



SACRAMENTO MUNICIPAL UTILITY DISTRICT ☐ P. O. Box 15830, Sacramento CA 95852-1830, (916) 452-3211
AN ELECTRIC SYSTEM SERVING THE HEART OF CALIFORNIA

June 24, 1987

GCA 87-256

Mr. James M. Taylor
Deputy Executive Director for Regional Operations
U.S. Nuclear Regulatory Commission
Philips Building
7920 Norfolk Avenue
Bethesda, MD 20014

Dear Mr. Taylor:

On June 18, 1987, I presented to the Board of Directors of the Sacramento Municipal Utility District my assessment concerning the schedule and budget for the successful restart of Rancho Seco. The materials summarizing my presentation are enclosed for your review.

The conclusions of the assessment resulted from my evaluation of the key facets of the current restart program. Further, our extensive and systematic in-house evaluation was augmented by the independent reviews of consultants and the findings of the Nuclear Regulatory Commission and INPO.

The results of our indepth assessment:

- o Confirm my judgment that Rancho Seco can be operated safely
- o Attach the following schedule and budget parameters to the restart effort:
 - 1 The delay of restart till January 1988
 - 2 A four- to five-month structured power ascension program after the January restart
 - 3 The required addition of \$62,000,000 to the 1987 budget.

The Board of Directors is giving careful consideration to the details of my assessment, and will make further comments at a future meeting.

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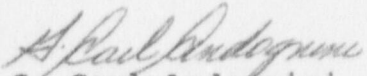
Mr. Taylor

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June 24, 1987

Should you require additional information, please contact Mr. John Vinguist of my staff at (916) 452-3211, ext. 4244.

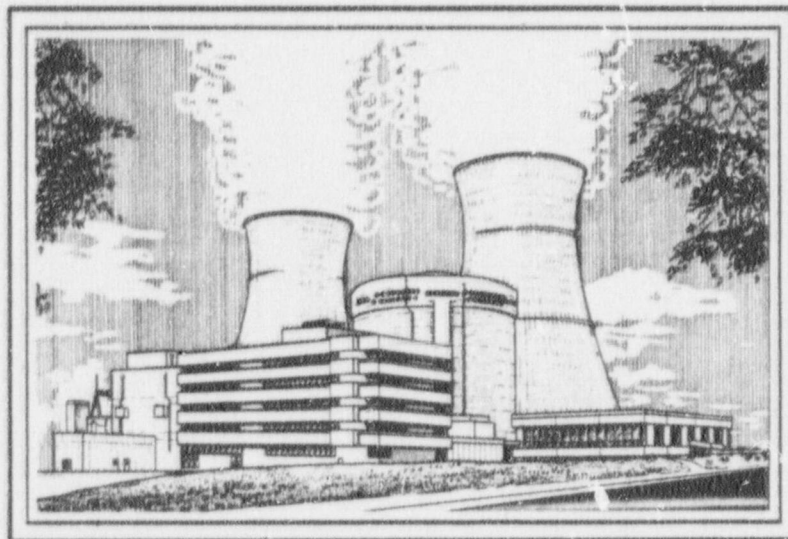
Sincerely,



G. Carl Andognini
Chief Executive Officer,
Nuclear

Enclosures

cc: T. Murley - (w/o enclosures)
J. Martin, Region V - (w/o enclosures)
RIC Files
4th Floor Files



RANCHO SECO
RESTART SCHEDULE
AND
BUDGET ASSESSMENT

PRESENTED TO THE
BOARD OF DIRECTORS
JUNE 18, 1987

INTRODUCTION

Good Morning President Wilcox, and members of the Board. Copies of my remarks and overheads have been provided to each Board Member. Additional copies will be available for the news media after my presentation.

In April, when I accepted this position, I made a commitment to report to you on the cost and schedule of Rancho Seco. Today, I am here to report to you my assessment for successfully completing the restart of Rancho Seco. In reaching my conclusions, I have evaluated all key facets of the current Restart Program. This has included a systematic review with individual department managers to assess their programs, difficulties, schedules, direction, and need for redirection. In addition to the evaluation that was made by the in-house staff, I selected several consulting specialists who have independently evaluated the Restart effort and have assisted in the preparation of this report. I have also met with the Nuclear Regulatory Commission and INPO. I have studied and critiqued all their reports and findings, and together with my own experience, I am prepared to tell you that I am ready to report our assessment for the restart of Rancho Seco.

My agenda for today covers (Slide - Agenda)

The agenda shows the subjects that I will cover this morning. First, I want to share with you that I am pleased with the thoroughness of the job which was done in reviewing the Restart Schedule and the basis for the budget projection.

I will also share with you our assessment of both schedule and budget. In addition, we took a forward look at items that might have a potential impact. We assigned a risk factor to each of these items. At the end, I will summarize my conclusions.

Much has been accomplished at Rancho Seco. An excellent problem identification program was established. This resulted in early and sound engineering decisions to accelerate the installation of the Emergency Feedwater Initiation and Control (EFIC) system, to accelerate the installation of new diesel generators, and to sleeve critical tubes in the steam generators.

I am pleased with the overall progress being made to the plant systems and equipment. Additional enhancements are required in management systems and procedures. High quality individuals now fill key positions of the permanent organization. However, the organization, which I will discuss shortly, lacks depth to adequately support the key individuals in place. A management development program to address this issue is being developed and will be implemented in 1988.

(Slide - Restart Implementation Organization)

In May, the organization was still structured to identify and resolve restart problems and implement modifications. Recently you were advised that the transition organization was implemented on June 15, 1987.

(Slide - Transition Organization)

This is a critical milestone for Rancho Seco, as we now begin the transition from a repair and retrofit phase to the startup and test phase. The purpose of the interim organization is to focus management attention on remaining restart functions, primarily system review and test, and to transition the new management team into their permanent line responsibilities.

When restart activities are complete, we will proceed to the final phase of our transition and implement the Permanent Organization.

(Slide - Permanent Organization)

With respect to staffing, several key positions have recently been filled. You will note that there are only three vacant positions at the department head level. We have successfully recruited key operations personnel who have strengthened those functions. Dan Keuter is the Nuclear Operations and Maintenance Director and Bill Kemper is the Operations Manager. Dan has a Senior Reactor Operator's License and many years experience at an operating nuclear plant. Bill has a Senior Reactor Operator's license plus extensive operating experience at an operating Babcock and Wilcox plant. Lee Fossum just accepted the position of Scheduling and Outage Manager. Lee brings extensive scheduling, outage, and maintenance management experience which he obtained at several nuclear plants. In addition, Karl Meyer has accepted our offer for the position of Licensing Manager. He is also a highly experienced and respected manager, who will assist us in responding to the NRC as well as perform normal licensing functions.

Under the consent agenda, I have requested the upgrade of the QA Manager position to Director. This upgrade is necessary to bring stature to the position and enables us to recruit an individual who can enhance our Quality Program as well as ensure regulatory compliance. Pending the results of today's meeting, he is prepared to join our organization.

The experience level of Rancho Seco operators needs to be strengthened. We are currently supplementing them with experienced individuals from other facilities. Furthermore, additional operator training will be conducted during the system test and power ascension portions of the test program.

In recruiting individuals for permanent positions, we have learned that individuals in all classifications are highly concerned about the uncertainties surrounding Rancho Seco today. While we supplement our current team with consultants, we need to establish the permanent team and get them trained to work cohesively as soon as possible.

We have completed an evaluation of the system review and test program to assure that it meets our needs to verify system operability. The NRC and the District have agreed upon the selection of systems and the functions to be tested as outlined in the System Status Reports. However, an evaluation has lead us to the conclusion that the test program requires strengthening in order to assure that the systems are functional. In our meeting with the NRC last week they concurred with this approach.

The engineering program has been revised to be more proactive and responsive to plant needs. Some of the findings of the recent NRC Augmented System Review and Test Program (AS RTP) Audit, coupled with our own evaluations, have shown a need to improve the design process, to provide more complete design packages and operational input into design changes. On Tuesday, just two days ago, in a phone conversation with the NRC Region V, they discussed their concern regarding AS RTP audits. Based on this conversation, we saw no alternative but to redirect our program by completing this effort prior to restart. We had previously started these audits but did not plan to complete them until after startup.

A problem identification program called QCI-12 was developed early in the outage to identify work items. This has proven to be an effective program. At this time we are reinforcing this process by establishing a Scope Control Program and have staffed it with a team from various disciplines. Their purpose is to better define the remaining scope and also to do a final scrub down of priority items to determine if they are applicable to the restart effort. This task force will continuously assess scope, schedule, and cost impact to enhance management control and progress reporting.

During my assessment program,, it was apparent that many of the plant processes were not integrated. A Management Systems Control Center (MSCC) has been developed to focus management attention on the numerous restart activities. The purpose of this Center is to dynamically display the various management processes in one location to coordinate those activities. Each process will be described as shown on the following overhead.

(Slide - MSCC)

An up-to-date status of the restart can be obtained at any time in the MSCC. The Restart Implementation Manager conducts meetings in the Center to review each process and its status with respect to the restart effort. In addition, the new Rancho Seco Management Control System will provide the governing Administrative Procedures to package the process and control all activities. When this new program has been proven, the entire process will be documented.

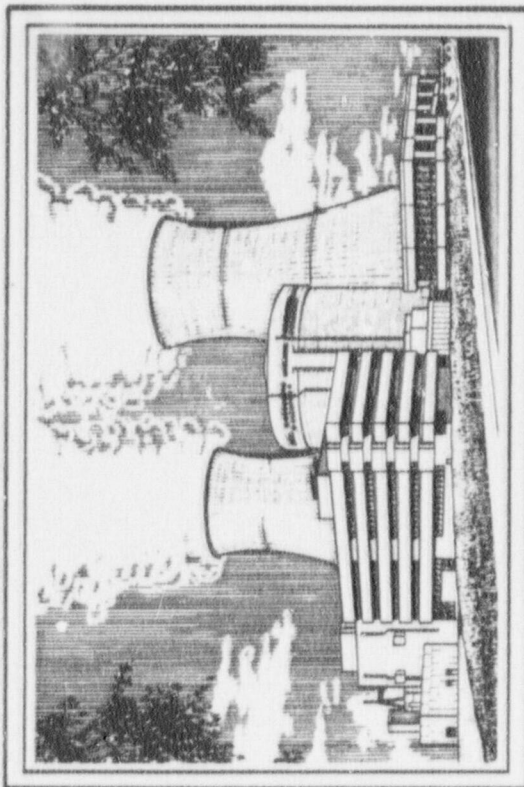
In summary, although it may take a period of operating experience before high reliability can be reached, I am confident that Rancho Seco can be operated safely. I repeat my commitment that I will not start up Rancho Seco until it is safe to do so. In addition to regulatory agencies review, I must also have the

concurrence from my staff, from the continuing effort of the Nuclear Advisory Committee, and from an outside independent group of industry experts who will conduct an operational readiness review.

At this time, let me provide you my assessment relative to schedule and cost.

RANCHO SECO
RESTART SCHEDULE
AND
BUDGET ASSESSMENT

PRESENTED TO THE
BOARD OF DIRECTORS
JUNE 18, 1987

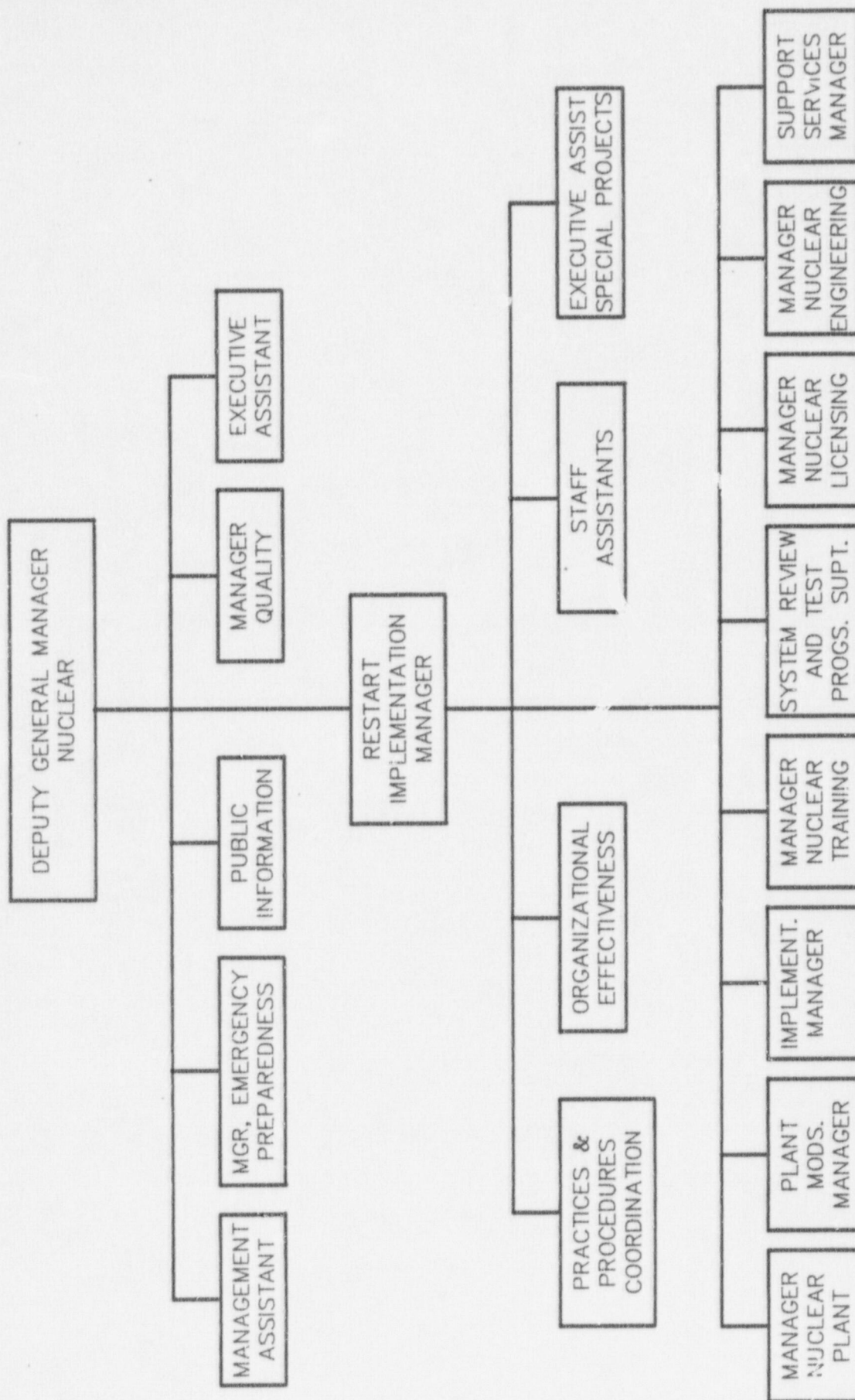


AGENDA

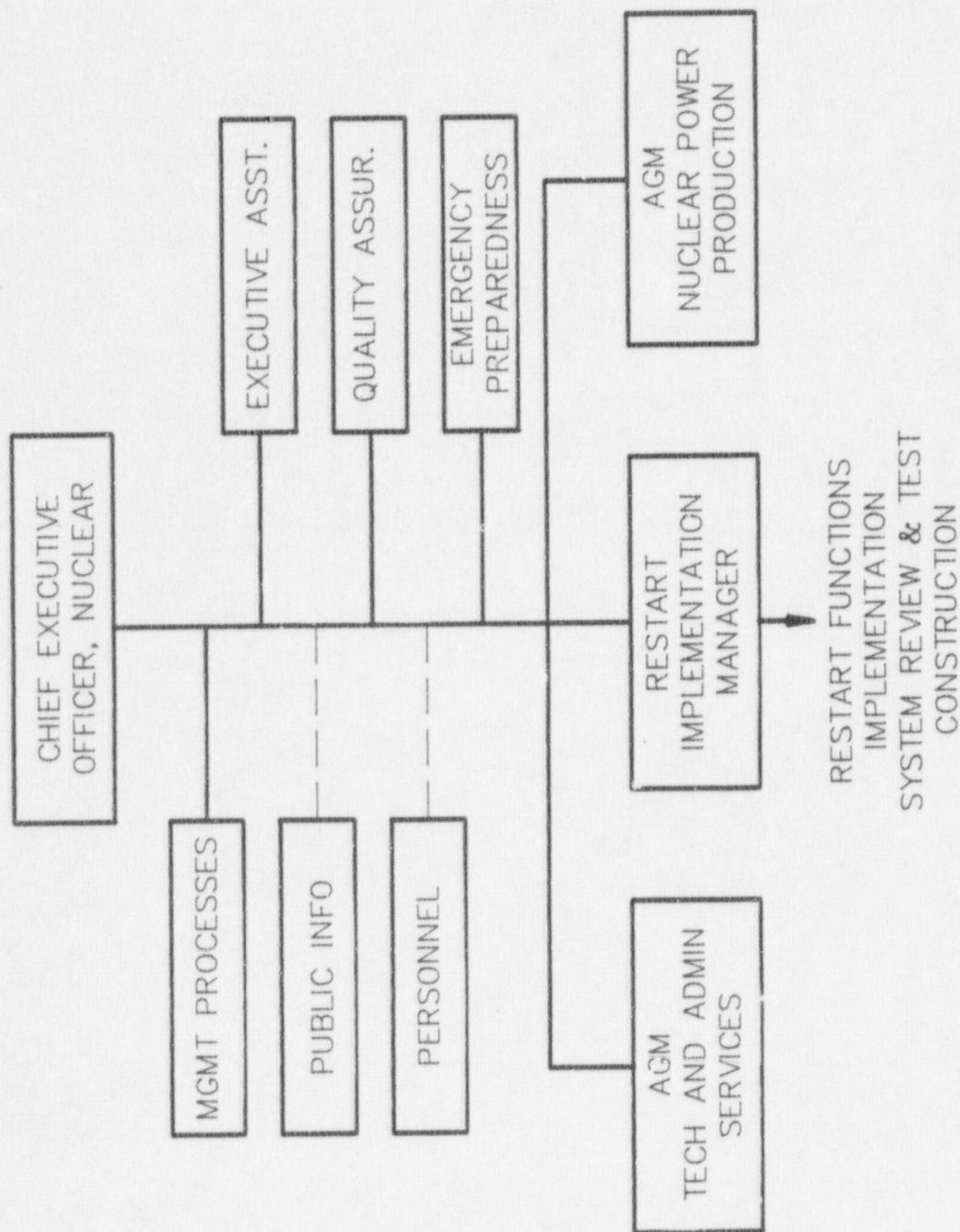
- INTRODUCTION
- RESTART SCHEDULE AND BUDGET BASIS
- SCHEDULE ASSESSMENT
- BUDGET ASSESSMENT
- POTENTIAL IMPACT ASSESSMENT
- CONCLUSIONS

■ INTRODUCTION

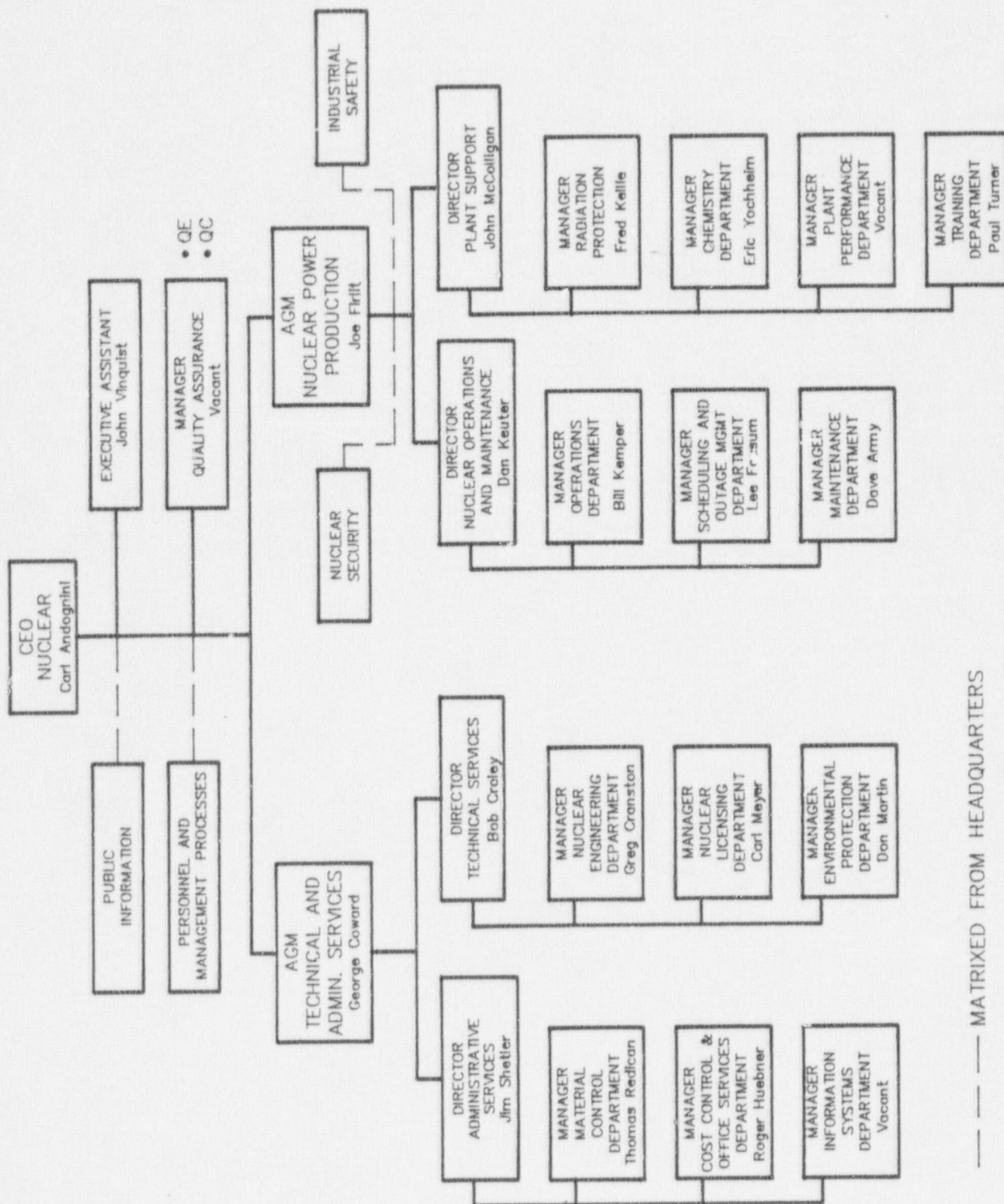
RESTART IMPLEMENTATION ORGANIZATION



TRANSITION ORGANIZATION



PERMANENT ORGANIZATION



— — — MATRIXED FROM HEADQUARTERS

MANAGEMENT SYSTEMS CONTROL CENTER

- PROCESS
- ACCOUNTABLE DEPARTMENT
- SUPPORT GROUPS
- PROCEDURES
- FLOWCHARTS
- CONTROL TOOLS
- BACKLOG

■ RESTART SCHEDULE
AND BUDGET BASIS

RESTART SCHEDULE AND BUDGET BASIS

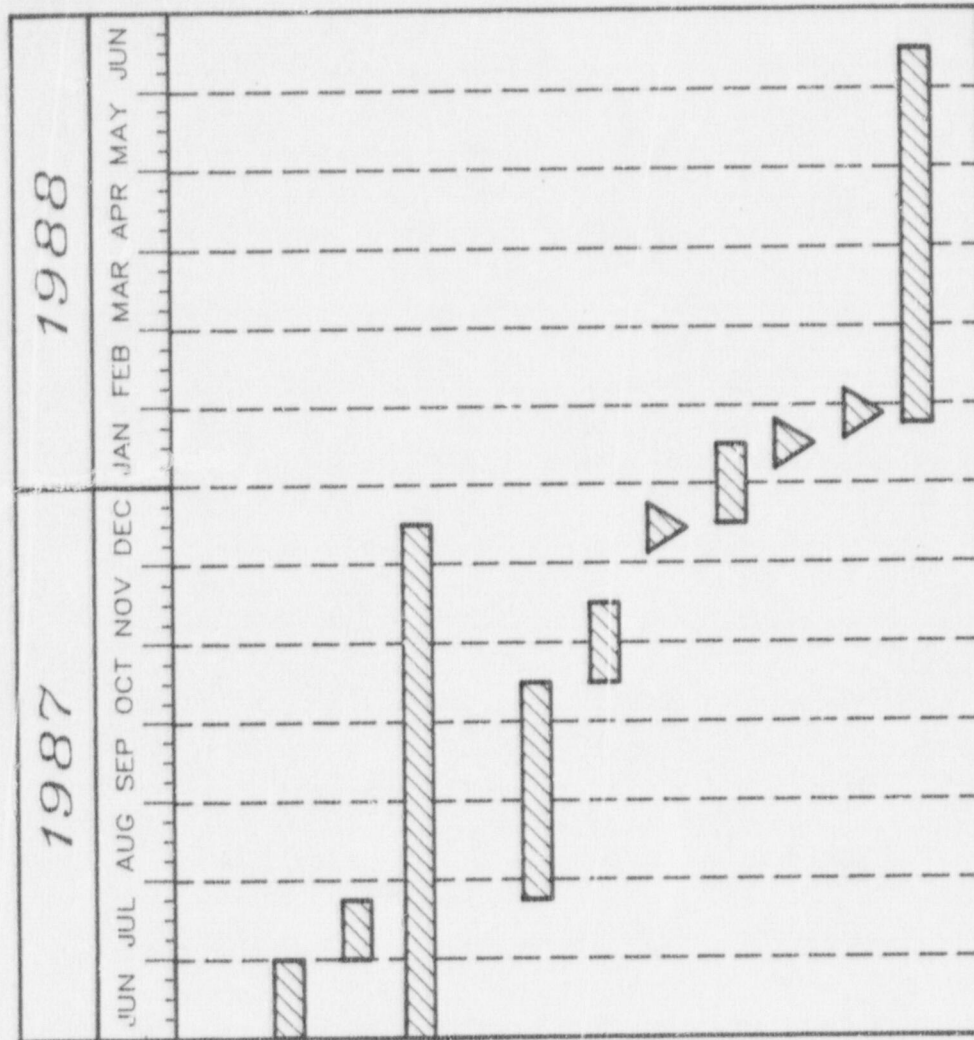
- IDENTIFIED SCOPE FROM SMUD RESTART PROCESS
- RECENT SCOPE ADDITIONS
 - EXPANDED COMPONENT AND SYSTEM FUNCTIONAL TESTING
 - EXPANDED POWER ASCENSION PROGRAM
 - EXPANDED RESPONSE TO NRC AUGMENTED SYSTEM REVIEW AUDIT
 - CABLE RACEWAY TRACKING SYSTEM (CRTS) PROGRAM EXPANSION
 - PROCEDURE PROGRAM EXPANSION
 - TECHNICAL SPECIFICATION UPGRADE PROGRAM
 - VALVE REWORK PROGRAM EXTENSION
 - REG. GUIDE 1.75 CABLE SEPARATION PROGRAM

■ SCHEDULE ASSESSMENT

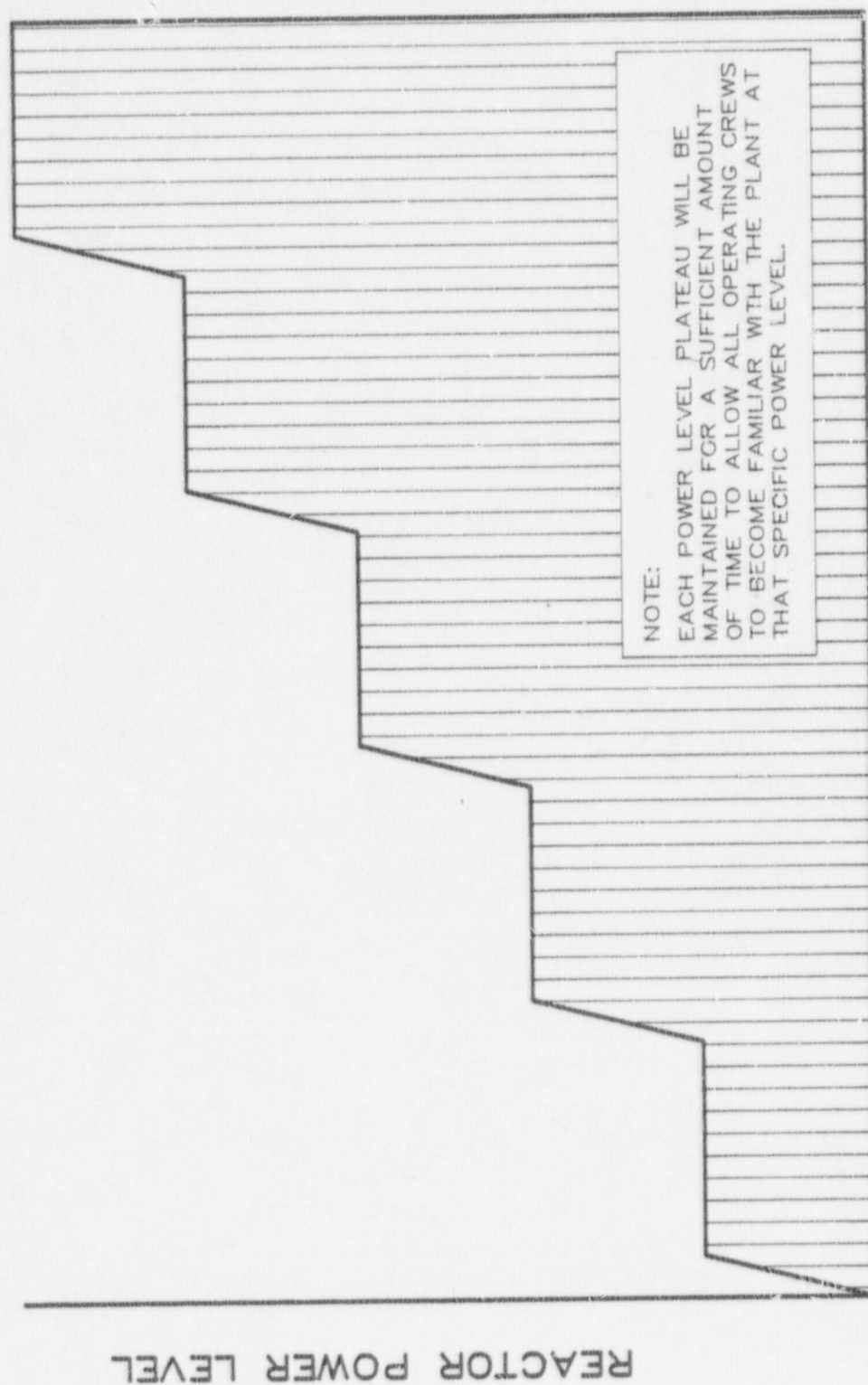
RANCHO SECO RESTART SCHEDULE (No Contingency Included)

PRIMARY CRITICAL PATH

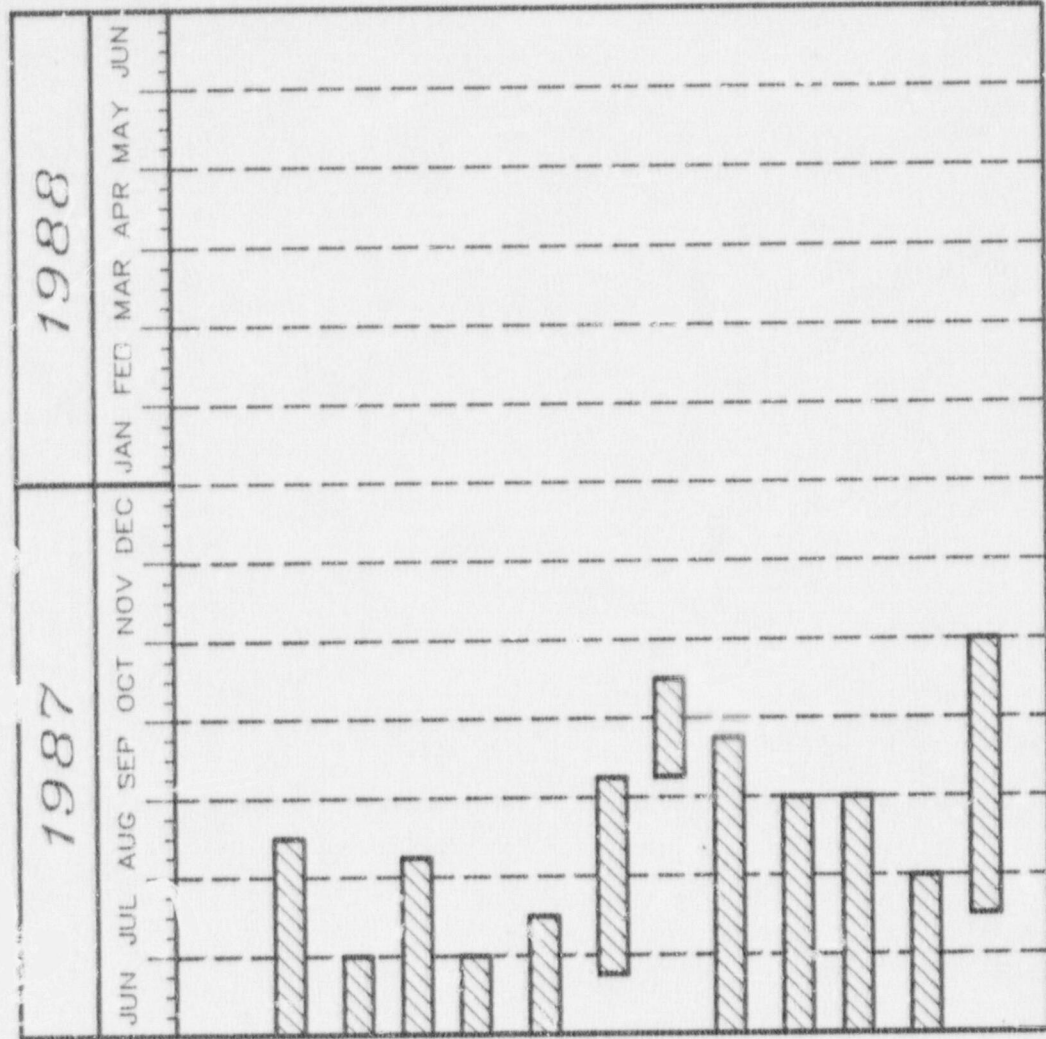
- Safety Systems Outages
- Aux Feedwater/EFIC Modifications
- Expanded Augmented System Review and Test Program
- Cold Functional Testing
- Cold Integrated Testing
- Plant Heatup
- Hot Shutdown Testing
- Reactor Startup
- Power Production
- Power Ascension Program



POWER ASCENSION PROGRAM



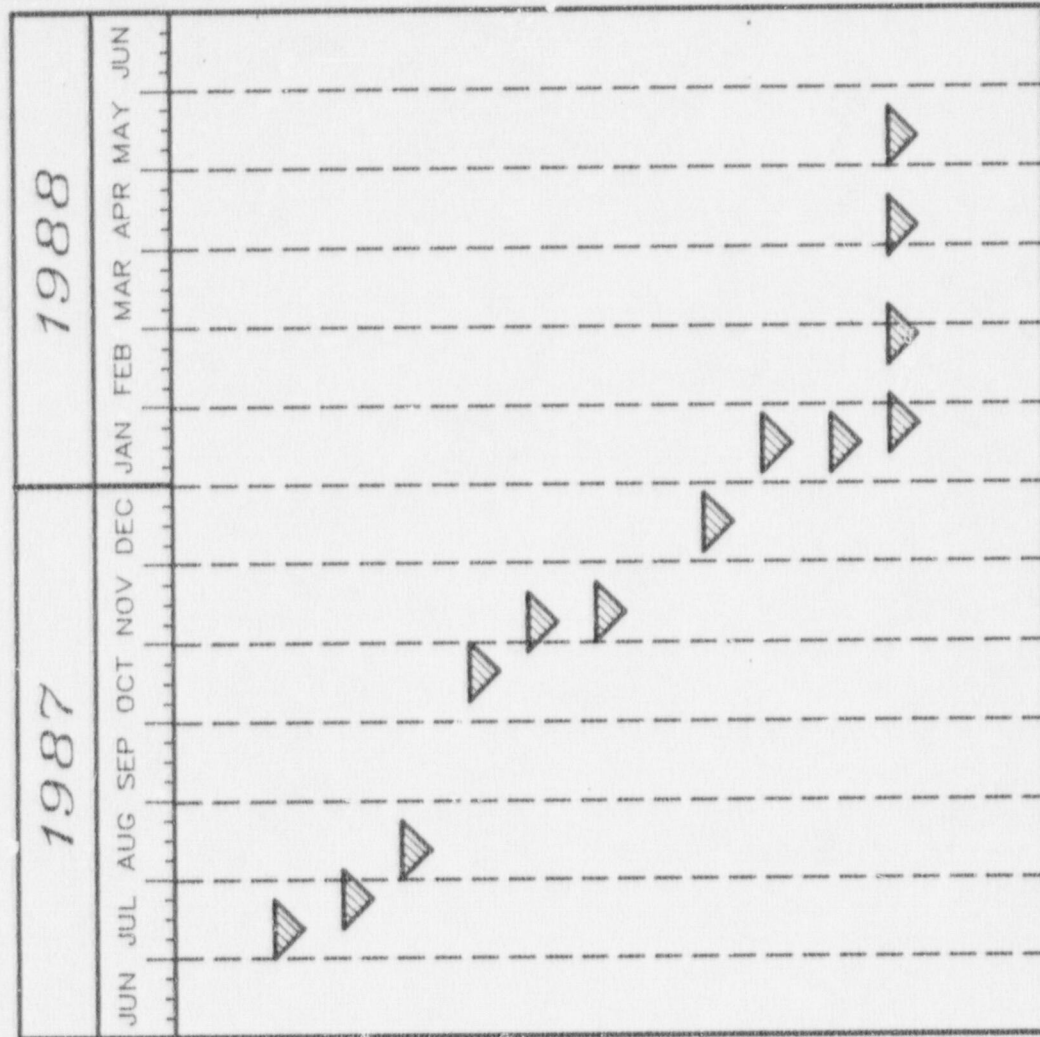
RANCHO SECO BASE CASE RESTART SCHEDULE



OTHER CRITICAL ACTIVITIES

- Post Accident Sampling System
- Heating & Ventilating System
- New Diesels
- Hydrogen Recombiner for ILRT
- Motor Operated Valves / LLR's
- Operator Simulator Training
- Final Modification Training
- Operating Procedure Revisions
- Technical Specification Issue
- Nuclear Engineering Program
- Valve Refurbishment
- Reg Guide 1.75 Cable Separation Program

RANCHO SECO BASE CASE RESTART SCHEDULE



MAJOR MILESTONES

- Complete New Diesel Testing
- Complete Integrated Leak Test
- Complete EFIC Cold Funct. Test
- Complete System Functional Test
- Complete Loss of Power Test
- Complete Operational Readiness Review
- Plant Heatup
- Complete Hot Shutdown Testing
- Reactor Startup
- Power Ascension Program

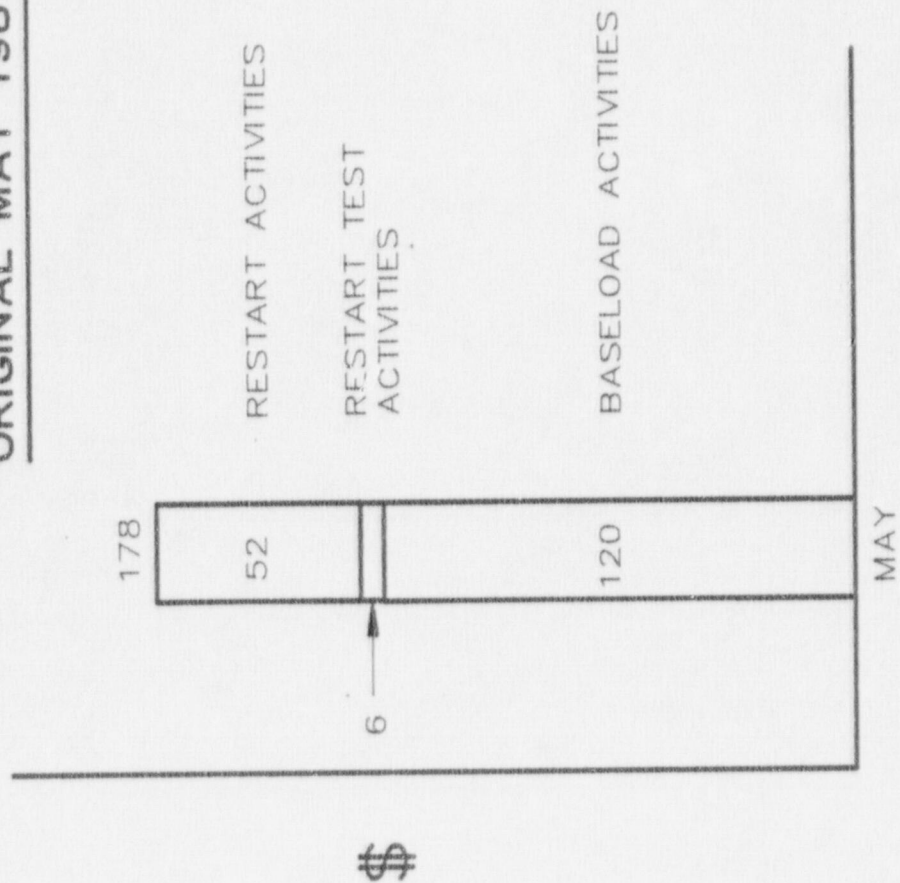
■ BUDGET ASSESSMENT

1987 BUDGET EVALUATION

- ORIGINAL MAY 1987 RESTART
- SEPTEMBER 1987 RESTART EVALUATION
- JANUARY 1988 RESTART EVALUATION

1987 NUCLEAR BUDGET
DOLLARS X MILLIONS

ORIGINAL MAY 1987 RESTART



PLANT RESTART DATE

SCOPE CHANGE IMPACT FACT SHEET
SEPTEMBER 1987 RESTART EVALUATION

IMPACT GREATER THAN \$2,000,000 EACH:

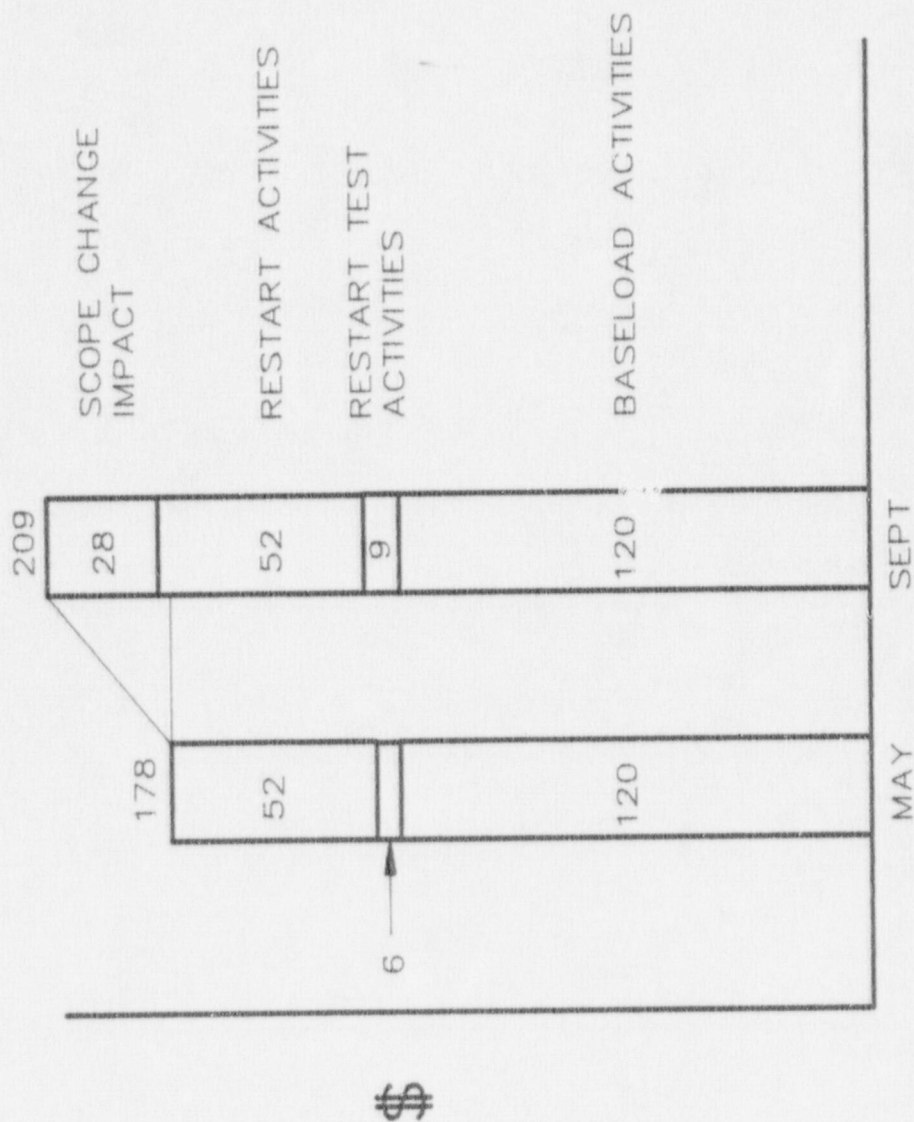
- PRESSURIZER HEATER BUNDLES
- DIESEL GENERATORS
- EFIC
- MOV UPGRADE
- CABLE RACEWAY TRACKING SYSTEM (CRTS) PROGRAM
- REG GUIDE 1.75 -(CABLE SEPARATION)
- INCREASE IN BASE SYSTEM TEST PROGRAM

IMPACT BETWEEN \$1,000,000 AND \$2,000,000:

- H₂ RECOMBINER
- ASBESTOS INSULATION*
- MAKE IT HAPPEN PROGRAM*
- SHIFT ADVISER PROGRAM*
- VALVE REFURBISHMENTS*

* New Scope Item
Not In Original 1987 Budget

1987 NUCLEAR BUDGET
DOLLARS X MILLIONS
SEPTEMBER 1987 RESTART EVALUATION



PLANT RESTART DATE

SCOPE CHANGE IMPACT FACT SHEET JANUARY 1988 RESTART EVALUATION

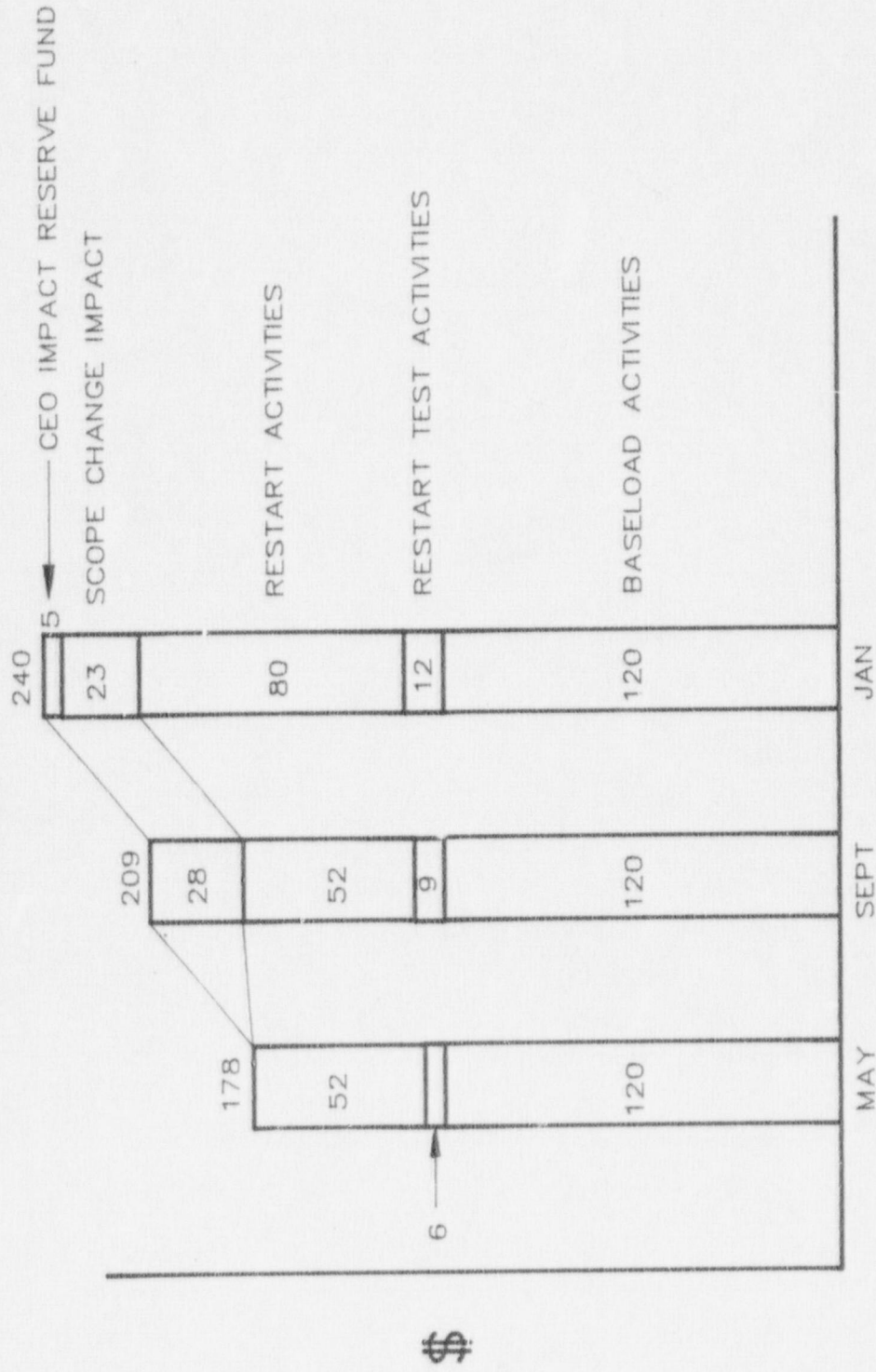
IMPACT GREATER THAN \$2,000,000 EACH:

- ADDITIONAL SCOPE FROM QCI-12 REVIEW
- MANAGEMENT PROCESS
 - EVALUATION
 - DOCUMENTATION
 - IMPLEMENTATION
 - QA PROGRAM
- AUGMENTED SYSTEM REVIEW & TESTING PROGRAM
- SYSTEM FUNCTIONAL TEST PROGRAM

IMPACT BETWEEN \$1,000,000 AND \$2,000,000:

- UPGRADE OF PROCEDURES
- UPGRADE OF EXISTING TECHNICAL SPEC.

1987 NUCLEAR BUDGET DOLLARS X MILLIONS JANUARY 1988 RESTART EVALUATION



■ POTENTIAL IMPACT ASSESSMENT

RESTART PROGRAM
POTENTIAL IMPACT ITEMS

- PERSONNEL
- TESTING
- LICENSING ISSUES
- SCOPE CHANGES
- DOCUMENTATION

POTENTIAL IMPACT ITEM ASSESSMENT FACTORS

ITEM	FACTORS
RISK	H - HIGH M - MEDIUM L - LOW
SCHEDULE IMPACT (WEEKS)	<u>EFFECT ON END DATE</u> H - GREATER THAN 4 M - BETWEEN 2 AND 4 L - LESS THAN 2
BUDGET IMPACT (\$ MILLION)	<u>EFFECT ON BUDGET</u> H - GREATER THAN 2 M - BETWEEN 1 AND 2 L - LESS THAN 1

POTENTIAL IMPACT ITEMS _____ PERSONNEL _____

DESCRIPTION	RISK	SCHEDULE	BUDGET	ACTIONS TO MITIGATE
FAILURE OF $\geq 20\%$ OF LIC. OPERATOR REQUAL CANDIDATES	L	H	L	• INCREASE FOCUS ON PRE-EXAM WALKTHROUGH AND TESTING
CONTROL ROOM ABILITY TO SUPPORT TEST/ REPAIR ACTIVITIES	M	M	M	• UTILIZE TEST PROGRAM AS TRAINING EXERCISE • ADVANCED CLEARANCES • RECOGNIZE CONSTRAINT
ABILITY TO HIRE AND SUSTAIN KEY ORGANIZATIONAL POSITIONS	M	M	L	• FOCUSED RE-START PERSPECTIVE • SOUND ORGANIZATIONAL APPROACH

SUMMARY IMPACT

RISK MEDIUM
 SCHEDULE MEDIUM
 BUDGET LOW

POTENTIAL IMPACT ITEMS TESTING

DESCRIPTION	RISK	SCHEDULE	BUDGET	ACTIONS TO MITIGATE
STARTUP SYSTEMS SCOPE EXPANSION	L	M	M	- INITIAL NRC CONCURRENCE OF SELECTED SYSTEMS - PREVIOUS TESTING EXPERIENCE INCORPORATED
SURVEILLANCES				
• REACTOR VESSEL INTERNAL VENT VLVS	M	L	L	CONTINUE INTERFACE WITH REGULATOR
EMERGENCY EXERCISE PERFORMANCE	L	H	M	- TRAINING PROGRAM - EMERGENCY DRILL PROGRAM

SUMMARY IMPACT

RISK MEDIUM
SCHEDULE MEDIUM
BUDGET LOW

POTENTIAL IMPACT ITEMS — LICENSING ISSUES —

DESCRIPTION	RISK	SCHEDULE	BUDGET	ACTIONS TO MITIGATE
HEATUP AND COOL-DOWN CURVES	L	L	L	• APPROVAL NOT REQUIRED FOR RESTART
SECTION XI PROGRAM SUBMITTAL	L	L	L	• SUBMITTAL IN JUNE • SUBMITTED PROGRAM AND PROCEDURES IMPLEMENTED

SUMMARY IMPACT

RISK LOW
SCHEDULE LOW
BUDGET LOW

POTENTIAL IMPACT ITEMS — SCOPE CHANGES —

DESCRIPTION	RISK	SCHEDULE	BUDGET	ACTIONS TO MITIGATE
TEST RESULTS				
• MAINTENANCE				• EXPERIENCE FACTOR INCORPORATED
— ROUTINE	H	L	L	• EARLY TESTING OF MAJOR COMPONENTS
— MAJOR	L	H	H	• EARLY EXERCISING OF SYSTEMS
— RCP SEALS	L	L	L	
• MODIFICATIONS	H	M	M	• STRENGTHEN ENGINEERING FIELD SUPPORT
				• REVIEW/ASSESS SPARE PART ALLOCATIONS
				• SCHEDULE ACCOMMODATION BASED ON EXPERIENCE
FUEL HANDLING EQUIP. REFURBISH.	L	M	H	• REVIEW ISSUE WITH REGULATOR
AUDITS/ASSESSMENTS				
• NRC	H	L	L	• CORRECTIVE ACTION TRACKING PROGRAM
• INPO	H	L	L	• CLOSE INTERACTION WITH AGENCIES
• QA	H	L	L	
• ANI	H	L	L	
• ASRTP FALL-OUT	H	L	M	
• IND. REVIEW TEAM	H	L	L	
MODIFICATIONS	L	L	L	• FORMAL SCOPE REVIEW TEAM
				• LONG RANGE PLAN INCORPORATING REMAINING SCOPE

SUMMARY IMPACT

RISK HIGH
SCHEDULE MEDIUM
BUDGET MEDIUM

POTENTIAL IMPACT ITEMS — DOCUMENTATION —

DESCRIPTION	RISK	SCHEDULE	BUDGET	ACTIONS TO MITIGATE
TEST PACKAGE CLOSE-OUT	M	M	L	• PACKAGE CLOSURE RESPONSIBILITY ESTABLISHED
DESIGN PACKAGE CLOSE-OUT	M	M	L	• PERFORMANCE MONITORING IN PROGRESS
CONSTRUCTION TURN-OVER OF DESIGN PACKAGE	M	M	L	• MANAGEMENT SYSTEMS CONTROL CENTER ESTABLISHED
CABLE RACEWAY TRACKING SYSTEM (CRTS)	H	M	H	• VERIFICATION EXPEDITING IN PROGRESS • SCHEDULE BASED ON EXISTING VERIFICATION PROCESS

SUMMARY IMPACT

RISK MEDIUM
SCHEDULE MEDIUM
BUDGET MEDIUM

**COST EVALUATION
1987 BUDGET**

(Dollar x Millions)

ORIGINAL 1987 BUDGET	178
COMMITTED INCREASE FOR SEPTEMBER RESTART	<u>31</u>
SUBTOTAL	209
REQUIRED INCREASE FOR JANUARY RESTART	26
RESERVE FUND FOR IMPACTS	<u>5</u>
TOTAL	240

CONCEPTUAL 1988 BUDGET

STATUS _____

DOLLAR x MILLIONS

BASE LOAD:

- ACTIVITIES NECESSARY TO OPERATE, MAINTAIN & MODIFY (ROUTINE). To Be Determined

RESTART CARRYOVER: 20

- POWER ASSESSMENT PROGRAM
- COMPLETION OF PROCEDURE UPDATES
- TECHNICAL SPECIFICATION RE-WRITE
- SHORT TERM CORRECTIVE ACTIONS
 - MANAGEMENT SYSTEMS
 - EXISTING COMMITMENTS
 - PACKAGE CLOSE-OUTS (DOCUMENTATION)

1988 IMPROVEMENTS: 50

- PRIORITY 2 & 3 QTS-ITEMS
- LONG TERM MANAGEMENT SYSTEM
- SIMULATOR
- ENGINEERING FACILITY

POTENTIAL IMPACT CARRY-OVER: 15

- TESTING/RUN-IN
- SCHEDULE DELAY

■ CONCLUSIONS

SUMMARY

■ SCHEDULE	JANUARY 1988
■ TOTAL PROJECTED COST FOR 1987 (DOLLAR x MILLIONS)	240

KEY FACTORS FOR SUCCESSFUL PLAN, SCHEDULE AND IMPLEMENTATION

- CLOSER TO SCOPE FINALIZATION
- MORE PERMANENT STAFF
- OPERATIONAL MANAGEMENT FOCUS
- ACCOUNTABILITY
- QUANTIFIED ASSUMPTIONS
- FOCUS TO STARTUP
- PRO-ACTIVE REGULATOR INTERFACE