



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30323

DEC 23 1985

Report Nos.: 50-338/85-29 and 50-339/85-29

Licensee: Virginia Electric and Power Company  
 Richmond, VA 23261

Docket Nos.: 50-338 and 50-339

License Nos.: NPF-4 and NPF-7

Facility Name: North Anna 1 and 2

Inspection Conducted: November 18-22, 1985

Inspector: W. E. Cline  
 for J. D. Harris

12/10/85  
 Date Signed

Approved by: W. E. Cline  
 W. E. Cline, Section Chief  
 Division of Radiation Safety and Safeguards

12/10/85  
 Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 55 inspector-hours on site in the areas of liquid and gaseous effluents and radiological environmental monitoring.

Results: Of the two areas inspected, no violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. Leberstein, Licensing Coordinator
- \*D. Roth, Quality Assurance Manager
- \*O. E. Hickman, Health Physics (HP) Supervisor
- \*R. A. Berquist, Instrumentation Supervisor
- \*A. H. Stafford, Superintendent Health Physics
- \*E. R. Smith, Assistant Station Manager
- \*K. R. LeFeure, Corporate Health Physicist
- \*E. W. Harrell, Station Manager
- \*W. C. Barnes, Assistant Supervisor, Health Physics
- M. Morgan, Periodic Test Coordinator
- D. Lewellyn, Senior Quality Control Engineer
- T. Johnson, Quality Control Supervisor

#### NRC Resident Inspector

- \*M. W. Branch

- \*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on November 22, 1985, with those persons indicated in paragraph 1 above. One item concerning administrative control of timely shipment of samples to a contract laboratory for radiochemical analysis was discussed (paragraph 8). No dissenting comments or opinions were expressed by licensee management. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

### 3. Audits and Appraisals (80721, 84723, 84724)

Technical Specification 6.5.3.1 requires audits of radiological environmental monitoring program at least once per 12 months, of the Offsite Dose Calculation Manual (ODCM) and implementing procedures at least once per 24 months, and of the Process Control Program (PCP) and implementing procedures at least once each 24 months.

The inspector reviewed the following audits:

- N-85-09, Radiological Environmental Monitoring Program, 6-13-85

- N-85-17, Process Control Program, 9-30-85

N-84-14, Offsite Dose Calculation Manual, 8-15-84

The inspector noted that findings were addressed in an appropriate manner. The audits reviewed appeared to probe deeply into programmatic issues and improvements were made in the audited program areas.

No violations or deviations were noted.

4. Procedures (80721, 84723, 84724)

Technical Specification 6.8.1 requires written procedures to be established, implemented, and maintained. The inspector reviewed the following procedures. All procedures listed had been reviewed and approved as required.

- ICP-RM-1-LW-111, Liquid Waste Clarifier Radiation Monitor Calibration, Rev. 8, 7-11-85
- PTEC-P-P-FC-1, Accuracy Certification and Calibration Procedure for Flow Measuring Devices, Rev. 2, 7-25-85
- HP-3.2.12, Accidental, Unplanned, or Uncontrolled Radioactive Liquid Release, 2-29-84
- HP-3.2.13, Accidental, Unplanned, or Uncontrolled Radioactive Gaseous Waste Release, 2-29-84
- HP-3.2.1, Radioactive Gaseous Waste Sampling, 5-16-85
- HP-3.2.3, Radioactive Liquid Waste Sampling, 7-16-85
- HP-REMM, Radiological Environmental Monitoring Manual
- HP-REMM-1, Section 1, Administration and Implementation, 5-3-84
- HP-REMM-2, Section 2, Sampling Schedule, 9-28-85
- HP-REMM-3, Section 3, Sampling Locations, 5-3-84
- HP-REMM-4, Section 4, Securing Samples, 5-3-84
- HP-REMM-5, Section 5, Packaging and Shipping, 8-28-85
- HP-REMM-6, Section 6, Operational Required Analysis and Sensitivities, 8-29-85
- HP-REMM-7, Section 7, Reporting Requirements, 5-3-84
- HP-REMM-8, Section 8, Maintenance and Calibration of Monitors, 8-29-85
- HP-REMM-9, Section 9, Quality Assurance, 5-3-84
- HP-REMM-10, Direct Radiation Monitoring (TLD) Stations, 10-14-85

No violations or deviations were noted.

5. Radiological Environmental Monitoring Program (80721)

Technical Specification 3.12.1 requires the radiological environmental monitoring program to be conducted as specified in Technical Specification Table 4.12-1. The inspector accompanied licensee personnel during a routine sample collection run. The environmental sampling sites visited included 12 air monitor stations and 12 Thermoluminescent dosimeter (TLD) stations, two of these stations were collocated with NRC TLD stations. During the inspection, one ground water sample, one discharge canal water sample, and one storm drain sample (Unit 1) were collected by the inspector and by licensee personnel. These samples will be analyzed for tritium and gamma emitters as part of a program to provide independent confirmation of environmental monitoring results reported to NRC. Results will be discussed with the licensee at a later date.

Technical Specification 4.12.2 requires a land use census to be conducted during the growing season at least once per 12 months. The inspector reviewed the annual land use census conducted during the growing seasons of 1984 and 1985 and had no comments. Technical Specification 3.12.3 requires participation in an Interlaboratory Comparison Program. The inspector noted that the licensee's contract lab participates in the U. S. Environmental Protection Agency Intercomparison Program. The inspector reviewed results of these cross checks from January 1984 - June 1985 and had no comments.

The inspector toured the meteorological tower and backup tower. There had been some operability problems and as a result meteorological instrumentation had been calibrated monthly. Corrective actions were taken and the calibrations are now being extended as the system proves more reliable. Currently, calibrations are performed bimonthly. The inspector verified by direct observation operability of meteorological instrumentation in the control room. The inspector noted that data is also transmitted to the corporate office for detailed analysis. Data can also be obtained at the meteorological tower and backup tower trailers.

No violations or deviations were noted.

6. Semi-Annual and Annual Reports (80721, 84723, 84724)

The Semi-Annual Radiological Effluent Release Reports for July 1, 1984 through December 31, 1984, and for January 1, 1985 through June 30, 1985 were reviewed. These reports were submitted in accordance with Technical Specification 6.9.1.9. No technical discrepancies were noted and the reports were consistent with Regulatory Guide 1.21. The releases are comparable for both report periods with no significant trends evident. The total body dose rate for both periods was less than .2% of Technical Specification limits.

Technical Specification 6.9.1.8 requires the submittal of an annual Radiological Environmental Surveillance Report. The inspector reviewed the report for calendar year 1984. The inspector determined the program was being performed as required with no increase in background radiation levels

other than the tritium level in the discharge canal. The tritium level is within allowed limits.

No violations or deviations were identified.

7. Radioactive Gaseous Wastes and Gaseous Effluent Treatment Systems (84724)

The inspector reviewed gaseous effluent release permits for October - November 1985. All releases were within limits with no adverse trends noted.

Technical Specifications Sections 4.6.4.3, 4.9.1.2, 4.7.7.1, and 4.7.8.1 list the testing and surveillance requirements for the Waste Gas Charcoal Filter System, Fuel Building, Control Room Emergency Habitability Systems, and the Safeguards Area Ventilation System, respectively.

The inspector examined selected records from December 1983 to September 1985 of in place leak testing of HEPA and charcoal filters, and charcoal absorber efficiency tests for the systems mentioned above. The inspector also reviewed records of operability and Safety Injection Actuation Isolation tests. During these reviews, minor inconsistencies were noted in periodic test procedures. Two examples are given. In the first example, PT 76.10B Control Room Emergency Ventilation Systems, Section 4.7 makes a reference to RDT-M16-1T, paragraph 4.5.3. Upon review of the licensee's copy of RDT-M16-1T, no such paragraph was found. Another procedure, PT-76.12A, Control Room Emergency Ventilation System (Post Maintenance Test on HEPA Filter), step 4.5 shows a calculation for percent penetration. However, a value obviously equivalent to filter efficiency was found in the data sheet where the value for penetration would normally have been recorded. This test, dated 11-7-85, had been reviewed and accepted by three individuals without this discrepancy being discovered. A detailed review found these tests to have been properly performed with the system passing both tests. Although the data sheet was incorrectly filled in, the inspector concluded the record was not misleading to a qualified reviewer concerning test results validity. Based on review of selected records this was the only example of this type of recordkeeping error. This isolated example is not considered a violation of recordkeeping requirements. The inspector's concerns were discussed with licensee management during the exit interview. Licensee management agreed to review these areas for improvement.

Technical Specification 3.11.2.6 limits the curie content of Waste Gas Storage Tanks and 4.11.2.6 specifies the testing frequency. The inspector reviewed records of curie content analysis from June 1984 to November 1985 and had no comments.

No violations or deviations were noted in these areas.

8. Radioactive Liquid Waste (84723)

Technical Specification 3.11.1.1 establishes upper limits for concentrations of radioactive material in liquid effluents. The inspector reviewed liquid effluent release permits for October and November 1985. The releases were within limits with no adverse trends noted.

Technical Specification Table 4.11-1 provides requirements for the sampling and analysis program for liquid effluents. During review of the records of sampling and analysis of liquid effluents, it was discovered that the third quarter composite sample for Sr 89, Sr-90 analysis had not been shipped to the vendor laboratory for analysis. No administrative control existed to ensure timely shipment of samples. The inspector noted that the required lower limits of detection could still be met even though the samples were not shipped in a timely manner. This matter was discussed during the exit interview. The licensee management agreed to develop appropriate administrative controls by January 15, 1986, to prevent a recurrence of this oversight. This will be followed as an open item (IFI 85-29-01).

Technical Specification 3.11.1.4 limits the curie content of each unprotected outdoor tank to less than or equal ten curies, excluding tritium and dissolved or entrained noble gases. The inspector selectively reviewed the sampling and analysis for curie content from May to October 1985 for the Refueling Water Storage Tank, Casing Cooling Storage Tank, PG Water Storage Tank, and the Boron Recovery Test Tank. Based on the selected review all tankage content appeared to be within limits.

No violations or deviations were noted.

9. Radioactive Effluent Monitoring Instrumentation

Technical Specifications 3.3.3.9 and 3.3.3.10 require radioactive liquid and gaseous effluent monitoring instrumentation channels to be operable with their alarm/trip setpoints set in accordance with the ODCM. Technical Specification, Table 4.3-12 and 4.3-13 establish frequencies for channel checks, source checks, channel calibrations, and channel functional test operations. The inspector selectively reviewed calibration and channel check records from June 1984 to November 1985. Calibrations and checks appear to be performed as required.

The inspector noted that the monitor panel in the control room was operative by direct observation.

No violations or deviations were noted.

10. Inspector Followup Items (92701)

The following inspector followup items (IFI) were closed during the inspection:

IFI 84-32-01 - Documentation was provided to show that the gaseous waste system was used during February, March, June, July, and August of 1984 to reduce radioactive materials in gaseous waste as referenced to Technical Specifications 3/4.11.2.4.

IFI 84-32-02 - After review of test procedures and completed test data, the inspector determined that the filter testing meets the requirements of ANSI N510.