UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

MAY 20 1996

Wolf Creek Nuclear Operating Corporation
ATTN: Neil S. Carns, President and
Chief Executive Officer
P.O. Box 411
Burlington, Kansas 66839

SUBJECT: MAY 10, 1996, PREDECISIONAL ENFORCEMENT CONFERENCE

This refers to the meeting conducted in the Region IV office on May 10, 1996. This meeting was held to discuss the apparent violations associated with the frazil ice event of January 30, 1996, at the Wolf Creek Generating Station.

We found the discussions beneficial and believe that they provided us with a better understanding of the event and your subsequent corrective actions and plans. This information will be considered in determining our final decision regarding any enforcement in this matter.

The meeting attendees are listed in Enclosure 1 and the subjects discussed during your presentation are included as Enclosure 2.

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,

J. E. Dyer, Director
Division of Reactor Projects

Enclosures:
1. Attendance List
2. Licensee Presentation

cc:
Wolf Creek Nuclear Operating Corp.
ATTN: Vice President Plant Operations
P.O. Box 411
Burlington, Kansas 66839

Shaw, Pittman, Potts & Trowbridge
ATTN: Jay Silberg, Esq.
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Wolf Creek Nuclear Operating Corp.
ATTN: Supervisor Regulatory Compliance
P.O. Box 411
Burlington, Kansas 66839

Missouri Public Service Commission
ATTN: Assistant Manager
Energy Department
P.O. Box 360
Jefferson City, Missouri 65102

Kansas Corporation Commission
ATTN: Chief Engineer
Utilities Division
1500 SW Arrowhead Rd.
Topeka, Kansas 66604-4027

Office of the Governor
State of Kansas
Topeka, Kansas 66612

Attorney General
Judicial Center
301 S.W. 10th
2nd Floor
Topeka, Kansas 66612-1597

County Clerk
Coffey County Courthouse
Burlington, Kansas 66839-1798

Kansas Department of Health
and Environment
Bureau of Air & Radiation
ATTN: Public Health Physicist
Division of Environment
Forbes Field Building 283
Topeka, Kansas 66620

Division of Emergency Preparedness
ATTN: Mr. Frank Moussa
2800 SW Topeka Blvd
Topeka, Kansas 66611-1287

bcc to DMB (IE45)

bcc distrib. by RIV:

| | |
|---|---|
| L. J. Callan | Resident Inspector |
| DRP Director | SRI (Callaway, RIV) |
| Branch Chief (DRP/B) | DRS-PSB |
| Project Engineer (DRP/B) | MIS System |
| Branch Chief (DRP/TSS) | RIV File |
| Leah Tremper (OC/LFDCB, MS: TWFN 9E10) | |

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|---|---|---|---|---|---|---|---|---|---|
| PE:DRP/B | | C:DRP/B | | D:DRP/B | | | | | |
| DNGraves;cm | | WDJohnson | | JEDyer | | | | | |
| 05/16/96 | | 05/17/96 | | 05/20/96 | | | | | |

OFFICIAL RECORD COPY

| PREDECISIONAL CONFERENCE | | |
|---|---|---|
| LICENSEE/FACILITY | Wolf Creek Nuclear Operating Corporation | |
| DATE/TIME | May 10, 1996, 9 a.m. (CDT) | |
| MEETING LOCATION | Region IV, Arlington, TX | |
| EA NUMBER | EA 96-124 | |
| NAME (PLEASE PRINT) | ORGANIZATION | TITLE |
| NRC ATTENDEES | | |
| G. Michael Vasquez | NRC RIV | Enforcement Specialist |
| L. J. Callan | " | EA |
| MARK A. SATORIUS | NRC HDQTRS | ENF SPECIALIST |
| PAULA GOLDBERG | NRC RIV | Reactor Inspector |
| ARTHUR HOWELL | NRC RIV | Dep. Dir., DRP |
| HOWARD WONG | NRC RIV | BRANCH CHIEF, P.B. 1 & 3 |
| THOMAS P. GWYNN | NRC RIV | DIRECTOR, DRS |
| W.H. Bateman | NRC - HQ | Project Director |
| J.C. Stone | NRC/NRR/HQ | Senior Project Manager |
| D. N. GRAVES | NRC/RIV | Proj. & Engineer |
| Breck Henderson | NRC RIV | Public Affairs Officer |
| Kevin Scheich | WCNOC | Sys Eng Supvsr/ATW Engineer |
| Nels W HOADLEY | WCNOC | MGR Support Engineering |

# ATTENDANCE LIST

**PURPOSE OF MEETING:** Predecisional Enforcement Conference with the Wolf Creek Nuclear Operating Corporation

**LOCATION:** Region IV, Arlington, Texas

DATE: May 10, 1996

TIME: 9 a.m.

| NAME (PLEASE PRINT) | ORGANIZATION | TITLE |
|---|---|---|
| W.D. Johnson | NRC - Region IV | Branch Chief |
| J.F. Ringwald | NRC - RIV | SRI |
| DAN MOORE | Wolf Creek | Mgr Maint |
| Neil Carns | Wolf Creek | CEO |
| Bob Kapecky | Wolf Creek | Shift Supervisor |
| W B NORTON | WOLF CREEK | MGR PERF IMPROVE + ASSESS |
| BRITT MCKINNEY | Wolf Creek | PLANT MANAGER |
| Ron Sims | Wolf Creek | Manager Systems Engineering |
| DAVE DEES | WOLF CREEK | SHIFT SUPERVISOR |
| Wayne K Dragenville | Wolf Creek | SReactor Operator |
| Ron Mullen | Wolf Creek | Supt. Mechanical Mnt. |
| Jerry S Morrill | Wolf Creek | Manager Regulatory Services |
| Chris Younie | WCNOC | Manager Operations |

# ATTENDANCE LIST

**PURPOSE OF MEETING:** Predecisional Enforcement Conference with the Wolf Creek Nuclear Operating Corporation

**LOCATION:** Region IV, Arlington, Texas

DATE: May 10, 1996 | TIME: 9 a.m.

| NAME (PLEASE PRINT) | ORGANIZATION | TITLE |
|---|---|---|
| Rick Muench | WCNOC | VP Engineering |
| Terry M. Damashek | WCNOC | Supervisor Regulatory Compliance |
| Otto Maynard | WCNOC | Chief Operating Officer |
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# January 30, 1996, Icing Event And Related Concerns

Enforcement Meeting

May 10, 1996

# Icing Event Related Concerns

- Operations Concerns:
  - Failure to follow procedure in aligning ESW (Apparent Violation 9603-04)
  - Failure to complete technical specification required cooldown within specified time limits (Apparent Violation 9603-11)
  - Failure to maintain procedures (Apparent Violation 9603-10)
  - Auxiliary feedwater terry turbine over-speed event (Related Issue)
- Engineering Concerns:
  - Quality of engineering work products (Inspection Followup Item 9603-12)
  - Missed opportunities to identify and prevent occurrence (Apparent Violation 9603-03)
  - Inadequate warming line design (Apparent Violation 9603-02)
  - Inadequate evaluation of an unreviewed safety question determination (Apparent Violation 9603-01)
- Maintenance Concerns:
  - Inadequate corrective actions (Apparent Violation 9603-09)
  - Inadequate work instructions (Apparent Violation 9603-07)
  - Failure to follow work instructions (Apparent Violation 9603-06)
  - Failure to follow procedure (Apparent Violation 9603-08 )

# Errors

- Primary
  - Handling:
    - Failing to control the machine to desired parameters
  - Communication:
    - Incorrect readback, hearback; failing to provide accurate information; providing incorrect information

# Errors

- Procedural:
  - Failing to make required callouts, making inaccurate callouts; not conducting or completing required checklists or briefs; not following prescribed checklist procedures; failing to consult or obtain critical information

# Errors

- Resource Management:
  - Failing to assign task responsibilities or distribute tasks among crew members; failing to prioritize task accomplishment; overloading crew members; failing to transfer/assume control of the machine

# Errors

- Situational Awareness:
  - Controlling machine to wrong parameters
- Systems Operation:
  - Mishandling engines or hydraulic, brake, and fuel systems; misreading and mis-setting instruments; failing to use ice protection; disabling warning systems

# Errors

- Tactical Decision:
  - Improper decision making; failing to change course of action in response to signal to do so; failing to heed warnings or alerts that suggest a change in course of action

# Errors

- Secondary:
  - There is only one secondary error and this is the type of error that depends on another crew member previously or simultaneously making a primary error. This error is:

    Monitoring/challenging:

    - Failing to monitor and/or challenge faulty action or inaction (primary error) by another crew member

# Operations Concerns

# Failure To Follow Procedure

- Apparent Violation 9603-04 (Tech. Spec. 6.8.1):
  - On January 30, 1996, Control Room personnel failed to align the ESW system as required by the alarm response procedure (ALR)

# Failure To Follow Procedure

- Root Causes:
  - ALR referred to another procedure for short term actions
  - Personnel failed to obtain and verify the referenced procedure
- Contributing Factors:
  - Failure to follow-up after initial action
  - Teamwork, communications, self-checking, questioning attitude, command and control
  - Assumption the Operators would perform correctly

# Failure To Follow Procedure

- Short Term Corrective Actions:
  - ❑ Selected ALRs corrected immediately
  - ❑ Briefing paper and presentations on procedure use and adherence - Complete
  - ❑ Management expectations for conduct of operation reinforced with crews - Complete
  - ❑ "Codeword" philosophy - Implemented
  - ❑ "Follow-up" buttons - Implemented

# Failure To Follow Procedure

- Long Term Corrective Actions:
  - Pilot program for unexpected actions or verbal response during simulator training - Ongoing
  - Upgrade alarm response procedures (currently 395 of 679 procedures reviewed, 39 upgraded) - Ongoing
  - "Codeword" philosophy effectiveness review - Implemented
  - "Follow-up" button effectiveness review - Implemented
  - "Attribute" matrix for continuing personnel assessment

# "Poison Pill" Scenario Summary

- Objectives:
  - Begins with a normal evolution (paralleling the main generator to the grid)
  - The evolution is complicated by series of malfunctions and misinformation (reactor trip, loss of PA01 buss, CCW service loop leak, and mis-positioned components)
  - Intended to expose the operating crews to a complex set of plant conditions requiring independent Operator action
  - Includes diagnosis of incorrect system alignments
  - Designed to re-inforce use of "follow-up" button, "codeword" and to exercise the "monitor and challenge" concept

# Communications Scenario Summary

- Objectives:
  - Exposes the operating crews to a series of unexpected conditions designed to challenge crew communications
  - Designed to demonstrate use of the "follow-up" buttons and "codeword" as appropriate
  - Simulation is halted at predetermined times to critique crew communications
  - Inaccurate verbal information is provided
  - Failures include: Stator Cooling Water temperature control, Loss of "B" Circulating Water pump, Circulating Water leak causing decrease in vacuum, Intercept valve fails closed, Refueling Water Storage Tank low level alarm, and blown fuse on Control Rod H-8

# Attribute Matrix

| | low | med | high |
|---|---|---|---|
| Communications | x | | |
| Judgement | | x | |
| Coaching | | x | |
| Accountability | | | x |
| Verbal skills | | x | |
| Written skills | | | x |
| Leadership | | x | |

# Failure To Follow Procedure

- Apparent Violation 9603-11 (Tech. Spec. 6.8.1):
  - Failure to complete a plant cooldown from MODE 3 to MODE 4, as required by Technical Specification 3.7.1.2.b, within 6 hours

# Failure To Follow Procedure

- Root Cause:
  - Inadequate / unclear procedural guidance
- Contributing Factors:
  - Supervising Operator (SO) believed he was required to complete General Operating Procedure GEN 005 "Minimum Load to Hot Standby," prior to beginning GEN 006 "Hot Standby to Cold Shutdown"
  - SO had not been required to complete a 6 hour 'real time' plant cooldown

# Failure To Follow Procedure

- Short Term Corrective Actions:
  - ❑GEN 005 revised to indicate steps that must be completed prior to entering GEN 006 - Completed
  - ❑Briefings conducted with Control Room crews (communications, command and control) - Completed

# Failure To Follow Procedure

- Long Term Corrective Actions:
  - ❑ Simulator training for accelerated plant shutdown / cooldown will be conducted by 7/31/96 - Ongoing
    - – To date, all crews that have been trained completed cooldown within 6 hour action statement requirement
  - ❑ Adoption of the Improved Tech. Spec. - Ongoing
    - – Upon adoption, the MODE change time requirement will be 18 hours (versus 6 hours)

# Cooldown Scenario Summary

- Objectives:
  - To establish plant conditions where the operator must identify the need to shutdown and cooldown to comply with Tech. Spec. requirements
  - Began with "A" Train outage in progress ("A" EDG and "A" ESW pump)
  - Following a reactor trip, the TDAFWP fails, forces the operating crew into Tech. Spec. 3.7.1.2 Action b
    - This action requires a cooldown to Mode 4 in less than 6 hours
  - The completion of the actions within the required 6 hours using GEN 005 and GEN 006

# Failure To Maintain Adequate Procedures

- Apparent Violation 9603-10 (Tech. Spec. 6.8.1):
  - Two examples:
    - On January 30, 1996, one Emergency Operating Procedure (EMG) was missing from the Control Room
    - A subsequent NRC review of Control Room procedures identified one missing Alarm Response Procedure (ALR)

# Procedure Audit Summary

- Initial Audit (3-12-96) Showed:
  - ❑ 31 errors out of 5439 procedure audited
  - ❑ 4/31 original errors were not corrected
    - – Due to improper interface between the Shift Clerks and Document Services.
    - – 1/4 were found by the NRC on 3-22-96
    - – All 31 were re-verified upon this discovery by the NRC
- Procedures maintained at the Auxiliary Shutdown Panel, Emergency Operations Facility (EOF), and Technical Support Center (TSC) were audited as a result of the above problem

# Failure To Maintain Adequate Procedures

- Root Cause:
  - Personnel error - Inattention to detail
- Contributing Factors:
  - Inadequate on-the-job training of Shift Clerks
  - Ineffective interface between Shift Clerks and Document Services personnel
  - Procedure use process

# Failure To Maintain Adequate Procedures

- Short Term Corrective Actions:
  - ❑ Replaced missing procedures - Completed
  - ❑ Performed audit of Control Room, TSC and EOF Procedures and corrected all identified deficiencies - Completed (3/27/96)

# Failure To Maintain Adequate Procedures

- Long Term Corrective Actions:
  - ❑ Shift Clerk training (3/27/96) and qualification card enhancement - Completed
  - ❑ Second quarter procedure audit - Completed (5/1/96)
  - ❑ Procedure AI 15A-002, "Procedure Audit" provides guidance for performing procedure audits - Completed
  - ❑ Enhanced procedure update process - Ongoing

# Engineering Concerns

# Quality Of Engineering
# Work Products / Failure To Prevent Occurrence

- NRC Inspection Report 50-482/95-07:
  - ❑Need to improve technical rigor, attention to detail, aggressiveness, and questioning attitude:
    - Inadequate safety evaluations
    - Failure to properly document technical concerns
    - Potential negative indicators (plant observations and industry events)

# Quality Of Engineering
# Work Products / Failure To Prevent Occurrence

- WCNOC Incident Investigation Team Report 96-002
- NRC Inspection Reports 50-482/96-03:
  - Need to improve engineering rigor, documentation, and questioning attitude (IFI 9603-12):
    - Operability evaluations
    - Clarifications of Technical Specifications
    - Potential negative indicators (plant observations and industry events)
  - Apparent Violation 9603-03, "Failure To Prevent Occurrence"

# Quality Of Engineering
# Work Products / Failure To Prevent Occurrence

- WCNOC Acknowledges And Agrees That The Quality Of Engineering Work Needs To Be Improved
- WCNOC Acknowledges And Agrees With Apparent Violation 9603-03
- Cause:
  - Lack of consistent and demonstrated management expectations
  - Inadequate personnel accountability (all levels of engineering)

# Quality Of Engineering
# Work Products / Failure To Prevent Occurrence

- Corrective Actions / Status:
  - Evaluations of safety / operationally significant issues will be approached as if WCNOC was the original designer or the independent verifier
  - Improve evaluation targeting, prioritization, scheduling, tracking, performance evaluation tools
    - Preliminary tool developed by 6/30/96

# Quality Of Engineering
# Work Products / Failure To Prevent Occurrence

- Corrective Actions / Status:
  - ❑Perform system functional assessments:
    - Auxiliary Feedwater System - 12/31/96
    - Essential Service Water System - 6/30/97
    - Component Cooling Water System - 12/31/97
    - Residual Heat Removal System - 4/30/98

Note: Use the auxiliary feedwater functional assessment to time machine test new expectations and tools

# Quality Of Engineering
# Work Products / Failure To Prevent Occurrence

- Corrective Actions / Status:
  - Review of outstanding safety-related action requests - Completed
    - No safety significant concerns identified
  - Plan for PSRC review of safety-related action request > 6 months old - Implemented
  - Removed incorrect information on frazil ice in Technical Specification Clarification - Completed

# Inadequate ESW Design

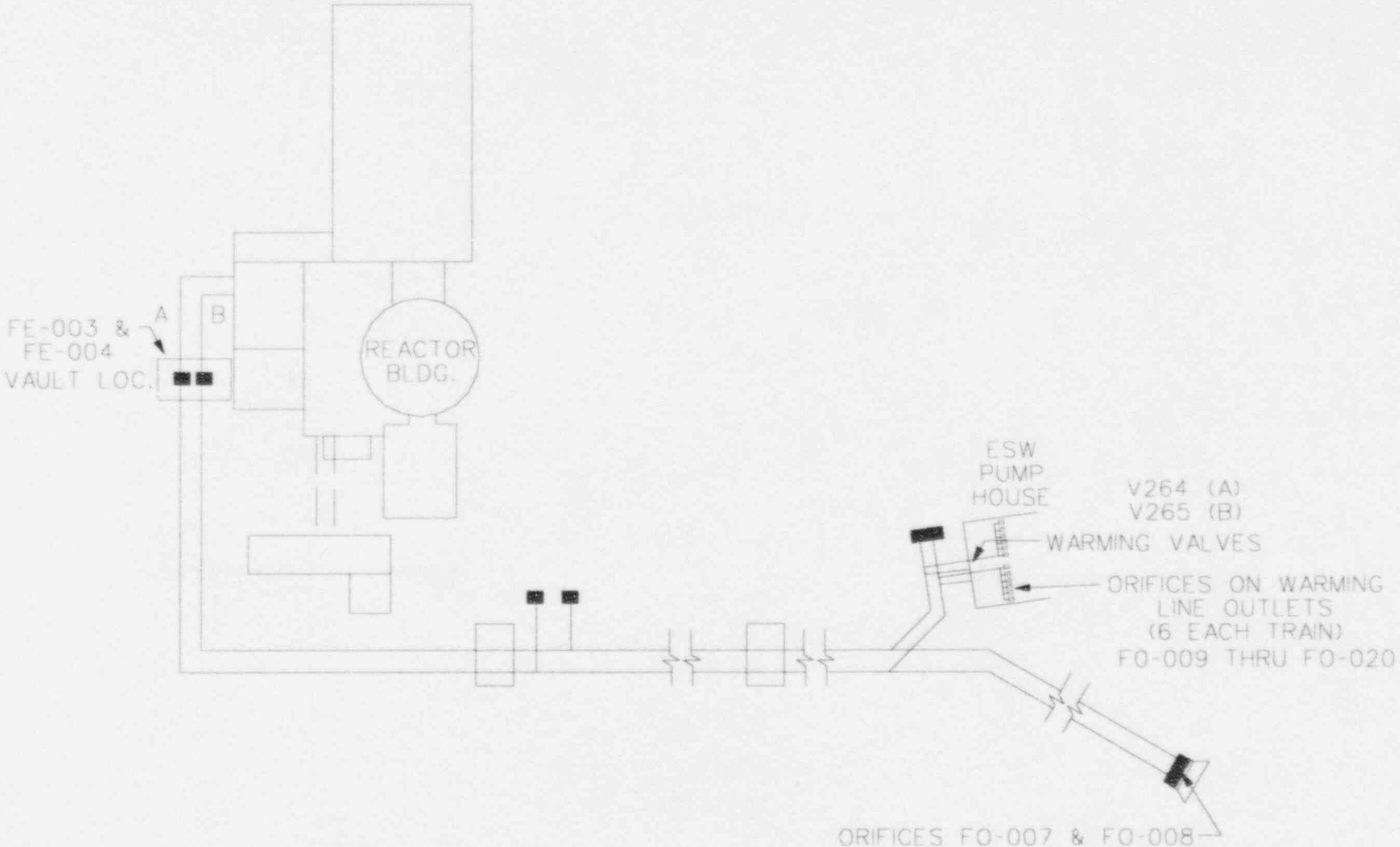
- Apparent Violation 9603-02 (10CFR50, Appendix B, Criterion III):
  - ESW Warming Line inadequate to prevent the formation of frazil ice
- Apparent Violation 9603-01 (10 CFR 50.59):
  - De facto design change caused by original design error

# Inadequate ESW Design

- Apparent Violation 9603-02 (10 CFR 50 Appendix, B, Criterion III):
  - WCNOC acknowledges and agrees with this violation
- Apparent Violation 9603-01 (10CFR50.59):
  - WCNOC denies this violation
  - Basis for denial:
    - The frazil icing event was not caused by a design change
    - The frazil icing event was not caused by a procedure change
    - The frazil icing event was not caused by an unanalyzed test
    - There was no desire or intent on the part of WCNOC to implement a design change, procedure change, or to conduct an unanalyzed test

# Inadequate ESW Design

- Root Cause:
  - Design of ESW was inadequate to prevent frazil ice formation
- Corrective Actions Status / Schedule:
  - ESW Modifications - Completed
  - Winterization Plan Including Icing Contingencies - Completed
    - Will include air bubbler capability
  - Revising PSA Model to include ESW warming line failure - 6/28/96
  - Temperature instrumentation of lake water, pump suction and warming line - 10/1/96




ESW UNDERGROUND RETURN PIPING OVERVIEW

# Maintenance Concerns

## TDAFWP Apparent Violations

# Basic Problem

- Problems
  - Poor work practice by mechanics and mechanical supervisors January 1996
  - Poor engineering evaluation of packing failure
  - Suitability of new packing material not questioned
  - Poor planner instructions
  - Vendor basis for AFW pumps run versus standby

# Inadequate Corrective Action

- Apparent Violation 9603-09 (10 CFR 50, Appendix B, Criterion XVI):
- Root Cause:
  - Poor engineering evaluation of an equipment problem
- Contributing Factors:
  - Failure to question the packing material suitability
  - Failure of Sys. Eng. to be involved sufficiently in determining corrective actions

# Inadequate Corrective Actions

- Corrective Actions:
  - ❑ Manager Maintenance expectations for self-critical evaluation issued - Completed (1/96)
  - ❑ Root Cause Analysis training requirements increased - implemented (4/96)
  - ❑ Sys. Eng. more involved in corrective maintenance - Measure with 3rd Qtr. 96 self-assessment.
  - ❑ Sys. Eng. now reports to Plant Manager - Implemented
  - ❑ Conduct self assessment 3rd Qtr. 96 to evaluate new material impact on key equipment
  - ❑ TDAFWP repacked with 1625 packing - Completed

# Work Instructions Not Complete

- Apparent Violation 9603-07 (10 CFR 50 Appendix B, Criterion V):
- Root Cause:
  - ❑Failure to incorporate all prime source information into work instructions

# Work Instructions Not Complete

- Corrective Actions:
  - ❑ Revised work instructions for packing - Completed
  - ❑ Repacked using new instructions - Completed
  - ❑ Improved post maintenance run-in test - Completed
  - ❑ Trained all planners in packing, post maintenance testing (PMT), and use of prime source documents - Completed
  - ❑ Assigned person to provide independent oversight of work - Implemented

# Work Instructions Not Complete

- Corrective Actions:
  - ❑ Packing training given to mechanics, planners and applicable Sys. Engs. - Completed
  - ❑ Lessons learned added to Maintenance Continued Training - Starts 5/13/96
  - ❑ Developed post maintenance retest procedure, SYS AL-123 - Completed
  - ❑ Conduct field work surveillances of work package adequacy; conduct self assessment 4 Qtr 96 to measure effectiveness
  - ❑ Reviewed all outstanding TDAFWP maintenance - Completed
  - ❑ Assigned new Planning Superintendent

# Failure to Follow Procedures

- Apparent Violation 482/9603-06 (Tech. Spec. 6.8.1):
- Root Cause:
  - Workers performed own interpretation to work instructions rather than stop and seek supervisory clarification
- Contributing Factors:
  - Work instructions not adequate
  - Mind set not to overtighten
  - Worker trained on finger tight
  - Supervisor failed to correct problem

# Failure to Follow Procedures

- Corrective Actions:
  - ❑ Retrained mechanics and supervisors on following procedures - Completed
  - ❑ Rewrote work instructions - Completed
  - ❑ Measure work package adequacy with self-assessment by 3rd Qtr 96
  - ❑ Trained mechanics and supervisors in new packing procedure - Completed
  - ❑ Developed mock-up repack training - 5/13/96
  - ❑ Reviewed Manager Maintenance Expectations - Completed
  - ❑ Counsel all supervisors by Plant Manager, Chief Operating Officer and Maintenance Manager by 5/30/96

# Failure to Follow Procedures

- Apparent Violation 482/ 9603-08 (Tech. Spec. 6.8.1):
  - ❑Troubleshooting beyond the scope of procedure
    - – Procedure states scope of work to be:
      - Limited and controlled by CWA or SS
      - To extent necessary to derive accurate work instructions for subsequent rework
      - Where system integrity is altered, verification of restoration must exist within the documentation

# Failure to Follow Procedures

- Basis For Denial:
  - Scope limited to 4 defined steps
  - Prerequisite coordination with SS & CWA
  - Only purpose, to take measurements & verify set screw tightness
  - Same workers on inboard and outboard
  - Equipment tagged out, listed in EOL
  - Used troubleshooting to identify non-conformance, used planned work task (WPT) to return to conforming condition

# Failure to Follow Procedures

- Basis For Denial:
  - No NCR identified on outboard gland (it did not fail)
  - Planned WPT used to conduct PMT and surveillance to verify Tech. Spec. 3.7.1.2 acceptance criteria
  - Troubleshooting performed under direct supervision of Supt. Mech. Maintenance
  - Troubleshoot was basic, within skill of craft
  - Was within AP 16C-002, Att. C
  - Had a planned WPT been used, craft would not have done anything differently

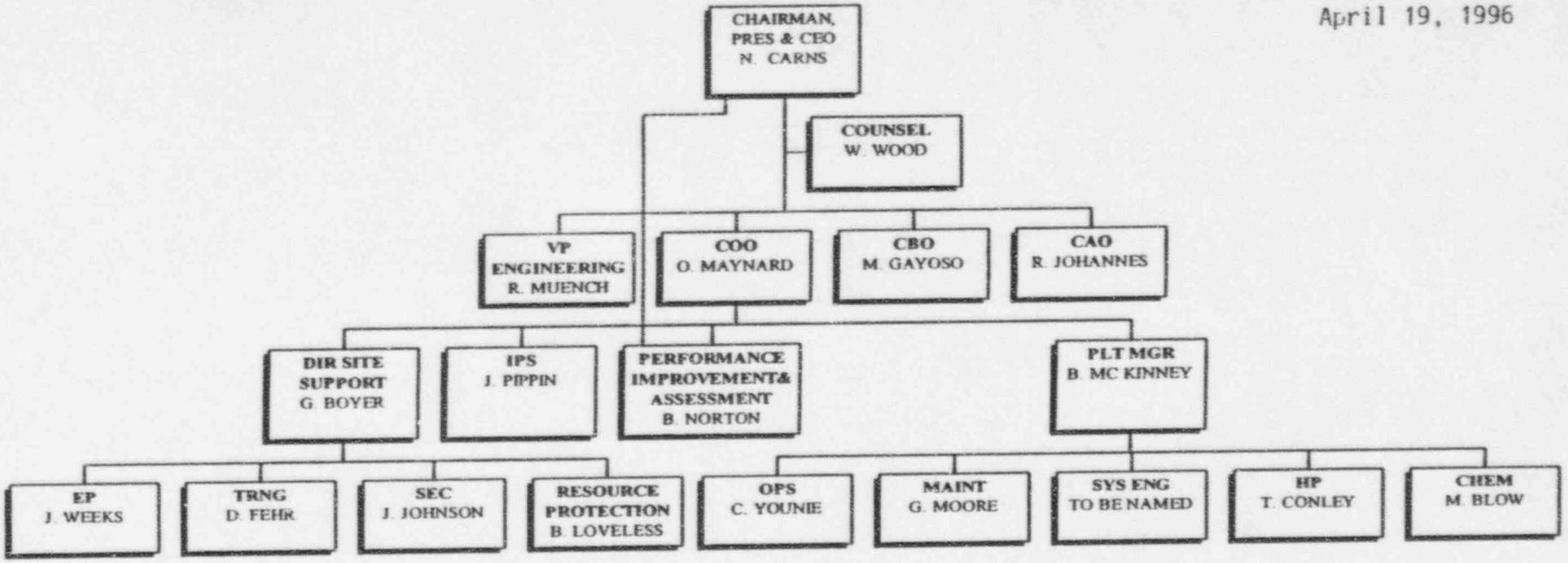
# MAINTENANCE SUMMARY

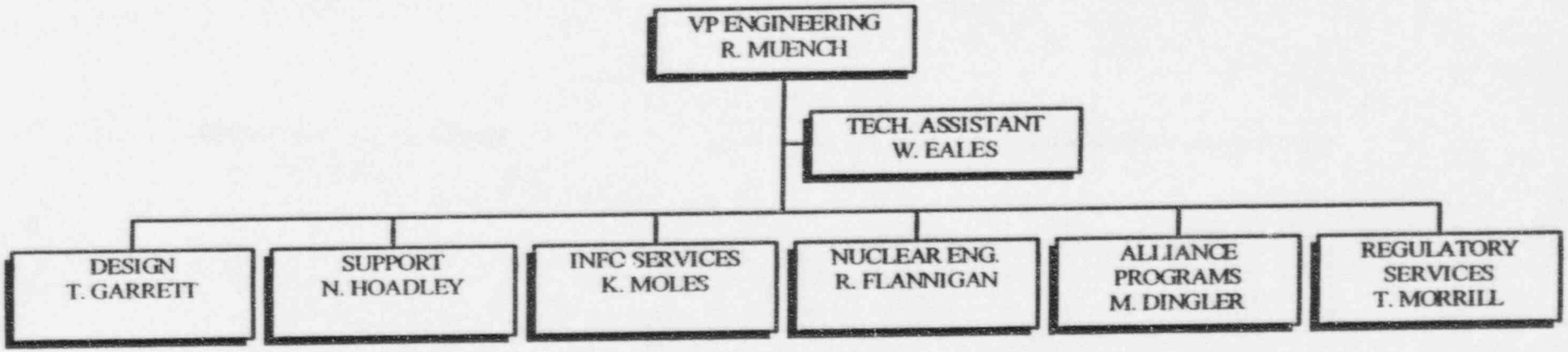
- WCNOC understands the significance of these events
- WCNOC is not satisfied with its performance
- WCNOC will implement corrective actions that will prevent recurrence
- WCNOC will follow-up on its corrective actions to assure effective implementation

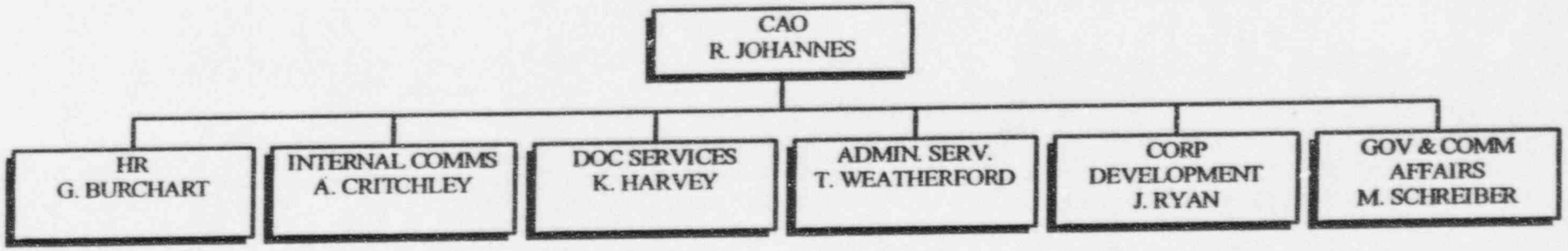
# Summary Information

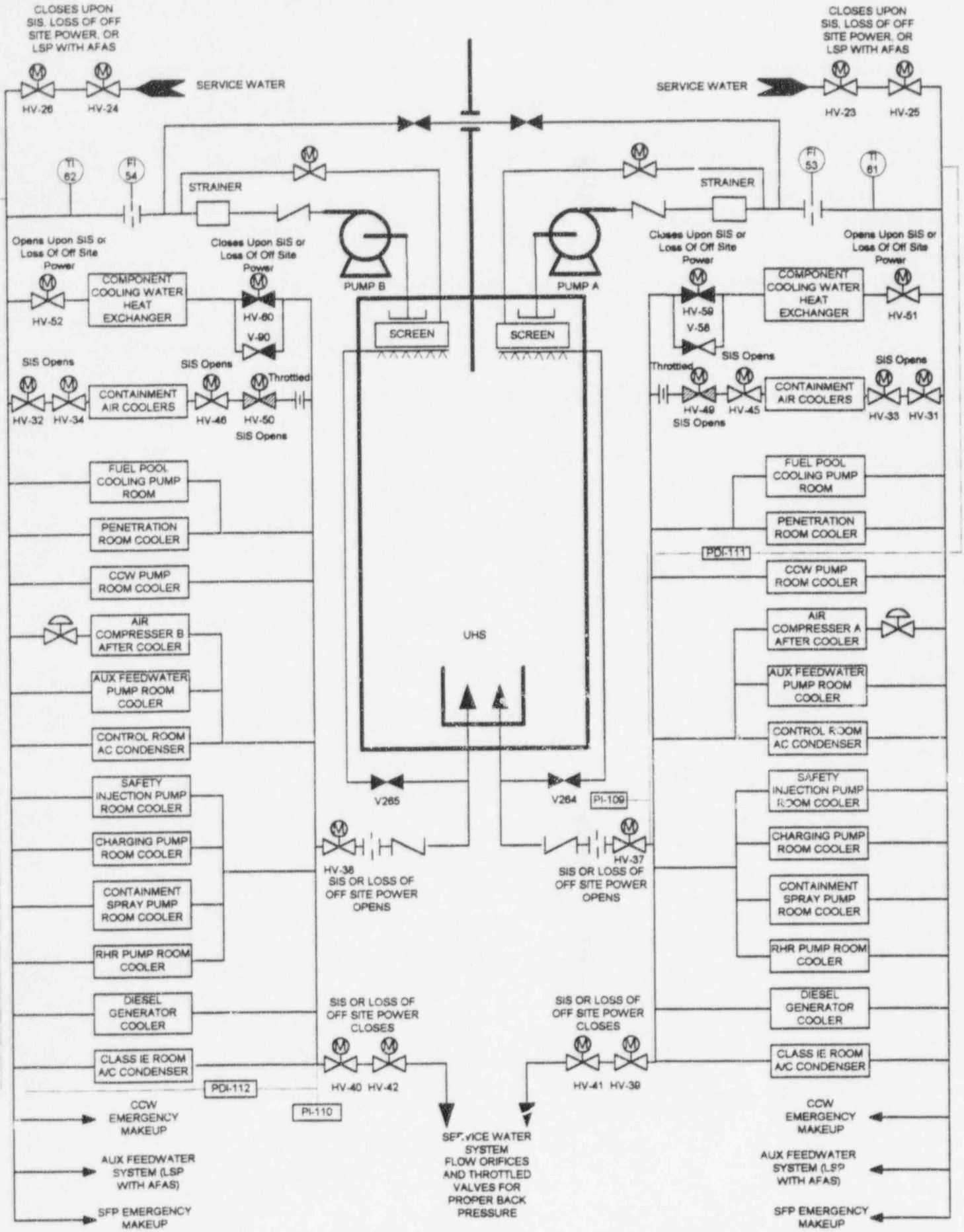
- WCNOC understands the significance of these events
- WCNOC is not satisfied with its performance
- WCNOC is aggressively implementing corrective actions to prevent recurrence
- Quarterly letter to Regional Administrator
- Potential industry applicability

April 19, 1996

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SERVICE WATER
HV-26
HV-24
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HV-23
HV-25
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PUMP B
PUMP A
FI 53
TI 61
STRAINER
Opens Upon SIS or Loss Of Off Site Power
HV-52
COMPONENT COOLING WATER HEAT EXCHANGER
Closes Upon SIS or Loss Of Off Site Power
HV-60
V-90
Closes Upon SIS or Loss Of Off Site Power
HV-59
V-58
COMPONENT COOLING WATER HEAT EXCHANGER
Opens Upon SIS or Loss Of Off Site Power
HV-51
SCREEN
SCREEN
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HV-32
HV-34
CONTAINMENT AIR COOLERS
SIS Opens
HV-46
Throttled
HV-50
SIS Opens
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HV-49
SIS Opens
HV-45
CONTAINMENT AIR COOLERS
SIS Opens
HV-33
HV-31
FUEL POOL COOLING PUMP ROOM
PENETRATION ROOM COOLER
CCW PUMP ROOM COOLER
AIR COMPRESSER B AFTER COOLER
AUX FEEDWATER PUMP ROOM COOLER
CONTROL ROOM AC CONDENSER
SAFETY INJECTION PUMP ROOM COOLER
CHARGING PUMP ROOM COOLER
CONTAINMENT SPRAY PUMP ROOM COOLER
RHR PUMP ROOM COOLER
DIESEL GENERATOR COOLER
CLASS IE ROOM A/C CONDENSER
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UHS
V265
V264
PI-109
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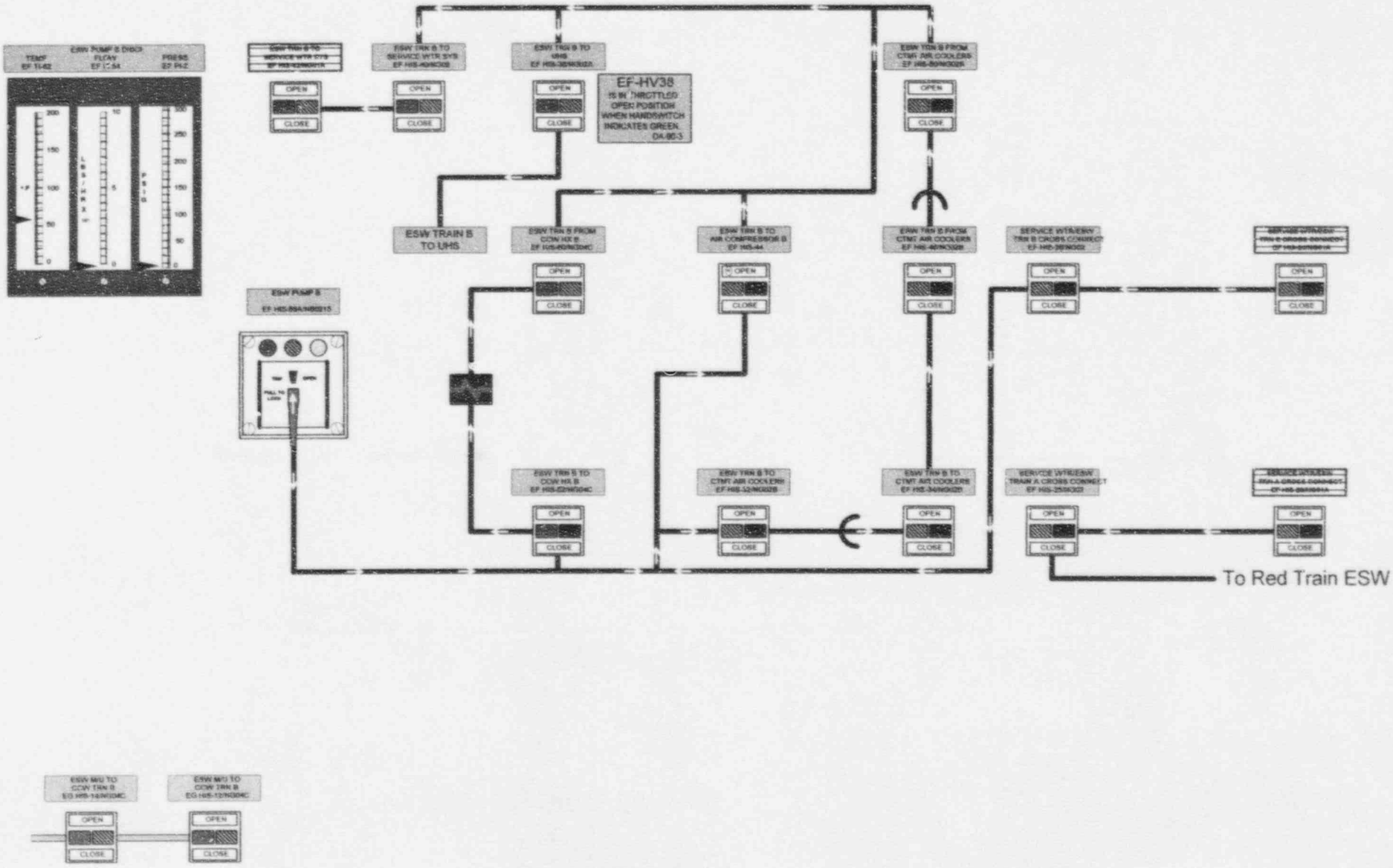
CONTAINMENT SPRAY PUMP ROOM COOLER
RHR PUMP ROOM COOLER
DIESEL GENERATOR COOLER
CLASS IE ROOM A/C CONDENSER
CCW EMERGENCY MAKEUP
AUX FEEDWATER SYSTEM (LSP WITH AFAS)
SFP EMERGENCY MAKEUP
SERVICE WATER SYSTEM FLOW ORIFICES AND THROTTLED VALVES FOR PROPER BACK PRESSURE
CCW EMERGENCY MAKEUP
AUX FEEDWATER SYSTEM (LSP WITH AFAS)
SFP EMERGENCY MAKEUP

Main Control Board RL019
ESW SYSTEM
(Yellow Train)



| Significance and Mitigation | | | |
|---|---|---|---|
| **Apparent Violation** | **Agree or Disagree** | **Significance** | **Mitigating Factors** |
| OPERATIONS | | | |
| 04-Failure to follow procedures | Agree | Moderate in this event | Self Identified<br>Self disclosed<br>Prompt Corrective Actions |
| 10-Failure to maintain procedures | Agree | Low for this event | Self Identified<br>Self disclosed<br>Back up method immediately available<br>Prompt corrective actions |
| 11-Failure to complete cool down | Agree | Low - Tech Spec times will be lengthened in future | Self Identified<br>Self disclosed<br>Prompt Corrective Actions |
| ENGINEERING | | | |
| 01-Inadequate Evaluation of an unreviewed safety question determination | Disagree<br>- Not a design change<br>- Not a procedure change<br>- Not a new test<br>- Previous usage - believe Criterion III | NA | NA |
| 02-Inadequate Design | Agree | High | Old design deficiency<br>Self Identified<br>Not likely to be identified through routine surveillance or QA Audit<br>Prompt corrective actions<br>Error was not willful in nature<br>Error Self disclosed |
| 03-Missed Opportunities | Agree | High | Self Identified<br>Self disclosed |

| Significance and Mitigation | | | |
|---|---|---|---|
| **Apparent Violation** | **Agree or Disagree** | **Significance** | **Mitigating Factors** |
| MAINTENANCE | | | |
| 06-Failure to follow work instructions | Agree | Low for this event | Self Identified<br>Self disclosed<br>Prompt Corrective Actions |
| 07-Inadequate work instructions | Agree | Moderate in this event - TDAFWP continued to operate | Self Identified<br>Self disclosed<br>Prompt Corrective Actions |
| 08-Failure to follow procedures (Trouble Shooting) | Disagree<br>- Limited and controlled<br>- No rework performed<br>- Equipment was tagged out<br>- Work was documented<br>- Did not impact operation | NA | NA |
| 09-Inadequate Corrective Action (TDAFWP) | Agree | Moderate in this event | Self Identified<br>Self disclosed<br>Prompt Corrective Actions |

bcc to DMB (IE45)

bcc distrib. by RIV:

| | |
|---|---|
| L. J. Callan | Resident Inspector |
| DRP Director | SRI (Callaway, RIV) |
| Branch Chief (DRP/B) | DRS-PSB |
| Project Engineer (DRP/B) | MIS System |
| Branch Chief (DRP/TSS) | RIV File |
| Leah Tremper (OC/LFDCB, MS: TWFN 9E10) | |

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| DNGraves;cm | | WDJohnson | | JEDyer | | | | | | | |
| 05/16/96 | | 05/17/96 | | 05/20/96 | | | | | | | |

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