

MAR 24 1983

MEMORANDUM FOR: D. G. Eisenhut, Director, Division of Licensing, NRR

FROM: C. E. Norelius, Director, Division of Project and Resident Programs

SUBJECT: SAFETY EVALUATION OF NUREG-0737, ITEM I.A.2.1.4, UPGRADING OF RO AND SRO TRAINING AND ITEM II.B.4, TRAINING FOR MITIGATING CORE DAMAGE MONTICELLO NUCLEAR GENERATING STATION, TAC NOS. 44176 and 44526

We have completed the review of the subject TMI Action Items. The Safety Evaluation and referenced portions of the Inspection Reports documenting this review are attached. These TMI Action Items were originally assigned to the Region III Operators Licensing Branch for evaluation. Therefore, the TAC NOS. are not on your "Status of Licensing Actions Under Regional Review."

Twenty-eight staff hours were used in this evaluation.

Any questions on this subject should be directed to K. R. Ridgway or J. I. McMillen (FTS 384-2544 or 384-2559).

C. E. Norelius, Director
Division of Project and
Resident Programs

Enclosures:

1. SE
2. Inspection Report (in part)
50-263/81-16 and 81-21

cc w/encls:

H. Nicolaras, ORPM
D. Vassallo, ORB-2
G. Lainas, AD/OR
D. Wigginton, LORPM

cc w/o encls:

J. Thoma, NRR

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WRM
Ridgway
3/21/83

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Tambling
3/21/83

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WRM
McMillen
3/21/83

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CSM
Streeter

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CSM
Norelius
3/23/83

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

(ITEMS I.A.2.1.4 and II.B.4.1 of NUREG-0737)

MONTICELLO NUCLEAR GENERATING STATION

DOCKET NO. 50-263

1.0 INTRODUCTION

As a consequence of the accident at TMI 2, implementation of a number of new requirements has been recommended for operating reactors. These new requirements are described in NUREG-0660, "NRC Action Plan Developed as a Result of the TMI 2 Accident," May 1980, and NUREG-0737, "Clarification of TMI Action Plan Requirement," November 1980. The NRC staff has also requested licensees to submit information sufficient to permit an independent evaluation of their response to these new requirements. This report provides an evaluation of the response to Action Plan Items I.A.2.1.4 and II.B.4, by Northern States Power Company (NSP).

2.0 EVALUATION

ITEM I.A.2.1.4

NSP in submittals to fulfill TMI Action Item I.A.2.1.4, has established a program to assure that all reactor operator and senior operator license candidates have the prescribed experience, qualification, and training. NSP has submitted a revised training program that includes training in areas required by the Task Action Plan Item I.A.2.1.4. The training programs in heat transfer, fluid flow, and thermodynamics, have been developed and are presently taught by the licensee.

Our review of the licensee's submittals, see references, indicate that NSP has revised their training and requalification training programs to include the areas required by TMI Task Action Item I.A.2.1.4 and we find the programs to be acceptable.

ITEM II.B.4

NSP has submitted the outline of a program for training in mitigating core damage. The program covers all of the training subjects specified in the INPO Report STF-01, Revision 1, dated January 18, 1981. These INPO guidelines, in turn, are based upon the training program outlined in the letter from H. R. Denton to all power reactor applicants and licensees, dated March 28, 1980. Our review of the licensee's program for the Monticello Nuclear Generating Station indicated that it meets the staff requirements of the TMI Action Item II.B.4.1. and is therefore acceptable. NSP is presently completing a revision to their Emergency Operating Procedures and a second phase training program for these procedures is scheduled to be completed following the next refueling

scheduled in early 1984. The Resident Inspector will review contents of the new emergency procedures and the training to implement them at this time. The item is carried as an open inspection item (263/81-16-01).

This completes the action required by Item II.B.4. However, future changes to the facilities, such as installation of additional instrumentation to detect conditions of inadequate core cooling, should be reflected in updates to the training program.

3.0 CONCLUSIONS

The information submitted by NSP and supplemented with verification reviews by RIII inspection (Inspection Report Nos. 50-263/81-16 and 50-263/81-21), provided sufficient details of the programs for upgrading RO and SRO training and for training in mitigating core damage for the staff to conclude that the requirements of Item I.A.2.1.4 and II.B.4 have been met.

4.0 References

NSP has submitted a number of items (letters and various attachments) which explain their training and requalification programs. These submittals, made in response to H. R. Denton's letter dated, March 28, 1980, form the information base for this evaluation.

1. Letter from J. A. Gonyeau, Manager, Production Training, NSP to Director of Nuclear Reactor Regulation, NRC, August 1, 1980 (1 pg, with five enclosures: items 2, 3, 4, 5, and 6).
2. Heat Transfer, Fluid Flow, and Thermodynamics Lesson Outlines (10 pp attached to item 1).
3. Mitigating Core Damage Lesson Outline (5 pp attached to item 1).
4. Reactor and Plant Transient Lesson Outlines (7 pp attached to item 1).
5. NSP Licensed Operator Requalification Program (10 pp attached to item 1).
6. NSP Instructor Requalifications Program (1 pg attached to item 1).
7. Letter from L. O. Mayer, Manager, Nuclear Support Services, NSP, to J. McMillen, Chief of Region III Operator Licensing Branch, NRC, October 20, 1981 (2 pp with one enclosure, item 5).
8. Letter from J. I. McMillen, Chief of Region III Operator Licensing Branch, NRC, to L. O. Mayer, Manager, Nuclear Support Services, November 19, 1981.
9. Letter from D. B. Vassallo, Chief of Operating Reactor Branch No. 2, to D. Musolf, Manager, Nuclear Support Services, NSP, December 30, 1982.

10. Letter from D. Musolf, Manager, Nuclear Support Services, NSP, to Director, Office of Nuclear Reactor Regulations, NRC, February 6, 1983.
11. Letter from D. Musolf, Manager, Nuclear Support Services, NSP to Director, Office of Nuclear Reactor Regulation, NRC, .

The following NRC personnel have contributed to this Safety Evaluation:

J. I. McMillen
C. H. Brown Jr.
K. R. Ridgway

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-263/81-21

Docket No. 50-263

License No. DPR-22

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

Facility Name: Monticello Nuclear Generating Station

Inspection At: Monticello Site, Monticello, MN

Inspection Conducted: October 1-30, 1981

Inspectors: *C. H. Brown*
C. H. Brown

A. L. Madison
A. L. Madison

Approved By: *W. S. Little*
W. S. Little, Chief
Reactor Projects Section 2C

12/18/81
12/18/81
1/11/81

Inspection Summary

Inspection on October 1-30, 1981 (Report No. 50-263/81-21)

Areas Inspected: A routine announced inspection of routine logs and records, housekeeping, routine security and radiological controls, followup on LERs and IE Bulletins, maintenance, design changes, preparation for maintenance shutdown, and TMI Task Action Items. The inspection involved a total of 124 inspector-hours onsite by two NRC inspectors including 28 inspector-hours onsite during offshifts.

Results: No items of noncompliance were identified in these areas.

8. Core Spray Line Safe End - Reducer Weld Cracks

The licensee reported that the radiograph of the core spray line safe end-reducer weld revealed that the UT indications were actual cracks in the heat effected zone. A Region III specialist followed up on this item and this is documented in Inspection Report No. 50-263/81-23. The plans are to replace the core spray line from the safe end to the first manual valve. The replacement is to be 304K stainless steel. This item is open and the design change will be reviewed when complete (263/81-21-01).

9. Independent Inspection Effort

One of the laborers working on cleaning up the inside of the torus reported he took a drink from the hose he was using to wash the torus. The water was being supplied from the condensate storage tank (CST) (within limits for a restricted area). The worker was given a whole body count and the results did not show any internal contamination. The training plan for workers at the site is now modified to specifically forbid drinking from hoses in the plant. The item remains open and will be reviewed in a future inspection (263/81-21-02).

10. TMI Action Plan Requirements Per NUREG-0737

Item I.A.2.1.4.B - Upgrading of Operator and Senior Operator and Senior Operator Training and Qualifications Modification. (Closed)

On August 1, 1980 the licensee submitted a modified RO and SRO training program. The program has essentially been implemented.

Item II.E.4.1.2 - Dedicated Hydrogen Penetrations Installation (Open)

The dedicated penetrations for the hydrogen recombiners were installed in November, 1980 and a satisfactory leak test was performed. During the October 1982 Maintenance Shutdown one set of penetrations will have the valves removed and the penetrations capped in preparation for a modification to prevent water collecting in the lines.

Item II.E.4.2 - Containment Isolation Dependability

The containment ventilation system isolation valves have been modified (see IE Report No. 50-263/80-19). The long term acceptance of the valve's operability is pending the review of the analysis by the valve vendor (Fischer).

- a. Parts 1-4, Implement Diverse Isolation was completed by December 31, 1979 (Closed).
- b. Part 5.b, Containment pressure setpoint is not to be changed. NRR concurred in November 1981 letter (Closed).
- c. Part 7, Radiation signal on purge valves is not going to be provided as per the Owners Evaluation (June 29, 1981 letter) (Closed).

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-263/81-16

Docket No. 50-263

License No. DPR-22

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

Facility Name: Monticello Nuclear Generating Station

Inspection At: Monticello, MN

Inspection Conducted: August 3 through 31, 1981

Inspectors: *W. S. Little*
C. H. Brown

10/28/81

W. S. Little
A. L. Madison

10/28/81

Approved By: W. S. Little, Chief
Reactor Projects Section 2C

10/28/81

Inspection Summary

Inspection during August 3 through 31, 1981 (Report No. 50-263/81-16)
Areas Inspected: A routine safety inspection was performed on routine logs and records, housekeeping maintenance, surveillance, training, retraining, followup on Licensee Event Reports and IE Circulars, reviewed minutes and monitored the SAC and OC meetings, discussed safety item with NSP Board of Directors, monitored cleanup of a liquid release. The inspection involved a total of 87 inspector-hours onsite plus 18 inspector-hours involved with the news media by two NRC inspectors including 27 inspector-hours onsite during offshifts.

Results: No items of noncompliance were identified in 11 of the 12 areas examined and three items of noncompliance were identified during review and evaluation of the liquid release (a design change was performed on the condensate storage system without the required review and approvals - Paragraph 12; work was performed on a contaminated system that was beyond the scope of the Work Request Authorization - Paragraph 12; work was performed on a contaminated system using a radiation protection specialist in lieu of a Radiation Work Permit (RWP), and a RWP was not written to document the job - Paragraph 12).

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9. Procedures

The inspectors reviewed selected procedures covering general plant operations, startup, operation and shutdown of safety-related systems, abnormal conditions, maintenance and administration to determine whether overall plant procedures are in accordance with regulatory requirements and whether the technical adequacy of the reviewed procedures is consistent with desired actions and modes of operations.

The plant Emergency Operating Procedures are in the process of being revised to comply with guidelines given by the NRC and various industry standards. Note that the NUREG 0799 "Draft Criteria for Preparation of Emergency Operating Procedures" was just recently released.

The inspectors also reviewed several temporary procedures for proper approvals and any conflicts with Technical Specifications.

No items of noncompliance were identified.

10. Training

During the period of April 1 to August 31, 1981, the inspectors verified by direct observation, by interviews of various licensee employees and temporary employees and by record reviews that the overall training activities for nonlicensed employees and general training for licensed employees are in conformance with Technical Specifications and QA program requirements.

No items of noncompliance were identified.

11. Requalification Training

During the period of September 1, 1980, to August 31, 1981, the inspectors have reviewed the licensee's requalification training program and its implementation.

The inspectors reviewed the training records of various licensed personnel including operators, supervisors and management for completeness and accuracy. The inspectors attended several training lectures to verify adequacy of technical content of presented information. The inspectors were unable to witness simulator training. However, all licensed personnel attended the Dresden simulator facility in Morris, Illinois and the records of their control manipulations, observations and supervisory time were consistent with Appendix A, Paragraph 3.a of 10 CFR Para 55.

The inspectors verified that required modifications to the requalification program called for NUREG-0737 were implemented. The inspectors also attended the Mitigating Core Damage training provided to all licensed personnel and others as required by NUREG-0737.

The training is provided by a contract through General Electric and appears to be consistent with the guidelines in Mr. H. R. Denton's letter of March 28, 1980, Appendix 3. However, the training does not appear to satisfy the intent of Item II.B.4 of NUREG-0737 as stated in the Position:

"Licensees are required to develop a training program to teach the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged. They must then implement the training program."

The training provided education on how to recognize when core damage has occurred, but not how to use "installed equipment and systems" to mitigate or control accidents in which the core is severely damaged. The licensee has informed the inspectors of a "second phase" of the training designed to train on the new Emergency Operating Procedures and on the use of installed equipment and systems to mitigate core damage. This second phase has not been scheduled as of yet due to delays in writing new Emergency Operating Procedures.

The licensee has agreed to submit an extension request to the October 1, 1981, deadline, and the inspectors have requested through appropriate IE channels resolution of this item from NRR. This is an open item. (263/81-16-01)

12. Liquid Release

On July 30, 1981, at approximately 10:00 p.m. (CDT) an unplanned, unmonitored liquid release occurred. The release from the condensate storage tank (CST) was approximately 1,400-gallons of which 100-gallons is estimated to have reached the Mississippi River upstream of the plant intake structure. The liquid was released when a hose connection to a Chem-Nuclear concrete processing unit broke inside the Radwaste Shipping Building. The water then ran out of the building and into a storm sewer. A patrolling guard spotted the water coming from under the truck door and notified the control room operators, who had the leak secured. Proper notifications were made by the plant and samples were taken. At first, the samples were reported as less than the maximum permissible concentration (MPC). However, at approximately 2:00 a.m. on July 31, 1981, analysis showed the CST water had concentrations of I-131 of 4.45×10^{-7} microcuries₂ per ml, I-133 of 1.04×10^{-6} microcuries per ml, and tritium of 1.2×10^{-2} microcuries per ml. These concentrations slightly exceed MPC and an Unusual Event was declared. The release concentrations were significantly less than MPC when averaged over a period of one year as allowed per the requirements of 10 CFR 20.106 RADIOACTIVITY IN EFFLUENTS TO UNRESTRICTED AREAS. Rain during the morning prompted concern over containment of further contaminated effluents emanating from the storm sewer. The inspector observed water dripping from the outlet of the storm sewer at approximately 10:00 a.m. July 31, 1981, and notified plant personnel. The outlets were immediately secured with sand and plastic, and additional samples were taken. The city of Minneapolis reacted by securing