



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

JAN 6 1978

DOCKET NOS.: 50-358, 50-387, 50-352/353, 50-367, 50-373/374,  
50-388, 50-416, 50-322

APPLICANTS: Members of Mark II Owner's Group

SUBJECT: MEETING WITH MARK II OWNER'S GROUP AND GENERAL ELECTRIC  
COMPANY ON MARK II CONTAINMENT, DECEMBER 16, 1977

Background:

A meeting was held on December 16, 1977, with representatives of the Mark II owner's group, the General Electric Company, and the NRC staff.

The purpose of this meeting was to discuss the status of the Mark II owner's group program to establish pool dynamic LOCA loads. The attendees list, the meeting agenda and the presentation slides are enclosed.

Summary:

1. Lateral Loads on Downcomers

The Mark II owner's described the bases and conservatisms in the generic lateral load specification along with a description of the application methods. The lead Mark II plants made separate presentations comparing their specific vent systems to vents in the test facilities. They also provided evaluations of the lead plants vent system capability to accommodate lateral loads.

A status report was made by General Electric personnel of the Mark owner's program to develop a downcomer mathematical model. This model is being used to develop a dynamic forcing function for the lateral load for use in the Long Term Program, LTP.

Preliminary results of this effort indicate conservatism in the current Short Term Program, STP, static equivalent lateral load specification.

We stated that additional information was needed to establish conservatisms in the STP Mark II lateral load specification. This additional information includes the following: The natural frequency of the vent system for each Mark II plant, the probability of occurrence of the design lateral load, comparison of the normalized 4T lateral load distribution to the licensee load distribution (see Table 4-1b in the DFFR) used to establish multivalent lateral loads, and an in depth evaluation of the 4T lateral loads observed in the GE licensee tests to account for different measurements.

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## 2. Fluid Structure Interaction

The Mark II owner's made several presentations directed at our concerns on the draft ANAMET report. The thrust of our concerns is that the existing documentation defining the 4T chugging loads is not adequate in the area of fluid structure interactions, FSI, to assure conservatism in this load. This presentation included a description of the conservatisms inherent in the current load specification, the method of applying these loads to Mark II containments, and lead plant design margins to accommodate load uncertainties. In addition a presentation was made of recent analytical efforts to evaluate FSI effects in the 4T facility to show that chugging loads measured in the 4T facility provide a conservative load specification for plant application. This effort is to be documented along with information extracted from the draft ANAMET report in the 4T FSI report NEDE 23710-P to be issued in January, 1978. We expressed our view that this effort be treated as a high priority task by the Mark II owner's to avoid a delay in our review schedule. We also stated that we would provide comments on this presentation in the next few weeks.

## 3. Multivalent Hydrodynamic Model

The Mark II owner's provided a status report on the multivalent hydrodynamic model. Preliminary results from this model indicate substantial conservatism in the current chugging load which is based on the single cell 4T tests. Development of this multivalent model has been designated as a Long Term Program task by the Mark II owner's group. We stated our intent to delay our review of this task until our review of the Short Term Program Tasks is complete.

## 4. NRC Positions and Loads

We presented our review status for the LOCA related pool dynamic loads. This information is summarized in the attached handout. Each load was placed in one of three categories: acceptable, unacceptable and indetermined. For those loads in the unacceptable category we specified a load or load prediction method that we could find acceptable. Loads in the indeterminate category are those where insufficient information exists to judge the acceptability of the loads at this time.

We also discussed our current review schedule for the Mark II Short Term Program as described in NUREG 0371. This schedule was slipped 3 months due to delays by the Mark II owners in submitting



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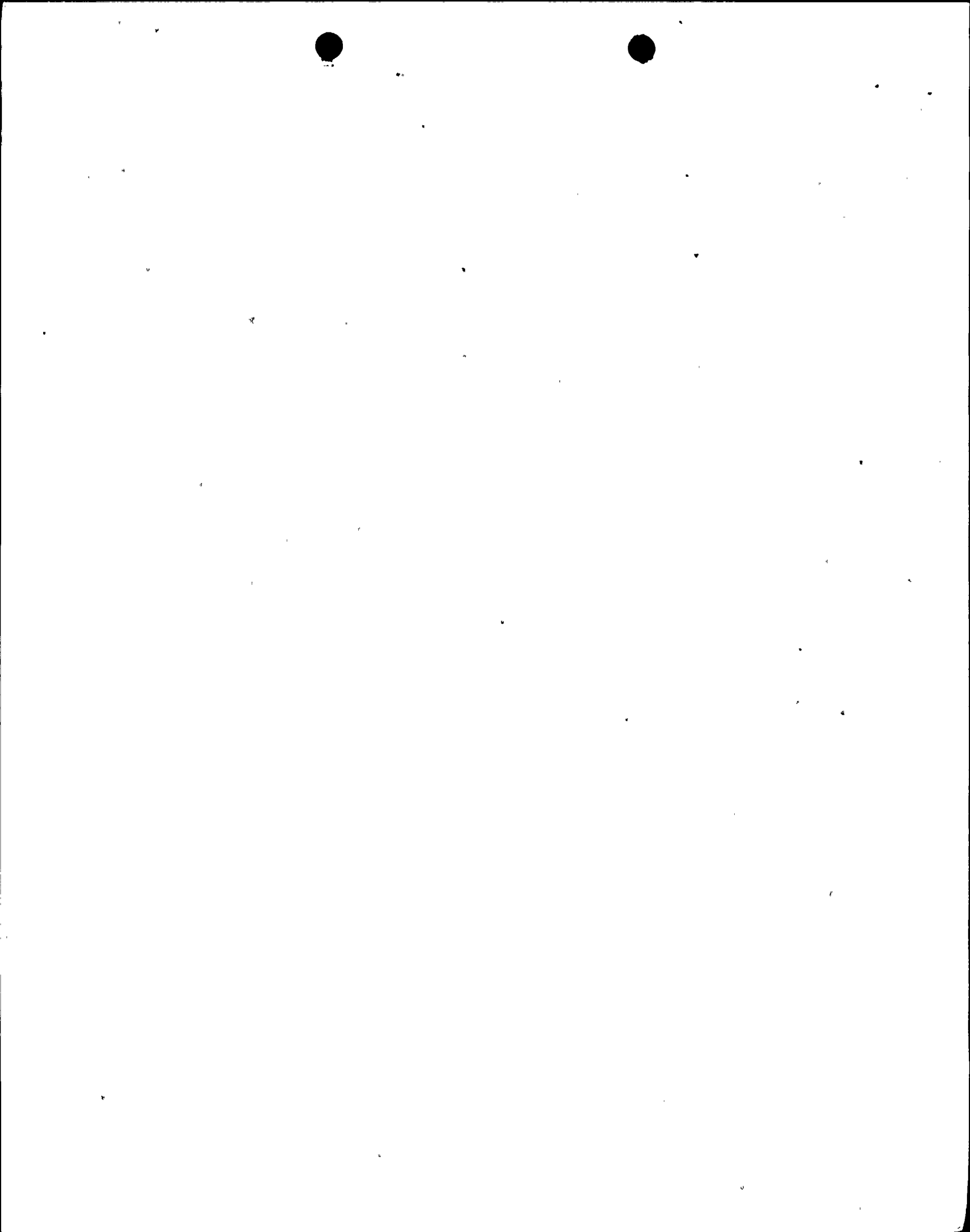
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documentation for a number of STP tasks. We expressed our concern that a number of STP documents that have not been submitted be submitted to avoid additional delays in our review schedule.

5. Program Status and Review.

The Mark II owners distributed several tables that showed the status of the STP tasks. These tables include a Task Status summary, a list of documentation submitted in support of the Mark II owner's program and a Table of completed tasks. These tables are attached. Time did not permit a discussion of the status of these program tasks. Plans for a future Mark II owner's meeting to discuss Safety Relief Valve Loads were discussed. A tentative meeting date of January 19, 1978, was agreed upon.

*I. R. Peltier*  
I. Peltier, Project Manager  
Light Water Reactors Branch No. 1  
Division of Project Management



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MARK II MEETING

BETHESDA

DECEMBER 16, 1977

*C. Anderson	NRC/CSB
A. Sonin	MIT (for BNL)
C. Economos	BNL
R. Scanlan	Princeton Univ. Dept. CE
G. Maise	BNL
J. Glynn	NRC / DSS
*C. Grimes	NRC/DOR
R. Tedesco	NRR/DSS
J. Healzer	GE
W. Bilanin	GE
B. Erler	Sargent & Lundy
R. Muzzy	GE
S. Wilson	GE
Y. Rashid	GE
E. Mead	PP&L
H. Brinkmann	CGE
A. Smith	GE
M. Granback	NIPS Co.
L. Frauenholz	GE
J. Martin	GE
H. Chau	Lilco
S. Chow	S&W
J. Metcalf	S&W
W. Hennessy	S&W
T. Zazueta	CFE
H. Yu	Ebasco
M. Mosier	NMPC
T. Martin	Nutech
*B. Browzin	NRC/RES
B. Jain	S&L
C. Luk	S&W
S. Mucciacciaro	S&W
E. McFarland	Bechtel
D. Fetters	PE Co.
H. Schoenhoff	Bechtel
R. Koppe	NSC
A. Olson	NSC
R. Crawford	S&L
J. Borhaug	Pretech Corp.
A. Kugler	WPPSS
H. Baker	Burns & Roe
B. Bedrosian	Burns & Roe
P. Kuo	NRC/SEB
J. Kudrick	NRC/CSB
G. Lainas	NRC/CSB
D. Jeng	NRC/SEB

\*To get enclosures



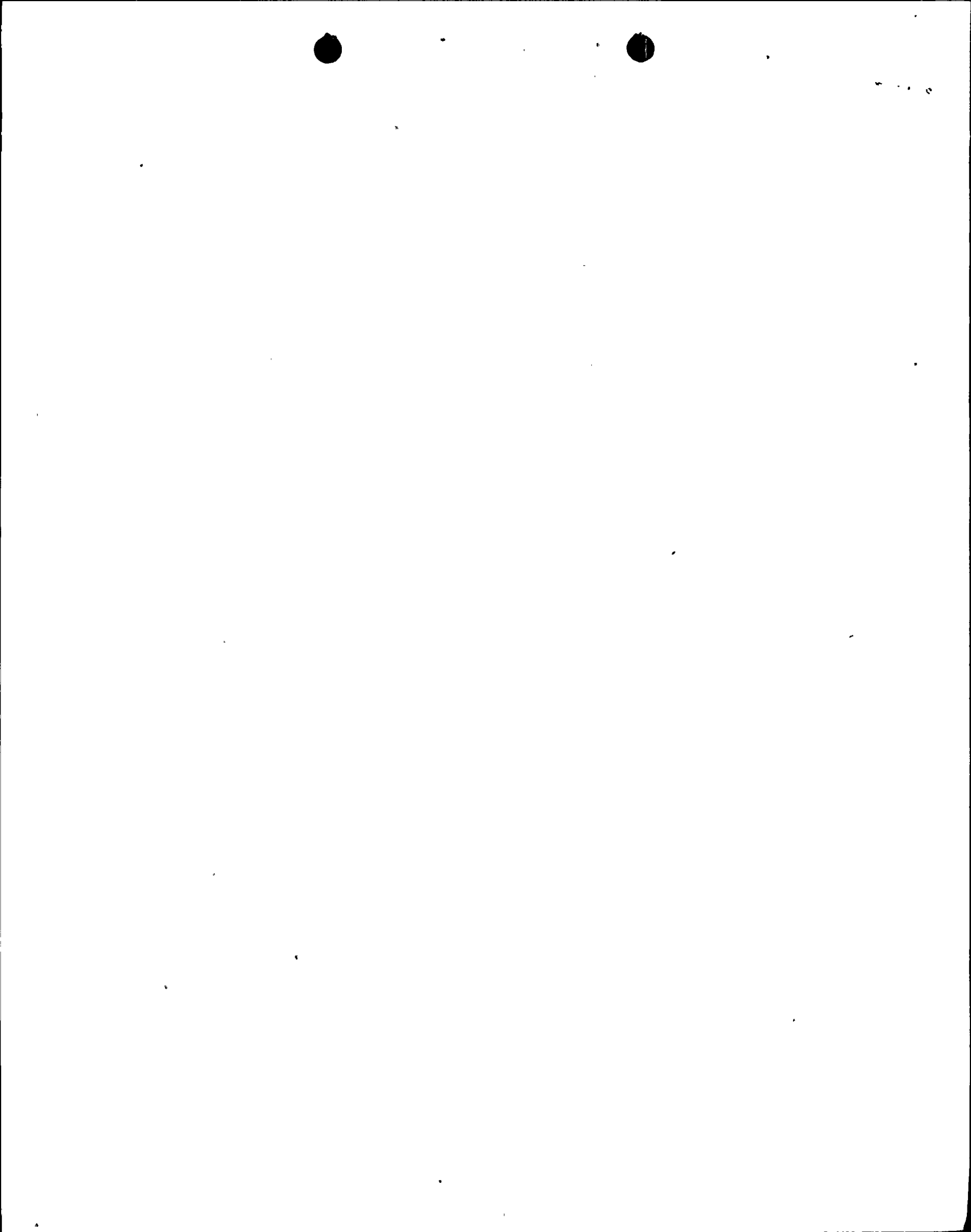


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T. Su °  
W. Davis  
A. Adamanbiades  
\*I. Peltier

NRC/CSB  
GE  
EPRI  
NRC/LPM



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MEETING SUMMARY

✓ Docket. File  
NRC PDR  
Local PDR  
TIC  
w/o encl. - NRR. Reading  
LWR-#1 File  
E. Case  
R. Boyd  
R. DeYoung  
D. Vassallo  
J. Stolz  
K. Kniel  
O. Parr  
S. Varga  
L. Crocker  
D. Crutchfield  
F. Williams  
R. Mattson  
H. Denton  
D. Muller  
Project Manager:  
Attorney, ELD.  
E. Hylton  
IE (3)  
ACRS (16)  
L. Dreher  
NRC Participants: listed in enclosure  
S. Rubenstein

