

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/86019(DRP)

Docket No. 50-483

License No. NP-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

Inspection Conducted: August 1 through October 4, 1986

Inspectors: B. H. Little  
C. H. Brown  
R. M. Lerch

Approved By: *William L. Forney*  
W. L. Forney, Chief  
Reactor Projects Section 1A

*10/17/86*  
Date

Inspection Summary

Inspection on August 1 through October 4, 1986 (Report No. 50-483/86019(DRP))

Areas Inspected: A routine, unannounced safety inspection by the resident inspectors and one region based inspector of Part 21 Reports, Licensee Event Reports, maintenance, surveillance, ESF walkdown, operational safety and SALP presentation.

Results: Of the six areas inspected, no violations or deviations were identified in five areas; one apparent violation was identified in the remaining area (failure to establish continuous fire watch - Paragraph 3.). The violation was determined to not result in a significant plant safety condition.

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## DETAILS

### 1. Persons Contacted

D. F. Schnell, Vice President, Nuclear  
S. E. Miltenberger, General Manager, Nuclear Operations  
\*G. L. Randolph, Manager, Callaway Plant  
C. D. Naslund, Manager, Operations Support  
A. P. Neuhalphen, Manager, Quality Assurance  
\*J. D. Blosser, Assistant Manager, Operations & Maintenance  
\*J. R. Peevy, Assistant Manager, Technical Services  
P. T. Abbleby, Assistant Manager, Support Services  
W. F. Powell, Assistant Manager, Materials  
M. E. Taylor, Superintendent, Operations  
D. E. Young, Superintendent, Maintenance  
W. R. Robinson, Superintendent, I&C  
R. R. Roselius, Superintendent, Health Physics  
G. J. Czeschin, Superintendent, Planning & Scheduling  
G. R. Pendergraff, Superintendent, Security  
\*J. E. Davis, Superintendent, Compliance  
T. S. Sharkey, Supervisor, Compliance  
D. W. Capone, Manager, Nuclear Engineering  
W. R. Campbell, Assistant Manager, Nuclear Engineering  
\*J. V. Laux, Superintendent, Technical Support  
\*B. K. Stanfield, Engineer  
\*K. C. Gearhart, Superintendent, QA, OPS Support  
L. H. Kanuckel, Supervising Engineer, QA Program Support

\*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. Licensee Action on 10 CFR 21 Reports (92700)

(Closed) 10 CFR 21 (483/84003-PP): Ruskin Fire Dampers Fail to Close Under Normal Duct Pressure. When the licensee received word the Ruskin Fire Dampers (type installed in plant) may fail to close with normal duct air flow, a temporary operating instruction (Nite Orders) was issued to secure ventilation in case of fire. The instruction contained a correlation between fire alarm and fan to be secured. The instruction will remain in force until the fire fighting procedures (QDP-ZZs) are revised. At the present time four out of the original 22 procedures remain to be revised.

(Closed) 10 CFR 21 (483/86001-PP): EDG Starting Air Pressure Not Promptly Venting Results in Overspeed Trip. The Emergency Diesel Generators that are installed at this site were of the type that may have the overspeed trip after start. The inspector noted the licensee had installed the recommended venting path on both units. The modifications were installed although the overspeed tripping had not become a problem with the diesels at this site.

(Closed) 10 CFR 21 (483/86002-PP): Fire Barrier Penetration Seals. B&B Promatec performed a fire test on a penetration/conduit seal configuration of the Waterford 3 Plant. The conclusion was that the configuration failed the test as the internal conduit seal exceeded the temperature limits of ASTM E-119 and provided the NRC with a 10 CFR Part 21 notification of the test failure. The failure was reported on a type of fire barrier penetration seal similar to the ones installed at Callaway.

The Callaway SNUPPS acceptance criteria for fire barrier penetration seals is based on FSAR commitments to 10 CFR 50 Appendix R and tested per guidance in ASTM E-119, IEEE-634 and ANI-MAERP with IEEE-634 specifically applied to the internal conduit seal type in question.

The licensee's evaluation of the data determined the test results verify the seals meet the commitments. The data shows the internal temperature reaching 730 degree F which is greater than the recommendation of IEEE-634 for self ignition temperature of cabling on the unexposed side of the seal. The licensee has referenced a report that lists the cabling used at Callaway, and has been reported by FMRC (EPRI NP-1200) to have a self ignition temperature of greater than 1000 degree F. This is considered to meet the commitment that the cable fire barrier penetration seal will withstand the fire endurance test without passage of flame or ignition of cables on the unexposed side for a period of time equivalent to the fire resistance rating required of the barrier.

(Closed) 10 CFR 21 (483/86003-PP): Fire Dampers Deficiencies. As a result of an inspection of installed fire dampers Kansas Gas and Electric Company issued a 10 CFR Part 21 Report as conditions were found that could degrade the dampers fire rating, (Ref. KMLNRC 85-100 dated 5/1/85). The resulting inspection at the Callaway Plant revealed that similar clearance (thermal expansion) problems were present on the installed fire dampers. The licensee issued LER 85-041-01 documenting this deficiency. The majority of the dampers have been modified, and the modification work on the remaining dampers is ongoing. The dampers that require an extended outage to complete the modification will be worked during the Refuel II Outage. This involves less than twenty dampers out of about 180 total. The licensee has committed to complete the fire damper modification before the restart from Refuel II. Roving fire watches will be maintained in the affected areas until the modifications are complete.

### 3. Licensee Event Report (LER) Followup (90712)

An in-office review was conducted for the following LERs to determine that reporting requirements were met, the report was adequate to assess the subject, the cause was accurately identified, corrective actions appear appropriate and that generic applicability as well as previous events were considered. In addition, each event was evaluated for whether additional NRC followup action was appropriate.

(Closed) LERs (483/84021-00; 483/84048-00; 483/85016-00; 483/85017-01; 483/85032-00; 483/85033-00, 483/85035-00, 483/85036-00, 483/85041-01, 483/86003-00, 483/86004-00).

| <u>LER No.</u> | <u>Title</u>                                                                          |
|----------------|---------------------------------------------------------------------------------------|
| 483/84021      | Technical Specification Violation                                                     |
| 483/84048      | Inadvertent Engineered Safety Feature Actuation                                       |
| 483/85016      | Spurious Low Pressurizer Pressure Reactor Trip                                        |
| 483/85017      | Overcurrent Protection of Containment Penetrations                                    |
| *483/85032     | Technical Specification Violation - Fire Watch Requirements Not Satisfied             |
| *483/85033     | Technical Specification Violation - Fire Watch Requirements Not Satisfied             |
| *483/85035     | Technical Specification Violation - Fire Watch Requirements Not Satisfied             |
| 483/85036      | Reactor Trip Due to Inadvertent MFIV Closure                                          |
| 483/85041-01   | Technical Specification Violation - Deficient Fire Barriers                           |
| *483/86003     | Technical Specification Violation - Fire Watch Requirements Not Satisfied             |
| 483/86004      | Reactor Protection System Logic Actuation Due to Spurious Source Range Hi Flux Signal |

The above LERs annotated by (\*) identify Technical Specification Violations which involved isolated events resulting from weaknesses in the licensee's administrative controls/fire watch instructions, and personnel training. The inspector performed initial reviews of the events and determined that the events were of lesser safety significance, and received appropriate licensee attention. In February 1986, the licensee established a Fire Protection Task Force to identify root cause and necessary corrective action to prevent recurrence. This effort has resulted in the following corrective measures:

- a. Established a permanent fire watch staff
- b. Issued door keys to fire watch personnel
- c. Revised associated administrative procedures
- d. Conducted special training classes in Technical Specification requirements, recognition and responsibility.

Violations are identified in some of these LERs which meet the criteria for 10 CFR Part 2, Appendix C for which a notice of violation will not generally be issued. These violations are of lesser severity which were identified, reported, and satisfactorily corrected by the licensee, and are not violations that could reasonably be expected to have been prevented by the Licensee's corrective action for a previous violation. Therefore, no notice of violation is being issued and these LERs are considered closed.

(Closed) LER 483/86034-00: Technical Specification Violation - Failure to Station a Continuous Fire Watch. On September 9, 1986, control room personnel observed that a trouble condition (yellow light) existed on the Main Fire Control Panel KC008 zone 165/window 132. Work Request (WR) No. 63318 was issued to troubleshoot and repair as necessary to clear the alarm. On September 10, 1986, the WR was performed which identified the trouble was the result of a blown fuse on the sprinkler

system control panel KC-257. The fuse was replaced and the alarm condition cleared. On September 23, 1986, the licensee's system engineer's review of this matter determined that the blown fuse had placed the Pre-Action Sprinkler System for the auxiliary building, 2000 foot elevation in an "inoperable" condition. The licensee also determined that the continuous fire watch required by Technical Specifications had not been maintained for approximately 31-1/2 hours during the time the sprinkler system was inoperable.

The inspector's review in this matter included the review of the incident report, control room logs, associated work documents, and interviews with control room supervisors and operators. The inspector determined that upon receiving the trouble alarm on September 8, the control room personnel failed to recognize the condition as a potential inoperable sprinkler system. The alarm printout (KC008) indicated that the "trouble" condition existed from 1526 September 8 through 2039 September 10, 1986. However, a fire watch was stationed in the area during the day shift each day in support of ongoing maintenance, and was in place at the time the trouble alarm was received. On September 9, control room personnel discussed the trouble alarm with the system engineer. The problem was erroneously assumed to be a faulty pressure switch, which if correct, would not have resulted in the system being inoperable. A work request was issued to correct the trouble condition, and on September 10, a blown fuse was determined to be the cause of the system failure. The fuse was replaced and the sprinkler system restored to operable.

The inspector determined that the event did not result in a significant plant safety condition as the system was available for manual operation and the area contained operable fire detection and backup suppression systems. However, the event indicates a potential weakness in operator attention and or training in this matter.

Technical Specifications Limiting Conditions for Operation (LC0) 3.7.10.2, requires that the Pre-Action Sprinkler System be operable for the protection of cable trays in the auxiliary building, 2000 foot elevation level. This area is identified as an area containing redundant systems or components which could be damaged. Action a. requires that with a Sprinkler System inoperable, within 1 hour establish a continuous fire watch with backup fire suppression equipment for those areas in which redundant systems or components could be damaged. The Licensee's failure to establish a continuous fire watch is a violation of Technical Specification LC0 3.7.10.2 (483/86019-01(DRP)).

(Closed) LER 483/86028-00: Technical Specification Violation - High Radiation Area Door Lock Mechanism Failure. On August 18, 1986, a health physics (HP) supervisor (during a routine tour of the Radiological Control Area (RCA)) discovered that door No. 13081 (high radiation area (HRA)) was not locked, which is a condition prohibited by Technical Specification 6.12.2. The supervisor locked the door and documented the violation in Incident Report No. 86-183 (LER 86028-00). On August 18, 1986, a HP technician purposely tested door No. 13081 and

found that the door could be opened without unlocking. The licensee determined that failure to maintain the door locked resulted from a damaged lock mechanism. The door was temporarily repaired and locked. Licensee's corrective action included the following:

- a. The locksmith replaced the damaged latch on 8/20/86.
- b. On 8/22/86, the locksmith inspected other locked HRA entrances and found no inadequacies.
- c. On 9/4/86, the lock on door 13081 was permanently modified. It now consists of a dead bolt only. All lock mechanisms of this type on heavy, steel doors with potential for HRA designation have been similarly modified.
- d. HP reviewed monthly exposure records for the months of July (date lock was functionally checked by the security locksmith) and August, 1986. No abnormal or excessive exposures were found to indicate unauthorized entry through the unlocked door during the event period.
- e. Appropriate plant personnel have been instructed in the operation of the modified locks.

The violation identified in this LER meets the criteria for 10 CFR Part 2, Appendix C for which a notice of violation will not generally be issued. This violation is of lesser severity which was identified, reported, and satisfactorily corrected by the licensee, and is not a violation that could reasonably be expected to have been prevented by the Licensee's corrective action for a previous violation. Therefore, no notice of violation is being issued and this LER is considered closed.

(Closed) LER 483/86026-00: Technical Specification Violation - Battery Bank Not Surveilled Within the Specified Interval. On July 7, 1986, the licensee determined that the Technical Specification Surveillance 4.8.2.1 had not been completed within the specified weekly time interval for Battery Bank "B". The allowable extension for completing the surveillance was exceeded by seven hours. Control room personnel declared Battery Bank "B" inoperable and entered Technical Specification 3.8.2.1 Action Statement. Within one hour, the surveillance was completed satisfactorily and the battery bank was declared operable.

The inspector determined that the Technical Specification violation was an isolated oversight by maintenance personnel.

The violation identified in this LER meets the criteria for 10 CFR Part 2, Appendix C for which a notice of violation will not generally be issued. This violation is of lesser severity which was identified, reported, and satisfactorily corrected by the licensee, and is not a violation that could reasonably be expected to have been prevented by the Licensee's corrective action to a previous violation. Therefore, no notice of violation is being issued and this LER is considered closed.

(Open) LER 483/86007-00, 01: Missing Fire Barrier Penetration Seals. On March 18, 1986, the licensee identified 23 fire barrier penetrations which did not have internal conduit seals installed. The licensee initiated the inspection as a result of a potential penetration design deficiency identified at the Waterford 3 Plant. The licensee declared the fire barrier penetrations inoperable and established fire watches for Technical Specification fire barriers. LER 86007-01 issued August 29, 1986, documents subsequent licensee inspections which identified approximately 320 additional penetrations which were missing at least one seal. Of these, approximately 50 were determined to be violations of Technical Specification 3.7.11. Also, 70 penetrations remain to be inspected when plant conditions permit. Fire watches will be maintained until the seals are installed or the inspections are completed.

On September 29, 1986, the inspector met with representatives of the Licensee's engineering and quality assurance departments, to review licensee's inspection findings, cause, and corrective actions. The inspector determined that once identified by the licensee, the event was appropriately documented, reported, and was given prompt, thorough attention by the licensee. The licensee has established fire watches as specified in applicable Technical Specification Action Statements. The Licensee's safety review, of the initial 23 deficient fire barriers, found that the lack of seals would not have prevented safe shutdown of the plant. The safety review of the remaining barriers are expected to be completed by October 15, 1986. This matter remains open pending further NRC review.

No violations or deviations were identified.

4. Monthly Maintenance (62703)

Selected portions of the plant maintenance activities on safety related systems and components were observed or reviewed to ascertain that the activities were performed in accordance with approved procedures, regulatory guides, industry codes and standards, and that the performance of the activities conformed to 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 calibrating were performed prior to returning the components or systems to service; parts and materials that were used were properly certified; radiological controls were implemented as necessary; and, fire prevention controls were implemented.

No violations or deviations were identified.

5. Monthly Surveillance (61726)

The inspectors reviewed or observed selected portions of the Technical Specifications required surveillance testing during power operations. Items which were considered during the inspection included whether adequate procedures were used to perform the testing, test instrumentation was calibrated, test results conformed with Technical Specifications and procedural requirements, and the test was performed within the required time limits. The inspector determined that the test results were reviewed by someone other than the personnel involved with the performance of the test, and that any deficiencies identified during the testing were reviewed and resolved by appropriate management personnel.

No violations or deviations were identified.

6. ESF System Walkdown (71710)

The operability of selected engineered safety features (ESF) was confirmed by the inspectors during a walkdown of the accessible portions of the system. The following items were included: procedures match the plant drawings, equipment conditions, housekeeping, instrumentation and valve and electrical breaker lineup status (per procedure checklist); locks, tags, jumper, etc. are properly attached and identifiable. The following systems were walked down during this inspection period.

- . Essential Service Water System
- . The Emergency Diesel Generator System
- . Auxiliary Feedwater System
- . Station Battery

No violations or deviations were identified.

7. Operational Safety Verification (71707)

The inspectors 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 reactor, auxiliary, and turbine buildings 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.

8. Presentation of SALP on September 24, 1986

The Region III Administrator, James G. Keppler, accompanied by R. F. Warnick, Chief, Reactor Projects Branch 1, W. L. Forney, Chief, Reactor Projects Section 1A, T. W. Alexion, Project Manager, Office of Nuclear Reactor Regulation - Division of Pressurized Water Reactors, and the inspectors, met with the licensee in St. Louis. The Systematic Assessment of Licensee Performance (SALP) 6 report (Inspection Report No. 483/86002(DRP)) was presented to D. F. Schnell, Union Electric Vice President Nuclear, S. E. Miltenberger, General Manager, Nuclear Operations and other Union Electric representatives in a public meeting attended by members of the public and press.

9. Exit Interviews (30703)

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 representative 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.