



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

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Report Nos.: 50-369/92-09 and 50-370/92-09

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

Docket Nos.: 50-369 and 50-370 License Nos.: NPF-9 and NPF-17

Facility Name: McGuire 1 and 2

Inspection Conducted: March 23-27, 1992

Inspector: D. W. Jones
 D. W. Jones

4/10/92
 Date Signed

Approved by: T. R. Decker
 T. R. Decker, Chief

4/20/92
 Date Signed

Radiological Effluents and Chemistry
 Section
 Radiological Protection and Emergency
 Preparedness Branch
 Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This routine, unannounced inspection was conducted in the areas of Control Room pressurization and air filtering systems, transportation of radioactive material, solid waste management, primary and secondary chemistry, post accident sampling systems, and training.

Results:

In the areas inspected, violations or deviations were not identified.

The licensee had complied with the operational and surveillance requirements for the Control Room pressurization and air filtering systems (Paragraph 2).

The licensee had effectively implemented a program for shipping radioactive materials and for properly classifying and preparing radioactive waste for shipment to a land disposal facility (Paragraphs 3 and 4).

The licensee's water chemistry control program was effectively implemented. The concentration was within the specified chemical parameters required to be monitored were well within their specified limits for reactor coolant. The specific activity of the reactor coolant was also well below the specified limit. The licensee's water chemistry program also included provisions for implementing the Electric Power Research Institute guidelines for PWR primary and secondary water chemistry (Paragraph 5).

The licensee had implemented an adequate program to ensure the capability to obtain and analyze samples of reactor coolant and containment atmosphere under accident conditions (Paragraph 6).

The licensee's program for training and qualification was effectively implemented and was considered an overall program strength (Paragraph 7).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *M. Bridges, General Supervisor, Chemistry
- *D. Britton, General Supervisor, Radiation Protection
- *A. Burleson, Scientist, Chemistry
- *C. Carpenter, Scientist, Chemistry
- *J. Correll, Supervisor, Radiation Protection
- *J. Foster, Radiation Protection Manager
- *F. Fowler, Manager, Human Resources
- *B. Hamilton, Superintendent, Operations
- *L. Kunka, Nuclear Production Engineer, Compliance
- C. Lemons, Specialist, Radiation Protection
- *R. Michael, Manager, Chemistry
- *K. Mullen, Associate Engineer, Compliance
- W. Osburn, Associate Instructor, Radiation Protection
- J. Pope, Associate Scientist, Radiation Protection
- O. Reid, Scientist, Chemistry
- *P. Roberson, Engineer, Systems Engineering
- *R. Sharpe, Manager, Regulatory Compliance
- H. Sloan, Scientist, Radiation Protection
- A. Washam, Associate Instructor, Chemistry

Other licensee employees contacted included engineers, technicians, operators, and office personnel.

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- *T. Cooper, Resident Inspector
- *K. Van Doorn, Senior Resident Inspector

*Attended exit interview on October 10, 1991.

2. Control Room Area Ventilation Systems (84750)

Technical Specifications (TSS) 3/4.7.6 described the operational and surveillance requirements for the control room pressurization and air filtration systems. Two independent systems consisting of fans, heating elements, pre-filters, high efficiency particulate air (HEPA) filters, and charcoal adsorber filter beds were required to be operable during all operational modes. Action statements applicable to various modes were provided for conditions in which one or both of the systems were inoperable. The frequencies for functional testing, filter leak testing, air flow measurements, differential pressure measurements, and charcoal adsorption efficiency testing were specified.

The inspector toured the plant area in which the pressurization and air filtering systems were located. The licensee's cognizant system engineer located and identified, for the inspector, the major components of the systems. The inspector observed that the components and associated ductwork were well maintained structurally and that there was no physical deterioration of the ductwork sealants.

The inspector reviewed the procedures listed below and determined that they included provisions for performing the above operability and performance tests. Review of selected records of those tests indicated that they had been performed at the required frequencies.

<u>Procedure No.</u>	<u>Purpose</u>
PT/1/A/4600/03A	Semi-daily surveillance of control room temperature
PT/1&2/A/4450/01A	Filter leak testing
PT/0/A/4450/08A&B	Operability test-10 hour run test
PT/1&2/A/4450/08C	Control room pressurization test
PT/1&2/A/4450/12A	Differential pressure and air flow measurements
PT/0/A/4450/17	System run time monitoring and carbon sampling

Based on the above reviews and observations, it was concluded that the licensee had complied with the above operational and surveillance requirements for the Control Room pressurization and air filtering systems.

No violations or deviations were identified.

3. Transportation of Radioactive Material (86750)

10 CFR 71.5 required the licensee to comply with the applicable regulations of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189 when transporting licensed material outside the confines of the plant or other place of use, or when delivering licensed material to a carrier for transport.

The inspector reviewed the procedures listed below and determined that they adequately addressed the following: assuring that the receiver has a license to receive the material being shipped; assigning the form, quantity type, and proper shipping name of the material to be shipped;

selecting the type of package required; labeling and marking the package; placarding the vehicle; assuring that the radiation and contamination limits are met; and preparing shipping papers.

HP/O/B/1004/02 "Preparation and Shipment of Radioactive Material"

HP/O/B/1004/04 "Preparation and Shipment of Mechanical Radwaste Filter Media"

HP/O/B/1004/09 "Preparation and Shipment of Processed Radwaste Material"

HP/O/B/1004/10 "Preparation and Shipment of Dry-Active Radwaste Material"

HP/O/B/1004/12 "Utilization of Polyethylene High Integrity Overpacks"

HP/O/B/1004/13 "Receipt of Vehicle for Shipment of Radioactive Waste"

HP/O/B/1004/14 "Preparation and Shipment of Dewatered Resins"

The inspector reviewed the licensee's records for 4 of the first 23 shipments made during 1992 (RSR #92 1...23). Those records indicated that the shipments were made in accordance with the above procedures and 10 CFR 71.5.

Based on the above reviews, it was concluded that the licensee had effectively implemented a program for shipping radioactive materials.

No violations or deviations were identified.

4. Solid Radioactive Waste Management Program (86750)

10 CFR 20.311(d)(1) required the licensee to prepare all radioactive waste transferred to a land disposal facility such that the waste is classified in accordance with 10 CFR 61.55 and meets the waste characteristic requirements of 10 CFR 61.56. Section 16.11-11 of the Final Safety Analysis Report (FSAR) required the licensee to process solid radioactive waste in accordance with the Process Control Program (PCP). TS 6.8.1 required the licensee to establish, implement, and maintain written procedures for activities related to implementation of the PCP.

The inspector reviewed procedure HP/O/B/1004/03 "Determination of the Waste Classification for Radioactive

Waste Offered for Shallow Land Burial" and determined that it included adequate provisions for properly classifying the waste and for ensuring that it meets the required characteristics, pursuant to 10 CFR 61.55, 10 CFR 61.56, and the PCP.

As indicated above, the inspector reviewed selected records for recent shipments of radwaste. Those records indicated that the waste had been classified and prepared for shipment in accordance with the written procedure.

Based on the above reviews, it was determined that the licensee effectively implemented a program for properly classifying and preparing radioactive waste for shipment to a land disposal facility.

No violations or deviations were identified.

5. Water Chemistry (84750)

TSs 3/4.4.7 and 3/4.4.8 described the operational and surveillance requirements for reactor coolant chemistry and specific activity. Maximum concentration limits and sampling frequencies were specified for dissolved oxygen, chloride, fluoride, and dose equivalent I-131 (DEI).

The inspector reviewed the McGuire Chemistry Manual and should be determined that it included provisions for sampling and analyzing the reactor coolant for the TS required parameters at the specified frequencies. The manual also included provisions for implementing the Electric Power Research Institute (EPRI) guidelines for PWR primary and secondary water chemistry.

The inspector also reviewed trend plots of analytical results for the TS required parameters and selected parameters included in the EPRI guidelines. The trend plots reviewed included data generated during the period August 1991 through February 1992. During steady state operations the dissolved oxygen, chloride, and fluoride concentrations were typically less than 25 ppb, which was well below their respective TS limits of 100 ppb, 150 ppb, and 150 ppb. The Unit 1 DEI was typically $<3 \text{ E-2 } \mu\text{Ci/ml}$ and the Unit 2 DEI was typically $<1 \text{ E-2 } \mu\text{Ci/ml}$. The DEI for both units was well below the TS limit of $1 \mu\text{Ci/gm}$. The other parameters selected for review were generally maintained within the EPRI guidelines.

Based on the above reviews, it was concluded that the licensee's water chemistry control program was effectively implemented.

No violations or deviations were identified.

6. Post Accident Sampling Systems (84750)

TS 6.8.4.e required the licensee to establish, implement, and maintain a program which would ensure the capability to obtain and analyze samples of reactor coolant, and radioactive iodines and particulates in plant gaseous effluents and containment atmosphere under accident conditions. The program was required to include training of personnel, procedures for sampling and analysis, and provisions for maintenance of sampling and analytical equipment.

The licensee's program included the use of a Post Accident Liquid Sampling (PALS) system and a Post Accident Gas Sampling (PAGS) system for each unit. The inspector reviewed the procedures listed below and determined that they included provisions for periodic testing of the systems and acceptance criteria for analytical results obtained during those tests. A review of the licensee's records for recent tests of the systems indicated that the systems were being adequately maintained.

OP/1/B/6200/48 "Procedure for Operation of the Unit 1 Post Accident Liquid Sample System"

OP/2/B/6200/48 "Operating Procedure for the Post Accident Liquid Sample System"

PT/1/B/4600/57 "Unit 1 Post-Accident Containment Air Sampling System Periodic Test Procedure"

PT/2/B/4600/57 "Unit 2 Post-Accident Containment Air Sampling System Periodic Test Procedure"

Based on the above reviews, it was concluded that the licensee had implemented an adequate program to ensure the capability to obtain and analyze samples of reactor coolant and containment atmosphere under accident conditions.

No violations or deviations were identified.

7. Training and Qualification (84750 and 86750)

TSS 6.3 and 6.4 described the requirements for training and qualification of licensee personnel.

The licensee's program was implemented through the Employee Training and Qualification System (EQTS) which consisted of general employee training, technical training, and employee/professional development training. The technical training consisted of initial training, on-the-job training and qualification, and continuing training. The inspector reviewed training records for two individuals, one of which was assigned to Radiation Protection and the other to Chemistry. The assigned duties of one of those individuals involved preparation of radioactive material for shipment. The other individual was assigned to radwaste operations. The records reviewed included EQTS Task Lists and Employee Task Qualification Reports. The EQTS Task List was a list of tasks which had been developed for each position and for which an individual must have been trained and qualified prior to independently performing the task. The Qualification Reports were maintained for each individual and listed the tasks for which the individual had received training and qualification. The inspector compared the EQTS Task List and the Qualification Reports for both of the individuals selected and determined that they had completed the specified training for their assigned positions.

Based on the above reviews, it was concluded that the licensee's program for training and qualification was effectively implemented and was considered an overall program strength.

No violations or deviations were identified.

8. Exit Interview

The inspection scope and results were summarized on March 26, 1992, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the results listed above. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.