

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-295; 50-304
License Nos: DPR-39; DPR-48

Licensee: Commonwealth Edison Company

Facility: Zion Generating Station

Dates: November 12, 1996

Meeting Location: Region III Office
801 Warrenville Road
Lisle, IL 60532-4351

Type of Meeting: Predecisional Enforcement Conference

Inspection: Zion Station
July 22 - August 22, 1996

Inspectors: Z. Falevits, Team Leader, Region III
J. Guzman, Reactor Inspector, Region III
R. Winter, Reactor Inspector, Region III
D. Rich, Reactor Engineer, Region III
R. Stakenborghs, Contractor, Parameter, Inc.
J. Heller, Contractor, Parameter, Inc.

Approved By: Mark A. Ring, Chief
Lead Engineers Branch
Division of Reactor Safety

Meeting Summary

Predecisional Enforcement Conference on November 12, 1996

Areas Discussed: Apparent violations identified during the inspection were discussed, along with the corrective actions taken or planned by the licensee. The apparent violations involved: (1) an ineffective 10 CFR 50.59 Safety Evaluation process; (2) inadequate modification closeout and post-modification testing; (3) failure to follow procedures and inadequate procedures which contributed to lack of control of Technical Specification Interpretations; (4) inadequate identification and resolution of recurring equipment deficiencies; and (5) weak oversight of engineering activities.

Report Details

I. Persons Present at Conference

Commonwealth Edison Company (ComEd)

J. Mueller, Site Vice President, Zion
J. Hosmer, Vice President, Engineering
D. Sager, Vice President, Generation Support
H. Gavankar, Chief Engineer, Mechanical & Structural
D. Farrar, Regulatory Assurance Manager, Zion
F. Gogliotti, Design Engineering Supervisor, Zion
B. Giffin, Engineering Manager, Zion
K. Housing, SQV Director, Zion
M. Burns, Primary Group Lead- System Engineering, Zion
L. Peterson, Modification Administration Supervisor, Zion
K. Moser, Assistant Superintendent of Operations, Zion
W. Subalusky, Site Vice President, LaSalle
L. Waldinger, Nuclear Oversight Manager
E. Connel III, Design Superintendent, Dresden
J. Hutchison, Site Engineering Manager
J. Meister, Site Engineering Manager, Braidwood
D. Wozniak, Site Engineering Manager, Byron
I. Johnson, Licensing Director
L. Holden, Nuclear Licensing Administrator, Zion
R. Ward, Director of Safety Review
M. Wiesneth, Licensing Engineer, Zion
J. Ashley, Mechanical Lead, Design Engineering, Zion
D. Galanis, Electrical Lead, Design Engineering, Zion
A. Amoroso, Electrical Lead, System Engineering, Zion
F. Spangenberg, Regulatory Assurance Manager, Dresden
P. Gazda, Maintenance Engineering Supervisor, Zion
R. Niederer, Nuclear Lead, System Engineering
M. Zar, Project Manager, Sargent & Lundy
R. Lincoln, Lead Electrical Engineer, Maintenance Engineering, Zion

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A. B. Beach, Regional Administrator, RIII
R. A. Capra, Director, Projects Division III, NRR
G. E. Grant, Director, Division of Reactor Safety (DRS), RIII
B. L. Burgess, Enforcement Officer, RIII
M. A. Ring, Chief, Lead Engineers Branch, RIII
M. L. Dapas, Chief, Reactor Projects Branch 4, RIII
Z. Falevits, Reactor Inspector, RIII
J. G. Guzman, Reactor Inspector, RIII

C. Y. Shiraki, Project Manager, Zion, NRR
B. A. Berson, Regional Counsel, RIII
M. A. Satorius, Deputy Director, Office of Enforcement
A. Vogel, Senior Resident Inspector, Fermi, RIII
D. R. Calhoun, Resident Inspector, Zion Station, RIII
E. W. Cobey, Resident Inspector, Zion Station, RIII
D. W. Rich, Resident Inspector, Braidwood Station, RIII
R. A. Burrows, Reactor Inspector, RIII
R. A. Winter, Reactor Inspector, RIII

Other

D. Dow, Independent Self-Assessment Team Member, Barrington Consulting
J. Yesinowski, Resident Engineer, Zion Station, IDNS

II. Predecisional Enforcement Conference

A Predecisional Enforcement Conference was held in the NRC Region III Office on November 12, 1996. This conference was conducted as a result of the findings of an inspection conducted from July 22 through August, 22, 1996, in which apparent violations of NRC regulations were identified. Inspection findings were documented in Inspection Report No. 50-295/96011(DRS); 50-304/96011(DRS) transmitted to the licensee by letter dated October 22, 1996.

The purpose of this conference was to discuss the violations, root causes, contributing factors, and the licensee's corrective actions. Also discussed were circumstances that led to the apparent breakdown in the engineering processes depicted in the apparent violations.

During the Predecisional Enforcement Conference, the licensee acknowledged the violations. The licensee's presentation included a synopsis of the broader engineering issues identified in the inspection as well as the specific enforcement issues. The licensee also presented a synopsis of the causes, safety significance, and corrective actions taken for each potential violation. A copy of the licensee's handout is attached to this report.

Attachment: As stated

ZION ENFORCEMENT CONFERENCE

NOVEMBER 12, 1996

AGENDA

INTRODUCTION

John Mueller

BROAD ISSUES

- 10 C.F.R. § 50.59
- CONFIGURATION MANAGEMENT/DESIGN CONTROL
- OPERABILITY ASSESSMENT PROCESS
- PROCEDURE ADEQUACY AND ADHERENCE
- CORRECTIVE ACTION PROGRAM
- SQV

Bryant Giffin
Frank Gogliotti
Larry Peterson
Mike Burns
Mike Burns
Bryant Giffin
Ken Hansing

SPECIFIC ENFORCEMENT ISSUES

Bryant Giffin

1. 10 C.F.R. § 50.59
2. CRITERION V - PROCEDURES
3. CRITERION XI - TESTING (PROGRAM)
4. CRITERION XIV - TESTING (PROCESS)/
CONFIGURATION CONTROL
7. CRITERION XVI - CORRECTIVE ACTIONS

AGGREGATE ASSESSMENT

Bryant Giffin

REGULATORY ASSESSMENT

Denny Farrar

CLOSING REMARKS

John Mueller

BROAD ISSUES

10 C.F.R. § 50.59 PROGRAMS/PROCESSES

ISSUE(S)

- ▶ Quality deficiencies
- ▶ Incomplete determination of UFSAR impact
- ▶ Procedural adherence
- ▶ Use of screen instead of safety evaluation
- ▶ Failure to identify technical specification changes
- ▶ Untimely off-site reviews

CAUSE(S)

- ▶ Over focus on task management
 - Inadequate management oversight/involvement
 - Failure to emphasize significance/impact of 50.59s
 - Inadequate feedback and performance measures
 - Unsuccessful implementation of previous corrective actions

BROAD ACTIONS TAKEN/PLANNED

- ▶ Reviewing 50.59s for quality/content
- ▶ Management is reordering priorities as necessary
- ▶ Management clarified expectations to workforce
- ▶ Added additional "checks and balances"
 - Additional in-line reviews
 - Department Head approvals
 - Safety Evaluation Review Committee
 - Feedback mechanisms
- ▶ Revised 50.59 Procedure
 - Independent review team input
 - Standardize NOD procedure
 - Establish appropriate 50.59 performance measures and indicators
- ▶ Have reassessed training requirements and will train in December 1996
- ▶ Feedback mechanism established to confirm satisfactory program implementation

CONFIGURATION MANAGEMENT/DESIGN CONTROL

ISSUE(S)

The process for controlling modifications and ensuring adequate post-modification testing package closure was ineffective.

CAUSE(S)

- ▶ Design/Configuration Control/Design Basis processes not viewed as being an essential element of safe plant operations
 - Failure to evaluate interim configuration of modifications which required changes during installation/testing phases
 - Failure to adequately document deviations from original design/testing intent
 - Inadequate oversight of design changes which required deviation from original installation/testing intent
 - Failure to manage engineering turnover of design change assignments

BROAD ACTIONS TAKEN/PLANNED

- ▶ Reviewed 50.59s for design changes that had been issued but had not been declared operable.
 - No USQs identified
- ▶ Reviewed design changes that had completed installation but had not been closed out to establish action plan for closure
- ▶ Out-of-service process for design changes modified
- ▶ Modification close-out area established to enhance modification package control

OPERABILITY ASSESSMENTS

ISSUE(S)

Quality and use of operability assessments were inadequate

CAUSE(S)

- ▶ Personnel preparing operability assessments are task oriented and do not appreciate the significance of an operability assessment
- ▶ Inadequate management oversight of operability assessment process
 - Failure to ensure that assessments are prepared by appropriate personnel
 - Failure to ensure quality work
 - Inadequate oversight of engineering judgements

BROAD ACTIONS TAKEN/PLANNED

- ▶ Clarified management expectations
- ▶ Performing consistency review of operability assessments
- ▶ Reviewed open operability assessments
- ▶ Ongoing monthly review of operability assessment corrective action status
- ▶ Established Engineering Department Head approval/Engineering Manager review

PROCEDURE ADHERENCE

ISSUE(S)

Recurring problems in administrative procedural adherence.

CAUSE(S)

- ▶ Inadequate management focus
- ▶ Failure to hold workforce accountable regarding adherence to administrative procedures/ processes

BROAD ACTIONS TAKEN/PLANNED

- ▶ During training, clarified management expectations regarding procedure adherence
- ▶ Conducted stand downs/work stoppage
- ▶ Developing/implementing management follow-up and expectation feedback mechanisms
- ▶ Initiated dual independent reviews of System Engineering tests performed during Z2R14 (subsequent to the work stoppage)

CORRECTIVE ACTIONS

ISSUE(S)

Corrective action efforts did not adequately identify causes of problems. Therefore, corrective actions were too narrowly focused. In addition, effectiveness of corrective actions was not verified.

APPARENT CAUSES

- ▶ Poor corrective action culture
- ▶ Inadequate questioning attitude
- ▶ Over focus on task management
- ▶ Low priority for program implementation
- ▶ Inadequate rigor regarding program implementation/verification

BROAD ACTIONS TAKEN/PLANNED

- ▶ Improved questioning attitude/corrective action culture
 - Increased management involvement in corrective action process implementation
 - Prompt assessment of component status is being addressed during daily event screening committee meetings
 - Department Heads are ensuring corrective actions are effective

SITE QUALITY VERIFICATION (SQV)

ISSUES

- ▶ NRC-stated deficiencies should have been identified and pursued by SQV prior to NRC inspection.

CAUSE(S)

- ▶ Reactive Philosophy
 - Narrow view of performance issues and significance
 - Failure to integrate off-site review issues into SQV assessments and actions
 - Inadequate coverage of Engineering programs
- ▶ Inadequate follow-through regarding corrective actions when issues were identified

BROAD ACTIONS TAKEN/PLANNED

- ▶ Modified audits and surveillances will include broader assessments of performance to properly characterize significance
- ▶ Increased SQV coverage in Engineering programs (and other areas as necessary)
- ▶ Clarifying and implementing expectations for corrective actions
- ▶ Adding resources and expanding skills

SPECIFIC ENFORCEMENT ISSUES

10 C.F.R. § 50.59

VIOLATION 1a

AUXILIARY FEEDWATER PUMP MODIFICATION

RESTATEMENT OF VIOLATION EXAMPLE

A modification changed the AFW pump steam supply steam traps. The modification was in service even though testing was incomplete. Therefore, the modification was in a mode which was not adequately analyzed (continuous bypass of orifices). No design change or 50.59 safety evaluation was performed to address the new operating mode.

ADDITIONAL INFORMATION

- ▶ A 50.59 evaluation and a modification addendum letter for the change was located subsequent to the NRC inspection
- 50.59 was inadequate

CAUSE(S)

- ▶ Inadequate rigor during 50.59 preparation
- ▶ Inadequate management oversight

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimum potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Close modification before end of current outage
- ▶ Will reperform 50.59
- ▶ Complete broad corrective actions regarding 50.59

VIOLATION 1b

TEMPORARY HEAT TRACING AND INSULATION FOR SI RECIRCULATION PIPING

RESTATEMENT OF VIOLATION EXAMPLE

Temporary Alteration 96-013 (March 18, 1996) was inadequate regarding modification detail and extent of equipment description. Zion failure to perform a 50.59 and document the results for a temporary modification that appeared necessary to prevent freezing was different from the UFSAR, could potential impact another system, and could introduce new failure modes.

ADDITIONAL INFORMATION

- ▶ A 50.59 screen was performed; however, it incorrectly concluded that a full 50.59 safety evaluation was not required

CAUSE(S)

- ▶ Inadequate rigor during 50.59 preparation
- ▶ Inadequate management oversight

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Reperforming 50.59 evaluation
 - No USQ
- ▶ Department Head approval of 50.59 screens
- ▶ Complete broad corrective actions regarding 50.59

VIOLATION 1c

SCAFFOLDING AROUND SI ACCUMULATORS

RESTATEMENT OF VIOLATION EXAMPLE

SE 50.59/0166/95, November 16, 1996, (should have stated 1995) was performed to allow scaffolding around the SI accumulators to remain in place inside containment during operation. Zion placed the units in operation during a four month period that an off-site review was being performed, with an incorrect SE to support installation, and little technical basis to support the USQ determination. See Violation 2c.

CAUSE(S)

- ▶ Inadequate rigor during 50.59 preparation
- ▶ Inadequate management oversight

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Remove scaffolding as soon as practicable
- ▶ Will reperform 50.59
- ▶ Performed operability assessment
- ▶ Complete broad corrective actions regarding 50.59

VIOLATION 1d

CONTAINMENT PENETRATION SEAL

RESTATEMENT OF VIOLATION EXAMPLE

Modification E22-1-95-218, "MOVs SI-8803A/B Bypass Line Addition" and the associated 50.59 SE credited a containment isolation valve seal water system function for the Volume Control System that was not credited in the UFSAR. Zion identified two additional instances where a plant system was not credited in the UFSAR but had been assumed to be a seal system in the containment isolation testing program. The safety evaluation was inadequate in that it failed to identify that UFSAR Table 6.2.4 does not list a seal system for containment penetration P-4 and thus the subject modification was a change to the facility as described in the UFSAR.

CAUSE

- ▶ Inadequate rigor during 50.59 preparation
- ▶ Inadequate management oversight

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequence
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Will revise SE to identify that the UFSAR must be changed
- ▶ Will update the UFSAR
- ▶ Complete broad corrective actions regarding 50.59
- ▶ As a result of Zion's review of this system not being credited in the UFSAR, additional similar examples have been identified — appropriate UFSAR updates will be made

SPECIFIC ENFORCEMENT ISSUES
APPENDIX B, CRITERION V, "PROCEDURES"

VIOLATION 2a

SR MODIFICATION CLOSEOUTS

RESTATEMENT OF VIOLATION EXAMPLE

Zion failed to ensure that SR modification closeout requirements were successfully accomplished prior to declaring the modified SSCs as operable and placing them in use in accordance with Modification, Installation and Testing Procedure ZAP 510-02, "Plant Modification Program," Sections G.6.d, "Quality Control," G.6.e, "System Engineer," G.7.c, "Modification Coordinator," G.7.d, "System Engineer Supervisor," and Appendix B, Section 3, "Mod Test Results Reviewed". See Violation Examples 3a and 4.

CAUSE(S)

- ▶ Inadequate management of turnover process
 - Failure to evaluate interim configuration of modification which required changes during installation/testing phases
 - Rationalization that procedural process completion was not a high priority if the component was capable of performing its intended safety function
- ▶ Inadequate management/oversight of backlog

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ No potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Nine safety-related design changes subsequently closed documenting completion of modification testing requirements
 - Testing documentation found for seven safety related changes — changes had to be re-reviewed, were deemed acceptable, and signed off
 - For one test — documentation had to be reviewed, test requirement was deleted, and document was signed off
 - One design change required completion of previously scheduled testing
- ▶ Future training to reeducate Engineering personnel on modification process
- ▶ Established design change closeout schedule

VIOLATION 2b

PIF PREPARATION

RESTATEMENT OF VIOLATION EXAMPLE

Zion Procedure ZAP 700-08, "Problem Identification Process," Rev. 1, Appendix A, Item 16, required the generation of PIFs for events or conditions identified by an assessment group. Although the UFSAR conformance review was completed by the end of June 1996, only one discrepancy of approximately 115 existing had a PIF generated as of the week of July 22, 1996, when the NRC team arrived on site.

CAUSE(S)

- ▶ Perception by FSAR Conformance Review Team Leader that PIF generation after self-assessment completion was acceptable practice

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ PIFs initiated and screened for significance in accordance with ZAP 700-08
- ▶ Letter from Site Vice-President to all employees emphasizing management expectation for initiation of PIFs

VIOLATION 2c

SCAFFOLDING REMOVAL

RESTATEMENT OF VIOLATION EXAMPLE

Procedure ZAP 920 -01, "Use Of Scaffolding and Ladders," requires that scaffolding be removed following work completion. However, scaffolds were left inside the containment when both units were operating — essentially being used as a permanent change. In addition, contrary to ZAP 920-01, the scaffolding had not been inspected every month since installation and the scaffolding was in direct contact with safety related equipment. See Violation 1c.

CAUSE(S)

- ▶ Tendency to default to easy way to accomplish task without adequate consideration of all administrative requirements
- ▶ Failure by management to hold personnel accountable for adherence to procedure
- ▶ Inadequate knowledge of administrative requirements

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Walkdown requirements reemphasized to involved personnel
- ▶ Performed walkdown of plant scaffolding
 - 30 day walkdowns performed since issue identified
 - Surveillance tracking database modified to prompt 30 day walkdowns
- ▶ Will remove scaffolding as soon as practicable
- ▶ Management initiatives reinforcing requirement to follow all procedures

VIOLATION 2d

MATERIAL MONITORING INFORMATION UPDATES

RESTATEMENT OF VIOLATION EXAMPLE

Procedure ZAP-500-13A, "Performance Monitoring, Evaluating and Goal Setting Within the Maintenance Rule Program" requires a monthly update of trending window data. In June 1996, at least eight system engineers failed to update the material condition monitoring information used for trending of component and system performance on thirteen systems.

CAUSE(S)

- ▶ Failure to appreciate importance of following administrative procedures
 - Inappropriate priority regarding Maintenance Rule information updates
- ▶ Failure by management to hold personnel accountable for administrative procedure noncompliance

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Clarified management expectations regarding priority of Maintenance Rule activities
- ▶ Assigned Engineering Manager's administrative assistant to focus on Maintenance Rule Action Plans
- ▶ Management initiatives reinforcing requirement to follow procedures
- ▶ Engineering Manager monitoring update status

VIOLATION 2e

DEGRADED VOLTAGE RELAY DIAGRAMS

RESTATEMENT OF VIOLATION EXAMPLE

ZAP 510-02, "Plant Modification Program," requires that all affected controlled design documents be listed in the design package to ensure appropriate revisions. During the review of degraded voltage relay set point changes, the NRC identified that six safety related Key Diagrams (22E-1-4000H, 22E-1-4000J, 22E-2-4000H, 22E-2-4000J, 22E-1-4000C and 22E-2-4000C) had not been revised to show the addition of the safety related degraded voltage relays.

CAUSE(S)

- ▶ Inadequate attention to detail
- ▶ Inadequate management oversight

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Management expectations for attention to detail emphasized
- ▶ DCR issued for subject key diagrams

VIOLATION 2f

EMERGENCY PROCEDURE ES 1.3, "TRANSFER TO COLD LEG RECIRCULATION"

RESTATEMENT OF VIOLATION EXAMPLE

The NRC identified that Emergency Procedure ES 1.3, "Transfer to Cold Leg Recirculation," Rev. 18 did not include guidance and instructions for the volume control system which was used as a penetration seal water system. This could have resulted in system operation being terminated and loss of the penetration seal.

CAUSE(S)

- ▶ Seal system function not addressed in the Westinghouse Emergency Response Guidelines
- Failure to recognize this when preparing Zion ERGs

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Obtained input from other ComEd PWRs on post-accident control of ECCS systems as a seal system
- ▶ Ongoing review by Licensing of basis for acceptance of current methodology

VIOLATION 2g

TECHNICAL SPECIFICATION INTERPRETATIONS

RESTATEMENT OF VIOLATION EXAMPLE

Issues documented in Sections 1(d), 2(a), 3(a), (b) and (c) modified the Technical Specification requirement or intent and therefore, procedure ZAP 130-02, "Technical Specification Interpretations" was not followed.

CAUSE(S)

- ▶ Inadequate procedural guidance (pre 1995)
- ▶ Inadequate onsite reviews (pre 1995)
- ▶ Inadequate management oversight of TSI process

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ No potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Generated procedural guidance (1995)
- ▶ Performed line by line review of TSIs
- ▶ Dispositioned TSIs with identified deficiencies
 - License amendments submitted
 - Deletions/revisions of deficient TSIs
- ▶ Performed 50.59s on remaining TSIs
- ▶ Trained licensed operators regarding revised/deleted TSIs
- ▶ Modified administrative tracking controls on TSIs
- ▶ Enhanced procedure governing TSIs
- ▶ Reinforced expectations for procedure compliance
- ▶ Incorporated existing TSIs into TSIP submittal

SPECIFIC ENFORCEMENT ISSUES
CRITERION XI, TESTING

VIOLATION 3a

PLANT OPERATION WITH INCOMPLETELY TESTED PLANT MODIFICATIONS

RESTATEMENT OF VIOLATION EXAMPLE

Operation of the plant with installed safety related modifications that have not been completely tested to demonstrate that modified SSCs will perform satisfactorily on demand. See Violation Examples 2a and 4.

CAUSE(S)

- ▶ Inadequate management of turnover process
 - Failure to evaluate interim configuration of modification which required changes during installation/testing phases
 - Rationalization that procedural process completion was not a high priority if the component was capable of performing its intended safety function
- ▶ Inadequate management/oversight of backlog

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ No potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Confirmed that management control of the modification installation process has improved
- ▶ Nine safety-related design changes subsequently closed documenting completion of modification testing requirements
 - Testing documentation found for seven safety related changes — changes had to be re-reviewed, were deemed acceptable, and signed off
 - For one test — documentation had to be reviewed, test requirement was deleted, and document was signed off
 - One design change required completion of previously scheduled testing
- ▶ Future training to reeducate Engineering personnel on modification process
- ▶ Established design change closure schedule

VIOLATION 3b

CHARGING PUMP DEGRADATION

RESTATEMENT OF VIOLATION EXAMPLE

Inadequate operability assessment on the 1B Charging Pump degradation and inadequate full flow test.

CAUSE(S)

- ▶ Failure to recognize the need to evaluate pump test results with respect to all accident scenarios
- ▶ Inadequate test acceptance criteria (full flow test)

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ No potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Re-performed operability assessment for 1B Charging Pump and confirmed operability
- ▶ Full flow test procedure for Charging and Safety Injection Pumps has been revised to require evaluation of pump performance data
- ▶ Incorporated testing into Z1R15 to confirm 1B Charging Pump curve

SPECIFIC ENFORCEMENT ISSUES
CRITERION XIV, "TESTING TRACKING"

VIOLATION 4

TESTING MARKING/TRACKING SYSTEMS

RESTATEMENT OF VIOLATION EXAMPLE

Failure to indicate by use of suitable marking or tracking systems the operability status of safety related SSCs modified by plant modifications that had been installed as early as 1986, placed in use, but not declared operable or signed or completed. This issue is similar to Violation Examples 2a and 3a.

CAUSE(S)

- ▶ Inadequate management of turnover process
 - Failure to evaluate interim configuration of modification which required changes during installation/testing phases
 - Rationalization that procedural process completion was not a high priority if the component was capable of performing its intended safety function
- ▶ Inadequate management/oversight of backlog

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ No potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Out-of-service process for design changes modified
- ▶ Confirmed that the management control of the modification process has improved
- ▶ Nine safety-related design changes subsequently closed documenting completion of modification testing requirements
 - Testing documentation found for seven safety related changes — changes had to be re-reviewed, were deemed acceptable, and signed off
 - For one test — documentation had to be reviewed, test requirement was deleted, and document was signed off
 - One design change required completion of previously scheduled testing
- ▶ Modification close-out area established
- ▶ Training to reeducate Engineering personnel on modification process
- ▶ Established design change closure schedule

SPECIFIC ENFORCEMENT ISSUES
CRITERION XVI, "CORRECTIVE ACTIONS"

VIOLATION 7a

IDENTIFICATION OF OUT-OF-TOLERANCE ROOT CAUSE

RESTATEMENT OF VIOLATION EXAMPLE

Failure to identify the root cause of repetitive out-of-tolerance conditions on the Containment Spray System sodium hydroxide Spray Additive Tank level indicators (PIFs 295-201-95-CAT4-1227, 295-201-96-CAT4-0010, 295-201-96-CAT4-0011, 295-201-96-CAT4-0916, and 295-201-96-CAT4-1044).

CAUSE(S)

- ▶ Possibility of damaging obsolete components
- ▶ Reliance on compensatory measures
 - Zion aware of situation
 - Plan to replace indicators already in development
 - Had increased calibration periodicity
 - Maintaining higher tank level to compensate

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Increased calibration frequency based on out of calibration results
- ▶ Identify other components in similar circumstance
- ▶ Will replace level indicators

VIOLATION 7b

4kV BREAKER NO 1412 FAILURES

RESTATEMENT OF VIOLATION EXAMPLE

Breaker No. 1412 failed on numerous occasions and a root cause of nonconforming conditions and appropriate corrective actions were not determined to preclude repetition.

CAUSE(S)

- ▶ Lack of a questioning attitude by station personnel
- ▶ Inadequate analysis of related work requests/PIFs
- ▶ Inadequate priority regarding added value of equipment trending

SAFETY SIGNIFICANCE

- ▶ No actual significance
- ▶ Minimal potential consequences
- ▶ Regulatory significance

CORRECTIVE ACTIONS

- ▶ Determined root cause(s) of failures and repaired breaker
- ▶ Improve questioning attitude/corrective action culture
- ▶ Increased management involvement in corrective action process
- ▶ Prompt assessment of component status
- ▶ Ensure corrective actions are effective

SUMMARY
BROAD ISSUES/BROAD ROOT CAUSE CATEGORIES/
ASSOCIATED CORRECTIVE ACTIONS

WEAK MANAGEMENT OVERSIGHT

- ▶ Clarification of management expectations provided to workforce (50.59, Configuration Management/Design Control, Procedure Adherence, Corrective Actions, OAs)
- ▶ Additional checks and balances (50.59)
- ▶ Additional in-line reviews (50.59)
- ▶ Safety Evaluation Review Committee (50.59)
- ▶ Department Head approvals (50.59)
- ▶ Consistency reviews of operability assessments (OAs)
- ▶ Department Head approval/Engineering Manager review (OAs)
- ▶ Site VP letter to all employees emphasizing management expectation for initiation of PIFs (Procedure Adherence)
- ▶ Management initiatives reinforcing requirement to follow all procedures (Procedure Adherence)
- ▶ Clarified management expectations regarding priority of Maintenance Rule activities (Procedure Adherence)
- ▶ Engineering Manager monitoring Maintenance Rule information update status (Procedure Adherence)
- ▶ Reemphasis of management expectations for attention to detail (Procedure Adherence)

SELF ASSESSMENTS

- ▶ Developing/implementing management follow-up and expectation feedback mechanisms (Procedure Adherence)
- ▶ Initiated dual independent reviews of tests performed during Z2R14 (subsequent to the work stoppage) (Procedure Adherence)
- ▶ Modified audits and surveillances will include broader assessments of performance to properly characterize significance (SQV)
- ▶ Increased SQV coverage in Engineering Programs (and other areas as necessary) (SQV)

SUMMARY
BROAD ISSUES/BROAD ROOT CAUSE CATEGORIES/
ASSOCIATED CORRECTIVE ACTIONS

LACK OF EFFECTIVE PRIORITY SYSTEM

- ▶ Management reordering of priorities (50.59)
- ▶ Clarification of management expectations provided to workforce (50.59, Configuration Management/Design Control, Procedure Adherence, Corrective Actions, OAs)
- ▶ Clarified management expectations regarding priority of Maintenance Rule activities (Procedure Adherence)

LACK OF ACCOUNTABILITY

- ▶ Clarification of management expectations provided to workforce (50.59, Configuration Management/Design Control, Procedure Adherence, OAs)
- ▶ Work stoppage (Procedure Adherence)
- ▶ Site VP letter to all employees emphasizing management expectations for initiation of PIFs (Procedure Adherence)
- ▶ Management initiatives reinforcing requirement to follow all procedures (Procedure Adherence)
- ▶ Clarified management expectations regarding priority of Maintenance Rule activities (Procedure Adherence)
- ▶ Engineering Manager monitoring Maintenance Rule information update status (Procedure Adherence)
- ▶ Reemphasis of management expectations for attention to detail (Procedure Adherence)

SUMMARY
BROAD ISSUES/BROAD ROOT CAUSE CATEGORIES/
ASSOCIATED CORRECTIVE ACTIONS

KNOWLEDGE DEFICIENCY

- ▶ Training reassessment/modification (50.59)
- ▶ Prompt assessment of component status (Corrective Actions)
- ▶ Expanding skills (SQV)
- ▶ Future training to reeducate Engineering personnel on modification process (Procedure Adherence)
- ▶ Management initiatives reinforcing requirement to follow all procedures (Procedure Adherence)
- ▶ Trained licensed operators regarding revised/deleted TSIs (Procedure Adherence)

INEFFECTIVE ROOT CAUSES/CORRECTIVE ACTION PROGRAM

- ▶ Site VP letter to all employees emphasizing management expectations for initiation of PIFs (Procedure Adherence)
- ▶ Increased management involvement in Corrective Action process implementation (Corrective Actions)
- ▶ Prompt assessment of component status (Corrective Actions)
- ▶ Increased management involvement in Corrective Action process implementation (Corrective Actions)

REGULATORY ASSESSMENT

10 C.F.R. § 50.59

- ▶ No USQs resulted from additional reviews
 - No instances of exceeding FSAR analysis
- ▶ No impact on operability because of 50.59 deficiencies
- ▶ One 50.59 prepared for a procedure change led to a technical specification violation
- ▶ Several 50.59s should have led to conservative/clarifying Technical Specification amendments

Operability Assessment Process

- ▶ Reviewed open operability assessments — conclusions still valid
- ▶ One closed operability assessment being validated by vendor test

Configuration Control/Testing Programs

- ▶ 7 safety related and six non safety related modifications declared operable after locating and re-reviewing test requirements
- ▶ One safety related modification declared operable after redefining test requirements
- ▶ One safety related modification and one non safety related modification declared operable after further testing
- ▶ Twelve non safety related modifications confirmed to be in an acceptable interim configuration

Procedure Adequacy And Adherence

- ▶ TSIs reviewed line-by-line
 - Revisions/deletions/amendments required
 - No issues warranting reporting (50.72, 50.73)

Enforcement Policy

- ▶ Issues have collective regulatory significance
- ▶ No individual immediate safety significance
- ▶ Minimal or no individual potential consequences
- ▶ Many issues identified as part of Zion initiatives
 - Acknowledge that Zion response to findings was slow
- ▶ Some violation examples appear to be duplicative
 - Same issue cited different ways

CLOSING REMARKS