



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

JUN 27 1985

Report No.: 50-413/85-25

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

Docket No.: 50-413

License No.: NPF-35

Facility Name: Catawba 1

Inspection Conducted: May 28-31, 1985

Inspector: C. M. Hosey
for T. R. Collins

6/19/85

Date Signed

Approved by: C. M. Hosey
C. M. Hosey, Section Chief
Division of Radiation Safety
and Safeguards

6/19/85

Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 29 inspector-hours on site during regular hours inspecting the radiation protection program in the areas of instruments and equipment used for radiation protection of personnel, posting, labeling and control of radiological control areas, radiation work permit controls, shipment of radioactive materials, internal and external exposure controls, Licensee's Program for Maintaining Exposures as low as reasonably achievable (ALARA), and previously identified inspector followup items.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *C. W. Graves, Operations Superintendent
- *J. W. Cox, Technical Services Superintendent
- *W. H. Bradley, QA Surveillance Supervisor
- *R. L. Clemmer, Technical Services, Health Physics
- *D. P. Simpson, Compliance Engineer
- *C. L. Hartwell, Compliance Engineer
- W. P. Deal, Station Health Physicist
- M. C. Couch, Health Physics Supervisor
- G. Barrett, Training Supervisor

Other licensee employees contacted included construction craftsmen, technicians, mechanics, security force members, and office personnel.

NRC Resident Inspectors

P. Skinner
K. VanDoorn

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 21, 1985, with those persons indicated in paragraph 1 above. The biological shield surveys required by Section 12, of the Final Safety Analysis Report (FSAR) were discussed.

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. Training and Qualifications (83723)

Basic Radiation Protection Training

The licensee was required by 10 CFR 19.12 to provide basic radiation protection training to workers. Regulatory Guides 8.29 and 8.13 outline topics that should be included in such training. Chapters 12 and 13 of the FSAR contain further commitments regarding training. The inspector discussed the initial and refresher general employee radiation protection

training (GET) with the Training Supervisor and reviewed lesson plans to determine what changes had been made in GET training and the scope of these changes. During tours of the plant, the inspector discussed topics from the GET training with maintenance mechanics to determine the effectiveness of the training. The inspector reviewed the GET training records to determine if records reflected adequate completion of initial and refresher GET training.

No violations or deviations were identified.

5. Organization and Management Controls (83722)

a. Organization

The licensee was required by Technical Specification 6.2 to implement the plant organization specified in Table 6.2-2. The responsibilities, authorities, and other management controls were further outlined in Chapters 12 and 13 of the FSAR. Technical Specification 6.2.3 specified the members of the Catawba Safety Review Group (CSRG) and outlined its functions and authorities. Regulatory Guide 8.8 specified certain functions and responsibilities to be assigned to the Radiation Protection Manager and radiation protection responsibilities to be assigned to line management.

The inspector discussed the type, methods of, and degree of interaction between plant groups with a radiation protection supervisor. The inspector discussed plant and radiation control area tour frequency with the Station Health Physicist and selected radiation protection supervisors and reviewed documentation of these tours.

- b. Technical Specification 6.2.2 specified minimum plant staffing. FSAR Chapters 12 and 13 also outlined further details on staffing. The inspector discussed authorized staffing levels vs. actual on-board staffing with the Station Health Physicist. The inspector examined shift staffing for the day shift on May 29, 1985, to determine if it met minimum criteria for radiation protection.

No violations or deviations were identified.

6. Control of Radioactive Materials and Contamination, Surveys, and Monitoring (83726)

The licensee was required by 10 CFR 20.201(b), 20.403, and 20.401 to perform surveys to show compliance with regulatory limits and to maintain records of such surveys. Chapter 12 of the FSAR further outlines survey methods and instrumentation. Technical Specification 6.8 required the licensee to follow written procedures. Radiological control procedures further outlined survey methods and frequencies.

1 a. Surveys

During plant tours the inspector observed surveys being performed by radiation protection staff. The inspector reviewed selected radiation work permits to determine if adequate controls were specified. The inspector discussed the controls and monitoring with the radiation protection technician assigned. The inspector performed independent radiation level surveys.

During plant tours, the inspector observed radiation and contamination survey results posted outside selected cubicles. The inspector performed independent radiation surveys of selected areas and compared them to licensee survey results. The inspector reviewed selected survey records for the month of May 1985 and discussed methods used to disseminate survey results with licensee representatives. The inspector also noted that several previously designated contamination areas had been cleaned up and were now maintained as clean

During tours of the plant, the inspector observed the exit of workers and movement of material from contamination control to clean areas to determine if proper frisking was performed on materials.

b. Instrumentation

During plant tours, the inspector observed the use of survey instruments by plant staff and compared plant survey meter results with results of surveys made by the inspector using NRC equipment. The inspector examined calibration stickers on radiation protection instruments in use by licensee staff and stored in the radiation protection laboratory. The inspector discussed the methods for doing instrument source checks prior to each use and calibration methods with radiation protection technicians.

c. Release of Materials for Unrestricted Use

The inspector discussed the program for surveying items for release from contaminated areas with a radiation protection technician and reviewed the procedure for such releases. The inspector observed release surveys performed by radiation protection technicians and documentation of results of these surveys. During tours of plant areas, the inspector observed posting of containers and performed independent surveys to determine if containers of radioactive material were properly identified.

No violations or deviations were identified.

7. Facilities and Equipment (83727)

FSAR Chapters 1 and 12 specified plant layout and radiation protection facilities and equipment. During plant tours, the inspector observed the operation of the contaminated clothing laundry, the flow of traffic through change rooms, and ventilated containment enclosures.

No violations or deviations were identified.

8. Audits (83722, 83723, 83724, 83725, 83726, 83728, 84722, 86721)

The licensee was required by Technical Specification 6.5 to perform audits of radiological controls and chemistry operations. The inspector reviewed audits of the radiation protection operations conducted during 1985. The inspector discussed the results of these audits with licensee representatives. These audits identified several items needing corrective action; however, actions to correct these items are still under review.

No violations or deviations were identified.

9. Transportation (86721)

The licensee was required by 10 CFR 71.5 to prepare shipments of radioactive material in accordance with Department of Transportation (DOT) regulations. The inspector reviewed all radwaste shipping procedures to determine that the licensee's radwaste shipping program met applicable regulations.

No violations or deviations were identified.

10. External Occupational Dose Control and Personal Dosimetry (83724)

During plant tours, the inspector checked the security of the locks of numerous locked high radiation areas and observed posting of survey results and the use of controls specified on three radiation work permits (RWPs).

a. Use of Dosimeters and Controls

The licensee was required by 10 CFR 20.202, 20.201, 20.102, 20.104, 20.402, 20.403, 20.405, 19.13, 20.407, and 20.408 to maintain workers' doses below specified levels and keep records of and make reports of doses. The licensee was required by 10 CFR 20.203 and Technical Specification 6.12 to post and control access to plant areas. FSAR Chapter 12 also contained commitments regarding dosimetry and dose controls. During observation of work in the plant, the inspector observed the wearing of thermoluminescent dosimeters (TLDs) and pocket dosimeters by workers. The inspector discussed the assignment and use of dosimeters with maintenance mechanics and radiation protection technicians. During plant tours, the inspector observed the posting of areas and made independent measurements of radiation levels to assure proper posting. The inspector reviewed recent changes to plant procedures regarding the use of TLDs and dosimeters.

b. Processing of Dosimeters

The inspector discussed with the Dosimetry Supervisor the flow of the TLD badge from its return by a worker through the recording of information (dose) from the readout on the worker's dose record, to determine areas where information could possibly be mishandled. The inspector discussed the system for comparison of TLD and pocket dosimeter results with an assigned radiation protection technician. The inspector discussed the licensee's quality control and assurance measures for assuring accurate dosimetry results with the dosimetry supervisor.

c. Dosimetry Results

The inspector reviewed the TLD results for 1985. The inspector reviewed the methodology proposed to be used by the licensee for assignment of doses in cases of lost or damaged pocket dosimeters.

The inspector reviewed the results of the TLD vs. pocket chamber comparisons for 1985.

No violations or deviations were identified.

11. Internal Exposure Control and Assessment (83725)

The licensee was required by 10 CFR 20.201(b), 20.401, 20.403, and 20.405 to control uptakes of radioactive material, assess such uptakes, and keep records of and make reports of such uptakes. FSAR Chapter 12 also includes commitments regarding internal exposure control and assessment.

a. Control Measures

During plant tours, the inspector observed the use of containment enclosures. The inspector discussed the use of this equipment with radiation protection technicians. The inspector reviewed recent changes to respiratory protection procedures.

b. Respiratory Maintenance and Issue

The inspector observed the facility for cleaning, maintenance and issuance of respirators and discussed these with two staff members assigned the task. The inspector reviewed recent changes to respirator maintenance and issue procedures.

c. Uptake Assessment

The inspector observed operation of the whole body counter and discussed its operation and results with the counter operator. The inspector reviewed the results of the analyses performed for all positive counts during 1985. The inspector discussed the assessments

and corrective actions with the Station Health Physicist and Maintenance Supervisor.

No violations or deviations were identified.

12. Maintaining Occupational Doses ALARA (83728)

10 CFR 20.1(c) specified that licensees should implement programs to keep workers' doses ALARA. FSAR Chapter 12 also contains licensee commitments regarding worker ALARA actions.

The inspector discussed the station's proposed actions to reduce individual and collective doses with the Station Health Physicist. The inspector also discussed proposed actions to set dose goals for tasks, methods used to reduce doses, and techniques used to monitor performance against goals. The inspector also reviewed recent changes to administrative procedures that implemented the elements of ALARA. The inspector examined the ALARA review documentation for activities during 1985. The inspector reviewed the projected total man-rem for 1985. An estimate of 145 man-rem was projected based on prior experience obtained at McGuire Nuclear Station for its first year of operation corrected for site specific conditions. To date approximately 14 man-rem has been expended.

No violations or deviations were identified.

13. Problem Reports and Radiological Deficiency Reports

The inspector discussed the Problem Reports and resulting corrective actions for 1985.

No violations or deviations were identified.

14. Radiation Protection - Startup (83521)

FSAR, Section 12.3.2 and Table 14.2.12-2 specify certain tests to be performed following fuel loading and during power ascension. The inspector reviewed procedure TP/1/B2200/01, Biological Shield Survey, which requires radiation surveys at 0%, 30%, 50%, 75% and 100% power levels to determine that design shielding is adequate for safe plant operation and to keep personnel radiation exposures ALARA. The inspector reviewed all radiation survey results obtained at 0% to 100% power and concluded that shielding appeared to be adequate with the exception of two (2) areas within the annulus (552' and 573' elevations). The licensee's test results for these areas revealed excessive levels of gamma radiation which could create a radiation hazard for personnel. The inspector discussed with licensee personnel their plans for controlling access and designating the radiological zones. The inspector was informed that access to these areas would be administratively controlled. The inspector was informed that an amendment to the FSAR will be submitted changing these areas to Radiological Control Zone VII. The inspector informed licensee representatives that this

item would remain as a inspector followup item pending resolution of the revision to the FSAR. (50-413/85-25-01).

No violations or deviations were identified.

15. Health Physics Staff (92706)

The inspector discussed organization and staffing levels with the Station Health Physicist. The inspector was informed that the licensee's Health Physics Staff turnover rate for the past two years was minimal. The inspector concluded after his review that the staffing level and organization was adequate.

16. Inspector Followup Items (92701)

- a. (Closed) IFI 50-413/84-41-02 Post Accident Sampling System (PASS) Shielding. The inspector reviewed the licensee's evaluation of shielding for the PASS system and concluded that the shielding was adequate.
- b. (Closed) IFI 50-413/84-47-02 Location of Containment High Radiation Monitors. The inspector reviewed the licensee's evaluation of the location of the containment high radiation monitors and concluded that the location of monitor was adequate.
- c. (Closed) IFI 50-413/84-47-03 Provisions for handling contaminated powdex resins. The inspector reviewed a proposed nuclear station modification (NSM) to reroute resin piping and provide necessary equipment for removal of contaminated resin. The inspector concluded that the NSM issued to modify the condensate system appeared to be adequate and had no further questions.