U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/OL-92-01

Docket No. 50-341 License No. NPF-43

Licensee: The Detroit Edison Company
6400 North Dixie Highway
Newport, MI 48166

Facility Name: Fermi 2 Nuclear Plant

Examination Administered At: Fermi 2 Nuclear Plant
Newport, Michigan

Examination Conducted: Weeks of April 20, and May 4, 1992

RIII Examiners: R. Orton, Pacific Northwest Laboratories (PNL)

M. Mitchell, Pacific Northwest Laboratories (PNL)

Chief Examiner: Michael E. Bielby Sr. 6/17/92
M. Bielby, Sr. Date

Approved By: M O Jordan 6/19/92
M. Jordan, Chief Date
Operator Licensing Section 1
Division of Reactor Safety

Examination Summary

Examination Administered During the Weeks of April 20 and May 4, 1992 (Report No. 50-341/OL-92-01(DRS))
A total of nine initial written and operating license examinations were administered to seven Reactor Operator (RO), and two Senior Reactor Operator-Upgrade (SRO-U) candidates. Examinations were administered in accordance with guidelines of NUREG 1021, Operator Licensing Examiner Standards, Revision 6.

Dynamic simulator scenarios were administered to two SROs as a result of an unsatisfactory evaluation in that area during the December 1991 requalification evaluation.
Results: All nine individuals successfully passed their respective initial license examinations. The two requalification retake SROs successfully passed the dynamic simulator scenario evaluations.

The following is a summary of major strengths and weaknesses noted during examination administration:

STRENGTHS

- SRO command and control authority (details in Section 3).
- Operator communications (details in Section 3).
- Examination material assembly (details in Section 4).
- Pre-exam review (details in Section 4).
- Examination security (details in Section 4).
- Simulator communications (details in Section 4).

WEAKNESS

- Simulator lack of fidelity (details in Section 4).

REPORT DETAILS

1. Examiners

+M. Bielby, Chief Examiner, RIII NRC
R. Orton, Examiner, PNL
+M. Mitchell, Examiner, PNL

2. Persons Contacted

Facility Representatives

+S. Catola, Vice President, Nuclear Engineering and Services
+D. Gipson, Assistant Vice President & Manager Nuclear Operations
+P. Fessler, Director Nuclear Training
+J. Joy, Senior Compliance Engineer
+R. McKeon, Plant Manager
+R. Newkirk, General Director Regulatory Affairs
+J. Plona, Superintendent Operations
+A. Settles, Director Nuclear Licensing
+R. Trimai, Nuclear Training Supervisor

NRC Representatives

+S. Stasek, Senior Resident Inspector
+K. Riemer, Resident Inspector
+C. Zelig, Observer

+Present at the Management Exit Meeting on May 8, 1992.

3. Operating/Written Examination

The following is a summary of generic strengths and weaknesses noted on the operating and written portions of the licensing examination. This information is being provided to aid the licensee in evaluating the initial license training program.

Strengths

Overall, the SROs exhibited good command and control authority when directing the EOPs. SROs demonstrated a good understanding of the EOPs by consistently evaluating their current situation, considering future actions, and re-entering EOP legs when appropriate.

SROs were aware of and remained in their position of authority, directing operator actions, giving periodic briefs and maintaining an overall accountability of plant status.

During dynamic scenarios, candidates used effective two-way communications, including repeat-backs. Orders and information were issued clearly and concisely.

During the simulator and Job Performance Measures (JPM) portion of the operating examination, candidates indicated the meters, indicating lights, alarms and recorders from which they were obtaining information. In addition they "thought out loud" which aided the examiners in clearly evaluating candidate's decisions and actions.

Weaknesses

There was a minor weakness identified on the written exam when over 75% of the candidates missed two questions on plant wide generics. The questions concerned the authority required to exempt on individual from control room access, and the level of authority to which a Lost Key or Lock term is submitted.

4. Training

The following is a summary of generic strengths and weaknesses of the training staff noted during the overall exam preparation and administration.

Strengths

Overall quality assurance of examination reference material was evident. The material delivered to both the NRC and contract examiners was well indexed and labeled, and complete. The preparation of material exceeded requirements detailed in the cover letter and Enclosure 1 of the NRC's 90 day notification letter to the facility.

The facility review of the written examination appeared to alleviate inappropriate wording and terminology, identify questions with more than one correct answer and questions with no correct answer. Two facility licensed operators, one each RO and SRO, performed an initial review of the written examination, and a facility training instructor performed a followup review. All three facility employees and the NRC Chief Examiner participated in a conference call with the exam authors to resolve pre-exam comments. There were no post-exam comments by the facility.

Examination security was evident during the course of exam development and administration. During the written examination review only one exam copy was required, the facility reviewed the exam in an isolated room, and the instructor insured the exam copy was locked-up at the end of the day. When scenarios and JPMs were validated, only the

simulator instructor was present. Signs were posted at all simulator and observation deck entrances, and associated doors locked. Scenarios were retained by the NRC at the end of each day.

Scheduling of simulator crews and personnel helped eliminate potential exam compromise. Whenever individuals completed JPMs or scenarios for the day, they were released after the next set of individuals were present in a classroom monitored by a facility instructor.

Facility instructors and operations personnel, as well as candidates, were issued different colored badges to identify them as having been exposed to the exam. Facility personnel were aware of the significance of the colored badges and avoided contact with those personnel, and/or discussion of the exam as appropriate.

The facility training department has implemented the use of portable headset radios for administration of scenarios. The radios were made available to the NRC for the dynamic simulator scenario portion of the examination. As a result of using radios, the transition between, and timing of, malfunctions was smoother. Additionally, discussion of ongoing events between examiners and the simulator operator was less evident to the candidates.

Weaknesses

The facility is involved in installation of a higher performance based computer. The current facility simulator computer has been upgraded; however problems still exist, such as a number of simulator versus plant deviations, items which fail to meet ANSI 3.5 criteria, and deviations or discrepancies that must be trained around to accomplish related simulator training objectives. The number and type of deficiencies and deviations represents a significant lack of computer and equipment fidelity. These items hamper in-depth training and evaluation of operators.

During administration of the simulator portion of the operating test, the following observations were made:

1) When Reactor Water Level (RWL) lowered to Top of Active Fuel (TAF) simulator begins to show erratic pressure/power spikes.

2) When Safety Relief Valve(s) (SRVs) lift the Torus begins to heatup as expected. However, in some

situations when Torus temperature reaches a certain value the Drywell (DW) temperature begins to also increase, similar to a Loss of Coolant Accident (LOCA) inside the DW.

3) When paralleling the Main Turbine Generator (MTG), generator voltage cannot be increased greater than bus voltage as required by procedure.

4) MTG doesn't load block to 50 MWe as required by procedure.

5) Simulator rod display is not the same as the plant.

6) Alarm 3D2, SDV LEVEL HIGH, always comes in on an ATWS scram.

7) E11-F024 is simulated as an MTG throttle valve, but is actually an isolation valve in the plant. An orifice has been installed in the plant.

8) Simulator Rod Worth Minimizer (RWM) does not work.

5. Procedure Discrepancies

The following is a summary of procedure discrepancies noted during exam preparation and administration.

During the written examination review, it was discovered that facility Abnormal Operating Procedure, NPP-20.138.01, Enclosure A, page 1 of 1, THERMAL POWER VS CORE FLOW, map did not have the same scale as that in Technical Specification 3/4.4.10, Figure 3.4.10-1. The procedure map was nonconservative with respect to the associated Technical Specification. Additionally, this map was posted on the 1H11-P680 panel in the Control Room. After identifying the problem the facility instructor promptly notified procedure control and management to resolve the problem. The facility wrote a Deviation Event Report (DER) and the NRC Senior Resident was notified. This problem was again discussed with the Senior Resident at the exit meeting. The procedure was changed to resolve the noted discrepancy.

During administration of dynamic scenarios, one of the candidates identified that procedure 23.413, CONTROL CENTER HVAC, Revision 23, Enclosure B, DAMPER LINEUP RECIRCULATION MODE, page 2 of 3, incorrectly lists Division II Damper F044, Exhaust Air Outboard Iso Vlv, as Open vice Closed when Division I is in Recirculation mode. The problem was discussed at the exit meeting. The procedure was changed to resolve the noted discrepancy.

6. General Observations

The following observations were made by the examiners while administering examinations:

- Security and Health Physics personnel were courteous and cooperative in assuring minimum delays when accessing the plant.

- Operations personnel were very cooperative and allowed examinations to continue in the Control Room without interruption.

- Training Staff was very cooperative in support of the exam.

7. Exit Meeting

A pre-exit meeting with the Training Department, and a management exit meeting was conducted on May 8, 1992. The specifics of Sections 3, 4 and 5 were discussed in detail. Those attending the management meeting are listed in Section 2 of this report.

The following items were discussed during the exit meetings:

a. Operator and Training Department strengths and weaknesses noted during examination administration (Sections 3, 4 and 5).

b. The general observations made by the examiners during examination administration (Section 6).

The results of the examinations were not presented at the exit meeting. The licensee was informed that the results would be contained in the examination report which would be issued within approximately 30 - 45 working days.

ENCLOSURE 2

SIMULATION FACILITY REPORT

Facility Licensee: Detroit Edison Company
(Fermi 2 Nuclear Plant)

Facility Licensee Docket No. 50-341

Operating Tests Administered On: May 5 - 8, 1992

This form is to be used only to report observations. 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 administration of the simulator portion of the operating test, the following observations were made:

1) When Reactor Water Level (RWL) lowered to Top of Active Fuel (TAF) simulator begins to show erratic pressure/power spikes.

2) When Safety Relief Valve(s) (SRVs) lift the Torus begins to heatup as expected. However, in some situations when Torus temperature reaches a certain value the Drywell (DW) temperature begins to also increase, similar to a Loss of Coolant Accident (LOCA) inside the DW.

3) When paralleling the Main Turbine Generator (MTG), generator voltage cannot be increased greater than bus voltage as required by procedure.

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6) Alarm 3D2, SDV LEVEL HIGH, always comes in on an ATWS scram.

7) E11-F024 is simulated as an MTG throttle valve, but is actually an isolation valve in the plant. An orifice has been installed in the plant.

8) Simulator Rod Worth Minimizer (RWM) does not work.

Overall the simulator has a large number of equipment and computer fidelity problems. All simulator versus plant deviations, and discrepancies noted during the examination have been previously identified by the facility and exceptions noted against their current simulator certification.

ENCLOSURE 3

REQUALIFICATION PROGRAM EVALUATION REPORT
REQUAL RETAKES FROM DECEMBER, 1991

Facility: Fermi 2 Nuclear Plant

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

Date of Evaluation: April 24, 1992

Area Evaluated: Simulator

Examination Results:

	RO Pass/Fail	SRO Pass/Fail	Total Pass/Fail	Evaluation (S or U)
Written Examination	N/A	N/A	N/A	N/A
Operating Examination				
Oral (JPMs)	N/A	N/A	N/A	N/A
Simulator	N/A	2/0	2/0	S
Evaluation of facility examination grading:				S

Crew Examination Results:

	Crew (Staff) Pass/Fail	Evaluation (S or U)
Operating Examination	P	S

Overall Program Evaluation: N/A

Submitted:
RIII
Bielby/cg
Examiner
06/17/92

Forwarded:
RIII
Jordan
Section Chief
06/19/92

Approved:
RIII
Wright
Branch Chief
06/19/92