

APR 13 1992

Docket No. 50-298
License No. DPR-46

Nebraska Public Power District
ATTN: Guy R. Horn, Nuclear Power
Group Manager
P.O. Box 499
Columbus, Nebraska 68602-0499

Gentlemen:

This refers to the enforcement conference conducted at Region IV's request at the Cooper Nuclear Station, Brownville, Nebraska, on March 24, 1992. This meeting related to activities authorized by NRC License DPR-46 for Cooper Nuclear 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 the apparent violations identified in NRC Inspection Report 50-298/92-04 and your corrective actions. 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:
Nebraska Public Power District
ATTN: G. D. Watson, General Counsel
P.O. Box 499
Columbus, Nebraska 68602-0499

RIV:PE:DRP/C
EEC:mas;df
4/9/92

C:DRPAC
PHH:mas
4/10/92

D:DRP
ABBeach
4/10/92

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PDR ADDCK 05000298
Q PDR

IE45
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Nebraska Public Power District

-2-

Cooper Nuclear Station
ATTN: John M. Meacham, Division
Manager, Nuclear Operations
P.O. Box 98
Brownville, Nebraska 68321

Nebraska Department of Environmental
Control
ATTN: Randolph Wood, Director
P.O. Box 98922
Lincoln, Nebraska 68509-8922

Nemaha County Board of Commissioners
ATTN: Larry Bohlken, Chairman
Nemaha County Courthouse
1824 N Street
Auburn, Nebraska 68305

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

Kansas Radiation Control Program Director

bcc to DMB (IE45)

bcc distrib. by RIV:

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

Nebraska Public Power District

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MEETING SUMMARY

Licensee: Nebraska Public Power District
Facility: Cooper Nuclear Station
License No.: DPR-46
Docket No.: 50-298
Subject: Enforcement Conference (50-298/92-04)

On March 24, 1992, representatives of Nebraska Public Power District met with Region IV personnel at the Cooper Nuclear Station, Brownville, Nebraska, to discuss the apparent violations identified in NRC Inspection Report 50-298/92-04. The conference was held at the request of Region IV. The attendance list and licensee presentation are attached to this summary.

The licensee presented a summary of the causes for the apparent violations, the scope of their reviews for similar occurrences, and the status and scope of their corrective actions. 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 enforcement conference between NPPD and NRC on March 24, 1992, at the Cooper Nuclear Station:

NPPD

H. Parris, Vice President, Production
G. Horn, Nuclear Power Group Manager
J. Meacham, Division Manager, Nuclear Operations
R. Wilbur, Division Manager, Nuclear Engineering and Construction
V. Woistenholm, Division Manager, Quality Assurance
D. Whitman, Division Manager, Nuclear Support
G. Smith, Nuclear Licensing and Safety Manager

NRC

J. Montgomery, Deputy Regional Administrator
A. Beach, Director, Division of Reactor Projects (DRP)
D. Chamberlain, Deputy Director, Division of Reactor Safety
P. Harrell, Chief, Project Section C, DRP
J. Larkins, Project Director, Project Directorate IV-1, Office of Nuclear
Reactor Regulation (NRR)
R. Kopriva, Senior Resident Inspector, Cooper Nuclear Station
W. Walker, Resident Inspector, Cooper Nuclear Station
R. Bevan, Project Manager, NRR
E. Collins, Project Engineer, DRP
R. Wise, Region IV Enforcement Staff

*NEBRASKA PUBLIC POWER DISTRICT
NUCLEAR REGULATORY COMMISSION - REGION IV
ENFORCEMENT CONFERENCE*

250 VDC BATTERY OPERABILITY ISSUES

MARCH 24, 1992



AGENDA

- *Introduction* G. R. Horn
- *Technical Specification Chronology* D. A. Whitman
- *Key Issues Leading to Event* D. A. Whitman
- *Event Safety Significance* D. A. Whitman
- *Discussion of Apparent Violations* J. M. Meacham
- *Summary* G. R. Horn



TECHNICAL SPECIFICATION CHRONOLOGY

- Prior to
November, 1986* Cell voltages, specific gravities and temperatures were to be measured and logged. No limits for these parameters were given.
- November, 1986* License Amendment No. 104 revised the Battery Surveillance Requirements to specify limits for cell voltage, specific gravities, temperature and level as follows:
- The electrolyte level of each connected cell is between the minimum and maximum level indication marks.
 - For each connected cell, the voltage is 2.0V minimum and specific gravity is 1.190 minimum, corrected for 77 F and electrolyte level.
 - The electrolyte temperatures in a representative sample of cells, consisting of at least every sixth cell, are within $\pm 5^{\circ}$ F.



TECHNICAL SPECIFICATION CHRONOLOGY (Con'd)

Spring, 1989 250 volt batteries were replaced with lead calcium cells.

May, 1989 The new cell design resulted in revising the Tech Spec cell voltage limit to 2.15V minimum. In addition, an average specific gravity limit of 1.200 for all connected cells was added.



KEY ISSUES LEADING TO EVENT

Two Key issues Contributed to the Initial interpretation and Handling of the Discrepancy:

- Historical Practices for Assessing Battery Capability*
- CNS Technical Specifications*



KEY ISSUES LEADING TO EVENT (Con'd)

Historical Practices for Assessment Battery Capability

- *For 13 years plant Technical Specifications required that cell voltages, specific gravities and temperatures were to be measured and logged. No limits for these parameters were given in Technical Specifications. Lacking these specifications Battery Operability was determined through:*
 - *Procedural Guidance*
 - *Technical Expertise of the Battery System Engineer*
 - *Engineering Evaluation*



KEY ISSUES LEADING TO EVENT (Con'd)

CNS Technical Specifications

- Applicable LCO states: "the four unit 125V/250V batteries and their chargers shall be operable."*
- Applicable Surveillance Requirement States: "For each connected cell, the voltage is 2.15V minimum and specific gravity is 1.190 minimum, corrected for 77° F and electrolyte level...."*
- Bases State: "Although station batteries will deteriorate with time, utility experience indicates there is almost no possibility of precipitous failure. The type of surveillance described in this specification is that which as been demonstrated over the years to provide an indication of a cell becoming irregular or unserviceable long before it becomes a failure." (Emphasis Added)*



EVENT SAFETY SIGNIFICANCE

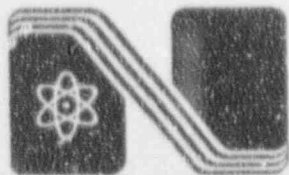
- *Both 250V batteries were capable of performing their intended function at all times. This was confirmed through:*
 - *Battery Operability Evaluated*
 - *Engineering Analyses*
 - *Battery Vendor Inspection*
 - *Field Testing of Several Removed Cells*



**ENFORCEMENT CONFERENCE
MARCH 24, 1992
250 VDC BATTERY LOW ICV**

DISCUSSION OF APPARENT VIOLATIONS:

1. INADEQUATE PROCEDURE FOR MAKING OPERABILITY DETERMINATIONS.
2. FAILURE TO OBTAIN SORC REVIEW OF OPERABILITY ANALYSIS.
3. OPERATION WITH INOPERABLE BATTERY.
4. NOT ASSESSING CONDITION IN A TIMELY MANNER.



Nebraska Public Power District

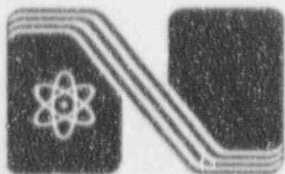
**ENFORCEMENT CONFERENCE
MARCH 24, 1992**

**DISCUSSION OF APPARENT
VIOLATION #1**

**INADEQUATE PROCEDURE FOR THE OPERATIONS STAFF TO
USE FOR MAKING OPERABILITY DETERMINATIONS.**

CAUSES

1. PROCEDURE RELIED TOO HEAVILY ON JUDGMENT.
2. PROCEDURES ALLOWED TECH SPEC ACCEPTANCE CRITERIA DISCREPANCIES TO BE EVALUATED.



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MARCH 24, 1992

DISCUSSION OF APPARENT
VIOLATION #1

ACTIONS TAKEN

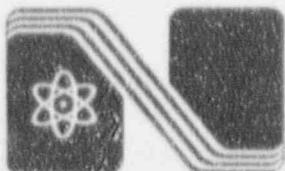
1. REVISED PROCEDURES.

- Procedure 0.26 now requires immediate inoperability declaration if Tech Spec acceptance criteria not met.
- Procedure 0.27 can not be used to evaluate discrepancies related to Tech Spec acceptance criteria.

2. PROCEDURE REVISIONS DISCUSSED WITH INVOLVED OPERATIONS PERSONNEL, ENGINEERS, AND MANAGEMENT.

3. REVIEWED SURVEILLANCE PROCEDURES.

- Assessed clarity regarding Tech Spec acceptance criteria.
- While adequate, found human factor weaknesses.



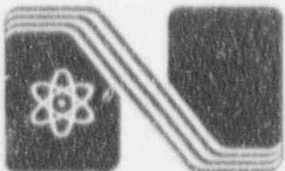
**ENFORCEMENT CONFERENCE
MARCH 24, 1992**

**DISCUSSION OF APPARENT
VIOLATION #1**

ACTIONS PLANNED

1. FURTHER REVISE OPERABILITY DETERMINATION PROCEDURE TO:
 - Clarify the separation of operability determinations from corrective actions.
 - Define preparation, review, and approval requirements.
 - Establish timeliness requirements commensurate with safety significance. (April 1992)

2. REVISE SURVEILLANCE PROCEDURES, AS REQUIRED, TO ENHANCE HUMAN FACTORS ASPECT OF DEPICTING TECH SPEC ACCEPTANCE CRITERIA. (December 1992)



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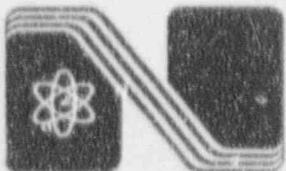
**ENFORCEMENT CONFERENCE
MARCH 24, 1992**

**DISCUSSION OF APPARENT
VIOLATION #2**

**FAILURE TO OBTAIN AN INDEPENDENT REVIEW OF AN
OPERABILITY ANALYSIS BY THE STATION OPERATIONS REVIEW
COMMITTEE.**

CAUSES

- 1. FAILURE TO FOLLOW PROCEDURES IN THE PREPARATION,
REVIEW, AND APPROVAL OF THE OPERABILITY ANALYSIS.**
- 2. FAILURE TO RECOGNIZE AN INFORMAL OPERABILITY
ANALYSIS AS ONE REQUIRING SORC REVIEW.**



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MARCH 24, 1992

DISCUSSION OF APPARENT
VIOLATION #2

ACTIONS TAKEN

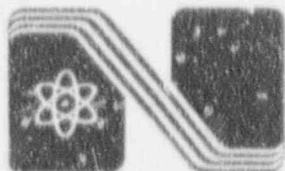
LETTER ISSUED TO MANAGERS AND SUPERVISORS
REITERATING EXISTING PROCEDURAL REQUIREMENTS FOR
OPERABILITY ANALYSES AND DISALLOWING INFORMAL
ANALYSES.

ACTIONS PLANNED

AS PREVIOUSLY DISCUSSED, PROCEDURES WILL BE REVISED:

- DEFINE PREPARATION, REVIEW AND APPROVAL
REQUIREMENTS
- DISALLOW INFORMAL OPERABILITY ANALYSES

(April 1992)



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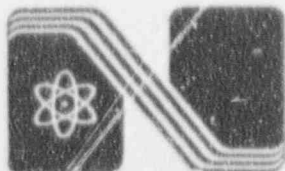
ENFORCEMENT CONFERENCE
MARCH 24, 1992

DISCUSSION OF APPARENT
VIOLATION #3

OPERATION OF THE FACILITY WITH AN INOPERABLE BATTERY
IN EXCESS OF THE TIME ALLOWED BY THE TECHNICAL
SPECIFICATIONS.

CAUSES

1. TECHNICAL SPECIFICATIONS WERE INTERPRETED TO
ALLOW BATTERY OPERABILITY DETERMINATIONS TO BE
MADE.
2. FAILURE TO FOLLOW STATION PROCEDURES - THE
DISCREPANCY WAS INFORMALLY EVALUATED.

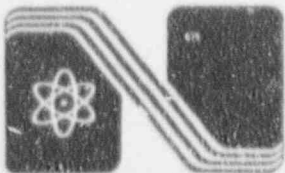


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MARCH 24, 1992
DISCUSSION OF APPARENT
VIOLATION #3

ACTIONS TAKEN

1. CORRECTED LOW ICV PROBLEM.
 - Replaced cells.
 - Implemented action plan.
2. VERIFIED CAPABILITY OF REMOVED CELLS.
 - Worst five cells from the "A" Battery tested in as found condition.
 - All cells met Service Test acceptance criteria.
3. CLARIFIED TECH SPEC REQUIREMENTS.
 - DMNO letter issued.
 - Submitted revised Tech Specs which identifies actions for degrading battery conditions.
4. REVISED 0.26 AND 0.27, AS PREVIOUSLY DISCUSSED, FOR IMMEDIATE DECLARATIONS OF OPERABILITY FOR TECH SPEC ACCEPTANCE CRITERIA.

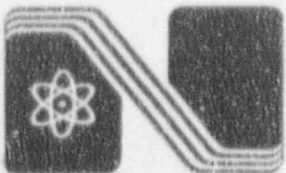


ENFORCEMENT CONFERENCE MARCH 24, 1992

DISCUSSION OF APPARENT VIOLATION #3

ACTIONS PLANNED

1. REPLACE OTHER CELLS EXHIBITING COPPER CONTAMINATION. (April Shutdown)
2. MAINTAIN INCREASED MONITORING (UNTIL OVERALL BATTERY CONDITION AND TRENDS CAN BE ADEQUATELY PREDICTED).
3. IMPLEMENT THE REVISED TECH SPECS. (When approved)
4. FURTHER REVISE OPERABILITY DETERMINATION PROCEDURE, AS PREVIOUSLY DISCUSSED.
 - Clarify preparation, review, and approval requirements.
 - Info..nal operability analyses disallowed.



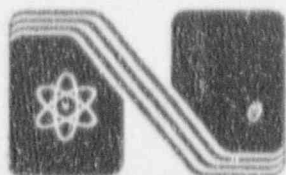
**ENFORCEMENT CONFERENCE
MARCH 24, 1992**

**DISCUSSION OF APPARENT
VIOLATION #4**

NOT ASSESSING A SIGNIFICANT CONDITION ADVERSE TO QUALITY WITHIN A PERIOD OF TIME COMMENSURATE WITH THE SAFETY SIGNIFICANCE OF THE IDENTIFIED DEFICIENCY.

CAUSES

1. OPERABILITY DETERMINATIONS WERE TOO CLOSELY LINKED TO CORRECTIVE ACTION ASSESSMENTS.
2. CORRECTIVE ACTION ROOT CAUSE ANALYSES NOT ALWAYS TIMELY.
3. IN-PROCESS FEEDBACK DURING ON-GOING EVALUATIONS NOT REQUIRED.



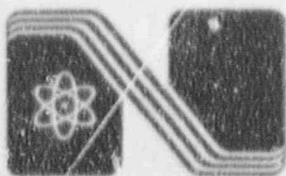
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MARCH 24, 1992**

**DISCUSSION OF APPARENT
VIOLATION #4**

ACTIONS TAKEN

1. PROCEDURES REVISED TO REQUIRE IMMEDIATE INOPERABILITY DECLARATION IF TECH SPEC ACCEPTANCE CRITERIA NOT MET.
2. DISCUSSED NEED FOR TIMELY ROOT CAUSES AND IN-PROCESS FEEDBACK WITH TECH STAFF AND ENGINEERING.



**ENFORCEMENT CONFERENCE
MARCH 24, 1992**

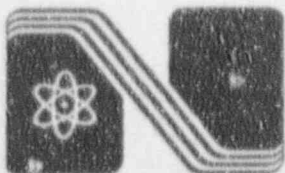
**DISCUSSION OF APPARENT
VIOLATION #4**

ACTIONS TAKEN (CONTINUED)

3. REVIEWED DOCUMENTATION FOR SIMILAR CONCERNS:

- Open NCRs.
- Selected Closed NCRs.
- Selected Completed Surveillance Tests.

ONE OTHER FAILURE TO DECLARE EQUIPMENT
INOPERABLE WAS NOTED.



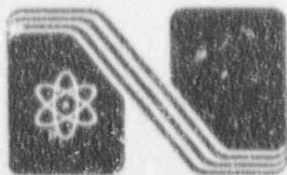
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ENFORCEMENT CONFERENCE
MARCH 24, 1992
DISCUSSION OF APPARENT
VIOLATION #4

ACTIONS TAKEN (CONTINUED)

CRACKED CELL JAR EVENT
SEPTEMBER 10, 1987

- Event documented in NCR 87-128.
- Cell jar was found cracked and leaking electrolyte.
- Cell was repaired the following day (9/11/87) with a SORC-approved Special Maintenance Procedure.
- Repair procedure required lowering level below crack (but above cell plates) for 24 hours to allow the epoxy repair to cure.
- Battery was assessed for operability with the low electrolyte level in one cell, and was considered operable during this time period.
- Per today's understanding of Tech Specs in this area, battery should have been declared inoperable.
- This event will be reported as required by 10CFR50.73.

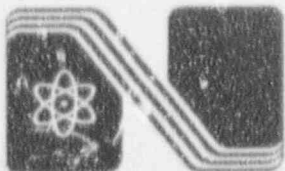


Nebraska Public Power District

ENFORCEMENT CONFERENCE
MARCH 24, 1992
DISCUSSION OF APPARENT
VIOLATION #4

ACTIONS PLANNED

1. AS PREVIOUSLY DISCUSSED, PROCEDURE WILL BE REVISED TO SEPARATE OPERABILITY DETERMINATIONS FROM FOLLOW-ON CORRECTIVE ACTIONS. (April 1992)
2. THE CORRECTIVE ACTION PROCEDURE WILL BE REVISED TO:
 - Clarify operability determination/corrective action separation.
 - Improve timeliness requirements for root cause analyses.
 - Require in-process feedback.
(April 1992)



ENFORCEMENT CONFERENCE
MARCH 24, 1992

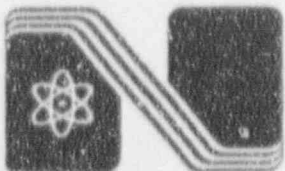
DISCUSSION OF APPARENT
VIOLATION #4

ACTIONS PLANNED (CONTINUED)

3. A PROGRAM FOR HANDLING LOWER THRESHOLD PROBLEMS IS CURRENTLY UNDER REVIEW. IT WILL ADDRESS:

- Near miss events
- Operational transients that do not result in ESF actuations
- Programmatic deficiencies

(Will be fully implemented by September 1992)



Nebraska Public Power District

SUMMARY

- 250V battery system "A" was capable of performing its Design Basis function.
- Immediate corrective actions performed include:
 - Replacement of battery cells.
 - Additional monitoring of 125/250V battery systems.
 - Procedure revisions to surveillance program and operability determination.
 - Review for Technical Specification LCO/Bases inconsistencies.
 - Submitted revised Technical Specifications on batteries.
 - Long term Corrective Action Requirements defined.
- Industry Technical Specifications Requirements.

