



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

Report Nos.: 50-338/89-32 and 50-339/89-32

Licensee: Virginia Electric and Power Company
Glen Allen, VA 23060

Docket Nos.: 50-338 and 50-339

License Nos.: NPF-4 and NPF-7

Facility Name: North Anna 1 and 2

Inspection Conducted: December 6-8, 1989

Inspector: J. J. Lefebvre
J. J. Lefebvre

1/5/90
Date Signed

Approved by: G. A. Belisle for
G. A. Belisle, Chief
Test Programs Section
Engineering Branch
Division of Reactor Safety

1-5-90
Date Signed

SUMMARY

Scope:

This routine, unannounced inspection was conducted in the areas of the snubber surveillance program and follow-up on IE Bulletin 80-11, Masonry Wall Design.

Results:

In the areas inspected, violations or deviations were not identified. The licensee's responsiveness to IEB 80-11 was adequate.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

G. Bischof, Civil Engineering Supervisor
*M. Bowling, Assistant Station Manager
G. Flowers, Site Engineering Supervisor
P. Kemp, Supervisor, Licensing
G. Swann, Senior Engineering Technician

Other licensee employees contacted during this inspection included two engineers, four technicians, and administrative personnel.

*Attended exit interview

2. Snubber Surveillance Program (70370) (Unit 1)

The inspector accompanied licensee engineers and observed visual inspection of approximately 50 safety-related snubbers installed on various piping systems in the Unit 1 containment building. The inspector verified that snubbers were not damaged, that attachments to the piping and support structure were secure, that fluid levels in reservoirs was above the target level, and that there was no leakage from fluid connections. The visual inspections were conducted in accordance with procedure number 1-PT-79.2, Hydraulic Snubbers Not Accessible for Visual Inspection During Reactor Operations; North Anna Power Station Inservice Inspection Manual, Procedure ISI-3.0; and Technical Specification 3/4.7.10. No discrepancies were noted during the inspection.

Within the areas inspected, no deviations or violations were identified.

3. (Closed) IE Bulletin 80-11, Masonry Wall Design (25537, 92701)

a. Background

The licensee responded to IE Bulletin 80-11 in letters to the NRC dated July 7, October 24, and November 3, 1980. The July 7 letter contained the licensee's 60-day response to the bulletin. In the October 24 letter, the licensee requested an extension until July 31, 1981, to complete the masonry wall reevaluation program. The November 3 letter provided an interim report and a summary of the design criteria used in the masonry wall evaluation program. The licensee submitted an estimated schedule for competing the reevaluation program in a letter to the NRC dated December 26, 1980, and interim progress reports in letters dated April 15 and June 15, 1981.

On August 20, 1981, the licensee submitted Licensee Event Report 81-062 which notified the NRC that 15 masonry walls in the fuel handling building did not meet seismic design requirements. The licensee provided the results of the masonry wall reevaluation program and a final report on IEB 80-11 to NRC in a letter dated September 14, 1981. Additional reports concerning LER 81-062 were submitted to the NRC in letters dated September 2, 1981, and July 20, 1983. Masonry walls were designated by the licensee to be either Class I, a wall with a significant amount of safety-related equipment in its proximity; Class II, a wall with a limited amount of safety-related equipment in its proximity; or Class III, a wall with no safety-related equipment in its proximity. The results of the masonry wall reevaluation program showed that 37 walls were acceptable, two walls were acceptable after equipment was removed from the walls, 16 walls were modified, and the 15 walls reported in LER 81-062 were not acceptable. In letters dated July 15, 1982, and November 14, 1984, to the NRC Office of Nuclear Reactor Regulation (NRR), the licensee responded to requests for additional information concerning masonry wall design. Based on the information provided in the letters listed above, NRR issued a Safety Evaluation Report dated August 12, 1988, which accepted the licensee's design methodology used to qualify the majority of the masonry walls, with the exception of an item concerning boundary conditions and the assumptions used in the licensee's evaluation of walls analyzed as free standing cantilevers.

In order to resolve the acceptability of the licensee's analysis for walls which were evaluated as cantilevers, the licensee provided additional information to NRR in letters dated April 7, and May 12, 1989, which listed the walls analyzed as cantilevers walls, identified the conservatisms in the analysis associated with these walls, and stated the results of a walkdown the licensee conducted to confirm the actual boundary conditions related to these walls. Members of the NRR staff visited the North Anna site on July 19, 1989, and confirmed the data and conditions provided in these letters. NRR issued a Safety Evaluation Report on September 7, 1989, which accepted the licensee's design method regarding cantilevers walls.

b. Inspection of Modifications to Masonry Walls

The inspector examined structural modifications to selected masonry walls which were installed to reinforce the walls so that they would not be overstressed during the design basis earthquake. These modifications were installed under Design Change Packages (DCP) 80-559A through 80-559J. The inspector examined the records, documents, and Quality Control (QC) inspection results of installed modifications (structural supports) on the masonry walls. Records examined included those documenting inspection of welds and concrete expansion anchors, material certification records, and nonconformance

reports. The inspector examined the quality records associated with DCPs 80-559N and 80-559P. These DCPs were initiated to relocate safety-related cables from the proximity of non-seismic Class III walls. Records examined included cable installation records and post modification test results. The inspector also examined DCPs 83-07 which was implemented to replace the fuel building masonry walls with sheet metal blow off panels. The walls were removed to resolve the problem regarding the 15 unacceptable walls reported in LER 81-062.

The inspector examined the modifications (structural supports) installed on wall numbers SB-254-6 and SB 271-1, and verified that the walls had been installed in accordance with the details shown on the design drawings, or that deviations from the design requirements were addressed as approved variation notices. The inspector compared the installed modifications with those shown on the following "as built" drawings:

- (1) Drawing No. 13075-CS-5F, 5G, 5H, and 5J, Service Building Block Wall Support; Wall No. 5B-254-6, Sheets 1 and 2, and Details, Sheets 1 and 2
- (2) Drawing No. 13075-CS-5L and 5M, Service Building Block Wall Supports, Wall No. 5B-271-1, Sheets 1 and 2

No discrepancies were identified. Modifications to other masonry walls were examined during an inspection documented in NRC Inspection Report Numbers 50-338,399/82-06. The inspector noted during the current inspection that wall numbers 5B-254-1 and 5B-254-5, which were previously modified by addition of supports, had been removed. Approval for the removals was completed under Engineering Work Request (EWR) 87-070C.

c. Review of Licensee's Program to Control Modifications to Masonry Walls

The inspector examined the licensee's program for control of modifications to block walls. Procedure NDCM STD GN-001, Instruction for DCP Preparation, includes a precaution that no equipment and/or components may be attached to a Class I or II wall unless specified, and that no safety-related equipment and/or components may be attached to or located in the collapse envelop of any Class III block wall. Design Procedure, Civil Engineering STD-CEN-0040, provides directions not to install safety-related equipment within the collapse envelop of any Class III wall, and that any attachments to Classes I or II walls are to be approved by Engineering.

Site Administrative Procedures 3.5, Engineering Control of Equipment Attaching to, Penetrating, and in Close Proximity of Masonry Block Walls; and 3.6, Control of Drilling, Digging and Cutting, address modifications to block walls which may affect the IEB 80-11 design evaluation.

d. Conclusions

Based on review of the licensee's actions to complete IEB 80-11 during an inspection documented in NRC Inspection Report Numbers 50-338,339/82-06, and review and acceptance of the licensee's design evaluation methodology, the inspector concluded that the licensee has complied with the requirements of IE Bulletin 80-11.

Within the areas inspected, no violations or deviations were identified.

4. Exit Interview

The inspection scope and results were summarized on December 19, 1989, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.