

SEP 5 1984

ocket No.: 50-382

Applicant: Louisiana Power and Light Company

Facility: Waterford 3

Subject: Meeting Summary for 10/26/83 Meeting with LP&L to Discuss  
Foundation Basemat at Waterford

A meeting was held at 9:00 am on October 26, 1983 in Room 1713 of the Maryland National Bank Building in Bethesda, Maryland. The purpose of the meeting between the US NRC staff and staff and consultants from Louisiana Power and Light Company (LP&L) was to discuss the safety significance of the observed cracks and water seepage in the foundation basemat at Waterford Steam Electric Station, Unit 3. The list of attendees for the meeting is shown on Attachment I.

Discussions at the meeting revolved around the manner in which the applicant would respond to the 10 questions from the staff which were transmitted by letter dated October 17, 1983 (Attachment II).

At the conclusion of the meeting, LP&L committed to submit formal responses to the staff's 10 questions within one week after the meeting.

Issuance of this summary at this time is to correct an administrative oversight, thus maintaining an appropriate record.

**ORIGINAL SIGNED BY**

James H. Wilson, Project Manager  
Licensing Branch No. 3  
Division of Licensing

Enclosure: As stated

cc: See next page

DL:LB#3 JW Wilson/yt 9/5/84  
DL:LB#3 GK Knighton 9/5/84

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A PDR



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

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Issuance of this summary at this time is to correct an administrative oversight, thus maintaining an appropriate record.

A handwritten signature in cursive script that reads "James H. Wilson".

James H. Wilson, Project Manager  
Licensing Branch No. 3  
Division of Licensing

Enclosure: As stated

cc: See next page

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Carole H. Burstein, Esq.  
445 Walnut Street  
New Orleans, Louisiana 70118

Attachment I

List of Attendees - October 26, 1983 Meeting; Bethesda, Maryland

NRC

J. Wilson  
J. Ma  
S. Chan  
R. Pichumani  
M. Peranich  
G. Lear  
S. Turk

LP&L

K. Cook  
R. Burski

EBASCO

J. Ehasz  
J. Costello  
A. Wern  
P. Liu  
S. Prussman

HEA

G. Harstead

OCT 17 1983

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Docket No.: 50-382

Mr. R. S. Leddick  
Senior Vice President - Nuclear Operations  
Louisiana Power & Light Company  
Post Office Box 8008  
142 Delaronde Street  
New Orleans, Louisiana 70174

Dear Mr. Leddick:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION CONCERNING CONCRETE  
MAT CRACKING AND WATER SEEPAGE ISSUES AT WATERFORD 3

- References:
1. Memo to D. Eisenhut, et al, from E. Christenbury, dated September 22, 1983, subject: "Waterford 3 Report on Water Seepage and Concrete Cracking" with enclosures.
  2. Memo to Commissioners from D. Eisenhut, dated September 15, 1983, subject: "Inspection and Enforcement Inquiry Team Report on Waterford QA Allegations (Board Notification No. 83-133)".
  3. Applicant's Answer to Joint Intervenor's Motion to Reopen Contention, dated September 30, 1983.
  4. Letter to R. C. DeYoung from J. M. Cain of Louisiana Power and Light, dated September 29, 1983

We have reviewed the above references and found that additional information is needed before we can continue our review. Dr. John Ma of Structural Engineering Sector A, and Dr. Raman Pichumani of Geotechnical Engineering Section, Structural and Geotechnical Engineering Branch are performing the review and have prepared the following questions.

The source of the water which is seeping to the top of the mat is believed to be ground water, but the path of seeping water has not been determined.

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Unless it can be shown that the ground water is seeping through vertical construction joints to the top of the mat, it is reasonable to assume that either vertical through cracks have occurred or localized porous zones exist, or both. Vertical through cracks are undesirable, especially if the mat was designed without shear reinforcement. Whether localized porous zones would affect the structural integrity of the mat depends on the size, location, and degree of porosity of these porous zones. We would like LP&L to address the adequacy of analysis and design of the mat and the effect of possible porous zones on the structural integrity of the mat.

In addition to addressing the above issues, LP&L should also provide answers to the following questions:

1. Was the mat treated as a one dimensional beam or two dimensional plate in structural analysis?
2. How were the shear and bending moment (flexure) diagrams of the mat obtained for proportioning the depth of the mat and the area of reinforcing bars?
3. State the causes of the convex shape of the mat prior to the placement of the containment vessel fill concrete.
4. Figure 2.5-117, Composite Foundation Mat Settlement, indicating the mat settlement in the N-S direction from 1975 to 1980, does not indicate a convex shape for the mat. Was the convex shape observed only in the E-W direction?
5. Figure 2.5-117 indicates a concave shape for the mat, but figure 2.5-118 indicates a convex shape for the mat. Clarify the apparent inconsistency between these two figures.
6. Furnish the settlement data for the mat from 1981 to present.
7. Describe the procedures used to determine the subgrade modulus for mat design; how were the effects of the heave (which was larger than estimated) accounted for in determining the subgrade modulus?
8. Was a waterproofing membrane placed around all the exterior faces of the mat?
9. Are the seepage zones in close proximity to vertical construction joints?

10. Were waterstops placed in the vertical construction joints and, if so, where?

We request that this information be provided by October 28, 1983. If you have any questions concerning this request, contact the Project Manager, J. Wilson on (301)492-7702.

Sincerely,

Original signed by:  
George W. Knighton

George W. Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing

cc: See next page

DL:LB 3  
JWilson/yt  
10/14/83

DE: 11  
GLear  
10/14/83

DE: 11  
GWKnighton  
10/17/83

WATERFORD

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MEETING SUMMARY DISTRIBUTION

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LB3 Reading

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S. Chan

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M. Peranich

G. Lear

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bcc: Applicant & Service List