



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

June 1, 1981

Generic Task No. A-7

DOCKET NOS.: 50-219, 50-220, 50-237, 50-245, 50-249, 50-254, 50-259,  
50-260, 50-263, 50-265, 50-271, 50-277, 50-278, 50-293,  
50-296, 50-298, 50-321, 50-324, 50-325, 50-331, 50-333,  
50-341, 50-354, 50-355, and 50-366

LICENSEES: Boston Edison Company, Carolina Power and Light Company,  
Commonwealth Edison Company, Detroit Edison Company,  
Georgia Power Company, Iowa Electric Light and Power  
Company, Jersey Central Power and Light Company, Nebraska  
Public Power District, Niagara Mohawk Power Corporation,  
Northeast Nuclear Energy Company, Northern States Power  
Company, Philadelphia Electric Company, Power Authority  
of the State of New York, Public Service Electric and  
Gas, Tennessee Valley Authority, Vermont Yankee Nuclear  
Power Corporation

FACILITIES: Oyster Creek Nuclear Generating Station, Nine Mile Point  
Unit No. 1, Pilgrim Unit No. 1, Dresden Unit Nos. 2 and  
3, Millstone Unit No. 1, Quad Cities Unit Nos. 1 and 2,  
Monticello, Peach Bottom Unit Nos. 2 and 3, Browns Ferry  
Units Nos. 1, 2, and 3, Vermont Yankee, Hatch Unit Nos. 1  
and 2, Brunswick Unit Nos. 1 and 2, Duane Arnold Energy  
Center, Cooper, Fitzpatrick, Enrico Fermi Unit No. 2, and  
Hope Creek Unit Nos. 1 and 2

SUBJECT: SUMMARY OF MEETING HELD ON MAY 22, 1981, WITH THE MARK I  
OWNER'S GROUP

On May 22, 1981, the staff met with representatives of General Electric and the Mark I Owner's Group in Bethesda, Maryland. The purpose of this meeting was to discuss progress in the implementation of the Mark I Long Term Program (LTP). The meeting attendees are identified in Enclosure 1, the meeting agenda in Enclosure 2, and copies of viewgraphs presented during the meeting are contained in Enclosure 3.

Mr. R. Logue gave the introduction and presented the licensee's interpretation of the NRC position on the Mark I LTP with regard to exceptions to NUREG 0661, staff review of Plant Unique Analyses (PUA), and requests for schedule relief. The staff concurred on the licensee's interpretation, as presented in Enclosure 3.

Mr. G. Neils identified the types of Mark 1 structural modifications made or in progress at Monticello (pages 2-4 of Enclosure 3). G. Neils and D. O'Rourke presented slides of the modifications made at Monticello and Peach bottom which were typical of those being made by the licensee's in the Owner's Group.

Mr. K. Ramsden identified the Owner's Group interpretations of NUREG 0661 which are being incorporated into the licensee's analyses, the specific details of which will be fully documented in the PUA reports.

Messrs. J. Carter, R. Smart, and J. Zaalouk described the schedular problems associated with their specific plants (pages 7-9 of Enclosure 3).

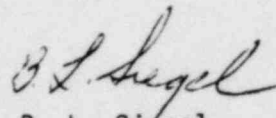
Mr. G. Neils summarized the Owner's Group perspective with regard to the current status of the Mark 1 LTP implementation. He stated that nearly all the licensees will use one or more alternate interpretations of NUREG 0661, and that the final torus analysis is needed for inputs to the attached piping analyses. Hardware (i.e., snubbers), if needed, cannot be ordered until these analyses are completed. In addition, an iterative process is usually necessary between the torus analysis and attached piping analyses and even after PUA has been completed, fine tuning of plant modifications may be required based on plant specific tests after modifications have been installed. Mr. Neils also noted that those licensees with 1981 dates would not complete the modifications if they involve the attached piping analyses, that those licensees with single-unit plants with early 1982 dates may complete the modifications on schedule, and those licensees with late 1982 dates will probably meet the schedules. It was anticipated that the NTOLs face the same problems as operating plants with regard to hardware delivery problems associated with the attached piping modifications.

A discussion was pursued related to the inclusion of Hope Creek in the NRC PUA audit review. It was mutually agreed that they be included; however, the staff informed the Owner's Group that this should not necessarily be considered a final review since staff requirements may change by the time the Hope Creek FSAR is submitted.

The staff questioned the Owner's Group representatives concerning the difficulties associated with completing the plant-unique analyses and modification designs inasmuch as so many licensees had expressed concerns about potential failures to meet the Order completion dates. Based on the ensuing discussion, the staff drew the following conclusions:

- The licensees were requested to notify the staff as soon as they determine that they will take exception or use alternate approaches to those in NUREG 0661 so we can identify obvious problems as soon as possible.

- When exceptions or alternate approaches are used, we expect the Owner's Group to provide guidance to all licensees on the approach to be used.
- PUA audits will be performed by BNL and Franklin Institute.
- We expect the licensees to continue as directed by H. Denton on December 20, 1979, to improve safety as quickly as possible.
- The licensees, through the Owner's Group office, were requested to provide a "score card" to the staff for each plant which should identify dates for completion of analyses, design and installation of the major and minor torus modifications and the attached piping modifications. Hope Creek and Fermi should be included. This "score card" should identify the major outages during which modifications are scheduled by refueling cycle and work that has been previously completed. A more detailed schedule breakdown similar to the modification categorization given on pages 2 and 3 of Enclosure 3 should also be provided.
- The information was requested to be provided in thirty (30) days (GE stated they will provide the staff a draft outline of the information the Owner's Group will submit for staff approval).
- The staff stated it will review the submittals and, taking the plants with the earliest scheduled completion dates, will consider modifying the orders and establishing priorities. The licensees were requested to be prepared to justify the scheduler changes identified on the "score card."



B. L. Siegel,  
Program Manager  
Mark I LTP Implementation

Enclosures:  
As stated

ATTENDEES  
BWR MARK 1 OWNER'S GROUP MEETING  
May 22, 1981

<u>Name</u>	<u>Organization</u>
Byron Siegel	NRC/DL/ORB 2
Keith Wichman	NRC/DL/ORAB
Robert N. Smart	NUSCo
Gerald H. Neils	NSPCo
Robert H. Logue	PECo
R. M. Hunt	GE
Ozen Batum	Southern Company Services
K. B. Ramsden	Commonwealth Edison Co.
Robert W. Wolf	GPUN
R. M. Weiner	MPR
C. I. Grimes	NRC
Jan S. Teraszkiewicz	PASNY
Billy W. Reid	IE
Bob Lowenstein	IE
Karl Meyer	IE
Harold Rehrauer	Iowa Electric
M. G. Mosier	NMPC
Harry Shearer	Iowa Electric
Addison B. Higginbotham	NUTECH
Vince Derr	NUTECH
N. W. Edwards	NUTECH
Dennis O'Rourke	PECO
M. F. Nash	PSE&G
Jim Carter	TVA
P. D. Hegecock	NUTECH
Dick Boyle	NPPD
J. M. Pilant	NPPD
George Wagner	Commonwealth Edison
Robert Smith	Yankee Atomic
Robert E. White	Yankee Atomic
Larry Steinert	GE
R. E. Keever	NUTECH
W. J. Fabruer	Detroit Edison
D. F. Lehnert	Detroit Edison
John R. Hoddy	PASNY
D. L. Bensinger	CP&L
Paulette Tranblay	NUS for NSAC/EPRI
Jimmy Zaalouk	CP&L
A. B. Cutter	CP&L
Leon Guaquil	PASNY
C. H. Hofmayer	EDS. Nuclear
Kulin D. Desai	NRC/DE/EGB
David Terao	NRC/DE/MEB
Shou-nien Hou	NRC/DE/MEB
N. Celia	Teledyne
Ralph B. Swenson	PASNY
R. J. DeLoach	Boston Edison Co.
J. Keyes	Boston Edison

MARK I CONTAINMENT PROGRAM  
NRC/MARK I UTILITY MEETING

• MAY 22, 1981

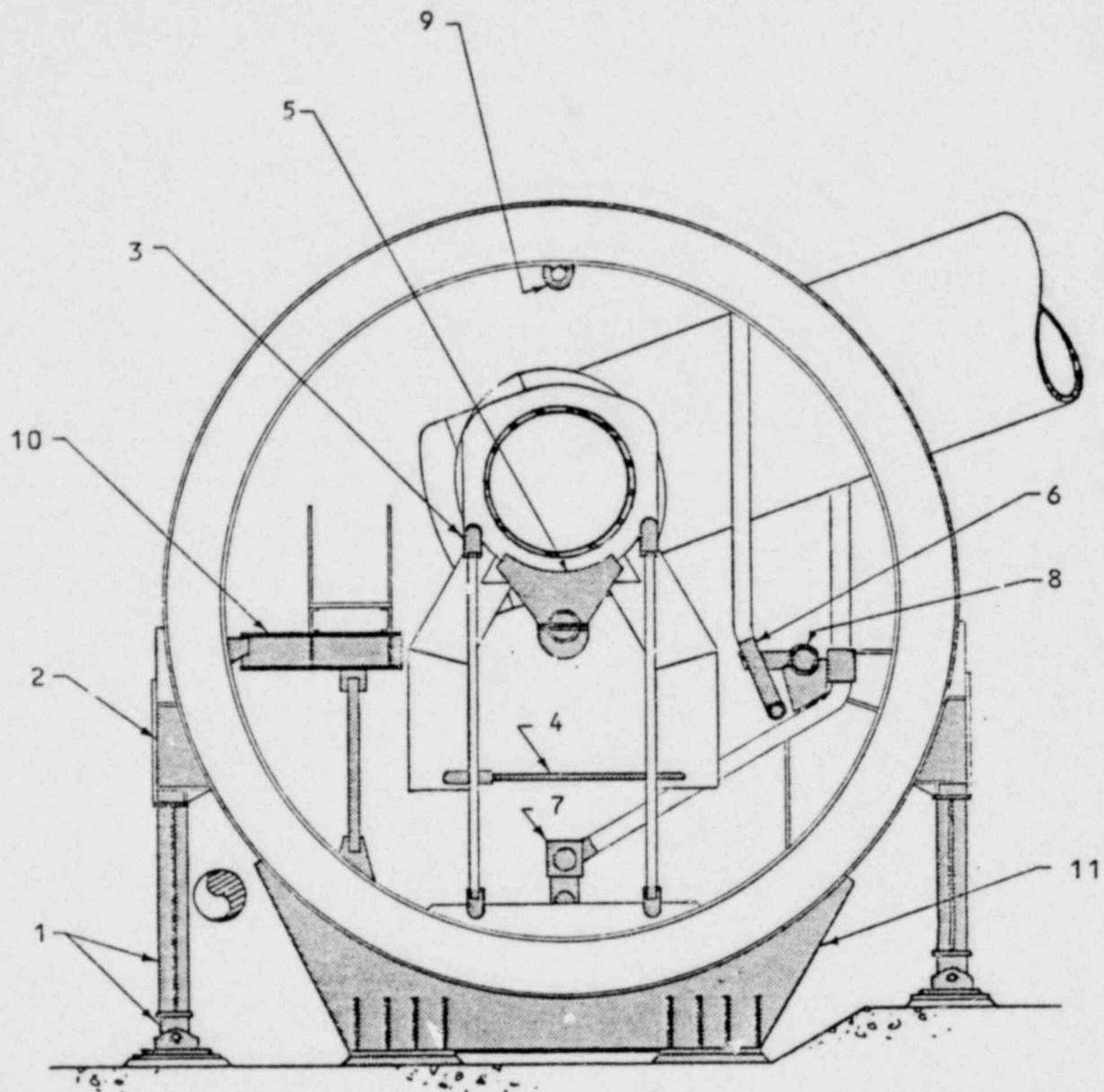
---

0	OPENING REMARKS	NRC
0	INTRODUCTION	LOGUE
0	TYPICAL UTILITY ACTION/PROGRESS	NEILS/O'ROURKE
0	TYPICAL NEED FOR INTERPRETATIONS	RAMSDEN
0	SCHEDULE ISSUES	CARTER/SMART/ZAALOUK
0	PERSPECTIVE	NEILS
0	CLOSING COMMENTS	NRC

UTILITY UNDERSTANDING OF NRC POSITION ON MARK I

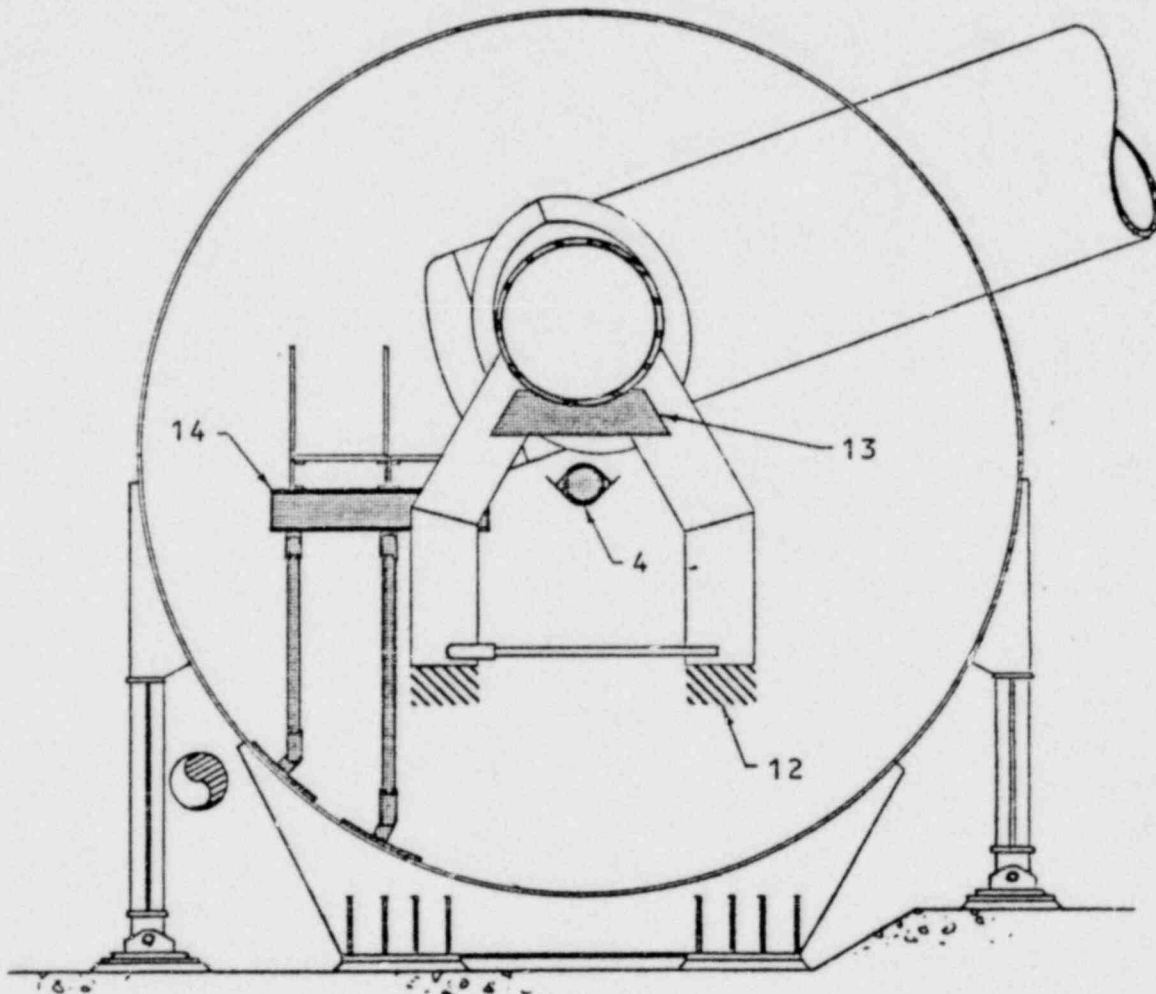
- O GENERIC ISSUES A6, A7, AND A39 ARE CLOSED OUT BY NUREG-0661 AND THE CONFIRMING ORDERS DATED JANUARY 13, 1981.
  
- O GENERIC REVIEWS OF EXCEPTIONS TO NUREG-0661 WILL NOT BE CONDUCTED BY THE NRC STAFF.
  
- O IF A GIVEN UTILITY PLANS TO TAKE EXCEPTIONS TO NUREG-0661, INFORM THE NRC BY LETTER AT THE TIME OF THE DECISION AND COMMIT TO PROVIDE THE ENGINEERING BASES OF THOSE EXCEPTIONS IN THEIR INDIVIDUAL PUA REPORT.
  
- O UNDERSTAND THAT THE INDIVIDUAL PUA REPORTS ARE SUBJECT TO AUDITS AFTER SUBMITTAL.
  
- O DO NOT ASK FOR GENERIC SCHEDULE RELIEF--INDIVIDUAL REQUESTS FOR SCHEDULE RELIEF WILL BE CONSIDERED ONLY WHEN THE NEED IS QUANTIFIABLE.

MARK I CONTAINMENT PROGRAM STRUCTURAL MODIFICATIONS  
MONTICELLO NUCLEAR GENERATING PLANT



<u>MODIFICATION DESCRIPTION</u>	<u>INSTALLATION DATE</u>
1 TORUS COLUMN/PIN REINFORCEMENT	SUMMER 1976
2 TORUS COLUMN TO SHELL REINFORCEMENT	SPRING 1977
3 VENT HEADER COLUMN REINFORCEMENT	FALL 1977
4 DOWNCOMER BRACING	FALL 1978
5 VENT HEADER DEFLECTOR/CONNECTION PLATE	FALL 1978
6 RHR ELBOW/SUPPORT	FALL 1978
7 SRV T-QUENCHERS AND QUENCHER SUPPORT BEAM	FALL 1978
8 SRV ELBOW SUPPORT BEAM	SPRING 1980
9 ADDITIONAL SPRAY HEADER SUPPORTS	SPRING 1980
10 TORUS CATWALK SUPPORT MODIFICATION	SPRING 1980
11 TORUS SADDLES	SUMMER 1981

MARK I CONTAINMENT PROGRAM STRUCTURAL MODIFICATIONS  
MONTICELLO NUCLEAR GENERATING PLANT  
(CONTINUED)



MODIFICATION DESCRIPTION

INSTALLATION DATE

4 VENT HEADER DEFLECTOR

FALL 1978

12 DOWNCOMER SHORTENING

FALL 1978

13 DOWNCOMER/VENT HEADER

INTERSECTION REINFORCEMENT

SPRING 1980

14 TORUS CATWALK MIDBAY SUPPORT

FALL 1981



MONTICELLO PLANT  
MARK I CONTAINMENT PROGRAM PLANT MODIFICATIONS

<u>MODIFICATION DESCRIPTION</u>	<u>COMPLETION DATE</u>
DRYWELL/WETWELL PRESSURE DIFFERENTIAL	SPRING 1976
TORUS SUPPORT COLUMN REINFORCEMENT	SUMMER 1976
ADDITIONAL TORUS ANCHORAGE	SUMMER 1976
TORUS COLUMN PIN REINFORCEMENT	SUMMER 1976
SUPPORT COLUMN TO TORUS REINFORCEMENT	SPRING 1977
ADDITIONAL 8" SRVDL VACUUM BREAKERS	FALL 1977
VENT HEADER SUPPORT COLUMN CONNECTION REINFORCEMENT	FALL 1977
HPCI SPARGER PIPE SUPPORT	FALL 1977
3 SRVDL T-QUENCHERS	FALL 1977
5 SRVDL T-QUENCHERS	FALL 1978
DOWNCOMER SHORTENING	FALL 1978
VENT HEADER DEFLECTOR	FALL 1978
DOWNCOMER BRACING	FALL 1978
RHR DISCHARGE ELBOW AND SUPPORT	FALL 1978
RCIC SPARGER PIPE SUPPORT	FALL 1978
SRVDL WETWELL SUPPORT REINFORCEMENT (ELBOW SUPPORT BEAM)	SPRING 1980
SRVDL DRYWELL SUPPORT REINFORCEMENT (6 SNUBBERS)	SPRING 1980
SPRAY HEADER SUPPORT REINFORCEMENT	SPRING 1980
DOWNCOMER/VENT HEADER INTERSECTION REINFORCEMENT	SPRING 1980
TORUS CATWALK SUPPORT REINFORCEMENT	SPRING 1980
TORUS CATWALK GRATING TIE-DOWN	SPRING 1980
TORUS SUPPORT SADDLES	SUMMER 1981
ADDITIONAL TORUS ANCHORAGE	SUMMER 1981
COMPLETE SRVDL DRYWELL (INCLUDING DRYWELL STEEL REINFORCEMENT)	FALL 1981
TORUS MONORAIL REINFORCEMENT (IF REQUIRED)	FALL 1981
REINFORCEMENT OF VACUUM BREAKERS	FALL 1981
TORUS CATWALK MIDBAY COLUMNS	FALL 1981
TORUS RING GIRDER BRACING MODIFICATION (IF REQUIRED)	FALL 1981
SRV DISCHARGE LINE - VENT LINE PENETRATION ASSESSMENT (IF REQUIRED)	FALL 1981
TORUS ATTACHED PIPING PRESSURE BOUNDARY MODIFICATIONS (IF REQUIRED)	FALL 1982
TORUS ATTACHED PIPING SUPPORT (IF REQUIRED)	SPRING 1982
DOWNCOMER LATERAL LOAD ASSESSMENT (IF REQUIRED)	FALL 1982
REMOVAL OF DRYWELL/WETWELL DIFFERENTIAL PRESSURE	FALL 1981

## FRAMEWORK FOR INTERPRETATION

### WHY "INTERPRET" CRITERIA?

- 0 IMPROVEMENTS IN METHODOLOGY BEYOND THAT IMPLIED IN CRITERIA
  
- 0 STRICT IMPOSITION OF CERTAIN CRITERIA YIELD "HARDSHIP" MODIFICATION
  
- 0 UTILIZE SIMPLER ANALYTICAL METHODS WITHOUT COMPROMISING SAFETY

## TYPICAL INTERPRETATIONS

- O ALTERNATE SRV ANALYSIS APPROACH
  - MODAL CORRECTION FACTORS
  - CONFIRMATORY TESTS
  
- O C.O. AND CHUGGING HARMONIC PHASING
  - REALISTIC BASES FOR COMBINING HARMONICS
  
- O SUBMERGED STRUCTURES
  - REALISTIC FSI EFFECTS
  - APPROACH CONFIRMED BY TEST DATA
  
- O FROTH IMPINGEMENT LOADS
  - DETAILED REVIEW OF  $\frac{1}{4}$  SCALE TEST RESULTS
  
- O TORUS LATERAL LOADS
  - LOAD DEFINITION BASES BEING REVIEWED
  - REACTION DUE TO SEISMIC BEING REVIEWED

SPECIFIC DETAILS WILL BE FULLY DOCUMENTED IN PLANT UNIQUE ANALYSIS REPORTS.

## NEED AND JUSTIFICATION FOR ADJUSTMENT IN MODIFICATION SCHEDULE

### - STATUS

- a. Unit 1 - Currently in 113 day modification outage - several days behind schedule
- b. Design attention concentrating on Unit 3

### - NEED

- a. Unit 1 - Extend orders to next refueling outage (March 1983) for many external mods and some miscellaneous internal mods
- b. Unit 3 - Extend orders for torus hydraulic snubbers; may require extension for some other internal and external mods

### - REASONS AND JUSTIFICATION FOR NEED

- a. Many more modifications than originally expected
- b. Material deliveries and drawing problems
- c. Back to back long outages for torus mods on three units
- d. Safety implications of c.
- e. Other modifications which must be done

MILLSTONE NO 1 SCHEDULE PROBLEMS  
RELATED TO REFUEL OUTAGE

- DESIGN - INSTALL IMMEDIATELY OR NEXT OUTAGE
  
- MAJOR MODIFICATIONS INSTALLED
  - OUTAGE OCT 1980 - JUNE 1981
  - ORDER DATE APR 1982
  - NET REFUEL LATE 1982
  
- REMAINING MODS
  - VENT HEADER - DOWNCOMER GUSSETTS
  - ATTACHED PIPING
  - ADDITIONAL "SUBMERGED STRUCTURE" MODS (?)
  - POOL TEMPERATURE MONITORING DISPLAY
  
- OUTAGE DELAY EFFECTS
  - SRV TEST DELAYED
    - DELAYS ATTACHED PIPING ANALYSIS & DESIGN
  - EARLIEST OPPORTUNITY FOR MODS LATE 82
  
- SCHEDULE EXTENSION NECESSARY

## Experience with Engineering Approach 'A'

Modifications	Installation Date	Completion of PUA	Will Need Remodification ?
HPCI TURBINE EXHAUST LINE	8/80	2/10/81	YES
DOWNCOMER TIES	8/80	12/18/81	YES *
SRV DISCHARGE LINE SUPPORTS IN WW (PENETRATION)	8/80	12/18/81	YES ✕
DEFLECTOR / DEFLECTOR SUPPORT	8/80	12/18/81	NO
T-QUENCHER	8/80	7/01/81	NO *
RHR ELBOWS	8/80	NOT REQUIRED	
VENT SYSTEM SUPPORT COLUMNS	8/80	12/18/81	YES *

\* Based on results to date

## PRESENT PERSPECTIVE

- O INTERPRETATIONS/ALTERNATES
  - O APPEARS NEARLY ALL WILL USE ONE OR MORE.
  - O WILL ADVISE BY LETTER AS SOON AS PRACTICAL.
  - O DETAILS IN PUA REPORT FOR POST-IMPLEMENTATION AUDIT.
  
- O ATTACHED PIPING AND PENETRATIONS
  - O FINAL TORUS ANALYSIS NEEDED FOR INPUTS TO PIPING ANALYSIS.
  - O MAGNITUDE OF ENGINEERING RESOURCES REQUIRED IS COMPARABLE TO ALL PREVIOUS WORK.
  - O NOT STRAIGHTFORWARD - COMPLEX ANALYSIS REQUIRED.
  - O BEST EFFORTS STILL INVOLVE SCHEDULE UNCERTAINTIES.
  - O WILL ADVISE WHEN QUANTIFIABLE ON PLANT UNIQUE BASIS.

TERA

MEETING SUMMARY DISTRIBUTION

Docket File  
NRC PDR  
Local PDR  
NSIC  
TERA  
ORB#2 Reading  
T. Novak  
J. Heltemes, AEOD  
T. Ippolito  
Project Manager (Siegel - 3 copies)  
OELD  
IE (3)  
Licensing Assistant  
ACRS (10)  
Each NRC participant  
Meeting Summary File  
J. Olshinski  
B. Grimes, DEP  
S. Schwartz, DEP  
D. Ramos, EPDB  
F. Pagano, EPLB  
K. Wichman  
C. Grimes  
K. Desai  
D. Terao  
Shou-nien Hou



Mr. L. D. Steinert, MC 681  
General Electric Company  
175 Curtner Avenue  
San Jose, CA 95125