

July 10, 2000

Mr. Thomas J. Palmisano  
Site Vice President and General Manager  
Palisades Nuclear Generating Plant  
Consumers Energy Company  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

SUBJECT: PALISADES - NRC EXAMINATION REPORT 50-255/2000301(DRS)

Dear Mr. Palmisano:

On June 2, 2000, the NRC completed initial operator licensing examinations at your Palisades Nuclear Generating Plant. The enclosed report presents the results of the examination.

Your training department personnel administered the written examination on May 26, 2000. NRC examiners administered the operating examination during the same week. Four of your applicants were administered senior reactor operator examinations. One re-applicant was administered a reactor operator written re-take examination. The license applicants' performance evaluations were finalized on June 27, 2000. All applicants passed all sections of their corresponding examinations and were issued senior reactor operator or reactor operator licenses, as applicable.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

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

Sincerely

**/RA/**

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

Docket No. 50-255  
License No. DPR-20

Enclosures:   1. Operator Licensing Examination Report  
                  50-255/2000301(DRS)  
                  2. Facility Comments and NRC Resolutions  
                  3. Simulation Fidelity Report  
                  4. Written Examination and Answer Keys (SRO and RO)

cc w/encls 1, 2, 3:   R. Fenech, Senior Vice President, Nuclear,  
                          Fossil, and Hydro Operations  
                          N. Haskell, Director, Licensing and Performance Assessment  
                          R. Whale, Michigan Public Service Commission  
                          Michigan Department of Environmental Quality  
                          Department of Attorney General (MI)  
                          Emergency Management Division, MI Department  
                          of State Police

cc w/encls 1, 2, 3, 4: D. Rogers, Training Department

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Fossil, and Hydro Operations  
N. Haskell, Director, Licensing and Performance Assessment  
R. Whale, Michigan Public Service Commission  
Michigan Department of Environmental Quality  
Department of Attorney General (MI)  
Emergency Management Division, MI Department  
of State Police

cc w/encls 1, 2, 3, 4: D. Rogers, Training Department

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION III**

Docket No: 50-255

License No: DPR-20

Report No: 50-255/2000301(DRS)

Licensee: Consumers Energy Company

Facility: Palisades Nuclear Generating Plant

Location: 27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

Dates: May 22–26, 2000  
June 2, 2000

Examiners: H. Peterson, Chief Examiner  
B. Hughes, Examiner

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

## NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently 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 and assessing 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	Radiation Safety	Safeguards
<ul style="list-style-type: none"><li>● Initiating Events</li><li>● Mitigating Systems</li><li>● Barrier Integrity</li><li>● Emergency Preparedness</li></ul>	<ul style="list-style-type: none"><li>● Occupational</li><li>● Public</li></ul>	<ul style="list-style-type: none"><li>● Physical Protection</li></ul>

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 very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

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 varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

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. 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. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

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

## EXAMINATION SUMMARY

### Palisades Nuclear Generating Plant NRC Examination Report 50-255/2000301(DRS)

During the week of May 22, 2000, NRC examiners conducted an announced operator licensing initial examination in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8. This examination implemented the operator licensing requirements of 10 CFR §55.41, §55.43 and §55.45.

Four senior reactor operator applicants were administered the written examination and operating tests. One reactor operator re-applicant was administered a written re-take examination. The licensee administered the written examination on May 26, 2000. The NRC administered the operating test during the same week.

#### Examination Summary:

- All applicants passed all portions of their respective examinations, and were issued senior reactor operator or reactor operator licenses, as applicable (Section 4OA5.1).

## Report Details

### **4. OTHER ACTIVITIES**

#### 4OA5 Other

##### .1 Initial Licensing Examinations

###### a. Inspection Scope

The NRC examiners conducted announced operator licensing initial examinations during the week of May 22, 2000. The facility licensee developed the written examinations and operating tests. Four senior reactor operator applicants received written examinations and operating tests. One reactor operator re-applicant received a written re-take examination.

###### b. Issues and Findings

The licensee's training department personnel administered the written examination on May 26, 2000, in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8. The NRC examiners independently graded the written examination and concluded that all five applicants achieved the passing criteria of 80.0 percent. On June 2, 2000, the licensee submitted four post-examination comments on the written examination. Two comments potentially affected the overall grading, and two comments were submitted as informational comments for future enhancement prior to entry into the NRC written examination bank. The comments and the NRC's resolutions are contained in Enclosure 2 of this report.

The NRC examiners determined that the written examination, as originally submitted by the licensee, was outside the acceptable quality range expected by the NRC. This determination was based on the fact that 28 written questions required replacement or modification when reviewed in accordance with NUREG-1021. The problems identified with the written examination included, but were not limited to, questions submitted with low discriminatory value, that did not meet the selected knowledge and abilities criteria, questions with multiple correct answers, technically incorrect answers, and questions submitted containing inappropriate distractors. The operating examination submitted by the licensee was within the range of acceptability expected for the proposed examination.

Following the 1999 initial operator license examination, the licensee performed a post-examination root cause analysis to address examination quality and high failure rate. Although examination quality issues were identified during this recent operator license examination, the overall examination submitted by the licensee and the overall performance by the applicants showed improvements.

The NRC examiners administered the operating tests during the week of May 22, 2000. All applicants demonstrated satisfactory performance in all three areas of the operating examination (administrative, control room and systems walkthrough, and integrated plant response). The examiners identified the following generic performance deficiencies while administering the operating tests:

- During administration of dynamic simulator scenarios that included entry into Emergency Operating Procedure No. 9, an emergency contingency procedure, the examiners observed that applicants had some difficulty following and identifying appropriate procedure steps.
- Given plant conditions involving the local tending of the emergency diesel generator during a systems job performance measure, two applicants performed actions that were contrary to the written procedures. The applicants incorrectly removed additional fuses not required by procedures.

The NRC examiners also identified several individual deficiencies in applicant performance during the operating examination which are described in each individual's examination report, Form ES-303-1, "Operator Licensing Examination Report." The NRC forwarded copies of the evaluations under separate correspondence to the Site Training Manager.

The NRC examiners reviewed and observed the licensee's overall examination security practices during the examination. The examiners did not identify any significant security concerns associated with the development or administration of the tests.

#### 4OA6 Meetings (Including Exit Meeting)

##### .1 Exit Meeting Summary

The inspectors presented the preliminary examination observations to Mr. Rogers and other members of licensee management at the conclusion of the operator licensing examination on June 2, 2000. The licensee acknowledged the issues presented. No proprietary information was identified.



## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

Gerald Boss, Operations Manager  
Stephen Cogswell, Exam Team  
Nathan Haskell, Licensing Director  
Darrell Hensley, Operations Training Exam Lead  
Sheri King, Licensing Senior Technical Analyst  
Daniel Malone, Licensing Manager  
Guy Packard, Operations Superintendent  
Pat Pitcher, HLC Training Supervisor  
Paul Rhodes, NPAD  
David Rogers, Training Director  
Bob Sailor, Training Instructor  
Thomas Steffler, Operations Shift Supervisor  
Ron Thurow, Operations Training Supervisor

### NRC

Jay Lennartz, Senior Resident Inspector  
Robert Krsek, Resident Inspector

## Facility Comments and NRC Resolutions

The licensee submitted four post written examination comments. Two of the comments had the potential to affect the final grading of the written examination, questions 15, common for both SRO and RO, and question 27, SRO only. The other two post written examination comments did not affect the grading of the written examination. These two questions (questions 1 and 44, common to both SRO and RO) were submitted only for future enhancement prior to inclusion into the NRC question bank.

### QUESTIONS AFFECTING EXAM GRADING

#### **Question No. 15 (RO/SRO Common)**

##### Comment:

"This question was modified during the exam administration. It became apparent that there may be more than one correct answer due to the nature of the questions raised by the students. The simulator C-33 panel was observed and it became apparent that all valves except CV-2130 were located there. The question and answer were changed during the exam to preclude subsequent deletion of the question due to three correct answers. The word "NOT" was inserted in the question stem as follows:

Which of the following valves associated with Reactivity Control can NOT be operated from Control Panel C-33?

The answer for the modified question now becomes "a".

##### NRC Resolution:

Recommendation accepted.

During the NRC review and pre-verification of the examination material with the licensee, no comments were made on Question 15. The licensee's reference and verification assured that the original selected answer "c" was the correct answer. It was initially verified by the licensee that only the valve MO-2169, choice "c", was controlled from Control Panel C-33, and that the other three distractors were not controlled from the same panel. Based on recent licensee recommendation, verification of panel C-33, the original question was technically incorrect. This was an example of poor verification by the licensee prior to submitting the examination material to the NRC. Based on review of the licensee's recent justification for question No. 15, changes to the question was accepted. The administered examination was updated to include "NOT" in the question stem, and the associated correct answer now becomes choice "a".

#### **Question No. 27 (SRO Only)**

##### Comment:

"Answer 'b' is not correct if a plausible assumption is made concerning the key word 'late'. If the candidate reasons that late is defined as *that time beyond the 2 hour limit*, then this condition becomes a non-emergency, 30 day reportable event and would require notification to the Duty and Call Superintendent. If the candidate assumes that late is defined as *that time beginning when the ill crew member relinquishes their control room duties*, then the condition

does not violate Technical Specifications and therefore would not be in violation and would not require notification. We request that question be deleted from the examination due to having no clearly correct answer. It is also recommended that the question be modified to be clearly correct in the future by modifying answer 'b' to read as follows:

if shift staffing is less than permitted by Technical Specifications due to an ill crew member being sent home and the replacement operator reports 1.5 hours after the person's departure."

NRC Resolution:

Recommendation to delete the question accepted.

During NRC review of the examination material, the examiner's editorial comment recommended to avoid negatively stated questions, i.e., avoid "EXCEPT", but to query a positive response soliciting when you must make a notification. However, during the NRC pre-examination verification the licensee assured the examiner and noted that the assumption of the 1.5 hours was within the technical specification time limit, and therefore NO notification was warranted. The licensee emphasized that the answer implied that the replacement operator will not arrive for 1.5 hours making choice 'b' correct. Based on the licensee's information, the NRC accepted the licensee's question as submitted. The wording of the question could reasonably lead the applicant into believing that technical specifications had not been violated, in that, the time referenced in the question started when the crew member left. Subsequently, the licensee reevaluated the question and proposed deleting the question due to interpretation error by three out of four applicants. The licensee's proposed clarification to the question for future use in the examination bank was noted as an acceptable improvement.

QUESTIONS NOT AFFECTING EXAM GRADING (Only Recommendation for Future Enhancement)

**Question No. 1 (RO/SRO Common)**

Comment:

"The determination of whether or not the CETs will indicate either superheated or saturated conditions is subject to further analysis based on the assumption of how much power was being produced at the top one foot of the core. It is debatable that enough decay heat is present in this area to cause superheated indication on the CETs. Answer modification is not suggested; however, the question would test with better reliability if the stem were modified as follows:

When the top *two* (2) feet of the Reactor Core becomes uncovered..."

NRC Resolution:

Recommendation accepted.

The added clarification of two feet appears to reinforce the question and answer.

**Question No. 44 (RO/SRO Common)**

Comment:

“A candidate assumed that operator action would have occurred - including isolating letdown to enhance emergency boration. We recommend an enhancement to the question as follows:1

*Assuming no subsequent operator action occurs, which of the following results in the greatest heat load on the Component Cooling Water System?”*

NRC Resolution:

Recommendation accepted.

The added enhancement of no subsequent operator actions appears to reinforce the question and answer.

SIMULATION FIDELITY REPORT

Facility Licensee: Palisades Nuclear Generating Plant

Facility Licensee Docket No: 50-255

Operating Tests Administered: May 23–25, 2000

The following documents observations made by the NRC examination team during the initial operator license 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

Enclosure 4

WRITTEN EXAMINATION LAND ANSWER KEYS (SRO AND RO)

This document will be available from ADAMS within 30 days under the title "Palisades Initial Examination 05/2000".

Enclosure 4