Distribution

Docket Nos. 50-250
and 50-251

September 1, 1983

Licensee: Florida Power and Light Company

Facility: Turkey Point Plant Units 3 and 4

Summary of Site Visit and Meeting Held with Florida Power and Light Company August 16, 18 and 19, 1983 Regarding Masonry Wall Design.

Introduction

By letter dated April 26, 1983, the NRC staff requested a site visit to observe and examine the masonry walls in conjunction with the IEB 80-11 reviews and a meeting be arranged to allow for a detailed audit of the calculations and analysis used for masonry wall qualification. The site visit was held on August 16, 1983, at Florida Power and Light Company's (FPL) Turkey Point Plant. The attendees are identified in Enclosure 1 and the agenda provided in Enclosure 2.

Subsequent to the site visit, meetings were held on August 18 and 19, 1983, at the Gaithersburg offices of Bechtel Power Corporation to perform a detailed audit of the calculations and analysis used to qualify several walls identified during the site visit. The attendees are identified in Enclosure 3.

Summary of Site Visit

Members of the NRC staff and their consultants, Franklin Research Center and Drexell University, met with members of FPL's staff and their representatives at the Turkey Point Plant Site. The objectives of the site visit were to observe and examine the masonry block walls in conjunction with IEB 80-11 review and discuss additional details of the masonry wall qualification. The primary concerns with regard to the masonry wall construction were:

- Construction deficiences identified in the Licensee Event Report dated April 19, 1983.
- Ongoing repair activities to dispose of the deficiencies
- Observe field conditions such as boundries, attachments, openings, etc.

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SURNAME	D.M.S. Lowe	D.N. Chorsh					
DATE	9/1/83	9/1/83					

In addition to the plant walk down, details were discussed relating to the masonry walls as identified in the agenda (Enclosure 2). At the conclusion of the plant tour and discussions, several walls were identified for detailed calculation reviews at subsequent meetings to be held on August 18 and 19, 1983, at the Gaithersburg offices of Bechtel Power Corporation.

Summary of August 18 and 19 meetings

Members of the NRC staff and their consultants met with the licensee and their representatives at the Gaithersburg offices of Bechtel Power Corporation. As previously stated, the purpose of the meetings was to review detailed calculations and to discuss the reevaluation criteria including arching action theory. The following identifies the major activities and observations of the staff:

- The plant contains approximately 97 safety-related masonry walls of which approximately 47 have been qualified using the arching action theory. The remaining walls have been qualified using working stress design method, These walls are/will be fully grouted and vertically reinforced.

- The staff was informed that the walls qualified using the working stress design method will not exceed the staff's allowable stresses. The tensile capacity of the masonry is not relied upon to resist loads (as noted above these walls are reinforced) and the shear stresses are not the governing factors.

- The "BLOCKWALL" program, used by the licensee to evaluate the masonry walls, conservatively assigns the spectral peak acceleration value at all frequencies which are less than the frequency at which the peak occurs in a given floor response spectra.

- The maximum in-plane strain occurs for one wall, No. T-31-6, for the Safe Shutdown Earthquake (SSE) condition. The value of this stress is 3.03×10^{-5}. The staff will use this information to judge the adequacy of the licensee's in-plane strain criterion.

- The calculations for three walls qualified using the arching action theory were reviewed. The calculated stresses in these walls were quite low and could be shown to meet the staff's acceptance criteria for unreinforced walls based on working stress design method. However, the staff was informed that this may not apply in all cases. In addition, some of the walls qualified by arching action theory are in high radiation areas.

The staff identified nine items requiring additional information. A formal request for additional information will be sent to the licensee. Upon satisfactory response, the staff can issue a safety evaluation report (SER).

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accepting the walls qualified by the working stress method. The SER will contain a staff position on the use of arching action theory.

The licensee and their representatives were well prepared for the site visit and meetings. The staff and their consultants were extended excellent cooperation which provided productive results. The staff gained valuable insight regarding the masonry wall construction, repair activities and design procedures used for the Turkey Point Plant masonry wall construction.

Daniel G. McDonald, Project Manager
Operating Reactors Branch No. 1
Division of Licensing

Enclosures:
1. Attendees - Site Visit
2. Agenda - Site Visit
3. Attendees - August 18 and 19 meeting

cc w/enclosures:
See next page

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DATE	9/ 1/83	9/ /83	9/ /83				

MEETING SUMMARY DISTRIBUTION
OPERATING REACTORS BRANCH NO. 1

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Enclosure 1

Masonry Walls Meeting
and Site Visit - Turkey Point Units 3 and 4

August 16, 1983

Name	Organization
D. McDonald	NRC/DL/ORB No. 1
N. Chokshi	NRC
D. Jeng	NRC
V. Con	FRC
H. Harris	Drexel University
S. Verduci	FPL
G. Kelter	FPL
R. Gill	FPL
T. Essinger	FPL
D. Grandage	FPL
K. Green	Bechtel

Enclosure 2

MASONRY WALLS

Meeting Agenda

for

August 16, 1983

9:00 a.m.

I. Identification of Non-Conformances
- Discovery
- NRC Notification
- Initial Action Taken
- Results of Initial Inspection
- Expanded Scope of Instruction
- Results of Expanded Inspection
- I&E Findings
- Repair Methods/Schedule

II. Original Construction
- Documentation Presently Available
- Design Assumptions
- Testing Program

III. IE Bulletin 80-11 "Masonry Walls"
- Overview of Bulletin & FPL Response
- Impact of Non-Conformance on 80-11 Submittals
- Necessity of Supplementing 80-11 Responses

IV. Questions & Responses

V. Plant Tour

Enclosure 3

Masonry Walls Meeting
Florida Power and Light Company
Bechtel Power Corporation Offices-Gaithersburg

August 18 and 19, 1983

Name	Organization
D. McDonald	NRC/DL/ORB No. 1
N. Chokshi	NRC
D. Jeng	NRC
V. Con	FRC
A. Hamid	Drexel University
G. Ketter	FPL
R. Gill	FPL
K. Green	Bechtel
P. Carrato	Bechtel
T. Wilk	Bechtel
K. Ekrek	Bechtel