U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/88019(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, Missouri

Inspection Conducted: September 1, 1988 through October 15, 1988

Inspectors: B. H. Little

C. H. Brown

Approved By: Robert W. DeFayette, Chief
Reactor Projects Section 3A

11/10/88
Date

Inspection Summary

Inspection from September 1, 1988 through October 15, 1988 (Report No. 50-483/88019(DRP))

Areas Inspected: A routine unannounced safety inspection of licensee event reports, plant operations, radiological controls, maintenance/surveillance, engineering and technical support, emergency preparedness, security, safety assessment/quality verification, and regional requests was performed.

Results: One technical specification violation was identified (failure to maintain safety injection accumulators operable). However, in accordance with 10 CFR 2, Appendix C, Section V.G; no Notice of Violation was issued (Paragraph 2). Except for a performance error, resulting in a reactor trip, the utility's operating crews demonstrated effective supervision and control of plant activities. The candidates assigned to hot license training were receiving effective supervision and instruction (Paragraph 3). Health physics staff maintained good control of radiological control area (RCA) access/egress and RCA work activities (Paragraph 4). The licensee has identified a potential environmental qualification (EQ) issue relating to misapplication of heat shrink tubing. This matter is unresolved pending further NRC review (Paragraph 6). Preliminary review of temperatures inside the reactor containment has begun - Temporary Instruction TI 2515/98 (Paragraph 10). Regional management (site visit) found that the utility personnel displayed a positive safety attitude and that plant material conditions were good (Paragraph 11).

DETAILS

1. Persons Contacted

D. F. Schnell, Senior Vice President, Nuclear
*G. L. Randolph, General Manager, Nuclear Operations
*J. D. Blosser, Manager, Callaway Plant
C. D. Naslund, Manager, Operations Support
A. P. Neuhalfen, Manager, Quality Assurance
J. R. Peevy, Assistant Manager, Technical Services
*W. R. Campbell, Manager, Nuclear Engineering
M. E. Taylor, Superintendent, Operations
D. E. Young, Superintendent, Maintenance
*W. R. Robinson, Assistant Manager, Operations and Maintenance
R. R. Roselius, Superintendent, Health Physics
T. P. Sharkey, Supervising Engineer, Site Licensing
G. J. Czeschin, Superintendent, Planning and Scheduling
W. H. Sheppard, Superintendent, Outages
G. R. Pendegraff, Superintendent, Security
L. H. Kanuckel, Supervisor, Quality Assurance Program
*J. V. Laux, Superintendent, Technical Support, Quality Assurance
G. A. Hughes, Supervisor, Independent Safety Engineer Group
J. C. Gearhart, Superintendent, Operations Support, Quality Assurance
*J. J. Cassmeyer, Quality Assurance Engineer
*J. A. McGraw, Superintendent Design Control

*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, operations, maintenance, health physics, and engineering staffs were contacted.

2. Inspection of Licensee Event Reports (92700)

Through direct observations, discussions with licensee personnel, and a review of records, the following licensee event report was reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence was accomplished in accordance with Technical Specifications (TSs). The LER listed below is considered closed.

(Closed) LER 87-031-00: Two safety injection (SI) accumulators were inoperable during testing when the nitrogen pressure relief valve lifted.

A. Background

On November 4, 1987, with the plant in Mode 3 - Hot Standby at 492 degrees Fahrenheit and 1791 psig, two safety injection (SI) accumulators were simultaneously inoperable. Technical specifications limiting conditions for operation (LCO) 3.5.1 requires that each accumulator be operable, with a nitrogen pressure

between 602 and 648 psig, while in Mode 3 with plant pressure above 1000 psig. The TS action statements do not provide for two inoperable accumulators and TS 3.0.3 applied.

At the time of the event, the SI accumulator "B" was isolated (inoperable) in accordance with surveillance procedure OSP-BB-VL006 to permit check valve testing. At approximately 0838 CST, SI accumulator "D" became inoperable when the accumulator pressure decreased below the TS limits. The plant entered TS 3.0.3 at approximately 0848 CST, SI accumulator "B" was restored to operability and the plant exited TS 3.0.3. SI accumulator "D" pressure decreased to 595 psig before the specified pressure was restored.

B. Evaluation of Cause

The licensee determined that the pressure reduction of SI accumulator "D" resulted from leakage past check valve EP-8818D. The leakage was attributed to the valve's failure to fully seat due to the low delta pressure used during testing. The leakage resulted in a SI accumulator low pressure alarm.

The nitrogen relief valve (EP-8857) lifted when utility operator action was taken to maintain accumulator pressure within TS limits. The relief valve lifting was caused by the nitrogen pressure regulator setpoint set higher than the relief valve. The regulator was out of calibration and was not listed in the plant's setpoint document.

As a contributing factor, OSP-BB-VL006 was misleading. Its text made it appear that leakage could be possible from only one accumulator. No specific procedural guidance was available to cover the actions operations should take when leakage is experienced and accumulator operability may be jeopardized.

C. Licensee's Corrective Action

- The pressure regulator was calibrated with a setpoint lower than the relief valve EP-8857.

- Calibration of the regulator was included in the preventative maintenance program.

- OSP-BB-VL006 was revised to specify that leakage is possible during testing from any accumulator. It will be further revised to provide guidance should accumulator operability be jeopardized. A statement was added to recommend that accumulator levels and pressures be at the high end of their limits when starting the test.

- Upon re-initiating the surveillance test, EP-8818D seated itself and no further actions are deemed necessary.

- Engineering action item (EAI Number 87-D0474) was initiated for the review of design documentation, which identified control and relief valve setpoints, to determine if revisions to the setpoint document are required.

D. Inspectors Review

The inspectors reviewed the details of the event, the licensee's event and causal factors analysis, and corrective actions. The inspectors determined that the event was an isolated occurrence and posed minimal safety significance. The event received the licensee's prompt and thorough response including corrective actions to prevent recurrence.

Two SI accumulators inoperable while in Mode 3 above a plant pressure of 1000 psig is a violation of TS 3.5.1. The violation meets the tests of 10 CFR 2, Appendix C, Section V.G; consequently, no Notice of Violation will be issued, and this matter is considered closed (463/88019-01 (DRP)).

LER 87-031-00 is considered closed.

3. Plant Operations (71707) (71710)

a. Operational Safety Verification

Inspections were routinely performed to ensure that the licensee conducts activities at the facility safely and in conformance with regulatory requirements. The inspections focused on the implementation and overall effectiveness of the licensee's control of operating activities, and on the performance of licensed and non-licensed operators and shift technical advisors. The inspections included direct observation of activities, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety system status and limiting conditions of operation (LCO), and reviews of facility procedures, records, and reports. The following items were considered during these inspections:

- Adequacy of plant staffing and supervision.

- Control room professionalism, including procedure adherence, operator attentiveness, and response to alarms, events, and off-normal conditions.

- Operability of selected safety-related systems, including attendant alarms, instrumentation, and controls.

- Maintenance of quality records and reports.

The inspectors observed that control room supervisors, shift technical advisors, and operators were attentive to plant conditions, performed frequent panel walkdowns and were responsive to off-normal alarms and conditions.

One plant trip occurred when a non-licensed utility operator mistakenly opened an interlocked panel door (current transformer fuse panel) causing a bus to be deenergized. The bus powered two of the three condensate pumps which resulted in a low steam generator level reactor trip. The event is reported in the licensee's licensee event report (LER) 88-010-00.

b. Off-Shift Inspection of Control Rooms

The inspectors performed routine inspections of the control room during off-shift and weekend periods; these included inspections between the hours of 10:00 p.m. and 5:00 a.m. The inspections were conducted to assess overall crew performance and, specifically, control room operator attentiveness during night shifts.

On two occasions, while performing deep shift (10:00 p.m. to 05:00 a.m.) inspections, the inspector observed candidates in hot licensee training standing reactor operator training watches. The candidates were receiving plant problem scenarios, and discussing off-normal indications and appropriate responses. The candidates were able to discuss reasons for the existence of actual control room alarms in response to the inspector's questions. The candidates training time was being effectively used.

The inspectors determined that both licensed and non-licensed operators were attentive to their duties, and that the administrative controls relating to the conduct of operation were being adhered to.

c. ESF System Walkdown

The operability of selected engineered safety features was confirmed by the inspectors during walkdowns of the accessible portions of several systems. The following items were included: verification that procedures match the plant drawings, that equipment, instrumentation, valve and electrical breaker line-up status is in agreement with procedure checklists, and verification that locks, tags, jumpers, etc. are properly attached and identifiable. The following systems were walked down during this inspection period:

- "A" Motor Driven Auxiliary Feedwater System
- "B" Emergency Diesel Generator System

d. Plant Material Conditions/Housekeeping

The inspectors performed routine plant tours to assess material conditions within the plant, ongoing quality activities and plant-wide housekeeping. The plant-wide housekeeping continues to be maintained at an above average level. The licensee's painting program is continuing with the result being improved cosmetic appearance and area light levels. The inspectors also accompanied the licensee's management on monthly plant tours.

No violations or deviations were identified.

4. Radiological Controls (71709)

The licensee's radiological controls and practices were routinely observed by the inspectors during plant tours and during the inspection of selected work activities. The inspection included direct observations of health physics (HP) activities relating to radiological surveys and monitoring, maintenance of radiological control signs and barriers, contamination, and radioactive waste controls. The inspection also included a routine review of the licensee's radiological and water chemistry control records and reports.

Health physics staff at the access control for the radiological control area (RCA) provided appropriate control of personnel access and egress. HP provided prompt and detailed personnel surveys in response to personnel monitor alarms and were knowledgeable of in-plant radiological problem areas. Appropriate radiological control barriers and direct HP coverage was provided for work involving penetration seal replacement.

The routine HP activities observed during this inspection period indicated a satisfactory performance level. The as low as reasonable achievable (ALARA) program has been part of the planning for several large man-hour jobs and was the determining factor for selecting which portion of the work would be postponed until the refueling outage.

No violations or deviations were identified.

5. Maintenance/Surveillance (62703) (61726)

Selected portions of the plant surveillance, test and maintenance activities on safety-related systems and components were observed or reviewed to ascertain if activities were performed in accordance with approved procedures, regulatory guides, industry codes and standards, and the Technical Specifications. The following items were considered during these inspections: 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 calibration was performed prior to returning the components or systems to service; parts and materials that were used were properly certified; and appropriate fire prevention, radiological, and housekeeping conditions were maintained.

The functions observed during this inspection period were found to be well planned with the performance generally effective during all phases. The control room was kept informed of the job status. Control of hazards, to plant and personnel, was noted to be satisfactory.

A. Maintenance

The reviewed maintenance activities included:

Work Request No.	Activity
WR 114543	Grouting trolley channels for breakers.

packages, to determine the type of terminations, material specified, and inspection records. WRs were written to obtain field verification of HST applications located outside of containment for which material or quality control (QC) inspections were not well documented.

In September, 1988, the licensee commenced the initial field verifications of HST applications located outside of containment. This effort identified deficient or questionable applications which required further field investigation e.g., destructive examination. IR Number 88-191 was issued documenting the initial verification findings. A request for resolution (RFR-05640) was initiated to incorporate additional test reports into environmental qualification (EQ) files and to provide a mechanism for tracking operability evaluations.

2. Field Verification Results

As of October 15, 1988, the licensee had completed field verification of 28 components located outside of containment. The misapplications affected eleven components, of which seven have been evaluated by the licensee as satisfactory. An evaluation of the remaining four is in process. Misapplications were identified as follows:

	Number of Misapplications	Application Deficiency
a.	5	Wrong size tubing
b.	4	HST shrunk over braid
c.	3	Incomplete shrinkage of HST

Inspection of this matter included; meetings with plant management and representatives of the licensee's quality assurance and nuclear engineering departments, the performance of two field inspections, and a review of related documents. The inspector determined that the engineering action plan provides for an extensive review and evaluation of HST applications. Deficiencies identified have been promptly corrected, documented, and are undergoing the licensee's "operability" assessment.

The licensee's evaluation of the deficiencies is in progress. A work document review of equipment inside containment is continuing. Field inspection/verification of equipment inside containment will be performed during the Refueling III outage.

This matter is unresolved, pending further NRC review. (Unresolved Item (483/88019-02(DRP)).

No violations or deviations were identified.

assembled in a timely manner and the review was considered to be sufficiently probing to determine the root cause of the event and to recommend corrective actions.

No violations or deviations were identified.

10. Regional Requests (92701)

A regional request was received to perform Temporary Instruction 2515/98. The instruction pertains to obtaining information on temperatures inside the reactor containment, particularly during the summer months. The technical specification's requirement for average air temperature in containment, i.e,: temperature of air being drawn into coolers, to be maintained at less than 120 degrees Fahrenheit was met. The final safety analysis report (FSAR) environmental qualification (EQ) aging of the equipment in containment is based on 120 degrees Fahrenheit in containment generally and 150 degrees Fahrenheit in the reactor cavity.

None of the equipment has temperature monitoring at the present time. The temperatures being recorded now are return air temperatures. The licensee has a modification under evaluation that would provide a larger number of areas with temperature monitoring for EQ aging. The requested data and information has been provided to the regional contact.

11. Regional Management Site Visit (30703)

On September 27, 1988, the resident inspectors accompanied the NRC Region III Administrator and the Reactor Projects Section Chief during a Callaway site visit. The site visit included a facility tour accompanied by the licensee's General Manager of Nuclear Operations, interviews with the utility's licensed and non-licensed operators and craft personnel. Personnel interviewed during the tour were forthright and knowledgeable of on-going activities and displayed a positive safety attitude. Material conditions of the plant were considered good to excellent with only minor exceptions noted.

At the conclusion of the visit, regional management met with the licensee's representatives and discussed tour observations, plant status and operating experience.

No violations or deviations were identified.

12. Violations for Which a "Notice of Violation" Will Not Be Issued

The NRC uses the Notice of Violation as a standard method for formalizing the existence of a violation of a legally binding requirement. However, because the NRC wants to encourage and support licensee initiatives for self-identification and correction of problems, the NRC will not generally issue a Notice of Violation for a violation that meets the tests of 10 CFR 2, Appendix C, Section V.G. These tests are: (1) the violation was identified by the licensee; (2) the violation would be categorized as Severity Level IV or V; (3) the violation was reported to

the NRC, if required; (4) the violation will be corrected, including measures to prevent recurrence, within a reasonable time period; and (5) it was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation.

A violation for which a Notice of Violation will not be issued is identified in Paragraph 2 of this report.

13. Unresolved Item

Unresolved items are matters about which more information is required in order to ascertain whether it is an acceptable item, a violation, a failure to meet a licensee commitment, or a deviation. An unresolved item is contained in Section 6 Item (483/88019-02(DRP)).

14. Exit Meeting (30703)

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

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