U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-315/82-02; 50-316/82-02

Docket No. 50-315; 50-316

License No. DPR-58; DPR-74

Licensee: American Electric Power Service Corporation Indiana & Michigan Power Company 2 Broadway New York, NY 10004

Facility Name: Donald C. Cook Nuclear Power Plant, Units 1 and 2

Inspection At: Donald C. Cook Site, Bridgman, MI

Inspection Conducted: January 19, 1982

Inspector: J. F. Norton

2/11/82

Approved By: & C. C. Williams, Chief Plant Systems Section

Inspection Summary

Inspection on January 19, 1982 (Report No. 50-315/82-02; 50-316/82-02) Areas Inspected: Licensee action relative to Bulletin No. 80-11, "Masonry Wall Design". The inspection involved a total of 8 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

DETAILS

Persons Contacted

Indiana and Michigan Power Company (I&M)

*W. G. Smith, Jr., Plant Manager
*E. L. Townley, Assistant Plant Manager
*J. F. Steitzel, Quality Assurance Supervisor
*G. W. Griffin, Quality Assurance Auditor
R. Rach, Maintenance Performance Engineer
R. A. Blyth. Plant Operations, Assistant Shift Supervisor

American Electric Power Service Corporation (AEPSC)

*H. L. Alexander, Staff Engineer - Structural Design *B. K. Wu, Mechanical Design Engineer *J. DeCastro-Palomino, Electrical Design Engineer

Nuclear Regulatory Commission

*E. R. Swanson, Senior Resident Inspector N. DuBry, Resident Inspector

Functional or Program Areas Inspected

The licensee's action on IE Bulletin No. 80-11, "Masonry Wall Design", was reviewed. Licensee responsibilities include identifying all masonry walls supporting or proximate to safety-related hardware attachments, equipment, and/or systems, describing the safety-related components, and re-evaluating the structural integrity of the walls under certain postulated loading conditions. Also, operability of jeopardized safety-related systems are to meet the applicable technical specification action statement.

The primary purpose of this inspection was to verify completeness and thoroughness of the wall and equipment survey and determine if requirements are addressed commensurate with the spirit and intent of the Bulletin.

1. General

Bulletin 80-11 was issued in May, 1980. The Bulletin provides details of the specific items required, some of which are briefed in paragraphs a. through j. following:

a. (Bulletin Item 1) "Identify all masonry walls in proximity to or having attached safety-related components, equipment, and/or systems. Describe the systems and equipment, both safety-related and non safety-related associated with these walls".

- b. (Item 2) "Re-evaluate design adequacy and structural integrity under all postulated load combinations."
- c. (Item 2a) "Establish a prioritized program for the re-evaluation."
- d. (Item 2bi) "Submit a written report describing in detail the configurations and functions of the walls, the types and strengths of construction materials, reinforcement details, and any other pertinent factors affecting their structural integrity."
- e. (Item 2bii) "Describe the practices employed in the construction of the walls."
- f. (Item 2biii) "Provide detailed justification for all criteria applied, referencing analysis methodologies, codes, and test data."
- g. (Item 2biii(a) "Evaluate all postulated loads and load combinations in the re-evaluation review."
- h. (Item 2biii(b) "Evaluate the mechanism for load transfer into the masonry walls and postulated failure modes."
- i. (Item 3) "If appropriate acceptance criteria is non-existent, establish a confirmatory test program or establish conservative assumptions to justify re-evaluation acceptance criteria."
- j. (Item 4) "In the re-evaluation, determine the impact on operability on any jeopardized safety-related system."

The information required in paragraphs b. and in f. through i. will be evaluated by the Franklin Research Center (FRC), Philadelphia. FRC has been retained by the Structural Engineering Branch of NRR to perform the technical evaluation of licensee's re-analyses. FRC will issue an Interim Technical Evaluation Report (ITER), then a final TER. FRC's current scheduling proposes June 17, 1982 and September 9, 1982 for completion of the ITER and TER, respectively, for D. C. Cook Units 1 and 2.

2. Identification of Walls and Description of Equipment and Systems

In surveying and evaluating masonry walls at D. C. Cook, the licensee has determined the following:

a.	Total No. of masonry walls in class I areas	144
b.	Total No. of "safety-related" walls	123
с.	Total No. of "non-safety related" walls	21
d.	Total No. of walls recently constructed and designed to	
	meet all postulated loads including those of IE Bulletin	
	80-11	6
e.	Total No. of safety-related walls re-analyzed	117
f.	Total No. of safety-related walls requiring modification	34

g. Total No. of safety-related walls not requiring modification 89
h. Total No. of safety-related walls modified 34

The Region III inspector randomly selected and individually examined 14 walls. Modifications had been accomplished on 7 of these walls. Detailed review of each wall was accomplished to assure that penetrations, loading points, attachments, and other considerations potentially impacting structural integrity and safety were appropriately identified on the survey drawings. Also, modifications were observed to verify congruence with design. No conflicting discrepancies were identified between actual wall conditions and the drawings.

3. Prioritized Program for Re-Evaluation

The order of priority established for the re-evaluation of the walls was:

- a. Analyze all safety-related block walls for seismic adequacy considering Operating Basis Earthquake (OBE) and Design Basis Earthquake (DBE). (The DBE is currently termed the Safe Shutdown Earthquake or SSE).
- b. Analyze all safety-related block walls for response to potential jet forces from High Energy Lines if the direction of the jet would be to fail the wall or a segment of the wall in the direction of any safety related equipment.
- c. Analyze all safety-related block walls for integrity to resist missile impact if the direction of the impacting force is such that it could potentially fail a wall or wall segment in the direction of a safety-related item.

The Region III inspector and AEPSC engineers discussed the loading conditions which were analyzed, specifically whether the loads encountered during normal plant operations were added to SSE loads in the analysis. AEPSC stated that these loading conditions were considered.

4. Details of Wall Configurations, Functions, and Construction Details

The licensee has presented information in their IEB 80-11 responses cross referencing wall configurations to drawings. Wall functions, details of construction materials and methods, and reinforcing details are not addressed in the responses.

5. Construction Practices Employed In Wall Construction

Licensee responses have not addressed the construction practices employed in constructing the walls.

6. Operability of Jeopardized Safety-Related Systems

The licensee responses alluded to but did not specifically address operability. This is not currently a safety concern, however, because modifications have been accomplished on walls which were calculated as potentially overstressed in the re-evaluation.

7. Review of Responses

Discussion was held regarding licensee responses relative to IEB 80-11. Four response letters were submitted dated July 10, 1980, January 14, 1981, March 20, 1981 and October 30, 1981. The Region III inspector emphasized the need of a report to draw all current data together for review and record, and to furnish required information not addressed in the above mentioned responses (alluded to in paragraphs 4 and 5).

The preparation of the report is required before Bulletin 80-11 can be closed.

Expeditious preparation of the report is exigent for FRC schedules to be realized.

Exit Meeting

The inspector met with licensee representatives (denoted under Persons Contacted) and conducted an exit meeting at the conclusion of the inspection on January 19, 1982. The inspector summarized the details and findings of the inspection, which were acknowledged by the licensee.