



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

SEP 19 1984

Report Nos.: 50-338/84-32 and 50-339/84-32

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 Dates: August 6-10, 1984

Inspection at North Anna site near Mineral, Virginia

Inspector: *R. H. Albright*  
 R. H. Albright

8-30-84  
 Date Signed

Approved by: *G. R. Jenkins*  
 G. R. Jenkins, Section Chief  
 Division of Radiation Safety and Safeguards

8/31/84  
 Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 41 inspector-hours (6 inspector-hours on the backshift) on site in the areas of external exposure control and personal dosimetry, surveys, monitoring, and control of radioactive material, solid waste, gaseous waste system, liquids and liquid wastes.

Results: No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*M. L. Bowling, Assistant Station Manager
- \*S. B. Eisenhart, Licensing Coordinator
- \*D. E. Hickman, Supervisor - Health Physics (Corporate)
- \*H. F. Kahnhauser, Staff Health Physicist (Corporate)
- \*A. H. Stafford, Supervisor - Health Physics
- \*C. A. Tarantino, Staff Health Physicist

Other licensee employees contacted included technicians, mechanics and office personnel.

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on August 10, 1984, with those persons indicated in paragraph 1 above. An Unresolved Item\* (URI) concerning operation of the ventilation exhaust treatment system (see paragraph 7) was discussed with licensee management.

During a telephone discussion with licensee personnel on August 17, 1984, the inspector informed licensee of an Inspector Followup Item (IFI) regarding testing of the ventilation exhaust filter system (paragraph 7).

Licensee management, in a telephone conversation on September 6, 1984, committed that the appropriate procedures to calibrate the liquid waste discharge sample pump flow would be revised or written by October 12, 1984 (paragraph 8).

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. External Exposure Control and Personal Dosimetry (83724)

10 CFR 20.202 requires each licensee to supply appropriate personnel monitoring equipment to specific individuals and require the use of such equipment.

During tours of the plant, the inspector observed workers wearing appropriate personnel monitoring devices.

---

\*An unresolved item is a matter about which more information is required to determine whether it is acceptable or may involve a violation or deviation.

10 CFR 20.203 specifies the posting, labeling and control requirements for radiation areas, high radiation areas, airborne radioactivity areas and radioactive material. Additional requirements for control of high radiation areas are contained in Technical Specification 6.12.

During tours of the plant, the inspector reviewed the licensee's posting and control of radiation areas, high radiation areas, contamination areas, radioactive material areas and the labeling of radioactive material. The inspector specifically discussed an open roll-up door entrance to the decontamination building. The normal access door to the area was approximately two feet away and posted as a radioactive material area and radiation area. Licensee personnel agreed that additional posting at the roll-up door entrance was good health physics practice and posted the roll-up door entrance as a radiation area.

No violations or deviations were identified.

5. Surveys, Monitoring, and Control of Radioactive Material (83726)

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present.

The inspector observed personnel using the personnel frisker (RM-14 with HP-210 pancake probe) to perform contamination surveys of themselves prior to exiting the controlled area.

10 CFR 20.203 states the requirements for labeling radioactive materials.

During tours of the auxiliary building and in the restricted area outside the auxiliary building, the inspector observed labeling of radioactive materials.

No violations or deviations were identified.

6. Solid Waste (84722)

10 CFR 20.311 requires a licensee who transfers radioactive waste to a land disposal facility to prepare all waste so that the waste is classified in accordance with 10 CFR 61.55 and meet the waste characteristics requirements of 10 CFR 61.56. It further establishes specific requirements for conducting a quality control program and for maintaining a manifest tracking system for all shipments.

The inspector reviewed procedure HP-3.2.8 - Packaging and Shipment of Radioactive Waste, which specifies the packaging and classifying methods for radioactive waste shipped to low-level waste burial facilities.

The inspector reviewed the methods used by the licensee to assure that waste was properly classified, met the waste forms and characteristics required by

10 CFR 61, and met the disposal site license conditions, and discussed the use of these methods with licensee representatives.

The inspector reviewed selected manifests prepared for waste shipments made during the period July - August 1984 to verify that a tracking system was being used to insure that shipments arrived at the intended destination without undue delay.

The inspector discussed with licensee representatives their program which defines waste streams and the use of scaling factors for determining the concentration of certain isotopes in the waste.

No violations or deviations were identified.

7. Gaseous Waste System (84724)

Technical Specification 3/4.11.2.2 states calendar quarter and calendar year dose limits for noble gases released in gaseous effluents from the site. Calculations of the cumulative dose contributions throughout the calendar quarter and year are to be performed every 31 days using methods described in the ODCM.

The inspector reviewed the cumulative doses calculated monthly for the period January - July 1984.

Technical Specification 3/4.11.2.3 states calendar quarter and calendar year dose limits to the critical organ of the maximum exposed member of the public from iodine-131, tritium, and from all radionuclides in particulate form with half lives greater than 8 days released in gaseous effluents from the site. Calculations of the cumulative dose contributions throughout the calendar quarter and year are to be performed every 31 days using methods described in the ODCM.

The inspector reviewed the cumulative doses calculated monthly for the period January - July 1984.

Technical Specification 3/4.11.2.4 requires that air dose and critical organ dose be projected for the next 31 days and if the projected doses exceed the stated doses the gaseous radwaste treatment system and/or the ventilation exhaust treatment system shall be used to reduce radioactive materials in gaseous wastes prior to their discharge.

The inspector reviewed the 31 day dose projections for the period February 1984 - August 1984. The 31 day dose projections for the months February, March, June, July, and August exceeded the critical organ dose guideline of this Technical Specification. The NRC Region II position is that this technical specification requires the ventilation exhaust treatment system to be run continuously to provide as much filtration of exhaust paths as possible when the projected 31 day dose exceeds the specified offsite dose to the critical organ.

Information necessary to show that the ventilation exhaust system was run continuously during the listed months was needed in order to determine compliance with this technical specification. Licensee personnel stated that they interpreted this technical specification to mean that the ventilation exhaust treatment system would be used during releases of major contributors to offsite dose such as releases due to containment purge. The information required from the licensee to resolve this item was discussed with license management. This data will be available for NRC Region II review by August 31, 1984. This item will be considered unresolved pending review of licensee supplied data. (338, 339/84-32-01)

Technical Specification 3/4.11.2.6 states that the maximum curie content in each gas storage tank shall be limited to  $\leq 25,000$  curies noble gases (considered as Xe-133). The frequency for determining that the above limit is met is once per month under current plant conditions.

The inspector reviewed curie content data for the gas storage tanks for June and July 1984.

Technical Specifications 3/4.7.7, 3/4.7.8, and 3.6.4.3 state the testing frequency and the specific tests required for the control room, safeguards and waste gas filter systems, respectively. ANSI N510 and Regulatory Guide 1.52 are referenced in this Technical Specification for the actual test procedures requirements.

The inspector reviewed the following test procedures to ensure that the specified tests and test frequencies complied with the respective Technical Specification requirements:

1-PT-69.4A	Waste Gas Charcoal Filter System Laboratory Analysis
1-PT-69.7A	Waste Gas Charcoal Filter System
1-PT-76.10A	Control Room Emergency Ventilation System
1-PT-76.12A	Control Room Emergency Ventilation System
1-PT-76.13A	Control Room Emergency Ventilation System
1-PT-77.2	Safeguards Area Ventillation System

While discussing another matter with the licensee personnel on August 17, 1984, additional information on the design of the safeguards ventilation and filter exhaust system was given to the inspector. This information was contrary to the inspector's understanding of system design and operation while onsite. This information led the inspector to question the adequacy of previous testing of the safeguards filter system to meet the requirements of ANSI N510, section 10.3 which includes the requirement to test bypass flow around a filter system. The inspector's understanding of the system during the inspection was that, when the filter system was put into use, all bypass flow around the filter system ceased and all exhaust from all ventilation systems which could use the filters would be routed to the filters. The additional information gained on August 17, 1984, indicated that each ventilation system which can use the filters for exhaust filtration has its own bypass dampers so that it can bypass the



filters when another ventilation system is lined up to use the filters. This is an inspector followup item (338,339/84-32-02).

No violations or deviations were identified.

8. Liquids and Liquid Wastes (84723)

Technical Specification 3.3.3.9 lists the required radioactive liquid effluent monitors, operability requirements, alarm trip setpoints and calibration frequencies.

The licensee accounts for radioactive material in the liquid waste discharges by use of a continuous composite sampler. This system uses a flow sensing device to signal a sampling pump which provides a sample volume proportional to the discharge flow. The electrical signal from the flow sensing device and the functioning of the pumps are checked once per 18 months in order to meet the calibration frequency in the technical specification. The sample catch tank has been calibrated. Licensee personnel compare the sample volume to a discharge volume integration to determine that the sample volume is proportional to the discharge volume. This check is not proceduralized or recorded. This comparison of sample volume to discharge volume should be recorded or some means to provide a calibration of the sample flow rate and discharge flow rate should be established. Licensee management committed, in a telephone conversation on September 6, 1984, that appropriate procedures would be revised or written which would calibrate the sample flow rate. This will be completed by October 12, 1984. The inspector stated that this is an open item and licensee corrective actions will be reviewed during a future inspection. (338,339/84-32-03)

Technical Specification 3.11.1.4 lists several outside tanks which hold radioactive liquids and requires that the curie contents of the tanks shall be limited to 10 curies each. The frequency for calculating curie content of each tank is once per week when radioactive materials are being added to the tank.

Curie content calculations for the following tanks are routine: a) refueling water storage tanks, and b) primary grade water storage tanks. The inspector reviewed weekly curie content data for the above tanks for the period February - March 1984.

No violations or deviations were identified.