



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-327/85-24 and 50-328/85-24

Licensee: Tennessee Valley Authority
500A Chestnut Street
Chattanooga, TN 37401

Docket Nos.: 50-327 and 50-328

License Nos.: DPR-77 and DPR-79

Facility Name: Sequoyah 1 and 2

Inspection Conducted: June 17-21, 1985

Inspectors: Keith Reuter for
B. Debs

7/31/85
Date Signed

Keith Reuter for
H. Christensen

7/31/85
Date Signed

Approved by: Keith Reuter Acting for
B. Debs, Acting Section Chief
Division of Reactor Safety

7/31/85
Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 68 inspector-hours on site in the areas of maintenance programs.

Results: Two violations were identified:

Violation 328/85-24-02 - Failure to perform appropriate post maintenance testing and for lacking post maintenance determination criteria.

Violation 328/85-24-03 - Failure to monitor ice condenser bed temperatures at the required periodicity

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *P. Wallace, Plant Manager
- *G. Boles, Mechanical Maintenance Engineer Supervisor
- *C. Chmielewski, Nuclear Engineer
- *H. Elkins, Instrumentation Maintenance Group Head
- *R. Gladney, Instrumentation Maintenance Engineer Supervisor
- *J. Hamilton, Quality Engineer/Quality Control Supervisor
- *G. Kirk, Compliance Supervisor
- *J. Krell, Plant Superintendent (Maintenance)
- *D. Love, Mechanical Maintenance Engineer Supervisor
- *B. Patterson, Plant Superintendent (Maintenance), Acting
- *M. Skarzinski, Electrical Maintenance Supervisor
- *C. Wilson, Nuclear Engineer
- *G. Wilson, Assistant Operations Group Supervisor

Other licensee employees contacted included engineers, technicians, operators, mechanics, security force members, and office personnel.

NRC Resident Inspectors

- K. Jenison, Senior Resident Inspector
- *L. Watson, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on June 21, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. The licensee commented on being unsure of the validity of the ice condenser door violation (VIO 328/85-24-03). Additionally, the licensee was notified by telephone that lack of appropriate post maintenance testing of the EGTS damper was a violation.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 5.d.

5. Corrective Maintenance (62702)

The inspectors reviewed the licensee corrective maintenance program to verify that the program had been established in accordance with regulatory requirements, industry guides and standards, and Technical Specifications. The review consisted of reviewing the licensee procedures, numerous maintenance requests, and interviews with various maintenance personnel.

Sequoyah's Standard Practice SQM-2, Maintenance Management System, establishes the method and responsibilities for managing the initiation, planning, scheduling, execution, status tracking, and documentation of maintenance work. The inspectors had the following concerns:

- SQM-2, Maintenance Management System Procedure, has no timeliness requirements for post work review. The inspectors noted several maintenance requests (MRs) that were performed in 1981 but had recently received post maintenance reviews. The licensee had identified these MRs and approximately 2000 other MRs as lacking a timely review.
- The maintenance planners assemble the maintenance request work packages using verified procedures and instructions. The foreman or craftsmen performing the work have no procedural requirement to verify that these procedures are still correct and are the latest revisions, even if the job is worked months after the package is assembled. This is of concern due to the large backlog of MRs that are in the available-to-work category.
- SQM-2, Maintenance Management System Procedure, lacks procedural guidance in the prioritization of routine maintenance. SQM-2 divides routine maintenance into three categories, P1, P2 and P3, but does not define the significance or urgency associated with these priorities.
- The inspectors noted several cases of priority down grading of MRs that lacked middle to upper management inputs into the decision process.
- The maintenance request system appears overburdened with non-maintenance work activities. An example is an MR for manufacturing a plexi-glass desk top.

The licensee was informed that the above concerns will be an inspector followup item (IFI 327,328/85-24-01). The licensee stated that they would address and take corrective action on the listed concerns, but could not give a firm commitment date for completion. The licensee stated that the concerns should be addressed within a year.

The inspectors reviewed several MRs in detail and identified the following:

- a. The review of MR A-089626, Containment Spray Pump Motor 1B, revealed that the licensee has developed a vibration trending program. The vibration analysis data for the containment spray pump showed that the inboard motor bearing was getting progressively worse. From this data, the licensee generated a MR to replace this bearing before the pump failed. The vibrational analysis of major equipment and the preventive maintenance that results will allow the licensee to maintain vital equipment in a higher condition of readiness and should prevent major failures of this equipment.
- b. A review of outstanding routine maintenance requests by the inspector identified MR-A-526113 which had been available for work since May 20, 1985. This MR stated that Emergency Gas Treatment System (EGTS) damper, 0-65-525, operates extremely sluggishly and binds. The maintenance performed to correct this situation was reported completed on June 18, 1985. The maintenance consisted of adjusting the counter balance on the damper.

The inspector observed that the aforementioned MR superceded MR-A-526473 which had been written on May 16, 1985. This MR had been assigned an "Immediate Attention" priority and requested that the system flow rate be verified as adequate and that damper operability be determined.

Licensee personnel indicated that an informal flow rate test was performed by the individual who wrote the original MR which determined that the flow rate was barely adequate. This statement of flow adequacy appears as an attachment to the original MR; however, no quantitative data had been procedurally documented. Additionally, post maintenance test requirements did not include a flow rate test.

SQM2, Maintenance Management System, section B.2.2, QA Post Maintenance Test Requirements, states, in part, that the planner or cognizant engineer shall identify any pre or post maintenance testing requirements by listing both the test number and the section responsible for the test. Should a special test be required, the planner shall state the specifics of this test. Section B.3, QA Review, states, in part, that the FQE section shall review required entries for originator and planner sections of the MR to assure the format and content are in compliance with quality assurance requirements and that the items of Appendix C have been considered. SQM2, Appendix C, Preparation/Initial Planning Guidelines for MRs, item 5, states, "Specify appropriate post maintenance testing, and where applicable, reference the proper plant instruction". Item 15, states, "Consider compliance with plant technical specifications". Specifically: (a) will removal of equipment from service for this maintenance violate any limiting conditions for operations and (b) are adequate post maintenance tests (SIs) specified to ensure the equipment

readiness for operation"? Technical Specification 6.8.1a states that written procedures shall be established, implemented and maintained covering the activities referenced below:

The applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978

Regulatory Guide 1.33, Revision 2, Appendix A, section 9.a, Procedures for Performing Maintenance, states, in part, that maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances.

10 CFR 50 Appendix B, criteria V, states, in part, that instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. After further review following the inspection, the licensee management was telephonically notified that, contrary to Technical Specification 6.8.1a, and 10 CFR 50, Appendix, B, criteria V, the licensee failed to properly preplan and perform post maintenance testing on safety-related equipment, the EGTS system, due to the lack of appropriate acceptance criteria for determining post maintenance testing of safety-related equipment. This is Violation (328/85-24-02).

- c. The inspector noted that on June 10, 1985, one of the licensee Auxiliary Unit Operators (AUO) generated two MRs (A553689 and A553690) to investigate and repair or replace paper and/or tape above the intermediate ice condenser doors for Units 1 and 2. These MRs had also been downgraded from immediate action. This condition was resulting in moisture in the upper plenum area causing ice buildup on the intermediate doors. The observed ice buildup also appears as a 1010 time entry in the AUO daily journal for June 10, 1985. On June 16, 1985, an entry was made into the Unit 2 containment to perform MR-A-553690. The inspector accompanied the detailed maintenance group into containment and observed some general icing on several intermediate doors. This icing appeared to cover a half to two thirds of the door's surface at an apparent depth of one-eighth to one-quarter inch. The area of greatest icing appeared below a location where insulating tape was torn overhead on the upper ice condenser doors allowing humid air to enter the bays. A member of the labor force indicated to the inspector that he routinely (nearly daily) enters the Unit 2 Ice Condenser and removes ice from the intermediate doors. He indicated that his work is accomplished either by a MR or solely on a housekeeping Radiation Work Permit (RWP).

The laborer stated that the ice is removed from the intermediate doors by chipping any ice away from the door gasket, opening the

door, and hitting the underside of door with a hammer to break free the ice accumulation. The ice is then removed from containment and placed in a 55-gallon drum for waste disposition. Approximately one-half to two thirds of the drum is filled in a five day period.

Licensee Technical Specification 3.6.5.3 states that the ice condenser inlet doors, intermediate deck doors, and top deck doors shall be closed and operable for modes 4 through 1.

Additionally, with one or more ice condenser doors inoperable, power operations may continue for up to 14 days provided the ice bed temperature is monitored once per 4 hours and the maximum ice bed temperature is maintained less than or equal to 27°F.

Technical Specification Surveillance Requirement 4.6.5.3.2 states, in part, that each intermediate deck door shall be verified closed and free of frost accumulation by visual inspection at least once per 7 days.

The licensee's operations management indicated that although ice was observed on the intermediate doors, ice bed temperatures were recorded once per eight hour shift rather than the required once per four hours. The inspector informed licensee management that this situation represents a violation of TS 3.6.5.3 (VIO 328/85-24-03).

- d. While reviewing open MRs, the inspector noted that an MR had been written to investigate concrete cracking of the polar crane wall for Units 1 and 2. The inspector was informed by licensee maintenance personnel that the concrete cracking was associated with feedwater hanger 1-FDH-282 which was anchored to the concrete where the cracking was observed. As a result of an engineering analysis, the licensee relieved the hanger of its load and distributed that load between adjacent hangers. For Unit 2, the approximately four feet of horizontal "I" beam hanger was left in place. When questioned by the inspector, the licensee indicated that the as left hanger was not analyzed regarding its potential for being a missile hazard. The inspector expressed concern that the hanger was attached to the concrete in a degraded manner and was located above a main feed line downstream of the tie-in by the auxiliary feed system. Licensee Maintenance personnel volunteered to analyze the hanger's missile hazard potential. The inspector informed licensee management that this issue remains an unresolved item until both the licensee and the NRC had evaluated this condition (URI 328/85-24-04).

6. Preventive Maintenance Program (PM)

The inspector conducted a review of the licensee's implemented preventive maintenance program (PM). This review consisted of reviewing the licensee's

administrative, quality and maintenance department procedures, observing a PM being performed and interviewing selected individuals who were responsible for planning, scheduling, tracking, developing and working PMs. Additionally, the inspector ascertained whether the licensee's program is in conformance with Technical Specification and commitments made to applicable regulatory guides and industry standards.

Sequoyah's PM program is implemented by SQM-57, Preventive Maintenance Program. This procedure requires the mechanical, electrical and instrument departments to establish the types and frequencies of PMs to be performed and adjust the PM frequencies as equipment operating experience is gained. Additionally, the plant services supervisor is responsible for the assembling of work packages, tracking, scheduling, backlog reporting and maintaining the master PM schedule. Finally, the general foreman of each maintenance section is responsible for the performance of the PM and returning of the completed package to the appropriate maintenance supervisor for review.

The PM program, as implemented at Sequoyah appears to be adequate in meeting the requirements and commitments made in Technical Specifications, applicable regulatory guides, and industry standards.