



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

Report Nos. 50-269/79-25, 50-270/79-23 and 50-287/79-25

Licensee: Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242

Facility Name: Oconee Nuclear Power Station

Docket Nos. 50-269, 50-270 and 50-287

License Nos. DPR-38, DPR-47 and DPR-55

Inspection at Oconee site near Seneca, South Carolina

Inspector: C. M. Hooley  
C. M. Hooley

11/6/79  
Date Signed

Approved by: A. F. Gibson  
A. F. Gibson, Section Chief, FFMS Branch

11/14/79  
Date Signed

SUMMARY

Inspection on October 9-12, 1979

Areas Inspected

This routine, unannounced inspection involved 32 inspector-hours onsite in the areas of radiation protection, including instruments and equipment, posting of notices, internal exposure control, radiological surveys, posting and control, and notification and reports; review of licensee action on I&E Bulletins, Circulars and Notices; followup on reportable occurrences; and followup on previously identified items.

Results

Of the ten areas inspected, no apparent items of noncompliance or deviations were identified in nine areas; one apparent item of noncompliance was found in one area (infraction-failure to keep entrance to high radiation area locked (269/287/79-25-01; 270/79-23-01) paragraph 10).

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. E. Smith, Station Manager
- \*C. T. Yongue, Station Health Physicist
- L. A. Blue, Health Physicist
- S. R. Newcomb, Health Physicist
- C. L. Harlin, Health Physicist
- D. Davidson, Health Physics Supervisor
- J. Owens, Health Physics Supervisor
- T. Alexander, Health Physics Supervisor
- \*R. T. Bond, Technical Services Supervisor
- D. G. Austin, Training Coordinator
- D. Roth, Assistant Shift Supervisor
- D. Rochester, Station Chemist

Other licensee employees contacted included five technicians, two operators, two mechanics and three office personnel.

#### NRC Resident Inspector

\*F. Jape

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on October 12, 1979 with those persons indicated in Paragraph 1 above.

### 3. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (269/287/79-20-01; 270/79-18-01) The inspector reviewed the corrective action taken to improve the administrative control of keys to high radiation areas. This item is discussed further in paragraph 10.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Instruments and Equipment

- a. The inspector observed a variety of radiological instruments (portable survey instruments, portal monitors, personnel friskers, pocket dosimeters) in use and available for use, checked calibration stickers, performed

battery and response checks for selected, portable instruments in the health physics office, and selectively examined calibrations records for survey instruments in use. The inspector discussed the radiation survey instrument calibration program with licensee representatives and observed the calibration of instruments.

- b. The inspector reviewed the following calibration procedure:

HP/O/B/1004/27 "Calibration Procedure for Victoreen  
Model 497 Portable survey meter"

HP/O/B/1004/30 "Calibration Procedure for Eberline  
Model RM-14 Personnel Monitor"

HP/Q/B/1005/07A "Procedure for Daily Source Check of  
RM-14 and 15 Beta-gamma Radiation Monitor".

No items of noncompliance or deviations were observed by the inspector.

6. Posting of Notices

10 CFR 19.11 requires, in part, that each licensee post current copies of 10 CFR 19 and 10 CFR 20 or if posting of the documents is not practicable, the licensee may post a notice which describes the document and states where it may be examined. 10 CFR 19.11 further requires that copies of any Notice of Violation involving radiological working conditions be conspicuously posted within two working days after receipt of the documents from the Commission. The inspector observed the posting of notices required by 10 CFR 19.11 and had no questions.

7. Internal Exposure Control

By review of records, observations and discussions with licensee representatives, the inspector evaluated the plant's program for air sampling, bioassay, engineering controls, MPC-hour controls, maintenance, and issuance controls. The inspectors performed contamination surveys of respirators in a "ready-for-use" status and determined that the contamination levels were less than those established for "ready-for-use" respirators.

The station's respiratory protection program appears to be in compliance with 10 CFR 20.103.

8. Surveys

- a. The inspector selectively reviewed records of radiation, contamination and airborne radioactivity surveys performed between August 8, 1979 and October 8, 1979, discussed the survey result with licensee representatives and observed the work in several active work areas to verify that the licensee was following the regulatory requirements of 10 CFR 20.103, 10 CFR 20.201 (b) and 10 CFR 20.401(b).

- b. The inspector reviewed the records of radiation and contamination surveys performed upon receipt of the following radiation sources:

17 Curie Cobalt-60 source, received July 30, 1979.

400 millicurie Cesium-137 source, received March 31, 1979.

4.05 Curie Plutonium-Beryllium source, received September 4, 1979.

The station's program for receiving radioactive material appears to be in compliance with 10 CFR 20.205.

- c. Technical Specification 4.16 requires that radioactive sources in use be leak tested at intervals not to exceed 6 months.

No items of noncompliance or deviations were observed by the inspector.

- d. The inspector performed independent radiation and loose surface contamination surveys in the auxiliary building and verified that the areas checked were properly posted.

#### 9. Notification and Reports

- a. The inspector reviewed the licensee records to determine if exposure data had been provided to terminated employees as required by 10 CFR 19.13(d). The inspector selected several names of recently terminated employees and verified that each employee had been sent a letter regarding his exposure history. The inspector had no further questions.
- b. The inspector discussed with a licensee representative the reporting requirements of 10 CFR 20.402, 10 CFR 20.403, 10 CFR 20.405 and 10 CFR 20.408 and reviewed plant records. No items of noncompliance or deviations were identified.
- c. The inspector reviewed the licensee's methods for complying with the recent changes to 10 CFR 19 and 10 CFR 20 for controlling radiation exposure to transient workers. The inspector had no further questions.

#### 10. Posting, Labeling and Control

- a. The inspector reviewed the licensee's posting and control of radiation areas, high radiation areas, airborne radioactivity areas, contamination areas, and radioactive material areas, and the labeling of radioactive material during tours of the plant. During a tour of the plant on October 11, 1979, the door leading to the deborating demineralizer hatch area (Room 251) was found closed but unlatched. Apparently a misalignment of the locking mechanism with the door jamb prevented the locking mechanism from engaging the jamb and locking the door. The

survey map posted at the entrance to the room indicated that the dose rate on valve 3G WD-199 was 2500 mR/hr on October 5, 1979 with radiation levels in accessible areas of the room of 250 mR/hr. A radiation survey performed by the licensee on October 11 confirmed these radiation levels. The inspector stated that failure to keep the entrance in a high radiation area locked and to maintain positive control over each individual entry was in noncompliance (269/287/ 79-25-01; 270/79-23-01) with 10 CFR 20.203(c).

- b. Duke Power Company's letter to the NRC dated September 20, 1979 stated that corrective action to prevent further noncompliance involving access to high radiation areas included, direct control of high radiation area keys by a health physics employee and a daily audit of the keys. During a review of the corrective action taken, it was determined that only approximately 25% (52) of the keys to high radiation areas were under direct control of a health physics employee and subject to a daily audit. Approximately 100 keys were maintained by the Operations Group and approximately 50 keys were in the possession of health physics personnel. The inspector stated that with nearly 200 keys to high radiation areas available, many of which are unaccounted for, compliance by the station with 10 CFR 20.203(c)(2) is questionable. This is evidenced by the fact that over the past thirteen months, five items of noncompliance relating to control of high radiation areas have been identified by NRC inspectors. The inspector stated that the controls specified in Duke Power's letter dated September 20, 1979 (direct control of all high radiation keys by an individual and daily audit of the system) should apply to all high radiation area keys. The inspector further stated that consideration should be given to reducing the number of high radiation areas, e.g. shielding, decontamination of systems, consolidation of areas behind a single door. Licensee representatives acknowledged the inspection comments.

#### 11. IE Notices, Circulars and Bulletins

- a. Information Notice 79-07, Rupture of Radwaste Tanks. The inspector reviewed the licensee's evaluation of the potential for a radioactive waste tank rupture. The interim radwaste evaporator concentrate storage tank is designed for 5 psi overpressure when full. Although the storage tank has been overflowed with 10-12% Boric Acid, no flow blockage has been experienced. If the vacuum relief valve vent became plugged the regular tank vent could be used. The vents can be isolated from the tank for clean-out, if necessary. Chloride stress corrosion is not considered a problem since the chloride concentration is kept low (less than 50 ppm). If the tank did rupture, the spill would be contained in the interim waste building. The building is designed to contain all the water from the simultaneous rupture of all tanks. The inspector had no further questions.
- b. Circular 79-09, Occurrence of Split or Punctured Regulator Diaphragms in Certain Self-Contained Breathing Apparatus. In July 1979 all Scott

Air Pak II/IIA were inspected in accordance with manufacturer recommendations. No failure were found. The licensee has also begun a monthly inspection and a post-use inspection program. No failures have been found. Modification kits for the Pressure-Pak III, pressure-demand SCBA have been ordered, however, the manufacturer has indicated a delay in shipment of 6 months.

- c. Circular 79-15 Bursting of High Pressure Hose and Malfunction of Relief Valve and "O"-ring in Certain Self-Contained Breathing Apparatus. The SurvivAir Mark I SCBA is not used by the licensee. The inspector had no further questions.

#### 12. Followup on Reportable Occurrence

On September 26, 1979, the licensee reported that between September 22 and September 25 two radioactive liquid waste discharges had been made which may have exceeded the maximum permissible concentration (MPC) specified in Technical Specifications 3.9.3 due to inadequate dilution water flow. Dilution water is normally provided by the Keowee Hydro Units. During the release, the hydro units were out of service for maintenance. Ordinarily when the hydro units are out of service, adequate dilution flow is maintained by leakage through the gates. However, during this maintenance outage, leakage was diverted to the hydro unit sump. Plant operations personnel were aware that the hydro units were out of service, but not aware that normal leakage was being diverted from the hydro tailrace. The release calculations considered normal leakage as dilution flow. When the problem was discovered the Keowee spillway gate was opened to provide dilution flow of 58 cubic feet per second (cfs). A review of sources of dilution water, revealed that adequate dilution flow (greater than 10 cfs) was available to keep the concentration less than the MPC specified in technical specification. The hydro unit sump was being pumped to this tailrace at a rate of 7.8 cfs and addition flow of 6.19 cfs was provided by overflow from the oil collection pond. The inspector reviewed the release permits and other records concerning this event and licensee's corrective action in response to this problem and had no further questions.

#### 13. Licensee Action on Previous Inspector Identified Items

- a. (Closed) Open Item (269/287/79-20-02; 270/79-18-02) Review of Radiation Exposure to Divers. The licensee performed an evaluation to determine the affect on readout of temperature changes during readout, within the range experienced between June 1979 and August 1979. The licensee concluded that no changes to doses assigned were necessary. The inspector had no further questions.
- b. (Close) Open Items (269/270/78-15-06; 287/78-16-06)

Use of GM Detectors Operated in the Current Mode. The waste gas tank high activity monitors and the plant vent high activity monitors have

been modified using kits provided by the manufacturer to prevent false zero indications due to saturation of the GM tubes. The inspector had no further questions.

14. Other Areas Inspected

- a. The inspector performed independent radiation surveys in the non-radioactive waste compactor area, scrap metal bins and the clean tool room to determine if radioactive material had been disposed of in uncontrolled areas. No radioactive material was found during the survey. The inspector had no further questions.
- b. On September 1, 1979, during the release of waste gas tank "1D" the Unit 1 high range gaseous waste system radiation monitor (1R1A-38) alarmed and automatically terminated the release. The initial analysis of the waste gas tank performed prior to the release indicated the activity was  $4.75 \text{ E-2 } \mu\text{Ci/ml}$ , principally Xenon-133. The re-analysis of this tank following the termination of the release indicated the activity was  $53 \mu\text{Ci/ml}$ , principally Xenon-133. A review of the first analysis revealed that the sample had been placed too close to the detector, resulting in a high dead time. The technician analyzing the sample failed to note a significant difference between elapsed time and real time. 1.26 curies were released before the release was terminated. The release rate was less than 1% of that which could have been used and still remained less than the maximum permissible concentrations for unrestricted areas specified in 10 CFR 20. The inspector reviewed the corrective action taken by the licensee and had no further questions.
- c. The inspector reviewed licensee identified items and had no questions.