UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report No. 50-280/80-31

Licensee: Virginia Electric and Power Company
Richmond, VA 23261

Facility Name: Surry

Docket No. 50-280

License No. DPR-32

Inspection at Stone & Webster Engineering Corporation, Boston Mass.

Inspector: R. M. Compton 9/8/80
R. M. Compton Date Signed

Accompanying Personnel: J. R. Costello, Inspector, Vendor Inspection Branch, RIV
R. K. Herr, Investigator, RIV

Approved by: A R Herdt 9/8/80
A. R. Herdt, Section Chief, RCES Branch Date Signed

SUMMARY

Inspection on August 5-6, 1980

Areas Inspected

This special, announced inspection involved 10 inspector-hours onsite in the areas of licensee actions on previous inspection findings.

Results

One item of noncompliance was identified (Infraction - improper pipe support installation and inspection - Paragraph 3).

DETAILS

1. Persons Contacted

Licensee Employees

J. L. Wilson, Station Manager
*T. A. Peebles, Technical Services Superintendent
*R. K. MacManus, Associate Engineer

Other Organizations

H. W. Durkin, Project Engineer, Stone & Webster Engineering Corp (S&W)
A. Banerjee, Assistant Project Engineer, S&W
J. W. Kelly, QA Program Administrator, S&W

*Attended exit interview

2. Exit interview

The inspection scope and findings were summarized on August 6, 1980 with those persons indicated in Paragraph 1 above and on August 12, 1980 with J. L. Wilson, Station Manager.

3. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item 280/80-22-01: Timely evaluation and reporting of nonconformances identified by IEB 79-14. During an inspection of Vepco at Stone & Webster (S&W) during June 16-18, 1980 it was noted that, for stress problem 3033, over two months had elapsed between the initial identification of a potential overstress condition and the notification of Vepco that a nonconformance existed. IE Bulletin 79-14 specifies that the licensee should assure that he is promptly notified when the Architect/Engineer identifies a nonconformance and that the significance of nonconformances with respect to system operability be evaluated by engineering judgement within two days of identification and by analysis within 30 days. Because the handling of problem 3033 did not appear to meet the intent of the Bulletin, Vepco and S&W agreed to evaluate the situation and provide more details about the timeliness of S&W's evaluation, analysis and notification of Vepco.

During this inspection the Vepco and S&W programs for IEB 79-14 were discussed with responsible individuals. The progress of stress problem 3033 was reviewed in detail, including the results, request for generation of hardware modifications, support modification packages and the nonconformance/overstress notification form. All available personnel involved with this stress problem were interviewed as to their qualifications, responsibilities and the actions taken.

The last computer run recorded in the log for this problem was dated December 1, 1979. S&W indicated that additional runs could have been made in the interim between December 1, 1979 and February 19, 1980 when Vepco was informed of the overstresses. However, they could provide no evidence of any action during this time. One analysis was made on February 19, 1980 at the request of Vepco, after their notification.

Stress problems 3028 and 3015 were briefly reviewed and had similar identification, evaluation and notification time frames, but had apparently less significant nonconformances.

The licensee indicated several conditions that contributed to the delays in evaluation and notification of nonconformances. The original design records for Surry were inadequate or nonexistent so that the standard comparison procedure outlined in the bulletin was not directly applicable. Therefore, the as-built condition of all systems was documented on drawings from which a stress analysis was performed. Additional, more refined and accurate analyses were performed when possible to reduce any indicated high stresses. These additional analyses took more time but many initial overstress indications were eliminated. Secondly, in order to expedite completion of the total IEB 79-14 work effort, all the as-builts were initially analyzed prior to any detailed evaluation of the results. Thirdly, there is an overall shortage of qualified stress analysis personnel due to the impact of Bulletins 79-02 and 79-14 on industry resources.

Regardless of the above stated conditions, the efforts by Vepco and S&W are considered inadequate. S&W procedure STF-3, through Revision 1, "Procedure for the Evaluation of Stress and Reporting of Over Allowable Stress for IE Bulletins 79-14, 79-02 and Show Cause Efforts did not specify any time limits for stress problem review or reanalysis nor did it address the two day initial engineering judgement or the 30 day analytical engineering evaluation specified in IEB 79-14. S&W correspondence to Vepco in February 1980 stated that the evaluation and analysis times specified in the Bulletin were not being met and that this should be identified to the NRC. Vepco's reply incorrectly indicated that the actions being taken had been adequately presented in prior correspondence with the NRC.

The maximum stresses indicated by the December 1, 1979 analysis were very high; exceeding the material's ultimate strength. However no attempt was made to screen stress problems after their initial analysis to give priority to the potentially most significant problems.

Vepco, in letter serial number 972 dated November 28, 1979 to NRR, indicated that support modifications would be "designed based on preliminary evaluations while analyses continued to conclusion"; stating that this parallel approach results in the most expeditious upgrading of systems. However, for problem 3033 the four very simple support modification designs were not signed by the designer until February 14, 1980, over two months after preliminary analysis showed significant overstresses.

The procedures for accomplishing IEB 79-14 failed to provide for the timely evaluation, analysis and licensee notification of identified nonconformances.

Unresolved Item 280/80-22-01 is being upgraded to an infraction and will be identified as 280/80-31-01.

The NRC RIV Vendor Inspection Branch will examine the actions taken by S&W on this matter for other facilities.

4. Unresolved Items

Unresolved items were not identified during this inspection.