

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/91007(DRP)

Docket No. 50-483

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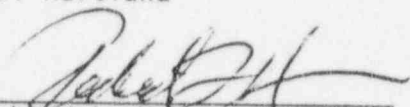
Facility Name: Callaway Plant, Unit 1

Inspection At: Callaway Site, Steedman, MO

Inspection Conducted: March 25 through 29, 1991

Inspectors: J. W. McCormick-Barger  
D. J. Hartland

Approved By:

  
Richard L. Hague, Chief  
Reactor Projects Section 3C

4/8/91  
Date

Inspection Summary

Inspection from March 25 through 29, 1991 (Report No. 50-483/91007(DRP))

Areas Inspected: Routine, unannounced inspection to evaluate the licensee's quality assurance program implementation and self-assessment capability.

Results: No violations or safety concerns were identified in the areas inspected. An executive summary is given below.

Executive Summary

Safety Assessment/Quality Verification: The licensee's self-assessment capability and quality assurance implementation program were determined to be very good. The Operations Review Committee (ORC) and Nuclear Safety Review Board (NSRB) performed their functions well. The Independent Safety Engineering Group (ISEG) and the Quality Assurance Surveillance/Audit Group were noted strengths in the licensee's organization. The licensee recently moved to combine several corrective actions programs into one all-encompassing Suggestion Occurrence Solution (SOS) System Program. This program has lowered the threshold for reporting deficiencies and is an example of the licensee's continued commitment to the identification and resolution of plant deficiencies.

## DETAILS

### 1. Persons Contacted

- \*J. G. Beck, Site Licensing Engineer
- J. D. Blosser, Manager, Callaway Plant
- H. D. Dono, Supervising Engineer, Quality Assurance
- W. R. Campbell, Manager, Nuclear Engineering
- F. J. Forck, Quality Assurance
- \*J. C. Gearhart, Superintendent, Quality Assurance
- \*G. A. Hughes, Supervising Engineer, Independent Safety Engineering Group
- \*J. V. Laux, Manager, Quality Assurance
- \*C. D. Naslund, Manager, Operation Support
- J. R. Peevy, Assistant Manager, Operations and Maintenance
- \*C. S. Petzel, Quality Assurance Engineer
- T. L. Shaw, Supervisor, Quality Control
- C. E. Slizewski, Supervising Engineer, Quality Assurance
- M. A. Stiller, Manager, Nuclear Safety and Emergency Preparedness
- \*T. W. Stotlar, Supervising Engineer, Quality Assurance
- \*M. E. Taylor, Assistant Manager, Work Control
- L. M. Zahara, Assistant Supervisor, Quality Control

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- \*B. L. Bartlett, Senior Resident Inspector

In addition, the inspectors interviewed other licensee personnel.

\*Denotes those present at the exit meeting on March 29, 1991.

### 2. Evaluation of Licensee Quality Assurance Program Implementation (IP 35502)

An evaluation of the licensee's implementation of its quality assurance (QA) program was performed. This evaluation included an in-office review and an inspection of the licensee's onsite QA surveillance/audit group.

#### a. In-Office Evaluation

The inspectors evaluated the latest SALP report and NRC outstanding items list, and recent inspection reports, licensee event reports (LERs), and licensee corrective actions for NRC inspection findings and identified no significant negative trends which would indicate problems in licensee QA program implementation.

#### b. Onsite QA Surveillance/Audit Group

The inspectors evaluated the licensee organizational chart to gain understanding of organizational relationships and verify independence of the QA group from Nuclear Operations. It was noted that the QA group reported directly to the Vice President-Nuclear, as is appropriate. A noted strength of the QA audit/surveillance group was that the QA engineers were organized into 20 separate functional

areas, which enhanced expertise in each of the areas. In addition, each QA engineer was assigned primary and secondary functional areas, which provided for some cross-training.

Another noted strength was the qualifications of the QA staff. Of the qualifications reviewed, all exceed regulatory requirements; all had engineering or technical degrees. The staff and supervisors that were interviewed appeared very knowledgeable. The staffing levels appeared to be appropriate for handling the existing work load.

The inspectors reviewed a number of audit and surveillance reports and determined that in-depth reviews of the various functional areas were performed and substantial recommendations proposed. Among the audit reports reviewed were:

- (1) Audit Report No. AP90-012, "Quality Assurance Audit of Corrective Action," issued October 16, 1990.
- (2) Audit Report No. AP90-007, "Quality Assurance Audit of Management, Technical, and Performance Review," issued July 13, 1990.
- (3) Audit Report No. AP90-001, "Quality Assurance Audit of Operations," issued March 15, 1990.

Of particular interest to the inspectors was the QA audit of corrective action. The corrective action program at Callaway was revised in June 1990 to combine several functional corrective action mechanisms into a single administrative process. The revised program was implemented to increase efficiency of the corrective action process and allow for more accurate trending of problems in the plant. The threshold for reportability of deficiencies was also lowered with the implementation of the revised program. As a result, during the last refueling outage, an average of 200 deficiencies per week were reported, as opposed to an average of 400 per year under the old system. There are currently about 1000 open items in the system, of which approximately 100 were initiated by the QA group; however, only 25-30 deficiencies are now being reported per week and about 50 open items are being closed weekly. The new deficiency document is called a "suggestion occurrence solution" (SOS). Administrative procedures are in place to prioritize SOSs based on reportability requirements and to specify time limits for when responses to SOSs are required to be completed. The October 16, 1990 audit report identified that a number of open SOSs had overdue responses. The inspectors discovered through interviews with QA staff that a recently completed audit of the program, for which a report has yet to be issued, identified similar findings. In the meantime, licensee management has initiated a task team, headed by the plant manager, to correct problems with the implementation of the revised program, including development of a prioritization procedure to consider safety significance in addition to reportability considerations. The tracking system is also being upgraded to include a tickler system for high priority SOSs. The

inspectors believed that the licensee is taking appropriate actions to correct the problems encountered during the implementation of the revised program.

Among the surveillance reports reviewed were:

- (1) Surveillance Report No. SP90-105, "Emergency Diesel Generator "B" Refuel IV Maintenance," issued November 20, 1990.
- (2) Surveillance Report No. SP90-094, "Surveillance of Plant Shutdown and Mid-Loop Operations," issued October 18, 1990.
- (3) Surveillance Report No. SP90-057, "Request For Resolution 04229B Loss of Nuclear Sampling System Containment Isolation Valve Indication," issued June 8, 1990.

Another noted strength in the QA program was the scheduling of surveillances and/or the inclusion of special inspection attributes in audits based on review of plant events, industry data, and NRC concerns. A good example of this was the surveillance of mid-loop operations. The report identified a need to provide additional procedural guidance for responding to loss of RCS inventory during mid-loop operations. Specifically, plant procedures for describing the symptoms and required actions for a loss of RCS inventory due to failure of the RHR piping did not include Mode 6 in the scope statement of the procedures. In response to the finding, Operations committed to improving the applicable procedures prior to entering reduced inventory conditions with fuel in the reactor, scheduled for later in the refueling outage. The inspectors verified that the procedural improvements were made on a timely basis. Other examples of surveillances performed in response to plant performance, NRC concerns, or industry data were: evaluation of Rosemount Inc. 10 CFR 21 notifications for transmitters; condensate polisher operation and regeneration in response to INPO recommendations; snubber inspection program upgrade due to snubber failure at Wolf Creek; and independent review of MOV testing program development in response to Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance."

Overall, management response to QA findings was very good and corrective actions were performed on a timely basis.

No violations or deviations were identified in this area.

### 3. Evaluation of Licensee Self-Assessment Capability (IP 40500)

In addition to an evaluation of the licensee's implementation of its QA program, the inspectors reviewed the licensee's overall self-assessment capability. This review included observing one ORC meeting and reviewing minutes of several NSRB meetings. The Callaway NRC senior resident inspector observed a recent NSRB meeting.

a. Nuclear Safety Review Board Meetings

The NSRB is required by plant Technical Specifications (TS) to function as an independent reviewer and auditor of all safety related aspects of the Callaway plant. The Board is to report to and advise the Senior Vice President - Nuclear on results and conclusions of its activities. Meetings are required to be performed at least once per six months.

The last NSRB meeting was held March 13 and 14, 1991. The Callaway NRC senior resident inspector observed portions of the 1-1/2 day meeting and reported that the meeting adequately covered the areas required by TS. The inspectors reviewed minutes of the last three NSRB meetings and determined that the minutes were very detailed. From review of the minutes, it appears that the meetings extensively covered the required subjects and probing questions were asked of events and results of third party reviews. The frequency of meetings reviewed and quorums exceeded TS requirements.

The NSRB plans to meet at least three times during 1991. In addition, special telecon meetings are conducted as needed. The licensee employs several consultants as participants at NSRB meetings. These consultants appear to provide important independent perspectives of plant performance.

The inspectors reviewed the log of TS required audits that are required to be performed under the cognizance of the NSRB. The inspectors determined that a specific TS audit, to assure conformance of unit operation to provisions contained within the TS and applicable license conditions, is not performed. The QA department informed the inspectors that the TS requirements are met through the performance of numerous other audits and/or surveillances that include reviewing TS performance applicable to the area being inspected. A QA engineer performs an annual review of a special computer tracking system to assure that all the TS required attributes are performed yearly. Currently, the QA group verifies that over 1000 TS attributes are performed over each three year period. These attributes cover all periodic TS required actions. The licensee, however, stated that they plan to discontinue its 100% review of TS attributes in the near future because they have gained a substantial confidence level that TS requirements have been performed since initial licensing. A reduced review of TS attributes will reportedly take the current program's place.

The inspectors were concerned that the NSRB is not being provided an annual summary report on the licensee's compliance to plant TS. The QA department stated that the NSRB receives the reports of all audits it performs and these reports would include the results of portions of the audits that review TS compliance. The NSRB also receives a summary report of surveillances performed and a biannual summary report of all QA findings. The QA department believes these documents would adequately convey any problems associated with TS compliance. The inspectors concluded that the actions performed by the QA department meet the required TS compliance review.

b. On-Site Review Committee

The function of the ORC is to advise the plant manager on all matters related to nuclear safety. The inspectors reviewed selected committee meeting minutes to ensure that the requirements of the TS have been met with respect to composition and meeting frequency. The ORC usually met twice a month, exceeding the TS required monthly frequency. The meetings were chaired by the plant manager and included an adequate mix of qualified staff members from most of the technical organizations. The minutes appeared to adequately document meeting agendas.

The inspectors observed an ORC meeting during the inspection period. The TS-required quorum was verified prior to the start of the meeting. The detailed briefing packages prepared for the meeting were adequately reviewed by the participants, as evidenced by the constructive discussion of the significant items that occurred. An example of this was the in-depth review and recommended approval of an LER pertaining to a violation of TS 4.0.4 during plant start-up following the last refueling outage. Previous open items were adequately addressed during the meeting.

The inspectors identified a good example of constructive interaction among plant organizations and supervisors and the resolution of disagreements by the ORC while reviewing the agenda for a recent NSRB meeting. The issue that was identified related to reportability of the failure of the Local Leak Rate Testing (LLRT) of Essential Service Water (ESW) valves during the last refueling outage. Specifically, ESW valves to and from the containment coolers failed the LLRT combined leakage criteria due to erosion/corrosion of valve internals. SOS 90-2724 was initiated to review reportability. Site Licensing determined that the SOS was not reportable as a TS violation because the leakage was found in a mode of operability of the penetration was not required by the TS. In accordance with Site Licensing's interpretation of NUREG 1022, "Licensee Event Report System," was that the condition was not an abnormal or serious degradation of the containment safety barrier that significantly compromised plant safety, nor was it an unanalyzed condition. ORC reviewed the SOS and agreed with Site Licensing's assessment. QA did not agree with Site Licensing's interpretation of NUREG 1022. Their opinion was that, though not a significant safety problem, it was a serious degradation. As a result, QA submitted a dissenting opinion to the ORC. In response, Nuclear Engineering issued a rebuttal stating the position that it is not a serious degradation primarily because the ESW system inside containment is essentially a closed system and the piping was intact. The ORC reviewed both the dissenting opinion and the rebuttal and confirmed that the SOS was not reportable. This issue was also reviewed by the NSRB. The inspectors interviewed the cognizant QA supervisor about this event and determined that he was satisfied with the adequacy of the review by the ORC.

c. Independent Safety Engineering Group (ISEG)

The licensee's ISEG is a TS-required organization that is chartered to review various sources of information to determine if improvements are needed at the plant. The inspectors performed a review of the group including selected reports, engineer qualifications, and interviews with some staff members.

All ISEG members were also Shift Technical Advisors (STAs). The group of about 12 engineers rotate, as STAs, in and out of the operating shift organization. The inspectors determined through selected records review that the ISEG engineers exceeded the TS required qualifications for ISEG membership. Having the ISEG engineers qualify as STAs is considered a strength. In addition, three of the engineers were also Senior Reactor Operator (SRO) qualified.

The inspectors determined that the ISEG was meeting the TS requirements for reviewing plant operating characteristics, NRC issuances, industry advisories, reportable events, and other sources of plant design and operating experience. The licensee's ISEG computer tracking system contained over 2400 items that were or are being reviewed by ISEG. There were less than 200 items open at the time of the inspection. The inspectors reviewed a small sample of closed items and determined that the ISEG review was adequate. The licensee provided several examples of ISEG item reviews that have resulted in direct plant improvements. The inspector performed detailed reviews of these examples and found them to contain extensive reviews of external information, plant events, and root causes of component failures. Useful recommendations were included that should reduce the probability of future recurrences or problems that have occurred elsewhere.

In addition to reviews of selected events, the ISEG supervisor provided the inspector copies of several reports generated by his group that analyzed series of events and resulted in recommendations beyond just correcting the specific problems. For example, human performance and circadian cycles reviews resulted in the licensee restricting the performance of some activities during certain times of the day and night. Some other generic reports included: Estimated Critical Position (ECP) Improvement QI (Quality Improvement) story; Rod Control Card Failures; Inadvertent Error Opportunities in Operating System Procedures (OSP's); 7300 Rack (Control Room Reactor Protection Back Panels) Failures; Internal Contamination Event Reviews; Professionalism Review; Callaway Plant Event Reduction Activities; and Single Failure Trip Mechanisms Review. ISEG has also contributed to Probability Risk Analyses (PRA), Safety System Functional Assessments (SSFA), and Electrical Distribution System Functional Assessments (EDSFA) activities.

In summary, the inspectors found the Callaway ISEG to be a strength that has directly contributed to the plants continued good performance.

No violations or deviations were identified in this area.

4. Exit Meeting (71707)

The inspectors met with licensee representatives (denoted in Paragraph 1) on March 29, 1991, to address the scope and findings of the inspection. The licensee representatives acknowledged the statements made by the inspectors with respect to items discussed in the report. The inspectors discussed the likely informational content of the inspection report with regards to documents or processes reviewed by the inspectors during the inspection and the licensee did not identify any such documents or processes as proprietary.