

May 17, 2000

Mr. Mark L. Marchi  
Site Vice President  
Kewaunee Plant  
Wisconsin Public Service  
Corporation  
Post Office Box 19002  
Green Bay, WI 54307-9002

SUBJECT: OPERATOR LICENSING REQUALIFICATION INSPECTION  
REPORT 50-305/2000010(DRS)

Dear Mr. Marchi:

This refers to the biennial inspection of the licensed operator requalification training program conducted on April 17 through 21, 2000, at your Kewaunee Nuclear Power Plant. The results of this inspection were discussed with K. Hoops and other members of your staff on April 21, 2000. 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.

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 enclosures will be placed in the NRC Public Electronic Reading Room link at the NRC homepage, <http://www.nrc.gov/NRC/ADAMS/index.html>.

M. Marchi

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

Sincerely,

***/RA/***

David E. Hills, Chief  
Operations Branch

Docket No. 50-305  
License No. DPR-43

Enclosures: 1. Inspection Report 50-305/2000010(DRS)  
2. List of Documents Reviewed  
3. Simulation Facility Report

cc w/encls: K. Weinhauer, Manager, Kewaunee Plant  
B. Burks, P.E., Director, Bureau of Field Operations  
Chairman, Wisconsin Public Service Commission  
State Liaison Officer

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-305  
License No: DPR-43

Report No: 50-305/2000010(DRS)

Licensee: Wisconsin Public Service Corporation

Facility: Kewaunee Nuclear Power Plant

Location: N 490 Highway 42  
Kewaunee, WI 54216

Dates: April 17 through 21, 2000

Examiners: Ann Marie Stone, Senior Operations Inspector  
George Wilson, Operations Inspector

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

## NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

### Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

### Radiation Safety

- Occupational
- Public

### Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent little effect on safety. WHITE findings indicate issues with some increased importance to safety, which may require additional NRC inspections. YELLOW findings are more serious issues with an even higher potential to effect safety and would require the NRC to take additional actions. RED findings represent an unacceptable loss of safety margin and would result in the NRC taking significant actions that could include ordering the plant shut down.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. The color for an indicator corresponds to levels of performance that may result in increased NRC oversight (WHITE), performance that results in definitive, required action by the NRC (YELLOW), and performance that is unacceptable but still provides adequate protection to public health and safety (RED). GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, as described in the matrix. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

## SUMMARY OF FINDINGS

### Kewaunee Nuclear Power Plant NRC Inspection Report 50-305/2000010(DRS)

This report covers the baseline inspection for the biennial review of the licensed operator requalification training program. The inspectors used the risk informed baseline inspection procedure 71111, Attachment 11, "Licensed Operator Requalification."

No significant inspection findings were identified.

## Report Details

### **1. REACTOR SAFETY**

#### 1R11 Licensed Operator Requalification

##### .1 Review of Historical Data - Effectiveness of Operator Training

###### a. Inspection Scope

The inspectors reviewed the plant's operating history from April 1998 through February 2000, 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 plant performance review (PPR) report, and
- selected NRC Inspection Reports, including reports written by resident and region-based inspectors.

###### b. Issues and Findings

No significant inspection findings were identified.

##### .2 Requalification Examination Material

###### a. Inspection Scope

The inspectors reviewed the annual requalification examination material, which consisted of dynamic simulator scenarios, job performance measures, 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.

Specific documents reviewed for this inspection are listed in Enclosure 2.

###### b. Issues and Findings

No significant inspection findings were identified.

.3 Requalification Examination Administration Practices

a. Inspection Scope

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

Specific documents reviewed for this inspection are listed in Enclosure 2.

b. Issues and Findings

No significant inspection findings were identified.

The facility evaluators correctly assessed crew performance during the dynamic scenarios. However, the facility evaluators' assessment of individual performance lacked rigor in the evaluation of the shift manager position and in some instances was not effective in identifying individual weaknesses during job performance measure evaluations. These weaknesses did not change the overall pass/fail decision for the individual.

In particular, the shift manager did not have the opportunity to make all of the applicable Technical Specification determinations during the dynamic scenarios. The facility evaluators did not ask follow-up questions regarding the determinations. The facility evaluators assessed the shift manager's competency of Technical Specifications based on the limited determinations made during the dynamic scenarios and previously observed performance. This practice was not contrary to the licensee's program; however, it did not result in an objective evaluation of this competency factor.

Also, in some instances, the facility evaluators failed to identify and document individual operator weaknesses. For example, in one job performance measure, the task required the individual to perform secondary plant shutdown actions using procedure N-CD-03, "Condensate System." One operator did not refer to the shutdown section of the procedure but accomplished the task by selecting individual steps within another section of the procedure. For example, the operator performed step 4.1.e (valve manipulation) without first performing steps 4.1.a-d. In this instance, the initial conditions would have prevented the operator from performing step 4.1.d. This failure to follow procedure was



not documented in the operator's assessment. Following discussion with the inspectors, the facility evaluators reviewed the procedural concerns with the individuals.

.4 Requalification Training Program Feedback Process

a. Inspection Scope

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, and training management) and reviewed the applicable licensee's procedures, feedback forms and recent operations department self-assessments. Specific documents reviewed for this inspection are listed in Enclosure 2.

b. Issues and Findings

No significant inspection findings were identified.

.5 Remedial Training Program

a. Inspection Scope

The inspectors assessed the licensed operator requalification remedial training program, including reviews of program procedures and interviews with key staff members. The inspectors reviewed current requalification cycle remedial training packages for two individuals who failed portions of the written examination and for an operating crew who failed the operating test.

Specific documents reviewed for this inspection are listed in Enclosure 2.

b. Issues and Findings

No significant inspection findings were identified.

.6 Conformance with Operator License Condition

a. Inspection Scope

The inspectors reviewed a sample of licensed operators' records to ascertain whether the facility and the operator licensee's were maintaining license conditions in accordance with 10 CFR 55.53. In addition to the documents listed in Enclosure 2, the following records were reviewed:

- a sampling of licensed operator medical records,
- operator proficiency log records for 2000 which indicated the watch standing hours for licensed operators at the facility, and
- requalification training attendance records for this current cycle.

b. Issues and Findings

The inspectors identified an unresolved issue concerning two licensed operators who did not participate in the April 1998 operating test. The two individuals took an NRC initial license examination in December 1997, received their licenses in January 1998, and took their first requalification annual operating test in April 1999. The facility licensee exempted the two individuals from the April 1998 requalification examination in accordance with step 6.3.2.A of Operations Training Program (OPS-TP) Appendix D, Revision G, "Licensed Operator Requalification Training Program." The inspectors identified that these two individuals did not participate and pass an operating test in 1998. 10 CFR 55.59(a)(2) states, in part, that each (individual) licensee shall pass a comprehensive requalification annual operating test. The facility licensee stated that the individuals passed the NRC initial license examination in January 1998, when the individual licenses were granted; therefore, the individuals were required to participate and pass an operating test in 1999; not in 1998. This issue is an unresolved item (URI 50-305/200010-01(DRS)) pending NRC clarification of 10 CFR 55.59(a)(2) requirements.

The inspectors identified an unresolved issue concerning the acceptability of serving a combination of 8- and 12-hour shifts to maintain an active license. Step 6.2.6 of OPS-TP Appendix D stated that to maintain active status, a licensed individual could serve a combination of 8- or 12-hour shifts within a quarter as long as a minimum of 56 hours per quarter were documented. The inspectors noted that in some instances, individual licensees truncated the last shift when the minimum 56 hours was reached. For example, during the first quarter of 2000, one individual worked four 12-hour shifts then completed an 8-hour shift. 10 CFR 55.53(e) stated that to maintain active status, the (individual) licensee shall actively perform the functions of an operator or senior operator on a minimum of seven 8-hour or five 12-hour shifts per calendar quarter. Clarification to this requirement was provided in a Question and Answer document which can be obtained at: <http://www.nrc.gov/NRC/REACTOR/OL/OLhome.html>). One question and answer located in the ES-605 section addressed this issue and stated the 10 CFR 55.53(e) requirement for licensed operators to maintain their proficiency may be satisfied with a combination of complete 8- and 12-hour shifts (in a position required by the plant's technical specifications) at sites having a mixed shift schedule. The clarification also stated that watches shall not be truncated when the minimum quarterly requirement (56 hours) is satisfied. The inspectors noted that operating crews were on 12-shift rotations, not mixed, and that several individual licensees served a combination of 8-and 12-hour shifts. Serving a combination of shifts and/or truncating after 56 hours is an unresolved item (URI 50-305/200010-02(DRS)) pending NRC clarification of 10 CFR 55.53(e) requirements.

## 4.0 OTHER ACTIVITIES

### 4OA5 Closure of Items

- .1 (Closed) Unresolved Item (50-305/98006-01(DRS)): Shift Supervisors Not Tested in Control Room Supervisor Position. The inspectors noted that Step H of OPS-TP, Appendix D, Section 6.6.4, "Module 2- Simulator Training," did not require shift supervisors to assume the role of the emergency operating procedure reader during the requalification cycle. The licensee's program credited the shift supervisors with directing the actions associated with the emergency response procedures and were held accountable for the actions of the control room supervisor. Since the time of the inspection, the NRC has conducted several workshops associated with the implementation of Revision 8 of NUREG 1021 and implemented a Question and Answer document to address industry questions and concerns. One question/answer located in the IP71111.11 section addressed this issue and stated that every senior reactor operator should be at risk of being evaluated on all items in 10 CFR 55.45(a) during any test. The senior reactor operators were not required to serve as a procedure reader. Holding the shift supervisors accountable for the control room supervisor's actions meets the intent of 10 CRF 55.45(a)(12); therefore, no violation occurred and this issue is closed.

### 4OA6 Management Meetings

- .1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on April 21, 2000. The licensee acknowledged the observations and findings and did not identify any information as proprietary.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

G. Baldwin, Senior Operations Instructor  
D. Braun, Assistant Plant Manager - Operations  
J. Brown, Nuclear Training Superintendent - Operations  
K. Evers, Nuclear Support Services Manager  
K. Hoops, Plant Manager  
G. Krogh, Senior Operations Instructor  
G. Riste, Licensing Supervisor

### NRC

J. Lara, Senior Resident Inspector

## ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

50-305/200010-01(DRS)	URI	Clarification of 10 CFR 55.59(a)(2) with respect to requirement to take first operating test after receiving an NRC license.
50-305/200010-02(DRS)	URI	Clarification of 10 CFR 55.53(e) with respect to serving a combination of shifts and/or truncating after 56 hours

### Closed

50-305/98006-01(DRS)	URI	Shift Supervisors Not Tested in Control Room Supervisor Position
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## LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
NRC	Nuclear Regulatory Commission
URI	Unresolved Item

## 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:

Operations Training Control Procedure (OTCP)-2.1, Revision K, "Job Performance Measure Development and Review"

OTCP-3.1, Revision K, "Exam Bank Question Development, Review, and Revision"

OTCP-3.4, Revision A, "Static Simulator Scenario Development, Review and Approval"

OTCP-4.1, Revision D, "Dynamic Simulator Scenario Development, Review and Approval"

OTCP-4.5, Revision D, "Dynamic Simulator Examination Guideline"

Kewaunee Probabilistic Risk Assessment Report, Table 3.2.1-2, "Event Tree Success Criteria Summary for Top Events"

Operations Training Program (OPS-TP), Revision F, "Operations Training Program"

OPS-TP Appendix D, Revision G, "Licensed Operator Requalification (LRQ) Training Program"

OPS-TP Appendix H, Form D-1, "Licensed Operator Requalification Training Program - Simulator Training Module - Plant Control Manipulations Record"

OPS-TP Appendix H, Form D-3, "Licensed Operator Requalification Training Program - Procedure Review Record"

OPS-TP Appendix H, Form D-5, "Licensed Operator Requalification Training Program On-Shift Time Record Annual Accumulated Hours"

OPS-TP Appendix H, Form H-5, "LRQ SRO/RO Grading Summary"

OPS-TP Appendix H, Form H-6, "Crew Grading Summary Guide"

List of individual operator license information including status of active/inactive, physical and renewal due dates, and current license restrictions.

Abnormal procedure for the electrical grid, A-EG-43, (Original revision), "Grid Stability and Testing Limitations"

A-EG-43A, (Original revision), "Main Electric Generator Faults"

### Current Cycle Material:

Training Attendance Records

0-LRQ-EXAM-DYN-006, Revision K, "LRQ Dynamic Simulator Examination"

0-LRQ-EXAM-DYN-034, Revision B, "LRQ Dynamic Simulator Examination"

0-LRQ-JPM-034, Revision J, "Perform a Dropped Rod Recovery"

0-LRQ-JPM-106, Revision I, "Perform Excess Letdown to Either VCT [volume control tank] or RCDT [reactor coolant drain tank]"

0-LRQ-JPM-148, Revision D, "Shutdown Safety Injection System"

LRQ-C13Y2-RO-A5, Static Simulator Written examination for RO given April 20, 2000  
LRQ-C13Y2-SRO-A5, Static Simulator Written examination for SRO given April 20, 2000  
LRQ-C13Y2-RO-B5, Written examination for RO given April 20, 2000  
LRQ-C13Y2-SRO-B5, Written examination for SRO given April 20, 2000

1998/2000 (Cycle 13) Kewaunee Nuclear Plant Annual Licensed Operator Requalification  
Sample Plan Development/Implementation

Upgrade/Remedial/Accelerated Training Assignments for crew and individual failures for current  
cycle.

Assessments:

Quality Assurance Audit 99-003 for Third Quarter 1999  
Quality Assurance Audit 99-004 for Fourth Quarter 1999

Other Material

List of open Simulator work orders

SIMULATION FACILITY REPORT

Facility Licensee: Kewaunee Nuclear Power Plant

Facility Licensee Docket No: 50-305

Operating Tests Administered: April 17 through 21, 2000

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