



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

MAR 04 1986

Report Nos.: 50-413/86-07 and 50-414/86-09

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

Docket Nos.: 50-413 and 50-414

License Nos.: NPF-35 and CPPR-117

Facility Name: Catawba 1 and 2

Inspection Conducted: February 3-7, 1986

Inspector: G. L. Troup *G. L. Troup* 3/3/86  
 Date Signed

Approved by: C. M. Hosey *C. M. Hosey* 3/3/86  
 C. M. Hosey, Section Chief  
 Division of Radiation Safety and Safeguards  
 Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 34 inspector-hours onsite in the areas of the radiation protection program and the radioactive solid waste program, including installation and testing of the area radiation monitoring system, internal and external exposure control, records and reports, control of potential high exposure areas, and a review of NUREG-0737 items.

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

## REPORT DETAILS

## 1. Persons Contacted

## Licensee Employees

- \*J. W. Hampton, Station Manager
- \*J. W. Cox, Technical Services Superintendent
- \*G. T. Smith, Maintenance Superintendent
- \*C. L. Hartzell, Compliance Engineer
- \*W. P. Deal, Station Health Physicist
- \*D. R. Rogers, Maintenance Engineer (Instrument and Control)
- A. J. Duckworth, Radwaste Chemistry Coordinator
- G. L. Courtney, Health Physics Staff Coordinator
- P. N. McNamara, Health Physicist
- F. L. Wilson, Health Physics Supervisor (R/IC)
- R. G. Wright, Health Physics Supervisor (Surveillance and Control)
- M. C. Couch, Health Physics Supervisor (DRC)
- P. G. Leroy, Licensing Engineer
- \*F. P. Schiffley, Licensing Engineer

Other licensee employees contacted included three technicians, three operators, two security force members, and four office personnel.

## NRC Resident Inspectors

- P. Skinner, Senior Resident Inspector
- P. K. VanDoorn, Senior Resident Inspector

\*Attended exit interview

## 2. Exit Interview

The inspection scope and findings were summarized on February 7, 1986, with those persons indicated in Paragraph 1 above. Licensee representatives expressed no dissenting opinions on the findings. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

## 3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

## 4. Area Radiation Monitoring System (83526)

- a. Final Safety Analysis Report (FSAR) Section 12.3 described the area radiation monitoring system. FSAR Table 12.3.4-1 listed the detectors, locations, sensitivity and ranges of the detectors.

- b. The inspector observed the alarm panel in the Control Room and verified that the readout/alarm modules for area monitors associated with Unit 2 (2-EMF-XX series) were all installed and connected. The inspector also verified that selected detectors were installed in the locations specified.
- c. In reviewing the alarm panel modules, the inspector noted that the meters for the Main Steam Line Monitors (1EMF-26-29 and 2EMF-10-13) were marked in "R/hr" but FSAR Table 12.3.4-1 lists the range in "mR/hr." The inspector questioned which range was correct as a difference of three orders of magnitude in radiation levels translates to a significant difference in the amount of radioactive material in the steam lines and potential for release through the steam relief valves. Through discussions with the cognizant technical personnel the inspector determined that the meters are correct and the FSAR was in error. Licensee representatives acknowledged this and stated that both the sensitivity and range of the steam line monitors would be corrected in the next revision of the FSAR. This is an Inspector Followup Item (413/86-07-01, 414/86-09-01).
- d. The inspector reviewed procedure HP/O/B/1009/12, Quantifying Gaseous Releases through Steam-Relief Valves under Post-Accident Conditions, and determined that the procedure utilized readings from the monitors in "R/hr" in the calculation. The inspector also discussed the meter readings with Control Room personnel; they were aware that the monitors read out in "R/hr."
- e. Testing of the area radiation monitors was accomplished under procedure TP/2/B/1600/01-B, Area Radiation Monitoring System Functional Test. All of the Unit 2 monitors were calibrated, tested and the trips and alarms tested satisfactorily. Although the completed test procedure had not been submitted for the formal review and approval, the inspector reviewed the test package and had no questions.

No violations or deviations were identified.

5. Records, Reports and Notifications (83724, 83725)

- a. The inspector reviewed the following records for indication of exposures in excess of regulatory limits:
  - (1) whole body counter log
  - (2) dosimeter exposure print-out
  - (3) pocket dosimeter - thermoluminescent dosimeter (TLD) correlation investigation reports (July-October 1986).

These records did not indicate instances where NRC or plant regulatory limits had been exceeded. The inspector also discussed any overexposures (potential or real) to external radiation or airborne radioactivity with the cognizant staff members; no overexposures had been suspected or determined.

- b. In reviewing the whole body counter log, the inspector noted several cases where the reason for the count was "investigation." The inspector discussed these cases with the cognizant personnel and was informed that these were programmed evaluations to assess any possible exposures to certain workers doing low-level waste sorting and surveying. The workers were counted each week during the work period; all results were negative. The inspector had no further questions.
- c. 10 CFR 19.13 provided for reporting radiation exposure data and internal exposure data to individuals after termination and in the event of an overexposure. Licensee representatives informed the inspector that such reports were prepared and submitted by the corporate health physics staff, not the plant staff. The inspector had no further questions.

6. Plant Tours (83524, 83526, 83724, 83725)

- a. During tours of the Unit 2 annulus and containment, the inspector discussed the methods which will be used to control and restrict personnel access to potential extremely high dose areas, such as the fuel transfer tube and the incore instrument area. A licensee representative showed the inspector the plugs which block the entrances to these areas and described the controls over these areas (locks, work permits, confined space and restricted space entry requirements, procedural requirements, etc.). Station Directive 2.11.4 required health physics approval for entry into such areas in the radiation control zone (RCZ) Health Physics procedures HP/O/B/100/25 and HP/O/B/100/18 specified requirements for access to high radiation areas and extra high radiation areas, respectively. As the access plugs were locked and the key(s) was under the direct control of health physics, and the administrative requirements delineated specific health physics action to unlock the areas, inadvertent or unknown entry into these areas is very improbable.
- b. The inspector noted that the Unit 2 areas in the Auxiliary Building were now included inside the RCZ, in preparation for startup. The inspector observed workers in the area wearing personnel dosimetry as required, using contamination survey instruments to monitor themselves upon exiting the areas, and having tools and equipment surveyed for release.

No violations or deviations were identified.

7. NUREG-0737 Items

- a. NUREG-0737, Clarification of TMI Action Plan Requirements, listed the TMI-related items approved for implementation. The inspector reviewed three of these items as they relate to Unit 2. These items were previously reviewed for Unit 1 and discussed in the following reports:

- (1) II.B.2 - Plant Shielding: Inspection Reports 50-413/84-10, 50-413/84-41 and 50-413/85-25.
  - (2) II.F.1.3 - Containment High Range Monitors: Inspection Reports 50-413/84-47 and 50-413/85-25.
  - (3) III.D.3.3 - Inplant Monitoring for Radioiodine: Inspection Report 50-413/84-41.
- b. The licensee's evaluation of plant shielding was contained in FSAR Table 1.9-1 and the determination that additional shielding was not necessary to meet the requirement of General Design Criterion 19 was applicable to Unit 2 as well as Unit 1. While shielding has been installed around some process monitors due to background radiation level considerations, licensee representatives did not identify any changes or additions due to the post-accident analysis.

Item II.B.2 is closed for Unit 2.

- c. The containment High Range Monitors (2-EMF-53A and 2-EMF-53B) had been installed, calibrated on the first range with a radioactive source, electrically calibrated over all ranges and the alarm and trip functions verified. The inspector compared the design and qualification criteria for the monitors as specified in the technical manual (GA E-160-1017) with the criteria in NUREG-0737; no discrepancies were noted. The inspector also reviewed the portions of procedure TP/2/B/1600/01-A for testing of the monitors and procedure IP/0/A/3314/04 for the electric calibration.
- d. The samplers, collection media and procedures for collection and evaluation of airborne radioiodine samples were the same for Unit 2 as for Unit 1. Licensee representatives informed the inspector that no changes or additional equipment were necessary to implement this requirement for Unit 2. The inspector had no further questions.

Item III.D.3.3 is closed for unit 2.

No violations or deviations were identified.

## 8. Information Notices

IE Information Notice 85-92, Surveys of Wastes Before Disposal from Nuclear Reactor Facilities, was issued to supplement IE Circular 81-07 for surveying and release of solid waste material as nonradioactive waste. The inspector determined that the licensee had received the Notice and was reviewing the contents for action. Licensee management representatives informed the inspector that the survey and release of wastes was still under discussion and a final corporate policy applicable to all of the stations had not yet been determined.

## 9. Facility Statistics

- a. During 1985, the licensee made one radioactive waste shipment consisting of 1,288 cubic feet of waste containing 0.069 curies of activity. The current inventory of radioactive waste onsite was 1,218 cubic feet plus 1,035 spent filters.
- b. In 1985 there were 66 personnel contamination cases, of which 16 were due to naturally occurring isotopes in materials.
- c. The collective dose received by personnel at the plant for 1985 was 62.7 rem as determined by TLD.