

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/94008(DRSS)

Docket No. 50-483

License No. NPF-30

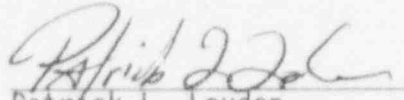
Licensee: Union Electric Company
Post Office Box 149
St. Louis, MO 63166

Facility Name: Callaway Nuclear Power Station

Inspection At: Callaway Site, Callaway County, Missouri


Inspection Conducted: June 6 through 10, 1994

Inspector:


Patrick L. Loudon
Radiation Specialist

6/17/94
Date

Approved By:


J. W. McCormick-Barger, Chief
Radiological Controls Section

6/17/94
Date

Inspection Summary

Inspection on June 6 through 10, 1994 (Report No. 50-483/94008(DRSS))

Areas Inspected: Routine announced inspection of the licensee's radiation protection and radioactive waste program (Inspection Procedures (IPs) 83750 and 86750) including; audits and appraisals, response to previously identified inspection findings, radiological events, and the station's As Low As Reasonably Achievable (ALARA) program.

Results: Two non-cited violations were noted; one regarding non-conservative alarm setpoints for Technical Specification radiation monitors, and a second regarding a shipment of radioactive waste which contained transuranic quantities in excess of the limits allowed in the transport cask's Certificate of Compliance. An Inspection-followup-Item was initiated to monitor the performance of the station in the area of unplanned contamination spreads and spills especially in the radioactive waste facility. Another area noted for management attention was with respect to radiation worker attentiveness to radiation work permit requirements during refueling outages. This item needs thorough review to mitigate such events during the next refueling outage in 1995. The station's Quality Assurance program was assessed to be effective and to be a station program strength. General station housekeeping was noted as good and radiological housekeeping was excellent.

DETAILS

1. Persons Contacted

Licensee Staff

- *R. Bartz, Quality Assurance Engineer
- *J. Blosser, Plant Manager
- *G. Clemens, Radiation Protection/Chemistry Technician
- *J. Cruickshank, Supervisor, Radioactive Waste/Chemistry
- *M. Farnam, Supervisor, Health Physics Operational Services
- *M. Evans, Superintendent, Health Physics
- *G. Hamilton, Supervisor, Quality Assurance
- *G. Hughes, ISEG Engineer
- *J. Kerrigan, Supervisor, Health Physics Count Room
- *J. Laux, Manager, Station Quality Assurance
- *R. Miller, Supervisor, Radioactive Waste and Transportation
- *K. Mills, Quality Assurance Engineer
- *J. Otter, Radiation Protection/Chemistry Technician
- *T. Parker, Radiation Protection/Chemistry Technician
- *S. Petzel, Engineer
- *G. Randolph, Vice President, Nuclear Operations

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- *B. Bartlett, Senior Resident Inspector
- K. Bristow, Reactor Engineer

The inspector also interviewed other licensee personnel during the course of the inspection.

*Denotes those present at the exit meeting on June 10, 1994.

2. Licensee's Response to Previously Identified Inspection Items (IP 83750)

(Closed) Inspection Followup Item (IFI) 50-483/93008-01: "Incorrect Information In Database"

During an inspection conducted on June 7-8 and 10-11, 1993, the inspector discussed the licensee's discovery that invalid meteorological data was stored in the radiological release information system (RRIS). This data was also used to generate the semi-annual effluent release report submitted to the NRC.

The licensee performed the following corrective actions:

- Strip charts containing meteorological data from 1984-1993 were verified by a meteorologist. The data was 90% recoverable for all years except 1985 during which the licensee experienced trouble with the meteorological tower sensors. Subsequently, revised semi-annual effluent release reports were submitted to the NRC.

- A new computer database was implemented to store meteorological information such that a reliance on RRIS is no longer needed. At the time of the inspection, meteorological data was transferred directly from the plant computer to the health physics network system. The data was then reviewed by a member of the corporate staff and discrepancies are fully addressed. The licensee also controlled access to this new database.
- RRIS software was altered such that data entered while in the manual mode will not be saved to the permanent record.

The actions taken by the station appeared to effectively address the concern. This inspection followup item is closed.

(Closed) IFI 50-483/93007-01: "Problems During the 1993 Annual Emergency Exercise Due to a Split Operational Support Center (OSC) Arrangement"

The inspector observed the licensee's performance in this area during the 1994 emergency exercise. The licensee had modified the OSC to include both a maintenance supervisor and a radiation protection supervisor in the same room which provided for better continuity in briefing and dispatching in-plant work crews. This new layout of the OSC appeared to adequately address the concerns raised following the 1993 exercise. This item is closed.

(Closed) Unresolved Item (URI) 50-483/93016-01 also identified as Licensee Event Report (LER) 93-001: "Concerns with appropriate alarm set points for Technical Specification related radiation monitors"

The licensee's Quality Assurance staff identified through a planned review that some of the Technical Specification (T.S.) radiation monitors had non-conservative alarm setpoints. The cause of the problem was assessed to be due to using the wrong controlling isotope to establish the setpoints. The licensee referenced the controlling isotope for such monitors to be Xenon-133. The conversion factor used to establish the setpoints was that of Krypton-85. This resulted in some of the monitors to have had setpoints that were a factor of two higher (non-conservative) than required by T.S. Technical Specifications require the monitors for the containment purge and control room ventilation system monitors to alarm at 2 mrem/hr (20 micro-Sieverts), based on Xenon-133. Since Krypton-85 was used as the controlling isotope for establishing the alarm setpoint, a Xenon release would not actuate an alarm on these monitors until a dose rate of 4 mrem/hr (40 micro-Sieverts) was reached. In either case the alarms would have actuated to mitigate exposures that would challenge regulatory limits.

The licensee recalculated setpoints for the monitors using Xenon-133 as the controlling isotope. Other gaseous effluent monitors were reviewed for similar problems with none encountered.

These non-conservative setpoints are a violation of Technical Specifications; however, since the problem was self identified through a Quality Assurance review, it had minor safety significance, and corrective actions were thorough and timely, it meets the criteria for a non-cited violation.

One non-cited violation was identified.

3. Audits and Appraisals (IP 83750, 84750, and 86750)

The inspector reviewed a recently completed self assessment of the station's transportation and shipping of radioactive waste programs. One item noted in the assessment was the identification of a shipment made in 1993 which contained fissile radioactive materials in excess of type A quantities. All other aspects of the shipment were in accordance with Department of Transportation and NRC regulations; however, the fissile quantity shipped was not allowed in the Certificate of Compliance (C of C) for cask 3-82B which was used to make the shipment. The licensee modified their procedures to ensure that all aspects of a shipping cask's C of C are reviewed for compliance. This is a violation of 10 CFR 71.53; however, because the licensee identified this item through an internal self assessment, it had minor safety significance, and the licensee's corrective actions were thorough and timely, it qualifies for enforcement discretion and will be regarded as a licensee identified non-cited violation.

The inspector noted during reviews of surveillances conducted during the 1993 refueling outage that Quality Assurance was trending radiation protection practices by workers and noted several occurrences in which radiation workers were not attentive to radiation work permit requirements and required prompting or instructions from radiation protection technicians. The inspector discussed these events with station QA engineers and radiation protection management and presented at the exit meeting (Section 7) the need for the station to conduct thorough reviews into the causes of these problems in order to effectively address them during the 1995 refueling outage.

The inspector also reviewed several audits and surveillances performed by the QA department in the areas of radiation protection and radioactive waste management. The inspector found these reviews to be thorough and technically oriented to identify both programmatic and specific technical discrepancies. Responsible departmental feedback to QA findings appeared to be timely and thorough to resolve the issue to prevent recurrence. The station's QA program continues to be effective in identifying station problems and was considered a station strength.

One licensee identified non-cited violation was identified.

4. Radioactive Waste Systems (IP 86750)

The inspector conducted a tour of the station's radioactive waste facility during the course of the inspection. During the tour an

accumulation of dry waste sludge was noted in the Primary Waste Evaporator Bottoms Tank Room (PEBT). The sludge was dry in a cake form and was not readily dispersible in its observed physical form.

The inspector question radioactive waste management as to the cause of the sludge spill. In reviewing past radiological occurrences concerning this system it was noted that the tank had overflowed in 1993. The tank is designed to overflow through a hard-piping arrangement to the Chemical Waste Drain Tank; however, the pathway in which the waste found its way out of the tank was through the blender shaft penetration in the tank. The tank is equipped with a blender due to the high percentage of solids in the tank (about 25%). As documented in the licensee's reporting system, the sludge had oozed through the packing seal for the shaft penetration and overflowed onto the tank room floor. The licensee re-packed the shaft seal in January 1994 and noted no problems until May 1994. At the time of the inspection the licensee had not concluded their investigation into the actual cause of the second occurrence; however, it was discovered that the packing around the shaft had worn away and provided a pathway for the sludge to overflow into the room.

The inspector discussed this occurrence with station management at the exit meeting (Section 7) and discussed other noted occurrences of unplanned contamination spreads in the radioactive waste facility. The inspector informed the licensee that this problem of unplanned spills and contamination spreads would be tracked as an open item to monitor the licensee's performance in fully reviewing root causes of such events and implementing effective corrective actions to preclude recurrence. (Inspection-Followup-Item (IFI) 50-483/94008-01)

No violations of NRC requirements were identified. One IFI was initiated.

5. ALARA Program

The licensee completed their sixth refueling outage in November 1993 at a dose expenditure of 207 person-rem (2.07 person-Sieverts) and recorded a total of 224 person-rem (2.24 person-Sieverts) for the 1993 calendar year. The licensee's exposure goal for 1994 was 15 person-rem (0.15 person-Sieverts).

The inspector reviewed the licensee's 1994 ALARA action plan. This plan contained many (greater than fifty) action items to be taken by the station to enhance and improve the station's ALARA program. A responsible individual was assigned to each action item which had a completion date in 1994 or early 1995. The action plan appeared fairly comprehensive in addressing the many elements which make up a station-wide ALARA program. The inspector discussed this action plan with station management and indicated at the exit meeting (Section 7) that the plan appeared well thought out and status and completion of individual items would be reviewed during future inspections.

No violations of NRC requirements were identified.

6. Plant Tours (IP 83750 and 86750)

The inspector toured the auxiliary and radioactive waste buildings during the course of the inspection. General housekeeping was noted to be good with some observations of cluttered equipment stored in the auxiliary building. Radiological housekeeping and controls (postings, barriers, etc.) were found to be excellent in the auxiliary building. A spill of radioactive waste was noted in the Primary Waste Evaporator Bottoms Tank Room in the radioactive waste building as discussed in Section 4 above.

No violations or deviations were identified.

7. Exit Interview (IP 83750)

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on June 10, 1994, to discuss the scope and findings of the inspection. Licensee representatives did not identify any documents or processes reviewed as proprietary. The following matters were specifically discussed:

- The two non-cited violations concerning radiation monitor alarm setpoints and a transportation shipment in 1993 (Sections 2 and 3).
- Observations with respect to a radioactive waste overflow and the IFI which was initiated to monitor the licensee's performance in the area of unplanned contamination spreads in the radioactive waste facility (Section 4).
- The observation of the QA department as continuing to be effective in identifying station problems and being a strength to the program (Section 3).
- Observations with respect to general and radiological housekeeping (Section 6).