MAR 30 1992

Docket No. 50-285
License No. DPR-40

Omaha Public Power District
ATTN: W. G. Gates, Division Manager
Nuclear Operations
444 South 16th Street Mall
Mail Stop 8E/EP4
Omaha, Nebraska 68102-2247

Gentlemen:

This refers to the management meeting conducted at Region IV's request in Omaha Nebraska, on March 16, 1992. This meeting related to activities authorized by NRC License DPR-40 for the Fort Calhoun Station and was attended by those on the attached Attendance List.

The subjects discussed at this meeting are described in the enclosed Meeting Summary.

It is our opinion that this meeting was beneficial and has provided a better understanding of your efforts and initiatives in the area of engineering. In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

Original Signed By:
A. B. BEACH
A. Bill Beach, Director
Division of Reactor Projects

Enclosure:
Meeting Summary w/attachments

cc w/enclosure:
LeBoeuf, Lamb, Leiby & MacRae
ATTN: Harry H. Voigt, Esq.
1875 Connecticut Avenue, NW
Washington, D.C. 20009-5728

*RIV/PE:DRP	*C:DRP	D:DRP
EECollins;bh	PHHarrell	ABBeach
/ /92	/ /92	3/30/92

*previously concurred

IE45
1/1

Washington County Board
of Supervisors
ATTN: Jack Jensen, Chairman
Blair, Nebraska 68008

Combustion Engineering, Inc.
ATTN: Charles B. Brinkman, Manager
Washington Nuclear Operations
12300 Twinbrook Parkway, Suite 330
Rockville, Maryland 20852

Nebraska Department of Health
ATTN: Harold Borchert, Director
Division of Radiological Health
301 Centennial Mall, South
P.O. Box 95007
Lincoln, Nebraska 68509-5007

Fort Calhoun Station
ATTN: T. L. Patterson, Manager
P.O. Box 399
Fort Calhoun, Nebraska 68023

bcc to DMB (IE45)

bcc distrib. by RIV:

R. D. Martin
DRSS-RPEPS
RIV File
DRP
Project Engineer (DRP/C)
DRS
Senior Resident Inspector - Cooper
Senior Resident Inspector - River Bend
Resident Inspector
Section Chief (DRP/C)
Lisa Shea, RM/ALF

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MEETING SUMMARY

Licensee: Omaha Public Power District (OPPD)

Facility: Fort Calhoun Station

License No.: DPR-40

Docket No.: 50-285

Subject: OPPD Engineering

On March 16, 1992, representatives of Omaha Public Power District met with Region IV personnel in Omaha, Nebraska, to discuss various engineering topics. The conference was held at the request of Region IV. The attendance list and licensee presentation are attached to this summary.

The licensee presented topics addressing the engineering organization, the configuration control process, pressurized thermal shock, the modification control process, the 1992 outage status, and engineering interface with plant operations. A copy of the licensee's presentation is enclosed in Attachment 2.

Attachments:
1. Attendance List
2. Licensee Presentation (NRC distribution only)

ATTENDANCE LIST

Attendance at the OPPD/NRC management meeting on March 16, 1992, at Omaha, Nebraska:

OPPD

F. Petersen, President, Omaha Public Power District
W. Jones, Senior Vice President, Nuclear Operations
W. Gates, Division Manager, Nuclear Operations Division
S. Gambhir, Division Manager, Production Engineering
R. Andrews, Division Manager, Nuclear Services
T. Patterson, Plant Manager, Fort Calhoun Station
R. Short, Manager, Nuclear Licesning
R. Phelps, Manager, Design Engineering
R. Jaworski, Manager, Station Engineering
T. McIvor, Manager, Nuclear Projects
K. Holthaus, Manager, Nuclear Engineering
W. Ponec, Manager, Administrative Services

NRC

S. Collins, Director, Division of Reactor Safety, (DRS)
T. Gwynn, Deputy Director, Division of Reactor Projects, (DRP)
T. Westerman, Chief, Plant Systems Section, DRS
J. Larkins, Project Director, Project Directorate IV-1, Office of Nuclear Reactor Regulation (NRR)
R. Mullikin, Senior Resident Inspector, Fort Calhoun Station
E. Collins, Project Engineer, DRP
S. Bloom, Project Engineer, NRR

OMAHA PUBLIC POWER DISTRICT
PRODUCTION ENGINEERING DIVISION

AN ENGINEERING GROUP COMMITTED TO:

- Safety
- Individual Respect
- Team Performance
- Integrity
- Accountability
- Cost Effectiveness
- Excellence

OBJECTIVES

- Mission
- Goals
- Organization
- Commitment to Quality
- Projects
- Modifications

NOTES:

MISSION

Provide Quality Engineering
and Technical Support
Services
for
Safe, Reliable and Economical
Operation of
Fort Calhoun Station

NOTES:

OMAHA PUBLIC POWER DISTRICT
PRODUCTION ENGINEERING DIVISION
PROFESSIONAL CODE OF ETHICS

Affirming our commitment to provide highest quality technical and engineering support for safe, reliable and economic operation of Fort Calhoun Station within established guidelines, regulations and procedures, we shall:

1. *Dedicate ourselves to the Nuclear Organization by promoting open and honest communication, team work and mutual respect.*
2. *Continue our vigilance in all areas of support activities by maintaining a questioning attitude and being proactive in identifying areas for improvement.*
3. *Continue to show ownership in our work and willingly accept responsibility for our actions and decisions.*
4. *Maintain and advance our technical skills and knowledge.*
5. *Continue to pay attention to detail and strive to complete quality work effectively, on time and within budget.*
6. *Exude pride in our work by attitude and appearance with the highest professional integrity.*
7. *Strive for the success of the Nuclear Organization by making effective use of our resources and meeting or exceeding the needs of our customers.*

GOALS

GOAL 1: SAFE OPERATION
- Continuation of Safety Culture
- Provide a Professional Working Environment

GOAL 2: PERFORMANCE
- Strive for Excellence in Operations
- Safe Completion of 1992 Refueling Outage on Schedule

GOAL 3: COSTS
- Do Right Things Right at a Reasonable Cost

NOTES:

OPPD Nuclear 1992 Priorities

Safe Operations

- Improve SALP Ratings
- Improve INPO Ratings
- Effectively Use Industry Operating Experience to Prevent Repeat Problems

Performance

- Improve Quality, Professionalism & Teamwork
- Operate Plant Successfully
- Complete Outage on Schedule

Costs

- Keep O&M & Capital Expenditures within Budget
- Complete Implementation of CERP Items
- Continue Long-Range Planning to Support Continued Operation

Omaha Public Power District

PED Organization and Functions

NOTES:

Omaha Public Power District

Commitment to Quality

NOTES:

COMMITMENT TO QUALITY

A - Attitude

B - Budget

C - Communication

NOTES:

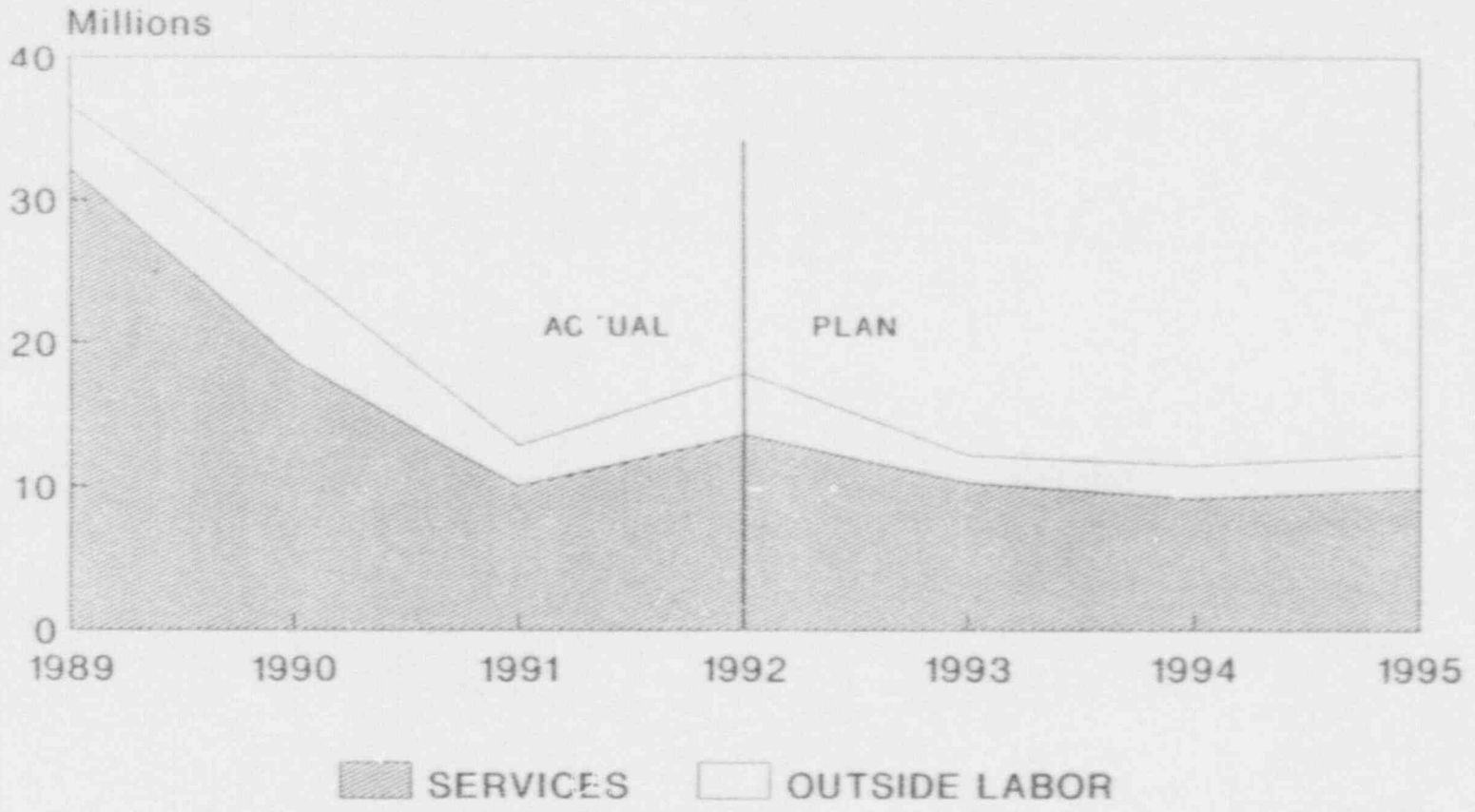
BUDGET

- RESOURCES
  - Head Count
  - Training
  - Experience
- PROGRAMS
  - Design Basis Documents
  - Program Basis Documents
  - Commitment Tracking System
  - Configureation Control Program
  - Guidelines/Instructions

NOTES:

FULL-TIME STAFF AS OF MARCH 14, 1992			
	1992 BUDGETED	CURRENT STATUS	REQS. PENDING
350 Division Mgmt.	5	5	0
351 Construction Mgmt.	16	15	1
352 System Engineering	43	45	0
353 Special Services	29	29	0
354 Radiological Services	8	8	0
355 Nuclear Procurement (32)			
356 Elect. I/C Engineering	18	19	0
357 Mechanical Engineering	25	24	0
358 Nuclear Engineering	24	24	0
359 Design Drafting	9	9	0
360 Nuclear Projects	10	9	0
361 Administrative Services	18	16	2
Misc. Open Positions			
TOTAL	205	203	3

PED OUTSIDE SUPPORT
SERVICES AND LABOR



1989-1991 ACTUAL DOLLARS PER ACCOUNTING
1992-1995 AMOUNT PER LONG RANGE PLAN

Omaha Public Power District
Fort Calhoun Station
Design Basis Documents

Plant Level Documents

Pipe Stress and Supports
Internal Missiles and High Energy Line Break
Electrical Equipment
Instrumentation Installation
Instrument and Control Systems
External Missiles
Seismic Criteria
Heavy Loads
Geotechnical
Masonry Walls
Accident Analysis
Regulations, Codes and Standards
Emergency Response Facilities
Personnel Protection
Site Meteorology
Records Retention

System Documents

Component Cooling Water
Raw Water
Spent Fuel Storage and Fuel Pool Cooling
Instrument Air
Chemical and Volume Control
Plant Communications
Emergency Diesel Generators
Demineralized Water
Fire Protection
Feedwater
Auxiliary Feedwater
Nitrogen and Hydrogen
Main Steam and Turbine Steam Extraction
Reactor Coolant
Shutdown Cooling
Containment Spray
High Pressure Safety Injection
Low Pressure Safety Injection
Post Accident Sampling
Primary and Secondary Sampling
Auxiliary Building HVAC
Containment HVAC
Control Room Habitability
Waste Disposal
120 VAC Vital Distribution
AC Electrical Distribution
DC Electrical Distribution
Cathodic Protection
ERF Computer and QSPDS Computer
Containment
Auxiliary Building
Intake Structure
Security Building

Cross Reference

Design Basis Document vs Technical Data Book Cross Reference Matrix

Omaha Public Power District
Fort Calhoun Station
Program Basis Documents

- Steam Generator
- Inservice Inspection
- Erosion/Corrosion Control
- Check Valves
- Containment Leak Rate Testing
- Snubbers
- Containment Tendons
- Motor Operated Valves
- Relief Valves

COMMUNICATION

- Internal Communication
  - Team Building Training
  - Quality Management Skills
  - Ops-Engineering Interface
  - Nuclear Notes
- External Communications
  - Customer-Supplier Relations

NOTES:

LICENSING SUBMITTAL

- Accountability
- Independent Review
- Scheduling
- Tracking
- Internal Reviews

NOTES:

Prioritization of Engineering Workload

- Control of Modifications and Major Projects
- Control of Engineering Support Tasks
- Backlog Management
- Long Range Plan

NOTES:

Control of Modifications and Major Projects

- Numerical Ranking System (ILS)
- Nuclear Projects Review Committee
- Cost Estimation
- Approval for Implementation
- Schedule Integration into Long Range Plan

NOTES:

Control of Engineering Support Tasks

- Prioritization Matrix
- Operations Priorities Meeting
- Schedule Integration
- Nuclear Projects Review Committee (if required)

NOTES:

Backlog Management

- Some Level of Backlog Necessary
- Provisions to Cancel Low Priority Tasks
- Nuclear Projects Review Committee Periodic Screening
- System to Control Work Closure

NOTES:

Long Range Plan

- Levelizes Engineering Resources
- Match Budget to Workload
- Helps Limit Outage Durations
- Anticipate Large Tasks

NOTES:

Configuration Control Process

- Procedural Tools for Both Simple and Complex Changes
- Capability to Meet Schedule Needs
- Ensure Safety and Quality
- Update Documentation

NOTES:

Summary

- Procedures in Place for Configuration Changes to Ensure:
  - Safe Operation
  - Meeting Design Criteria
  - System Reviews
  - Satisfy Customer
  - Maintain Documentation
- Training Plan for Design Engineers in Progress

NOTES:

PRESSURIZED THERMAL SHOCK

NOTES:

FORT CALHOUN STATION (FCS) HISTORY

1983 Cycle 8 Implemented Low Radial Leakage Fuel Management

1985 Reactor Vessel Weld 2-410 Sample Obtained and Analyzed

1986 Cycle 10 Implemented Extreme Low Radial Leakage Fuel Management with Part Length Poison Rods in 16 Fuel Assemblies

PTS Rule Submittal – Screening Criterion (RT_{PTS}) Would Not Be Reached Until 54 EFPY

1987 Cycle 11 Low Radial Leakage Fuel Management

NOTES:

FORT CALHOUN STATION (FCS) HISTORY

1988 Reg. Guide 1.99, Rev. 2, Issued

CEOG Task for Reg. Guide 1.154 Analysis

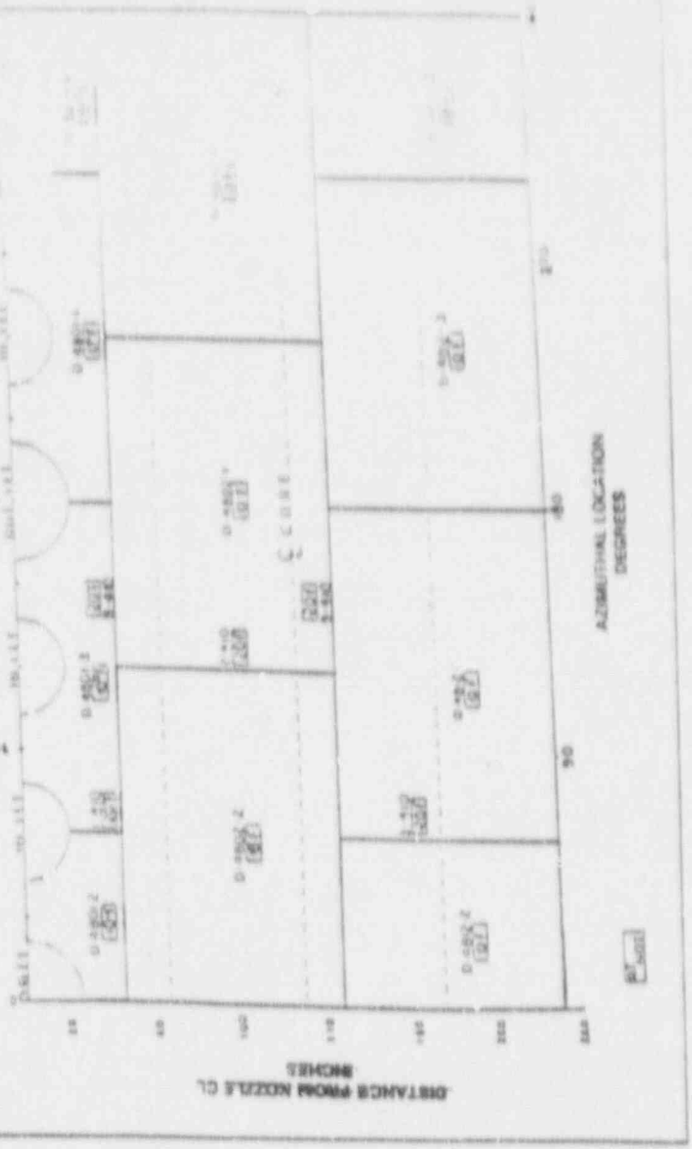
1991 **Cycle 14 Optimized Extreme Low Radial Leakage Core Designed (See Figure 2). Aggressive Flux Reductions:**

- Hafnium rods (12 assemblies)
- 4 natural uranium assemblies
- IFBA fuel rods

Submittal for Revised PTS Rule – Reach Screening Criterion in 2009

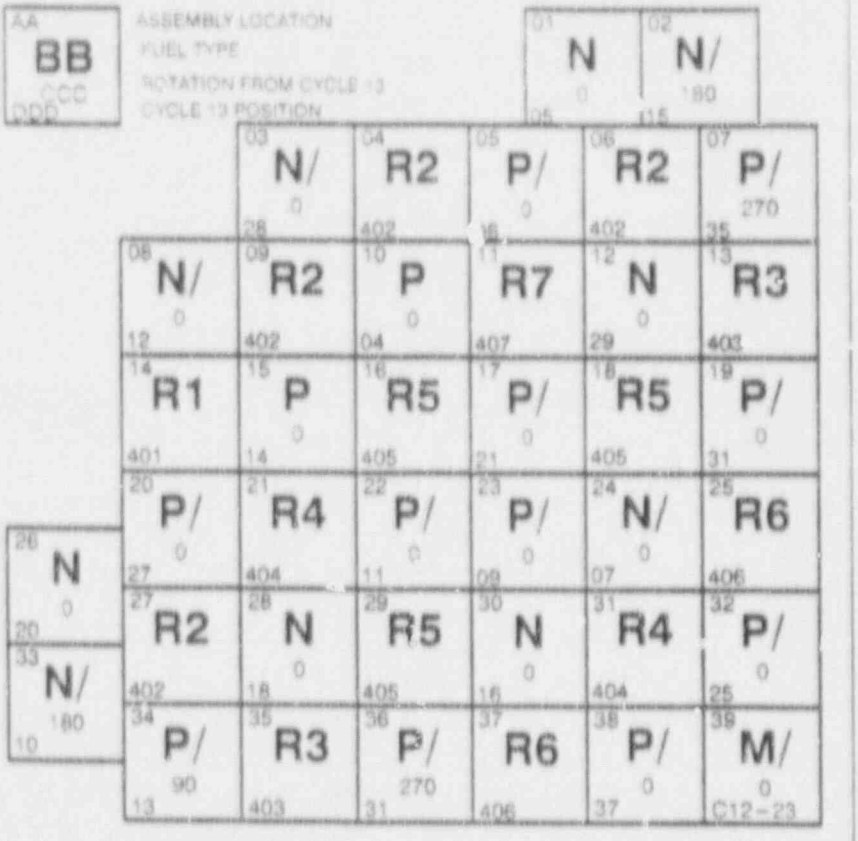
NOTES:

Figure 1
Fort Calhoun Station
Pressure Vessel View



NOTES:

Figure 2
Cycle 14 Fuel Loading Pattern



R1 – 0.74% w/ 0 IFBA, 4 Assys
R2 – 3.85% w/ 28 IFBA, 16 Assys
R3 – 3.85% w/ 48 IFBA, 4 Assys
R4 – 3.85% w/ 64 IFBA, 8 Assys
R5 – 3.85% w/ 84 IFBA, 12 Assys
R6 – 3.60% w/ 8[illegible]JA, [illegible] Assys
R7 – 3.60% w/ 64 IFBA, 4 Assys
Full Length Hafnium Poison Rods (QC Assys 1,2,8)
52–Batch, Reflective Symmetry, EOC Burnup – 14,000 MWD/MTU

NOTES:

CURRENT STATUS

- DOT 4.3 Analysis Performed by ABB–CE for OPPD for Cycles 11–14
- Results Below are Best Estimate With the DOT 4.3 Code Benchmarked to the FCS W–225 and W–265 Surveillance Capsule Results. This Includes a 66°F Uncertainty Application (24.4% of 270°F):
- From EOC 14, 13.2 EFPY Remain Before the 10CFR50.61 Screening Criterion of 270°F (For Longitudinal Welds) is Reached. This Corresponds to the Beginning of the Year 2011.

NOTES:

CURRENT STATUS

NRC

- Recently Issued Generic Letter 92-01 (Reactor Vessel Structural Integrity). Key Points to be Addressed Include:
  - Irradiation temperature
  - Chemistry composition of RV material
  - Results of material surveillance program
- SECY 91-333

NOTES:

FUTURE

- Continued Use and Further Optimization of Extreme Low Radial Leakage Fuel Management
- FCS Specific Reg. Guide 1.154 Analysis Completion
- Reactor Vessel Annealing – Continue to Track and Evaluate
- Potential Rule Changes (SECY 91–333)

NOTES:

SUMMARY

- OPPD Has a Well Defined Weld Chemistry Database
- The 10 CFR 50.61 Screening Criterion of 270°F Will Not Be Reached Before Expiration of Operating License in 2008, Due to the Implementation of PTS Mitigating Fuel Management
- Actual Date of Reaching Screening Criteria is 2011
- Evaluating Other Options for Lifetime Extension to 2013 and Beyond

NOTES:

Modification Installation & Testing

CONSTRUCTION WORK CONTROL

- CONSTRUCTION WORK ORDERS
  - Field Engineer
  - System Engineer
  - Operations
  - Quality Control
- FIELD DESIGN CHANGES
  - System Engineer
  - Design Engineer
  - Plant Review Committee
- STANDARDIZATION
  - Construction Work Procedures
  - Construction Specifications
- QUALITY CONTROL
  - Inspections
  - Surveillance

NOTES:

Modification Installation & Testing

CONSTRUCTION SCHEDULING

- Estimates and Schedules
- Construction Coordinator
- Plan-Of-The-Day Meetings
- Performance Tracking

TRAINING AND QUALIFICATION

- Craft Indoctrination
- Journeymen Construction Craft
- Training Matrix

NOTES:

Modification Installation & Testing

TESTING AND TURNOVER

- DCP Testing Summary
- Construction Testing
- Pre-Op Testing
  - SMART Review
  - PRC Approval
  - Test Engineer
- Turnover
  - Acceptance for Operability
  - Document Update
  - Backlog

POST MODIFICATION TESTING REVIEW

- Scope
- Process
- Review Team

NOTES:

Omaha Public Power District

- 1992 Refueling Outage
  - Planning
  - Status
  - Engineering Support

NOTES:

SAFE Shutdown Planning

- Utilized Guideline for Industry Actions to Assess Shutdown Management (NUMARC 91-06) and NRC Staff Evaluation of Shutdown and Low Power Operation (Draft NUREG-1449)

  1. Outage Planning and Control

  2. Shutdown Safety Issues
     a. Decay Heat Removal
     b. Power Availability
     c. Reactivity Control
     d. Inventory Control
     e. Containment

  3. Assessment Process

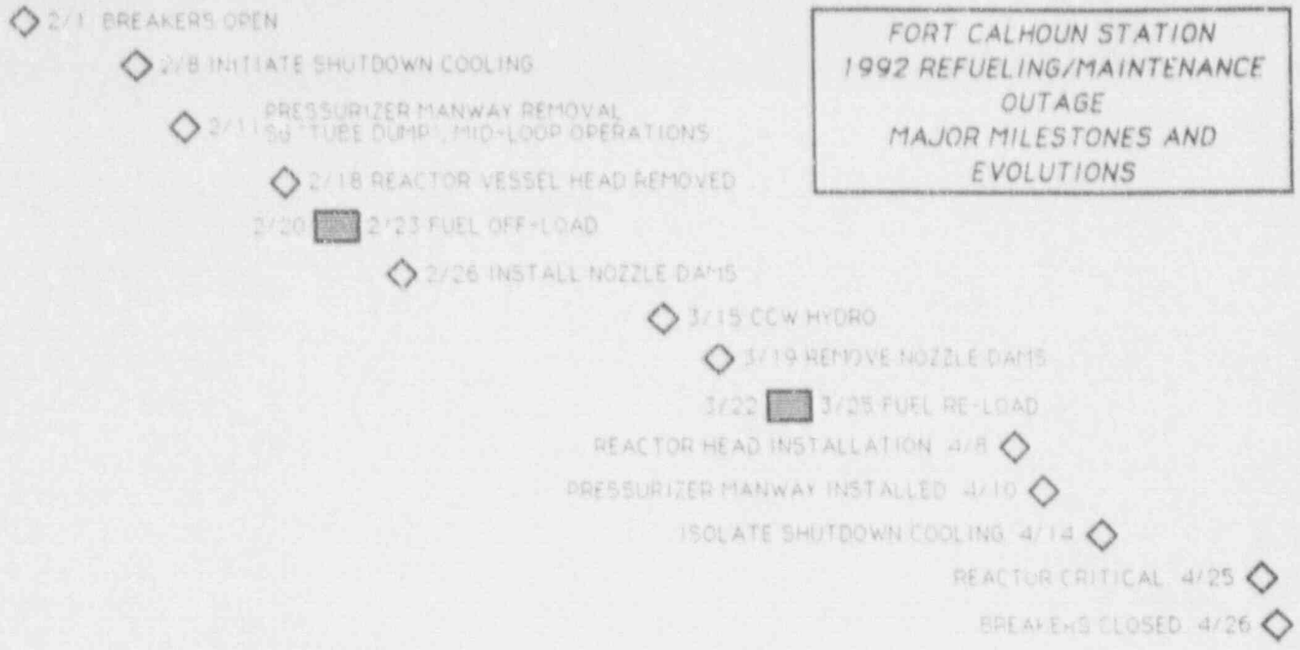
NOTES:

SAFE Shutdown Planning

- Key Enhancements Added:

1. Outage Control Center (OCC)
2. Status Board
3. Minimize Mid-Loop Operation
4. Pre-Job Briefing for Critical Tasks
5. NSRG Reviews
6. Switchyard Coordinator
7. Extra Shift Supervisor
8. Third Diesel Generator

NOTES:



FORT CALHOUN STATION
1992 REFUELING/MAINTENANCE
OUTAGE
MAJOR MILESTONES AND
EVOLUTIONS

NOTES:

Unique Projects/Tasks Completed

- Safety Injection Tank Dumps Verified Check Valve Operability
- Pressurizer Inspection Verified No Sludge Deposits or Heater Abnormalities
- PORV Valve Stroke Testing Verified Acceptable Timing
- Main Steam Safety Valve Lift Test Found 5 of 10 Valves Outside the 1% Lift Pressure
- Containment Tendon Sampling and Crease Void Inspection Found Tendons Not Degraded
- Steam Generator ECT Found No Tubes in Sample of 4683 Tubes Needing Plugging (4th Consecutive Outage)
- Thermal Shield Inspection and 11 Pin Repair Showed No Damage and "On-Time" Repair
- UT of Spare CEDM Housings Showed No Cracking
- UT of Fuel Assemblies to Detect Tight Leakers

NOTES:

Unique Projects/Tasks In Progress

- Reactor Vessel 10 Year In-Service Inspection
- Erosion/Corrosion Monitoring Program Found Need to Replace 3 Pipe Sections of 60 Inspected To Date (79 Sections to be Inspected)
- MKW Diesel Generator Part 21 Inspection of Generator Coupling Bolts Found No Deficiencies
- 10 Year Hydro of CCW System
- Steam Generator Girth Weld Inspection
- Reconstitution of One Fuel Assembly

NOTES:

Outage Projects

- Reactor Coolant Pump Seal Maintenance
- Check Valve Inspections
- Relief Valve Testing
- Pressurizer Sludge Inspection
- Erosion/Corrosion
- Steam Generator Services
- Balance of Plant ECT
- Reactor Vessel 100% ISI Examinations
- ISI Examinations
- Thermal Shield Inspection & Repair
- Motor Operated Valve (MOV) Testing
- System Pressure Tests (10 Year Hydros)
- Snubber Maintenance and Testing
- ESF Testing
- Diesel Generator Work
- Main Generator Rotor Balance
- Condenser Repair Project
- LP Turbine Overhaul

NOTES:

Modifications

- Regulatory Commitment
  - 87-008, Annunciator Upgrade
  - 88-076, Relay 94/1045 Contacts 7-8, 9-10 Configuration
  - 89-019, Shutdown Cooling Low Flow Alarm
  - 89-055, AFW Pump Instrumentation
  - 90-003, TE-601 Containment Sump Penetrations
  - 90-024, LPSI Pump Low Voltage Trip Interlock
  - 90-038, MS & FW Supports in Room 81 & Turbine Building
  - 90-047, Pipe Restraint RCH-32 & 33
  - 90-060, SI Relief Valves, Flanged Connection
  - 90-063, Diesel Generator Room HVAC Control
  - 91-008, Under Voltage Protection for 480V SR Motor
  - 91-025, Replace Valves LCV-383-1/2

NOTES:

Modifications

- Replacements
  - 89-013, Replacement of 480 Volt Breaker Trip Devices
  - 90-076, Boric Acid Concentration Reduction
  - 90-062, Thermal Shield Locking Collar Replacement
  - 91-028, Change to RC-2B Insulation Support Ring

NOTES:

Modifications

- Operational Enhancements

  - 84-176, Letdown Level & Backpressure Controls
  - 87-014, Replacement of HCV-249 & HCV-2988
  - 88-017, Third Aux FW Pump Enhancements
  - 88-064, Install Fans to Inverters A/B/C/D 1&2
  - 89-048, Instrumentation for CH-4A and CH-4B
  - 89-074, Electrical Changes to Charging Pumps
  - 89-081, FW-10 Steam Supply Line Break Protection
  - 90-005, DG Instrumentation Upgrade
  - 90-023, 161 KV System Modifications
  - 90-026, RW Discharge Valve Replacement
  - 90-061, On Line CECOR
  - 90-067, FW-8C Load Shed Following OPLS
  - 90-071, CEA Change Machine Removal
  - 91-013, RPS/Delta T Power Fluctuation
  - 91-015, Pressurizer Flange Leak
  - 92-002, PAL Equalizing Valve Installation
  - 92-009, SI Relief Valve Set Point Change
  - 92-012, Seismic Mounting of DC Bus Breakers

NOTES:

Omaha Public Power District

Interface With Operations

NOTES:

COMMUNICATIONS

- Plan of the Day & Daily Planning Meetings
- PRC Representation
- Operability/Reportability Evaluation Assistance
- Issues Meetings
- Division Manager Weekly Meetings

NOTES:

Manager - Station Engineering Role

- Division Manager - NOD Reporting
- Daily Plant Manager Interface/ Communication

NOTES:

- Biweekly Operations Priority Meeting
- System Engineering System Report Cards
- NPRC/NPC Function
- Outage Support/Coordination

NOTES:

SSFI INTRODUCTION

- Annual SSFI Since 1987
- Included in SEP 21
- Vertical Slice Audit
- Diverse Audit Teams
- 75 Corrective Action Documents

NOTES:

SSFI SUMMARY

- Auxiliary Feedwater (1987)
- Instrument Air (1988)
- 120 VAC Vital Distribution (1989)
- Component Cooling Water (1990)
- 125 VDC Electrical System (1991)
- SSFI Follow-Up Audit (1991)
- 1992 SSFI Plans

NOTES:

AUXILIARY FEEDWATER

- Conducted in 1987
- 48 Concerns Identified
- 11 QA Deficiencies
- Corrective Actions Summary
- All Corrective Action Documents Closed

NOTES:

INSTRUMENT AIR

- Conducted in 1988
- 63 Concerns Identified
- 39 QA Deficiencies
- Corrective Actions Summary
- Several Plant Modifications
- All Corrective Action Documents Closed

NOTES:

120 VOLT AC DISTRIBUTION

- Conducted in 1989
- 16 QA Deficiencies
- Corrective Actions Summary
- One Corrective Action Document in Progress

NOTES:

COMPONENT COOLING WATER

- Conducted in 1990
- 6 QA Deficiencies
- Corrective Actions Summary
- Potential Deficiencies Already Identified in DBD Items
- One Corrective Action Document in Progress

NOTES:

125 VOLT DC SYSTEM

- Conducted in 1991
- 3 QA Deficiencies
- 2 Recommendations
- Corrective Actions Summary
- All Corrective Action Documents in Progress

NOTES:

SSFI CONCLUSIONS

- Findings Decreasing in Quantity and Significance
- Decrease Due to DBR Efforts
- SSFIs Provide Valuable Feedback
- Other Factors

NOTES:

Omaha Public Power District

Generic Letter 89-10 Project

NOTES:

OBJECTIVES

- Comprehensive MOV Program - Operability and Reliability
- Satisfy GL 89-10
- Facilitate Long-Term MOV Program

NOTES:

PROJECT TASK SUMMARY

- MOV Requirements
- Determination/Verification of Switch Settings
- Maintenance and Testing Program Enhancements
- Program Controls
- Tracking/Trending Program

NOTES:

MOV REQUIREMENTS

- Population Determination
- Design Basis Review/Reconstitution
- Establish MOV Database
- EEQ Review

NOTES:

Determination/Verification of Switch Settings

- Develop Test Methods and Procedures
- Test Equipment Enhancements
- Develop Design Basis Test Schedule
- Establish Switch Setting Program
- Perform MOV Testing/Analysis

NOTES:

Maintenance and Testing Program Enhancements

- Engineering Procedures
- Maintenance Procedures
- Enhanced Training
- Long-Term Test Schedule
- Post-Maintenance Testing
- Preventive/Predictive Maintenance
- Spare Parts Procurement

NOTES:

PROGRAM CONTROLS

- Administrative Guidelines
- Program Basis Document
- Lugging and Raychem Splice Procedures
- BOP Strategy/Extension

NOTES:

Tracking/Trending Program

- Establish Program and Database
- Review Activities/Documentation
- Industry Issues
- Periodic Evaluation

NOTES:

Actions Taken Subsequent to NRC Program Inspection

- Violation Response, November 4, 1991
- Detailed Evaluation of HCV-348 and HCV-1041C
- Reviewed Switch Setting History
- Addressed Inspection Report Comments

NOTES:

Organization Considerations

- Production Engineering Division
- Nuclear Operations Division
- Nuclear Services Division

NOTES:

Participation in Industry Efforts

- MOV User's Group (MUG)
- EPRI MOV Program

NOTES:

ONGOING PROGRAM

- Program Since 1985
- GL 89-10 Enhancements
- Lessons Learned Application
- Personnel Support
- Database/Documentation Support

NOTES:

Testing of Prototype PORV Block Valve

- Initially Planned to Meet NUREG-0737
- In-Situ Testing Not Feasible
- Prototype Valve Tested at Wyle Labs
- Piping Modeled Plant Design
- Saturated Steam and High Pressure Water Tests
- Satisfied NUREG-0737, GL 89-10, and GL 90-06
- Witnessed by OPPD, Wyle, Crane, and EPRI
- Valve/Actuator Performed Well, Confirmed Operability

NOTES:

Omaha Public Power District

PORV BLOCK VALVE

STEAM BLOWDOWN TESTING

NOTES:

Valve Test Program Set Up To:

- Closeout NUREG-0737, Item II.D.1 Issues (Isolate Steam Blowdown Through A "Stuck" Open PORV)
- Obtain Valve Data For Generic Letter 89-10 Program
- Obtain Valve Data For Generic Letter 90-06 (Low Temperature, Overpressure Protection)

NOTES:

ACKNOWLEDGEMENTS

- CRANE-ALOYCO
- WYLE LABORATORIES (NORCO, CA)
- ABB/COMBUSTION ENGINEERING

NOTES:

Test Program Description

ENTIRE TEST PROGRAM CONSISTED OF OPEN AND CLOSE VALVE STROKES AT VARIOUS STEAM AND WATER CONDITIONS.

FLUID	TEMP (°F)	PRESS (PSIG)	FLOW (LBM/HR)
AIR	AMBIENT	0	NONE
STEAM	596	1485	ORIFICE CONTROLLED
STEAM	636	1985	ORIFICE CONTROLLED
STEAM	653	2235	ORIFICE CONTROLLED
STEAM	668	2485	130,000
AIR	AMBIENT	0	NONE
AIR	AMBIENT	0	NONE
WATER	AMBIENT	0	NONE
WATER	AMBIENT	485	225,000
WATER	540	1200	180,000
WATER	540	1400	368,500
WATER	AMBIENT	0	NONE

VALVE STROKE DATA ACQUIRED FROM 54 VALVE STROKES USING COMBINATIONS OF THE ABOVE FLUID CONDITIONS.

NOTES:

Valve & Actuator Descriptions

VALVE DESCRIPTION

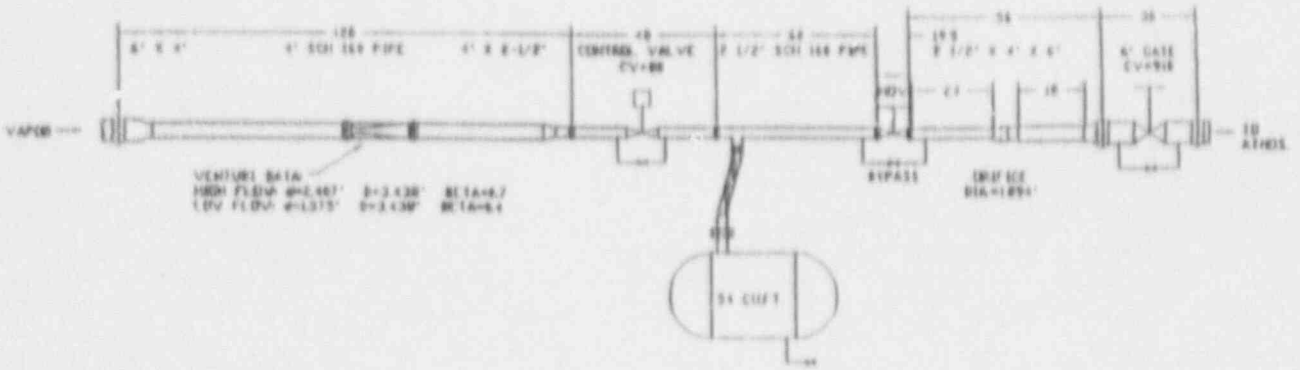
	IN-PLANT	TEST VALVE
VALVE MANUFACTURER:	CRANE	CRANE
VALVE MODEL NUMBER:	797-U	797-U
VALVE NOMINAL SIZE:	2½ in.	2½ in.
VALVE ANSI CLASS:	2500#	2500#
VALVE TYPE:	Flex-Wedge Gate	Flex-Wedge Gate
VALVE STEM PITCH:	½	½
VALVE STEM LEAD:	½	½

ACTUATOR DESCRIPTION

	IN-PLANT	TEST VALVE
ACTUATOR MANUFACTURER:	Limitorque	Limitorque
ACTUATOR MODEL NUMBER:	SMB-00-7½	SMB-00-10
OVERALL RATIO:	46.8	46.8
SPRING PACK:	0301-111	0301-111
STEM LUBRICANT:	NEVER-SEEZ NG-165	MOBILUX EP-1

NOTES:

Test Piping Configuration



NOTES:

Significant Characteristics

- Valve had hardfacing (stellite) on seats (Body and Disc) and on Disc Guides (Disc and Body).
- Disc Guide is a continuous "U" shaped design.

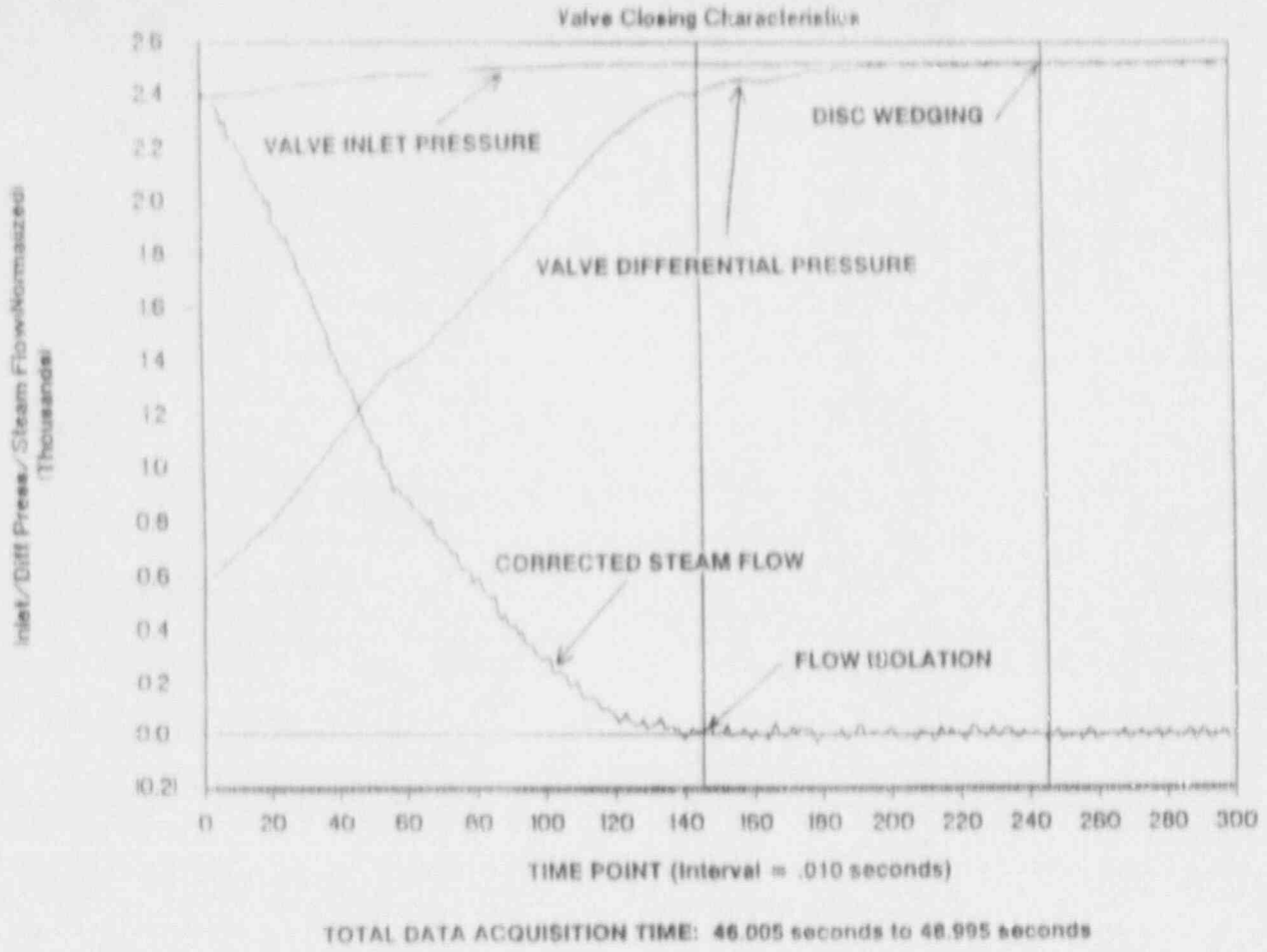
NOTES:

Steam Blowdown Testing Results

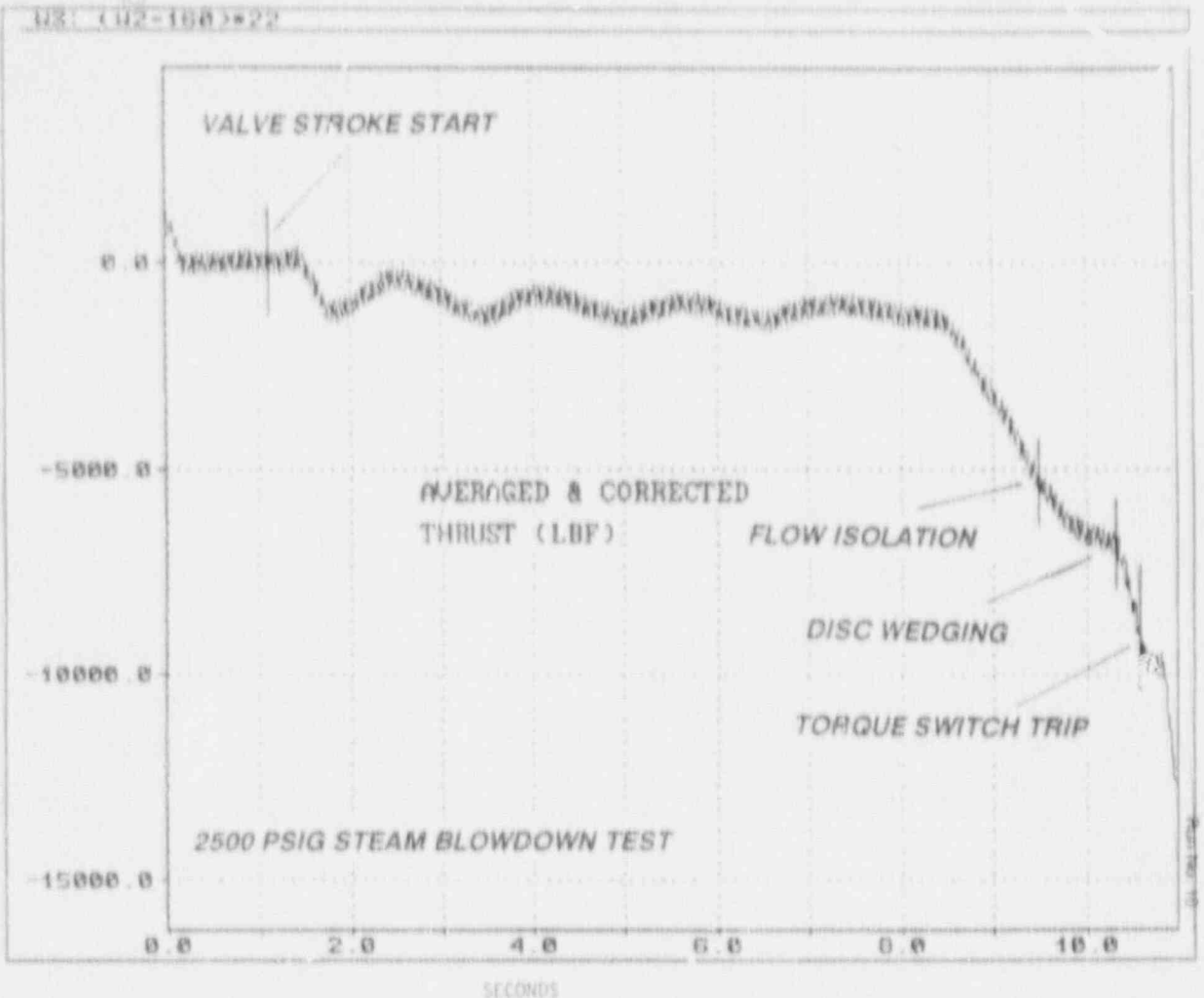
MAX STEAM BLOWDOWN CONDITIONS

FLUID	TEMP (°F)	PRESS (PSIG)	FLOW (LBM/HR)
AIR	AMBIENT	0	NONE
STEAM	606.3	1508	55,833
STEAM	642.2	1944	74,815
STEAM	662.5	2243	86,667
STEAM	680.0	2526	105,851
AIR	AMBIENT	0	NONE

NOTES:


PORV BLOCK VALVE TEST (2500 PSI)
Valve Closing Characteristics
Inlet/Diff Press./ Steam Flow(Normalized) (Thousands)
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
(0.2)
VALVE INLET PRESSURE
DISC WEDGING
VALVE DIFFERENTIAL PRESSURE
CORRECTED STEAM FLOW
FLOW ISOLATION
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300
TIME POINT (Interval = .010 seconds)
TOTAL DATA ACQUISITION TIME: 46.005 seconds to 48.995 seconds

NOTES:


VALVE STROKE START
0.0
-5000.0
-10000.0
-15000.0
AVERAGED & CORRECTED
THRUST (LBF)
FLOW ISOLATION
DISC WEDGING
TORQUE SWITCH TRIP
2500 PSIG STEAM BLOWDOWN TEST
0.0
2.0
4.0
6.0
8.0
10.0
SECONDS

NOTES:

Steam Blowdown Testing Results

Valve Performance Characteristics

- Two Valve Disc Positions Identified:
  1) Flow Isolation
  2) Disc Wedging
- Valve Disc isolated flow and wedged at lower stem thrust values than predicted by any of the industry sizing equations.
- Actuator exhibited no loss in stem thrust at torque switch trip at max steam flow conditions (ROL Effects).
- No visible wear on Valve Disc body guides after all testing.
- Finish on Disc seating surfact showed minimal wear.

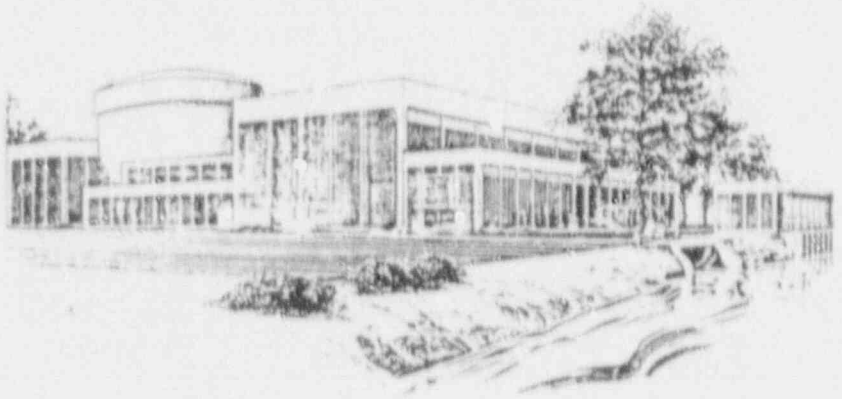
NOTES:

PRODUCTION ENGINEERING DIVISION
MISSION STATEMENT

The PRODUCTION ENGINEERING DIVISION shall incorporate OPPD policies and standards of excellence in operations in support of the safe and reliable operation of the Fort Calhoun Station through:

Providing corporate design engineering, system engineering, construction management and other technical support for the Fort Calhoun Station and effectively managing the design and construction of additions and changes to the Fort Calhoun Station.

Establishing and maintaining an effective plant configuration management process that identifies the documented design requirements, ensures a properly implemented design and controls plant changes throughout the life of the plant.



PRODUCTION ENGINEERING DIVISION
1992 GOALS AND OBJECTIVES

Goal 1: SAFE OPERATIONS

To ensure the continuation of a "safety culture" in the OPPD Nuclear Program and to provide a professional working environment, in the control room and throughout the OPPD nuclear organization, that assures safe operation.

- Conduct construction work activities in accordance with station standards for industrial safety, ALARA, procedural compliance and housekeeping.
- Continue activities that support the "safety culture" and safe operations at Fort Calhoun Station.
- Encourage a "questioning attitude" within Production Engineering Division employees to ensure timely identification of any safety or reliability problems.
- Encourage and promote high standards of quality, and professionalism within Production Engineering Division and team work throughout the Nuclear organization.

Goal 2: PERFORMANCE

To strive for Excellence in Operations utilizing highest standards of performance at Fort Calhoun Station that result in safe and reliable plant operation in power productions.

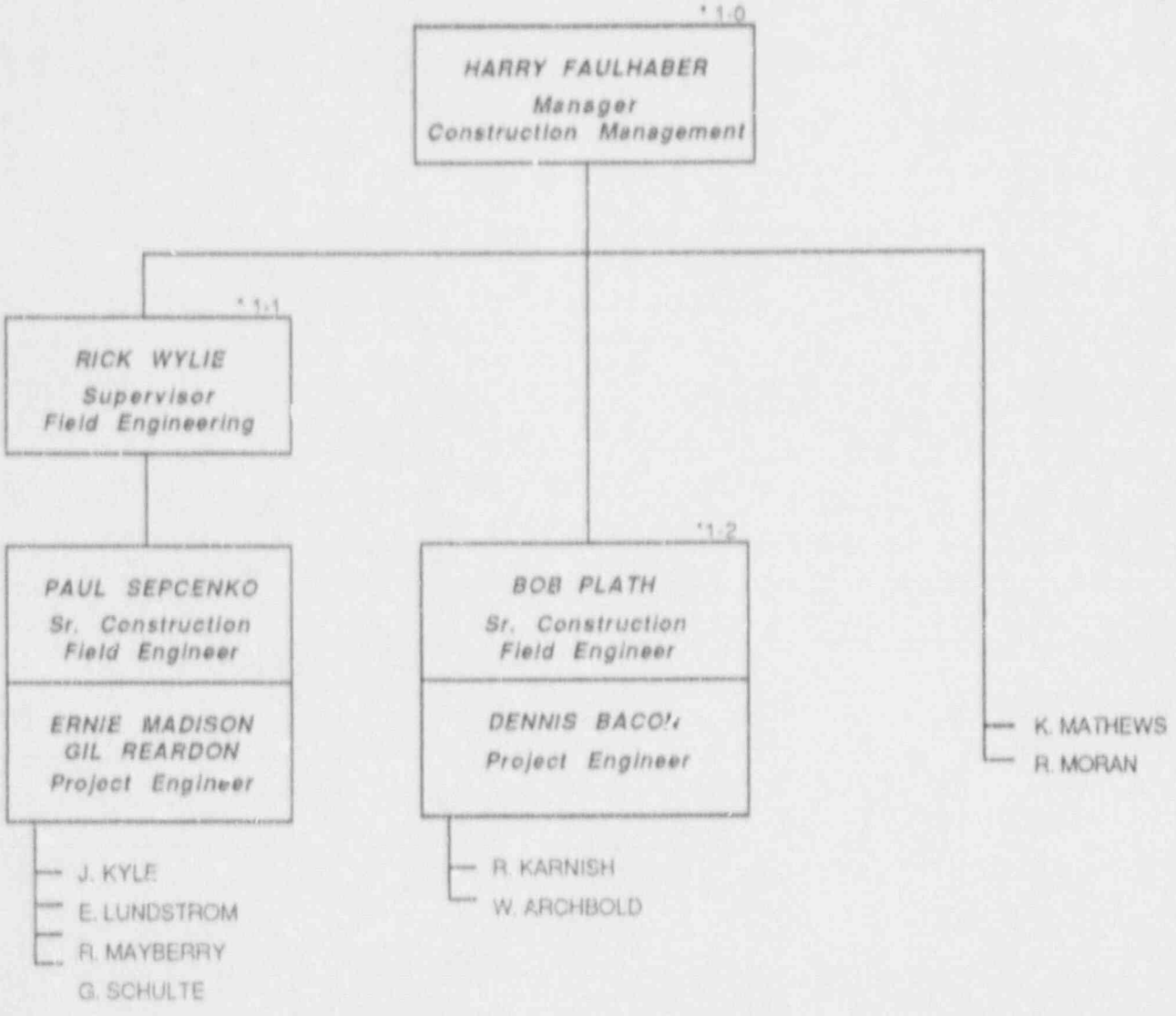
- Continue to improve overall performance and achieve highest SALP ratings in al areas of plant operation.
- Improve support for operations staff by providing timely and thorough resolution of technical problems and issues.
- Create a work environment that is conducive to high employee morale, high productivity and low turnover rate.
- Complete 1992 Refueling Outage on time and within budget.

Goal 3: COSTS

Operate Fort Calhoun Station in a manner that cost effectively maintains nuclear generation as a viable source of electricity.

- Respond to, and provide support for all CERP related activities in a timely manner.
- Utilize PED's resources in the most cost effective and efficient way.
- Work on improving organizational efficiency through stream lining of various work processes and clearly defining expectations and priorities for all groups within Production Engineering Division.
- Provide professional management of al special projects assigned to Production Engineering Division to ensure that the projects are completed in a timely and cost effective manner.

CONSTRUCTION MANAGEMENT



* FOR KEY FUNCTIONAL RESPONSIBILITIES, SEE ATTACHMENT 1

1-0

- Performance and execution of all on-line, pre-outage and outage modifications
- New construction activities at the Fort Calhoun Station
- Post modification testing

1-1

❍ Prepare schedules for assigned modifications. Review and approve final schedules provided by cost/scheduling. Revise schedules and estimates as required by FDCR's and scope changes.

❍ As required to support assigned modifications:

- Schedule and coordinate pre-job test briefing.
- Plan, schedule, and coordinate daily craft testing.
- Initiate all Field Design Change Requests required for completion.
- Coordinate preparation of all permits required.
- Coordinate SAC for Operability and Final according to S.O. G-21.
- Issue and maintain all controlled copies of construction work procedures and drawings.
- Plan, schedule, and coordinate support activities by QA, QC, HP, Chemistry, Operations, Security, and Maintenance.

❍ Prepares post modification test procedures.

❍ OPPD test craft report to the lead test engineer.

❍ Coordinate procurement of test equipment required to perform testing.

1-2

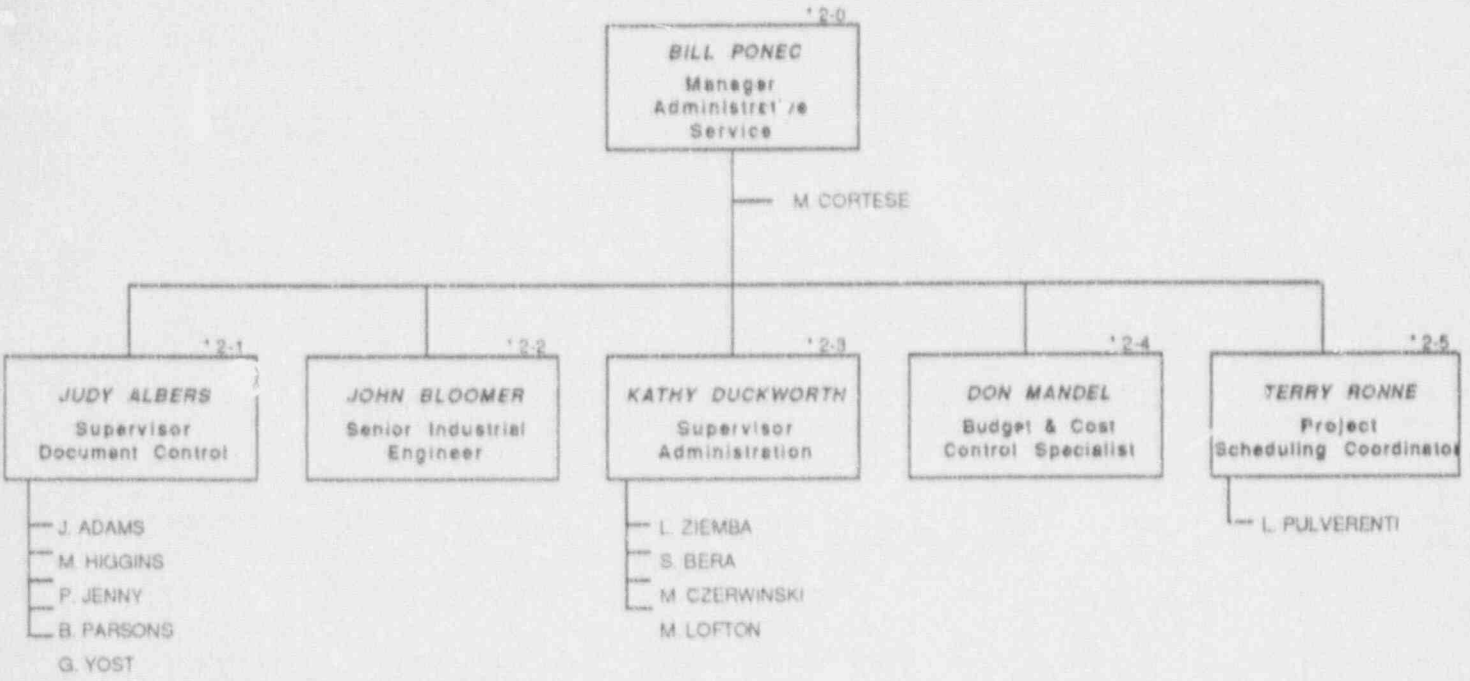
❍ As a member of the SMART perform constructability reviews for assigned modification packages at all stages of issue.

❍ As required to support assigned modifications:

- Assist design engineers with walkdowns, estimates, schedules, and material takeoffs during design.
- Prepare initial labor estimates and schedules. Review and approve final schedules provided by cost/scheduling.
- Revise as required by FDCR's and scope changes.
- Perform material take-offs, prepare material lists, and prepare material forms for non-engineering items.
- Plan, schedule, and coordinate support activities by QA, QC, HP, Chemistry, Operations, Security, and Maintenance.
- Coordinate preparation of all permits required.
- Coordinate SAC for Operability and Final According to S.O. G-21.
- Issue and maintain all controlled copies of Construction Work Procedures and drawings.

❍ Initiate scaffold and asbestos removal permits as needed to support modification activities.

ADMINISTRATIVE SERVICES



* FOR KEY FUNCTIONAL RESPONSIBILITIES, SEE ATTACHMENT 2

2-0

- Budgets and Cost Control.
- Project Scheduling.
- Document Control.
- Clerical and Administrative.
- Industrial Engineering.

2-1

- ❍ Control design documents & maintain records.
- ❍ Document updates.
  - Design change package & ECN organization.
  - Distribution of updates design documents.
- ❍ Administration of EEAR's (logging, filing, & transmittals).
- ❍ Reproduce drawings, prints & documents of record.
- ❍ Controls microfilming of design documents.
- ❍ Maintain vendor manual program.
- ❍ Assist FCS operating & maintenance staff in drawing identifications.
- ❍ Control documents for DCP SMART review comments.

2-2

- ❍ Productivity Improvement.
- ❍ Work Force Management.
- ❍ Contract work monitoring.
- ❍ Special Studies.

2-3

- ❍ Stenographic work.
- ❍ Word processing support.
- ❍ Invoice processing.
- ❍ Purchase order organization.
- ❍ Mail handling.
- ❍ Stationary supplies.
- ❍ Telephone coverage.
- ❍ MMIS data input.
- ❍ Contract preparation/coordination.
- ❍ Training coordination - technical, first aid, driver training, etc.

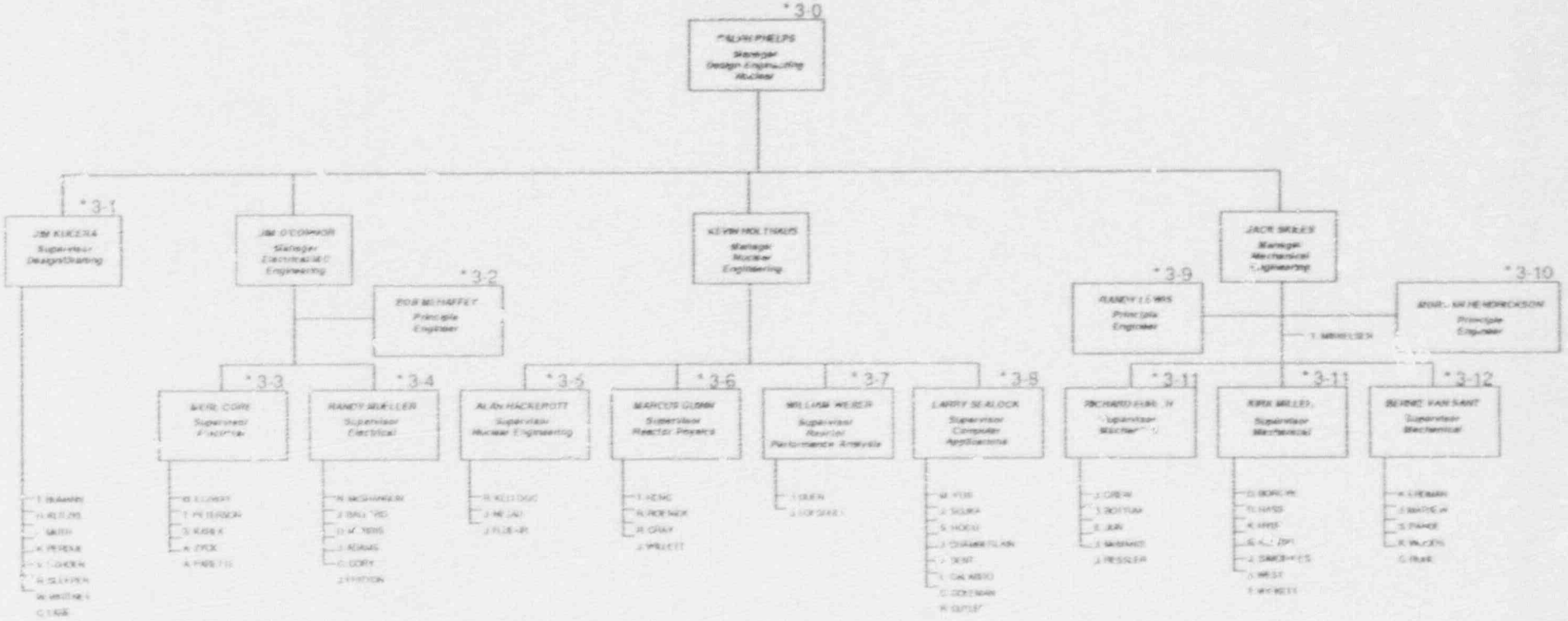
2-4

- ❍ Prepare & coordinate budgets.
  - O & M.
  - Construction.
  - Input to other Divisions.
- ❍ Prepare monthly budget & variance reports.

2-5

- ❍ Project scheduling direct P/2 activities.

DESIGN ENGINEERING - NUCLEAR



* FOR KEY FUNCTIONAL RESPONSIBILITIES, SEE ATTACHMENT 3

3-6

- Provides high quality Civil/Structural, Electrical/I&C, Mechanical and Nuclear design engineering support.
- Core reload analysis & fuel management.
- Software support for plant process computers.
- Probabilistic Risk Assessment.
- Operations and Maintenance Support on as needed basis.

3-1

- ❍ Perform detail drafting design & prepare drawings, charts, etc.
- ❍ Field verification of as-builts.
- ❍ Modification of design documents to reflect as-built conditions in support of.
- ❍ Implement drawing upgrade programs.

3-2

- ❍ Solve complex electrical/I&C engineering design related problems.
- ❍ Provide expert electrical/I&C engineering review.
- ❍ Provide input to facility license charges and management action items.
- ❍ Provide requisite technical management for special electrical/I&C projects.
- ❍ Research industry for state of the art design methods, material procedures, etc.
- ❍ Develop and plan major technical programs including cost and schedule requirements to respond to regulatory or operating problems.
- ❍ Provide technical direction and leadership to major program work teams.
- ❍ Act as OPPD representative on industry or regulatory committees or groups involved in electrical issues or policy.
- ❍ Serve as an expert witness if required.
- ❍ Provide an Electrical PE stamp when required.

3-3

REGULATORY SUPPORT

- ❍ Recreation of design basis as needed.
- ❍ Resolution of CARs, IRs and CIDs.
- ❍ Electrical Equipment Qualification (EEQ).
- ❍ Technical support for NRC & other regulatory issues.

OPERATIONS SUPPORT

- ❍ Engineering studies/projects.
- ❍ Review of procedures, standard specs., etc.
- ❍ Prepare SAOs.
- ❍ Evaluate substitute parts.
- ❍ Maintain updated Electrical drawings.

3-4

PLANT CONFIGURATION CHANGES

- ❍ Electrical Design Engineering.
  - Prepare and review plant modifications including conceptual, (preparation, checking, approval), preliminary, final, construction package, SAC & updating.
- ❍ Electrical Project Engineering.
  - A/E selection, coordination, design reviews, set criteria, provide technical direction.

continued

3-4 *(continued)*

- ❍ Material Procurement.
  - Prepare material list, specifications, issue RFQ, contract documents, etc.
- ❍ Scheduling and Work Planning.
  - Budgets and estimating.
- ❍ Construction management support.
- ❍ On-site modification support.
- ❍ Preparation of ECNs.

3-5

- ❍ Fort Calhoun Station PRA.
- ❍ Resolution of design basis issues and open items that involve risk of non-deterministic solutions.
- ❍ Severe accident management issues.
- ❍ Provide probabilistic support for modification justifications and generic issues resolution.
- ❍ Shielding/dose analysis.
- ❍ CQE list upgrades & maintenance.

3-6

- ❍ Core Reload analysis.
  - Fuel management (including PTS Resolution).
  - Physics Safety Analysis.
  - Axial Shape Analysis
  - Technical Data Book (Updates predictions).
- ❍ Core Follow.
  - Monthly Core Follow Reports.
  - CECOR Coefficient Generation.
  - CECOR Application (Incore Monitoring System).
- ❍ Physics Testing & Predictions.
- ❍ Reactor Engineer & Operations Support.

3-7

- ❍ Core Transient Analysis.
  - Steady State Thermal Hydraulics.
  - Transient Analysis.
  - Setpoint Analysis.
- ❍ Fuel Performance Monitoring, Outage Support Fuel Activities & Fuel Design Reviews.
- ❍ PTS Reg. Guide 1.154.
- ❍ Reactor Vessel Material.
- ❍ LTOP System Support Including P-T Curves.
- ❍ Analysis & Maintenance of Accident Analysis Design Basis in USAR & DBDs.
- ❍ Operational Support Including Preparation of FI.Cs, SAOs, 10CFR50.59 Evaluations.
- ❍ Oversee criticality analysis for spent fuel.

continued

3-8

- ○ Plant Process Computer Support including Software Configuration Management.
  - ERF Computer System.
  - Site Security Computer System.
- ○ CHAMPS Software Control, Upgrades & Maintenance (FCS Maintenance).
- ○ OPTIM Software Control, Upgrades & Maintenance (FCS Training).
- ○ Meteorlogical & Radiological Software.
- ○ TLD & Pencil Dosimetry Software.

3-9

- ○ Solve complex mechanical engineering design related problems.
- ○ Provide expert mechanical engineering review.
- ○ Provide input to facility license charges & management action items.
- ○ Provide requisite technical management for special mechanical projects.
- ○ Research industry for state of the art design methods, material procedures, etc.
- ○ Develop & plan major technical programs including cost and schedule requirements to respond to regulatory or operating problems.
- ○ Provide technical direction & leadership to major program work teams.
- ○ Act as OPPD representative on industry or regulatory committees or groups involved in mechanical issues or policy.
- ○ Serve as an expert witness if required.
- ○ Provide an Mechanical PE stamp when required.
- ○ Provide technical direction for the piping qualification program.
- ○ Provide leadership in seismic issues.
- ○ Provide SQUG program technical direction.

3-10

- ○ Solve complex structural/civil engineering design related problems.
- ○ Provide expert structural/civil engineering review.
- ○ Provide input to facility license charges & management action items.
- ○ Provide requisite technical management for special structural/civil projects.
- ○ Research industry for state of the art design methods, material procedures, etc.
- ○ Develop & plan major technical programs including cost & schedule requirements to respond to regulatory or operating problems.
- ○ Provide technical direction & leadership to major program work teams.
- ○ Act as OPPD representative on industry or regulatory committees or groups involved in structural/civil issues or policy.
- ○ Serve as an expert witness if required.
- ○ Provide an Civil PE stamp when required.
- ○ Provide architectural & building design criteria & consultation.
- ○ Consult in Missouri River issues affecting FCS.
- ○ Coordinate on FCS environmental issues.

3-11

PLANT CONFIGURATION CHANGES

- ○ Mechanical/Civil Design Engineering.

  Prepare & review plant modifications including conceptual, preparation, checking, approval), preliminary, final, construction package, SAC & updating.

continued

3-11 (continued)

- ○ Mechanical/Civil Project Engineering.
  - A/E selection, coordination, design reviews, set criteria, provide technical direction.
- ○ Material Procurement.
  - Prepare material list, specifications, issue RFQ, contract documents, etc.
- ○ Scheduling & Work Planning.
  - Budgets & estimating.
- ○ Construction management support.
- ○ On-site modification support.
- ○ Preparation of ECNs.

REGULATORY SUPPORT

- ○ Recreation of design basis as needed.
- ○ Resolution of CARs, IRs, & CIDs.
- ○ Fire Protection Appendix k safe shutdown analysis.
- ○ Technical support for NRC & other regulatory issues.

OPERATIONS SUPPORT

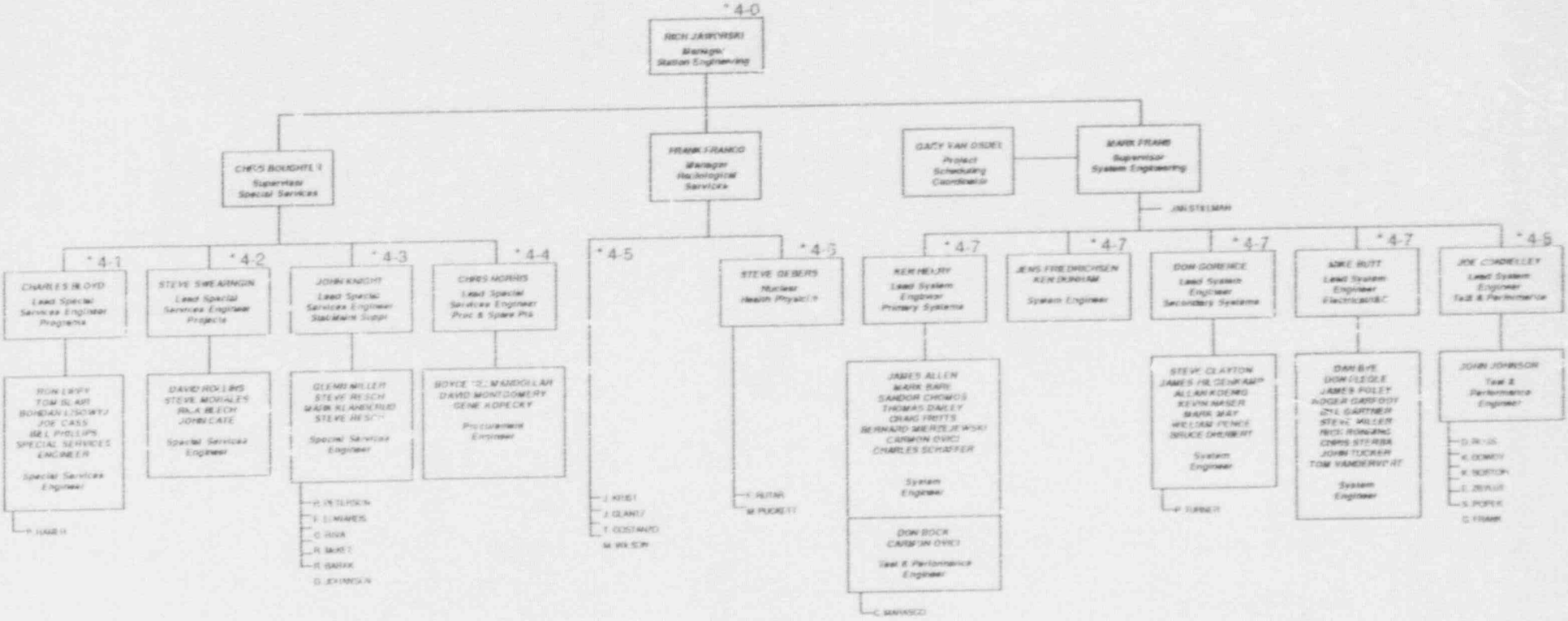
- ○ Engineering studies/projects.
- ○ Review of procedures, standard specs, etc.
- ○ Prepare SAOs.
- ○ Evaluate substitute parts.
- ○ Maintain updated Mechanical/Civil drawings.

3-12

- ○ Perform pipe stress & pipe support analysis calculations.
- ○ Develop & maintain computer codes for stress analysis.
- ○ Develop & maintain piping structural models.
- ○ Maintain isometrics.
- ○ Perform structural analysis & calculations.
- ○ Perform seismic interaction calculations.
- ○ Benchmark computer codes for CQE work.
- ○ Maintain computer stress calculations files.

continued

STATION ENGINEERING



* FOR KEY FUNCTIONAL RESPONSIBILITIES, SEE ATTACHMENT 4

4-0

- System Engineering.
- Radiological and Chemistry Services.
  Plant Performance Analysis
- Environmental Sampling Program.
- Procurement Engineering.
- Maintenance Support.
- Technical support for special programs and projects.

4-1

❍ Provide engineering support for programs development project & address generic/special station technical issues.

- Check valve inspection program.
- Motor operated valve improvement.
- Containment leak rate testing.
- Erosion corosion control.
- Snubber inspection.
- Steam generator inspection.
- In-service inspection.
- Containment tendon testing.
- Other special programs.

❍ Research & prepare responses to assigned NRC bulletins, generic letters, etc.
❍ Provide engineering support for special tests & examinations.

4-2

❍ Provide technical support for equipment reliability programs & single point engineer accountability for outage task projects.

- Responsible for implementation of equipment reliability programs.
- Check valve inspection program.
- Motor operated valve improvement.
- Containment leak rate testing.
- Erosion corosion control.
- Snubber inspection.
- Steam generator inspection.
- In-service inspection.
- Containment tendon testing.
- Eddy current testing.

❍ Inspect & repair major NSSS components.
❍ Inspection & repair to major balance of plant components.
❍ Provide engineering support for assigned special projects.
❍ Research & prepare responses to assigned NRC information bulletins, generic letters, etc.

4-3

❍ Provide engineering support for daily activities requiring general technical input/evaluation.

- Provide direct maintenance support.
- Review & evaluate maintenance history on major maintenance issues.

continued

4-3 (continued)

- Assist System Engineers in procedure writing, root-cause evaluation, human performance evaluation, system waldkdowns, surveillance test reviews, modification package reviews, & NRC/INPO evaluations.
- Provide communication link & working relationahips between various functional groups.
- Provide support & coordinate welding programs.

4-4

❍ Perform engineering evaluation in procuring nuclear safety related parts.

- Prepare, review & approve material evaluation reports (MER) and material procurement plans (MPP) per PED-GEI-32.
- Prepare, review & approve commercial grade dedication packages.
- Prepare & Maintain bills of materials (BOM) & associated procurement specifications for spare parts.

❍ Provide technical assistance for shelf life program.
❍ Prepare & maintain PED procurement procedure.
❍ Maintain spare parts program.

4-5

❍ Long term trending of chemical control & processes.
❍ Chemical oversight & technical support.
❍ Develop new processes.
❍ Environmental radiation monitoring.
❍ NPDES program.
❍ NRC Semi-annual Effluent Report.
❍ Meterological data analysis.
❍ Corporate environmental policies.
❍ EPA State of Nebraska Environmental Reporting.
❍ Annual environmental report.
❍ Technical operation support to

- Hazardous waste.
- Environmental programs.
- Asbestos program.

❍ Environmental Technical Administration (outside the protected area)

- Met tower.
- Sewage lagoons.
- Landfill.
- River banks.

❍ Review, assist in approval & implementation of chemistry programs & changes:

- Secondary, primary, & aux chemistry system.

❍ Representative for

- Steam generator integrity committee.
- CE materials chemistry working group.

continued

4-6

- ○ HP Projects & oversight.
- ○ Dose assessment.
- ○ Technical operational support & recommendations.
  - Radwaste program.
  - Radiological controls & engineering.
  - ALARA.
  - Respiratory protection.
  - Tech spec. compliance.
  - Instrumentation & Calibration.
  - Personnel exposure reduction.
  - Effluent monitoring.
- ○ Oversight & trending for the effectiveness of station radiation protection program.
- ○ Maintain the corporate dose projection/assessment program.
- ○ Radiological incidents.
  - Dosimetry.
  - Bioassays
  - Whole body counting.
  - High exposure & effluent releases.
  - Radiochemistry isotopic identification.
- ○ Reviews health physic experience at other nuclear plants.
- ○ Establishes corp. policies, goals, & standards for radiation protection.
- ○ Evaluate implementation of regulations & requirements.
- ○ Submit regulatory reports.
- ○ Maintain radioactive material licenses.
- ○ Support Emergency Planning Scenarios.
- ○ Radiation Safety Officer for facilities other than Fort Calhoun Station.

4-7

- ○ System Status/Performance Activities.
  - Perform system walkdowns & initiate appropriate corrective actions.
  - Interface with crafts, operations, engineers, management, etc. regarding system status/performance & initiate appropriate corrective actions.
  - Perform system related performance appraisals, investigations, evaluations, etc. & generate appropriate documents, responses, etc.
  - Prepare, witness & document system related special tests for system performance evaluation.
  - Maintain system related equipment/component trending files & initiate appropriate actions based on evaluation of trends.
- ○ Maintenance Support Activities.
  - MWO support activities.
  - Miscellaneous technical support of maintenance activities.

continued

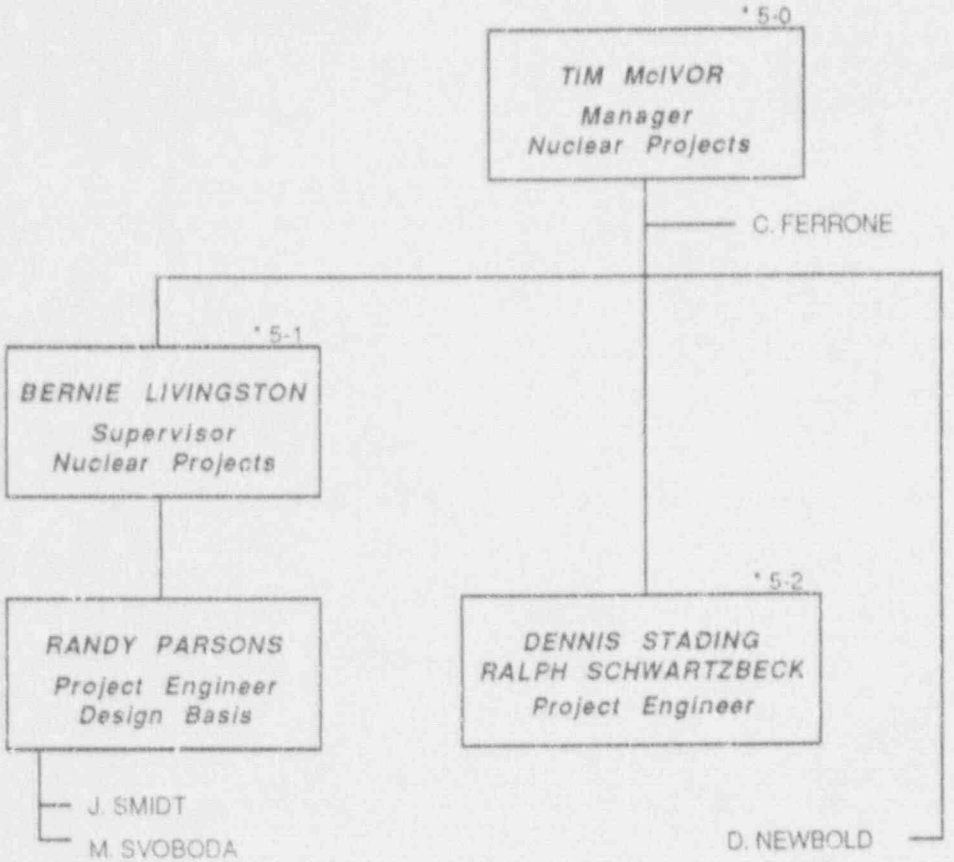
4-7 (continued)

- Configuration Control Activities.
  - Identify system configuration nonconformances, initiate appropriate corrective actions, & resolve nonconformances as applicable.
  - Generate, monitor & close out temporary modifications.
  - Generate modification requests & perform duties of SMART chairman.
- Procedure Activities.
  - Maintenance of system related procedures.
  - Review & approve results of completed system related surveillance tests.
  - Review results of unsatisfactorily completed calibration procedures.
  - Perform system related procedure verifications in support of procedure upgrade project
  - Perform biennial review of system related procedures.
- Provide Technical Support In Addressing ALARA Concerns, Licensing Action Items, etc.

4-8

- NPRDS program.
  Performance indicator program.
  Performance monitoring/trending program.
  Predictive maintenance program.
  Surviellance test program.
  Steam cycle performance program.
  Safety system actuation reduction program.

NUCLEAR PROJECTS



* FOR KEY FUNCTIONAL RESPONSIBILITIES, SEE ATTACHMENT 5

5-0

- Specialized projects designed to support improved ratings in SALP and INPO evaluations

5-1

- Design Basis Reconstitution - Maintenance Phase
- Configuration Management

5-2

- Vendor manuals (complete)
- Procedure upgrade (complete)
- Labeling (complete)
- Asbestos abatement (complete)
- Facility appearance upgrade (complete)
- Procurement (complete)
- Instrument accuracies (complete)
- Root cause analysis (complete)
- CHAMPS database/computer support (complete)
- Other major projects
  - MOVs (Generic Letter 89-10)
  - AOVs
  - SOVs
  - USAR Update

continued

Omaha Public Power District

RUN DATE: 03/10/92 08:03:27

NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MOD5

MOD YEAR: 91 ONLINE MODS

PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	1992	1993	1994	1995	1996	TOTAL
FC89-085-	DG-1 FRESH AIR INLET DAMPER CO	303.0	AFA	MF-SENT	6.0						6.0
FC90-074-	SPARE CEDM #9 MODIFICATION	273.0		MF-READY							.0
FC90-040-	A1-133A/B PANEL VENTILATION	244.0	AFA	MF-SENT	35.0						35.0
FC90-073-	A1-133 PANEL COOLING	244.0	AFA	MCR RTND	118.9						118.9
FC89-049-	CCW SUCTION PRESS GAUGE AC-3A/	234.5	AFA	CONST ST	83.2						83.2
FC89-061-	NORMAL AND EMERGENCY LIGHTING	227.0	AFA	MF-READY	13.0						13.0
FC90-065-	CONTAINMENT ROOF CRANE	224.5	AFA	PED -BKLG							.0
FC90-029-	HYDROGEN TO VCT TIE-IN	224.0	AFA	MF-SENT	27.5						27.5
FC91-017-	HIGH ENERGY LINE BREAK IN ROOM	220.0	AFA	MCR RTND	117.0						117.0
FC90-028-	AUX BLDG CORRIDOR 4 ISI CAL BL	206.5	AFA	MF-SENT	4.0						4.0
FC85-059-	FIRE ESCAPE ROUTES-DG & SWGR R	206.0	AFA	PED -BKLG	69.8						69.8
FC90-064-	CORRECTION OF SEC SYSTEM DEFIC	185.5	AFA	CONST FIN	195.0						195.0
FC88-129-	DW SYSTEM MODIFICATION	182.5	AFA	SAC-ACPT							.0
FC91-005-	DG RADIATOR DUCT ACCESS	182.0	AFA	MF-SENT	13.6						13.6
FC90-018-	WASTE DRAINLINE FOR 'B' STEAM	172.5	AFA	MF-SENT	10.0						10.0
FC90-049-	SIGMA METERS REPLACEMENT	171.0	AFA	MF-READY	12.6						12.6
FC88-022-	CRDR LABELING/DEMARCATION/MIMI	152.5	COMP	MCR RTND	2.0						2.0
FC88-128-	WATER PLANT CHLORINE ROOM SAFE	117.5	AFA	MCR RTND	30.8						30.8
FC86-115-	MAINTENANCE SHOP ADDITION	116.0		MCR RTND	25.0						25.0
FC87-042-	D-G ROOMS DRY PIPE SPRINKLER S	106.5	AFA	ACPT-STUP	291.0						291.0
FC90-035-	TM-89-M-053 & TM-89-E-007 CLOS	105.5	AFA	MF-SENT	5.5						5.5
FC80-121-	ADDITIONAL NUCLEAR ALARMS	104.0	AFA	MCR RTND	9.5						9.5
FC88-028-	HYDRAZINE INJECTION PUMP MODIF	103.0	AFA	CONST FIN	137.2						137.2
FC89-012-	CHARGING PUMP VALVE STOPS	102.0	AFA	MF-SENT							.0
FC80-104-	RADWASTE VOLUME REDUCTION	98.5	N/R	MCR RTND							.0
FC90-011-	WAREHOUSE IMPROVEMENTS (FP UPG	92.5	AFA	MCR RTND	85.0						85.0
FC90-033-	GROUNDS CAUSED BY HCV-248	73.0	AFA	DRFT COMP							.0
FC90-020-	DISCONNECT FOR ROOM 71 LAPPING	51.0	AFS	MF-SENT	.6						.6
FC83-004A	REMAINING VA 66 FLOW PROBLEMS	.0	AFA	MCR RTND							.0
FC85-049A	SECURITY UPGRADE - PHASE I (PA	.0	N/R	MCR RTND							.0
FC85-049B	SECURITY UPGRADE - PHASE II (P	.0	N/R	MCR RTND							.0
FC86-012-	SECONDARY SAMPLE CHILLERS	.0	N/R	CONST FIN							.0
FC91-027-	HIGH ENERGY LINE BREAK IN ROOM		AFA	MF-SENT	24.6						24.6
					1,316.8	.0	.0	.0	.0	.0	1,316.8

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NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MOD5

MOD YEAR: 92 ONLINE MODS

PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	1992	1993	1994	1995	1996	TOTAL
FC89-065-	BROAD BAND INTEGRATED COMMUNIC	285.5	AFA	PED -BKLG		120.7					120.7
FC90-002-	BACKUP HEATERLESS AIR DRYER	226.0	AFA	PED -BKLG		124.5					124.5
FC89-082-	QSPDS COMMUNICATION PRIORITY C	225.5	AFA	FD ISSUED	97.5						97.5
FC90-031-	DIESEL GENERATOR 10 SEC START	217.0	AFP	EEAR-BKLG		.0					.0
FC90-068-	NI CABLE SEPERATION	214.5	AFP	PED -BKLG		.0					.0
FC90-041-	DG VOLTAGE REGULATOR REPLACEME	212.0	AFA	PED -BKLG	280.5	12.4					292.9
FC86-061-	AUX BLDG RADIO COMMUNICATION U	208.0	AFA	PED -BKLG	25.0	896.0					921.0
FC91-031-	DG RADIATOR DAMPER UPGRADE	193.0	AFP	PED -BKLG	.0	.0					.0
FC90-055-	AI-100 TELEPHONE	192.0	AFP	PED -BKLG	3.0						3.0
FC89-078-	R.O. UNIT TO D.I. PLANT	184.0	AFP	PED -BKLG		.0					.0
FC85-046-	SVCE BLDG STAIRWAY FIRE RATING	181.0	AFP	PED -BKLG		32.1					32.1
FC88-001-	SERVICE BUILDING REMODELING	181.0	AFA	EEAR-BKLG	40.0	858.5					898.5
FC90-025-	CHRG. PUMP COOLERS RELIEF VALV	176.0	AFP	PED -BKLG		33.5					33.5
FC90-072-	REPAIR/REPL FIRE BARRIER SEALS	169.0	AFA	CONST ST	704.0	101.6					805.6
FC89-072-	INSTRUMENT AIR TEST TEE ISOLAT	167.0	AFA	CP ISSUED	6.2	7.5	1.9				15.6
FC89-017-	ABANDONMENT OF WD EVAP.GS.CONT	157.0	AFP	PED -BKLG		229.0					229.0
FC91-011-	FLOW INDICATION FOR CHARGING P	157.0	AFA	PED -BKLG		.0					.0
FC91-018-	DOOR 1007-19 INTER LOCK	156.5	AFA	PED -BKLG	.0	.0					.0
FC88-121-	RW PROCESS BUILD CONN FOR PLAN	150.0	AFA	CONST FIN	553.5						553.5
FC84-155-	RM-056B CONTAMINATION	146.5	AFA	PD ISSUED	82.5	1,001.7	103.7				1,187.9
FC90-057-	WATER PLANT SAMPLING, PHASE II	130.5	AFA	PED -BKLG	58.0	235.1					293.1
FC89-077-	CONTROL ROOM OPS/MAINT WORK CE	127.0	AFP	PED -BKLG		.0					.0
FC91-037-	DOOR 1007-1 ACCESS CONTROL	119.5	AFA	MCR RTND		10.0					10.0
FC85-036-	UPGRADE FIRE DETECTION SYSTEM	117.0	AFA	PED -BKLG	88.9	647.4	103.7				840.0
FC90-046-	ELIMINATION OF XENON GAS PROBL	114.0	AFA	CP REVD	63.0						63.0
FC88-038-	ROOM 27 VERY HIGH RAD AREA DOO	108.5	AFP	PED -BKLG		.0					.0
FC87-002-	FUEL TRANSFER CANAL DRAIN PUMP	107.0	AFA	PED -BKLG		107.9					107.9
FC86-093-	SWITCHGEAR ROOM HALON SYSTEM I	105.5	AFA	CP REVD	63.6	119.0					182.6
FC85-065-	REDUNDANT FL INSTM-AUX BLDG VE	103.5	AFP	PED -BKLG		33.2					33.2
FC88-087-	STACK FLOW INDICATION (ERF COM	101.5	AFP	EEAR-BKLG		17.8					17.8
FC85-068-	INST LADDER & DOOR-WATER PLANT	101.0	AFA	PED -BKLG		46.4					46.4
FC84-095-	ERF COMPUTER X/Q PROGRAM	100.5	AFS	PED -BKLG		.0					.0
FC87-052-	INTERFACE OF SIMULATOR W/EOF &	100.5	AFP	PED -BKLG		.0					.0
FC83-046-	SIRWT-SFP-REFUELING CAVITY FIL	100.0	AFA	CONST ST	86.6						86.6
FC89-063-	FP-5 (JOCKEY PUMP) REPLACEMENT	98.5	AFP	PED -BKLG		40.9					40.9
FC73-027-	POSIT INDICAT ON HCV-1041C & H	98.0	AFP	PED -BKLG	40.0	12.4					52.4
FC91-007-	AUX. BLDG. TRUCK BAY OVERHEAD	96.5	AFA	PED -BKLG	35.1	106.2					141.3
FC90-044-	AC-7 VENT LINE STRAINER	94.5	AFA	CP ISSUED		49.0					49.0
FC84-129-	ACCESS LADDER FOR FW-65B	93.0	AFA	PED -BKLG		.0					.0
FC74A021A	SG BLOWDOWN - PRCS SYSTEM	82.5	AFA	CONST ST	.0	94.3					94.3
FC88-012-	AUX BLDG HP/CHEM AREA RENOVATI	63.5	AFA	FD REVD	150.0						150.0
FC91-030-	REPL. OF CHARGING PUMP DISCHAR		AFA	PED -BKLG		.0					.0
					2,377.4	4,937.1	209.3	.0	.0	.0	7,523.8

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NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MODS

MOD YEAR: 93 ONLINE MODS

PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	1992	1993	1994	1995	1996	TOTAL
FC89-057-	110 M WEATHER TOWER DATA COLL	163.5	AFA	PED -BKLG			79.0				79.0
FC91-022-	CHEM. LAGOON/PH NEUT. ENHANCEM	158.5	AFP	PED -BKLG			.0				.0
FC90-070-	ILRT VENT PASS	144.5	AFP	PED -BKLG		.0	.0				.0
FC83-071-	CATHODIC PROTECTION FOR FUEL T	134.0	AFP	PED -BKLG		100.0	41.1				141.1
FC89-083-	DG 480V PNL DP-1 CKT BKR MECH	123.0	AFP	PED -BKLG		.0	0				.0
FC92-001-	SIRWT FILTRATION	122.0	AFP	PED -BKLG							.0
FC91-034-	AFW TEST LINE REMOVAL	104.5	AFP	PED -BKLG		.0	.0				.0
FC90-052-	CAGE FOR BORONOMETER/FAILED FU	104.0	AFP	PED -BKLG		.0	.0				.0
FC88-075-	MODIFICATION OF OIL DRAINS	93.0	AFA	CP ISSUED	18.0	29.1	3.0				50.1
FC89-087-	FO-139, FO-140 SAMPLE LINE AND	85.0	AFP	PED -BKLG		12.7	1.3				14.0
FC88-065-	STANDARDIZING DG AIR COMP BATT	81.0	AFP	PED -BKLG		.0	.0				.0
FC88-085-	SCREENWASH HEADER LOW PRESS. I	78.0	AFP	PED -BKLG		9.1	.8				9.9
FC87-053-	STEAM COILS CONDENSATE LINE RE	74.0	AFP	PED -BKLG			201.3				201.3
FC91-035-	VA-68 DUCT ACCESS PORT	70.5	AFP	PED -BKLG		.0	.0				.0
FC84-076-	480 VOLT OUTLETS IN INTAKE STR	69.0	AFP	PED -BKLG		.0	.0				.0
FC86-043-	ADTNL DATA ACQUISTN CAPABILITY	63.0	AFP	PED -BKLG			.0				.0
FC85-159-	VA-37 ROLLUP FILTERS ACCESS PL	63.5	AFP	PED -BKLG		.0	.0				.0
FC83-004B	VA 121 BOOSTER FAN (ELEC)	.0	AFA	CP ISSUED			85.2				85.2
					18.0	150.9	411.7	.0	.0	.0	580.6

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NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MODS

MOD YEAR: 94 ONLINE MODS

PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	'/92	1993	1994	1995	1996	TOTAL
FC91-009-	SPENT FUEL POOL RE-RACK	250.5	AFA	PED -BKLG	470.0	,071.0	1,779.6	2,125.0			5,445.6
FC91-003-	SPENT FUEL POOL SUCTION BREAK	84.5	AFA	PED -BKLG				9.0			9.0
FC91-019-	WAREHOUSE X-RAY MACHINES	63.5	AFP	PED -BKLG				.0			.0
FC89-069-	CONTROL ROOM FIRE MAIN PRESSUR	55.5	AFP	PED -BKLG			.0	.0			.0
FC86-021-	ADDITIONAL TURBINE BUILDING SU	39.5	AFP	PED -BKLG			.0	.0			.0
					470.0	1,071.0	1,779.6	2,134.0	.0	.0	5,454.6

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NUCLEAR PROGRAM PLANNING
CPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MOD5

MOD YEAR: 92 OUTAGE MODS

PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	1992	1993	1994	1995	1996	TOTAL
FC90-026-	R.W. DISCHARGE VALVE REPLACEME	300.0	AFA	ACPT-STUP	331.1	48.6					379.7
FC91-026-	STATION BATTERY REPLACEMENT	273.5	AFA	CONST ST	46.0	170.7					216.7
FC90-061-	ON-LINE CECORE	266.0	AFA	CONST ST	622.2	17.4					639.6
FC90-005-	DG INSTRUMENTATION UPGRADE	264.5	AFA	CONST ST	181.0	70.5					251.5
FC90-071-	CEA CHANGE MACHINE REMOVAL	256.5	AFA	ACPT-STUP	45.0	19.6					64.6
FC90-060-	SI RELIEF VALVES, FLANGED CONN	256.0	AFA	CONST ST	80.3	23.1					103.4
FC90-067-	FW-8C LOADSHED FOLLOWING OPLS	250.0	AFP	ACPT-STUP	16.0	4.9					20.9
FC90-062-	THERMAL SHIELD LOCKING COLLAR	249.0	AFA	CP REVD	7.3						7.3
FC91-025-	REPL. OF VALVES LCV-383-1 & LC	216.0	AFA	CONST ST	10.3	276.8					287.1
FC89-019-	SHUTDOWN COOLING LOW FLOW ALAR	212.5	AFA	CP REVD	128.0	36.3					164.3
FC92-002-	PAL EQUALIZING VALVE ISOLATION	209.0	AFA	FD ISSUED							.0
FC89-081-	FW-1D STEAM SUPPLY LINE BREAK	203.0	AFA	CONST ST	28.2	42.8					71.0
FC91-008-	UNDER VOLTAGE PROT. FOR 480V S	202.0	AFA	CONST ST		9.3					9.3
FC89-074-	ELECTRICAL CHANGES TO CHARGING	177.5	AFA	CP REVD	113.4	10.0					123.4
FC91-015-	PRESS. LOOP SEAL FLANGE/VALVE	177.5	AFA	CONST ST	68.9	31.1					100.0
FC88-076-	RELAY 94/1045 CONTACTS 7-8, 9-	175.0	AFA	CONST ST	7.2	.5					7.7
FC89-013-	REPLACEMENT OF 480V BREAKER TR	169.5	AFA	ACPT-STUP	516.4	581.9					1,098.3
FC90-038-	MAIN FEEDWATER SUPPORTS ROOM 8	167.5	AFA	CONST ST	497.9	346.8					844.7
FC88-064-	INSTALL FANS TO INVERTERS A/B/	167.0	AFA	CONST ST	39.0	5.2					44.2
FC84-176-	LETDOWN LEVEL & BACKPRESSURE C	164.0	AFA	CONST ST	118.1	89.0					207.1
FC89-048-	INSTRUMENTATION FOR CH-4A AND	163.0	AFP	CP REVD	62.2	39.2					101.4
FC91-013-	RPS DELTA T POWER FLUXUATION	159.0	AFA	CP REVD	.0	166.1					166.1
FC91-028-	CHANGE TO RC-2B INSULATION SUP	159.0	AFA	CP REVD	14.4	14.9					29.3
FC90-063-	DIESEL GENERATOR ROOM HVAC CON	155.0	AFA	CONST ST	13.5	5.2					18.7
FC87-008-	ANNUNCIATOR UPGRACE	147.5	AFA	CONST ST	60.8	45.4	291.5				397.7
FC89-060-	REPLACEMENT OF GE-MAC POWER SU	147.5	AFA	PED -BKLG	78.0	315.0	350.0	330.0			1,073.0
FC89-076-	BORIC ACID CONCENTRATION REDUC	147.0	AFA	CONST ST	35.0	101.0					136.0
FC90-024-	LOSI PUMP LOW VOLTAGE TRIP INT	144.5	AFA	CP REVD	78.5	1.9					80.4
FC90-047-	PIPE RESTRAINT RCH-32 AND RCH-	136.0	AFA	ACPT-STUP	8.3	10.9					19.2
FC88-017-	ADDITION OF A THIRD AUX FEEDWA	129.0	COMP	ACPT-STUP	81.4	36.3	.0	.0	.0		117.7
FC90-003-	TE-601 CONTAINMENT SUMP PENETR	123.5	AFA	CONST ST	18.0	3.9					21.9
FC89-055-	AFW PUMP INSTRUMENTATION	94.5	AFA	CONST ST	40.3	7.5					47.8
FC90-023-	161KV SYSTEM MODIFICATIONS	91.5	AFA	ACPT-STUP	31.0	19.7					50.7
FC87-014-	REPLACEMENT OF HCV-249 AND HCV	85.0	AFA	CONST ST	101.1	46.7					147.8
FC92-009-	SI RELIEF VALVES SETPOINT CHAN		AFA	PED -BKLG		.0					.0
					3,478.8	2,598.2	641.5	330.0	.0	.0	7,048.5

Omaha Public Power District

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NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MOD5

MOD YEAR: 93 OUTAGE MODS

PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	1992	1993	1994	1995	1996	TOTAL
FC89-084-	STEAM GENERATOR OVERFILL PROTE	288.0	AFA	PED -BKLG		77.8	32.4				110.2
FC90-059-	A1-310-DW2-PS3 DEACTIVATION	266.0	AFP	PED -BKLG			.0				.0
FC90-058-	CCW RELIEF VALVE THREADED UNIO	256.0	AFP	EEAR-BKLG			.0				.0
FC90-042-	FRESH AIR INTAKE FOR DIESEL GE	244.0	AFP	PED -BKLG		197.9	124.5				322.4
FC91-024-	RAW WATER HEADER ANNUBAR REPLA	239.5	AFA	PED -BKLG			.0				.0
FC89-075-	REACTOR COOLANT PUMP MOTOR OIL	221.0	AFP	PED -BKLG			25.4				25.4
FC89-029-	SI PIPING UPGRADE (SI-323)	199.0	AFS	PED -BKLG		.0	.0				.0
FC88-066-	SI LOOP INJECTION VALVE INDIC.	192.5	AFA	PED -BKLG			68.0				68.0
FC91-004-	DG COOLING SYSTEM ENHANCEMENT	182.0		PED -BKLG	38.3	4.7	16.4				59.4
FC90-004-	AUTO CLOSURE INTERLOCK REMOVAL	171.0	AFP	EEAR-BKLG			.0				.0
FC90-015-	13.8KV/480V EMERGENCY TRANSFOR	170.5	AFP	PED -BKLG		.0	.0				.0
FC92-003-	4160 & 480V BRKRS CLOSE CIRCU	152.5	AFP	PED -BKLG							.0
FC91-002-	HG-104 FLANGES	148.0	AFP	PED -BKLG			.0				.0
FC91-010-	RELIEF VALVE FLANGES	148.0	AFP	PED -BKLG			.0				.0
FC89-062-	FIA-236 HOT LEG INJECTION	144.0	AFP	PED -BKLG		.0	.0				.0
FC88-034-	CCW TO RCP SEALS ISOL VALVES H	139.0		PED -ACT		39.4	13.5				52.9
FC87-030-	CONTNMNT PRESSURE CONTRL SWTCH	138.5	AFP	PED -BKLG			.0				.0
FC88-046-	HCV-400 SERIES VALVES OPER REP	133.5	AFP	PED -BKLG		98.7	208.8				307.5
FC81-183-	RC PUMP VIBRATION MONITORING S	126.0	AFE	PED -BKLG			.0				.0
FC87-044-	VLPM UPGRADE/RCP VIB MONITORIN	126.0	AFA	PED -BKLG		.0	188.7				188.7
FC90-054-	REPL LIMITORQUE OPER ON HCV-13	120.5	AFA	EEAR-BKLG			77.9				77.9
FC86-004-	REPLACE DIODES WITH VARISTORS	120.0	AFP	PED -BKLG			.0				.0
FC91-020-	120VAC INSTR. BUS COORDINATION	113.5	AFP	EEAR-BKLG		.0	.0				.0
FC91-036-	FEEDWATER/CONDENSATE PUMP OPER	112.5	AFP	PED -BKLG		.0	.0				.0
FC90-050-	WR LOG CHANNNEL, EXT RANGE CUT	94.0	AFP	PED -BKLG		58.9	22.6				81.5
FC81-153-	RPL OF SDF 1 UNDERFREQUENCY RE	82.0	AFA	PED -BKLG			.0				.0
FC84-102-	REPL OF PENETRATION TEMP RECOR	59.5		PD REVD							.0
FC46-029-	ADD CONDENSER SAMPLING TRAYS	55.0	AFP	PED -BKLG		.0	.0				.0
FC86-106-	CHARGING PUMP PRESSURE SWITCHE	54.0	AFP	PED -BKLG		.0	.0				.0
FC91-006-	SINGLE INDICATION LAMP MODIFIC		AFP	EEAR-BKLG							.0
					38.3	477.4	778.2	.0	.0	.0	1,293.9

Omaha Public Power District

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NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MODS

M[illegible]AR: 95 OUTAGE MODS

PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	1992	1993	1994	1995	1996	TOTAL
FC86-072-	CHARGING PUMP REPLACEMENT/RELI	112.0	AFP	PED -BKLG				.0	.0		.0
FC88-054-	G-E PANEL BOARD METERS	98.0	AFP	EEAR-BKLG				.0			.0
FC85-207-	REACTOR COOLANT PUMP MOTOR LIG	91.0	AFP	PED -BKLG				.0			.0
FC91-038-	CONTAINMENT PENDANT LIGHT REPL		AFP	EEAR-BKLG							.0
					.0	.0	.0	.0	.0	.0	.0

Omaha Public Power District

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NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR PROJECT PROGRAM
(SUMMARY OF PROJECTS BY PRIORITY SCORE)

REPORT: PRCJ1

PROJ NO	DESCRIPTION	LEAD DEPT	PRI SCORE	1991	1992	1993	1994	1995	1996
PR91-015-	EOP/AOP REVISION/UPGRADE	841	270.0	425.0	134.8	183.7	51.9	.0	.0
PR91-070-	THERMAL SHIELD REPAIR	353	258.0	3,164.8	2,208.3	.0	.0	.0	.0
PR91-059-	EROSION/CORROSION INSP	353	252.0	.0	82.0	54.0	.0	60.0	63.0
PR91-076-	CONTAINMENT ILRT	353	249.0	.0	.0	185.7	.0	.0	198.7
PR91-075-	REACTOR SURVEIL CAPSULE INSPEC	353	238.0			344.0			
PR91-071-	RELIEF VALVE TESTING PROG	353	237.0		3.0	3.0	1.0	4.0	4.0
PR91-054-	STEAM GENERATOR SERVICES	353	236.0	.0	1,141.4	1,174.6	.0	1,182.7	1,184.7
PR91-008-	FIRE BARRIER LABELING PROJ.	360	235.5	.0	12.2				
PR91-055-	SNUBBER INSPECTION/TESTING	353	233.5	.0	9.5	7.1	.0	7.1	8.1
PR91-037-	PRES.THERMAL SHOCK ANAL.	358	228.8	228.8	207.4	207.4	155.6	77.8	77.8
PR91-048-	OUTAGE SURVEILLANCE TESTING	352	225.0						
PR91-049-	ELECT. DIST. MAINTENANCE	352	225.0						
PR91-050-	ESF TESTING	352	225.0	.0	.0				
PR91-051-	DIESEL GEN. OVERHAUL	352	225.0	.0	31.1				
PR91-058-	CAVITY LINER INSP/REPAIR	353	225.0	.0	.0				
PR91-064-	RCP MOTOR MAINTENANCE	842	225.0	.0	.0				
PR91-065-	CONTAINMENT PAINT REPAIR	842	225.0	.0	311.1	777.8	.0	777.8	777.8
PR91-066-	TEMPORARY COND. POLISHING SYS	844	225.0	.0	.0				
PR91-067-	LIQUID EFFLUENT RELEASE	844	225.0	.0	.0				
PR91-068-	SECONDARY SIDE DRY LAY_UP	844	225.0	.0	.0				
PR91-006-	MOD CLOSEOUT (PRE 1991)	359	209.0	20.0	15.5				
PR91-045-	20YR REACTOR VESSEL 100% ISI	353	205.0	187.0	358.5	.0	.0	.0	.0
PR91-061-	MOV TESTING	353	205.0	.0	96.0	135.7	.0	137.7	139.7
PR91-063-	ISI/IST EXAMS	353	205.0	.0	526.4	534.5	102.0	608.0	608.0
PR91-047-	CONTAINMENT TENDON TESTING	353	203.0	482.8	52.6	.0	.0	.0	481.7
PR91-057-	SYS PRESS. TESTS (10YR HYDRO)	353	199.0	.0	32.0	34.0	.0	.0	.0
PR91-044-	MOVATS GL89-10	360	195.0	815.1	588.3	492.3	192.4	.0	.0
PR91-027-	NUMARC PROCUREMENT INITIATIVE	353	192.5	.0	110.7	52.0	54.0	57.0	60.0
PR91-060-	CHECK VALVE INSPECT/TESTING	353	188.0	.0	9.0	9.0	.0	10.0	11.0
PR91-043-	FUSE CONTROL PROJ	356	174.0	96.8	34.9	.0	.0	.0	.0
PR91-009-	STATION BLACKOUT	356	173.0	23.0	28.5				
PR91-042-	10 CFR 20 REVISION UPGRADE	354	169.0	200.0	872.9	26.2			
PR91-062-	PRESSURIZER SLUDGE INSPECTION	353	168.0	.0	143.3	.0	.0	.0	.0
PR91-040-	ELEC DWNG UPGRADE/AS BUILT PRO	356	166.5	110.0	114.1	114.1	114.1	114.1	64.3
PR91-041-	S&W DBD DWNG DISCREP RESOLUT	359	166.5	8.0	58.1	6.2	6.3	6.4	6.4
PR91-073-	ASME XI APPENDIX VIII	353	164.5	50.0	50.6	57.9	161.6	59.9	111.7
PR91-039-	USAR UPGRADE	810	163.5	252.8	145.4	80.8	80.8	80.8	80.8
PR91-056-	BOP EDDY CURRENT TESTING	353	162.5	22.0	117.1	136.6	22.7	135.6	137.6
PR91-038-	LONG-TERM SEISMIC PIPE QUAL	357	161.0	1,304.6	887.8	1,011.2	1,011.2	1,011.2	148.4
PR91-036-	PROCEDURES UPGRADE	360	153.5	1,413.6	419.8	669.4	550.9	476.6	480.6
PR91-035-	PROBABILISTIC RISK ANALYSIS	358	151.5	833.1	1,164.5	746.9	378.4	352.4	252.4
PR91-034-	TURBINE INSP. AND REPAIR	352	145.0	.0	547.4	207.4	.0	103.7	207.4
PR91-033-	SECURITY SYS CAMERAS	830	144.0	65.0	.0				
PR91-007-	INSTRUMENT SETPOINT PROJECT	356	141.0	30.0	105.9	96.9	78.3		
PR91-032-	EMERGENCY RESPONSE DATA SYS	358	136.0	36.4	11.4	11.4	.0	.0	.0
PR91-031-	SEWAGE LAGOON IMPROVEMENT	310	127.0	557.0	.0	.0	215.7	.0	215.7
PR91-030-	CONFIGURATION MGMT PROJ	360	119.0	427.4	483.8	462.1	463.1	464.1	465.1
PR91-028-	STRATEGIC ALARA (RAD.MINIMIZE)	354	117.5	73.7	45.0	78.1	.0	.0	.0
PR91-029-	AOVATS	360	117.5	109.3	37.5	61.6	47.7	48.0	48.5
PR91-025-	LLRW_COMPACT	348	106.5	600.0	1,625.0	1,085.0	.0	.0	.0
PR91-026-	CHAMPS SYS PROGRAMMING IMP.	358	106.5	605.2	634.4	664.3	664.3	664.3	664.5

RUN DATE: 03/10/92 08:03:22

NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR PROJECT PROGRAM
(SUMMARY OF PROJECTS BY PRIORITY SCORE)

REPORT: PROJ1

PROJ NO	DESCRIPTION	LEAD DEPT	PRI SCORE	1991	1992	1993	1994	1995	1996
PR91-005-	CERP	350	105.5	.0	120.4				
PR91-024-	PERFORMANCE MONITORING UPGRADE	352	96.5	393.5	24.1	78.1	78.7	79.2	79.8
PR91-023-	RELIABILITY CENTERED MAINT	353	96.0	309.8	183.1	185.0	186.9	188.7	190.6
PR91-022-	INTAKE SCREEN REBUILD	842	91.0	200.0	103.7	103.7	103.7	103.7	103.7
PR91-021-	FACILITY APPEARANCE UPGRADE	351	88.5	475.2					
PR91-020-	SEISMIC QUALITY UTILITY GROUP	357	72.0	80.0	16.5	6.2	.0	.0	.0
PR91-019-	TECH SPEC UPGRADE	810	71.5	.0	.0	.0	77.8	77.8	.0
PR91-018-	STANDING ORDER REVISION	840	67.0	125.0	.0	.0	.0	.0	.0
PR91-017-	AUX. BLDG. ROOF REPAIR	842	66.5	400.0					
PR91-016-	CONDENSER ISO VALVES	842	65.5	.0	518.5	518.5	.0	518.5	518.5
PR92-001-	ZEBRA MUSSEL, ASIATIC CLAM PLN	354	0.0						
PR91-001-	SEVERE ACCIDENT MGMT	358	0.0	.0	.0				
PR91-002-	LOWER MODE EMERG. PLN. GUIDE	841	0.0	.0	.0				
PR91-010-	DESIGN BASIS OPEN ITEM RESOLUT	360	0.0	831.9	188.6	791.1	791.6	777.7	87.1
PR91-072-	TOTAL QUALITY ADVANTAGE	611	0.0	.0	.0	.0	.0	.0	.0
PR91-074-	CONTRL OF CQE FLDS IN CHAMPS	358	0.0	18.2	10.9				
PR91-077-	SPENT FUEL DRY STORAGE	357	0.0						
PR91-078-	SOLENOID OPERATED VALVES	360	0.0		12.8				
PR91-079-	LABELING PHASE E	360	0.0	268.8	329.5	2.4	2.4	2.4	2.4
				15,243.8	14,965.3	11,315.9	5,593.1	8,187.2	7,480.0

1992 REFUELING OUTAGE
DESCRIPTION OF PROJECTS

THERMAL SHIELD INSPECTION AND REPAIR - PR91-70

Inspect the Fort Calhoun Station Reactor Vessel Thermal Shield and tighten its positioning pins to prescribed preload value as required during the 1992 Refueling Outage.

EROSION/CORROSION CONTROL - PR91-59

To detect and monitor areas of Fort Calhoun station piping susceptible to erosion/corrosion and to determine replacement intervals in piping in order to assure continued safe operations of Plant systems.

STEAM GENERATOR SERVICES - PR91-054

Install steam generator nozzle dams, perform eddy current testing, plug tubes (if necessary), remove steam generator nozzle dams, perform secondary visual inspections, and perform sludge lancing.

SNUBBER INSPECTION TESTING - PR91-55

To comply with Fort Cahoun Station Technical Specifications by assuring operability of all snubbers and maintaining operability by a timely replacement of snubber seals.

INSERVICE INSPECTION - PR91-63

ASME Section XI examination of Class 1, 2, and 3 components and supports.

COMPONENT COOLING WATER TEN-YEAR HYDRO TEST - PR91-57

To perform the Component Cooling Water System Class 3 ten-year hydrostatic test per SS-ST-CW-3001.

MOTOR OPERATED VALVES - PR91-44

Overhaul, repair, diagnostic testing (MOVATS) and testing for Generic Letter 89-10.

CHECK VALVE INSPECTION/TESTING - PR91-60

Performance of scheduled Preventive Maintenance Inspections and Surveillance Tests utilizing visual inspection Fort Calhoun Station check valves to detect and repair degraded check valves, and to ensure continued operability. To comply with Check Valve Program Plan and Five-Year Check Valve Inspection Plan.

BALANCE OF PLANT EDDY CURRENT TESTING - PR91-56

Perform eddy current testing of Plant heat exchangers.

TURBINE INSPECTION AND REPAIR - PR91-34

Inspection of the low pressure section of the turbine. Also inspection/repair of LAP/LPB and all intercept and intercept stop valves.

20 YEAR REACTOR VESSEL 100% ISI - PR91-45

Required examinations of the reactor vessel components for the 10 year interval as mandated by the ASME code Section XI.

CONTAINMENT TENDON TESTING - PR91-47

Testing is performed in accordance with Tech. Spec, 3.5(7) on a five year frequency rate.

DIESEL GENERATOR OVERHAUL - PR91-51

Preventative maintenance and visual inspection of diesel generators to ensure continued operation.

MOV TESTING - PR91-61

To maintain and test the limitorque actuators on Motor Operated Valves. This is an ongoing project to ensure operability of MOV's as required by Generic Letter 89-10.

PRESSURIZER SLUDGE INSPECTION - PR91-62

Determine the composition and severity of the Pressurizer sludge deposits, remove the deposits if possible, and survey the condition of the pressurizer internals. This will eliminate the lower pressurizer level instrument nozzles becoming obstructed and thereby giving false indicators.

RELIEF VALVE TESTING - PR91-71

Develop a relief valve testing program which meets ASME Section XI requirements and ensures a high reliability of relief valve performance.

RUN DATE: 03/12/92 10:03:38

NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR PROJECT PROGRAM
(SUMMARY OF OUTAGE PROJECTS BY NUMBER)

REPORT: PROJOUT

PROJ NO	DESCRIPTION	DEPT	PRI SCORE	1991	1992	1993	1994	1995	1996
PR91-016-	CONDENSER ISO VALVES	842	65.5	.0	518.5	518.5	.0	518.5	518.5
PR91-034-	TURBINE INSP. AND REPAIR	352	145.0	.0	547.4	207.4	.0	103.7	207.4
PR91-044-	MOVATS GL89-10	360	195.0	.0	103.7	249.0	.0		
PR91-045-	20YR REACTOR VESSEL 100% ISI	353	205.0	.0	406.0	.0	.0	.0	.0
PR91-047-	CONTAINMENT TENDON TESTING	353	203.0	129.8	57.6	.0	.0	.0	378.0
PR91-048-	OUTAGE SURVEILLANCE TESTING	352	225.0						
PR91-049-	ELECT. DIST. MAINTENANCE	352	225.0						
PR91-050-	ESF TESTING	352	225.0	.0	.0				
PR91-051-	DIESEL GEN. OVERHAUL	352	225.0	.0	31.1				
PR91-054-	STEAM GENERATOR SERVICES	353	236.0	.0	1,230.4	1,174.6	.0	1,182.7	1,184.7
PR91-055-	SNUBBER INSPECTION/TESTING	353	233.5	.0	80.0	7.1	.0	7.1	8.1
PR91-056-	BOP EDDY CURRENT TESTING	353	162.5	20.0	141.1	136.6	20.7	135.6	137.6
PR91-057-	SYS PRESS. TESTS (10YR HYDRO)	353	199.0	.0	85.0	34.0	.0	.0	.0
PR91-058-	CAVITY LINER INSP/REPAIR	353	225.0	.0	.0				
PR91-059-	EROSION/CORROSION INSP	353	252.0	.0	159.9	54.0	.0	60.0	63.0
PR91-060-	CHECK VALVE INSPECT/TESTING	353	188.0	.0	71.5	9.0	.0	10.0	11.0
PR91-061-	MOV TESTING	353	205.0	.0	165.6	135.7	.0	137.7	139.7
PR91-062-	PRESSURIZER SLUDGE INSPECTION	353	168.0	.0	150.3	.0	.0	.0	.0
PR91-063-	ISI/IST EXAMS	353	205.0	.0	771.4	534.5	102.0	608.0	608.0
PR91-064-	RCP MOTOR MAINTENANCE	842	225.0	.0	.0				
PR91-065-	CONTAINMENT PAINT REPAIR	842	225.0	.0	311.1	777.8	.0	777.8	777.8
PR91-066-	TEMPORARY COND. POLISHING SYS	844	225.0	.0	.0				
PR91-068-	SECONDARY SIDE DRY LAY_UP	844	225.0	.0	.0				
PR91-070-	THERMAL SHIELD REPAIR	353	258.0	196.7	2,208.3	.0	.0	.0	.0
PR91-071-	RELIEF VALVE TESTING PROG	353	237.0		12.0	3.0	1.0	4.0	4.0
PR91-075-	REACTOR SURVEIL CAPSULE INSPEC	353	238.0			344.0		7.0	
PR91-076-	CONTAINMENT ILRT	353	249.0	.0	.0	247.7	.0	.0	198.7
				346.5	7,050.9	4,432.9	123.7	3,552.1	4,236.5

PRIORITIZATION SCORING FORM

DESCRIPTION: _____

PROJECT, EAR, MOD, ECN, etc.# _____ DATE: _____

ATTRIBUTE	ATTRIBUTE MULTIPLIER (A)	ELEMENTS	ELEMENT SCORE	ELEMENT MULT	ELEMENT RATING (B)	INDEX (AxB)
SAFETY		Public Safety		(.4)		
		Industrial Safety		(.4)		
		Radiation Exposure		(.2)		
	10			Sub Total		
PLANT OPERABILITY		Availability/Reliability		(.5)		
		Operability		(.5)		
	6			Sub Total		
REGULATORY		Regulatory & Commitments		(1.0)		
	8			Sub Total		
COST IMPACT		Costs		(1.0)		
	5			Sub Total		
CORPORATE		Goals Related		(.5)		
		Management Concern		(.5)		
	5			Sub Total		

TOTAL INDEX _____

EVALUATION BY: _____

REVIEWED BY: _____

Figure 5-1

NUCLEAR PROGRAM PLANNING

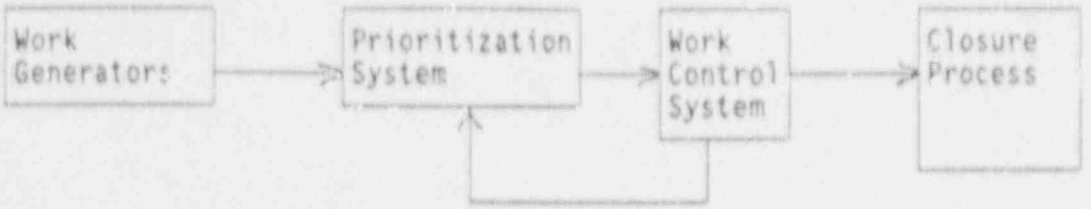
ECN/EAR/NCR/MWR/MWO/CAR/NSRG/CID PRIORITIZATION MATRIX

PRIORITY SCORE	SAFETY	PLANT OPERABILITY	REGULATORY	PLANT IMPROVEMENT	CORPORATE
1	Conditions with very high potential to affect public safety, personnel safety, or give personnel high radiation exposures.	Conditions leading to plant shutdown, power producing or safety related equipment failures, including major security system or fire protection losses.	Shutdown; license revocation; avoid NOV; Tech Spec tCO and Design Basis Operability Issues. Mandatory commitment.		Directly related to goals or cost control; payback less than one year; highly important to senior nuclear management.
2	Conditions that cause safety system challenges, present significant personnel injury risks, or additional radiation exposures.	Significantly increase reliability of a system or component; equip. substitutions to relieve operating constraints; reduce probability of errors.	Potential Violation Issues; fines/NOV response; Dated, written commitments, SEP program, remove SAOs; requires compensatory manpower deployed > 24 hrs.	Increase of net plant output payback less than 2 years. Prevent plant derating.	Reduce significant expenditure or personnel; achieves payback within 2 yrs; had significant attention from senior management.
3	Fire, security, or emergency planning significant deficiencies; reduction of radiation exposure; required emergency response capabilities.	Improve reliability; reduce maintenance, surveillance, testing activities; improve productivity; improve key plant performance indicators.	Corrective Actions (Dated). Unresolved safety issue; long-term tech spec issue; written commitments whose delay could be negotiated; requires compensatory manpower < 24 hrs.	Extend equipment life. Impact to plant outage shedule; Major increase in maintenance interval; Major operational cost reduction.	External commitment directly related to company goals; payback is 2 to 3 yrs; senior management in support of issue.
4	Enhance emergency response capabilities; fire and security minor deficiency; may reduce personnel rad exposures.	Reduce spare parts inventory, paperwork; payback 3 years. Improve other plant performance indicators.	Undated (< 2 Yr) Commitments. NRC concern closure; issue raised by regional office; site resident, or special NRC evaluation; meet intent of Reg. Guide. Procedural Required Actions.	ALARA; Replace outmoded equipment or components. Enhancement which significantly improves system operation. Includes heating/cooling equipment and building systems.	Help achieve performance indicator goal; payback in 3 to 5 yrs. Middle management concern.
5	Improve public perception; improve good work practices; provide operating convenience.	Minor improvement; enhancement; indirect plant performance improvement.	Configuration control; OER, IEN; open inspection item closure; anticipation of NRC or INPO position in 2 yrs.	Minor operational cost reduction; Simplify or clarify procedures or tests.	Indirectly enhance performance indicator; payback beyond 5 years; no senior management involvement.

PRIORITIZATION PROTOCOL
ECN/EAR/NCR/MWR/MWO

PRIORITY	DESCRIPTION
1	Work that needs to be addressed immediately in order to avoid a plant shutdown, derate or significant regulatory exposure. For example, plant is in a short term LCO with an action statement that requires plant shutdown. Only a a shift supervisor, the operations supervisor, plant Manager or Division Manager - Nuclear Operations can assign this level. Anyone assigned a priority 1 task will be expected to give it uninterrupted coverage; i.e., it is to be worked around the clock until resolved. If task requires outage, would require unscheduled outage.
2	Work that if not accomplished by the specified need date or if not addressed in a timely manner could lead to plant shutdown, derate or potential violation. This priority can also be assigned by the Plant Manager or Division Managers for issues that have a high "political" sensitivity. These tasks will be worked as necessary to meet the assigned due date, including overtime work if needed. If outage required, will be planned for next unscheduled outage or next refueling outage at latest.
3	Work that has high potential for causing plant shutdown if a redundant component is lost or work that has a daily cost associated with it such as compensatory post or added operator tasks to compensate for the condition. These tasks will be assigned a requested due date and delays must be negotiated with the requestor. Typically, overtime would not be authorized for priority 3 work unless needed to reduce overall backlog. If outage needed should be done during next scheduled outage.
4	Work that has a definite pay back or improvement in worker efficiency and/or morale. This classification would also include industrial safety improvements that have limited risk associated with them. If not resolved for a long period of time, these items could be upgraded to priority 3 due to nuisance level. Overtime would not be authorized for this work. If outage needed, would be scheduled at next convenient outage.
5	Work that has a potential long term pay back and/or human factors improvement value. A qualitative cost benefit analysis could be used to cancel such work items. These tasks would typically be fill-in type work or reviewed periodically to see if changing conditions would warrant upgrading priority. No overtime is authorized for these tasks. If outage related, not to interfere with critical path work.
6	Work that has no expected current return but are captured to ensure that a decision is documented. These tasks are normally expected to be closed out during initial review by management.

ENGINEERING WORK MANAGEMENT



1. Modification Requests (MR)	1. MR uses ILS system of forced ranking	1. Scheduling	1. No Scope changes
2. Engineering Change Notice (ECN)	2. Others use priority matrix	2. Resources	2. Cancellations
3. Engineering Action Request (EAR)		3. Customer preference thru periodic negotiating meeting	3. Timely updates
4. NCR		4. Reviews	4. Age review
5. Design Basis Issue			
6. Programs			

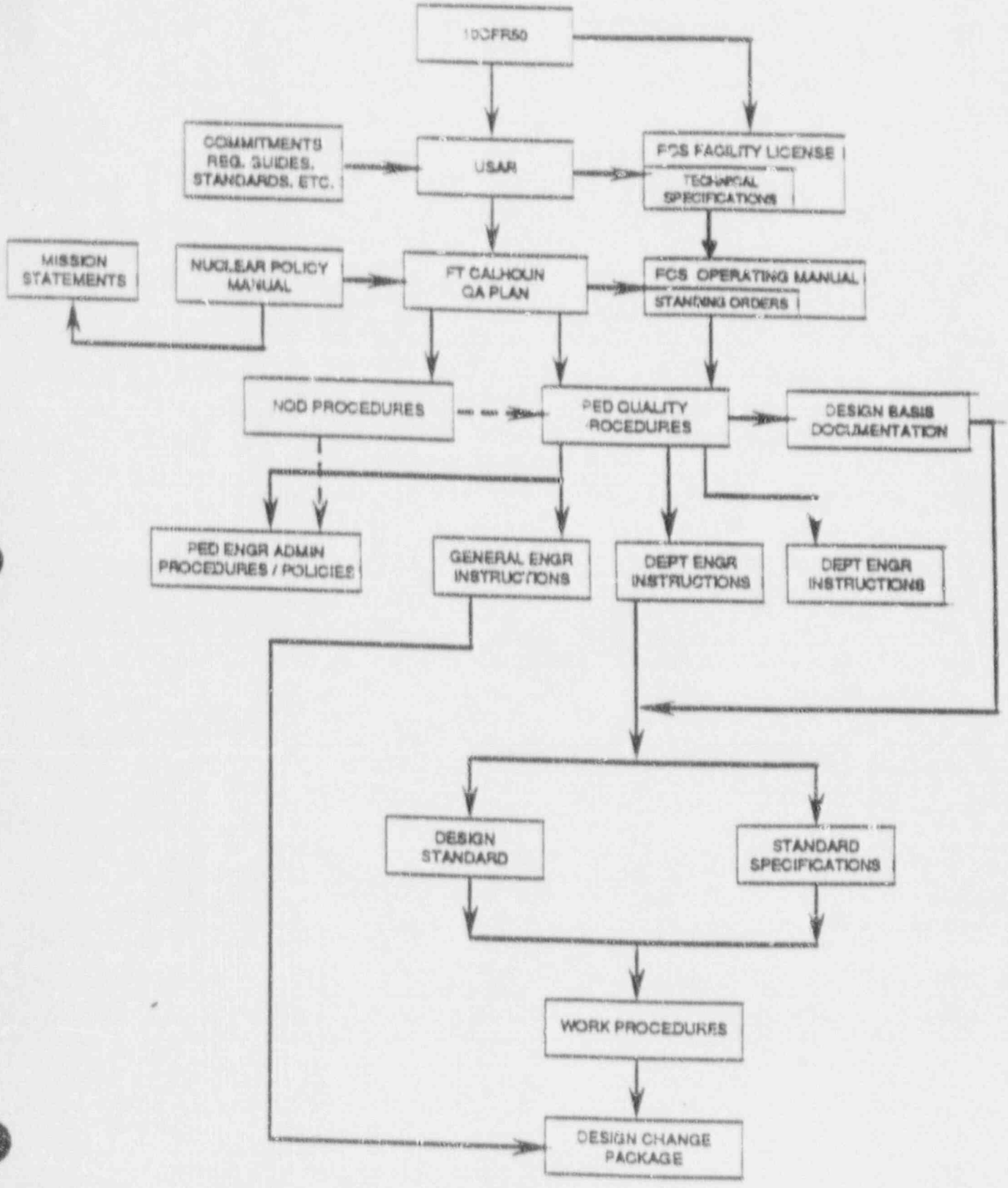
RUN DATE: 03/12/92 03:03:43

NUCLEAR PROGRAM PLANNING
OPPD NUCLEAR MODIFICATION PROGRAM
(MODIFICATION SUMMARY BY YEAR AND PRIORITY)

REPORT: MODS

MOD YEAR: 92 ONLINE MODS

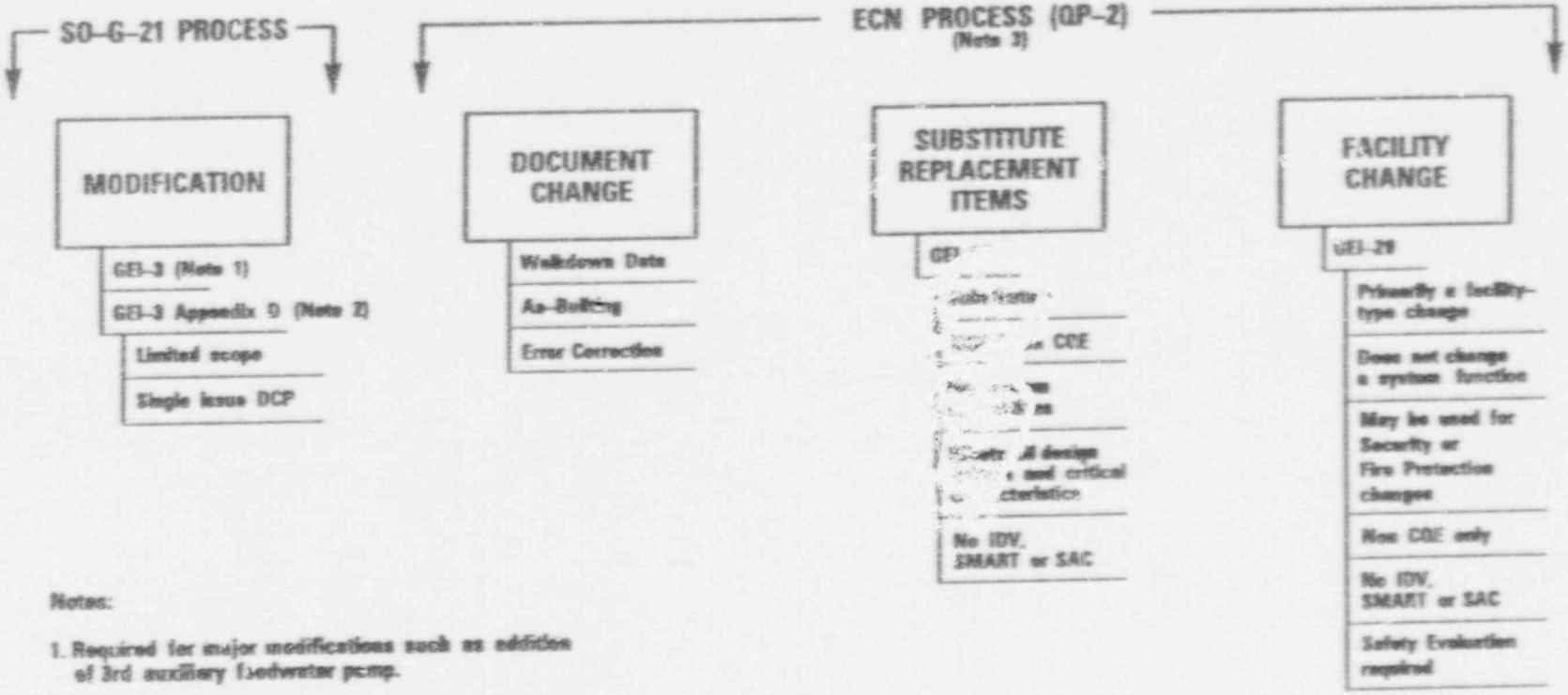
PROJECT	DESCRIPTION	ILS	PLAN	STAT	1991	1992	1993	1994	1995	1996	TOTAL
FC89-065-	BROAD BAND INTEGRATED COMMUNIC	285.5	AFA	PED -BKLG		120.7					120.7
FC90-002-	BACKUP HEATERLESS AIR DRYER	226.0	AFA	PED -BKLG		124.5					124.5
FC89-082-	QSPDS COMMUNICATION PRIORITY C	225.5	AFA	FD ISSUED	97.5						97.5
FC90-031-	DIESEL GENERATOR 10 SEC START	217.0	AFP	EEAR-BKLG		.0					.0
FC90-068-	NI CABLE SEPERATION	214.5	AFP	PED -BKLG		.0					.0
FC90-041-	DG VOLTAGE REGULATOR REPLACEME	212.0	AFA	PED -BKLG	280.5	12.4					292.9
FC86-061-	AUX BLDG RADIO COMMUNICATION U	208.0	AFA	PED -BKLG	25.6	896.0					921.6
FC91-031-	DG RADIATOR DAMPER UPGRADE	193.0	AFP	PED -BKLG	.0	.0					.0
FC90-055-	AI-100 TELEPHONE	192.0	AFP	PED -BKLG	3.0						3.0
FC89-078-	R.O. UNIT TO D.I. PLANT	184.0	AFP	PED -BKLG		.0					.0
FC85-046-	SVCE BLDG STAIRWAY FIRE RATING	181.0	AFP	PED -BKLG		32.1					32.1
FC88-001-	SERVICE BUILDING REMODELING	181.0	AFA	EEAR-BKLG	40.0	858.5					898.5
FC80-025-	CHRG. PUMP COOLERS RELIEF VALV	176.0	AFP	PED -BKLG		33.5					33.5
FC90-072-	REPAIR/REPL FIRE BARRIER SEALS	169.0	AFA	CONST ST	704.0	101.6					805.6
FC89-072-	INSTRUMENT AIR TEST TEE ISOLAT	167.0	AFA	CP ISSUED	6.2	7.5	1.9				15.6
FC89-017-	ABANDONMENT OF WD EVAP.GS.CONT	157.0	AFP	PED -BKLG		229.0					229.0
FC91-011-	FLOW INDICATION FOR CHARGING P	157.0	AFA	PED -BKLG		.0					.0
FC91-018-	DOOR 1007-19 INTER LOCK	156.5	AFA	PED -BKLG	.0	.0					.0
FC88-121-	RW PROCESS BUILD CONN FOR PLAN	150.0	AFA	CONST FIN	553.5						553.5
FC84-155-	RM-0568 CONTAMINATION	146.5	AFA	PD ISSUED	82.5	1,001.7	103.7				1,187.9
FC90-057-	WATER PLANT SAMPLING, PHASE II	130.5	AFA	PED -BKLG	58.0	235.1					293.1
FC89-077-	CONTROL ROOM OPS/MAINT WORK CE	127.6	AFP	PED -BKLG		.0					.0
FC91-037-	DOOR 1007-1 ACCESS CONTROL	119.5	AFA	MCR RTND		10.0					10.0
FC85-036-	UPGRADE FIRE DETECTION SYSTEM	117.0	AFA	PED -BKLG	88.9	647.4	103.7				840.0
FC90-046-	ELIMINATION OF XENON GAS PROBL	114.0	AFA	CP REVD	63.0						63.0
FC88-038-	ROOM 27 VERY HIGH RAD AREA DOO	108.5	AFP	PED -BKLG		.0					.0
FC87-002-	FUEL TRANSFER CANAL DRAIN PUMP	107.0	AFA	PED -BKLG		107.9					107.9
FC86-093-	SWITCHGEAR ROOM HALON SYSTEM I	105.5	AFA	CP REVD	63.6	119.0					182.6
FC85-065-	REDUNDANT FL INSTM-AUX BLDG VE	103.5	AFP	PED -BKLG		33.2					33.2
FC88-087-	STACK FLOW INDICATION (FRF COM	101.5	AFP	EEAR-BKLG		17.8					17.8
FC85-068-	INST LADDER & DOOR-WATER PLANT	101.0	AFA	PED -BKLG		46.4					46.4
FC84-095-	ERF COMPUTER X/Q PROGRAM	100.5	AFS	PED -BKLG		.0					.0
FC87-052-	INTERFACE OF SIMULATOR W/EOF &	100.5	AFP	PED -BKLG		.0					.0
FC83-046-	SIRWT-SFP-REFUELING CAVITY FIL	100.0	AFA	CONST ST	86.6						86.6
FC89-063-	FP-5 (JOCKEY PUMP) REPLACEMENT	98.5	AFP	PED -BKLG		40.9					40.9
FC73-023-	POSIT INDICAT ON HCV-1041C & H	98.0	AFP	PED -BKLG	40.0	12.4					52.4
FC91-007-	AUX. BLDG. TRUCK BAY OVERHEAD	96.5	AFA	PED -BKLG	35.1	106.2					141.3
FC90-044-	AC-7 VENT LINE STRAINER	94.5	AFA	CP ISSUED		49.0					49.0
FC84-129-	ACCESS LADDER FOR FW-65B	93.0	AFA	PED -BKLG		18.3					18.3
FC74A021A	SG BLOWDOWN - PRCS SYSTEM	92.5	AFA	CONST ST	.0	94.3					94.3
FC88-012-	AUX BLDG HP/CHEM AREA RENOVATI	62.5	AFA	PD REVD	150.0						150.0
FC91-030-	REPL. OF CHARGING PUMP DISCHAR		AFA	FD ISSUED	7.7	57.3					65.0
					2,385.1	5,014.7	209.3	.0	.0	.0	7,607.1



Production Engineering Division (PED)
Procedure Hierarchy

M165857

DESIGN CHANGE TOOLS



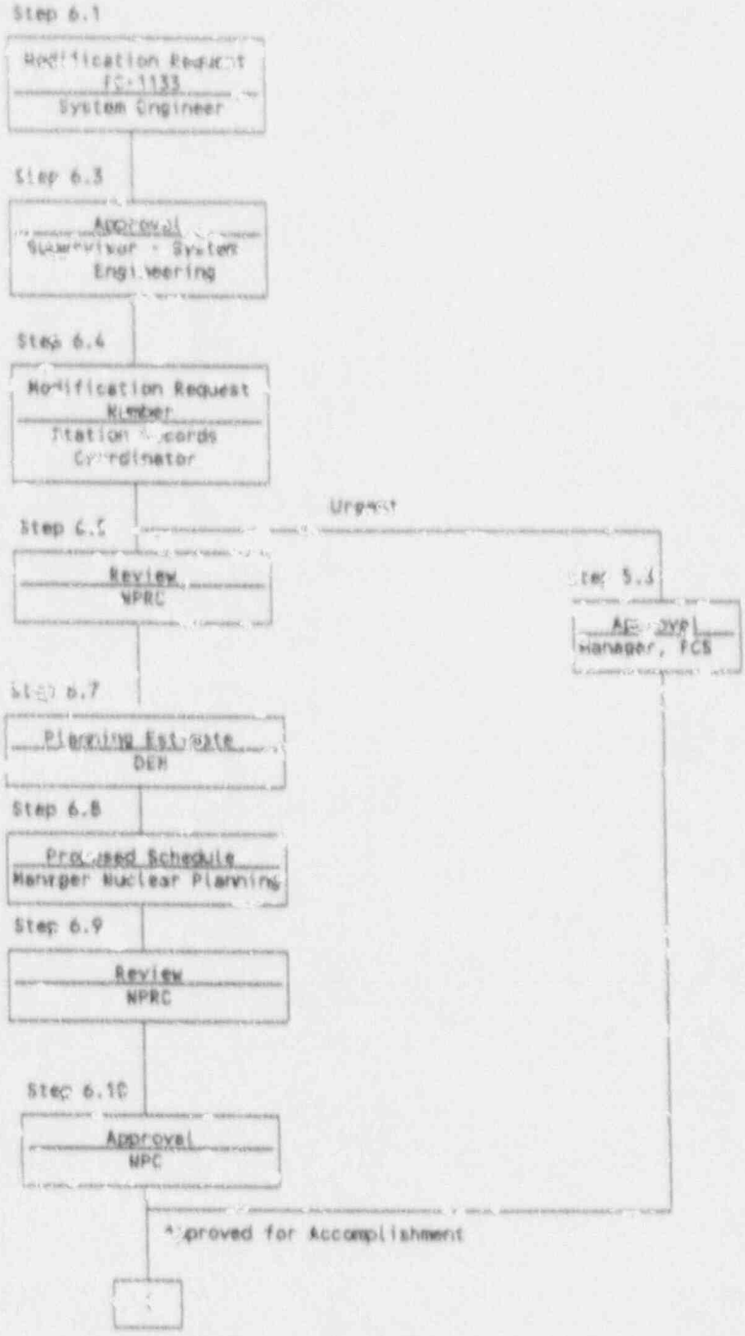
Notes:

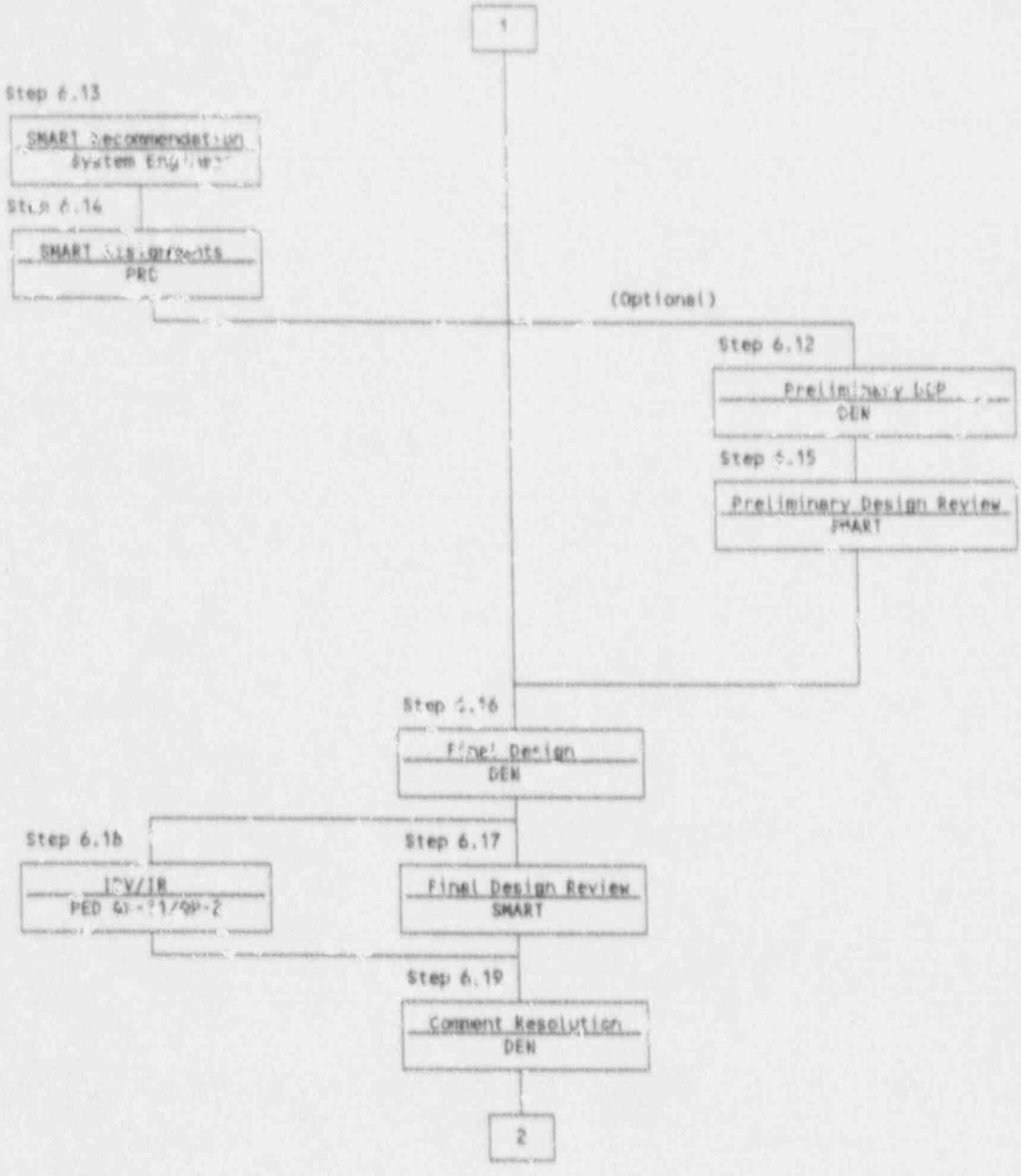
1. Required for major modifications such as addition of 3rd auxiliary feedwater pump.

2. Abbreviated version of GEI-3 package. This can be used for modifications that must proceed on a "fast track" schedule; does not require detailed cost estimates, option evaluation, etc., but retains full safety review requirements of G-21.

3. The ECN documentation can optionally be completed by the originator (procurement engineer, system engineer, special services engineer, field engineer, etc.). Final approval by Design Engineering is required prior to implementation. Design Engineering is responsible for ensuring the design basis of Fort Calhoun Station is maintained.

INITIATION, REVIEW, APPROVAL, AND CANCELLATION

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Step 6.13
SMART Recommendation
System Engineer
Step 6.14
SMART Disapprovals
PRC
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Step 6.12
Preliminary DCP
DEN
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SMART
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DEN
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ICV/IR
PED 41-71/OP-2
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SMART
Step 6.19
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DEN
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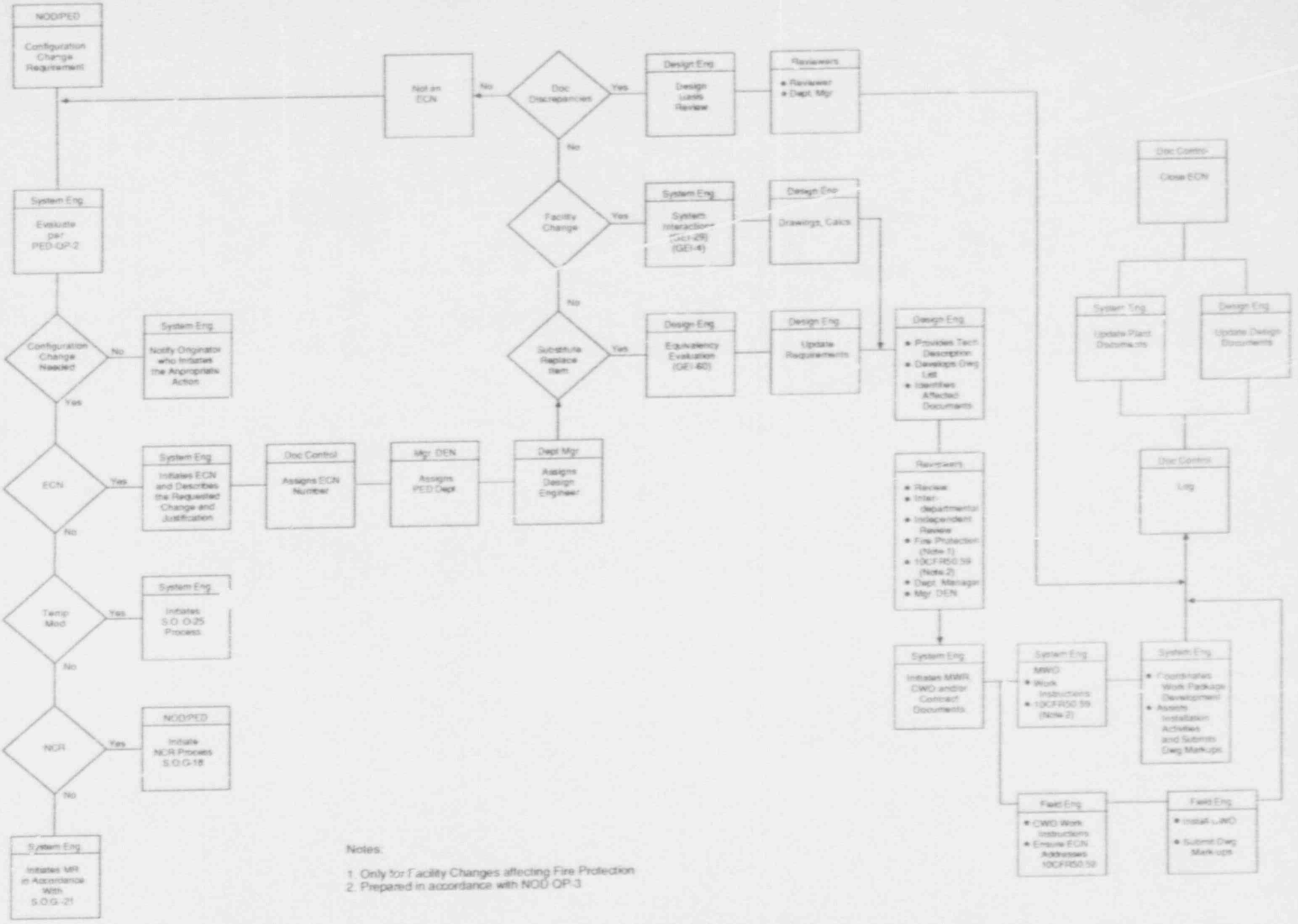

Notes:

1. Only for Facility Changes affecting Fire Protection
2. Prepared in accordance with NOD QP-3