

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-155/OL-94-01

Docket No. 50-155

License No. DPR-6

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

Facility Name: Big Rock Point Nuclear Plant

Examination Administered At: Big Rock Point Nuclear Plant
10269 US 31 North
Charlevoix, MI 49720

Examination Conducted: During the week of May 2, 1994

Examiners: R. Miller, D. Odland; Sonalysts, Inc.

Chief Examiner: M. E. Bielby, Sr.
M. E. Bielby, Sr.

5/27/94
Date

Approved By: M. J. Jordan
M. J. Jordan, Chief
Operator Licensing Section 1

5/27/94
Date

Examination Summary

Examination administered during the week of May 2, 1994
(Report No. 50-155/OL-94-01)

Written and operating initial license examinations were administered to four operators. Reactor Operator (RO) examinations were administered to two non-licensed operators, and Senior Reactor Operator (SRO) examinations were administered to two licensed ROs. Examinations were administered in accordance with guidelines of NUREG 1021, "Operator Licensing Examiner Standards," Revision 7.

Results: All individuals successfully passed all sections of their respective examinations.

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

Strengths:

- Facility pre-exam review (Section 3.a).
- Operator command and control (Section 3.c.).

Items for Improvement:

- Communications between crew members (Section 3.c).

REPORT DETAILS

1. Examiners

- * M. Bielby, Chief Examiner, RIII NRC
- R. Miller, Examiner, Sonalysts, Inc.
- D. Odland, Examiner, Sonalysts, Inc.

2. Persons Contacted

Facility

- * G. Hausler, Operations Manager (Acting)
- * G. Withrow, Plant Safety & Licensing Director
- * W. Barnshaw, Nuclear Performance Assessment Department / Operations
- * D. LaCroix, Training Administrator
- * M. Bielinski, Simulator Engineer
- * D. Staton, Operations Instructor
- * K. Thompson, Operations Instructor

U. S. Nuclear Regulatory Commission (NRC)

- * R. Leemon, Senior Resident Inspector, Big Rock Point
- * Denotes presence at the exit meeting held on May 6, 1994.

3. Initial License Training Program Observations

The initial license training program appears to be functioning well as evidenced by the 100% pass rate. Training department personnel were responsive to needs of license candidates and in assisting the NRC in developing and validating this examination. Instructors were knowledgeable and maintained a professional attitude throughout the examination week.

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

a. Written Examination

The written examination for both RO and SRO was a 100 point, multiple choice format as prescribed by NUREG 1021, Revision 7.

Strengths:

- The facility pre-exam review appeared to eliminate potential written examination question problems as evidenced by the lack of post-exam comments.

Weaknesses:

- Results of grading indicated weaknesses in the plant-wide generic and plant system sections of the examination. The following questions, as numbered on the examination, were

identified because two or more candidates had incorrect answers, and had selected the same incorrect answer from the distractors for each of the missed questions. The question numbers were:

RO (30b)/SRO (4b)

RO (49)/SRO (23)

SRO (75)

b. Job Performance Measures (JPMs)

Operators were determined to be satisfactory in this area. The JPMs performed in the simulator/control room were:

1. Isolate Emergency Condenser (EC) Leaking Tube Bundle
2. Place Post Incident System (PIS) in Long Term Cooling
3. Loss of Single Control Rod Drive (CRD) Position Indication
4. Anticipated Transient Without Scram (ATWS) Actions - CRD Pump Fails to Start (alternate path)
5. Main Turbine Bypass Valve (BPV) Surveillance (alternate path)
6. Operational Check of Stack Gas Monitor (SGM)

The JPMs performed in the plant were:

1. Channel Check on Emergency Core Cooling System (ECCS) Flow Recorder
2. Transfer Plant Exhaust Fans
3. Manual Local Operation of Feedwater (FW) Valve CV-4000
4. Start Emergency Diesel Generator (EDG) for Alternate Shutdown Test

Strengths

- Overall, operator system knowledge and equipment familiarity in the plant and simulator was good as evidenced by their ability to correctly answer JPM questions and performance of required procedures. There were no JPMs that the candidate failed to perform correctly, nor JPM questions that the candidate failed to answer correctly.

Weaknesses

- None were noted.

c. Dynamic Simulator Scenarios

All individuals were graded as satisfactory in the dynamic simulator scenarios. Two scenarios were required, and each were administered once to the four operators.

Scenario 1 included: 1) control room area radiation monitor upscale failure; 2) EDG Auto Transfer Switch failure; 3) Off-gas (OG) channel 1 upscale failure; 4) performance of a coupling integrity check surveillance; 5) stuck control rod (F-2); 6) main steamline (MSL) break upstream of the isolation valve (MSIV) inside containment; 7) bus tie breaker trip on overcurrent due to

auto start of the electric fire pump; 8) failure of the diesel fire pump to auto start; 9) auto closure of the feedwater regulation valve (FWRV) due to steam drum reference leg flashing.

Scenario 2 included: 1) loss of control power for EC Loop 2 Outlet Isolation valve which required a decrease of reactor power by 5% and performance of an operability test T90-26; 2) CRD pump failure; 3) required trip of a reactor coolant pump (RCP) due to high vibration; 4) normal reactor shutdown due to low recirculation flow; 5) upscale failure of wide range monitor (WRM) channel 2; 6) loss of operating Steam Jet Air Ejector (SJAE) resulting in loss of condenser vacuum and scram; 7) ATWS.

Strengths

- Command and control of the shift supervisors (SS) was good. The SS efficiently prioritized actions of the crew when responding to casualties and equipment malfunctions. The SS tenuously pursued a course of action to repair inoperable equipment, maintain the big picture, held periodic crew briefings when appropriate, and directed emergency operating procedure (EOP) actions during the major casualty.
- Candidates consistently verified all alarms, and referenced appropriate alarm response procedures.
- Two training instructors were allocated to run the scenarios. During major transients the operators needed to make multiple notifications to various departments. The use of two instructors enhanced the examination process because they were able to handle the large number of communications concurrently with providing timely feedback to the operators and running the simulator. Radio reports were appropriately made to the control room to inform the crew of equipment status. Realistic times were allotted for performing actions outside the control room.

Weaknesses

- RO candidates did not consistently acknowledge orders. However, the SRO issuing the order consistently requested verification that the order was received and understood. As a result there were no instances of orders being incorrectly executed.
- The number of previously developed simulator instrument malfunctions was adequate for this examination. However, future dynamic scenario examinations may require a larger number of instrument failures to prevent repeating the same malfunctions between scenarios.

4. Operations, Security, Radiation Protection, Other

Operations, security and radiation protection personnel were cooperative and professional when dealing with the NRC examiners. Plant and control room entrance and exits were made in a timely manner with no delays.

5. Simulator Observations

The simulator performed well throughout the examination. It did not halt or require initialization during either of the scenarios. One problem was identified when the RO was selecting, deselecting and attempting to drive rods during a stuck rod event (Enclosure 2). The problem did not impact the scenario.

6. Exit Meeting

An exit meeting was held with Big Rock Point Nuclear Station management on May 6, 1994. Those attending the management meeting 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 3.

The facility licensee did not identify as proprietary any of the materials provided to or used by the examiners during the inspection.

Enclosure 2

SIMULATION FACILITY REPORT

Facility Licensee: Consumers Power Company
(Big Rock Point Nuclear Station)

Facility Licensee Docket No: 50-155

Operating Tests Administered: May 2 - 6, 1994

The following documents observations made by the NRC examination team during the May 1994, initial 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 was observed:

During Event 5, Scenario 1, the RO identified a stuck rod (F-2). The RO selected a rod and inserted it one notch to verify operability. He immediately selected another rod and attempted to insert it one notch, however, the previous rod inserted. Based on the ROs observation of rod movement without an insert signal, the SS directed a manual scram be inserted and the scenario continued to completion. After discussing the situation with the simulator engineers, it appears that the simulator computer may not have responded to the de-selection of the first rod and selection of the second rod before the insert signal was received. According to the simulator engineers, there have been no similar cases previously observed in the simulator.