

December 2, 1999

Mr. M. Wadley
President, Nuclear Generation
Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

SUBJECT: OPERATOR LICENSING REQUALIFICATION INSPECTION
REPORT 50-282/99018(DRS); 50-306/99018(DRS)

Dear Mr. Wadley:

This refers to the biennial inspection of the licensed operator requalification training program conducted on November 1 through 5, 1999, at your Prairie Island Nuclear Generating Station, Units 1 and 2. The results of this inspection were discussed with Mr. J. Sorensen and other members of your staff on October 28, 1999. The enclosed report presents the results of this inspection.

This inspection was an examination of activities conducted under your license as they relate to safety and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC identified one issue of low safety significance that was entered into your corrective action program and is discussed in the enclosed report. This issue was determined to involve a violation of NRC requirements; however, because of its low safety significance, the violation was not cited. If you contest this noncited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Prairie Island facility.

No safety significant findings were identified.

In accordance with 10 CFR 2.790 of the NRC's Rules of Practice, a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

M. Wadley

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/s/ D. E. Hills

David E. Hills, Chief
Operations Branch

Docket Nos. 50-282; 50-306
License Nos. DPR-42; DPR-60

Enclosures: 1. Inspection Report 50-282/99018(DRS); 50-306/99018(DRS)
2. Simulation Facility Report

cc w/encls: Site General Manager, Prairie Island
Plant Manager, Prairie Island
S. Minn, Commissioner, Minnesota
Department of Public Service
State Liaison Officer, State of Wisconsin
Tribal Council, Prairie Island Dakota Community

M. Wadley

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Original Signed by David E. Hills

David E. Hills, Chief
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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-282; 50-306
License Nos: DPR-42; DPR-60

Report No: 50-282/99018(DRS); 50-306/99018(DRS)

Licensee: Northern States Power Company

Facility: Prairie Island Nuclear Generating Plant

Location: 1717 Wakonade Dr. East
Welch, MN 55089

Dates: November 1 - 5, 1999

Examiners: Michael Bielby, Reactor Inspector
Ann Marie Stone, Reactor Inspector

Approved by: David E. Hills, Chief, Operator Licensing Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

Prairie Island Nuclear Power Station, Units 1 & 2
NRC Inspection Report 50-282/99018(DRS); 50-306/99018(DRS)

This report covers the pilot baseline inspection for the biennial review of the licensed operator requalification training program. The inspectors used the risk informed baseline pilot inspection procedure 71111 Attachment 11, [ALicensed Operator Requalification@](#).

REACTOR SAFETY

Cornerstone: Barrier Integrity

The inspectors observed three examples involving compromise of licensed operator requalification examination integrity with respect to examination security. This non-cited violation included two instances in which personnel not on the security agreement were present during job performance measure administration on the simulator and one instance which allowed the possibility for additional unauthorized personnel to view job performance measure administration on the simulator. This violation had low safety significance because the examples did not result in invalidation of administered requalification examinations.

Report Details

I. Operations

1. REACTOR SAFETY

1R11 Licensed Operator Requalification

.1 Operator Knowledge and Performance

.1.1 Annual Evaluation of Operator Performance (Operator Requalification)

a. Inspection Scope (71111.11)

The inspectors observed the performance of one operating shift crew during the annual licensed operator requalification operating examination. The crew consisted of four licensed reactor operators (RO) and four licensed senior reactor operators (SRO). The operating shift crew was divided into two simulator crews for evaluation purpose.

b. Observations and Findings

No significant inspection findings were identified.

.2.1 Operating History

a. Inspection Scope (71111.11)

The inspectors reviewed the plant's operating history from January 1998 through September 1999, to assess whether the licensed operator requalification training program had addressed operator performance deficiencies noted in the plant. The inspectors discussed recent human performance issues with the NRC resident inspectors and licensee personnel, and reviewed the following documents:

\$ Licensee Event Reports for 1998 and 1999,

\$ the current plant issues matrix, and

\$ selected NRC Inspection Reports, including reports written by resident inspectors and operator licensing examiners.

b. Observations and Findings

No significant inspection findings were identified.

.2.2 Requalification Examination Material

a. Inspection Scope (71111.11)

The inspectors reviewed the annual requalification examination material, which consisted of dynamic simulator scenarios, job performance measures (JPM), and written examinations to evaluate general quality, construction, and difficulty level. The inspectors assessed the examination material quality and content using inspection procedure 71111, Attachment 11 checklists. The inspectors reviewed the methodology for developing the requalification examinations, including incorporation of probabilistic risk assessment insights. The inspectors compared both the current year and last year's annual requalification cycle examination material to assess the level of examination material duplication. The inspectors also discussed various aspects of the examination development with members of the licensee's training and operations staff.

b. Observations and Findings

No significant inspection findings were identified.

.2.3 Requalification Examination Administration Practices

a. Inspection Scope (71111.11)

The inspectors observed the administration of all aspects of the requalification examination to determine the evaluators' ability to administer an examination and assess adequate performance through measurable criteria. The inspectors observed the performance of the simulator to support the examinations. The inspectors observed one operating shift crew (divided into two simulator crews) during the dynamic simulator scenarios and JPM evaluations. Nine licensed operations and training staff personnel were observed administering the examinations, including pre-examination briefings, observations of operator performance, individual and crew evaluations of observations, techniques for JPM cuing, and final evaluation briefing and documentation for twelve licensed operators. In addition, the inspectors interviewed operators and key staff members from training and operations departments to assess their understanding of the requalification training process. The inspectors also reviewed the licensee's overall examination security program.

b. Observations and Findings

On November 3, 1999, during the administration of JPMs in the simulator, the inspectors observed the following examination security concerns:

- \$ Maintenance personnel repaired a lock on a simulator instructors=booth door and inspected the simulator back door lock while the operators were performing their annual requalification JPM examinations. These individuals were not on the security agreement.
- \$ An individual entered the simulator room to update procedures which had been revised. This individual was not on the security agreement.
- \$ The windows on the simulator instructors= room doors were not covered. Though somewhat obstructed, it was possible to view the actions in the simulator or computer displays through these windows.

The individuals involved were not sensitive to the warning signs placed on the doors. These three instances represented opportunities for other licensed personnel, who would later be administered the same examination material, to gain knowledge of the examination content and therefore, adversely impacted the integrity of the examination. The three instances described above are examples of a violation of 10 CFR 55.49, Integrity of Examinations and Tests, which requires that facility licensees shall not engage in any activity that compromises the integrity of any examination required by 10 CFR Part 55. This violation is being treated as a Non-Cited Violation (NCV) consistent with the Interim Enforcement Policy for Use During the NRC Power Reactor Oversight Process Pilot Plant Study (50-282/99018-01; 50-306/99018-01 (DRS)). This violation is in the licensee's corrective action program as issue 19993150. This violation had low safety significance because the examples did not result in invalidation of administered requalification examinations.

.2.4 Requalification Training Program Feedback Process

a. Inspection Scope (71111.11)

The inspectors verified the methods and effectiveness of the licensed operator requalification training program to ascertain whether assessments of operator performance were effectively incorporated into the requalification training. The inspectors performed interviews with key licensee personnel (operators, instructors, training management, and quality assurance) and reviewed the applicable licensee's procedures and the following documents to assess the licensee's training program feedback system effectiveness:

- \$ Student and Manager evaluations of training sessions and
- \$ Licensee self-assessments of the training program.

b. Observations and Findings

No significant inspection findings were identified.

.2.5 Remedial Training Program

a. Inspection Scope (71111.11)

The inspectors reviewed documentation of the licensed operator requalification remedial training program and program procedures, and conducted interviews with key staff members. The inspectors reviewed remedial training packages for individuals who failed portions of the 1998 operating examination. At the time of the inspection, there were no failures of the 1999 requalification examination.

b. Observations and Findings

No significant inspection findings were identified.

.2.6 Conformance with Operator License Condition

a. Inspection Scope (71111.11)

The inspectors reviewed a sample of licensed operators' records to ascertain whether the facility and the operator licensees were maintaining license conditions in accordance with 10 CFR 55.53. The following records were reviewed:

\$ a sampling of licensed operator medical records,

\$ operator proficiency log records for 1999 which indicated the watch standing hours for licensed operators at the facility, and

\$ requalification training attendance records for this current cycle.

b. Observations and Findings

No significant inspection findings were identified.

4.0 OTHER ACTIVITIES

4OA4 Closure of Items

.1 (Closed) Violation (VIO) 50-282/98010-01; 50-306/98010-01: Inadequate Procedure for Dumping Steam with Steam Generator Power Operated Relief Valves. The inspectors verified the corrective actions described in the licensee's response letter, dated August 7, 1998, to be reasonable and complete. No similar problems were identified.

.2 (Closed) Violation (VIO) 50-282/97019-01; 50-306/97019-01: Section Work Instruction O-10, AOperations Manual Usage,@Circumvented Required Emergency Operating Procedure Steps. The inspectors verified the corrective actions described in the licensee's response letter, dated January 21, 1998, to be reasonable and complete. No similar problems were identified.

- .3 (Closed) Violation (VIO) 50-282/97019-02; 50-306/97019-02: Several Section Work Instructions Were Improperly Implemented Without Proper Approval and Review. The inspectors verified the corrective actions described in the licensee's response letter, dated January 21, 1998, to be reasonable and complete. No similar problems were identified.
- .4 (Closed) Inspection Follow-up Item (IFI) 50-282/97019-03; 50-306/97019-03: Licensee's Use of Dual Role Senior Reactor Operator/Shift Technical Advisor (SRO/STA). The inspectors reviewed 1998 Observation Reports related to the licensee's self-assessments of the Shift Manager (SM) Oversight role. The licensee identified problems related to the SM/STA responsibilities during various dynamic simulator scenarios involving routine, abnormal, and emergency plant events. The licensee implemented corrective actions which included revision of several emergency plan implementing procedures and abnormal procedures to allow the shift supervisor (SS) of the unaffected unit to assist the SM, as necessary, and to no longer require the SM to directly respond to the scene of a chemical or oil spill, fire, medical, or radiological emergency. During this inspection, the inspectors observed the licensee administer two scenarios to two different crews that involved instances in which the SM was required to perform concurrent duties of SM, emergency director, and STA. During emergency plant operations, the SM called on the unaffected unit SS to assist in implementation of the emergency plan by providing initial reviews of event classification and protective action recommendations, and making notifications. The inspectors did not observe any loss of the SM overview role or oversight function during the scenario examinations based on direct involvement in tasks related to performance of concurrent duties of SM, emergency director, and STA.
- .5 (Closed) Unresolved Item (URI) 50-282/97019-04; 50-306/97019-04: Potential Failure to Provide Adequate Instruction to Meet Completion Time Criteria Assumed in the Updated Safety Analysis Report for a Steam Generator Tube Rupture Event. The licensee initiated non-conformance report 19970653 to address this issue. Using operator response times and design assumptions, the licensee recalculated the amount of time operators would have prior to overfilling the steam generator during a tube rupture event. The licensee determined that a steam generator overfill could occur sometime between 28.4 and 32.7 minutes into the event depending on how quickly the crew isolated the auxiliary feedwater system. The licensee demonstrated that each crew could meet this time requirement; thus, meet the assumptions in the Updated Safety Analysis Report. Therefore, no violation occurred. The scenario was incorporated into the requalification program.

4OA5 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on November 5, 1999. The licensee acknowledged the observations and findings and did not identify any information as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Amundson, General Superintendent, Engineering
D. Fricke, Superintendent Simulator Engineering
J. Jensen, Training Process Manager
T. Johansen, Operations Training Requalification Coordinator
B. Mather, Shift Manager Special Projects
S. Seilhmer, Operations Training Instructor
T. Silverberg, General Superintendent Plant Operations
J. Sorensen, Site General Manager
D. Westphal, Operations Training Superintendent

INSPECTION PROCEDURES USED

71111.11 Reactor Safety - Initiating Events, Mitigating Systems, Barrier Integrity, Attachment
11, Licensed Operator Requalification

LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that NRC inspectors reviewed the documents in their entirety, but, rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. NRC acceptance of the documents or any portion thereof is not implied.

Procedures:

Program Description for License Requalification Training Program P9100L, Revision 14
5AWI 1.5.8, AProcedure Adherence,@Revision 0
5AWI 3.15.6, @Site Communication Standard@, Revision 0
Emergency Plan Implementing Procedures, Section F3, AClassification of Emergencies,@ Revision 25
SWI-O-2, AShift Organization, Operation and Turnover,@ Revision 41
SWI-O-10, AOperations Manual Usage,@ Revision 36
SWI-O-39, AOperations Training Plan, Revision 5
SWI O-40, ALicense Requalification,@ Revision 1
SWI O-50, AReactivity Management,@ Revision 0
SWI-OT-4, ACycle Examination Development/Review/Approval Flowchart,@ Revision 0
SWI-OT-5, ATest Item Guidelines,@ Revision 0
SWI-OT-6, AEvaluator Practices,@ Revision 1
SWI-OT-7, ACrew Training Representative Responsibilities,@ Revision 5
SWI-OT-8, AExam Security,@ Revision 5
SWI-OT-9, AOperations Training Computer Administered Examinations
Training Procedures 2.3, AIncorporating PRA [probabilistic risk assessment] into Training,@
Revision 1
Training Procedures 3.5, ARequalification Examination Bank Maintenance,@ Revision 0
Training Procedures 3.7, ALicense Requalification Examination Administration,@ Revision 7
Training Procedures 4.1, ATraining Evaluation,@ Revision 5

Current Cycle Material:

Post Course Evaluation Reports for Cycles 98-01 through 98-13
Simulator Evaluation Summary for Cycles 98-06, 98-09 and 98-10
Simulator Evaluation Exam Analysis for Requal Cycles 98-06 and 98-08
Remedial Training Plans for Selected Individuals
Attendance Records for Current Requalification Cycle
Part A and Part B Written Examination administered on November 4, 1999
Simulator Exercise Guide #18, ACharging Pump Air Leak, Continuous Rod Withdrawal, SBLOCA
[small break loss of coolant accident],@ Revision 8
Simulator Exercise Guide #32, APRZR [Pressurizer] Level Failure, Fire, Loss of Generator Seal Oil
and SGTR [steam generator tube rupture] with Subsequent Fault,@ Revision 3
Simulator Exercise Guide #41, APRZR Level Failure, Turbine Valve Malfunctions, Uncontrolled
Depressurization of Both SGs [steam generators],@ Revision 2

Simulator Exercise Guide ATT043, AAuto Stop Oil Transmitter Failure, VCT [volume control tank] Level Transmitter Failure, Loss of all AC with LBLOCA [large break loss of coolant accident], Revision 1

Simulator Exercise Guide ATT0033, ASeal Water Heat Exchanger Leak, CRUD Burst; SBLOCA, Transfer to Recirculation, Loss of Recirculation,@ Revision 0

Simulator Exercise Guide ATT040, AFailure of RPS [reactor protection system], Tornado, LOOP [loss of offsite power], Loss of Heat Sink,@ Revision 2

JPM MS-3S, AInitiate Cooldown of Unit 1 RCS [reactor coolant system] Using 11 SG PORV From HSD [hot shutdown] Panel,@ Revision 5

JPM VC-3S, APlace Excess Letdown in Service,@ Revision 6

JPM EO-9S, ATerminate SI [safety injection] and RHR [residual heat removal] Flow Following Inadvertent SI,@ Revision 7

JPM BD-1F-1, ARespond to a Loss of Generator Bus Duct Cooling,@ Revision 3

JPM EG-8, AReset D6 EDG [emergency diesel generator] Start Failure and 86 Relays,@ Revision 3

JPM EO-3SF-1, ARespond to Reactor Trip with Safety Injection (Immediate Actions),@ Revision 2

Assessments:

Prairie Island Operations Training Self Evaluation Report for 3rd Quarter 1997 (Requal Exam Bank Maintenance)

Prairie Island Operations Training Self Evaluation Report dated conducted July 26-30, 1999

General Quality Services Audit Report AG 1998-01, APlant Operations Personnel Training@

General Quality Services Audit Report AG 1998-03, APlant Simulators@

Operations Training PAC [program advisory committee] Meeting Minutes for 1998 and 1999

LIST OF BASELINE INSPECTIONS PERFORMED

The following inspectable-area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

Licensed Operator Requalification

Inspection Procedure 71111.11

SIMULATION FACILITY REPORT

Facility Licensee: Prairie Island Nuclear Station

Facility Licensee Docket Nos: 50-282; 50-306

Operating Tests Administered: November 2 through November 4, 1999

The following documents observations made by the NRC examination team during the license requalification examination. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM	DESCRIPTION
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1. None