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 STEINHARDT, C.R. Wisconsin Public Service Corp.
 RECIP. NAME RECIPIENT AFFILIATION
 MARTIN, J.B. Region 3 (Post 820201)

SUBJECT: Responds to violations noted in insp rept 50-305/93-23.
 Corrective actions: GMP-207 form revised to require
 identification of matl type, pipe & fitting size & schedule
 for all safety-related pipe & fitting replacement.

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March 31, 1994

Mr. J. B. Martin
U.S. Nuclear Regulatory Commission, Region III
801 Warrenville Road
Lisle, IL 60532-4351

Dear Mr. Martin:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reply to Notice of Violation - Inspection Report 93-023

Reference: Letter from J. B. Martin (NRC) to C. R. Steinhardt (WPSC) dated March 1, 1994 (Inspection Report 93-023)

The Nuclear Regulatory Commission (NRC) identified two violations during the Resident Inspectors' routine inspection covering the time period of December 23, 1993, to February 2, 1994. In addition, the Inspection Report expressed some concern with the management, conduct, and coordination of design and maintenance activities and identified an effective self-assessment organization as a vehicle to address these concerns.

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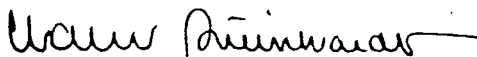
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Although we are not in full agreement on all the specifics for each violation and their regulatory significance, I do concur that an aggressive self-assessment program, including a personal self-critical attitude, is the cornerstone to an excellent nuclear operation.

As we have discussed, we are currently evaluating and redirecting our self-assessment capabilities and will consider the identified issues in our efforts. Our goal is to have more than a specific organization or program, it is to have a personal commitment from everyone in the organization to critically review how we do business everyday, such that our efforts focus on continuous improvement.

The attachment to this letter provides our detailed response to the violations. I appreciate your comments and look forward to discussing our progress with you. If you have any questions, please contact me or a member of my staff.

Sincerely,



C. R. Steinhardt
Senior Vice President - Nuclear Power

cas

Attach.

cc - US NRC, Region III
US NRC Document Control Desk
US NRC Senior Resident Inspector

Attachment I

to the Letter

From:

C. R. Steinhardt (WPSC)

To:

Mr. J. B. Martin (NRC)

Dated: March 31, 1994

Re: Inspection Report 93-023

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NRC Notice of Violation:

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

Contrary to this requirement, two maintenance activities were conducted which installed piping of a schedule different than was prescribed by the engineering specifications indicated on the work requests associated with these maintenance activities. (305/93023-02 (DRP))

This is a Severity Level IV violation (Supplement I).

WPSC's Response:

Wisconsin Public Service Corporation (WPSC) does not contest the violation. However, we request the NRC review the criteria described in 10 CFR 2 Appendix C and the information contained in this response and reconsider this item for categorization as a non-cited violation.

On January 5, 1994, with the plant at 100% power, Kewaunee quality control (QC) personnel were reviewing completed work request (WR) packages for valve PR-50A. Valve PR-50A is a 3/4 inch diameter drain valve off of the pressurizer safety valve loop seal and was suspected as the probable cause of higher than normal reactor coolant system (RCS) leakage. The QC personnel were reviewing the WR packages in anticipation of replacing the valve. During this review, a QC Supervisor identified that schedule 80 pipe nipples had been installed when the valve was replaced in April 1993 during the annual refueling outage. The work request package referenced an engineering specification which called for schedule 160 pipe. Upon identifying this non-conformance, the supervisor immediately notified plant management. At this time the Plant Manager decided to take the unit off line, investigate the cause of the leak, correct the cause of the leak, and replace the schedule 80 pipe. The decision to take the plant off line was based on:

1. The higher than normal RCS leakage (approximately 0.7 gallons per day),
2. Identifying valve PR-50A as the probable cause of the leakage, and
3. Determining that the wrong schedule pipe had been installed during the 1993 refueling outage.

Once the plant was in hot shutdown the source of leakage was identified as a gasket for the Pressurizer (PRZR) manway cover. Valve PR-50A and associated piping were found in good condition with no sign of damage. Subsequent analysis determined that stresses in the schedule

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80 pipe under normal and accident conditions were within Updated Safety Analysis Report (USAR) allowable stress limits. Although the existing piping could have been left in service indefinitely, it was replaced with schedule 160 pipe during the shutdown.

The investigation into the cause of the event included:

1. A review of past WR packages to identify if this problem had occurred in the past, and
2. A review of the WR package that installed the incorrect schedule piping.

The review of past work request packages included all safety-related work request packages since January 1992. The review identified one additional case where the wrong schedule pipe had been installed. Like valve PR-50A, this example was a small (3/4" diameter) socket pipe nipple. As with PR-50A, analysis showed that the stresses in the schedule 80 pipe were less than USAR allowables.

As a result of finding an additional example of the wrong schedule pipe, the review of past WR was expanded to include:

1. All work requests associated with code class piping since January 1989, for pipe diameters 2 inches and smaller.
2. All work requests associated with pipe replacement for safety-related systems with schedule 160 piping requirements since plant startup in June 1974.

This further review was completed on January 7, and did not identify any other examples where the wrong schedule pipe had been installed. A review of past WR packages, including the 2 that installed the wrong schedule pipe, identified the root cause of these events. Prior to March 1992, work request packages for installing pipe generally identified the required material type, the required pipe schedule, and occasionally the stock code number. Although not required, this information was filled in by hand on the GMP-207 form, "General Repair and Replacement Instructions". In 1993, this form was computerized. As a result, instead of identifying the detailed information described previously, the form only identified an engineering specification which contained this information. The investigation into the two specific work packages of interest determined that the workers installing the pipe did not have an understanding of the engineering specifications or how to use them.

WPSC's investigation also identified weaknesses in the development and implementation of the two work requests. A review of past incident reports (IRs), Kewaunee's internal corrective action document, identified other events which involved weaknesses in the work request process. As a result of the two events involving schedule 80 piping and other IRs, IR 94-013 was initiated on January 17, 1994 to investigate and recommend improvements in the work request process.

In summary, the following corrective actions have or are being implemented to correct the weaknesses identified during our investigation of these events.

1. Kewaunee plant management took conservative action and took the plant to cold shutdown to investigate the cause and repair the source of the higher than normal RCS leakage.
2. An extensive search of previous work request packages was performed to identify other cases where the wrong schedule pipe had been installed.
3. A pipe stress analysis was performed and in both cases stresses were found to be less than USAR allowable stress. Therefore, neither case presented any safety concern.
4. Root cause analysis was performed and is continuing. The analysis determined:
 - A. The most significant contributor to this event was the change in the way piping material was specified in the work packages. To address this problem, the GMP-207 form has been revised to require identification of material type, pipe and fitting size, and schedule for all safety related pipe and fitting replacement.
 - B. Contributing to these events are weaknesses in the work request process. Incident report 94-013 was initiated on January 17, 1994 to document an investigation of the work request process. This investigation, with recommended corrective action, is expected to be completed in May of 1994. The schedule for implementation of corrective actions will depend on the scope and the resources required to implement them.

Based on:

1. Kewaunee's self identification of this problem,
2. The fact that this is not a repeat or intentional violation,
3. WPSC's safe and conservative operating decision to bring the plant off line and correct the problem,

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4. Analysis which shows that the event has no safety implication,
5. Kewaunee's root cause analysis that resulted in short term corrective actions to prevent recurrence of this event, and
6. Our commitment to review and improve the work request process to prevent related events from occurring.

WPSC believes this event meets the criteria for a non-cited violation described in 10 CFR 2 Appendix C.

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NRC Notice of Violation:

Technical Specification (TS) 3.6.a requires that containment system integrity shall not be violated if there is fuel in the reactor except when the reactor is in cold shutdown. TS 1.0.g defines containment integrity to exist when all requirements of TS 4.4 are satisfied. TS 4.4 requires that Type B and C tests, as defined in 10 CFR 50, shall be conducted. 10 CFR 50, Appendix J, item IV.A, requires that any modification of a component which is part of the reactor containment boundary shall be followed by either a Type A, B, or C test, as applicable.

Contrary to the above, on January 11, 1994, the licensee failed to perform 10 CFR 50, Appendix J, Type C testing on containment isolation valves following modifications to the valve actuator torque switch setting and prior to heating the plant above cold shutdown. (305/93023-03(DRP)).

This is a Severity Level IV violation (Supplement I).

Wisconsin Public Service Corporation's (WPSC's) Response:

WPSC does not concur that this is a violation of 10 CFR 50 Appendix J. The following provides a description and our assessment of this event.

Description of Event

On January 5, 1994, the plant was taken to cold shutdown to repair a small reactor coolant system leak. In addition to repairing the leak, Wisconsin Public Service Corporation also adjusted the close torque switch settings and performed diagnostic testing on valves CVC-211 and CVC-212. Valves CVC-211 and CVC-212 are motor operated valves (MOVs) that provide isolation of the reactor coolant pump seal water return line and containment isolation.

After completing the MOV tests and repairing the reactor coolant system leak, the plant began the heatup process. The Appendix J leak rate test coordinator became aware of the work on the valves when the work was discussed at the morning meeting on the day of the startup. The Appendix J leak rate test coordinator became concerned that the MOV maintenance activities could have affected valve seat leakage. The leak rate test coordinator immediately informed plant management of his concerns and an operability determination was performed. Based on WPSC's assessment, a leak rate test was not required. That assessment was based on: 1) the acceptable diagnostic test results that indicated the valves were closed with hard seat contact, 2) acceptable post-maintenance valve timing, 3) the low leakage history for these valves, and 4) an examination of applicable regulations. However, WPSC recognized that LLRT of MOVs following torque switch adjustments is an industry practice and conservative. Furthermore, since the plant was in intermediate shutdown at this time, cooling the plant to cold shutdown was not considered a significant plant evolution. Therefore, WPSC conservatively decided to stop the plant heatup and return the plant to a cold shutdown condition to perform a local leak rate test on the valves. The test results were within the administrative acceptance criteria for the valves.

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Following an operability determination and the decision to cooldown and perform local leak rate testing, WPSC contacted NRC Region III personnel to discuss the event. During the discussion NRC personnel raised several concerns and indicated that under these circumstances, local leak rate testing was required by 10 CFR 50 Appendix J. Although WPSC agreed that post-maintenance leak rate testing following torque switch adjustments and MOV diagnostic testing is a conservative practice and is consistent with existing industry practices, WPSC does not agree that this is a regulatory requirement.

Assessment

During MOV testing in accordance with General Maintenance Procedure (GMP) 236-1, "Diagnostic Testing of Limitorque Motor Operated Valves Using the Torque Thrust Cell," on January 8, 1994, and January 9, 1994, torque switch settings on CVC-211 and CVC-212 were reduced from 1.25 to 1.0. GMP 236-1, step 4.4.5, specifies acceptance criteria for MOV dynamic diagnostic testing. Substep A.1 requires that hard seat contact be demonstrated. The Maintenance Engineering department verifies hard seat contact indication by reviewing the actual thrust and torque values prior to returning the valve to operable status. That practice was followed and in this case the test results confirmed hard seat contact.

As stated earlier WPSC acknowledges that local leak rate testing of containment isolation valves following torque switch adjustments on MOVs is an industry practice and that the practice is conservative. However, WPSC does not agree that local leak rate testing of containment isolation valves following torque switch adjustments and MOV diagnostic testing is a regulatory requirement. 10 CFR 50 Appendix J states:

Any major modification, replacement of a component boundary, or resealing a seal-welded door, performed after pre-operational leakage rate test shall be followed by either a Type A, Type B, or Type C test, as applicable for the area affected by the modification.

The MOV testing performed after adjusting the torque switch settings assures that the valve is closed tightly. Therefore, this work should not be considered a major modification or maintenance which could have a significant impact on seat leakage. An analogous situation is different personnel closing the same manual containment isolation valves. In this example closing force varies from individual to individual with closure assured by valve position and skill of the craft feel for hard seat contact.

Although WPSC does not concur that this is a violation of 10 CFR 50 Appendix J criteria, we did identify weaknesses in our programs.

Cause of the Event

While no single deficiency by itself directly caused this event, the following weaknesses were identified by the investigation:

During initial planning, the Plant Electrical Supervisor inspected all MOVs that were candidates for testing during the short outage. Note that CVC-211 and CVC-212 have informational tags identifying that the leak rate test supervisor is to be contacted prior to performing any maintenance. The Plant Electrical Supervisor recognized CVC-211 and CVC-212 as containment isolation valves, however he believed the work on the actuator would not affect valve seat leakage. Therefore, he considered verification of seat leakage requirements for post-maintenance testing unnecessary.

Weaknesses in Kewaunee's implementation of post-maintenance testing was identified by the investigation. Even though no specific element of the Post-Maintenance Test Program could be identified as the cause of this event, a general lack of sensitivity to existing post-maintenance test requirements was noted.

Corrective Action

The following corrective actions will be taken to address these weaknesses:

1. MOV test procedures will be revised to incorporate the requirement to consult the Appendix J Leak Rate Test Coordinator prior to performing diagnostic testing of containment isolation valves. This will be completed in June 1994.
2. Training on the containment integrity Technical Specifications and regulations will be provided to the maintenance group. This will be completed in April of 1994.
3. WPSC will perform local leak rate testing on containment isolation valves following MOV operator maintenance until WPSC and the NRC reach agreement on the necessity for testing.
4. During plant outages, the Shift Technical Advisors review completed work requests in accordance with GNP 8.4.2, "Independent Assessment of Outage Work Request Status" to ensure proper retests have been completed prior to returning the plant to operation. The Shift Technical Advisor reviewing the work request associated with CVC-211 and CVC-212 did not identify the need to perform a local leak rate test. To address this concern, GNP 8.4.2 will be revised by May 1994 to provide additional guidance on retest requirements to the STA.
5. As with the violation concerning the schedule 80 piping discussed previously in this submittal, this incident identified weaknesses in our work request process. Therefore,

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this event has been included in the evaluation of the work request process as part of our evaluation of Incident Report 94-013. As stated earlier, this review will be completed in May 1994.

WPSC did review the LLRT program to determine if the implementation of this program was a significant contributor to this event. WPSC's review determined that it was not a significant contributor since the valves were tagged and the Electrical Supervisor recognized them as containment isolation valves. Therefore, beyond the additional training requirements, other weaknesses in the program that may exist did not have a significant affect on this event.

If the NRC does not concur with WPSC and continues to consider this a violation of 10 CFR 50 Appendix J, we request the violation be considered a non-cited violation in accordance with 10 CFR 2 Appendix C. This request is based on:

1. WPSC personnel identification of the problem.
2. The fact that this is not a repeat or intentional violation.
3. WPSC taking short term corrective action to prevent recurrence of this event including taking the plant to cold shutdown to perform a LLRT on the valves, revising procedures, and providing additional training.
4. The results of the LLRT were acceptable and demonstrate that this event had no safety implications.
5. Our commitment to review and improve the work request process to prevent related events from occurring.