

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-155/OL-92-02

Docket Nos. 50-155

Licenses No. DPR-6

Licensee: Consumers Power Company
10269 US 31 North
Charlevoix, MI 49720

Facility Name: Big Rock Point

Examination Administered At: Big Rock Point Power Station
Charlevoix, MI 49720

Examination Conducted: December 1-3, 1992

RIII Examiner:

M. Leach
M. Leach

12/24/92
Date

Chief Examiner:

K. Shembarger for
K. Shembarger

12/24/92
Date

Approved By:

M. Jordan for
M. Jordan, Chief, OLS 1

12/24/92
Date

Examination Summary

Examination Administered on December 1-3, 1992 (Report
No. 50-155/OL-92/02(DRS))

Written, simulator, and walkthrough requalification examinations were administered to three Senior Reactor Operators (SROs) and three Reactor Operators (ROs). Two crews, one consisting of an SRO and two ROs (an operations crew) and the other consisting of two SROs and one RO (a mixed crew of operations and staff personnel), were evaluated on the simulator portion of the NRC examination. In addition, requalification retake examinations were administered to three operators; one RO and one SRO were administered simulator examinations and one RO was administered a written and walkthrough examination.

Results: Both crews passed the NRC regual examination. The three SROs and three ROs administered an entire examination passed all three sections of the examination. The SRO and RO administered retake simulator examinations passed their examinations. The RO administered a retake written and walkthrough examination passed the written examination, but failed the walkthrough examination. Based on this evaluation and the results of the previous two NRC administered regualification examinations, and in accordance with the criteria of NUREG-1021, Revision 6, Operator Licensing Examiner Standards, ES-601, the Big Rock Point Regualification Training Program was rated as satisfactory.

The following is a summary of the strengths and weaknesses noted during the performance of this examination.

Strengths

- The quantity of JPMS in the facility exam bank.
- Simulator performance.
- Administration of the written examination.
- Walkthrough and simulator evaluators.
- RO knowledge of emergency operating procedures.
- Control board operations.
- Operator performance on the walkthrough examination.
- Operator performance on the written examination.

Weaknesses

- Examination security.
- Exam control and administration.
- Proposed Part A section of the written examination.
- Operator command and control during simulator examination.
- Clear implementation of emergency operating procedures during simulator examination.
- Operators failure to attempt to isolate a recirculation pump when indication of a LOCA through the seals existed during the simulator examination.

REPORT DETAILS

1. Examiners

*+K. Shembarger, Chief Examiner, NRC, Region III
*+M. Leach, NRC, Region III

2. Persons Contacted

Facility

* W. Beckman, Plant Manager
* R. Alexander, Technical Engineer
* L. Darrah, Operations Supervisor
* T. Hagan, Director, Nuclear Training
* D. Hughes, Executive Engineer
*+D. LaCroix, Big Rock Point Training Administrator
* G. Petitjean, Performance Specialist
* G. Rowell, Big Rock Point Training
+A. Thier, Big Rock Point Training
+K. Thomson, Big Rock Point Training
+W. Trubilowicz, Operations Superintendent

U. S. Nuclear Regulatory Commission (NRC)

*+M. Jordan, Chief, Operator Licensing Section 1, Region III
* T. Tongue, Project Engineer, Big Rock Point

+Denotes those present at the Training Staff exit meeting on December 4, 1992.

*Denotes those present at the Management exit meeting on December 3, 1992.

3. Regualification Training Program Observations

Although inadequacies were found in the proposed examination material (as described below) and several weaknesses in the control and administration of the examination were identified (such as failing to upgrade material prior to exam week and failing to include a member of the NRC during all exam briefings), overall the facility regualification program was found to be adequate. A comparison of NRC and facility grading on the written and operating sections of the examination indicates that the facility is in conformance with existing standards.

The following information is provided for evaluation by the licensee via their SAT based training program. No response is required.

a. Written Examination

Strengths:

- Overall, the proposed Part B exam was good, requiring only minor revision.
- Operator performance on the written examination was good.
- Acceptation of the written examination was good.

Weaknesses:

- NUREG 1022, ES-602, "Requalification Written Examinations", requires Part A of the written examination consist of two static scenarios, one with the plant in a steady state situation at power and the other a "snapshot" of the plant following a major transient which results in an ESF initiation. The proposed exam consisted of two at power static exams, requiring development of a major transient and ESF initiation static exam prior to exam week.
- ES-602 requires that each Part A static exam consist of a minimum of one major and two to three minor malfunctions to prevent excessive concentration of examining in one knowledge area. In the proposed Part A exam, one static contained only one malfunction (with no major transient) and the other contained a major transient with only one malfunction.
- ES-602 requires that each static examination be designed to take 45 minutes to complete with 15 additional minutes allowed for review. In addition, an individual time validation of each question is required. Both requirements exist to ensure that the operator has adequate time to complete the examination, without excessive time built into the exam. The proposed Part A questions and exam had not been time validated.

b. Job Performance Measures (JPMs)

Strengths:

- The number of JPMs in the facility exam bank was extensive.

- Overall, operator performance during the walkthrough examination was good.
- Walkthrough evaluators performed well.

Weaknesses:

- Some JPM cues did not reflect what the operator would actually observe in the plant. For example, after starting an MG set, the cue was "MG set is running" when the operator would actually observe an increase in voltage and frequency. The cues were modified to more accurately reflect the conditions observed in the plant.
- The JPM bank did not include separate JPMS for SROs only. The facility should review the SRO training program and job requirements to identify tasks that are specific to SROs and consider developing SRO specific JPMS for inclusion in the exam bank.
- The JPM bank did not include time critical JPMS. Time critical JPMS are JPMS that cover tasks that must be performed within an established length of time to ensure safe operation of the plant. The facility should review the licensed operator training program and job requirements to determine if time critical tasks exist and consider developing associated JPMS for inclusion in the exam bank.

c. Dynamic Simulator Scenarios

Strengths:

- The RO knowledge of the emergency operating procedures was good during the dynamic simulator examination.
- Control board operations were good during the dynamic simulator examination.
- Overall, the simulator performed well during the dynamic simulator and walkthrough examinations.
- Operation of the simulator by the training staff was good.
- Simulator exam evaluators performed well.

Weaknesses:

- The description of the scenario content, the evaluator outline, and the scenario outline did not always match in the proposed scenarios, which made it difficult to determine the intended path of the scenario, and resulted in confusion during exam preparation. All three portions of the scenario (scenario content, evaluator outline and scenario outline) should be consistent to not only eliminate confusion, but primarily to ensure that the post-exam discussion with the licensed operators accurately reflects the events included in the exam.
- Not all scenarios were developed with only one success path. Evaluation scenarios should be designed to eliminate all but one success path to allow evaluation of the operators in a predetermined area.
- Not all proposed scenarios required an entry into Technical Specifications. NUREG 1021 requires evaluation of all SROs in the implementation of Technical Specifications during the NRC administered regualification examination.
- Command and control during the dynamic simulator examination was weak, which at times led to slow recovery from events.
- Clear implementation of emergency operating procedures was weak; the lack of markings made on the flow charts to indicate the procedure and step being implemented during the recovery would not only make it difficult to perform an adequate turnover for a relief crew, but would also make it difficult for an OTA to provide guidance during the recovery.
- During the dynamic simulator examination, all crews were either slow to take actions, or failed to take actions to isolate a recirculating pump with a LOCA through the seals.

4. Training, Operations, Security, Rad Protection

During exam development, the following weaknesses were identified and discussed with the facility:

- During exam preparation, a breakdown in exam security occurred when a member of the requalification exam development team provided training to licensed operators scheduled to take the examination. The facility took immediate actions to notify the NRC, remove the individual from the exam development team, and substitute portions of the proposed examination previously developed with new exam material. In addition, the actions taken by the facility to prevent recurrence appear to be adequate.
- The licensed operator training program does not provide adequate guidance on the conditions that constitute an ATWS. Specifically, a failure of the reactor to scram when required is only considered an ATWS condition when entry into the ATWS contingency procedure is made. As a result, a manual reactor scram due to a failure of the reactor to scram automatically is not considered an ATWS, and therefore would not be classified as a site area emergency in accordance with the facility's emergency plan. This weakness was discussed with and will be reviewed by the facility to determine corrective actions, if any, that will be taken to address the weakness.
- The licensed operator training program does not provide adequate guidance to ensure events requiring notification to the NRC in accordance with 10 CFR 50.72 are reported. Specifically, the guidance provided for a condition (such as an ATWS), which is classified as a site area emergency, would not be reported if the condition was corrected before making an NRC notification. The weakness was discussed with and will be reviewed by the facility to determine corrective actions, if any, that will be taken to ensure licensed operators properly report events in accordance with 10 CFR 50.72.
- EOP-1, "Primary System Control", indicates that if pressure is less than 1435 psig, pressure is to be controlled less than 1385 psig by various means, supplemented by the turbine bypass valve, reactor cleanup and reactor cleanup blowdown. A caution in the procedure states "The reactor clean-up system non-regenerative heat exchanger may not have sufficient capacity to remove decay heat until nearly a week following reactor shutdown. Premature use of the

cleanup system as the sole method of decay heat removal will result in an increase in PCS temperature and pressure."

During validation of a loss of heat sink scenario, a facility exam team member did not believe the operators would attempt to establish reactor cleanup blowdown due to the caution statement although reactor cleanup was sufficient for decay heat removal as observed on the simulator. The issue was discussed with and will be reviewed by the facility to determine if 1) a weakness in the training program exists, 2) a procedural weakness exists, or 3) a simulator fidelity problem exists.

- EOP-1, "Primary System Control", directs the operator to enter ONP-2.9, "Multiple Rod Insert Failure", if a reactor scram is achieved by either placing the mode switch to shutdown or opening the RPS undervoltage circuit breakers. EOP-1 should direct the operator to transfer to ONP-2.31, "Reactor Scram", if a reactor scram is successful using either method to scram the reactor. The procedural weakness was discussed with and will be reviewed by the facility for procedure modification consideration.

5. Simulator Observations

Simulator discrepancies were identified. These discrepancies are noted in Attachment 3.

6. Exit Meeting

A preliminary exit meeting with the facility training department was held at Big Rock Point on December 3, 1992, and a final exit meeting with Big Rock Point plant management was held at the station on December 4, 1992. Those attending the meetings are listed in Section 2 of this report. The following items were discussed during the exit meeting:

- Strengths and weaknesses noted in this report.
- The general observations relating to the plant noted in section 5.

The preliminary rating of the Big Rock Point regualification training program was presented at the exit meeting. The facility was informed that the results will be documented in this examination report.

ENCLOSURE 2

REQUALIFICATION PROGRAM EVALUATION REPORT

Facility: Big Rock Point

Examiners: Kristine Shembarger, Chief Examiner
Melvyn Leach, Examiner

Date of Evaluation: December 1-3, 1992

Areas Evaluated: ☒ Written ☒ Oral ☒ Simulator

Examination Results:

	RO Pass/Fail	SRO Pass/Fail	Total Pass/Fail	Evaluation (S or U)
Written Exam:	<u>8/1</u>	<u>8/0</u>	<u>16/0</u>	<u>S</u>
Operating Exam				
Oral	<u>8/1</u>	<u>8/0</u>	<u>16/0</u>	<u>S</u>
Simulator	<u>8/1</u>	<u>7/1</u>	<u>15/2</u>	<u>S</u>

Evaluation of facility written examination grading S

Crew Examination Results:

	Crew 1 Pass/Fail	Crew 2 Pass/Fail	Crew 3 Pass/Fail
Operating Examination	Pass	Pass	Pass

	Crew 4 Pass/Fail	Crew 5 Pass/Fail	Crew 6 Pass/Fail
	Fail	Pass	Pass

Overall Program Evaluation

Satisfactory

Submitted:

John for KS
Shembarger
12/24/92

Forwarded:

M. L. Jordan
Jordan
12/24/92

Approved:

Wright
Wright
12/24/92

ENCLOSURE 3

SIMULATION FACILITY REPORT

Facility: Big Rock Point

Docket No. 50-155

Operating Tests Administered On: December 1, 1992

The following documents observations made by the NRC examination team during the December, 1992, regualification 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

Diesel Fire Pump	Annunciator "Hi Lo Fire Acc Level" alarmed when "Diesel Fire Pump Trouble" should have alarmed.
Steam and Feed Flow Indication	Steam and feed flow indication was too high for the power level.
Feedwater Temperature Indication	Feedwater temperature was outside the normal band for the power level.
Demineralized Water Storage Tank Level	Demineralized water storage tank level decreased unexpectedly and unnecessarily.
Condensate Storage Tank Level Annunciator	Condensate storage tank low level annunciator did not alarm when level was below the annunciator setpoint.

Emergency Condenser

Simulator was not modelled to reflect emergency condenser operation if the emergency condenser was placed in service from the alternate shutdown building.

Emergency Condenser
Level

Emergency condenser level indicated low at all times.