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 50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287  
 72-0004 Duke Power Co., 50-269, 50-270 & 50-287, 07200004

AUTH.NAME AUTHOR AFFILIATION  
 MERSCHOFF,E.W. Region 2 (Post 820201)  
 RECIP.NAME RECIPIENT AFFILIATION  
 HAMPTON,J.W. Duke Power Co.

SUBJECT: Forwards enforcement conference summary re insp repts  
 50-269/92-24,50-270/92-24 & 50-287/92-24.Major areas  
 discussed:mispositioned valve in Unit 3 LPSW sys.List of  
 attendees encl.

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Docket Nos. 50-269, 50-270, 50-287, and 72-4  
License Nos. DPR-38, DPR-47, DPR-55 and SNM-2503

Duke Power Company  
ATTN: Mr. J. W. Hampton  
Vice President  
Oconee Nuclear Site  
P. O. Box 1439  
Seneca, SC 29679

Gentlemen:

SUBJECT: ENFORCEMENT CONFERENCE SUMMARY  
(NRC INSPECTION REPORT NOS. 50-269/92-24, 50-270/92-24, AND  
50-287/92-24)

This letter refers to the Enforcement Conference held at our request on November 24, 1992. This meeting concerned activities authorized for your Oconee facility. A specific issue that was discussed at this conference related to the mispositioned valve in the Unit 3 Low Pressure Service Water (LPSW) system which was identified by your staff on September 12, 1992. This mispositioned valve resulted in the Unit 3 LPSW system being operated in a degraded mode. A general discussion was also conducted concerning the LPSW system. This enforcement conference was open for public observation in accordance with the Commission's trial program for conducting open enforcement conferences as discussed in the Federal Register, 57 FR 30762, July 10, 1992. A list of attendees, an enforcement conference summary, and a copy of your enforcement conference handout are enclosed. We are continuing our review of this issue to determine the appropriate enforcement action.

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 and its enclosures will be placed in the NRC Public Document Room.

Should you have any questions concerning matter, please contact us.

Sincerely,

*Orig signed by Ellis Merschoff*

Ellis W. Merschoff, Director  
Division of Reactor Projects

Enclosures:

1. List of Attendees
2. Enforcement Conference Summary
3. Enforcement Conference Handout

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PDR ADOCK 05000269  
G PDR

*IE01*

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12/7/92

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12/13/92

RII

PStohr

12/4/92

RII

GJenkins

12/4/92

RII

CEvans

12/7/92

ENCLOSURE 1

LIST OF ATTENDEES

NRC Attendees:

S. D. Ebnetter, Regional Administrator, Region II (RII)  
J. R. Johnson, Deputy Director, DRP, RII  
A. R. Herdt, Chief, Reactor Projects Branch 3, DRP, RII  
T. A. Peebles, Chief, Operations Branch, Division of Reactor Safety (DRS)  
G. A. Belisle, Chief, Reactor Projects Section 3A, DRP, RII  
P. E. Harmon, Senior Resident Inspector, Oconee, DRP, RII  
W. K. Poertner, Resident Inspector, Oconee, DRP, RII  
G. R. Jenkins, Director, Enforcement and Investigations Coordination Staff (EICS), RII  
B. Uryc, Senior Enforcement Specialist, EICS, RII  
J. G. Luehman, Senior Enforcement Specialist, Office of Enforcement  
C. F. Evans, Regional Counsel, RII  
L. A. Wiens, Project Manager, Project Directorate II-3, Office of Nuclear Reactor Regulation (NRR)  
S. R. Jones, Chief, Plant Systems Branch, Division of Systems Safety and Analysis, NRR  
M. T. Markley, Performance and Quality Evaluation Branch, Division of Reactor Inspector and Licensee Performance, NRR  
R. E. Musser, Project Engineer, DRP, RII  
J. H. Bartley, Operator Licensing Examiner, DRS, RII  
R. S. Baldwin, Operator Licensing Examiner, DRS, RII

Licensee Attendees:

J. W. Hampton, Vice President, Oconee Nuclear Site (ONS)  
H. B. Barron, Station Manager, ONS  
B. L. Peele, Engineering Manager, ONS  
J. M. Davis, Safety Assurance Manager, ONS  
D. B. Coyle, Systems Manager, ONS  
S. C. Adams, Manager, Community Relations  
L. J. Azzarello, Mechanical/Nuclear Engineering Supervisor, ONS  
M. E. Patrick, Regulatory Compliance, ONS  
G. H. Savage, Communications Specialist, Duke Power Company  
R. O. Sharpe, Regulatory Compliance Manager, McGuire Nuclear Station

## ENCLOSURE 2

### ENFORCEMENT CONFERENCE SUMMARY

On November 24, 1992, representatives from Duke Power Company (DPC) met with the NRC in the Region II Office in Atlanta, Georgia to discuss a specific issue concerning the mispositioned valve in the Unit 3 Low Pressure Service Water (LPSW) system which was identified by the licensee on September 12, 1992. This mispositioned valve resulted in the Unit 3 LPSW system being operated in a degraded mode. A general discussion was also conducted concerning the LPSW system.

Following the opening remarks by Mr. S. D. Ebnetter, Regional Administrator, Region II (RII) and Mr. J. R. Johnson, Deputy Director, Division of Reactor Projects, RII, DPC gave a presentation, Enclosure 3, on the issue.

An introduction to DPC's presentation was given by Mr. J. W. Hampton, Vice President, Oconee Nuclear Site (ONS), with the formal presentation given by Mr. B. L. Peele, Engineering Manager, ONS. The presentation included an LPSW system design/description, LPSW system issues, Technical Specification issues, a degraded LPSW system flowpath, future LPSW plans, an LPSW history, and a summary.

NRC closed the meeting by thanking DPC for their presentation and stating that the presentation had served to enhance the NRC's understanding of the issue and DPC's corrective actions.

ENCLOSURE 3

**OCONEE NUCLEAR SITE**

**LPSW SYSTEM**

**ENFORCEMENT CONFERENCE**

**November 24, 1992**

# **AGENDA**

**INTRODUCTION**

**LPSW SYSTEM DESIGN/DESCRIPTION**

**LPSW SYSTEM ISSUES**

**TECH SPEC ISSUES**

**DEGRADED LPSW SYSTEM FLOWPATH**

**FUTURE LPSW PLANS**

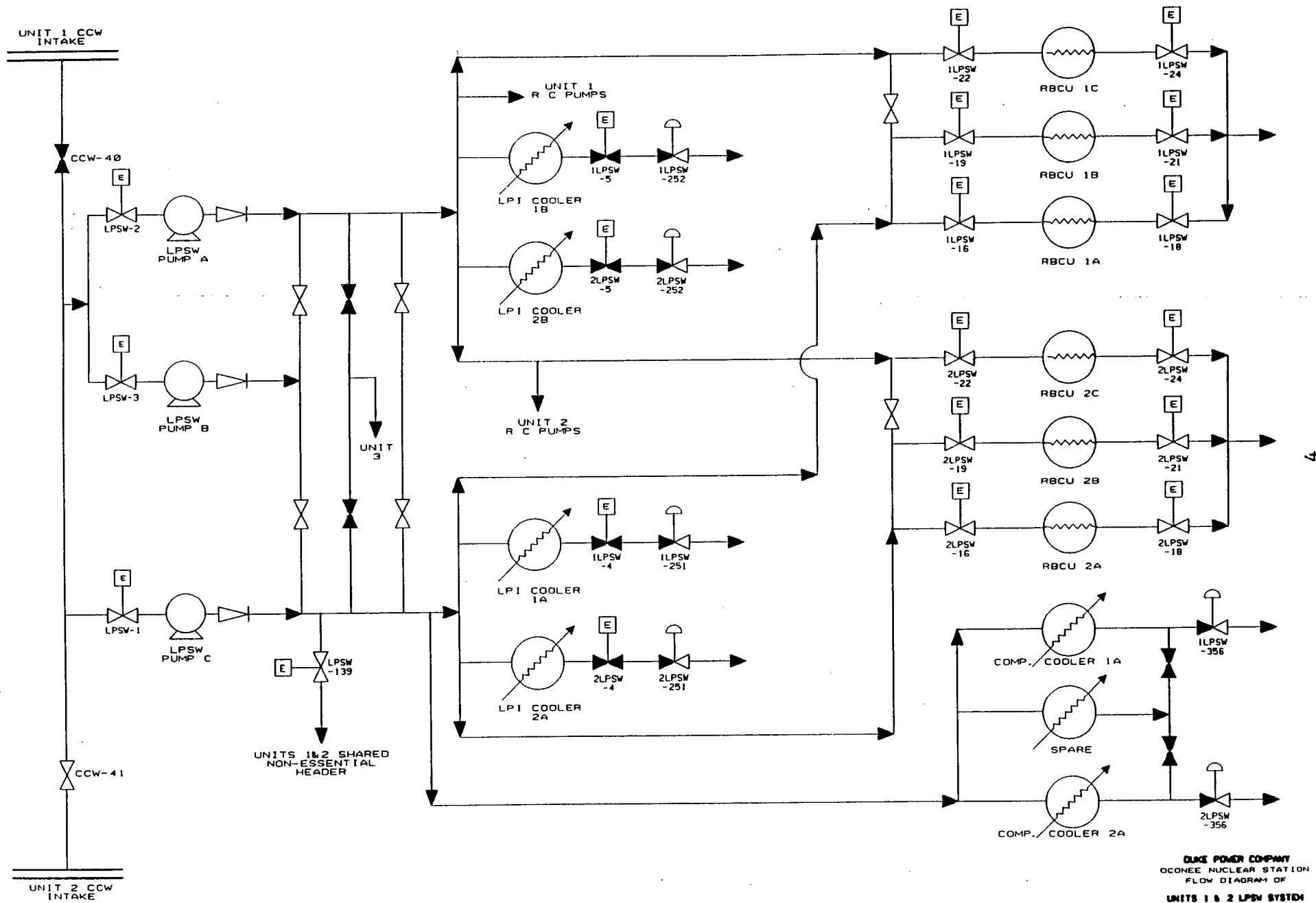
**LPSW HISTORY**

**SUMMARY**

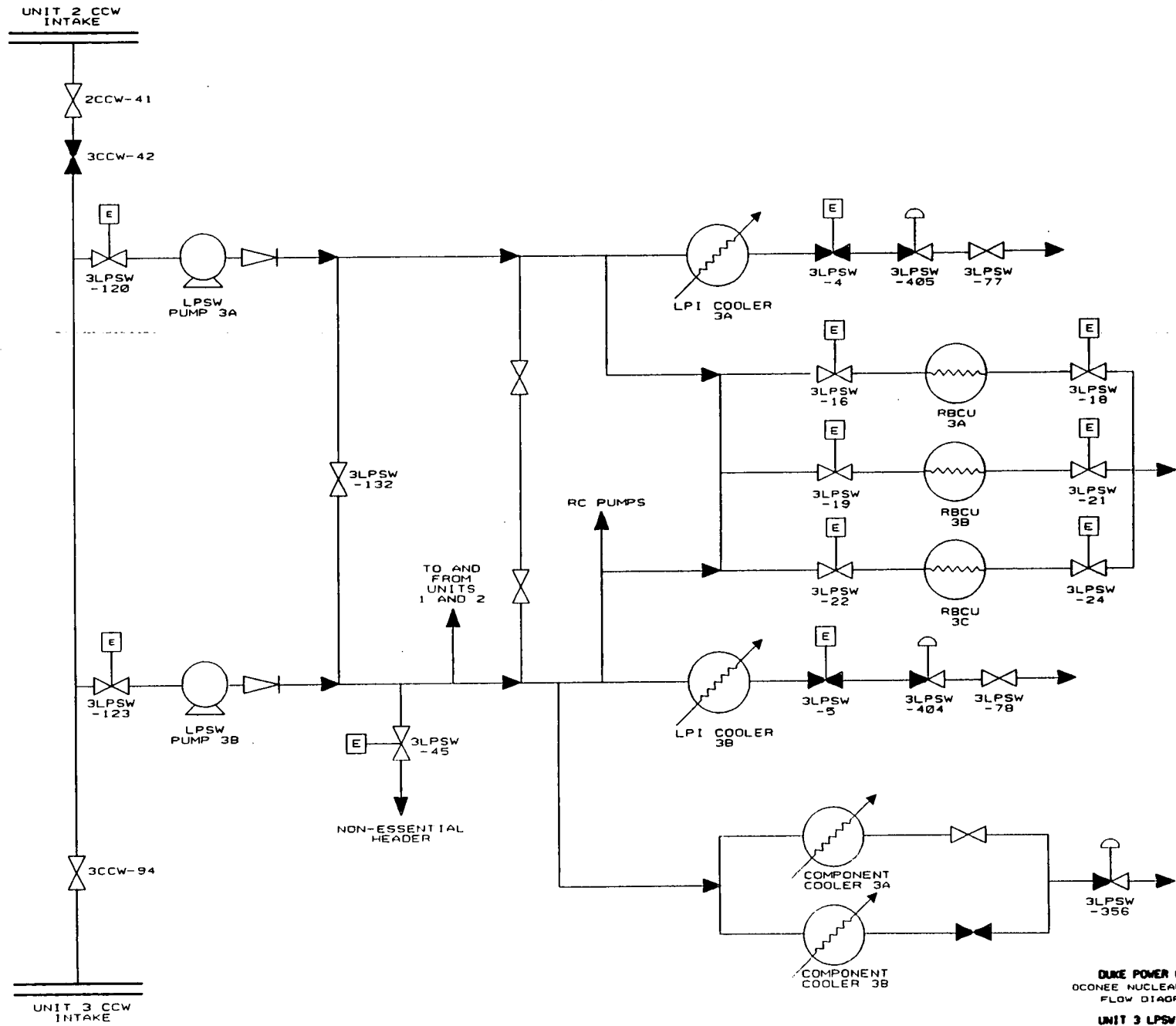


## **SYSTEM DESIGN/DESCRIPTION**

- **SYSTEM OVERVIEW**
- **IMPACT OF LOSS OF INSTRUMENT AIR**
- **COMPONENT REQUIREMENTS  
( FLOW - NO FLOW )**
- **CREDIT TAKEN FOR OPERATOR ACTION**



DUKE POWER COMPANY  
 OCOONEE NUCLEAR STATION  
 FLOW DIAGRAM OF  
 UNITS 1 & 2 LPSW SYSTEM



DUKE POWER COMPANY  
 OCONEE NUCLEAR STATION  
 FLOW DIAGRAM OF  
 UNIT 3 LPSV SYSTEM

## **LPSW SYSTEM ISSUES**

- **REQUIRING HARDWARE CHANGES**
- **REQUIRING PROCEDURE CHANGES**
- **REQUIRING RE-ANALYSIS**

## **HARDWARE CHANGES**

**ISSUE: LPI Cooler Isolation Valve Failure to Open**

**☞ High Flow Through Other Cooler**

**CORRECTIVE ACTION: Travel Stops**

**☞ Limits Flow Through Cooler**

# PROCEDURE CHANGES

**ISSUE: LPSW Pump Failure to Start**

☞ **High Pump Flow (NPSH)**

**CORRECTIVE  
ACTION:**

**Procedural Guidance to Isolate an  
LPI Cooler on Unaffected Unit  
(Unit 1&2 Only)**

☞ **Limits Total Pump Flow**

**Procedurally Control Lake Level  
(All Three Units)**

☞ **Increases Available NPSH**

## RE-ANALYSIS

ISSUE: 1) LPSW Pump Failure

☞ Low RBCU Flow

2) Bus Failure ( Unit 1 & 2 Only )

Lose a Pump, Block Flow Through a Cooler

☞ Low Flow to LPI Cooler

CORRECTIVE  
ACTION:

Re-analyze RB Post LOCA Heat  
Removal Requirements

Lower Maximum Lake  
Temperature

## **TECH SPEC ISSUES**

- **APPARENT INCONSISTENCY BETWEEN FSAR AND TECH SPECS**
- **EVALUATION AND TECH SPEC INTERPRETATION**
- **SURVEILLANCE SPEC DEFICIENCIES**
- **TECH SPEC CHANGES**



# DEGRADED LPSW SYSTEM FLOWPATH

- DESCRIPTION OF EVENT

- ☞ Valve Found Not Fully Open

- ROOT CAUSE OF EVENT

- ☞ No System Performance Test

- CORRECTIVE ACTION

- ☞ Perform Test, Repair Valve

- SAFETY SIGNIFICANCE

- ☞ LPI Cooler was Operable at Reduced Flow

## **FUTURE LPSW PLANS**

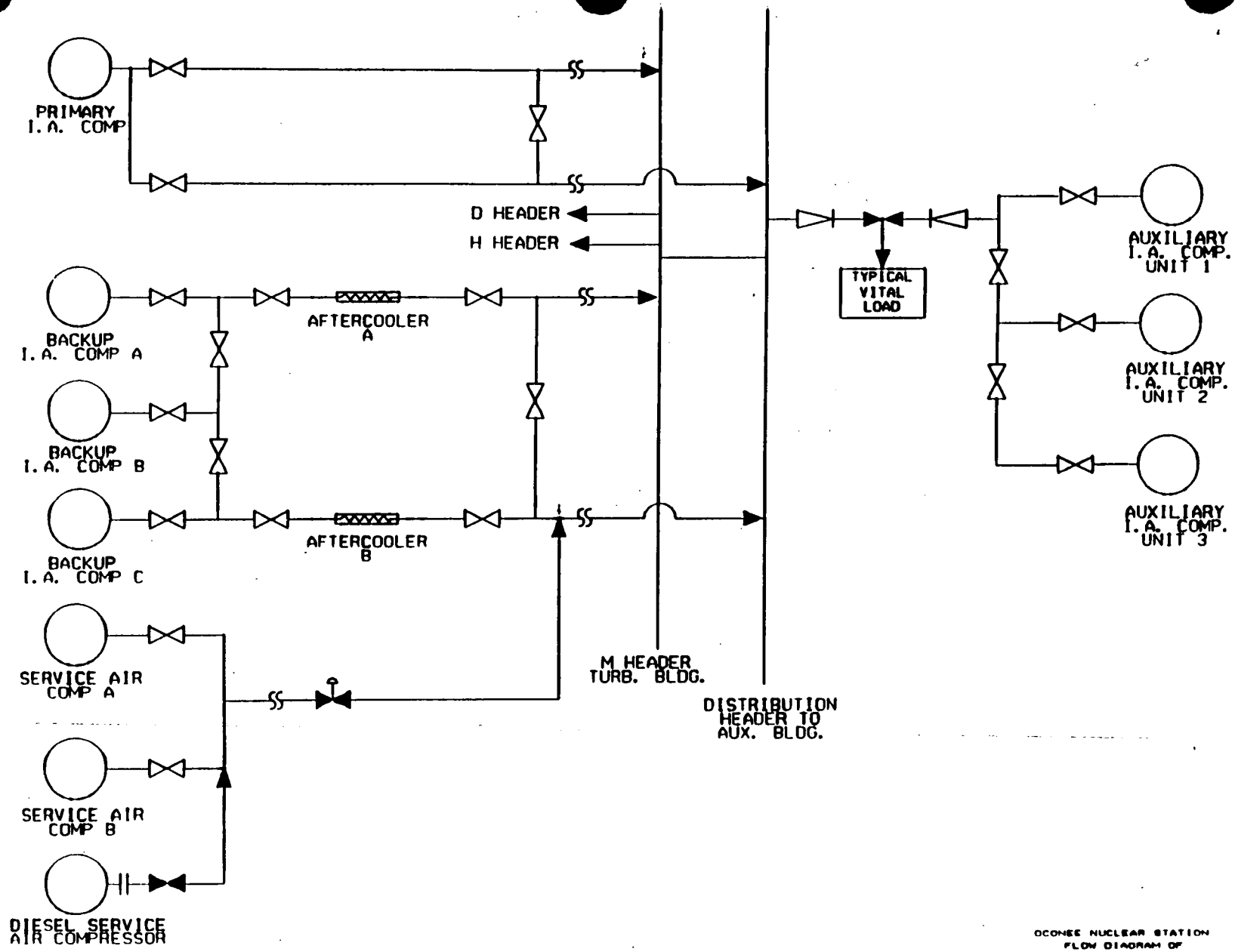
- **PERFORM PERIODIC SYSTEM FLOW TESTING**
- **EVALUATION OF ALTERNATIVES TO REGAIN FLEXIBILITY OR REDUCE THE ROLE OF INSTRUMENT AIR**
- **DEFINE PLANT CONDITIONS FOR PERFORMING EXTENDED PUMP MAINTENANCE**
- **ENHANCE LPSW SYSTEM FLOW MODEL**

# LPSW HISTORY

- **B & W CORRESPONDENCE CONCERNING EXCESSIVE LPI COOLER FLOW:**
  - ☞ **Added Valves and Changed Control System**
  
- **1987 LPSW SITA AUDIT:**
  - ☞ **Pointed Out the Lack of a Design Bases**
  - ☞ **Pointed Out the Lack of System Performance (Flow) Testing**
  - ☞ **Prompted Initiation of Model Development**
  
- **EXCESSIVE LPSW FLOW THROUGH LPI COOLER EVENTS:**
  - ☞ **Initiated Design Study and Ordered Replacement Valves**
  
- **GENERIC LETTER 89-13:**
  - ☞ **Upgraded Heat Exchanger Testing Emphasized Pipe Erosion/Corrosion**
  - ☞ **Expedited Model Benchmarking**

## **INSTRUMENT AIR (IA) SYSTEM**

- **PRIMARY IA COMPRESSOR  
RETAIL POWERED**
- **SECONDARY (BACKUP) IA COMPRESSOR  
PLANT POWERED**
- **AUXILIARY (VITAL) IA COMPRESSOR  
ONE/UNIT - KEOWEE POWERED**
- **SERVICE AIR BACKUP**
- **DIESEL COMPRESSOR BACKUP**



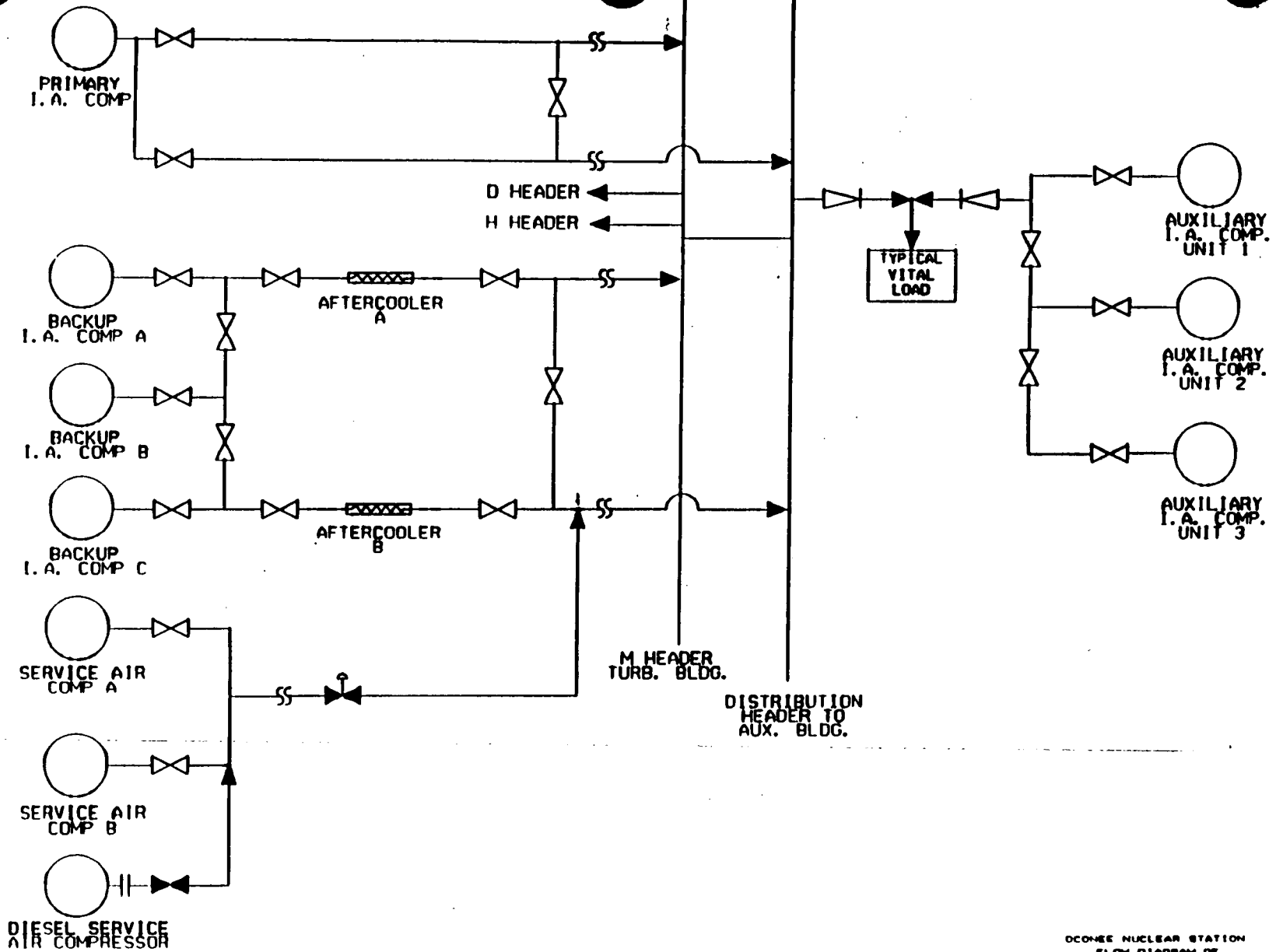
OCONEE NUCLEAR STATION  
 FLOW DIAGRAM OF  
 COMPRESSED AIR SYSTEMS

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OCCONEE NUCLEAR STATION  
 FLOW DIAGRAM OF  
 COMPRESSED AIR SYSTEMS



## **SUMMARY**

- **LPSW SYSTEM STATUS**
- **COMPREHENSIVE REVIEW OF SYSTEM / OPERATOR INTERACTION**
- **SYSTEM OPERABILITY**
- **PLANT OPERATION / ENGINEERING INTERFACE**
- **CORRECTIVE ACTION PROGRAM**

## **SUMMARY**

- **LPSW SYSTEM STATUS**
- **COMPREHENSIVE REVIEW OF SYSTEM / OPERATOR INTERACTION**
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