



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

SEP 04 1992

Report Nos.: 50-413/92-21 and 50-414/92-21

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

Docket Nos.: 50-413 and 50-414 License Nos.: NPF-35 and NPF-52

Facility Name: Catawba 1 and 2

Inspection Conducted: July 27-31, 1992

Inspector: D. W. Jones 8/28/92
 D. W. Jones Date Signed

Approved by: T. R. Decker 9/1/92
 T. R. Decker, Chief 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 process and effluent radiation monitoring instrumentation, meteorological monitoring, and water chemistry.

Results:

There was one licensee-identified violation in the area of effluent radiation monitoring instrumentation - failure to declare the turbine building sump monitor to be inoperable in a timely manner and to perform grab sampling of the turbine building sump in accordance with the Technical Specification Action Statement. No deviations were identified.

Except for the above licensee-identified violation, the licensee had effectively implemented a program for maintaining radioactive effluent monitoring instrumentation in an operable status and for calibrating those instruments (Paragraph 2).

The licensee had complied with the Technical Specification requirements for the meteorological monitoring instrumentation (Paragraph 3).

The licensee's water chemistry control program was effectively implemented (Paragraph 4).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *T. Crawford, Manager, System Engineering
- P. Deal, Manager, Radiation Protection
- M. Drost, Supervisor, Chemistry
- *J. Forbes, Manager, Engineering
- *T. Harrall, Manager, Safety Assurance
- L. Lee, Associate Engineer, Component Engineering
- J. Lowery, Compliance Specialist, Regulatory Compliance
- *W. McCollum, Station Manager
- B. McNeill, Scientist, Chemistry
- B. Rayfield, Production Specialist, Safety Review Group
- *L. Schlise, General Supervisor, Radiation Protection
- *K. Seasely, Compliance Engineer, Regulatory Compliance
- P. Simbrant, Production Specialist, System Engineering
- *D. Vaught, General Supervisor, Chemistry
- C. Wrey, Scientist, Radiation Protection

Other licensee employees contacted included engineers, technicians, and administrative personnel.

Nuclear Regulatory Commission

- *P. Hopkins, Resident Inspector
- *W. Orders, Senior Resident Inspector
- J. Zeiler, Resident Inspector

*Attended exit interview.

2. Process and Effluent Radiation Monitoring (84750)

Technical Specifications (TSS) 3/4.3.3.1, 3/4.3.3.10, and 3/4.3.3.11 described the operational and surveillance requirements for the radiation monitoring instrumentation associated with plant operations and radioactive effluents. The instrumentation was required to be operable during specified operational modes and demonstrated to be operable by the performance of channel checks, source checks, channel calibrations, and analog channel operational tests (ACOTs) at specified frequencies.

The inspector toured the control room and relevant areas of the facility with a licensee representative to locate and determine the operability of the following radiation monitors.

- EMF-35 Unit Vent Particulate (Units 1 and 2)
- EMF-36 Unit Vent Noble Gas (Units 1 and 2)
- EMF-37 Unit Vent Iodine (Units 1 and 2)

EMF-38 Containment Atmosphere Particulate
(Units 1 and 2)
EMF-39 Containment Atmosphere Noble Gas
(Units 1 and 2)
EMF-41 Auxiliary Building Ventilation
EMF-49 Liquid Waste Discharge (from the Auxiliary
Building)
EMF-50 Waste Gas Discharge
EMF-57 Monitor Tank Building Liquid Discharge

The instrumentation for the above radiation monitors was found to be operable at the time of this inspection.

The inspector reviewed the procedures listed below which related to channel checks, source checks, channel calibrations, and ACOTSS for the above listed monitors.

PT/1&2/A/4600/02A	"Mode 1 Periodic Surveillance Items"
PT/1&2/A/4600/03A	"Monthly Surveillance Items"
OP/1&2/A/6450/15	"Containment Purge System"
OP/1&2/A/6450/17	"Containment Air Release and Addition System"
OP/0/B/6500/14	"Operations Liquid Waste Release"
OP/0/A/6500/19	"Operations Waste Gas Release"
OP/0/B/6500/59	"Monitor Tank Building Radiation Monitors"
IP/0/B/3314/09	"Radiation Monitoring Systems Dual Range, Beta Channel Calibration"
IP/0/B/3314/10	"Single Range Beta Activity Monitor Transfer Calibration"
IP/0/B/3314/11	"Radiation Monitoring System Dual Range Gamma Activity Monitors"
IP/0/B/3314/13	"Radiation Monitoring System (EMF) Particulate Activity Monitor Channel Calibration"
IP/0/B/3314/14	"Radiation Monitoring System Iodine Activity 1EMF37&40, 2EMF37&40"
IP/0/B/3314/30M	"EMF Process Monthly Analog Channel Operational Test"
IP/1&2/B/3314/36Q	"1&2EMF36 Quarterly Analog Channel Operational Test"
IP/1&2/B/3314/39Q	"1&2EMF39 Quarterly Analog Channel Operational Test"
IP/0/B/3314/49Q	"0EMF49 Quarterly Analog Channel Operational Test"
IP/0/B/3314/50Q	"0EMF50 Quarterly Analog Channel Operational Test"
IP/0/B/3314/57Q	"Quarterly Analog Channel Operational Test for 1EMF57"
IP/0/B/3314/57R	"0EMF57 Transfer Calibration Procedure"

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PT/1&2/A/4600/03A "Monthly Surveillance Items"
OP/1&2/A/6450/15 "Containment Purge System"
OP/1&2/A/6450/17 "Containment Air Release and Addition
System"
OP/0/B/6500/14 "Operations Liquid Waste Release"
OP/0/A/6500/19 "Operations Waste Gas Release"
OP/0/B/6500/59 "Monitor Tank Building Radiation
Monitors"
IP/0/B/3314/09 "Radiation Monitoring Systems Dual
Range, Beta Channel Calibration"
IP/0/B/3314/10 "Single Range Beta Activity Monitor
Transfer Calibration"
IP/0/B/3314/11 "Radiation Monitoring System Dual
Range Gamma Activity Monitors"
IP/0/B/3314/13 "Radiation Monitoring System (EMF)
Particulate Activity Monitor
Channel Calibration"
IP/0/B/3314/14 "Radiation Monitoring System Iodine
Activity 1EMF37&40, 2EMF37&40"
IP/0/B/3314/30M "EMF Process Monthly Analog Channel
Operational Test"
IP/1&2/B/3314/36Q "1&2EMF36 Quarterly Analog Channel
Operational Test"
IP/1&2/B/3314/39Q "1&2EMF39 Quarterly Analog Channel
Operational Test"
IP/0/B/3314/49Q "0EMF49 Quarterly Analog Channel
Operational Test"
IP/0/B/3314/50Q "0EMF50 Quarterly Analog Channel
Operational Test"
IP/0/B/3314/57Q "Quarterly Analog Channel
Operational Test for 1EMF57"
IP/0/B/3314/57R "0EMF57 Transfer Calibration
Procedure"

The inspector determined that the procedures for performing the channel checks and source checks included provisions for conducting those checks at the required frequency. The licensee indicated that scheduling of instrument calibrations and ACOTs was administered by the Planning Department through issuance of Work Requests. The inspector reviewed selected licensee records of channel checks, source checks, channel calibrations and ACOTs for each of the above listed monitors. The records selected for review were generally from the three most recent surveillances performed. Those records indicated that the surveillances had been performed in accordance with their applicable procedure and at the required frequency.

The inspector reviewed summary reports for availability of effluent monitors. Those reports included a listing of each effluent monitor and the percent of the time that the monitors were operable each month. They also provided the year-to-date percent availability for each monitor and the average year-to-date percent availability over all monitors listed. As of July 1992, the overall average percent availability for the TS required monitors was 92%. The licensee's system for monitoring the availability of the effluent monitors was considered a program strength.

During the inspection the licensee informed the inspector that a Licensee Event Report (LER 413/92-09) was being prepared to report a violation of the TSs (3/4.3.3.10) for the turbine building sump radiation monitor (1EMF-31). The inspector reviewed a draft of the LER and discussed the details of the event with the licensee. On July 22, 1992, a pipe rupture occurred in the Unit 1 turbine building sump discharge line to the initial hold-up pond. The discharge line was isolated in order to repair the ruptured pipe and two of the three turbine building sump pumps were removed from service. The third sump pump, along with temporary pumps and fire hoses, was used to divert the turbine building sump water discharge flow to the service building sump. That third turbine building sump pump was removed from service on July 25, 1992, which left discharge capability from the sump to the temporary pumps. The turbine building sump radiation monitor continued to function in its capacity as a radiation monitor of the activity level of the water in the sump but it did not have the capacity to automatically terminate the discharge, by isolating the temporary pumps, if the monitor's trip set point had been exceeded. The TS Action Statement for the turbine building sump monitor specified that effluent release could continue with the monitor in an inoperable state provided that grab samples were analyzed for radioactivity at least once per 24 hours. Licensee personnel had discussed the operability of the monitor on July 22 and 24, 1992, and concluded that the

monitor was operable based on the determination that the monitor would provide sampling capability superior to the once per 24 hour grab sample from the sump. Licensee discussed the operability of the monitor again on July 27, 1992, and declared the monitor to be inoperable when it was determined that the monitor could not perform its control function of terminating the discharge. On July 28, 1992, the third turbine building sump pump was returned to service and the monitor was declared to be operable. The licensee indicated that grab samples were taken from the turbine building sump on July 22 and 27, 1992, and results indicated that the activity levels were well within release limits. The inspector reviewed plots and tabulations of the activity measured by the monitor (1EMF-31) at 15 minute intervals over the period July 22 through 27, 1992. That data indicated that the activity levels of the water in the sump during that period were at or near detector background levels. The licensee's corrective action for this event was to return the turbine building sump discharge system to operable status. Planned corrective actions to prevent recurrence included discussion of the event with affected licensee personnel and implementation of standing compensatory actions for maintaining adequate effluent monitoring capability when temporary sump pumps are used. This violation, i.e. the licensee's failure to declare the turbine building sump monitor to be inoperable in a timely manner and to perform grab sampling of the turbine building sump in accordance with the TS Action Statement, will not be subject to enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section V.A. of the Enforcement Policy (NCV 50-413/92-21-01).

Based on the above reviews and discussions, it was concluded that, except for the above event, the licensee had effectively implemented a program for maintaining radioactive effluent monitoring instrumentation in an operable status and for calibrating those instruments.

There was one licensee identified non-cited violation in this area. No deviations were identified.

3. Meteorological Monitoring Program (84750)

TS 3/4.3.3.4 described the operational and surveillance requirements for the meteorological monitoring instrumentation. The instrumentation was required to be operable at all times and demonstrated to be operable by the performance of daily channel checks and semiannual channel calibrations. An Action Statement specified that when one or more of the monitoring channels is inoperable for more than 7 days, a Special Report would be submitted to the NRC

within 10 days outlining the cause of the malfunction and the plans for restoring the instrumentation to operable status.

The inspector reviewed the procedures listed below and determined that they included provisions for performing the required surveillances.

PT/1/A/4600/02A "Mode 1 Periodic Surveillance Items"
 IP/O/B/3343/10 "Meteorological Instrumentation System (EPB)
 Wind Speed Channel Calibration"
 IP/O/B/3343/09 "Meteorological Instrumentation System (EEB)
 Wind Direction Channel Calibration"
 IP/O/B/3343/07 "Calibration Procedure for RDT T/ΔT
 Channel Calibration"

The inspector reviewed the licensee's records for the three most recent calibrations of the meteorological monitoring instrumentation and determined that the instrumentation had been calibrated in accordance with the above procedures and at the required frequency. The inspector visited the control room and found that the meteorological monitoring instrumentation was then currently inoperable. During a non-routine surveillance on April 30, 1992, the licensee discovered a malfunction of the monitoring system and was unable to restore the system to operable status within 7 days. A Special Report was submitted on May 14, 1992, to provide the information specified in the TS Action Statement. The report indicated that the meteorological data was being stored and accessed through a back up system and that options for expeditious restoration of the system to operable status were being evaluated.

Based on the above reviews and observations, it was concluded that the licensee had complied with the TS requirements for the meteorological monitoring instrumentation.

No violations or deviations were identified.

4. 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 Chemistry Management Procedure 3.4.17 "Sample Collection, Specification and Corrective Action" and determined that it included provisions for sampling and analyzing the reactor coolant for the TS required parameters

at the specified frequencies. The procedure 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. The trend plots reviewed included data generated during the period June 1991 through May 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 $<1 \text{ E-2 } \mu\text{Ci/ml}$ and the Unit 2 DEI was typically $<5 \text{ E-3 } \mu\text{Ci/ml}$. The DEI for both units was well below the TS limit of $1 \mu\text{Ci/gm}$.

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.

5. Exit Interview

The inspection scope and results were summarized on July 31, 1992, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed above. No dissenting comments were received from the licensee. Proprietary information is not contained in this report.