



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

JUN 10 1981

Report Nos. 50-325/81-09 and 50-324/81-09

Licensee: Carolina Power and Light Company
411 Fayetteville Street
Raleigh, N.C. 27602

Facility Name: Brunswick Steam Electric Plant

Docket Nos. 50-325 and 50-324

License Nos. DPR-71 and DPR-62

Inspection at Southport, N.C. and New Hill, N.C.

Inspector: D. M. Montgomery for 6-9-81
A. L. Cunningham Date Signed

Approved by: D. M. Montgomery 6-9-81
D. M. Montgomery, Acting Section Chief Date Signed
EPPS Branch

SUMMARY

Inspection on April 20-24, 1981

Areas Inspected

This routine unannounced inspection involved 32 inspector-hours onsite in the areas of radiological environmental monitoring including: management controls; inspection of environmental monitoring stations; review of environmental monitoring data; review of analytical quality control; review of radiological environmental monitoring procedures; and inspection of calibration status of air particulate monitoring systems.

Results

Of the six areas inspected, no violations or deviations were identified in two areas; four violations were identified in four areas (failure to implement required program for surface water sampling of intake canal, paragraph 6b; failure to obtain required approval for temporary changes of radiochemical procedures, paragraph 5c; failure to provide calibration procedure for periodic calibration of air particulate monitoring systems' gas meters, paragraph 7; failure to submit written notification to NRC within 30 days following deletion of milk sampling station from environmental monitoring program, paragraph 6c).

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DETAILS

1. Persons Contacted

- *C. K. Dietz, General Manager
- *G. J. Oliver, Manager, Environmental and Radiation Control
- *R.D. Pasteur, Supervisor, Environmental and Chemistry
- *A. Caylor, Environmental and Chemistry Foreman
- D. H. Edwards, Jr., Supervisor, Environmental Radiological Laboratory (HEEC)

Other licensee employees contacted included technicians.

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on April 24, 1981 with those persons indicated in Paragraph 1 above. The findings, including the violations listed herein, were further discussed with licensee representatives, via telephone, on May 1, 1981. Licensee representatives acknowledged all findings discussed.

3. Licensee Action on Previous Inspection Findings

No previous inspection findings were outstanding during the subject inspection.

Unresolved Items

Unresolved items were not identified during this inspection.

5. Management Controls

- a. Section 5.1 of Appendix B Technical Specifications assigns responsibility and authority for conducting the radiological environmental monitoring program. Discussions with licensee representatives disclosed that management controls were consistent with the assigned program. Through discussions with licensee representatives, inspection of environmental monitoring equipment and stations in the presence of a licensee representative, review of procedures and program data, the inspector determined that responsibility for the environmental monitoring program was assigned to specific organizations and individuals with designation to responsible management and supervision. There were no questions regarding this item.

- b. Inspection included a detailed review of audit report Nos. QAA/130-3 (July 9, 1980), QAA/21-11 (July 3, 1979), and QAA/21-15 (August 18, 1980). Inspection of the subject reports and the respective audit checklists disclosed that the Radiological Environmental Monitoring Program was implemented in compliance with Appendix B Technical Specification 4.2 and applicable management and administrative controls defined in Section 5.0 of the subject specifications. There were no questions regarding this item.
- c. Appendix B Technical Specification 5.3 requires preparation and approval of written procedures for environmental sampling and radiochemical analyses to ensure compliance with the radiological environmental monitoring conditions defined in Appendix B Technical Specification 4.2. Procedural requirements also include actions to be taken when environmental protection conditions are exceeded. Inspection included a detailed review of administrative, environmental sampling, radiochemical analytical procedures, and all respective revisions thereof. The procedures inspected are listed below.
- (1) RC&T Procedure 3100 Radiological Environmental Monitoring Program (Rev. 0, 12-4-79)
 - (2) RC-AD-3 Administrative Procedure (Rev.1, 11-18-76)
 - (3) RC-AD-4 Administrative Procedure (Rev. 0, 5-9-80)
 - (4) RC-ER-1 Determination of Tritium In Environmental Waters (Rev. 2, 6-20-78)
 - (5) RC-ER-2 Alpha and Beta Plateau Determinations (Rev. 1, 9-15-76)
 - (6) RC-ER-3 Sample Counting Using Beckman Widebeta II Planchet Counting System (Rev. 1, 1-15 76)
 - (7) RC-ER-5 Quality Control Procedure for LS-233 Liquid Scintillation Counting System (Rev. 1, 9/23/76)
 - (8) RC-ER-6 Determination of Counting Efficiency Factors for Beckman Widebeta II Proportional Counter (Rev.1, 1-15-76)
 - (9) RC-ER-7 Sample Counting Using Beckman LS-233 Liquid Scintillation Counter (Rev. 1, 1-15-76)
 - (10) RC-ER-8 Quality Control in the Environmental Radiochemistry Laboratory (Rev. 1, 8-4-76)
 - (11) RC-ER-9 Determination of Tritium Counting Efficiency on the Beckman Liquid Scintillation Counter (Rev. 1, 5-9-78)

- (12) RC-ER-10 Calibration of Ge (Li) ND-4420 Gamma Spectrometer System (Rev. 1, 4-4-13-76)
- (13) RC-ER-11 Energy Calibration for RC-ER-10 (Rev. 1, 11/13/76)
- (14) RC-ER-12 Determination of Gross Alpha and Gross Beta Activities in water (Rev. 1, 11-7-76)
- (15) RC-ER-13 Determination of Radioiodine in Milk and Charcoal. (Rev. 2, 8-31-77)
- (16) RC-ER-14 Determination of Radiostrontium in Environmental Samples of Air, Vegetation, Soil, Sediment, Sand, Milk, Fish, Benthics, Zooplankton, and Shrimp (Rev. 1, 12-15-78)
- (17) RC-ER-15 Quality Control Procedure for the Ge (Li) ND-4420 Gamma Spectrometer System (Rev. 1, 6/2/78)
- (18) RC-ER-16 Determination of Counting Efficiency Factors for Beta-Gamma Coincidence Counter (Rev. 1, 8-23-77)
- (19) RC-ER-17 Timing and Discriminator Settings for Beta-Gamma Coincidence System (Rev. 0, 8-24-77)
- (20) RC-ER-18 Quality Control Procedure for Beta-Gamma Coincidence System (Rev. 0, 8/27/77)
- (21) RC-ER-19 Reporting Anomalous Results (Rev.0, 12-5-77)
- (22) RC-ER-20 Administrative Procedure for Responsibilities and Retention of Records of the Environmental Surveillance Program (Rev. 0, 10-10-78)
- (23) RC ER 21 Calibration of Analytical and Top Loading Balances (Rev.0, 7-23-80)
- (24) RC-HP-20 Calibration Procedure for High Volume Air Sampler (Rev. 2, 8-30-80)
- (25) RC-HP-10 Calibration Procedure Nuclear Measurements Air Monitor Model AM-4D (Rev. 2, 8-30-80)

Inspection disclosed that temporary changes were made to Sections 8.3.2, 8.3.3, 8.3.4, 8.3.5 (deleted), 8.3.6 (deleted) and 8.3.9 of Procedures RC-ER-12 (Determination of Gross Alpha and Gross Beta Activities in Water Rev. 1, 11-7-76) and RC-ER-18 (Quality Control for Beta-Gamma Coincidence System) without approval by two members of facility management. Such changes are contrary to the requirements cited in Appendix B Technical

Specification 5.3 which allows temporary changes to procedures which do not alter the intent of the original procedure; however, provided that such changes are approved as stated above. Licensee representatives were informed that the subject finding constituted a violation (50-325/81-09-01 and 50-324/81-09-01). Temporary changes to procedure RC-ER-12 involved dried sample weight, volume of digestant added to the samples, digestion period, and increased volume of oxidant (hydrogen peroxide) added to filtrate. Changes to Procedure RC-ER-18 involved analytical sensitivities. Licensee representatives were reminded that procedure review and approval is required to ensure the accuracy of the program and all results generated therefrom. Licensee representatives acknowledged the above finding.

Inspection of procedures also disclosed that the Table of Contents of Administrative Procedure RC-AD-3 required up-dating to include the following changes: (1) addition of Environmental Procedures RC-ER-16 through RC-ER-21; (2) correction of the page numbering sequence; (3) correction of the titles for procedures RC-ER-10 and RC-ER-11. This finding will be carried as an inspector followup item (50-325/81-09-02 and 50-324/81-02-02).

6. Implementation of the Environmental Monitoring Program.

- a. Inspection of the radiological environmental monitoring program included review of monitoring records and data, inspection of sampling stations, and review of the annual radiological environmental monitoring report. The findings are discussed below.
- b. Inspection of sampling stations included the following: (1) all air particulate monitoring stations and associated TLDs; (2) monitoring stations consisting solely of TLD's; (3) surface water sampling stations located at the plant cooling water intake and discharge canals; (4) all ground-water monitoring stations listed in Appendix B Technical Specification 4.2, Table 4.2-1; (5) milk sampling stations; (6) selected vegetative and soil sampling plots associated with air particulate and milk sampling stations. Inspection disclosed that all air particulate sampling stations, individual TLD monitoring stations and those associated with air particulate sampling stations were found to be intact and in satisfactory operating condition. Inspection of the plant cooling water intake and discharge canal surface water sampling stations disclosed that the method of surface water sampling conducted at the intake canal was not in compliance with the required method defined in the Technical Specification. Appendix B Technical Specification 4.2 requires, in part, that automatic intermittent water samplers collect monthly surface water samples. Sampling of the intake canal was implemented by collection of weekly grab samples (i.e., one-gallon grab sample per week) and compositing such samples on a monthly basis. The inspector informed licensee representatives that failure to sample surface water at the intake canal, as

required by the subject specification, constituted a violation (50-325/81-09-03 and 50-324/81-09-03). The licensee representatives acknowledged this finding and will respond appropriately upon receipt of this report.

- c. Inspection of the milk sampling stations, viz Stations 35, 36 and 37, and all sampling records associated therewith during the period January 1, 1980 through April 23, 1981, disclosed that samples were no longer available at sampling station 36 (Lewis Farm) as of March 9, 1981. This station was deleted from the surveillance program. Appendix B Technical Specification 4.2 provides that milk sampling stations may be dropped from the surveillance program when samples can no longer be obtained therefrom; however, the subject specification requires that the NRC should be notified, in writing, within 30 days with an explanation of why milk can no longer be obtained from such station. Inspection disclosed that the licensee failed to notify the NRC as required. The inspector informed licensee representatives that failure to implement the notification requirement constituted a violation (50-325/81-09-04 and 50-324/81-09-04). Licensee representatives concurred with this finding and stated that appropriate notification of NRC would be implemented.
- d. Inspection of licensee routine reporting requirements, defined in Appendix B Technical Specification 5.4.1.2, and the reports generated thereby, disclosed that such reports were submitted to the NRC on schedule and met the contents requirement defined in the subject specification. Reports included the following: (1) Annual Operating Environmental Monitoring Reports for the years ending December 1979, and December 1980; (2) Semiannual Effluent Reports for calendar years 1979 and 1980. There were no questions regarding this item.

7. Calibration of Dry Gas Meters Associated with Air Particulate Monitoring Systems

Inspection of all air particulate monitoring stations listed in Appendix B Technical Specification 4.2, Table 4.2-1 disclosed that all monitoring systems were operating on a continuous basis, as required. Inspection further disclosed that spare and replacement equipment for maintenance of the subject monitoring systems were adequate and readily available. Inspection of particulate air monitoring stations also included review and assessment of the monitoring log book resident at each monitoring station. Each log documented the following: (1) periodic recovery of the air particulate filter and radioiodine charcoal cartridge as required by Appendix B Technical Specification 4.2, Table 4.2-1, (2) periodic calibration (viz., every six months) of the dry gas meters associated with the air particulate monitoring systems; (3) maintenance of systems components as required. The inspector discussed with licensee representatives periodic calibrations of dry gas meters and the detailed written procedures for

implementing such calibrations. Inspection disclosed that no written procedures were developed for calibration of the meters. Appendix B Technical Section 5.3 requires, in part, that quality assurance procedures will be developed for monitoring, sample collection, and sample analysis. Based upon the above cited requirement, licensee representatives were informed that failure to provide written procedures for calibration of dry gas meters associated with each air particulate monitor constituted a violation (50-325/81-09-05, 50-324/81-09-05).

8. Licensee Program for Quality Control of Radiochemical Analytical Measurements.

The inspector reviewed licensee procedures addressing implementation of analytical quality control program for radiochemical analyses of environmental monitoring samples. Analyses of the subject monitoring samples are performed at the central corporate laboratory, Shearon Harris Energy and Environmental Center, New Hill, North Carolina. The program includes duplicate sample analysis, spiked samples for intralaboratory and inter-laboratory quality control including the state of North Carolina and the cross-check program involving the Environmental Protection Agency. The quality control program appeared to be consistent with the quality assurance procedural requirements defined in Appendix B Technical Specification 5.3.1.