

February 14, 1993

Docket No. 50-285

LICENSEE: Omaha Public Power District

FACILITY: Fort Calhoun Station, Unit 1

SUBJECT: SUMMARY OF MEETING HELD ON FEBRUARY 3, 1993, WITH OMAHA PUBLIC POWER DISTRICT TO DISCUSS MANAGEMENT ISSUES FOR FORT CALHOUN STATION

The staff met with Omaha Public Power District (OPPD) on February 3, 1993, at One White Flint North to discuss management issues for Fort Calhoun Station. The list of meeting attendees is enclosed (Enclosure 1).

The meeting consisted of OPPD management discussing issues such as pressurized thermal shock, PRA/IPE/IPEEE projects, design basis reconstitution, spent fuel pool reracking at Fort Calhoun Station, the July 3 and August 22, 1992 events and lessons learned, 1993 challenges and strategic issues. Enclosure 2 is the basic information that was presented.

/s/
Steven D. Bloom, Project Manager
Project Directorate IV-1
Division of Reactor Project III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

DISTRIBUTION LIST FOR MEETING SUMMARY FEBRUARY 3, 1993:

Docket File	NRC & Local PDRs	PDIV-1 Reading
T. Murley/F. Miraglia	J. Partlow	J. Roe
M. Virgilio	G. Hubbard	T. Alexion
P. Noonan	OGC	E. Jordan, MNBB 3701
ACRS (10)	P. Harrell, RIV	

OFC	PD4-1/LA	PD4-1/PM	PDIV-1/D
NAME	PNoonan	SBloom/vsb	GHubbard
DATE	2/11/93	2/11/93	2/14/93

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

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A handwritten signature in black ink, appearing to read "Steven D. Bloom", is positioned above the typed name.

Steven D. Bloom, Project Manager
Project Directorate IV-1
Division of Reactor Project III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

Mr. Terry L. Patterson
Omaha Public Power District

Fort Calhoun Station, Unit No. 1

cc:

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Post Office Box 399
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MEETING BETWEEN NRC STAFF AND OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION, UNIT 1

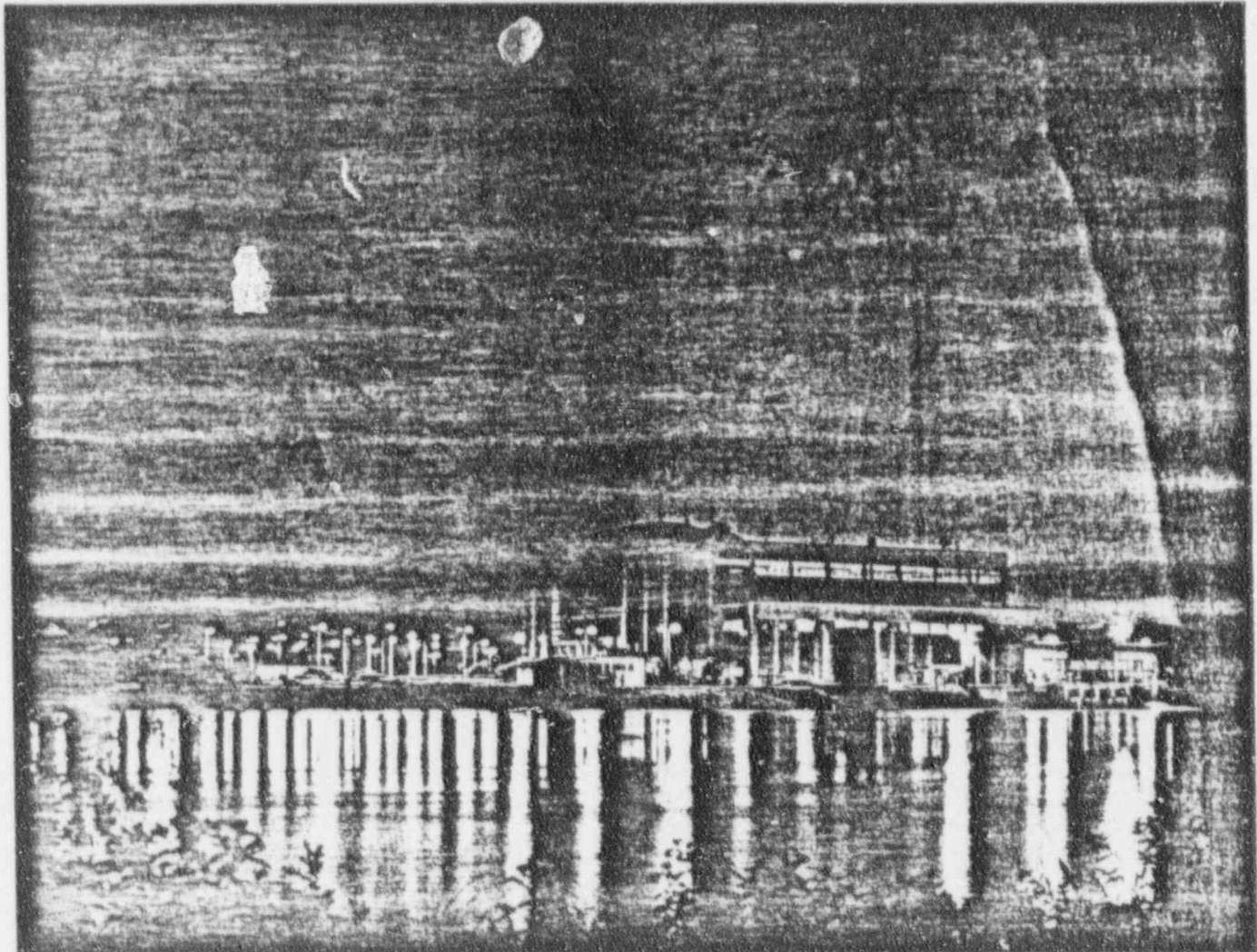
MANAGEMENT ISSUES

February 3, 1993

MEETING PARTICIPANTS

<u>NAME</u>	<u>ORGANIZATION</u>
T. Murley	NRR
F. Miraglia	NRR
J. Partlow	NRR/ADPR
J. Roe	NRR/DRPW
G. Hubbard	NRR/PDIV-1
S. Bloom	NRR/PDIV-1
C. Yates	NRR/PDIV-1
M. Houston	ACRS
P. Baranowski	EDO
B. Jones	OPPD/Senior Vice President
W. Gates	OPPD/Vice President
S. Gambhir	OPPD/Division Manager - Production Engineering
R. Short	OPPD/Manager - Nuclear Licensing/Industry Affairs
E. Hiruo	McGraw-Hill Nuclear Publications

FORT CALHOUN STATION

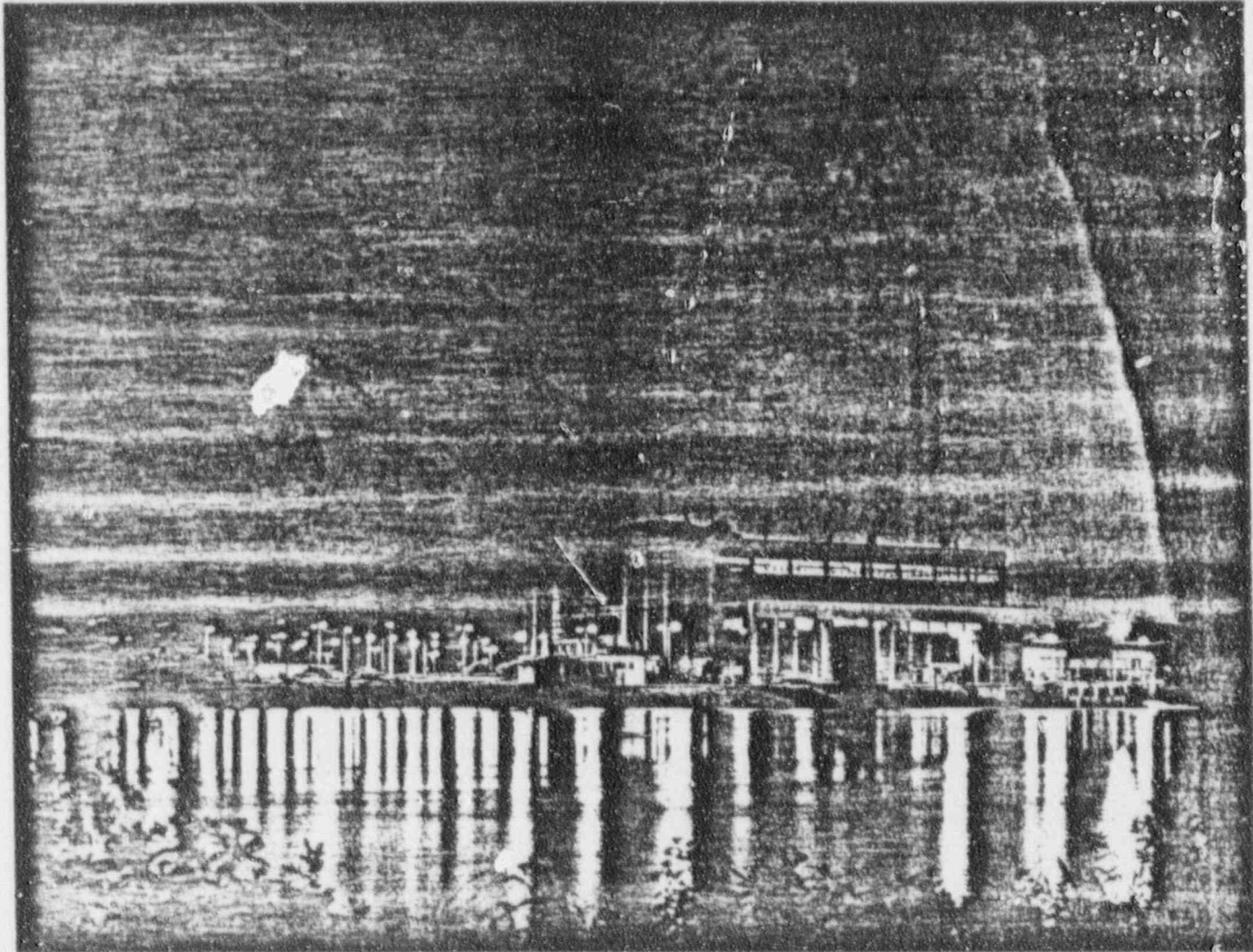


OMAHA PUBLIC POWER DISTRICT
NRC/OPPD MANAGEMENT MEETING
FEBRUARY 3, 1993

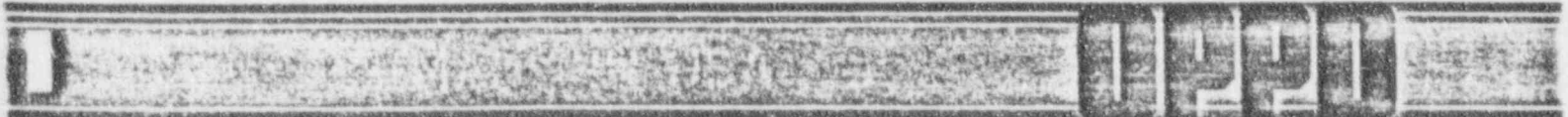


Omaha Public Power District

FORT CALHOUN STATION



OMAHA PUBLIC POWER DISTRICT
NRC/OPPD MANAGEMENT MEETING
FEBRUARY 3, 1993



Omaha Public Power District

AGENDA

Opening Comments	Bill Jones
Pressurized Thermal Shock	Sudesh Gambhir
PRA/IPE/IPEEE Projects	Sudesh Gambhir
Design Basis Reconstitution	Sudesh Gambhir
Spent Fuel Pool Reracking	Sudesh Gambhir
July 3 and August 22, 1992 Events Lessons Learned	Gary Gates
1993 Challenges	Gary Gates
Strategic Issues	Bill Jones

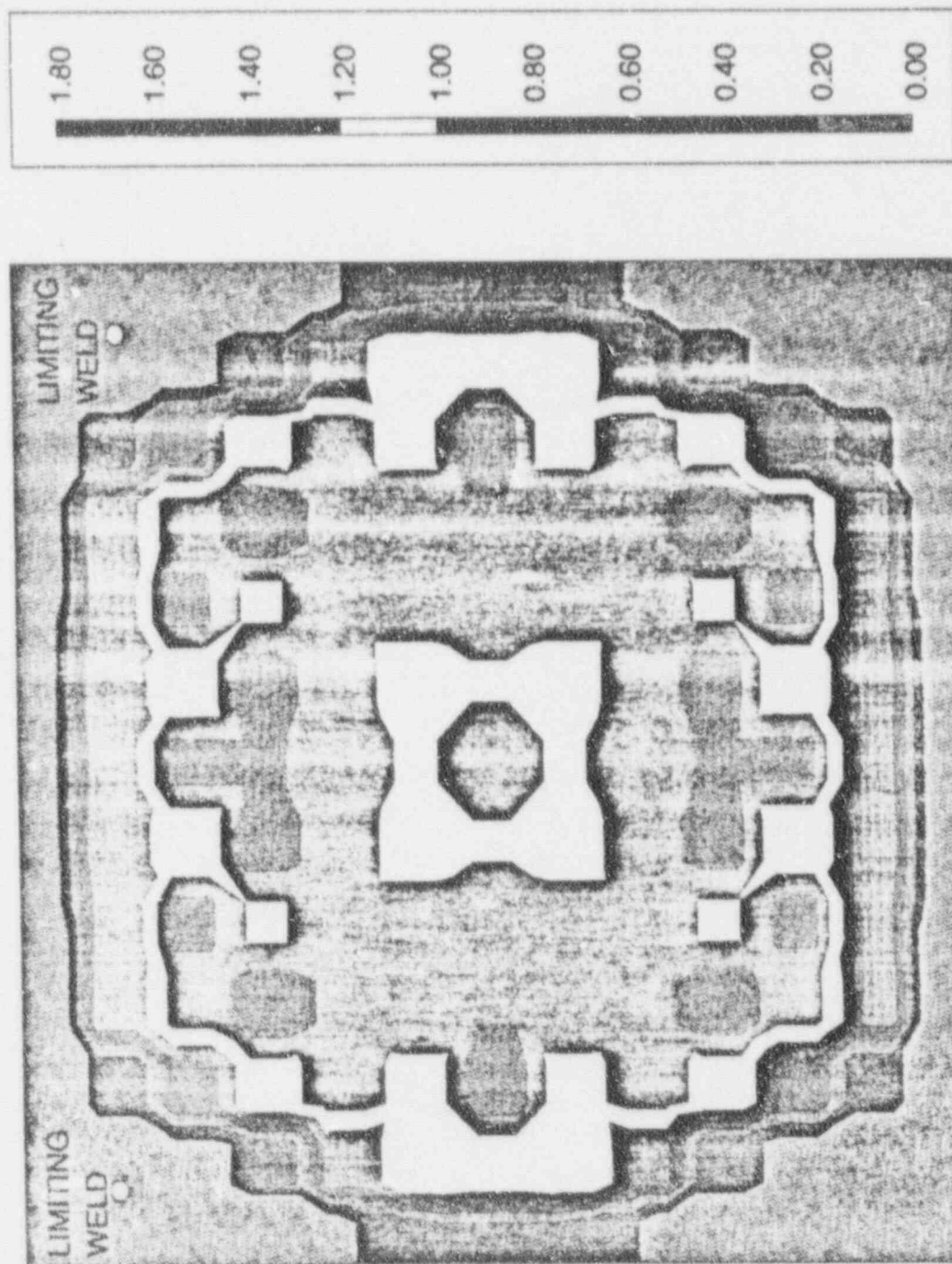
PRESSURIZED THERMAL SHOCK (PTS)

- Condition of FCS Reactor Vessel is Well Documented
 - Limiting weld/plate material chemistry known
 - 100% ISI Completed 1992 Outage
 - 6 Surveillance Capsules Currently Installed
 - FCS Specific Limiting Weld Surveillance Capsule - 1993 Outage Installation
- Employed Low/Extremely Low Radial Leakage Cores Since Cycle 8
- Cycle 14 Core Flux Reduction Features
 - Hafnium Flux Suppression Rods
 - Natural Uranium Fuel Assemblies in Peripheral Locations
 - Integral Fuel Burnable Absorbers
- PTS Screening Criteria Reached 2010/2011 with Cycle 14 Type Core

PRESSURIZED THERMAL SHOCK (PTS) (Continued)

- Cycle 15 Design Results in Further Flux Reductions
 - PTS Screening Criteria Reached After 2013
- Upper Shelf Energy Maintained Above 50 ft-lbs
- Monitoring NRC/Industry Enhancements
 - ABB/CE Reactor Vessel Group Member
 - NUMARC ADHOC Advisory Committee Member
- Summary: Proactive Management of PTS Issue

Cycle 15 Pattern R4 Relative Power Density at BOC



○ LIMITING WELD

Figure 1

The Cycle 15 neutron flux at the 60/300 Degree weld locations represent a reduction to 73% of the Cycle 10 flux.

The Cycle 14 flux represents a reduction to 81% of the Cycle 10 flux.

PRA/IPE/IPEEE PROJECTS

- Committed to Full Scope Level III PRA
- A Living PRA is our Goal
- Dedicated Staff Working with Outside Consultant
- PRA Status:
 - Level I & II Models Complete
- PRA Oversight Committee Formed Summer 1992
 - Membership - Operations, Maintenance, Design and System Engineering, Training and Licensing
 - Review Criteria
 - Core Damage Frequency ($> 10^{-4}$)
 - Important Contributors to Core Damage Frequency or Poor Containment Performance
 - Preliminary Finding Regarding Potential Overpressurization of CCW System Shared with NRC Staff

PRA/IPEE/IPEEE PROJECTS (Continued)

- PRA Results are Being Used
 - 1992 Refueling Outage
 - Modification Activities
 - Station Battery Replacement
- PRA Schedule:
 - Final Level I/II/III Models to NRC - December 1993
- IPEEE Schedule:
 - All Events except Seismic and Fire - December 1993
 - Seismic and Fire Events - June 1995
 - To be Combined with USI A-46 Resolution - Outage Walkdowns Required
- Summary: FCS PRA will be a living program and exceed GL 88-20 requirements

DESIGN BASIS RECONSTITUTION

- Objectives:

- Index and Sort the Original Construction and Design Basis Records
- Create Plant Level and System Level Design Basis Documents
- Perform Verification to Confirm That Safety Systems Can Perform Their Normal and Post Accident Design Functions

- Results Achieved:

- Over 50,000 Design Documents Indexed
- 33 System Level Documents Developed
- 16 Plant Level Documents Developed
- Several Significant Design Deficiencies Have Been Identified and Corrected
 - Containment Spray System
 - MS and MFW Piping
- Numerous Calculations Have Been Recreated

DESIGN BASIS RECONSTITUTION (Continued)

- Open Item Definitions/Status:
 - Categorized by Safety Significance
 - Majority of Safety Significant Items Closed
 - Closure of Remaining Open Items: Planned Based on Safety Significance
- Design Basis Document (DBD) Maintenance:
 - Design Engineers - Assigned as System/Plant Level Sponsors
 - Procedures in Place to Require Use and Updating of DBDs
- Summary:
 - Several Design Basis Problems That Probably Would Not Have Been Found Were Identified and Corrected
 - DBDs Will Provide the Basis for Future Modifications

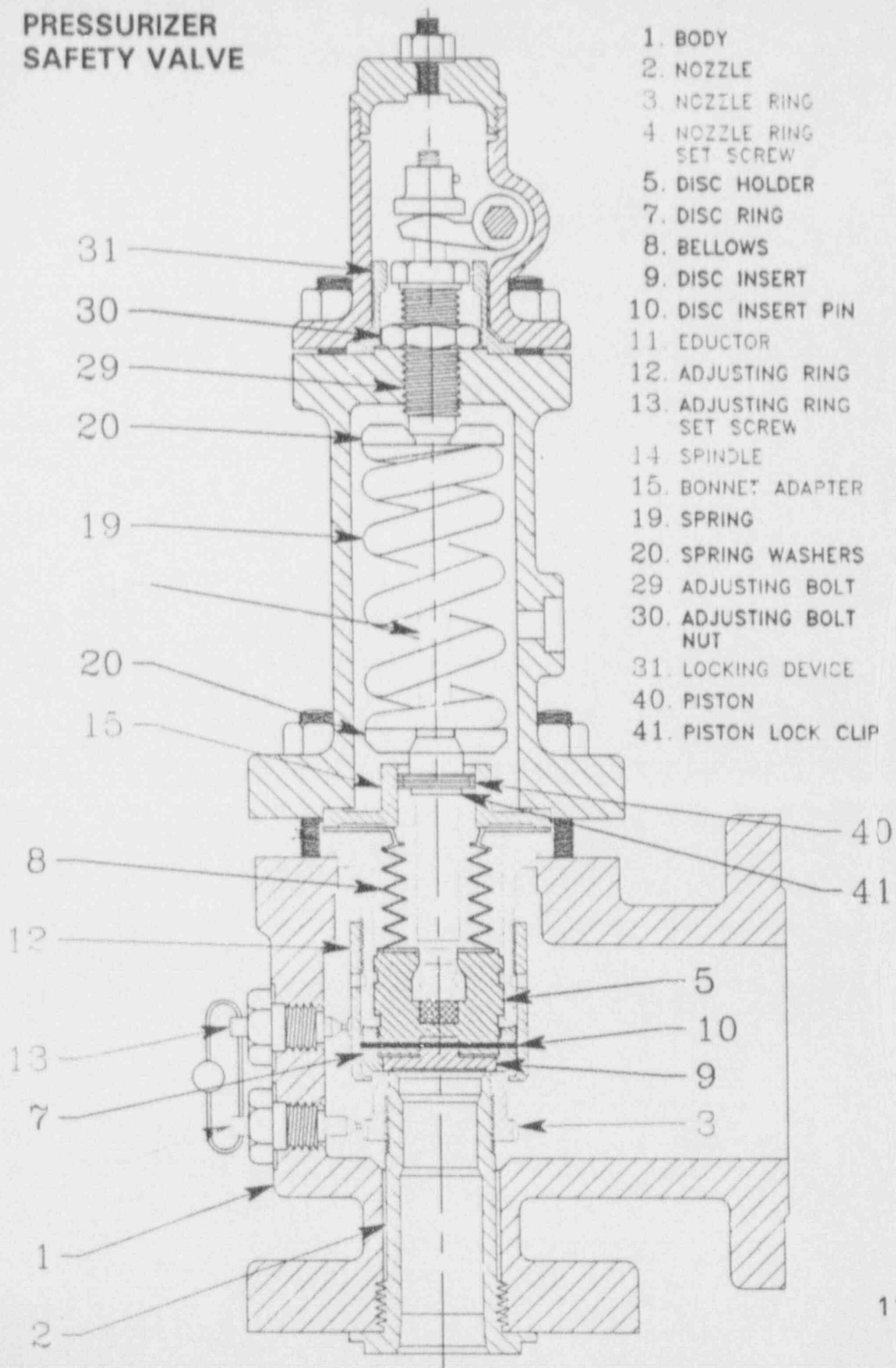
SPENT FUEL POOL RERACKING

- Capability for Full Core Offload Lost During 1995 Outage
- Last Reracking Completed in 1984
- Higher Density Racks Planned
 - Storage Capacity to be Increased from 728 to 1083
- Will Extend Full Core Offload Capability to 2006
- Schedule
 - Application Submitted - 12/92
 - NRC/OPPD Meeting - 12/15/92
 - NRC Requested Approval - 5/93
 - New Racks Installed - 1994

JULY 3 and AUGUST 22, 1992 EVENTS
LESSONS LEARNED

- Importance of Operator Simulator Training
- Upgraded EOPs/AOPs were key
- Emergency Organization Response & Quarterly Readiness Drills
- Primary System Challenges due to Secondary Side Single Failure Vulnerabilities
- Pressurizer Safety Valve Setpoint Testing
 - Loop Seal Effects
 - In-situ vs. Laboratory Testing Differences
- Improved Handling of Circuit Boards with Jumpers
- Plant Reliability Sensitization

PRESSURIZER SAFETY VALVE



1993 CHALLENGES

- Improve Forced Outage Rate/Station Reliability
 - While Maintaining Safe & Cost Effective Operation
- 1993 Refueling Outage - 56 Days
- Further Improve Shutdown Safety during 1993 Outage
- 10 CFR 20 Project Implementation - July 1993
- GL 89-10 MOV Design Basis Testing - 1993 Outage
- Individual Plant Evaluation (IPE) Completion
- Strive for Continued Improvement
 - Avoid Complacency

STRATEGIC ISSUES

- Power Uprate Status
- Decommissioning Funding Increase - \$116.5 million to \$312 million
- Cost Effective Operation
- Performance Indicators
- Second 161KV Offsite Power Source

APPENDIX A

FORT CALHOUN STATION SIGNIFICANT IMPROVEMENTS

PROJECTS/PROGRAMS

- Project 1991 Projects (see attached description)
- Design Basis Reconstitution
- AOPs/EOPs
- Reactor Vessel 100% ISI
- Thermal Shield Repair
- Fire Barrier Upgrade

MODIFICATIONS

- Third Auxiliary Feedwater Pump
- Security System Upgrade
- 480V Breaker Trip Devices
- Diesel Generator Upgrades
- Shutdown Cooling Low Flow Alarm
- MS/MFW Pipe Supports
- Station Battery Replacement
- SIRWT Discharge Valve Replacement

OTHER

- Plant Specific Simulator
- New Warehouse, Chemistry/RP and Administration Buildings
- System Engineering

PROJECT 1991 PROJECTS

FACILITY APPEARANCE UPGRADE

1. Restored the physical appearance of the Fort Calhoun Station to a like-new or better-than-new condition.
2. Established an ongoing program to maintain the site and the plant in a condition to be a model for both OPPD and the nuclear industry.

PREVENTIVE MAINTENANCE PROGRAM UPGRADE

1. Maximize the performance and availability of critical plant equipment through the implementation of periodic, predictive and planned maintenance actions.
2. Reduce corrective (and total) maintenance costs.

PROCEDURES UPGRADE

1. Upgrade the Fort Calhoun Station Operating Manual procedures to current industry standards, including both technical and human performance considerations. This involves a total of approximately 3000 procedures.
2. Establish a methodology to ensure that procedures are maintained in a upgraded condition.
3. Achieve a substantial reduction in the number of human performance problems which can be attributed to procedural inadequacies.

PROJECT 1991 PROJECTS (Continued)

TRENDING AND ROOT CAUSE ANALYSIS

Established a methodology for conducting trending and completing root cause analyses.

VENDOR MANUALS PROGRAM UPGRADE

1. Facilitate reliable and safe power generation consistent with NRC Generic Letter 83-28 by establishing a continuing program to ensure that safety-related vendor technical information is complete, current and controlled.
2. Optimized maintenance and operations support by performing a review of non safety-related manuals.

CQE PROCUREMENT AND STORAGE

Established/upgraded station spare parts, shelf life and procurement procedures for safety-related material to meet currently accepted NRC and industry standards.

LABELING

1. Developed labeling standards and implemented a program which clearly, accurately and permanently identifies equipment, components, fixtures, rooms and areas.
2. Established a program to ensure that the labeling improvements are maintained for the operating life of the station.

PROJECT 1991 PROJECTS (Continued)

ASBESTOS MANAGEMENT

Developed a program and database to manage all asbestos-containing material in the Fort Calhoun Station to protect the health and safety of employees and to comply with EPA, OSHA and State requirements.

WELDING AND TORQUING

1. Developed and implemented a comprehensive welding program that is among the best in the industry. The program includes:
 - a. A programmatic document that addresses all applicable regulatory requirements.
 - b. Procedures that comply with the applicable editions of the ASME and AWS codes.
 - c. Procedures for testing and qualifying welders and performing required welding Quality Control inspections.
2. Developed and implemented a procedure to control and document the torquing of safety-related threaded fasteners.

INSTRUMENT LOOP UNCERTAINTIES

Determine the device, loop and test equipment accuracies for safety-related instrumentation and verify their adequacy.

CHAMPS DATA BASE UPGRADE

Developed an equipment data base which contains all plant equipment, completely reflects all maintenance and modification activities and is maintained in an accurate and upgraded condition.