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 FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co.
 AUTH. NAME AUTHOR AFFILIATION
 UHRIG, R.E. Florida Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 MILLER, J.R. Operating Reactors Branch 3

DOCKET #
05000335

SUBJECT: Discusses reactor vessel internals & thermal shield & plant recovery program, Outline of final rept of integrity & stability of internals w/o thermal shield, presented at 830922 meeting, encl. Info submittal dates listed.

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1. The first part of the report deals with the general situation of the country and the progress of the war. It is a very interesting and informative account of the events of the year.

2. The second part of the report deals with the economic situation of the country. It is a very detailed and accurate account of the economic conditions of the year.

3. The third part of the report deals with the social situation of the country. It is a very thorough and comprehensive account of the social conditions of the year.

4. The fourth part of the report deals with the political situation of the country. It is a very clear and concise account of the political conditions of the year.

5. The fifth part of the report deals with the military situation of the country. It is a very well-informed and up-to-date account of the military conditions of the year.

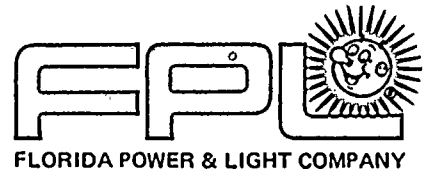
6. The sixth part of the report deals with the cultural situation of the country. It is a very interesting and enlightening account of the cultural conditions of the year.

7. The seventh part of the report deals with the educational situation of the country. It is a very detailed and accurate account of the educational conditions of the year.

8. The eighth part of the report deals with the health situation of the country. It is a very thorough and comprehensive account of the health conditions of the year.

9. The ninth part of the report deals with the labor situation of the country. It is a very clear and concise account of the labor conditions of the year.

10. The tenth part of the report deals with the foreign relations of the country. It is a very well-informed and up-to-date account of the foreign relations of the year.



October 6, 1983
L-83-509

Office of Nuclear Reactor Regulation
Attention: Mr. James R. Miller, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Miller:

RE: St. Lucie Unit I
Docket No. 50-335
Reactor Vessel Internals and Thermal Shield;
Plant Recovery Program - Recovery Plan Revision

In a meeting held on September 22, 1983, Florida Power & Light Company (FPL) provided you with an outline of the final report on St. Lucie I Integrity and Stability of Internals Without Thermal Shield (Conclusions and Findings). That outline presentation is included on an attachment to this letter.

A draft submittal schedule was discussed at that meeting, and with Mr. Don Sells of your office on September 26, 1983, in order that a final FPL presentation could take place on October 20, 1983. Due to difficulties encountered in the Core Support Barrel repair machining process, and the factoring of additional support activities required to return St. Lucie I to power, it has become necessary to revise the St. Lucie I Recovery Plan. Revision 4 of that Recovery Plan is enclosed.

Contingencies affecting the date for return to power of St. Lucie I, are shown on the revised Recovery Plan, and are attributable to factors, the duration and/or occurrence of which are unknown at this time.

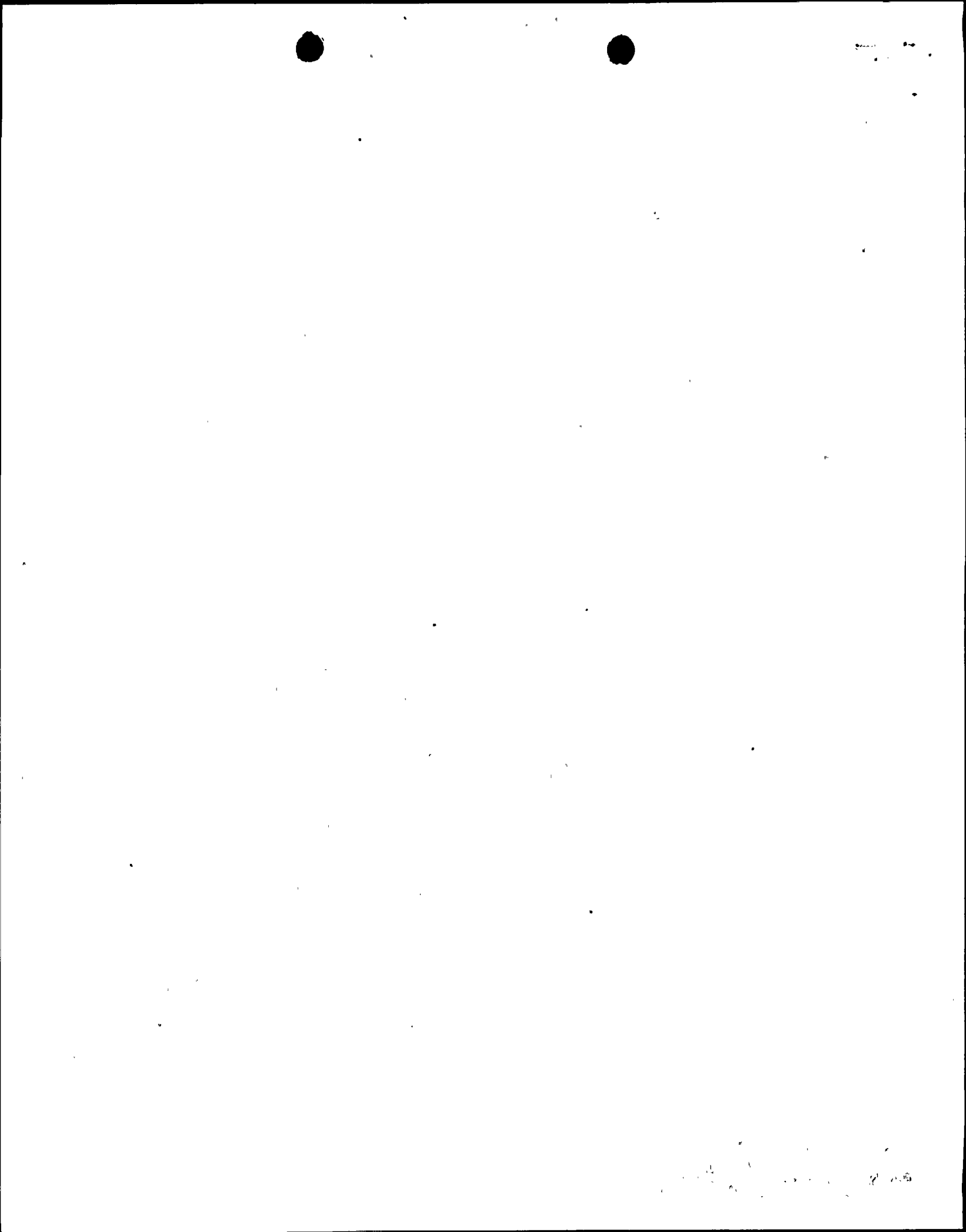
Remaining information submittal dates, updating our letter of August 22, 1983, (L-83-452) and the tentative dates of your letter of April 26, 1983, are as follows:

<u>Items (Designation from our April 19 letter, L-83-230)</u>	<u>Tentative Submittal</u>
B. Thermal Shield Failure Analysis	October 17, 1983
D(5) Integrity and Stability of Internals	December 15, 1983
D(6) Conclusions and Findings	December 15, 1983

Completed items/tasks integral to the St. Lucie Unit I Plant Recovery Program, are as follows:

Handwritten signature: Aool

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PDR

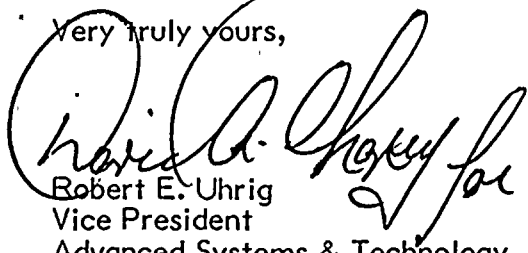


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Office of Nuclear Reactor Regulation
Mr. James R. Miller, Chief

<u>L-83-230</u>			
<u>Action Items</u>	<u>Subject</u>	<u>Letter</u>	<u>Date</u>
(NA)	INITIAL ASSESSMENT OF REACTOR VESSELL INTERNALS	L-83-230	4/19/83 (4/12/83 NRC Meeting)
(DI)	REACTOR VESSEL INTERACTIONS (PTS)	L-83-263	4/27/83
(C)	RECOVERY PLAN	L-83-264	4/27/83 (4/25/83 NRC Meeting)
(D2)	EFFECTS ON FUEL PERFORMANCE	L-83-265	4/27/83
(NA)	TECHNICAL SPECIFICATION P/T LIMITS	L-83-280	5/3/83
(D3&D4)	LPMS AND EXCORE DETECTOR DATA REVIEW	L-83-345	6/7/83 (6/3/83 NRC Meeting)
(NA)	RV GAMMA HEATING SUBMITTAL	L-83-367	6/23/83
(NA)	EXXON RELOAD SUBMITTAL	L-83-369	6/23/83
(NA)	FINAL EXXON RELOAD SUBMITTAL	L-83-429	7/27/83
(A)	REACTOR VESSEL INTERNALS AND INSPECTION RESULTS	L-83-452	8/22/83
(NA)	RECOVERY PLAN REVISION	L-83-475	9/7/83
(NA)	POST-LUG REMOVAL FINAL NDE INSPECTION RESULTS	L-83-491	9/20/83

Should any questions arise, please contact us immediately.

Very truly yours,


Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/DAC/cab

Enclosure

cc: Harold F. Reis, Esquire



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ATTACHMENT 1

ST. LUCIE UNIT 1

EVALUATION OF OPERATION WITHOUT A THERMAL SHIELD

SEPTEMBER 22, 1983

PROJECT STATUS OVERVIEW - TASKS COMPLETED

INITIAL ASSESSMENT OF REACTOR VESSEL INTERNALS		4/12/83
REACTOR VESSEL INTERACTIONS (PTS)	L-83-263	4/27/83
EFFECTS ON FUEL PERFORMANCE	L-83-265	4/27/83
TECHNICAL SPECIFICATION P/T LIMITS	L-83-280	5/3/83
LPMS AND EXCORE DETECTOR DATA REVIEW	L-83-345	6/7/83
RV GAMMA HEATING SUBMITTAL	L-83-367	6/23/83
EXXON RELOAD SUBMITTAL	L-83-369	6/23/83
FINAL EXXON RELOAD SUBMITTAL	L-83-429	7/27/83
REACTOR VESSEL INTERNALS AND INSPECTION RESULTS	L-83-452	8/22/83
PLANT RECOVERY PLAN REVISION	L-83-475	9/7/83
FINAL POST-LUG REMOVAL NDE RESULTS	L-83-491	9/20/83

PURPOSE

DISCUSS FINAL REPORT CONTENT

REPORT OVERVIEW

- CHAPTER 1 SUMMARY AND CHRONOLOGY OF EVENTS
- CHAPTER 2 DESCRIPTION OF REACTOR INTERNALS AND REACTOR VESSEL INTERFACES
- CHAPTER 3 PRESSURIZED THERMAL SHOCK
- CHAPTER 4 NON-DESTRUCTIVE EXAMINATION (NDE) TECHNIQUES
- CHAPTER 5 NDE INSPECTION RESULTS
- CHAPTER 6 CORE SUPPORT BARREL REPAIR
- CHAPTER 7 FAILURE MECHANISM ANALYSIS
- CHAPTER 8 CORE SUPPORT BARREL STRUCTURAL INTEGRITY
- CHAPTER 9 SAFETY ANALYSIS
- CHAPTER 10 MONITORING AND INSPECTION PROGRAMS

CHAPTER 1 SUMMARY AND CHRONOLOGY OF EVENTS

- o SUMMARY (CONCLUSIONS AND FINDINGS)
- o CHRONOLOGY OF EVENTS

CHAPTER 2 DESCRIPTION OF
REACTOR INTERNALS AND REACTOR
VESSEL INTERFACES

- o DESCRIPTION OF REACTOR INTERNALS
- o DESCRIPTION OF REACTOR VESSEL INTERFACES

CHAPTER 3 PRESSURIZED THERMAL SHOCK

- o INTRODUCTION
- o END-OF-LIFE RT_{NDT}
- o REACTOR VESSEL GAMMA HEATING

CHAPTER 4 NON-DESTRUCTIVE EXAMINATION TECHNIQUES

- o DESCRIPTION OF TECHNIQUES
 - VISUAL
 - EDDY CURRENT
 - ULTRASONIC
- o CRITERIA
- o CALIBRATION
- o SEQUENCE OF INSPECTION

CHAPTER 5 NDE INSPECTION RESULTS

- o REACTOR VESSEL INTERFACES AND INTERNALS INSPECTION RESULTS
- o THERMAL SHIELD INSPECTION RESULTS
- o CORE SUPPORT BARREL INSPECTION RESULTS
- o FUEL INSPECTION RESULTS

CHAPTER 6 CORE SUPPORT BARREL REPAIR

- o CSB REPAIR PROCESS
 - REPAIR MACHINING OBJECTIVES
 - MACHINING DESCRIPTION
- o CSB EXPANDABLE PLUG REPAIR
 - DESIGN DESCRIPTION
 - THERMAL HYDRAULIC CONSIDERATIONS
 - STRUCTURAL CONSIDERATIONS
 - TESTING
 - INSTALLATION
 - CONCLUSIONS - PLUG INTEGRITY

CHAPTER 7 FAILURE MECHANISM ANALYSIS

o INTRODUCTION

CHRONOLOGY AND HISTORY
PROGRAM DESCRIPTION
SUMMARY

o BASIC INFORMATION

HYDRAULIC LOADS
STRUCTURAL RESPONSE
DESIGN, FABRICATION AND INSTALLATION DATA
PVMP AND VISUAL INSPECTION DATA
LPM AND IVM DATA
METALLURGICAL EXAMINATION

o FAILURE MECHANISM

INITIATION
PROGRESSION

o CONCLUSIONS

CHAPTER 8 CORE SUPPORT BARREL STRUCTURAL INTEGRITY

- 0 REACTOR INTERNALS STRESS ANALYSIS RESULTS
- 0 CSB STRESS ANALYSIS RESULTS

INTRODUCTION

CRITERIA

CSB MATERIAL EXAMINATION RESULTS

STRESS ANALYSIS RESULTS

CHAPTER 9 SAFETY ANALYSIS

o INTRODUCTION

o EFFECT OF THERMAL SHIELD REMOVAL

PRIMARY SYSTEM FLOW RATE
CORE FLOW DISTRIBUTION

o EFFECT OF CSB REPAIRS

BYPASS LEAKAGE RATES

ASSESSMENT OF PLUG FAILURE ON TRANSIENTS AND ACCIDENTS

o CYCLE 6 LICENSING ANALYSIS APPLICABILITY

CHAPTER 10 MONITORING AND INSPECTION PROGRAMS

- o INTRODUCTION
- o MONITORING OBJECTIVES
- o EXCORE MONITORING
 - SYSTEM DESCRIPTION
 - DATA ACQUISITION SCHEDULE
 - DIAGNOSTICS
 - ALERT AND ALARM LEVELS
- o LOOSE PARTS MONITORING
 - SYSTEM DESCRIPTION
 - DATA ACQUISITION SCHEDULE
 - DIAGNOSTICS
 - ALERT AND ALARM LEVELS
- o INSPECTION OBJECTIVES
 - SHORT TERM INSPECTION
 - LONG TERM INSPECTION
- o SUMMARY

ATTACHMENT 2

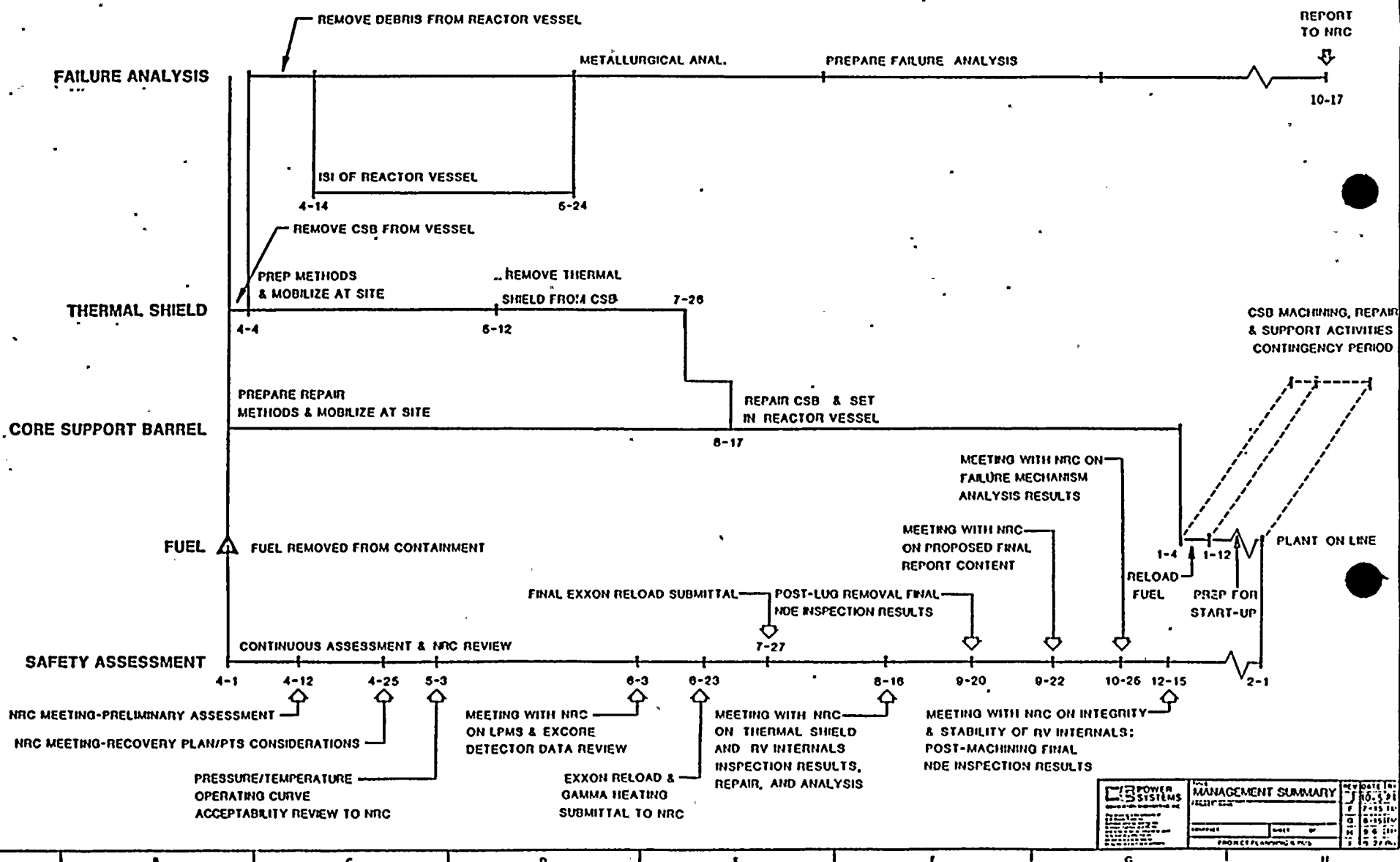
NRC MEETING

22 September '83

(FPL - PSL-1 THERMAL SHIELD RECOVERY)

<u>NAME</u>	<u>AFFILIATION</u>
D. Sells	NRC Project Manager
B. D. Liaw	NRC/MTEB
S. Hou	NRC/MEB
W. S. Hazelton	NRC/MTEB
J. R. Miller	NRC/ORB3 Chief
Daniel Fieno	NRC/CPB
Alan Wang	ACRS
Paul Leech	NRC/ORB-3
Richard J. Kiessel	NRC/IE/EGCB
Lambros Lois	NRC/DST/CPB
J. C. Chandler	Exxon Nuclear
T. A. Dillard	FPL
D. C. Chaney	FPL
C. D. Sellers	NRC/MTEB
C. M. Molnar	C-E
J. F. Mullooly	C-E
Y. Hsii	NRC/CPB

ST. LUCIE 1 PLANT RECOVERY PLAN (REVISION 4)



POWER SYSTEMS <small>ST. LUCIE 1 PLANT</small> <small>REVISION 4</small>	MANAGEMENT SUMMARY <small>PROJECT PLANNING & PLS</small>		<small>REV</small> 1	<small>DATE</small> 10-17-81
	<small>COMPILED</small> <small>DATE</small> 10-17-81	<small>BY</small> <small>DATE</small> 10-17-81	<small>OF</small> <small>DATE</small> 10-17-81	<small>NO.</small> 1

