



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

Report Nos.: 50-327/84-33 and 50-328/84-33

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: October 30-31, 1984

Inspector: T. D. Gibbons 12-11-84
T. D. Gibbons Date Signed

Approved by: T. E. Conlon 12-11-84
T. E. Conlon, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 14 inspector-hours on site in the area of worker concerns.

Results: Two apparent violations were found (Failure to perform periodic inspections on the batteries for the fifth emergency diesel generator - paragraph 5a-2.) and (Failure to document calibration of megger - paragraph 5b).

REPORT DETAILS

1. Licensee Employees Contacted

- *P. R. Wallace, Plant Manager
- *J. A. Nicholls, Construction Manager
- *B. B. Whitaker, QC Inspection Supervisor
- *G. B. Kirk, Compliance Engineer
- *B. Alsup, Compliance Supervisor
- *D. C. Craven, Electrical Maintenance Supervisor

NRC Resident Inspector

E. Ford, SRI

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 31, 1984, with those persons indicated in paragraph 1 above. The following findings were identified and discussed with the licensee and there were no dissenting comments.

- Violation 327, 328/84-33-01 Failure to perform periodic inspection on safety-related batteries (Paragraph 5a).
- Violation 327, 328/84-33-02 Failure to document calibration of Megger (paragraph 5b).

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Worker Concerns

The inspector examined two concerns raised by a worker. The concerns related to the storage and maintenance of electrical batteries purchased for the fifth diesel generator and the rereeling of electrical cable.

a. Concern

Specifically, the worker's concern was that Inspection Instruction No. 19 (II-19), titled "Battery Inspections", Rev. 9, dated March 1, 1982 was violated with respect to the storage and maintenance of electrical

batteries purchased for the fifth diesel generator. The worker contended that the violation occurred when he was directed to continue inspecting the batteries in accordance with II-19 after he identified that the specific gravity (SG) was too high. The worker stated that he interpreted the procedure to mean that no further inspections were required until corrective action had been completed on the high SG problem.

Discussion

The fifth diesel generator package was ordered from Power Systems Division (PSD) of Morrison Knudson Corporation on contract 74C63-83090. Change Order 14 to the contract authorized PSD to supply C&D batteries. The change order specified C&D batteries Model 3 DCU-9. This model has a SG of 1.210 and a rating of 100 ampere hours.

The vendor shipment was received on site on March 31, 1981. The receiving inspector noted that the batteries received were Model 3 DCUC-9. This model has a SG of 1.250 and a rating of 112 ampere hours. The receiving inspector initiated a Nonconforming Condition Report (NCR) number 2686.

The licensee contacted the battery manufacturer and was told that Model 3 DCUC-9 is a high discharge rate battery that is routinely converted into a model 3 DCU-9 by dilution of the electrolyte to a SG of 1.210. A representative of C&D visited the site on January 29, 1982, and lowered the SG to 1.210. This corrective action was done in accordance with a PSD procedure, titled "Procedure for Reduction of Specific Gravity of Battery Electrolyte", dated December 12, 1981. This procedure was approved by TVA's Mechanical Engineering Branch on December 30, 1981. The C&D representative was accompanied by a licensee inspector and the required documentation was completed.

The battery vendor recommends that the batteries be placed on charge within 60 days after delivery to the site. This says that II-19 should have been implemented by May 1981. However, II-19 was not issued until March 1, 1982, and the first inspection was not conducted until June 1, 1982. The licensee was not able to produce any records to document the charging and or inspection of the batteries from March 1981 to June 1, 1982. The previously mentioned PSD procedure for reduction of specific gravity of battery electrolyte requires that the batteries be fully charged prior to dilution of the electrolyte. In order to verify whether the batteries were charged prior to dilution, the NRC inspector contacted the C&D representative that performed the initial dilution. The representative stated that the batteries were on charge and appeared fully charged on January 29, 1982. This indicates that the batteries may have been on charge for some time prior to the first inspection done in accordance with II-19 on June 1, 1982.

The NRC inspector reviewed procedure II-19, Rev. 9 to determine the requirements for inspection of batteries. The review disclosed that II-19 had been placed on an inactive status as of April 25, 1979, since at that time all batteries had been transferred to Nuclear Power. Revision 9 made minor changes to the procedure and reactivated the procedure for implementation on March 1, 1982. As previously stated, the first inspection to revision 9 was conducted on June 1, 1982. It was at this time that the worker identified that the SG was still too high. As a result of his findings, the worker issued NCR 2803 and felt that no more inspections should be made until corrective action was complete. TVA's supervision requested that the worker continue the bi-weekly inspections per II-19 since the batteries were on charge and should be inspected. The worker felt that the continued inspections violated the procedure.

As a result of the June 1, 1982 inspection, the licensee requested that the C&D representative return to the site and finish his dilution process such that all cells will have a SG of 1.210. The C&D representative returned on November 16, 1982, and continued his dilution process in accordance with PSDs approved procedure. Further inspections disclosed that certain cells were still outside the acceptable range of 1.220 to 1.210. On June 14, 1983, Engineering Design dispositioned NCR 2803 allowing TVA's construction personnel to dilute the electrolyte using the approved vendors procedure. The NCR was closed on July 5, 1983, after the balance of cells were corrected.

On October 10, 1983, Nuclear Power requested several of these batteries as spares to be used in other safety-related applications in the plant.

Findings

Based on the NRC inspectors review of procedure II-19, the worker's concern could not be substantiated in that the procedure does not state that after the identification of a deficient condition, that all future (required) inspections be waived until corrective action is complete. The procedure merely states that "Upon completion of the required corrective action, the cells shall be reinspected in accordance with this instruction." However, procedure II-19 requires that batteries be inspected after they are placed on charge. There is evidence that the batteries were on charge in January 1982, and may have been on charge from May 1981. This is an apparent violation of II-19, in that periodic inspections were not performed and documented from January to June of 1982. This violation is identified as 50-327, 328/84-33-01, Failure to Perform Periodic Inspections on Safety-Related Batteries.

b. Concern

Cable rereeling was performed without QC meggering the cable. The worker identified eight cable storage yard inspections, by date, which

required rereeling of cable onto new reels because of deterioration of the old reels. The reports questioned are as follows:

Cable Yard A	June 29, 1982 and July 30, 1982
Cable Yard B	May 28, 1982 and July 30, 1982
Cable Yard C	May 28, 1982; June 29, 1982; July 30, 1982; and September 30, 1982

Discussion

Periodic inspections are made in the various storage yards at the site. These inspections are done in accordance with Inspection Instruction Number 32 (II-32), titled "Inspections of Materials in Storage and Housekeeping Conditions." Paragraph 7.c speaks specifically to rereeling of electrical cable. Paragraph 8.c defines the acceptance criteria for rereeling of cable. One of the requirements is to megger the insulation resistance after the cable has been rereeled onto a new reel. To do this requires the use of a Meg-ohm Meter, which must be verified "in calibration" each time it is used. Verification of "in calibration" is done in accordance with Appendix A of procedure CP-P4. This procedure requires the user of the meter to sign the "megger daily calibration log".

After rereeling the cable, the QC inspector is required to megger the insulation and complete data sheet no. 6 to II-32. This sheet requires the megger identification number, calibration due date, the date of inspection and the QC inspectors signature plus other related information.

It should be noted that the meggering done in storage on safety-related cable is not the official or final acceptance of that cable. The final acceptance of any cable is the inspection performed after the cable has been installed in the plant. One of the final acceptance criterion is meggering after installation.

The NRC inspector examined the storage reports for the dates listed under concern and identified that 30 reels of cable had been rereeled. The inspector randomly selected five of the QC records associated with the 30 rereelings and reviewed them to verify that the inspection data sheets were properly filled out, signed and dated.

Reels selected:

<u>Inventory Number</u>	<u>Sequoyah Reel Number</u>	<u>Cable Type</u>
D170	SNP 13833	WHH
D154	SNP 1075	WGD

D1234	SNP 9973	WDN
D737	SNP 3409	WDN
D1452	SNP 7517	WDE

For the records selected, the data recorded appeared adequate except the word "daily" was written in the blank space for calibration due date.

The NRC inspector examined the "Megger Daily Calibration Log" sheet and noted that the inspector of record for the five data sheets previously reviewed had not signed the log. Upon questioning, the QC inspector stated that he thought the word "daily" entered on the rereeling sheet was sufficient and that he was not required to sign the log. The QC inspector stated that the megger used was calibration checked daily.

Findings

Based on review of QC records and discussions with licensee personnel, the NRC inspector concludes that meggering was done and, therefore, the concern could not be substantiated. However, failure to have signed the "Megger Daily Calibration Log" required by Appendix A of procedure CP-P4 is an apparent violation. This violation is identified as 327, 328/84-33-02, Failure to document calibration of megger.