JUN 8 1976

DOCKET NOS: 50-322, 50-352 & 50-353, 50-358, 50-367, 50-373 & 50-374, 50-387 & 50-388, 50-397, 50-410

APPLICANTS: Long Island Lighting Co., Philadelphia Electric, Cincinnati Gas and Electric Co., Northern Indiana Public Service Co., Commonwealth Edison, Pennsylvania Power and Light Co., Washington Public Power Supply System and Niagara Mohawk Power Corporation

FACILITIES: Shoreham Nuclear Power Station Unit No. 1, Limerick Generating Station Units No. 1 and No. 2, William H. Zimmer Nuclear Power Station, Unit 1, Bailly Generating Station Nuclear 1, LaSalle County Station Units No. 1 and No. 2, Susquehanna Steam Electric Station Units No. 1 and No. 2, WPPSS Nuclear Project No. 2, Nine Mile Point Nuclear Station Unit No. 2

SUMMARY OF MEETING HELD ON APRIL 29, 1976 WITH MARK II OWNERS

On November 5, 1975, the General Electric Company submitted, for the Mark II owners group, a design basis document designated as "Mark II Containment Dynamic Forcing Function Information Report (DFFR)", NEDO 21061 and NEDE 21061P. Subsequently each of the Mark II owners submitted a plant specific report. The NRC staff during their preliminary review of the DFFR and the various plant specific reports found that there was a considerable variation in the manner in which the DFFR was applied by each Mark II owner in his plant specific evaluation. A meeting was held on April 29, 1976, between representatives of the Mark II owners, their architect engineers, the General Electric Company and the NRC staff to determine whether a common basis for loads and margins could be included in the DFFR so that the document could be reviewed to a much greater extent on a generic basis, applicable to all Mark II containments. In addition the status and schedule of the Mark II Pool Dynamic Loading Program were discussed. The attendees list, the meeting agenda, and copies of some of the slides used in the presentation made at the meeting are enclosed. The remainder of the slides are available in my office.

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The following principal topics were discussed.

1. Dynamic Forcing Function Information Report - DFFR

The DFFR was issued in September 1975. Revision No. 1 consisting of errata and editorial changes was submitted in April 1976. The DFFR was intended to provide bounding load methodology for use by the Mark II owners. However, it was not mandatory that all the Mark II owners follow the DFFR nor would all the owners make a commitment to follow the DFFR completely.

2. Supporting Program

Parallel with the preparation of the DFFR, the Mark II owners sponsored a test and analysis support program (see enclosure). The purpose of the program is to provide test information to support the DFFR and to refine the analytical techniques in the DFFR. A document providing more details on the supporting program will be supplied by the end of May.

3. "4T" Pool Swell Tests

The 4T tests which are part of the supporting program are in progress. Phase I testing was completed and the test report will be provided by the end of May. GE stated that the test results confirm the DFFR load methodology except that a condensation load on the wall was measured. The DFFR indicates that this load is not significant.

4. Electric Power Research Institute (EPRI) Tests

EPRI is conducting multi-downcomer tests on a scale model. The purpose of the test is to provide motion pictures of the pool swell during blowdown through more than one downcomer. The motion pictures are expected to be available in May.

5. FSAR Schedule

The Mark II owners provided the following dates by when they expect to submit their FSAR; (a) LaSalle County Station Unit No. 1 and No. 2 - August 1976, (b) WPPSS Nuclear Project No. 2 - late July 1976, (c) Limerick Generating Station Units No. 1 and No. 2 - December 1977, (d) Susquehanna Steam Electric Station Units No. 1 and No. 2 - First Quarter 1978, and (e) Nine Mile Point Nuclear Plant No. 2 - 1978-1979.

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Summary

The intent of the April 29 meeting was to determine whether a common basis for loads and margin could be included in the DFFR so that it could be reviewed to a much greater extent on a generic basis applicable to all Mark II containments. However, the various Mark II owners held that the design differences between the various Mark II containments make any further significant review on a generic basis impractical and therefore wished to proceed on an individual plant basis. We indicated we could follow this approach and will proceed to review each Mark II containment on an individual basis. We also stated that for this approach each containment will be reviewed during the operating license review phase for that specific plant.

Original signed by

Sydney Miner, Project Manager
Light Water Reactors Branch 4
Division of Project Management

Enclosures:
1. The Attendance List
2. Agenda
3. Copies of Slides

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DATE ➤	6/7/76	6/7/76				

ENCLOSURE 1

MARK II
CONTAINMENT MEETING
APRIL 29, 1976

ATTENDANCE LIST

NRC

Sydney Miner
Clifford Anderson
T. M. Su
Andrew Bates
F. Schauer
A. Bournia
W. R. Butler
W. F. Kane
R. Tedesco
P. F. Riehm
M. D. Lynch
J. Snell
C. P. Tan
S. P. Chan
G. Lainas

SARGENT & LUNDY

Ray M. Crawford
B. A. Erler

PECO

R. H. Logue

WPPSS

G. L. Gelhaus

STONE & WEBSTER

W. P. Hennessy
D. J. Alexander
D. J. Heesen
Ron Klause

BECHTEL

E. L. McFarland
H. R. Schmiedel

NUTECH

A. F. Deardorff

CIN GAS & ELEC COMPANY

J. D. Flynn
H. C. Brinkmann

LILCO

Joseph P. Novarro
H. Chau

GE

Dana C. Ditmore
L. H. Frauenholz
R. E. Schaffstall
A. R. Smith

CECo

Brent Shelton

NMPC

S. F. Manno

PP&L

W. E. Barberich
W. J. Rhoades

BURNS & ROE

Don Baker
Bedros Bedrosian

NIPSCO

J. W. Dunn

4/27/76

ENCLOSURE 2

MARK II POOL DYNAMIC LOAD STATUS REPORT

NRC/OWNERS GROUP/GE

PROPOSED MEETING AGENDA

NRC AGENDA	AGENDA ITEM	
I	I	Schedule for the Mark II Owners Group Pool Dynamic Load Program
II & III F	II	Status of the Mark II Owners Group Pool Dynamic Load Program
	A	Overview of Phenomena Investigated
	B	Summary of Analytical Results and Documentation
	C	Summary of Test Results and Documentation
	D	Future Analysis and Tests
	III	Status and Basis of the Dynamic Forcing Function Report (DFFR)
III A,B,C	A	Application of the DFFR to Design Assessment
IV	B	Basis of the DFFR Load Methodology
III E	C	Report Update
III D	IV	Discussion of NRC Questions
V	V	Plant Unique Assessment Report - Summary, Conclusions, and NRC Review Schedule

ENCLOSURE 3

MARK II SUPPORTING PROGRAM STATUS UP-DATE

Program Activity	Activity Type	Targeted Completion Date
A. LOCA Related Activities		
1. "4T" Pool Swell Test Phase I Report Phase II Report	Test	 End of May 1976 September 1976
2. DFFR Pool Swell Velocity Breakthrough Model Confirmation	Analysis	November 1976
3. Impact Tests on Pool Internal Structures (NEDE-13426P & NEDC-20989-2P)	Test	Complete
4. Qualify Impact Model (NEDE-13426P & NEDC-20989-2P)	Analysis	Complete
B. Safety/Relief Valve Related Activities		
1. Relief Valve Pipe Clearing Model for Quencher (Confirmation of Model)	Analysis	May 1977
2. Relief Valve Pipe Clearing Model for Ramshead (NEDO-20942, NEDE-20942P, NEDO-21062 & NEDE-21062P)	Analysis & Test	Complete
3. In-Plant Test of S/R Valve Discharge Loads During Consecutive Actuations (Ramshead)	Test	End 4th Quarter 1976
4. DFFR Relief Valve Consecutive Actuation Transient Analysis Confirmation	Analysis	Late 2nd Quarter 1977
5. In-Plant Test of S/R Valve Discharge Loads During Consecutive Actuations (Quencher)	Test	September 1977
6. Safety/Relief Valve Steam Discharge Thermal Mixing (Confirmation of Model)	Analysis	End 4th Quarter 1976
C. MARK II Supporting Program Report	Report	End of May 1976

MARK II CONTAINMENT TASK FORCE:

DFFR OBJECTIVES:

1. METHODOLOGY FOR PRELIMINARY DESIGN LOADS
2. JUSTIFICATION CONSISTENT WITH TEST DATA
3. TIMELY RESPONSE TO NRC QUESTIONS

4/28/76

MARK II

CONTAINMENT TASK FORCE

DAR OBJECTIVES:

1. DESIGN ASSESSMENT OF EXISTING PLANT
2. IDENTIFICATION OF DESIGN MODIFICATIONS
3. TIMELY RESPONSE TO NRC QUESTIONS

DAR RESULTS:

1. LOAD DEFINITION
2. EXISTING STRUCTURES ACCOMMODATE DYNAMIC POOL LOADS
3. SOME DESIGN MODIFICATIONS REQUIRED

4/28/76

MARK II

CONTAINMENT TASK FORCE

LOAD METHODOLOGY

OBJECTIVES:

1. COMMON BASIS FOR LOAD IDENTIFICATION
2. COMMON BASIS FOR LOAD COMBINATIONS
3. COMMON BASIS FOR PLANT SPECIFIC LOADS
4. COMMON BASIS FOR STRUCTURAL LOAD FACTORS
5. COMMON BASIS FOR LOAD MARGIN

COMMON DESIGN FEATURES

1. DOWNCOMER LOADS

UNIQUE DESIGN FEATURES

1. SRV DISCHARGE
2. POOL SWELL

DISTRIBUTION

Docket Files
NRC PDR
Local PDR
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R. Denise
D. Skovholt
J. Stolz
K. Kniel
O. Parr
W. Butler
D. Vassallo
R. Clark
T. Speis
P. Collins
C. Heltemes
R. Houston
S. Varga
J. Miller
F. J. Williams
R. Heineman
H. Denton
Project Manager
Attorney, ELD
IE (3)
M. Rushbrook
NRC participants
ACRS (16)
R. Maccary
D. Ross
R. Tedesco
J. Knight
S. Pawlicki
I. Sihweil
P. Check
T. Novak
Z. Rosztoczy
V. Beneroya
G. Lainas
T. Ippolito
V. Moore
R. Vollmer
M. Ernst
W. Gammill
G. Knighton
B. Youngblood
W. Regan
D. Bunch
J. Collins
W. Kreger
R. Ballard
M. Spangler
J. Stepp
L. Hulman

Long Island Lighting Company
ATTN: Andrew W. Wofford
Vice President
175 East Old Country Road
Hicksville, New York 11801

Edward M. Barrett, Esq.
General Counsel
Long Island Lighting Company
250 Old Country Road
Mineola, New York 11501

Edward J. Walsh, Esq.
General Attorney
Long Island Lighting Company
250 Old Country Road
Mineola, New York 11501

Mr. Thomas Burke
Project Manager
Shoreham Nuclear Power Station
P. O. Box 618
Wading River, New York 11792

Dr. William E. Seymour
Staff Coordinator
New York State Atomic Energy Council
New York State Department of Commerce
99 Washington Street
Albany, New York 12210

Philadelphia Electric Company
ATTN: Edward G. Bauer, Jr.
Vice President & General Counsel
2301 Market Street
Philadelphia, Pennsylvania 19101

Troy B. Conner, Jr., Esq.
Conner & Knotts
1747 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

W. William Anderson, Esq.
Deputy Attorney General
Room 512, Main Capitol Bldg.
Harrisburg, Pennsylvania 17120

Frank R. Clokey, Esq.
Special Assistant Attorney General
Room 219, Towne House Apartments
P. O. Box 2063
Harrisburg, Pennsylvania 17105

Honorable Lawrence Coughlin
House of Representatives
Congress of the United States
Washington, D. C. 20515

Roger B. Reynolds, Jr., Esq.
324 Swede Street
Norristown, Pennsylvania 19401

Willard C. Hetzel, Esq.
312 Main Street
East Greenville, Pennsylvania 18041

Lawrence Sager, Esq.
Sager & Sager Associates
45 High Street
Pottstown, Pennsylvania 19464

Joseph A. Smyth
Assistant County Solicitor
County of Montgomery
Courthouse
Norristown, Pennsylvania 19404

Eugene J. Bradley
Philadelphia Electric Company
Associate General Counsel
2301 Market Street
Philadelphia, Pennsylvania 19101

The Cincinnati Gas and
Electric Company
ATTN: Mr. Earl A. Borgmann
Vice President - Engineering
P. O. Box 960
Cincinnati, Ohio 45201

Troy B. Conner, Jr., Esq.
Conner & Knotts
1747 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Mr. William J. Moran
General Counsel
The Cincinnati Gas and
Electric Company
P. O. Box 960
Cincinnati, Ohio 45201

Mr. William G. Porter, Jr.
Porter, Stanley, Arthur,
and Platt
37 West Broad Street
Columbus, Ohio 43215

Mr. Robert Killen, Chairman
of the Board & Chief
Executive Officer
The Dayton Power and Light Company
P. O. Box 1034
Dayton, Ohio 45401

J. Robert Newlin, Counsel
The Dayton Power and Light Company
P. O. Box 1034
Dayton, Ohio 45401

Clermont County Library
Third and Broadway Streets
Batavia, Ohio 45103

Mr. James D. Flynn, Manager
Licensing and Environmental Affairs
The Cincinnati Gas and Electric Company
P. O. Box 960
Cincinnati, Ohio 45201

Mr. J. P. Fenstermaker
Senior Vice President - Operations
Columbus and Southern Ohio
Electric Company
215 North Front Street
Columbus, Ohio 43215

David B. Fankhauser, PhD
3569 Nine Mile Road
Cincinnati, Ohio 45230

Gary P. Kreider, Esq.
Keating, Muething and Klekamp
18th Floor, Provident Tower
One East Fourth Street
Cincinnati, Ohio 45202

Ms. Mari B. Snell
8801 Brittany Drive
Cincinnati, Ohio 45242

Stephen T. Sonneville, Chairman
Greater Cincinnati Citizens
Solid Waste Project
6628 Afton Avenue
Cincinnati, Ohio 45213

Thomas A. Luebbers, Esq.
Cincinnati City Solicitor
Room 214, City Hall
Cincinnati, Ohio 45202

Mr. Stephen Schumacher
Miami Valley Power Project
P. O. Box 252
Dayton, Ohio 45401

Timothy S. Hogan, Jr., Chairman
Board of Commissioners
50 Market Street Clermont County
Batavia, Ohio 45103

Northern Indiana Public Service Company
ATTN: Mr. H. P. Lyle, Vice President
Electric Production & Engineering
5265 Hohman Avenue
Hammond, Indiana 46325

Meredith Hemphill, Jr., Esq.
Assistant General Counsel
Bethlehem Steel Corporation
Martin Tower
Bethlehem, Pennsylvania 18016

William H. Eichhorn, Esq.
Schroer, Eichhorn & Morrow
5243 Hohman Avenue
Hammond, Indiana 46320

Mr. Edward W. Osann, Jr.
Wolfe, Hubbard, Leydid, Voit & Osann, Ltd.
Suite 4600
One IBM Plaza
Chicago, Illinois 60611

Marvin N. Benn, Esq.
Special Assistant Attorney General
134 North LaSalle Street
Suite 2222
Chicago, Illinois 60602

Robert J. Vollen, Esq.
109 North Dearborn Street
Chicago, Illinois 60602

Commonwealth Edison Company
ATTN: Mr. Byron Lee, Jr.
Vice President
P. O. Box 767
Chicago, Illinois 60690

Richard E. Powell, Esq.
Isham, Lincoln & Beale
One First National Plaza, Suite 4200
Chicago, Illinois 60670

Mr. Brent Shelton, Chairman
Mark II Owners Group
Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Mr. Norman W. Curtis
Vice President - Engineering
& Construction
Pennsylvania Power & Light Company
2 North Ninth Street
Allentown, Pennsylvania 18101

Mr. Earle M. Mead, Project Manager
Pennsylvania Power & Light Company
2 North Ninth Street
Allentown, Pennsylvania 18101

Gerald Charnoff, Esquire
Shaw, Pittman, Potts, Trowbridge
& Madden
Barr Building
910 17th Street, N.W.
Washington, D. C. 20006

Mr. William E. Barberich
Licensing Engineer
Pennsylvania Power & Light
Company
2 North Ninth Street
Allentown, Pennsylvania 18101

Washington Public Power Supply System
ATTN: Mr. J. J. Stein
Managing Director
301 Fifth Avenue
P. O. Box 968
Richland, Washington 99352

Richard Q. Quigley Esq.
Washington Public Power Supply System
P. O. Box 968
Richland, Washington 99352

Niagara Mohawk Power Corporation
ATTN: Mr. Gerald K. Rhode
Vice President - Engineering
300 Erie Boulevard West
Syracuse, New York 13202

Arvin E. Upton, Esquire
LeBoeuf, Lamb, Leiby & MacRae
1757 N Street, N. W.
Washington, D. C. 20036

Miss Juanita Kersey, Librarian
Oswego City Library
120 E. Second Street
Oswego, New York 13126

Mr. Richard Goldsmith
Syracuse University
College of Law
E. I. White Hall Campus
Syracuse, New York 13210

Dr. William E. Seymour
Staff Coordinator
New York State Atomic Energy Council
New York State Department of Commerce
99 Washington Street
Albany, New York 12210

Anthony Z. Roisman, Esquire
Berlin, Roisman & Kessler
1712 N Street N. W.
Washington, D. C. 20036