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

OCT 1 1979

Docket Nos.: 50-518/519/520/521
50-553/554
50-461/462
50-440/441
50-373/374

MEMORANDUM FOR: Steven A. Varga, Acting Assistant Director for Light Water Reactors, Division of Project Management

THRU: Olan D. Parr, Chief, Light Water Reactors, Branch No. 3, Division of Project Management

FROM: Anthony Bournia, Project Manager, Light Water Reactors, Branch No. 3, Division of Project Management

SUBJECT: SUMMARY OF MEETING WITH GENERAL ELECTRIC COMPANY HELD SEPTEMBER 28, 1979 TO DISCUSS LOAD COMBINATIONS FOR BWR PLANTS

Background

General Electric Company requested a meeting with us to discuss our schedule for reviewing and approving the load combinations in the licensing of BWR plants. The meeting to discuss this matter was held on September 25, 1979.

A list of the meeting attendees is enclosed.

Discussion

A meeting was held on September 28, 1979 at the request of the General Electric Company to discuss our review of the load combination problem. Mr. Sherwood of General Electric in his opening remarks indicated that the purpose of the meeting was to obtain the staff's commitment to get manpower assigned in order to resolve this problem in a timely manner. Essentially the presentation for General Electric was made by Mr. Ditmore. Enclosed are the vu-graphs of his presentation. As a result of this meeting, the problem areas were indicated to be the methodology to be used to combine dynamic responses and the methodology for the safety relief valve (SRV) time-phase.

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We related to General Electric that with respect to combining dynamic responses our consultants, Brookhaven National Laboratory, have concluded their studies and that a final report of their analyses will be issued in October. Based on the Brookhaven report and our findings, we will be able to issue a staff's position on the response combination for the Mark II containment in the very near future. General Electric requested a future meeting to discuss the following items: (1) the need to conduct fatigue analyses for Class 2 and 3 piping under a combine operating basis earthquake and SRV loads, and (2) issues on passive component functional capability. We agreed to hold a telecon on the week of October 1, 1979, to finalize the meeting date. With respect to the SRV time-phase methodology, a suggestion was made to expedite the review by getting all parties together for sufficient time (maybe a week) to resolve this problem. We stated that because of our manpower limitation we could not commit ourselves to a meeting at this time. We indicated that we would get back with General Electric within two weeks to discuss this matter.

A. Bournia

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Enclosures:
As Stated

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Meeting Attendees

<u>Name</u>	<u>Affiliation</u>
Anthony Bournia	NRC/DPM
R. K. Mattu	NRC/DSS
S. Hou	NRR/DSS
W. R. Butler	NRR/DSS
A. W. Harrison	Houston Lighting & Power
F. E. Hatch	General Electric
J. S. Abel	Commonwealth Edison
Don R. Denton	TVA
John B. West	Public Service Co. of Okla.
Dana Ditmore	General Electric
F. Schroeder	NRC/DSS
R. Mattson	NRC/DSS
J. Knight	NRC/DSS
R. J. Bosnash	NRC/DSS
Shou-Men Hou	NRC/DSS
Gary Grosscup	Cleveland Electric
E. W. O'Rourke	General Electric
S. Varga	NRC/DPM
I. A. Peltier	NRC/DPM
Byron Lee, Jr.	Commonwealth Edison
Leonard J. Koch	Illinois Power Co.
E. P. Stroupe	General Electric
Glenn Sherwood	General Electric
Richard Denise	NRC/DSS

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PURPOSE/OBJECTIVE

- TO DISCUSS LICENSING ISSUES RELATED TO
EQUIPMENT EVALUATION PROGRAMS

- ASSURE THAT THE NRC IS AWARE OF THE IMPACT OF
CONTINUED DECISION DELAYS FOR KEY ISSUES:
 - SRSS
 - LOAD COMBINATIONS/ACCEPTANCE CRITERIA

- REQUEST NRC MANPOWER BE APPLIED FOR TIMELY
RESOLUTION OF ISSUES

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BACKGROUND

- PREVIOUS MEETINGS
 - MARCH 1978
 - MAY 1978
 - MARCH 1979

- NRC COMMITMENTS FOR RESOLUTION LONG PAST DUE

- RESOLUTION OF ISSUES DELAYED BY NRC
 - ALL DATA INTO NRC - NO OUTSTANDING QUESTIONS
 - NRC MANPOWER UNAVAILABLE
 - TMI CAUSING FURTHER DELAYS

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ISSUES REQUIRING NRC ACTION

KEY ISSUES

- SRV TIME-PHASED METHODOLOGY
- EXTEND SRSS APPROVAL TO BOP, SRV AND OBE

SECONDARY ISSUES

- FATIGUE ANALYSIS FOR OBE + SRV
- EXCLUSION OF LOAD CASE 10
- FUNCTIONAL CAPABILITY OF PASSIVE COMPONENTS

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SRV TIME-PHASED METHODOLOGY

- SRV TIME PHASING METHODS
 - FORCING FUNCTION FOR MULTIPLE SRV DISCHARGE
 - METHODOLOGY IN ICLR ATTACHMENT M - APRIL 1978
 - GE/NRC REVIEW MEETING MAY 1978
 - GE/NRC CONSULTANTS MEETING NOVEMBER 1978

- REALISTIC METHOD CONSIDERS
 - PRESSURE RISE RATE
 - SETPOINTS
 - VALVE OPENING TIME
 - BUBBLE FREQUENCY

- GE USING METHOD IN ANALYSES FOR CROSS QUENCHER

- NO OPEN QUESTIONS

NEED NRC APPROVAL

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USE OF SRSS FOR COMBINATION OF DYNAMIC LOADS

- GL USING SRSS ON NSSS EQUIPMENT ANALYSIS

- NUREG 0484 ACCEPTED SRSS FOR LOCA + SSE FOR RCPB

- EXPANDED ACCEPTANCE REQUESTED
 - BOP PIPING AND EQUIPMENT
 - SRV LOAD COMBINATIONS
 - OBE LOAD COMBINATIONS
 - MULTIPLE DYNAMIC NON-SEISMIC LOADS

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NEED NRC APPROVAL OF EXPANDED ACCEPTANCE

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LOAD COMBINATION ISSUES

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• LOCA + SSE + SRV (LOAD CASE 10)

- SBA & IBA ALREADY CONSIDER CASE 10
- SRV ACTUATION DURING DBA DOES NOT OCCUR
- NOT PREVIOUSLY REQUIRED FOR PIPING AND EQUIPMENT
- GE POSITION LETTERS TO NRC IN FEBRUARY 1979
- NO FORMAL NRC RESPONSE RECEIVED

• OBE + SRV FATIGUE ANALYSIS

- MARK II (LEAD PLANT)/MARK III ACCEPTED NRC REQUIREMENT TO EVALUATE OBE + SRV AS UPSET
- FATIGUE EVALUATION NOT REQUIRED
- GE POSITION DOCUMENTED AND ACCEPTED IN GESSAR
- NRC IS APPARENTLY RECONSIDERING DECISION

NEED NRC APPROVAL OF LOAD COMBINATIONS

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FUNCTIONAL CAPABILITY OF PASSIVE PIPING COMPONENTS

- GE POSITION SUBMITTED SEPTEMBER 1978
- NRC INTERIM POSITION UNNECESSARILY CONSERVATIVE
- NO CREDIT FOR INTERNAL PRESSURE ON PIPE
- DESIGN CHANGE POSSIBLE OUTCOME
- NO FORMAL NRC POSITION RECEIVED

NEED NRC APPROVAL OF GE POSITION

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NRC RESOLUTION IMPORTANT

- ADVERSE IMPACT OF ANY CHANGES TO
 - LOADS
 - EVENT COMBINATIONS
 - COMBINATION METHODS
 - ACCEPTANCE CRITERIA

- WILL RESULT IN REANALYSIS

- WILL RESULT IN PLANT SCHEDULE DELAY

- MAY RESULT IN EQUIPMENT MODIFICATIONS

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SCHEDULE IMPACT OF A CHANGE

- 1-2 YEARS REANALYSIS SCHEDULE IMPACT
 - AE STRUCTURAL DYNAMIC ANALYSIS (6-9 MO)
 - GE EQUIPMENT ANALYSIS (16-20 MO)
 - AE EQUIPMENT ANALYSIS (16-20 MO)

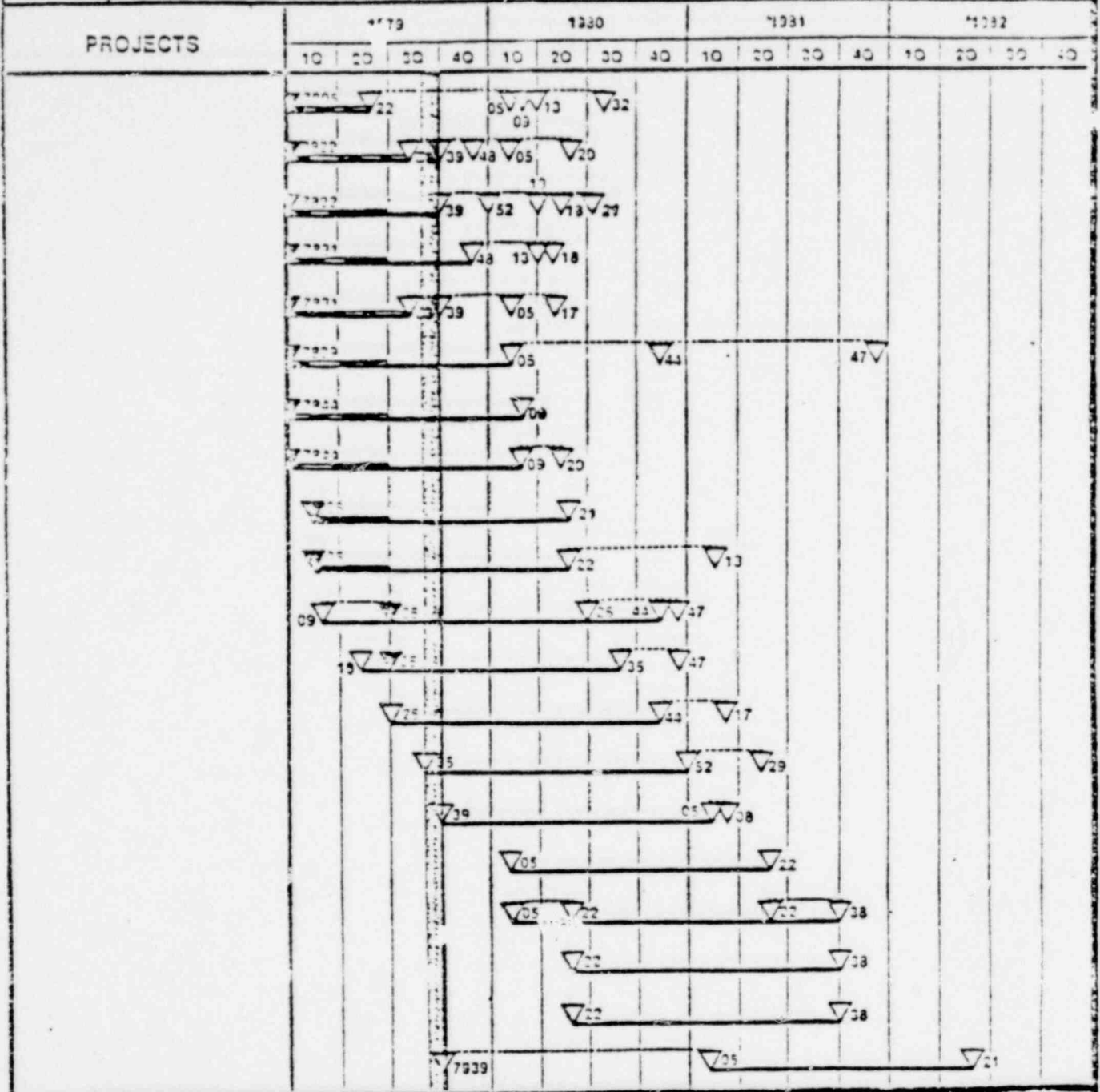
- ADDITIONAL HARDWARE DELAY
 - PROCUREMENT
 - MODIFICATION
 - INSTALLATION

- PLANT STARTUP DELAY

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NSSS LOADS ADEQUACY EVALUATION

SCHEDULE RESPONSIBILITY
STATUS AS OF DECEMBER 30 1979



SRSS
LOAD COMBINATIONS
ICLR
SPV QUENCHER METHODS

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CONCLUSIONS/SUMMARY

● FAVORABLE NRC DECISION/DOCUMENTED APPROVAL

- AVOID REANALYSIS
- AVOID SCHEDULE DELAY
- AVOID EQUIPMENT/STRUCTURE DESIGN CHANGE

● SPECIFIC NRC APPROVAL REQUIRED

- SRSS EXTENSION TO BOP SEPT. 1979
- SRV TIME-PHASED METHODOLOGY DEC. 1979
- SRSS EXTENSION TO OTHER COMBINATIONS DEC. 1979
- REMAINING ISSUES DEC. 1979

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