U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/85021(DRP)

Docket No. 50-483 License No. NPF-30

Licensee: Union Electric Company
Post Office Box 149 - Mail Code 400
St. Louis, MO 63166

Facility Name: Callaway Plant, Unit 1

Inspection At: Callaway Site, Steedman, MO 65077

Inspection Conducted: September 4 through October 21, 1985

Inspectors: B. H. Little
C. H. Brown

Approved By: for C. W. Hehl, Chief
Reactor Projects Section 2A

November 4, 1985
Date

Inspection Summary

Inspection on September 4 through October 21, 1985 (Report No. 50-483/85021(DRP))
Areas Inspected: Routine unannounced safety inspection by the resident inspectors of licensee event reports, surveillance observation, operational safety verification maintenance observation, instrument and control surveillance procedures, quality control inspection program, incident reduction program, and regional requests. The inspection involved a total of 247 inspector-hours onsite by two NRC inspectors including 46 inspector-hours onsite during off-shifts.
Results: No violations, deviations or safety concerns were identified in the eight areas reviewed.

DETAILS

1. Persons Contacted

*S. E. Milterberger, Manager, Callaway Plant
D. F. Schnell, Vice President, Nuclear
*D. C. Poole, Assistant Manager, Operations and Maintenance
R. L. Powers, Assistant Manager - Quality Assurance
M. E. Taylor, Operations Superintendent
*J. E. Davis, Compliance Superintendent
J. C. Gearhart, Supervisory Engineer, QA
*P. T. Appleby, Assistant Manager, Support Services
J. T. Patterson, Assistant Superintendent, Operations
*C. D. Naslund, Superintendent, Instrumentation and Control
J. V. Laux, Supervisor, QA
W. A. Norton, Engineer, QA
A. P. Neuhalfen, Assistant Manager, Administrative
W. P. Robinson, Compliance Supervisor
D. E. Heinlein, Assistant Superintendent, Operations
K. R. Evans, Instrument and Control Supervisor

*Denotes those present at one or more exit interviews.

In addition, a number of equipment operators, Reactor Operators, Senior Reactor Operators, and other members of the Quality Control (QC), Operations and Maintenance staffs were contacted.

2. Licensee Event Reports (LERs) Followup

Through direct observations, discussions with licensee personnel, and the review of records, the following LERs were reviewed to determine that the events were documented and evaluated, reportability requirements were fulfilled and appropriate corrective measures had been implemented.

(Closed) LER 84-028-01: Inadvertent Safety Injection. On August 13, 1984, an Unusual Event was declared due to unplanned initiation of Emergency Core Cooling Systems (ECCS) with discharge to the core. The ECCS actuated as designed, and the plant was restored to a normal configuration in accordance with operating procedures. This event was initiated when an Instrument and Controls technician placed a Reactor Coolant System (RCS) pressure channel in test during performance of the surveillance procedure. However, one of the redundant pressure loops was failed in the tripped condition due to incorrect design strapping of the associated bistable. This trip went undetected as the associated lamp on the Partial Trip Status Panel had failed and the initial surveillance test for this loop had not yet been performed at the time of this event. Thus, when the loop being calibrated was placed in test, coincidence logic was completed and a Pressurizer Low Pressure signal actuated the Safety Injection.

The initial NRC inspection in this matter was reported in Inspection Report No. 50-483/84036. The report identified both a violation for the licensee's failure to promptly identify and correct a nonconforming condition, and also an open item relating to a surveillance procedure deficiency.

To prevent recurrence, the licensee implemented a design change on the bistable which resets permissive P-11 to correct the false input. Surveillance procedures have been revised to require a lamp test prior to putting the instrument channel in the test mode.

The inspector has completed the review of this matter and considers this item closed. Also closed are Violation No. 483/84036-03(DRP) and Open Item No. 483/84036-02(DRP).

(Closed) LER 84-052-00: Inadvertent Engineered Safety Features (ESF) Actuations and Manual Reactor Trip. On October 16, 1984, an ESF actuation occurred which resulted from a loss of switchyard bus voltage. The event resulted in a loss of the rod control power supply and starting and loading of the emergency diesel generator. When the diesel generator restored power to the rod control system the reactor operator observed a change in rod position and initiated a manual reactor trip.

The event was caused during electrical relay testing when relay technicians failed to tagout the flashover relay (50FO/V-55). During relay testing, the flashover relay gave indication that the breaker had flashed over (arced), which opened site feeder breakers V-45 and V-85 and isolated the 345 kV switchyard bus.

The incident was reviewed with the relay technicians with an emphasis on the importance of correctly tagging out DC control power before working on electrical control circuits. The failed primary power supply in the rod control power supply cabinet was replaced and tested satisfactorily.

The inspector determined that the licensee's response in this matter was appropriate. This item is considered closed.

(Closed) LER 85031: Lo-Lo Steam Generator Level Reactor Trip. On June 20, 1985, a lo-lo level in Steam Generator (S/G) "C" initiated a reactor trip. The lo-lo level signal resulted from an operational test being performed on a steam pressure sensor channel for that generator with the channel still in a controlling mode due to a procedure error. A resulting low steam pressure signal caused the feedwater regulation valve to close and, before the S/G level could be controlled manually, the lo-lo level set-point was reached. The procedure was revised. This item is considered closed.

No violations or deviations were identified.

3. Surveillance Observation

The inspector reviewed/observed the following Technical Specification required surveillance testing:

Surveillance Procedure	Test
MSE-KC-FW001	Fire Detection Functional and Supervisory Operability Test
ISF-SE-00N31	Nuclear Instrument Source Range - Functional
ISF-AE-0L537-547	Steam Generator Level Protection - Functional
ISF-BB-0P458	Pressurizer Pressure Protection - Functional

Items which were considered during the inspection included: performance of testing in accordance with adequate procedures, test instrumentation was calibrated, test results conformed with Technical Specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and any deficiencies identified during the testing were reviewed and resolved by appropriate management personnel.

No violations or deviations were identified.

4. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators throughout the inspection period. The inspector verified the operability of selected safety-related systems, reviewed tagout records, and verified proper return to service of affected components. Tours of the auxiliary and turbine building were conducted. During these tours, observations were made relative to plant equipment conditions, fire hazards, fire protection, adherence to procedures, radiological control and conditions, housekeeping, security, tagging of equipment, ongoing maintenance and surveillance, containment integrity, and availability of safety-related equipment.

No violations or deviations were identified.

5. Maintenance Observation

Station maintenance activities of safety-related systems and components listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, industry codes or standards, and in conformance with Technical Specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; parts and materials used were properly certified; radiological controls were implemented; and fire prevention controls were implemented.

The following maintenance activities were observed/reviewed:

Number	Activity
WR 47244	Fire Protection Sealing of Penetrations for Newly Installed Instrument Cables
RWR 26621	Lubricate Bearings (RHR-A Room Cooler Fan)
RWR 26232	Emergency Diesel Generator A Inspect/Clean/Adjust Generator Brush Holders
WR 43116	Replace Check Valve in Air Compressor B Discharge Line
WR 50255	Troubleshoot and Repair Flux Mapping Data Transfer

No violations or deviations were identified.

6. Instrument and Control (I&C) Surveillance Procedures

The inspectors performed a sample inspection of revised I&C monthly surveillance procedures. These procedures were recently reviewed and revised by the licensee with consideration given to "human factors" elements aimed at the reduction of operator/technician performance errors.

The inspectors determined that the revised procedures have incorporated features which should improve communications and control of surveillance activities. Significant procedure changes include:

- The addition of date and initial requirement for each procedure action step.
- The requirement to place "test in progress" tags on equipment controls in the control room.
- Reactor operator notification requirement prior to performing a procedure step which will cause an alarm in the control room.
- Test data is now incorporated in the body of the procedures.
- The requirement for independent verification of each "restoration" step.

No violations or deviations were identified.

7. Quality Control (QC) Inspection Program

On October 3, 1985, the licensee implemented a revised Quality Control Inspection Program. The revised program was implemented through the issuance of Plant Administrative Procedure APA-ZZ-00570

(Callaway Quality Control Inspection Program) which provides general program requirements and also specific instructions for the implementation and control of the Operational Quality Control Manual (OQCM). The OQCM consists of the following three major sections:

- Inspection Requirements and Acceptance Criteria
- Assignment of Inspection Points (Hold, Witness and Monitor)
- Performance of Inspections on Maintenance Activities.

During the inspection, the inspectors reviewed the revised inspection program documents, and interviewed QC inspectors and QC supervisory personnel. The inspection program is more comprehensive providing specific inspection requirements and acceptance criteria for procedures and work authorizing documents. There has been an increase in the assignment of inspection points. These inspection points have been predetermined by plant engineering and QC for specific work activities. The assignment of inspection points on work authorizing documents is now performed by QC inspectors assigned to the licensee's Planning Department.

No violations or deviations were identified.

8. Incident Reduction Program

On September 20, 1985, the licensee implemented a Callaway Plant Trip/Incident Reduction Program (IRP). The program provides a committee chairman and a six member committee which functions as a subcommittee of the On-Site Review Committee (ORC). The committee activities are specified as:

A. An evaluation of all incidents/trips since January 1, 1985 for any root cause or common cause contributors which have not been sufficiently addressed and make recommendations, as appropriate.

B. Develop a comprehensive trend analysis of 1985 incidents to date and establish a program for the future trend analyses.

C. A detailed review of the Incident Report Program including, but not limited to, procedural adequacy, sufficiency of responses, and adequacy of investigation/determination of root cause and appropriateness of corrective action. Recommendations for program improvements shall be made as a result of this review, as appropriate.

D. Develop a Trip/Incident Reduction Program for Callaway Plant using appropriate Institute of Nuclear Power Operations (INPO) guidelines and provide proper integration with the Westinghouse Owners Group Trip Reduction Program.

E. Provide periodic and special case reports to the ORC.

The inspectors have reviewed the licensee's IRP, the committee charter and discussed program scope and methods with licensee management and committee members. The committee members are representatives from various operations and operations support departments. The committee employed a comprehensive checklist approach in the evaluation of trips/incidents to identify root cause and causal factors.

No violations or deviations were identified.

9. Regional Requests

A memorandum from C. E. Norelius dated July 1, 1985, provided instructions for the inspection of TI 2500/14 (Inspection of the Location of the Manual Trip Circuit in Westinghouse - Design Plants With a Solid State Protection System (SSPS)). An inspection in this matter was performed to assure that the licensees are using controlled drawings that depict correctly the actual location of the manual trip circuits and that the manual trip circuits are down stream of the output transistors Q3 and Q4.

Inspection in this matter included the review of Bechtel Drawing No. OPE03SB12A and the inplant inspection of wiring, cable numbers, wire terminations and color scheme. The inspectors determined that the licensee was using controlled drawings and that the manual trip circuits are correctly located down stream of the output transistors Q3 and Q4. TI 2500/14 is considered closed.

No violations or deviations were identified.

10. Exit Interview

The inspector met with licensee representatives (denoted under Persons Contacted) at intervals during the inspection period. The inspector summarized the scope and findings of the inspection. The licensee representatives acknowledged the findings as reported herein. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.