

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

REGION III

Report No. 50-282/80-05; 50-306/80-06

Docket No. 50-282; 50-306

License No. DPR-42; DPR-60

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

Facility Name: Prairie Island Nuclear Generating Plant

Inspection At: Prairie Island Site, Red Wing, MN

Inspection Conducted: March 1-31, 1980

Inspectors: *KRBaker*
for C. D. Feierabend

4/18/80

E. R. Swanson
E. R. Swanson

4/18/80

Approved By: *KCB*
for D. C. Boyd, Chief
Reactor Project Projects Section 3-1

4/18/80

Inspection Summary

Inspection on March 1-31, 1980 (Report No. 50-282/80-05; 50-306/80-05)

Areas Inspected: Routine resident inspection of plant operation, maintenance, followup of licensee reported events and review of licensee small break loss of coolant accident procedures. The inspection involved 85 resident inspection hours onsite and 24 inspector-hours onsite by one regional based inspector.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Personnel Contacted

F. Tierney, Plant Manager
E. Watzl, Plant Superintendent, Plant Engineering and
Radiation Protection
A. Hunstad, Staff Engineer
R. Lindsey, Superintendent, Operations
J. Nelson, Superintendent, Maintenance
D. Mendele, Superintendent, Operations Engineering
G. Miller, Engineer
G. Lenertz, Engineer
B. Stephens, Engineer
G. Sundberg, Instrument Engineer
D. Cragoc, Shift Supervisor
G. Edon, Shift Supervisor
M. Balk, Shift Supervisor
J. Meath, Shift Supervisor
D. Walker, Shift Supervisor

2. General

Bruce Burgess was assigned and reported to the resident inspection office on March 3, 1980.

Both units operated at power throughout the month.

3. Review of Licensee Small Break Loss of Coolant Accident (SBLOCA) Procedures

The inspectors reviewed the licensee's SBLOCA procedures and compared them with the guidelines established in the Westinghouse Owners Group Document, "Reference Emergency Operating Instructions, 4 Loop, 3 Loop and 2 Loop Plants with Nominal 1400 PSI Range SI Pumps, Revision 1 with revised pages through November 2, 1979. Initial review completed on March 4-6, 1980 included the following procedures:

E1.0 Safety Injection Initiation, Rev. 1, Dated December 10, 1979

E1.1 Loss of Reactor Coolant, Rev. 2, Dated December 28, 1979

The resident inspector also reviewed the following procedures:

TMI-80-10 Temporary Change to Procedure E1.1, Dated March 12, 1980
E1.1 Loss of Reactor Coolant, Rev. 3, Dated March 25, 1980

In addition to the emergency procedures the licensee has drafted "basic" documents for safety injection initiation and for subsequent actions. These are intended to be available in the control room describing the basis for the steps in procedure E1.0 and E1.1. The basis documents will also be used for training and retraining.

- a. Procedure(s) has/have been reviewed and approved as required by Technical Specification 6.5.
- b. The procedures conform to the above referenced guidelines with the following exceptions and comments:
 - (1) E1.0 does not contain a word description of the "diagnostics", for accident evaluation. The licensee considers that the diagnostic figure and immediate action steps in the procedure are specific and sufficient. The licensee will include a minor additon to Figure E1.0-2 in the next revision of procedure E1.0.
 - (2) E1.0 does not include as immediate actions the verification of feed isolation and service and component cooling pumps started. The licensee includes these items in a more thorough checklist for auto actuation of SI and considers them not to be of comparable importance with other immediate actions.
 - (3) E1.0 Appendix I, Recover from Spurious SI, does not include the guideline step which re-establishes operation of pressurizer heaters and returns the makeup and letdown to pressurizer level control. The licensee will include an appropriately worded step in the next revision to the procedure.
 - (4) E1.0 contains no requirement to verify MSIV's closed after the containment pressure setpoint is reached. The licensee intends to include this in the next revision.
 - (5) E1.0 omits the note describing plant response to decay heat removal by steam generator power operated relief valves or code safeties only. The licensee intends to include this discussion in the "Basis" Document for E1.0.
 - (6) E1.1 contains the licensee's procedure for material switchover of ESF from injection to cold leg recirculation.

This procedure involves terminating injection flow during lineup for recirculation over a period not to exceed 10 minutes.

The licensee's procedure conforms to the vendor's guidelines and is as described in the FSAR. The inspector has verified that this sequence is similar to other 2 loop plants and has identified this as a question for generic resolution.

- (7) E1.1 does not contain caution statements concerning shutdown of idling or lightly loaded diesels or maintaining seal injection flow when reactor coolant pumps are secured. The licensee stated that their particular diesels are not adversely affected by idling and that maintaining seal injection flow is a known operator responsibility and that additions would tend to clutter the procedure.
- (8) E1.1 does not contain the notes concerning checking of redundant channels while performing steps of the procedure or using pressurizer level along with other indications when evaluating system conditions and initiating actions. The licensee has incorporated the first note into the supporting basis document and the second note was not repeated from E1.0 to prevent needless clutter.
- (9) E1.1 specifies 10 psig for reset of containment spray and stopping the spray pumps where the guide refers to "nominal operation containment pressure." The licensee chose this value for several reasons. It conserves RWST water and prevents unnecessary wetting of components in containment. Additionally, the containment fan coils are safeguards quality and designed for 100% pressure reduction.

The licensee's justifications and corrective actions appear to be adequate, pending resolution of item b. (6) above, which will be resolved on a generic basis.

- c. Initial review of procedure E1.1 found that there was a question concerning the method to be used to verify adequate subcooling prior to stopping safety injection. This was adequately clarified in Revision 3 to E1.1. The procedures appear to be concise and do not require numerous cross references which could lead to operator confusion.
- d. Proper precautions are provided in the procedure. Where appropriate they are repeated in the procedure.

- e. Procedural protection is provided against deadheading ECCS pumps where system pressure may be above pump shutoff head. Guidance is also provided on maintaining coolant inventory in these cases.

4. Operator Interviews

The inspector interviewed five licensed operators including two staff Senior Reactor Operators (SRO's) one Shift Supervisor (SRO license) and two shift reactor operators (RO license).

The operators interviewed:

- a. Knowledgeably discussed the symptoms and transient response characteristics of the plant with respect to a SBLOCA.
- b. Demonstrated a knowledge of the procedures to be used for a SBLOCA, and, with the exception of one staff SRO, the immediate actions required. The staff SRO, though not familiar with the specific immediate action steps was adequately familiar with the necessary actions and the bases for them.
- c. Were knowledgeable in the importance of heat sink, recognition of adequate subcooling and core voiding, importance of sub-cooled versus saturated conditions, indications of inadequate core cooling, and implementation of natural circulation.

5. Training

The licensee conducted formal classroom training for all licensed operators in December, 1979. The resident inspector attended one of the training sessions and determined that the training presented was acceptable.

The licensee scheduled procedure "walk through" training for all shift personnel to be conducted by each shift supervisor. The resident inspector observed a portion of one of the "walk throughs" and reviewed the training records. Initial record review indicated that one shift had not completed the walk through training. The resident inspector verified that additional walk through training for that shift was subsequently conducted.

6. Maintenance

The inspector reviewed several work requests (WR's) and work request authorizations (WRA's) and verified that all required reviews and approvals had been completed.

7. Plant Operations

The inspector reviewed plant operations including examination of selected operating logs, special orders, temporary memos, jumper and tagout logs for the month of March. Tours of the plant included walks through the various areas of the plant to observe operations and activities in progress; to inspect the status of monitoring instruments, to observe for adherence to radiation controls and fire protection rules, to check proper alignment of selected valves and equipment controls, and to review status of various alarmed annunciators with operators.

The inspector also reviewed annunciator status, recorder charts, surveillance records, and logs to verify that plant operations were maintained in accordance with Technical Specification requirements.

8. Licensee Event Reports (LERs)

The inspector reviewed the following LERs submitted by the licensee, determined that reporting requirements had been met, and determined that corrective actions were being implemented. (Closed)

- a. P-RO-79-11, Unit 2, Operation with One Source of Offsite Power
- b. P-RO-80-01, Both Trains of Caustic Addition Valved Out.

This event was discussed with the licensee management during a meeting on February 26, 1980. ^{1/}

- c. P-RO-80-03, Unit 2, Steam Generator Tube Degradation

The licensee met with NRR at the vendor's laboratory on February 12, 1980 to discuss and evaluate the problem with the conclusion that there was adequate technical justification to support a return to power.

- d. P-RO-80-04, Instrument Drift, Loop A Steam Flow Transmitter
- e. P-RO-80-05, D1 Diesel Generator Lockout by Pressure Switch Operation
- f. P-RO-89-07, Load Limit Control for D1 Diesel Generator Found on Incorrect Setting.

This event was described in a previous inspection report. ^{2/}

^{1/} IE Inspection Report Nos. 50-282/80-04 and 50-306/80-05.

^{2/} IE Inspection Report Nos. 50-282/80-03 and 50-306/80-04.

9. Exit Interview

The inspectors conducted an interview exit interview with Mr. Lindsey on March 6, 1980. An exit interview was held with Mr. Tierney at the conclusion of the inspection. The inspectors discussed the scope and the results of the inspection. The licensee stated that implementation of "TMI-2 Lessons Learned" has top priority, and that supplemental information was being forwarded to NRR.