

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-263/84-16(DRP)

Docket No. 50-263

License No. DPR-22

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

Facility Name: Monticello Nuclear Generating Station

Inspection At: Monticello Site, Monticello, MN

Inspection Conducted: September 11-13, 1984

Inspectors: D. C. Boyd *RW DeFayette*
R. W. DeFayette *RW DeFayette*
B. L. Jorgensen *RW DeFayette*
R. Hasse *MN WASE*

Approved By: D. C. Boyd, Chief *RW DeFayette*
Reactor Projects Section 2D *for*

10/5/84
Date

Inspection Summary

Inspection from September 11-13, 1984 (Report No. 50-263/84-16(DRP))
Areas Inspected: A special, announced inspection by Region-based inspectors of management and work control activities during the recirculating pipe replacement outage. The inspection involved a total of 90 inspector-hours onsite by 4 NRC inspectors.
Results: No items of noncompliance or deviations were identified.

DETAILS

1. a. Licensee Personnel Contacted

- *L. Eliason, General Manager, Nuclear Plants
- *M. Clarity, Assistant to the Plant Manager
 - D. Nevinski, Plant Superintendent, Engineering and Rad. Protection
- *D. Antony, Superintendent of Operations
- *W. Anderson, Plant Superintendent, Operations and Maintenance
 - R. Scheinost, Superintendent, Quality Engineering
- *J. Pasch, Superintendent, Security and Services
- *L. Waldinger, Superintendent, Radiation Protection
 - W. Hill, Superintendent, Technical Engineering
 - W. Albold, Superintendent of Maintenance
- *B. Day, Superintendent, Operations Engineering
 - L. Nolan, Superintendent, Nuclear Technical Services
 - A. Sillman, Construction Superintendent, NE&C
- *F. Schober, Scheduling Administrator
- *P. Walker, Acting Superintendent, Quality Engineering
- *P. Johnson, Project Manager, NE&C
- *G. Crosby, Lead Quality Assurance Engineer
- *J. Closs, Power Supply, Quality Assurance
- *J. Bystizycki, NE&C, Quality Control
 - L. Pudlick, Engineer
 - W. Boehme, Site Superintendent
 - M. Onnen, Site Superintendent
 - F. Ratka, Scheduling Coordinator
 - G. Earney, Training Superintendent
 - R. McGillic, Training Engineer
 - M. Brant, Site Superintendent
 - J. Rowan, QA Engineer
 - M. Miller, Acting Superintendent, Radiation Protection
 - D. Larsen, Project Engineer, NE&C
 - G. Goering, Manager, Nuclear Technical Services

b. NRC Personnel

- D. Boyd, Region III
- R. DeFayette, Region III
- C. Brown, SRI, Monticello
- B. Jorgensen, SRI, Palisades
- R. Hasse, Region III
- G. Gower, IE
- R. Lloyd, IE
- R. Jacobstein, Consultant (IE)

The inspectors also contacted other licensee employees including members of the technical and engineering staffs and reactor and auxiliary operators.

*Denotes those licensee representatives attending the management exit interview.

2. Work Control Practices

The licensee's Administrative Control Directives (ACDs) and Administrative Work Instructions (AWIs) were briefly reviewed for familiarization with policies and instructions governing equipment control. Systems procedures for selected systems which remain important even during an extended outage were then briefly reviewed:

- a. Operations Manual B.9.1, "Electrical Systems - General Procedure".
- b. B.9.8, "Diesel Generators".
- c. B.2.1, "Fuel Pool Cooling".
- d. B.8.4.1, "Instrument and Service Air".
- e. B.7.1, "Liquid Radwaste", Section III, "Closed (Clean) Radwaste".
- f. B.8.7, "Heating and Ventilation System".
- g. B.8.5, "Fire Protection".

Discussions were held with Operations Shift Supervisors focusing on problems which have occurred at other plants during extended outages to ascertain whether similar problems could occur at Monticello. Known and potential causes which contributed to these problems were reviewed against procedures, practices and philosophies relating to equipment control at Monticello. The flow and exchange of information concerning system/equipment conditions, status of work activities, and plans and schedules for upcoming activities were especially emphasized.

The licensee uses a Work Request Authorization (WRA) system for essentially all work activities. The Shift Supervisor is the final authorizing official, and must sign the WRA before work can begin. To aid him in deciding whether or when to authorize the work, NSP has written a procedure (4AWI-3.6) which identifies critical systems, instruments, and structures. The status of these systems is maintained on a status board in the Shift Supervisor's office. When the work requires equipment tagging for workmen protection or for equipment isolation/protection, this tagging is accomplished by the Operations group under the direction of the Shift Supervisor. Most tagouts are performed according to instructions of an Operations Controlling Document (OCD) which accompanies the WRA. The licensee has prepared approximately 500 OCDs for work activities associated with both safety-related and other components, which are retained on file for use when a need to work on a given component is identified. Several examples of OCDs for various components of interest were examined:

- (1) OCD 4101-2, "#12 Emergency Diesel Generator".
- (2) OCD 4460, "Heating and Ventilation, V-SF-10" (diesel ventilation).
- (3) OCD 4842-2, "Emergency Service Water Pump #12 Electrical Maintenance".

(4) OCD 4160-3, "Instrument Air System - #13 Air Compressor".

(5) OCD 4131-1, #11 RBCCW Heat Exchanger".

(6) OCD 4193, "Electric Motor, Fire Protection Pump".

At some nuclear plants it has been determined that, on occasion, significant changes are made in administrative control procedures during an extended outage as compared to control procedures used when the plant is operating. Technical Specification requirements also may be greatly reduced, especially in terms of mandated equipment operability. Some systems will be required out of service for maintenance or modification, other systems may not be needed nor is there any work being performed on them while still others are needed to continue to perform their routine and emergency functions. In this situation, the overall picture may become clouded by the heavy daily details of processing numerous work requests (both removing equipment from and returning it to service), and this can lead to confusion and errors. Northern States Power Company (NSP) appears to have made very few changes, if any, to equipment control administrative requirements from what is used during normal operation. NSP maintains WRA files on a system basis, such that the status of a system and the components of that system can be determined by review of a single file. All work groups are required to file on a daily basis an "active" WRA status report covering their individual activities. Status sheets and boards are also used.

At some other plants it has been found that equipment on which work has been completed, but which is not under a Technical Specification LCO for timely return to service because the plant is in an outage, may not be returned to service promptly. Technical Specification out-of-service limits are not imposed nor are there written directives to assure rapid return to operability of the equipment on completion of work. This could increase the overall risk of accidents or incidents by keeping a system out of service that possibly could help mitigate the consequences of some future event. The philosophy of NSP at Monticello, however, appears to be directed to prompt restoration to service of systems which have been removed from service and repaired. The Monticello scheduling group also provides some forcing function in this area by establishing system restoration milestones in the activity schedule.

During extended outages, a larger and more diverse group of workers is typically onsite at any plant. Many workers are unfamiliar with administrative control requirements, and with plant layout and equipment locations. This creates an added potential for unauthorized removal of equipment from service, or for mistakenly working on the wrong equipment. NSP resolves this problem by permitting only Operations Department personnel to remove and restore equipment. A system is in place for temporary partial restoration of equipment for testing (again, solely through the Operations Department) which requires the equipment to be returned to the isolated pre-test condition. The WRA package usually includes a uniquely numbered half-tag which matches a tag with the same number which is hung directly on the component on which the work is to be performed. This provides

assurance that a workman will not mistakenly start work on a wrong component. Although this system apparently is not used universally at Monticello for all work, it is used when multiple components such as valves or instruments are located close together.

At some other plants it has been found that systems which are not being worked on and which are not required or needed during an extended outage may suffer degradation from inattention to such considerations as environmental or chemical conditions. At Monticello, NSP planned an extended dry layout of certain such systems. Others are being subjected to the same routine surveillance and sampling processes which would be required during normal plant operation. NSP also is maintaining operator area surveillances and log sheet-directed checks to the extent practicable. This assures the routine presence in most plant areas of an individual knowledgeable in what the licensee would consider "normal" versus "degraded" conditions in the plant.

The inspector found the Operations Controlling Documents to be adequately comprehensive and clear for those items inspected. They contain appropriate cross-references to Technical Specifications, procedures, drawings and other information. There is currently some variation from one OCD to another in terms of format, with those more recently developed conforming to a clearer standard format specifically addressing precautions and prerequisites, removal from service, isolation, return to service, and testing. The inspector believes that more detail also could be provided for some of the more complex, safety-related system OCDs as they are upgraded to the standard format. This includes verification of operability or testing of redundant components, or auxiliaries to redundant components.

No items of noncompliance or deviations were identified.

3. Control of Design Changes and Modifications

The inspector reviewed the design change and modification control program for modifications implemented by the plant staff. The emphasis for this review was placed on the adequacy of safety evaluations, operability testing, work control, and completion of document revisions.

a. Documents Reviewed

- . Administrative Control Directive 3ACD4.1, "Design Change Control," Rev. 9.
- . Administrative Work Instruction 3AWI4.1.1, "Safety Evaluations," Rev. 2.
- . Management Memorandum PSQA 84-2, June 29, 1984.
- . Completed design change packages:
 - . DC 82M083 - Scram Solenoid Modification.

- . DC 81M010 - RPV Feedwater Nozzle Modification.
- . Preliminary Design Change Packages:
 - . DC 83M100 - Limitorque Operator Replacements for EQ.
 - . DC 84M034 - Modifications to the Hydrogen Analyzer Trip Circuits.

b. Results of Inspection

Design changes implemented by the plant staff are currently controlled by Administrative Control Directive 3ACD4.1, "Design Change Control." All modifications initiated after January 1, 1985, will be done in accordance with the NIAWI5.1.X series of work instructions. This change will provide for more complete documentation of the design process (i.e., design inputs, design verification methodology, etc.).

The review of 3ACD4.1 and the design change packages listed in Paragraph 3.1 indicated that plant implemented design changes were adequately controlled. Safety evaluations were documented and included evaluation criteria as well as conclusions. Design packages were not closed until all documentation was completed.

4. Corporate QA Coverage of Outage Activities

Discussions with QA personnel indicated a substantial amount of QA coverage by corporate personnel. Operations QA has completed approximately 60 surveillances of outage activities as well as performing audits in the areas of modification verification, Work Release Authorization (WRA) controlled activities, and equipment control.

Project QA provides coverage of Nuclear Engineering and Construction (NE&C) Department activities. Coverage includes audits and surveillances of NE&C and contractor activities on site. Audits at contractor facilities are also performed as appropriate. Approximately 380 surveillance reports have been issued during the outage by project QA.

5. Surveillances

The inspectors reviewed logs and interviewed personnel to determine if surveillance tests are performed on systems which are operational. The inspectors determined that the licensee periodically publishes a memo which lists those surveillance tests which are not required because of the reactor condition. Any surveillance test which does not appear on this list must be performed routinely. When a system is returned to service following maintenance, it is immediately put back on the routine surveillance list which is kept by computer and which is used to identify when surveillances are due. Prior to reactor startup, all critical systems will be verified operational by using the "Pre-Start Check-list" forms.

6. Training

The inspectors interviewed personnel in the training department and examined a few training documents to determine how training is requested and completed for new or modified systems. When a design change is requested, it is accompanied by a "Design Change Control Form" (Form 3-3016-1, Rev. 6) on which the requestor (the responsible engineer) checks the blocks that apply to the change. One of those blocks is "Training", and if it is checked, the requestor attaches a "Request for Training" form on which he briefly describes the desired training. This form is sent to the Training Department where it is logged on a "Training Request" log and returned to the requestor. When the training is completed, the requestor is then notified. The Work Request Authorization cannot be signed off as completed by QA until it is verified that the training is completed.

Commencing January 1, 1985, the licensee will implement new procedures for nuclear plant modifications which will strengthen the training requirements. With the new procedures, when a modification is initiated (procedure NIAWI 5.1.2, Rev. 0) a modification team may be appointed by the Plant Superintendent Engineering and Radiation Protection (PSERP). This team may consist of one or more people and should act as a consulting group in the modification process. The Modification Team Assignments, which can include training if deemed necessary, are formalized on Form 1-3034.

Following completion of the modification, Procedure NIAWI 5.1.16, Rev. 0, "Turnover for Operations", is used to document that the modification is ready for turnover to the plant for operation. Part of this procedure is the turnover checklist, Form 1-3055, which contains a block titled, "Required Training Completed." A similar checklist is contained in procedure NIAWI 5.1.17, Rev. 0, "Modification Closeout" which establishes the methods for closing out a modification.

This new system is not being implemented until January 1, 1985, because the licensee will be presenting a 4 day workshop on the new system to affected plant personnel prior to its implementation. The workshop will require the attendees to "walk" a plant modification through the new procedures, including filling out all required documents.

7. Scheduling

The inspectors interviewed the plant scheduling administrator and other personnel to determine how work control scheduling is maintained during the long outage. The Administrator stated that no new organization was created for the outage, and that planning for it started about a year before it began. The plant Operations committee approves all work, but the Scheduling Administrator gives them the "window" in which the work can be performed. Day to day control is maintained by conducting brief morning meetings at which responsible personnel discuss the work which was completed the previous day and which is scheduled for the current day. This is tracked on a 3 day computerized schedule (the 3 days being the previous day, the current day, and the next day) which is updated

daily. This system and the daily meeting provides current information to the responsible personnel so they can determine how other work activities will impact their areas of responsibility.

8. Systems Engineers

The licensee maintains a policy of designated "Systems Engineers" who are responsible and cognizant of all aspects of their assigned systems. They are in the work path of Work Request Authorizations (in fact, they generally initiate them) and must review all design modification proposals for their systems. When such modifications are made, the system engineer must assure that: (1) system drawings are updated; (2) procedural changes are made; (3) the training department is notified to provide any required training.

The inspectors discussed the systems engineer concept with operations personnel to determine how they interact with one another. Although the operations personnel apparently agree with the concept, several of them stated that many of the engineers are very inexperienced and are not very familiar with the details of their systems. This does not cause a safety concern, however, because the shift supervisor will not approve the WRA until he has personally talked to the systems engineer and determined exactly what the WRA will accomplish.

9. Summary

This was a unique inspection in that it focused on management control of work activities during the long recirculation pipe replacement outage. The reason for the inspection was recent events at 2 other reactor sites in which there were violations during long outages apparently due to a relaxation of attentiveness brought about by a false sense of security because of the outage. The inspectors' conclusions at Monticello are that the licensee is maintaining normal work practices and vigilance as much as possible, is fully aware of the importance of maintaining control of all work, and is determined not to lull itself into major mistakes because of the outage. Plant personnel interviewed by the inspectors also are aware of the importance of maintaining control. The inspectors found no weaknesses in the management control procedures and attitude of workers.

10. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection and summarized the scope and findings of the inspection activities. The licensee acknowledged the inspectors' comments.