

CATEGORY 1

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AUTH.NAME: ARCHI, M.L. AUTHOR AFFILIATION: Wisconsin Public Service Corp.
RECIP.NAME: RECIPIENT AFFILIATION: Document Control Branch (Document Control Desk)

SUBJECT: Forwards response to violations noted in Insp Rept
50-305/97-02. Corrective actions: provide NOV rept to
operations staff to reenforce intent of NAD 12.4 Step 4.7.

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WISCONSIN PUBLIC SERVICE CORPORATION

600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

April 28, 1997

10 CFR 2.201

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reply to Notice of Violation, Inspection Report 97-002

- Reference:
- 1) Letter from G. E. Grant (NRC) to M. L. Marchi (WPSC) dated March 28, 1996 (NRC Inspection Report 50-305/97002 and Notice of Violation).
 - 2) Letter from R. L. Hague (NRC) to C. A. Schrock (WPSC) dated June 26, 1992 (NRC Inspection Report 50-305/92013).
 - 3) Letter from K. H. Evers (WPSC) to U. S. NRC Document Control Desk dated May 15, 1991 (Reportable Occurrence 91-004-00).
 - 4) Letter from M. L. Marchi (WPSC) to U. S. NRC Document Control Desk dated March 3, 1997 (Reportable Occurrence 97-001-00).

In reference 1, the Nuclear Regulatory Commission (NRC) provided Wisconsin Public Service Corporation (WPSC) with the results of the NRC inspection activities conducted January 6 through January 31, 1997.

During the inspection, NRC identified four Severity Level IV violations. Three of the violations were cited against 10 CFR 50, Appendix B and one against 10 CFR 50.65 (Maintenance Rule).

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Document Control Desk
April 28, 1997
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Attached is our response to the notice. If you have any questions regarding this response, please contact me or a member of my staff for clarifications.

Sincerely,



for Mark L. Marchi
Manager - Nuclear Business Group

GIH

Attach.

cc: US NRC Senior Resident Inspector
US NRC Region III

ATTACHMENT 1

Letter from M. L. Marchi (WPSC)

To

Document Control Desk (NRC)

Dated

April 28, 1997

Re: Reply to Notice of Violation, Inspection Report 97-002

NRC Notice of Violation 97-002-001 (305/97002-01)

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances.

10 CFR 50, Appendix B, Criterion II, "Quality Assurance Program," requires, in part, that a quality assurance program be established and that the program be documented by written policies, procedures, or instructions and be carried out throughout plant life in accordance with those policies, procedures or instructions.

The Kewaunee Nuclear Power Plant (KNPP) Operational Quality Assurance Program Description (OQAPD), Revision 17, is the documented quality assurance program which implements the requirements of 10 CFR 50, Appendix B, Criteria II and V. Section 5.0, "Instructions, Procedures, and Drawings," of the KNPP OQAPD requires, in part, that measures shall be established in appropriate directives to control the preparation, format, content, and use of operating, test and maintenance procedures, and approvals for same.

Nuclear Administrative Directive NAD 12.4, "Special Plant Procedures," revision A, is an appropriate directive which implements the requirements of the KNPP OQAPD. Section 4.7 of NAD 12.4 requires that procedures be present for infrequently performed activities and activities that are extensive or complex and therefore cannot be committed to memory.

Contrary to the above, during the period December 20 through December 24, 1996, licensee personnel performed flushing of the auxiliary feedwater system, an infrequently performed activity which could not be committed to memory, without having a procedure of a type appropriate to the circumstances present.

WPSC Response

Wisconsin Public Service Corporation (WPSC) contests this violation. The reason for the violation as cited is an interpretation by NRC that a procedure to guide troubleshooting activities on the Auxiliary Feedwater System (AFW) was required under the administrative controls in place for the KNPP. WPSC disagrees in that the activity in question was well within the skill of the individuals involved and was in accordance with plant directives and expectations. Therefore, we do not agree that a formal procedure was required.

Reason For Violation

On December 19, 1996, while the plant was in refueling shutdown, a trace of chemical contaminants was discovered by the Chemistry group after sampling the Condensate Storage Tanks (CST). At the time, the AFW system was not required to be operable. The contaminant discovery was made following a routine Surveillance Procedure (SP) run on the AFW pumps during which the CSTs are recirculated and in-service test data is obtained. The discovery prompted an investigation into the source. It was decided between the Operations and Chemistry work groups to locally sample at the pumps and flush the AFW piping involved as a method of troubleshooting a suspected leak through a valve which isolates Service Water to the suction of the B AFW pump.

During the discussion between the two groups, notes were written to assist in communicating the troubleshooting plan to the oncoming shifts. It was anticipated that the evolution would take place over the course of a weekend. These notes were later typed and embellished by the next shift in the process of reviewing drawings and verifying the plan. These notes, when reviewed by the NRC Inspector, were interpreted as being of a sufficient detail and complexity to warrant a procedure be developed.

The violation is cited as a failure to satisfy a requirement under plant Nuclear Administrative Directive (NAD) 12.4 "Operating Procedures," specifically Step 4.7, "that procedures be present for infrequently performed activities that are extensive or complex and therefore cannot be committed to memory." The inspection report characterizes the situation as requiring a procedure of a type appropriate to the circumstances present. For this evolution, the personnel involved determined that the circumstances present did not require a procedure.

The basis for Step 4.7 of NAD 12.4 is to provide personnel guidance when a procedure already exists. This guidance was developed in response to NRC Inspection Report 92-013 dated 6/26/92 (ref. 2) - follow-up on reportable occurrence Licensee Event Report (LER) 91-004 (ref. 3). At issue was a verbal direction given to an operator in the field in lieu of providing him with a copy of a procedure. At the time the NRC inspector recommended that the licensee provide guidance to have the procedure, if one existed, in hand to assure correct sequence, versus relying upon memory for infrequently performed tasks. The basis for Step 4.7 was not to describe when development of a procedure was appropriate.

NAD 12.4 Step 4.7 goes on to clarify that procedures are NOT required for routine actions that have been committed to memory or for routine tasks that are within the skill of the craft. For the AFW activity of concern, the personnel involved determined that the tasks involved were not challenging and that the critical elements of performance would be controlled by tagout status control. Valve manipulations were straightforward and not complex. The use of tagouts with independent verification was to control the existing configuration of the AFW system to avoid having to repeat performance of a prestartup checklist. The notes were used to facilitate shift briefings. There would have been no enhancement to plant or personnel safety by turning these notes into a procedure. All of the actions performed by the personnel involved are considered acceptable and within the existing administrative guidance.

WPSC is concerned that the violation cited will serve as a disincentive to personnel trying to apply rigor to job planning, review and performance. The use of notes in the shift turnover process which are used to enhance effective communications has been challenged as not meeting a subjective interpretation of a NAD step when in fact, the actions of the individuals met the expectations of management for quality operation of the plant. WPSC does not agree with a conclusion contained in the inspection report that "given licensee management expectations, other tasks of comparable complexity having safety significance may also have been performed without procedures." This conclusion is not substantiated beyond a difference in interpretation of KNPP administrative guidance.

Corrective Actions

Provide this NOV report to the Operations staff to reenforce the intent of NAD 12.4 Step 4.7.

Compliance Schedule

May 1, 1997

NRC Notice of Violation 97-002-002 (305/97002-03)

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

10 CFR 50, Appendix B, Criterion II, "Quality Assurance Program," requires, in part, that a quality assurance program be established and that the program be documented by written policies, procedures, or instructions and be carried out throughout plant life in accordance with those policies, procedures or instructions.

The Kewaunee Nuclear Power Plant (KNPP) Operational Quality Assurance Program Description (OQAPD), Revision 15, was the documented quality assurance program which implemented the requirements of 10 CFR 50, Appendix B, Criteria II and XVI, during April 1995. Section 16.0 of the KNPP OQAPD required, in part, that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective materials and equipment, and nonconformances shall be identified by Nonconformance Reports and/or Incident Reports.

Contrary to the above, during April 1995, nonconformances existed when relief valves MU-320A and MU-320B, on the suction to the auxiliary feedwater pumps, were found out of tolerance and neither a Nonconformance Report nor an Incident Report was initiated to ensure that the nonconformances were identified and evaluated.

WPSC Response

Wisconsin Public Service Corporation (WPSC) does not contest this violation. Although the testing, inspection, repair, and retest activities were adequately performed and documented on Relief Valve Data Sheets, Work Request Forms and attachments, and relief valve repair procedures, an Incident Report was not initiated at the time to document and assess the out of tolerance valve setpoints. Upon notification of this concern by the resident inspector, KAP (Kewaunee Assessment Process) Number 0181 was initiated by the KNPP Licensing Group on August 28, 1996. (Note the Kewaunee Assessment Process replaced the Incident Report Program in April, 1996.) The subsequent evaluation concluded the nonconforming relief valve setpoints would not have rendered the Auxiliary Feedwater (AFW) Pumps inoperable or negatively affected any other Engineered Safeguards Function. In addition, the potential for flooding the AFW pump rooms (due to water discharging from the relief valves) was reviewed and determined not to be a concern based on the presence of adequate drain capacity in the immediate area. In summary, the as found relief valve setpoints would not have resulted in a failure of the AFW System to perform its intended function. Therefore, no safety significant concerns existed.

Reason for Violation

This event was caused by the failure of plant personnel to recognize the need to assess the nonconforming conditions found during the relief valve testing. A contributing factor was that the relief valve testing procedure did not specifically instruct the user to document and evaluate all unacceptable test results via the Incident Report Program.

In November 1994, WPSC recognized the need to improve its nonconformance reporting system. Consequently, a team was assembled to study this matter, as a result, the new KAP process was initiated in April 1996. Since that time, the Kewaunee Assessment Process has provided KNPP with a more effective means of problem identification and tracking.

Corrective Actions

WPSC Group Leaders will continue to emphasize the importance of documenting problems and nonconformances through the use of the KAP process. It is expected that the plant staff's increased attention to this program will reduce the likelihood of not reporting such nonconformances in the future.

In order to verify that KAPs are being initiated for equipment problems, a sample of work requests will be reviewed. Results of the review will be used to improve the corrective action program as necessary.

Relief valve testing procedures will be revised to clearly state the need to initiate a KAP whenever as-found test results are not within pre-established acceptance criteria.

Compliance Schedule

We plan to complete the work request review by the end of 1997.

The appropriate revisions to the relief valve test procedures will be completed by June 30, 1997.

NRC Notice of Violation 97-002-003 (305/97002-04)

10 CFR 50.65(a)(2) requires, in part, that each holder of an operating license under 50.21(b) or 50.22 shall monitor the performance or condition of structures, systems, or components against licensee-established goals. Such goals shall be established commensurate with safety.

Contrary to the above, as of January 6, 1997, the licensee had failed to establish adequate goals or performance criteria and monitoring to demonstrate that the performance or condition for the residual heat removal system, a risk-significant system, was being effectively controlled through adequate preventive maintenance.

WPSC Response

Wisconsin Public Service Corporation (WPSC) does not contest this violation. WPSC agrees that the reliability performance criteria of less than two Maintenance Preventable Functional Failures (MPFFs) per cycle for the Residual Heat Removal (RHR) system does not demonstrate goals set commensurate with safety as required by 10 CFR 50.65(a)(1). Your assessment, as well as WPSC's, noted that the actual number of MPFF occurrences for the RHR system is consistent with the lower failure rates assumed in WPSC's Probabilistic Risk Assessment (PRA).

Reason for Violation

This event was caused by a misinterpretation of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," as well as not keeping current with industry correspondence regarding the Maintenance Rule.

Prior to July 10, 1996, WPSC decided to use MPFFs as a reliability performance criteria. The actual value to be used was determined to be less than or equal to two MPFFs per system per cycle. This initial determination was based on WPSC identifying that when one MPFF was used, this did not match PRA assumptions for several Structures, Systems, and Components (SSCs). However, a performance criteria of less than one MPFF would result in unnecessarily placing SSCs into (a)(1) due to random failures. Use of one MPFF action limit would be similar to treating an initial MPFF as a repetitive failure. Therefore, the expert panel determined that two MPFFs would be an acceptable performance criteria.

Stated in other terms, WPSC's approach used deterministic logic in establishing the maximum number of MPFFs. A basic assumption in the operation of a nuclear power plant is that at any given time, at least one train of safety related equipment will be available. Maintaining this assumption assures the continued health and safety of the public. To maintain this assumption, the expert panel limited the number of MPFFs to one per cycle for a system to remain classified as (a)(2). This helps ensure that random failures of equipment will not result in redundant trains of equipment becoming inoperable.

Following July 10, 1996, several plant Maintenance Rule baseline inspection reports were issued. WPSC noted that there appeared to be an industry issue with using MPFFs for reliability performance criteria. WPSC became focused on whether MPFFs could be used as a reliability measure and not on the technical basis for the acceptable number of MPFFs. Since WPSC's deterministic approach seemed reasonable for a basis, further technical basis evaluation was not performed. WPSC anticipated that the resolution of the industry issue would address what type of technical basis was needed. This method was flawed since WPSC did not keep as current with industry Maintenance Rule correspondence (i.e. plant baseline inspection reports, NRC letters to NEI, etc.) as it should have.

A review of industry correspondence regarding the Maintenance Rule and the findings of the NRC inspection indicated that WPSC's deterministic approach is unacceptable and further technical analysis is necessary. WPSC also conducted an internal audit of the Maintenance Rule Program in March 1997. The audit team identified a similar concern regarding the performance criteria's technical basis.

Corrective Actions

Corrective actions taken:

1. WPSC has reviewed industry correspondence regarding the Maintenance Rule.
2. WPSC's in-scope SSCs with reliability performance criteria that have experienced one or more MPFFs were reviewed for placement in the (a)(1) condition. The SSCs placed in (a)(1) due to this review will remain in (a)(1) until the reliability performance criteria has been reviewed and revised as necessary.

Corrective actions to be taken:

1. The reliability performance criteria for the RHR system, as well as the remaining Maintenance Rule in-scope SSCs, will be reviewed and revised as necessary to ensure the criteria are set commensurate with safety.
2. The availability performance criteria for all Maintenance Rule in-scope SSCs will also be reviewed and revised if necessary.

Compliance Schedule

The short term corrective actions have been completed. The review and revision of the reliability and availability performance criteria has an anticipated completion date of June 13, 1997.

NRC Notice of Violation 97-002-004 (305/97002-07)

10 CFR 50, Appendix B, Criterion III, Design Control, required that "Measures shall be established to assure that applicable regulatory requirements and design basis. . .are correctly translated into specifications, drawings, procedures, and instructions."

Contrary to the above, from October 18, 1995 to the time of the inspection, the licensee did not correctly translate the regulatory requirements and the design basis into specifications for the minimum amount of water to be available in the condensate storage tank. The 39,000 gallons specified in Technical Specification 3.4.c were not adequate for dealing with the 4-hour station blackout event.

WPSC Response

Wisconsin Public Service Corporation (WPSC) does not contest this violation. However, WPSC does not agree that the Technical Specification (TS) minimum of 39,000 gallons available in the condensate storage tanks (CST) is inadequate for coping with the four hour station blackout event. WPSC has reviewed this concern and determined that the 39,000

gallons is adequate to remove decay heat during a station blackout event. However, the administrative controls used to ensure 39,000 gallons of water was available were inadequate. WPSC has also determined that the concern raised during the inspection did not result in a violation of the Technical Specifications.

Reason for Violation

Technical Specification 3.4.c, "Condensate Storage Tank," requires 39,000 gallons of water be "available in the condensate storage tanks." The TS basis states, "The specified minimum water supply in the condensate storage tank is sufficient for four hours of decay heat removal." The TS is not specific as to the definition of "available." WPSC's interpretation is that the required 39,000 gallons be available to be pumped to the steam generators (SGs). This means that 39,000 gallons would be the minimum required to the generator after addressing water losses and instrument accuracy. It is not meant to be the minimum controlled tank level. This position was described in reportable occurrence LER 97-001 (ref. 4).

The procedures that ensure an adequate supply of water in the CSTs incorrectly identify the CST levels necessary to meet the 39,000 gallon requirement. The procedures state that CST level must be equal to or greater than 60 percent for one tank or 30 percent for two tanks. The procedures are incorrect because the individuals responsible for the TS change made in 1993 for the station blackout rule did not adequately account for the following:

1. instrument accuracy,
2. water lost to the AFW pump's bearing and oil coolers and to the condenser, and
3. the unavailable water (below four percent CST level).

Corrective Actions

In order to ensure 39,000 gallons would be and was available, an evaluation was performed to:

1. Identify the minimum level required in the CSTs to ensure 39,000 gallons is available to the SG. This analysis addressed instrument error, water directed to a waste trench from the AFW pump oil and bearing coolers, water directed to the condenser during a station blackout (a ten minute mission time was assumed), and the unavailable volume of water below four percent CST level.

2. Identify the procedures which ensure adequate CST volume is available and revise them if required.
3. Review operator logs from February 1993 to the present (the time frame in which the 39,000 gallon TS is applicable) to identify occasions when CST level was less than the level identified in Step 1.

The following provides the results of the evaluation:

1. A calculation was performed to determine the minimum required CST level. When both tanks are being used (cross-tied), the combined percentage must equal 90 percent. The current value which administratively controls level in the CSTs is a combined percentage of 60 percent. This value is not adequate. Procedure changes are addressed below in results section 2.
2. The following procedures and logs were identified as ensuring adequate CST volume:
 - a. N-MUP-27C, "Makeup Water Demineralizer Regeneration"
 - b. SOP-AFW-05B-1, "AFW Service Water Header B Flush"
 - c. A-CD-03, "Condensate System Abnormal Operation"
 - d. N-0-01-CLC, "Plant Requirements Before Exceeding 350°F"
 - e. N-FW-05B, "Auxiliary Feedwater System"
 - f. N-FW-05B-CL, "Auxiliary Feedwater System Prestartup Checklist"
 - g. RT-FW-05B, "Turbine Driven AFW Pump Local Manual Operation"
 - h. N-0-05, "Plant Cooldown from Hot Shutdown to Cold Shutdown Condition"
 - i. SP 87-125, "Shift Instrument Channel Checks - Operating"
 - j. KNPP (Kewaunee Nuclear Power Plant) Water Treatment Log
 - k. Alarm response sheet MUP-27, Annunciator Number 47064-Q, "Cond Storage Tanks Level High/Low"

The above procedures either state that CST level must be 30 percent in each tank or combined CST levels must be 60 percent. Based on the recent calculation for level, the 30 percent level should be changed to 45 percent and the 60 percent level changed to 90 percent.

3. SP 87-125, "Shift Instrument Channel Checks - Operating," which records CST level once per shift while operating, was reviewed back to February of 1993 when the TS

was changed from 30,000 to 39,000 gallons. During this time frame, the lowest CST level recorded was 46 percent (in one tank). This relates to a lowest combined level of 92 percent. Since tank level was recorded once per shift and the TS allows up to 48 hours of reactor operation if the minimum of 39,000 gallons is not available, TS 3.4.c was not violated.

Compliance Schedule

The procedures stated above which administratively control CST level will be changed to reflect the new calculated level. The procedure revisions will be complete by the time the CSTs are required to be available. The plant is currently in an outage with a scheduled completion date of early to mid-June 1997.