

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

RO Inspection Report No. 050-263/73-11

Licensee: Northern States Power Company
414 Nicellet Mall
Minneapolis, Minnesota 55401

Monticello Nuclear Generating Plant
Monticello, Minnesota

License No. DPR-22
Category: C

Type of Licensee: BWR (GE) 545 Mwe

Type of Inspection: Routine, Unannounced

Dates of Inspection: October 24-26, 1973

Dates of Previous Inspection: August 30-31, 1973
(Environmental Protection)

Principal Inspector: P. H. Johnson

H. C. Dance

12/5/73
(Date)

Accompanying Inspector: T. N. Tambling

T. N. Tambling

12/4/73
(Date)

Other Accompanying Personnel: None

Reviewed By: H. C. Dance, Senior Reactor Inspector
BWR Operations

H. C. Dance

12/5/73
(Date)

SUMMARY OF FINDINGS

Enforcement Action

Violations considered to be of Category II severity are as follows:

- A. Paragraph 3.8.A of the Technical Specifications requires radioactive gases released from the stack to be continuously monitored.

Contrary to this requirement, the stack effluent monitor was inadvertently rendered inoperable between August 7 and 10, 1973. (Paragraph 26)

- B. Paragraph 4.5.G.1 of the Technical Specifications states that all low pressure core cooling and containment cooling service water systems connected to the operable diesel generator must be demonstrated to be operable when one of the diesel generators is inoperable.

Contrary to this requirement, surveillance testing of these components was omitted during diesel generator maintenance on September 24 and 25, 1973. (Paragraph 20)

Licensee Action on Previously Identified Enforcement Matters

- A. Corrective actions related to three violations noted during inspections^{1/} conducted during May and July, 1973, have been completed. (Paragraphs 7, 12, and 22)

- B. Corrective actions related to items 5.a, 6, 9.b, and 15 of the management audit^{2/} are continuing. (Paragraphs 4, 5, and 6) Completion of corrective actions related to all other management audit items has been noted in previous inspection reports.

Unusual Occurrences

- A. A reactor building-to-torus vacuum breakers control switch was observed on May 2, 1973, to have a trip setting outside Technical Specifications limits. (Paragraph 18)

- B. The licensee discovered during the past refueling outage that improperly sized rivets had been installed in the main steam chase blowout panels. (Paragraph 14)

^{1/} RO Inspection Reports No. 050-263/73-05 and No. 050-263/73-08.

^{2/} Letter, RO:HQ to NSP, dated 10/19/72.

- C. A primary containment isolation valve pneumatic seal was found on July 18, 1973, to be at less than normal pressure. (Paragraph 17)
- D. A Main Steam Isolation Valve required 6 seconds to close during a routine test on August 1, 1973. (Paragraph 11)
- E. A main steam line drain valve failed to close on August 10, 1973. (Paragraph 16)
- F. A three-day lapse in monitoring of stack off-gas occurred in August 1973. (Paragraph 26)
- G. Power to No. 1AR transformer was temporarily interrupted on September 9, 1973. (Paragraph 15)
- H. Sodium pentaborate solution was found in No. 12 standby liquid control pump lubricating oil on September 17, 1973. (Paragraph 23)
- I. Surveillance testing of emergency core cooling components was inadvertently omitted during diesel generator maintenance on September 24 and 25, 1973. (Paragraph 20)
- J. A standby gas treatment system heater malfunctioned on September 29, 1973. (Paragraph 25)
- K. A temperature switch installed to isolate the high pressure coolant injection system in the event of a steam line rupture was observed on October 2, 1973, to trip above the maximum allowed setpoint. (Paragraph 19)

Other Significant Findings

A. Current Findings

1. Modifications to safety valves and relief valves were accomplished during a recent outage to reduce operating restrictions required by a postulated turbine trip transient. (Paragraphs 9 and 10)
2. The stack off-gas release rate at the time of the inspection was 55,000 uCi/sec. Subsequent phone conversations reported the release rate to have increased to a level of approximately 80,000 uCi/sec. Tie-in of the off-gas holdup system was expected to be accomplished in six to eight weeks. (Paragraph 24)

B. Status of Previously Reported Unresolved Items: No change.

Management Interview

The inspectors conducted a management interview with Messrs. Larson (Plant Manager), Clarity (Superintendent-Plant Engineering and Radiation Protection), and Anderson (Superintendent-Operation and Maintenance) at the conclusion of the inspection. The following matters were discussed:

- A. The inspectors discussed the unusual occurrences reviewed during the inspection and stated that two events, the lapse in stack monitoring and the omission of a required surveillance test, represented violations of Technical Specifications requirements, although related actions to correct and prevent recurrence of the problems was noted to have been taken. (Paragraphs 20 and 26) The licensee's continuing investigation into drifting temperature switches was also discussed. (Paragraph 19)
- B. The inspector questioned the adequacy of procedures used by control room operators to maintain a status of abnormal plant conditions, in view of the events involving a lapse of stack monitoring and the introduction of sodium pentaborate into standby liquid control pump lubricating oil. (Paragraphs 23 and 26) The licensee replied that existing practices of maintaining a control room file of work request authorizations was considered to be adequate.
- C. The inspector stated that at the existing rate another year would apparently be required to complete implementation of the Administrative Control Directives, and asked why the rate of progress could not be accelerated. The licensee responded by asking the inspector whether he was concerned with the quality-related aspects of Monticello plant operation. The inspector replied that although no major deficient areas had been identified, formalization of the program should be completed as soon as possible, and that the related noncompliance item from the management audit would meanwhile remain outstanding. The inspector stated that the status of the quality assurance program would also be a significant consideration in a finding of completion for the full-term operating licensing. (Paragraph 4)
- D. The licensee's retraining program was discussed. The inspectors noted that all required subjects had been incorporated into the program, but that no formal methods for evaluation of the program's effectiveness had yet been developed. The licensee acknowledged the inspectors' comments. The inspectors stated that the related noncompliance item from the management audit would remain outstanding pending development of evaluation criteria. (Paragraph 5)
- E. The inspector discussed the licensee's progress on review of Operations Manual procedures and improvement in the use of temporary procedures. He noted that although the licensee still expected to complete the review

by the end of 1973, this would require a considerable effort by the facility staff. The inspector stated that the related noncompliance items from the management audit would remain outstanding. (Paragraph 6)

- F. The relationship of residual heat removal (RHR) service water pump shutoff head to the pressure rating of the RHR heat exchangers was discussed. The licensee stated that he would investigate the feasibility of establishing temporary procedures which would prevent the pressure in the heat exchangers from exceeding the design value. (Paragraph 21)
- G. The inspector summarized other areas reviewed during the inspection. With respect to the orientation of the primary safety valves, the licensee stated that the matter had been referred to the architect-engineer for design review. (Paragraph 10)

REPORT DETAILS

1. Persons Contacted

C. Larson, Plant Manager
M. Clarity, Superintendent - Plant Engineering and Radiation Protection
W. Anderson, Superintendent - Operation and Maintenance
G. Jacobson, Plant Engineer, Technical
L. Elison, Radiation Protection Engineer
D. Antony, Plant Engineer, Operations
H. Theobalt, Retraining Coordinator
R. Jacobson, Plant Chemist
J. Pasch, Engineer
D. Wolfe, Quality Engineer
L. Nolan, Engineer
M. Hammer, Engineer
W. Hill, Controls Engineer
F. Fey, Assistant Radiation Protection Engineer
J. Heneage, Engineer
R. Kmitch, Shift Supervisor
M. Brant, Operator
M. Onan, Operator

2. General

The plant was operating at full power during the inspection, with a stack release rate of approximately 55,000 uCi/sec. A mid-November outage was anticipated for reinspection of shock suppressors. The inspectors noted no abnormal conditions during a plant tour in company with a shift supervisor.

3. Records Review

The following records were reviewed:

- a. Operations Committee minutes, March 30 and May 1 - July 11, 1973.
- b. Safety Audit Committee minutes, June 27 - 28, and September 26 - 27, 1973.
- c. Scram records since July 1973 (no scrams experienced).

4. Quality Assurance Program

Item 15 of the RO:HQ letter^{3/} following the May 1972 management audit stated that contrary to 10 CFR 50, Appendix B, a formal quality assurance program

^{3/} Letter, RO:HQ to NSP, dated 10/19/72.

had not been implemented. The licensee's response^{4/} discussed the intended issue of a policy manual on the corporate level and a manual of Administrative Control Directives by the Plant Manager. The stated schedule objective was to have the majority of the directives issued by April 1973. An April 1973 examination of the licensee's progress was discussed in a previous inspection report.^{5/}

Examination of the licensee's program development efforts since the April inspection led to the following observations:

- a. As a result of some consolidation of topics, the number of directives scheduled to be issued had decreased slightly to 59.
- b. Thirteen directives had been issued in final form, with five more expected to be issued within two weeks. Eighteen others had been issued in second draft form for trial use and comment. Twenty-two directives were not yet available in draft form at the site.
- c. Individuals principally involved with preparation of the directives estimated that at the current rate approximately four directives per month could be placed in final form. The inspector noted that at this rate approximately one more year would be required to complete the implementation of the Administrative Control Directives.
- d. Licensee representatives had established a priority of issue for the directives remaining to be completed, but no specific schedule for issue had been adopted.

The inspector noted during the management interview at the conclusion of the inspection that the licensee's progress in issuing the directives was considerably behind the originally stated objectives. Licensee management acknowledged the inspector's comment, and replied that Quality Assurance activities at Monticello had not been shown to be inadequate. The inspector stated that formalization of the program along the requirements of Appendix B was still of considerable importance and should be pursued at a faster rate by whatever means possible, without degrading the apparent comprehensiveness of the directives issued to date.

5. Retraining Program

Item 6 of the enforcement letter^{6/} following the May 1972 management audit cited the lack of required evaluations of the effectiveness of the operator

^{4/} Letter, NSP to RO:HQ, dated 11/10/72.

^{5/} RO Inspection Report No. 050-263/73-04.

^{6/} Letter, RO:HQ to NSP, dated 10/19/72.

retraining program and stated that all subjects required by paragraph 6.1.D of the Technical Specifications had not been included in the program. The inspector reviewed the licensee's retraining program to determine what actions had been taken since the management audit to meet Technical Specifications requirements. It was noted that the present retraining coordinator had recently been assigned, the former coordinator having terminated his employment earlier in 1973. A new phase of the formal retraining program had been implemented covering 12 days of training over a three month period. The overall program is to run for two years with approximately 27 days instruction per year. All topics identified in paragraph 5.5.1 of ANSI 18.1 were noted to be included in the program, as required by paragraph 6.1.D of the Technical Specifications. The retraining program was noted to include both licensed and unlicensed members of the operating staff. A separate one-day first aid program had been given to approximately 75% of the plant staff, with the remainder to receive the course in the future.

The licensee representative stated that quizzes are or will be given at appropriate times in the course work. The inspector noted that course work, attendance, and quiz grades were being documented, but that the licensee had not yet established a formal program to evaluate the effectiveness of the retraining. The licensee's response^{7/} to the enforcement letter stated that evaluation methods would be developed by the end of the then-current retraining year, which was stated by facility management to be May 1973. The inspector stated that this item would remain outstanding until evaluation methods have been established.

6. Operating Procedures

The RO:HQ enforcement letter^{8/} following the May 1972 management audit cited noncompliance related to temporary changes to operating procedures (Item 5.a) and review of Operations Manual Procedures (Item 9.b). Initial investigation of the licensee's related corrective actions, as described in his response^{9/} to the RO:HQ letter, was made during previous inspections.^{10/} At the time of these inspections, the licensee stated that corrective actions related to the two items would be completed by the end of 1973.

Examination by the inspector of the master copy of Volume F Memos (temporary procedure changes) kept in the control room showed 168 to be in effect as

7/ Letter, NSP to RO:HQ, dated 11/10/72.

8/ Letter, RO:HQ to NSP, dated 10/19/72.

9/ Letter, NSP to RO:HQ, dated 11/10/72.

10/ RO Inspection Reports No. 050-263/72-07 and No. 050-263/73-01.

compared to 206 in November 1972. Of the 168, 66 were issued in 1971 and 62 were issued in 1972. Examination of six recent Volume F Memos selected at random showed them to have been approved by the Operations Committee within one month after issue as required by Technical Specifications. The inspector noted that a significant number of Volume F's had been in effect for more than one year. Licensee representatives responded that some of these were in fact of temporary nature and that most of the others would be eliminated by completion of the first operations manual review.

Examination of the status of Operating Manual Review showed that approximately 50 of the 87 manual sections remained to be reviewed prior to the end of 1973. Individuals working closely with the Manual Review expressed optimism concerning completion of the review as scheduled, although it was noted that this represented a significant workload for the Operations Committee and the members of the technical staff associated with the review.

7. Unauthorized Procedure Change

An RO:III enforcement letter^{11/} issued to the licensee following an inspection conducted in May 1973 cited a violation of the requirement that temporary procedure changes be approved by two licensed senior operators. The licensee's reply^{12/} outlined the corrective actions to be taken. The inspector discussed these actions with licensee representatives, examined a memorandum issued to the plant staff on July 9, 1973, and concluded that the licensee's corrective actions related to the violation had been completed.

8. Reactor Coolant System

A routine review of reactor coolant system operation was conducted, with no violations noted. Particulars of the review were as follows:

- a. Maintenance activities related to relief valves, safety valves, and main steam isolation valves were reviewed as discussed elsewhere in this report.
- b. Documents related to the last cold shutdown were examined for compliance with allowable cooldown and heatup rates and recording of temperatures as required.
- c. Documentation of reactor vessel head flange and head temperatures during the last stud detensioning and tensioning was verified. Although the records available satisfied Technical Specifications requirements, the inspector pointed out that post-tensioning temperatures were not recorded as called for on the surveillance test sheet.

^{11/} Letter, RO:III to NSP, dated 6/28/73.

^{12/} Letter, NSP to RO:III, dated 7/16/73.

- d. Records showed proper completion of required water chemistry analyses during the months of August and September 1973.
- e. Procedures for controlling plant heat up rates were examined.
- f. Procedures for the control of recirculating pumps were examined. These procedures included a graph which defined the allowable speed mismatch between the two recirculating pumps.

9. Relief Valve Modifications

During the plant outage conducted in early October, the licensee also performed modifications to all four of the Target Rock relief/safety valves to eliminate a generic delay in valve response. The Operations Committee was noted to have approved the modifications (including modification procedure and safety review) on September 25. The modifications, completed on October 3, provided for draining of condensate from the volume above the main piston and changed the pilot valve from a bottom-seating to a top-seating characteristic. Following the valve maintenance, the plant was heated up to 200 psig for an operability test of the relief valves. The first valve to be tested, the "A" relief valve, opened but could not be closed by repeated operation of the control switch. The valve closed 54 minutes later at a reactor pressure of 70 psig. A second test was performed at this time, with the valve remaining open for 3 minutes. Disassembly and inspection of the "A" relief valve revealed bent piston rods associated with the air operator and second stage disc. The licensee's internal report of the event stated that it was then decided to inspect the air operator and second stage of the remaining relief valves under the supervision of a Target Rock representative. The inspection revealed a slightly bent (.003" to .005") second stage disc in each valve. New discs with sturdier stems were installed in two of the valves, and the discs were straightened in the other two pending future replacement. The licensee, assisted by the Target Rock representative, believed the air plunger in the "A" relief valve to have been deformed during previous maintenance. Subsequent operation with this misalignment caused binding in the second stage of the relief valve. Subsequent to reinspection and reassembly of the relief valves, a satisfactory operability test of all valves was performed at 200 psig. The "A" valve was also tested at 950 psig, and automatic depressurization system functional tests were completed for all valves. The completed modification procedure verified valve setpoints to have been set and tested at 10⁵.8-10⁶.9 psig, which is in accordance with Technical Specifications.

Licensee representatives stated that source documents were not available for the two new stems used in the relief valves because of their having been supplied during plant construction. The inspector concluded that

actions taken by the licensee to verify proper operability of these components were consistent with paragraph 5.1.6.1 of ANSI N18.7, Administrative Controls for Nuclear Power Plants. The licensee's internal report concluded that the event was not required to be reported to the AEC since it had occurred as a result of maintenance activities and was discovered before the system was restored to operation. The inspector also inquired about valve response time following the modification. The licensee responded by presenting a letter^{13/} which reported that 22 of 22 similar valves tested following completion of the same modification met the design requirements of 0.4 seconds delay with 0.1 second stroke time. The licensee's safety review determined, based on this report, that response time testing onsite was neither practical nor necessary to assure safe operation.

Based upon the modifications performed on the relief valves and the increased setpoints of the safety valves, Licensing subsequently authorized^{14/} operation to continue at 100% power until a Cycle 2 exposure of 2680 HWD/T, at which time a reduction to 91% will commence.

10. Safety Valve Replacement

The inspector examined the licensee's activities related to replacement of all four safety valves with others having a higher setpoint, as authorized by Change No. 10 to the Technical Specifications. Work documents indicated the replacement to have been completed on October 2, 1973. A letter dated September 20, 1973, from the valve manufacturer certified all four safety valves to have been set at 1240 psig and tested with steam pressure. Plant management representatives stated that the question raised during a previous inspection with regard to orientation of the safety valves was being referred to Bechtel Corporation for design review.

11. Main Steam Isolation Valve (MSIV) Slow Closure

A recent licensee report^{15/} discussed the closure of a MSIV in 6 seconds as compared with the 3-5 seconds required by the Technical Specifications. Discussion of the event with a licensee representative, review of pertinent maintenance documents, and examination of photographs taken during maintenance showed the event to have been as described in the licensee's report.

^{13/} Letter, GE to NSP, dated 9/13/73.

^{14/} Letter, Directorate of Licensing to NSP, dated 10/18/73.

^{15/} Letter, NSP to Directorate of Licensing, dated 8/10/73.

12. Main Steam Isolation Valve (MSIV) Leak Test

A letter^{16/} issued to the licensee following a July 1973 inspection listed a violation of Technical Specifications requirements during the performance of MSIV leak tests. The licensee's response^{17/} stated that all local leak rate test procedures would be revised prior to use during the next refueling outage to prevent recurrence of similar procedural problems. The licensee's letter also gave justification for considering the observed leak rate test result to be valid. During the current inspection, facility representatives stated that none of the procedures had yet been revised but confirmed the intention expressed in the response to the enforcement letter. The inspector examined an isometric drawing of the related portion of the main steam lines, and reviewed letters from the two individuals who had performed the test in question. Based upon these documents and test data recorded during performance of the leak test, the inspector saw no reason to question the validity of the satisfactory test results.

13. Reactivity and Power Control

A routine examination of systems related to reactivity and power control was conducted, with no violations noted. Particulars of the review were as follows:

- a. The one-rod-out shutdown checks performed by the licensee in August 1973 were examined. Details of these tests were reported^{18/} by the licensee to RO:III. The inspector conducted spot-checks of GE and NSP one-rod-out rod worth calculations for agreement, examined the completed test procedure, reviewed the licensee's unusual occurrence report describing the tests, and concluded the test results to have been as described in the licensee's report.
- b. Rod drive performance, specifically the possibility of control blade-fuel bundle interaction, was discussed with facility representatives. The inspector examined documents related to testing of five rods recently observed to have stopped at the "02" position during scrams. These tests were recommended to the licensee by General Electric Company. Photographs of oscilloscope traces for three of the drives were sent to General Electric for evaluation. Examination by the licensee of the performance of the remaining two drives and comments provided by General Electric led to the determination that no interactions existed.

^{16/} Letter, RO:III to NSP, dated 8/20/73.

^{17/} Letter, NSP to RO:III, dated 9/7/73.

^{18/} Letter, NSP to RO:III, dated 8/6/73.

- c. The licensee's methods used to verify compliance with Change No. 9 to the Technical Specifications were examined. This change imposed new limits on average planar LHGR and local LHGR. The inspector examined the surveillance test form used for the verification and observed a determination of limiting LHGR's performed by the processed computer. No deficiencies were noted.
- d. The rod drive overtravel and drive housing support surveillance requirements of the Technical Specifications, section 4.3.B, were noted to have been completed as required following the Spring 1973 refueling outage.

14. Main Steam Chase Blow-out Panel Design

A licensee report^{19/} discussed the discovery of a design deficiency in the blow-out panels in the main steam chase. The inspector reviewed the licensee's correspondence with the architect-engineer, design sketches and calculations, documentation involved in removal and replacement of a blow-out panel, and documents verifying removal of the excessive number of sheer rivets as noted in the licensee's report. No discrepancies were noted.

15. Temporary Loss of No. 1AR Transformer

A licensee report^{20/} discussed the loss of the 1AR transformer due to a pinched wire that shorted the No. 6 transformer A phase current transformer. The inspector reviewed the event with a licensee representative, examined related documents, and concluded the event and followup actions to have been accurately described in the licensee's report.

16. Failure of Main Steam Line Drain Valve to Close

A licensee report^{21/} discussed the failure of the outboard main steam line drain valve to close on a signal from the control room hand switch. This occurred during a routine plant startup on August 10, 1973. Review of the occurrence with a licensee representative and examination of related documents showed the event and the licensee's followup action to have been as described in his report. The licensee stated that adjustment of the contractor interlocks would be incorporated into the breaker maintenance procedure prior to the next refueling outage.

^{19/} Letter, NSP to Directorate of Licensing, dated 5/23/73

^{20/} Letter, NSP to Directorate of Licensing, dated 9/18/73.

^{21/} Letter, NSP to Directorate of Licensing, dated 8/17/73.

17. Inoperability of a Primary Containment Valve T-Ring Seal

A licensee report^{22/} discussed the observance of low T-ring seal pressure on the air operated primary containment outboard purge/vent valve (AO 2387). The low seal air pressure was discovered during the routine monthly external inspection of the suppression chamber on July 18, 1973. Discussions with a facility representative and examination of pertinent documents showed the event and the licensee's corrective actions to have been as described in his report. The licensee representative indicated that the loose set screw and air connection could have resulted from previous work on the valve and that the testing performed after valve maintenance might not have uncovered the problems. Four loose set screws were found and tightened during a subsequent inspection of other valves of the same manufacture. The licensee feels that his surveillance program coupled with the awareness of the potential problem should prevent recurrence.

18. Reactor Building to Torus Vacuum Breaker Control Switch

A licensee report^{23/} discussed the discovery on May 2, 1973, of a setpoint drift of one of two differential pressure switches which control the reactor building to torus vacuum breakers. The normal trip setpoint of the switch is 0.4 psi. The switch was found to trip at approximately 0.6 psi, which exceeded the Technical Specification limit of 0.5 psi. The cause of the change in trip setpoint has not been identified. Review of the results of an accelerated surveillance schedule showed that after recalibration, the switch did not experience further calibration drift over a three month period.

In a previous report^{24/} a bellows failure in the same type differential pressure switch was reported. The manufacturer's recommendation to correct that problem was the use of overrange kick-off switches (prevents over travel of the bellows and decreases recovery time). The same corrective method appeared to be applicable to the calibration drift. The licensee stated that new switches with the overrange kick-off feature were on hand and should be installed by the next refueling outage.

19. HPCI Steam Line High Area Temperature Switch Malfunction

A licensee report^{25/} discussed the setpoint drift of one of the sixteen high pressure coolant injection (HPCI) steam line high area temperature

^{22/} Letter, NSP to Directorate of Licensing, dated 7/26/73.

^{23/} Letter, NSP to Directorate of Licensing, dated 5/16/73.

^{24/} Letter, NSP to Directorate of Licensing, dated 11/16/73.

^{25/} Letter, NSP to Directorate of Licensing, dated 10/12/73.

switches. During the quarterly surveillance test, the "as found" setpoint of the switch was 208°F versus a Technical Specifications maximum of 200°F. Because of setpoint drift experienced with similar switches, the licensee had been using a 187.5°F setpoint to insure that the switches remained below the 200°F limit during the three month in-service period. A brief review of related surveillance test data showed the calibration of most switches to have remained within 10°F of their established setpoints during their three months of service. The particular temperature switch discussed in the licensee's report had showed a greater than normal downward setpoint drift during two previous calibration checks. The licensee is pursuing the drift problem based upon recommendations made by the manufacturer.

20. Inadvertent Omission of Required Surveillance Test

A licensee report^{26/} discussed the failure to demonstrate operability of the low pressure core cooling systems and containment cooling service water systems during diesel generator maintenance on September 24 and 25, 1973. As stated in the licensee's report, the omission occurred because the individuals who authorized the work did not recognize that surveillance test requirements pertaining to taking a diesel generator out of service were specified in two different sections of the Technical Specifications. The inspector noted that the licensee had revised the surveillance test procedure to include the specific surveillance requirements, and that the general area of review of Technical Specifications is to be included in the Administrative Control Directives currently being prepared. The licensee was notified that the omission represented a violation of paragraph 4.5.G.1 of the Technical Specifications, but that related actions to correct the problem and prevent recurrence were considered to have been completed.

21. Residual Heat Removal (RHR) Heat Exchangers

A previous inspection report^{27/} discussed investigation by the licensee into the relationship between RHR service water pump shutoff head and the pressure rating of the tube side of the RHR heat exchangers. Although normal system operating pressure is much lower, records indicated that the higher-than-expected shutoff head for the RHR service water pumps can exceed the 450 psig heat exchanger pressure rating by as much as 75 psi at low flow rates. Telephone discussions with corporate representatives subsequent to the inspection indicated that alternative corrective actions were being discussed with equipment suppliers. Meeting minutes showed the Safety Audit Committee to be following the matter, which had been formally listed as an Action Item. During the management interview at the conclusion of the inspection, facility representatives stated that they would examine the feasibility of imposing administrative controls upon routine operation of the system to prevent exceeding the heat exchanger design pressure.

^{26/} Letter, NSP to Directorate of Licensing, dated 10/5/73.

^{27/} RO Inspection Report No. 050-263/73-01.

22. Low Boron Concentration in Standby Liquid Control System

A licensee report^{28/} discussed the dilution of the standby liquid control system boron solution to below the Technical Specification limit on May 24, 1973, and the administrative action taken to prevent a recurrence. The inspector reviewed the revised procedures with a licensee representative. A new form 5039, "Request for Addition to Liquid Poison Tank" had been issued and was in use. The inspector noted that implementation of the revised procedures completed the corrective actions identified in the licensee's response^{29/} to the RO:III enforcement letter.

23. Sodium Pentaborate Solution in Standby Liquid Control Pump Lubricating Oil

A licensee report^{30/} discussed the contamination of No. 12 standby liquid control pump lubricating oil with sodium pentaborate solution. Leaking packing on the pump shafts and a closed stuffing box drain valve caused the sodium pentaborate to leak into the crankcase. Although the normal practice is to coordinate such maintenance work with the control room, the stuffing box drain valve was closed without notification or logging. According to the licensee's representative, the painter who closed the drain valves was not properly oriented prior to his work assignment. It was noted, however, that the occurrence did not render the pump inoperable to perform its intended function. A management representative stated that a discussion on relationships between maintenance and operations personnel had been added to the briefing list for new employees. The inspector noted during a tour of the plant that the stuffing box drain valves had been seal-wired open to prevent recurrence.

24. Off-gas System Testing

The inspector reviewed the status of completion of the off-gas preoperational test program. Preoperational tests were approximately 85% completed, with approximately 35% of the completed tests having been reviewed by the Operations Committee. Review of other completed tests and preparation of the system operating manual were stated to be in progress along with required revisions to the Operations Manual. Ventilation tie-ins to the stack from the compressed storage building were expected to be completed during a brief outage in Mid-November, with system tie-in and operational testing to follow six to eight weeks later upon completion of preoperational tests and procedure review.

^{28/} Letter, NSP to Directorate of Licensing, dated 6/4/73.

^{29/} Letter, NSP to RO:III, dated 7/16/73.

^{30/} Letter, NSP to Directorate of Licensing, dated 9/25/73.

Licensee representatives stated that the hydrogen analyzer problem discussed in a previous report^{31/} had been resolved by the elimination of dilution flow to the analyzers. Representatives stated the operation with filament temperatures well below the detonation point and the use of double tungsten flame arresters had been shown to provide safe operation. Maintenance was also noted to be in progress on one of the off-gas compressors due to reduced compacity. A representative stated in a subsequent telephone conversation that the cause had been determined to be worn piston rings, apparently having resulted from operation at elevated temperatures. The representative stated that steps were being taken to ensure proper temperatures during subsequent operations, and the recurrence was not expected.

25. Malfunction of the "B" Standby Gas Treatment System Heater

A licensee report^{32/} described the failure of a 30 amp-600 volt fuse block assembly in the heater circuit of the "B" standby gas treatment system on September 29, 1973. The inspector reviewed the occurrence with licensee representatives, examined related records, and concluded that the matter had been accurately described in the licensee's report.

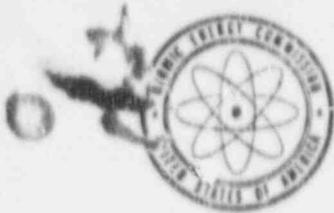
26. Lapse of Off-Gas Stack Monitoring

A licensee report^{33/} discussed a lapse in stack gaseous effluent monitoring during hot standby and plant startup to 30% power between August 7 and 10, 1973. Review of the occurrence with facility representatives showed the event and related corrective actions to have been accurately described in the licensee's report. The inspector verified the removal of the local purge switch to have been reviewed by the licensee as required by 10 CFR 50.59. The inspector stated during the management interview at the close of the inspection that the lapse in monitoring was a violation of paragraph 3.8.A of the Technical Specifications, which requires continuous monitoring of the stack effluent. He also noted that actions by the licensee to correct the violation and prevent its recurrence had been completed.

^{31/} RO Inspection Report No. 050-263/73-08.

^{32/} Letter, NSP to Directorate of Licensing, dated 10/8/73.

^{33/} Letter, NSP to Directorate of Licensing, dated 8/17/73.



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

TELEPHONE
(312) 858-2660

A. RO Inspection Report No. 050-263/73-11

Transmittal Date : December 7, 1973

Distribution:
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DR Central Files
Regulatory Standards (3)
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C. Incident Notification From: _____
(Licensee & Docket No. (or License No.))

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