



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

SEP 18 1984

Report Nos.: 50-325/84-25 and 50-324/84-25

Licensee: Carolina Power and Light Company
411 Fayetteville Street
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Conducted: August 20-23, 1984

Inspector: D.M. Montgomery for
P. G. Stoddart

9-13-84
Date Signed

Approved by: Daniel M. Montgomery
Daniel M. Montgomery, Section Chief
Emergency Preparedness and Radiological
Protection Branch
Division of Radiation Safety and Safeguards

9-13-84
Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 26 inspector-hours on site in the areas of radioactive gaseous and liquid waste processing and effluents.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Licensee Employees Contacted

- *C. R. Dietz, Plant General Manager
- *A. G. Cheatham, III, Manager Environmental and Radiation Control
- *W. J. Dorman, Quality Assurance Supervisor
- *D. E. Novotny, Senior Specialist, Regulatory Compliance
- *W. A. Nurnberger, Foreman, Environmental and Radiation Control
- J. Davis, Engineer, Support Group
- M. D. Hill, Manager, Administrative and Technical Support
- L. E. Tripp, Radiation Control Supervisor
- K. E. Enzor, Director, Regulatory Compliance
- C. E. Robertson, Supervisor, Chemistry and Environmental Analysis
- M. L. Milliner, Foreman, Chemistry and Environmental Analysis
- S. L. Watson, Engineer, Environmental and Radiation Control
- J. E. Harrell, Project Engineer, NSSS
- T. E. Karriker, Radwaste Shift Foreman

Other Organizations

C. Rosenberger, Quality Assurance, CP&L Corporate Headquarters

NRC Resident Inspectors

D. O. Myers

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 23, 1984, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Changes to Equipment and Procedures (84723, 84724)

The inspector reviewed changes, revisions, or additions to the following procedures associated with plant chemistry, radioactive waste treatment or processing, radiological process or effluent instrumentation, or Technical Specification requirements:

E&RC-0225, "Testing of Absolute Particulate Filters", Rev. 0, February 29, 1984

E&RC-0515, "Review of Process Control Program (PCP)", Rev. 0, October 18, 1983

E&RC-1000, "Sampling and Analysis Schedule for Technical Specifications Related to Radioactive and Nonradioactive Chemistry", Rev. 12, January 12, 1984

E&RC-1005 "Collection of Routine and Nonroutine Samples", Rev. 1, May 2, 1984

E&RC-1214, "Monthly Source Check of Process Radiation Monitors", Rev. 1 September 28, 1983

E&RC-1221, "Collection, Preparation, and Analysis Procedure for Routine SJAE Off-Gas Analysis", Rev. 3, December 9, 1983

E&RC-1225, "Augmented Offgas Sampling System", Rev. 2, May 30, 1984

E&RC-1241, "Collection and Preparation Procedure for Routine Reactor Coolant Samples for Gross Activity Determination", Rev. 0, September 23, 1983

E&RC-1500, "Analysis of PASS Samples in the Laboratory", Rev. 5, March 14, 1984

E&RC-1505, "Operation Procedure for Post Accident Sampling Stations", Rev. 3, February 3, 1984

E&RC-2002, "Sampling of Radioactive Airborne Effluent Release", Rev. 4, May 16, 1984

E&RC-2003, "Reporting of Radioactive Airborne Effluent Releases, Rev. 1, April 18, 1984

E&RC-2009, "Radioactive Liquid Effluent Releases and Reports", Rev. 1, July 31, 1984

E&RC-2015, "Procedures for Preparation of the Semiannual Environmental and Effluent Release Report", Rev. 1, May 23, 1984

E&RC-2175, "Off-Site Dose Calculation (ODCM) Software Package Instructions and Documentation", Rev. 1, May 9, 1984

E&RC-2203, "Calibration and Operation of Particulate Counters", Rev. 5, May 23, 1984

PT-15.1-a, "Standby Gas Treatment System Weekly Run Time Check", Rev. 3, February 6, 1984

PT-15.1.1, "Standby Gas Treatment System Heater Check", Rev. 4, December 15, 1983

PT-15.1.6, "Standby Gas Treatment System Operability", Rev. 12, March 21, 1984

All of the above procedures addressed their specific areas in sufficient detail to permit plant personnel to perform the tasks or functions covered by the purpose and scope of the procedures. Changes or revisions to procedures had been reviewed and approved by appropriate plant staff and management prior to issuance.

No violations or deviations were identified.

5. Audits and Appraisals (84723, 84724)

Annual audits and appraisals of facility operations and safety functions are required under provisions of Technical Specifications 6.2.3, 6.5, 6.5.4, 6.5.5, and 6.5.6.

The inspector discussed the licensee's audit and appraisal program in the areas of liquid and gaseous radioactive waste management, reactor chemistry, effluent treatment, and radiological effluent instrumentation with licensee representatives. A comprehensive corporate audit including most of these areas had been completed shortly before the inspection; however, the results had not received the appropriate corporate level review and were not available at the time of the inspection.

No violations or deviations were identified.

6. Liquid Radwaste Systems (84723)

The inspector reviewed the licensee's experience in maintaining and using liquid radwaste systems and solidification systems. A reverse osmosis (R.O.) water processing unit was a component of the original liquid radwaste system design but proved to be unsatisfactory and was removed in 1983. Licensee representatives indicated that fouling of the membrane by organic materials and sludge was the principal problem, although it was stated that lower-than-expected salt concentrations in the feed stream made the R.O. unit less useful than anticipated. The licensee also found the evaporative concentrator not necessary for liquid waste processing and is considering removing it from the system to make more space available for other purposes. The current system utilizes Powdex-type filter demineralizers in series with deep-bed demineralizers for liquid radwaste processing, with most of the processed water being re-used in the plant.

The inspector reviewed the licensee's semi-annual effluent reports for 1983 and noted that radioactive effluents were within Technical Specification limits and within 10 CFR Part 20, Appendix B, limits and therefore ALARA.

No violations or deviations were identified.

7. Reactor Coolant (84723)

- a. Technical Specification Table 3.4.4-1 specifies the maximum coolant concentration limits for chloride and conductivity. Sampling frequencies are specified in Technical Specification 4.4.4. The

inspector reviewed selected plant chemistry records for the period January 1, 1984, to the date of the inspection and verified that the results were within limits for the tests reviewed.

- b. Technical Specification 3.4.5 specifies the limit for specific activity in the reactor coolant system. Technical Specification 4.4.5.1 specifies the sampling and analysis frequencies for gross radioactivity determinations. Table 4.4.5-1 also specifies the sampling and analysis frequencies for isotopic analysis for dose-equivalent iodine-131 determination and isotopic concentrations of I-131, I-133, and I-135. The inspector reviewed selected plant chemistry records for the period January 1, 1984, through July 31, 1984.

No violations or deviations were identified.

8. Radioactive Liquid and Gaseous Effluents (84723, 84724)

- a. Sections 3/4.11.1 and 3/4.11.2 of the Technical Specifications provide surveillance requirements and limits for the discharge of liquid and gaseous effluents, respectively.

The inspector examined selected liquid and gaseous release records, effluent release permits, and other licensee radwaste records for the period of October 1, 1983, to the date of the inspection. The Technical Specifications establish noble gas and iodine release rates, maximum activity contained in tanks, limits for discharges of gaseous waste through the plant vents, limits for discharges of liquid waste to the plant discharge canal, and provide for the sampling and analysis of radioactive material in radioactive liquid and gaseous effluents. The inspector noted that the records were maintained in accordance with requirements of Technical Specification 6.10.

- b. Technical Specification 3/4.6.6.1 specifies testing and surveillance requirements for the Control Room Emergency Filtration System and the Standby Gas Treatment Systems. The inspector examined records of charcoal absorber sample efficiency tests, of HEPA filter and charcoal absorber in-place leak tests, and of operability tests and determined that the results of the tests and frequencies of tests and analyses satisfied the Technical Specification requirements.
- c. The inspector reviewed the licensee's "Semi-Annual Radioactive Effluent Release Reports" for the periods January 1, 1983, through June 30, 1983, July 1, 1983, through December 31, 1983, and January 1, 1984, through June 30, 1984. The reports met the requirements of Technical Specification 6.9.1.8 and were consistent with the guidance in Regulatory Guide 1.21. The inspector noted that the activation of the Augmented Offgas (AOG) System for Unit 1, which occurred in January 1984, resulted in a decrease, by a factor of approximately 200 in the discharge of radioactive gases to the environment during the second quarter of 1984 (Note: The Augmented Offgas System for Unit 2 had not been placed in service as of the date of the inspection;

however, Unit 2 had been shut down for refueling during the second quarter of 1984, permitting an assessment of Unit 1 releases through the AOG).

No violations or deviations were identified.

9. Instrumentation (84723, 84724)

- a. Technical Specification Table 4.3.3 requires that all radioactive liquid and gaseous effluent monitors be calibrated at least every 18 months to a NBS-traceable source, functionally tested quarterly, and the instrument operability checked at least daily. The inspector reviewed records and procedures for the calibration and testing of the radioactive liquid and gaseous effluent monitors.
- b. Technical Specifications 4.11.1.1.1 and 4.11.2.1.1 require the sampling and analysis of representative samples of radioactive or potentially radioactive liquids in batch releases prior to release and of representative samples of continuous liquid and gaseous effluent streams. The inspector reviewed procedures for the sampling and analysis of the required samples and examined the certification of NBS-traceable calibration sources used in radiological measurements of samples.

No violations or deviations were identified.