

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-255/94007(DRS)

EA 94-041

Docket No. 50-255

License No. DPR-20

Licensee: Consumers Power Company
212 West Michigan Avenue
Jackson, MI 49201

Facility Name: Palisades Nuclear Generating Plant

Meeting Conducted: March 11, 1994

Meeting At: Region III Office, Lisle, Illinois

Type of Meeting: Enforcement Conference

Inspection Conducted: Onsite at Palisades Nuclear Plant
January 10 through February 11, 1994

Inspectors: S. Burgess
J. Guzman
J. Lennartz
R. Lerch

Approved By: 
G. C. Wright, Chief
Engineering Branch

3/24/94
Date

Meeting Summary

Enforcement Conference on March 11, 1994. (Report No. 50-255/94007)

Areas Discussed: A review of the five examples of the apparent violation identified during inspection 50-255/94007(DRS), their safety significance, and corrective actions taken or planned by the licensee. The inspection identified five examples where prompt corrective actions were not taken to previously identified concerns. One significant example identified a single failure vulnerability that could lead to the loss of all engineered safeguards system pumps and loss of the required safety injection function. Three examples related to system performance analysis and testing issues, and one example was relative to the seismicity of instrument tubing.

Details

1. Persons Present at Conference

D. W. Joos, Sr. Vice President, Nuclear
R. A. Fenech, Vice President Nuclear
D. W. Rogers, Plant Safety and Licensing Director
R. D. Orosz, Nuclear Engineering and Construction Manager
R. M. Rice, Director, Nuclear Performance Assessment Department (NPAD)
J. Kuemin, Licensing Administrator
S. Wawro, Operations Support Superintendent
R. Brzezinski, Engineering Team Leader/ NRAD
K. Osborne, System Engineering Manager
D. Vandewalle, Mechanical/Civil/Structural Engineering Manager
R. J. Gerling, Reactor and Safety Analysis Manager
T. Duffy, Safety Analysis Supervisor
P. J. Gire, Systems Engineering
G. H. Groff, Control Operator

U. S. Nuclear Regulatory Commission, Region III

J. B. Martin, Regional Administrator, RIII
G. E. Grant, Director, Division of Reactor Safety, RIII
G. C. Wright, Chief, Engineering Branch, RIII
L. F. Miller, Chief, Reactor Projects Branch 2, RIII
R. W. DeFayette, Director EICS, RIII
P. R. Pelke, Enforcement Specialist, RIII
A. H. Hsia, Project Manager, NRR
S. B. Burgess, Team Leader, RIII
B. A. Berson, Regional Counsel, RIII
R. M. Lerch, Reactor Inspector
J. A. Lennartz, Reactor Engineer, RIII
C. N. Orsini, Reactor Engineer, RIII
J. G. Guzman, Reactor Inspector, RIII

2. Enforcement Conference

An Enforcement Conference was held in the NRC Region III office on March 11, 1994. This conference was conducted as a result of the preliminary findings of the inspections conducted between January 10 and February 11, 1994, in which an apparent violation of NRC regulations and license conditions were identified. The violation identified five examples where prompt corrective actions were not taken to previously identified concerns. The inspection findings were documented in Inspection Report No. 50-255/94007(DRS), transmitted to the licensee by letter dated March 4, 1994.

The purposes of this conference were to (1) discuss the apparent violations, their causes, and the licensee's corrective actions; (2) determine if there were any escalating or mitigating circumstances; and

(3) obtain any information which would help determine the appropriate enforcement action.

The licensee's representatives described the Service and Component Cooling Water systems and discussed the five examples of inadequate corrective action. Included in the discussion were (1) the technical issues, (2) the process that led to the lack of corrective action, (3) remedial actions taken, (4) actions to prevent recurrence, and (5) the safety significance. A summary of the licensee's corrective actions is included in the attached handout that the licensee provided at the conference (Attachment 2). The licensee did not contest any of the apparent violations and was in agreement with the NRC's understanding of the violation.

At the conclusion of the meeting, the licensee was informed it would be notified in the near future of the final enforcement action. A copy of the licensee's and NRC's presentations are attached to this report.

Attachments:

1. NRC Presentation Handout
2. Licensee Presentation Handout

U.S. NRC REGION III

PALISADES

ENFORCEMENT CONFERENCE

March 11, 1994

10:00 A.M. (CST)

EA 94-041

REPORT NUMBER 50-255/94002

REGION III OFFICE

801 WARRENVILLE ROAD

LISLE, ILLINOIS

PALISADES ENFORCEMENT CONFERENCE

Agenda

INTRODUCTION AND OPENING REMARKS:

Geoffrey E. Grant, Director, Division of Reactor Safety

NRC OVERVIEW:

Geoffrey C. Wright, Chief, Engineering Branch

SUMMARY OF APPARENT VIOLATIONS:

Sonia D. Burgess, Team Leader, Division of Reactor Safety

LICENSEE PRESENTATION AND DISCUSSION:

Consumers Power Company

NRC FOLLOWUP QUESTIONS

CLOSING REMARKS:

John B. Martin, Region III Administrator

APPARENT VIOLATION

10 CFR Part 50, Appendix B, Criterion XVI states that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

CONTRARY TO THE ABOVE

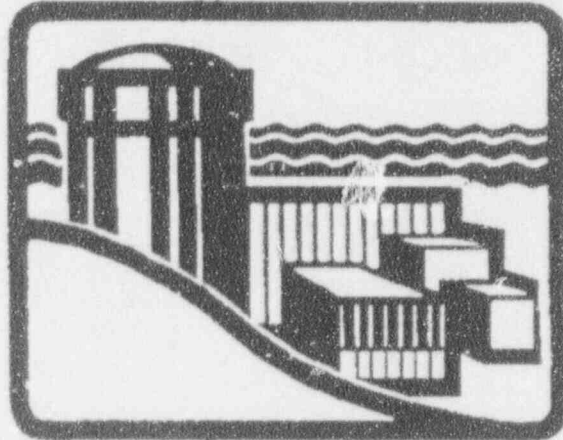
- a. Prompt corrective actions were not taken to address that backup cooling to the ESS pumps from the service water system (SWS) could not be accomplished during a LOOP/LOCA because non-safety instrument air was required for valve actuation. This was previously identified on May 25, 1989, in the Component Cooling Water (CCW) Safety System Design Confirmation (SSDC) report.
- b. Prompt corrective actions were not taken to incorporate the non-critical header isolation valve, CV-1359, into a leakage test program as previously identified on May 17, 1990, in the SWS SSDC report.
- c. Prompt corrective actions were not taken until January 27, 1994, to address the seismicity of bent instrument tubing and unistrut supports located in front of the CCW heat exchangers. The condition was identified on January 4, 1994.
3. Prompt corrective actions were not taken to couple the SW IST pump reference values and the SW flow balancing test as previously identified on May 4, 1990, in the SW SSDC.

The apparent violations discussed in this enforcement conference are subject to further review and may be subject to change prior to any resulting enforcement action.

- e. Inadequate corrective action was taken to address that SWS test T-216, "Service Water Flow Verification," Revision 4, balanced flow to the CCW heat exchangers at or very near their required flow rates and did not allow for pump degradation. This was identified in the SW SSDC on May 4, 1990.

The apparent violations discussed in this enforcement conference are subject to further review and may be subject to change prior to any resulting enforcement action.

PALISADES



NUCLEAR PLANT

PALISADES ENFORCEMENT CONFERENCE

MARCH 11, 1994



AGENDA

NRC INTRODUCTION

INTRODUCTION DW JOOS

SYSTEM DESCRIPTION ST WAWRO

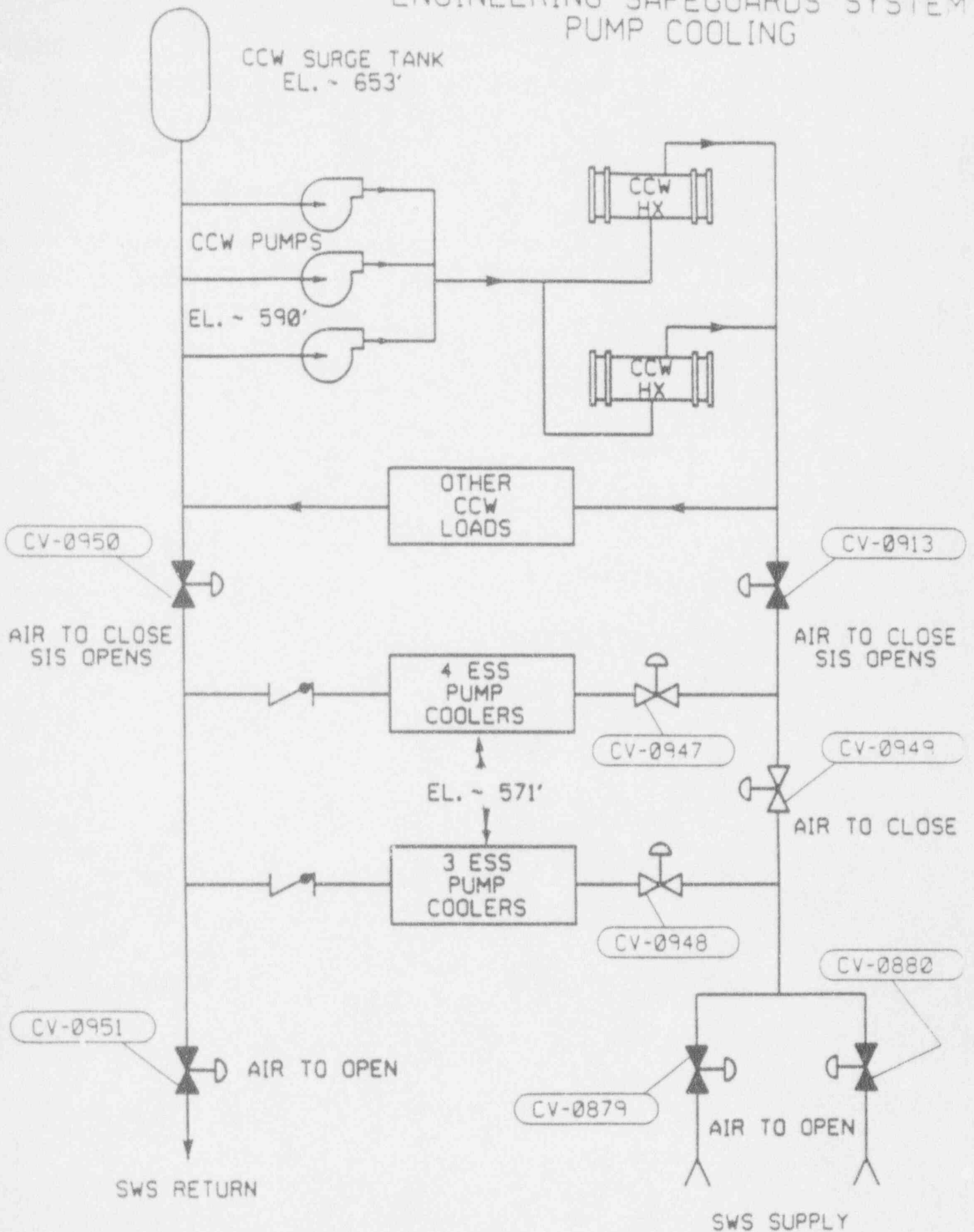
FIVE EXAMPLES RD OROSZ

EVENTS
CAUSES
CORRECTIVE ACTIONS
SAFETY SIGNIFICANCE

NPAD PERSPECTIVE RM RICE

PERFORMANCE IMPROVEMENT DWJOOS

PALISADES NUCLEAR PLANT
ENGINEERING SAFEGUARDS SYSTEM
PUMP COOLING

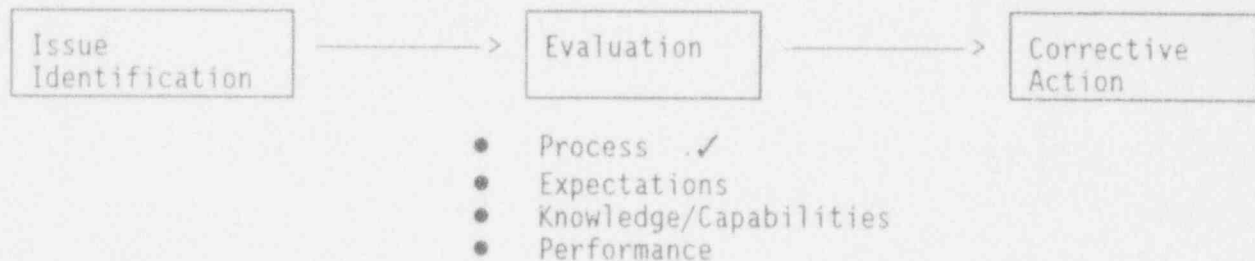


LOSS OF ALL ESS PUMPS

Technical Issues

- Single failure of CCW supply valve for ESS pumps cooling
- Original design basis - pumps did not require cooling water
- 1986 vendor information questioned original design basis
- 1989 safety system design confirmation - single failure identified

Process



- 1986 Inadequate investigation of pump cooling requirements with inadequate follow up
- 1989 Inadequate investigation of single failure vulnerabilities

Remedial Actions

1. Immediate action to open CCW valves.
2. Pump cooling requirements analysis (04/30/94).
3. Pump cooling modifications if required (95 refueling outage).

Actions to Prevent Recurrence

1. Reevaluate SSDC findings (S&L involvement for design knowledge). (08/01/94)

Safety Significance

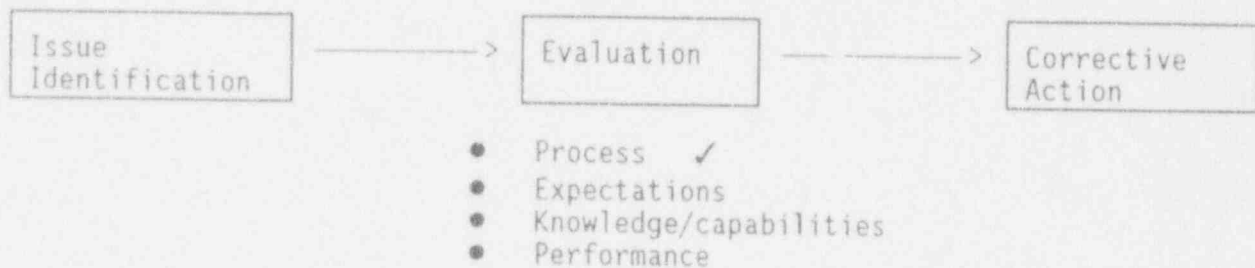
1. Valve fails to open position (fail-safe) - failure unlikely.
2. Preliminary conclusion - HPSI Pumps qualified for service.
3. Containment can be cooled with air coolers only.

SYSTEM PERFORMANCE ANALYSIS AND TESTING ISSUES

Technical Issues

- Pump IST program linkage to system performance verification
- System performance verification deficiencies
 - Heat exchanger fouling
 - Instrument uncertainties
 - Pump degradation
 - Boundary valve degradation
- CV-1359 leakage testing program

Process



- 1990 safety system design confirmation identified these issues
- Narrow focus on code compliance
- Accepted system performance verification weaknesses
- Testing capability weaknesses
- Management accepted inadequate response to issues

Remedial Actions

1. Service water system performance reverification. (05/08/94)

Actions to Prevent Recurrence

1. Coordinate pump IST program with system performance verifications. (all future testing)
2. Multi-disciplinary evaluation of analysis and testing interfaces and development of test methodologies. (12/15/94)
3. Reevaluate SSDC findings (S&L involvement for design knowledge). (08/01/94)

Safety Significance

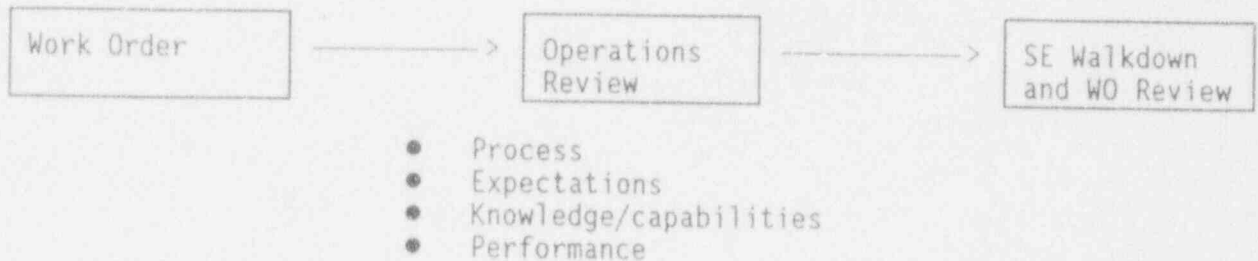
1. Preliminary analysis shows adequate SW flow below a 50°F lake temperature.
2. Engineering's judgement is that SW flows are adequate for anticipated lake temperatures although some tuning of SW system may be required.

INSTRUMENT TUBING SEISMIC ADEQUACY

Technical Issues

- Tubing supports are not in accordance with current span requirements
- Tube is bent; one support is bent, another very flexible
- Tubing meets interim operability criteria, but may not meet FSAR requirements for allowable stress

Process



- System engineering not adequately involved in work order process
- System engineering knowledge of potential operability issues could be improved

Remedial Actions

1. Engineering analysis of tubing/supports to determine FSAR compliance (07/01/94).
2. Evaluate impact of not meeting current design requirements on other instrument tubing configuration (09/01/94).

Action to Prevent Recurrence

1. Enhance work order review process by ensuring process and expectations include a timely review of all work orders by system engineer to assess operability (06/01/94).
2. Provide continuing training of system engineers on lessons learned regarding operability issues; examples are; instrument tubing span criteria and hanger integrity criteria (07/01/94).

Safety Significance

1. Tubing meets interim operability criteria.
2. Judgement of engineering is that tubing will be shown to meet FSAR criteria.