

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No.: 50-333/90-20
License No.: DPR-59
Licensee: Power Authority of the State of New York
P.O. Box 41
Lycoming, New York 13093
Facility: James A. Fitzpatrick Nuclear Power Plant
Dates: August 20 - 23, 1990
Inspectors: T. Fish, Senior Operations Engineer
C. Sisco, Operations Engineer

Lead Inspector: *T.H. Fish* 10/5/90
Todd H. Fish, Senior Operations Engr. Date

Reviewed by: *Richard J. Conte* 10/5/90
Richard J. Conte, Chief Date
BWR Section, Operations Branch
Division of Reactor Safety

Inspection Summary: Inspection on August 20-23, 1990 (Inspection Report 50-333/90-20).

Areas Inspected: Routine unannounced inspection of Fitzpatrick operator evaluations of EOP usage, licensee actions on previous inspection findings and TMI action items.

Results: See Summary of Results (next page).

JAMES A. FITZPATRICKNRC INSPECTION REPORT NO. 50-333/90-20SUMMARY OF RESULTS

Inspectors observed an operating crew's performance on the simulator and evaluated how they responded to several scenarios designed to exercise the EOPs. The crew's performance was satisfactory.

The facility made two commitments to the NRC as a result of findings identified during a previous inspection. One commitment was to complete licensed operator training on the drywell spray initiation limit. This training has been completed. The second commitment, made in response to NRCB 88-07 and Supplement 1, was to revise the training given on power oscillations and to revise all affected procedures (UNR 333/89-04-01 - see paragraph 3). The lesson plan has been revised, licensed operators have been trained, and affected procedures have been revised.

The following procedure control aspects of the TMI action items were reviewed: II.B.1.3, Vent procedures; II.F.2.4, Core cooling instrumentation; II.K.3.57, Identifying water sources prior to depressurization; I.C.1.2.B and .3.B, Core cooling procedures. Based on the incorporation of revision 4 to the EOPs, these aspects of the above-noted TMI action items were adequately addressed and resolved.

Inspection Report 50-333/88-200 identified seven concerns with the EOPs, three of which had already been resolved (NRC Inspection Report No. 50-333/89-12). Facility corrective actions regarding the remaining four were reviewed for adequacy. Based on a review of administrative procedures and the incorporation of revision 4 to the EOPs, facility corrective actions appeared to be appropriate.

No violations were identified.

DETAILS

1. BACKGROUND

During the week of August 20, 1990, the NRC inspected various items associated with the Emergency Operating Procedures (EOPs). There were four objectives to the inspection: 1) Observe an operating crew performing several scenarios on the simulator. These scenarios were designed to exercise various accident-mitigation strategies of the EOPs; 2) Determine whether licensee commitments, in response to NRC Inspection Report No. 50-333/89-04, had been completed; 3) Review several TMI action items to assess whether the procedure control aspects of these items had been successfully resolved; and 4) Determine whether facility corrective actions had adequately resolved concerns with the EOPs previously identified in NRC Inspection Report No. 50-333/88-200. Personnel contacted during the course of this inspection are listed in Attachment 1.

2. OPERATOR EVALUATIONS

Three scenarios were run on the plant specific simulator with one crew of licensed operators. The crew consisted of two SRO and three RO licensed operators. The simulator scenarios provided information on real time activities. The purpose was to determine whether: 1) the EOPs provide operators with sufficient directions such that their responsibilities and required actions during emergencies, both individually and as a team, are clearly outlined and do not cause operators to physically interfere with each other while performing the EOPs; 2) the EOPs avoid duplicating operator actions when a transition from one EOP to another EOP, or other procedure, is required; and 3) operators are knowledgeable about where to enter and exit the procedures. The scenarios were designed to evaluate the EOPs and the operators ability to utilize the procedures during various plant emergency conditions, both before and after a reactor scram. Following each scenario, detailed discussions were held with the licensed operators and operations department staff.

The NRC inspectors observed the following during the scenarios:

- The EOPs utilized reached the desired end point of placing the plant in a stable condition.
- The operators effectively used the EOPs.
- The Emergency and Plant Information Computer (EPIC) was an effective aid to the operators and provided useful information needed to respond to emergency conditions.
- The operators appeared to be adequately trained to respond to the loss of the EPIC system.
- The operators demonstrated the ability to effectively control drywell parameters utilizing the Drywell Spray Initiation Limit.

The inspectors concluded that the EOPs provide strategies to both mitigate plant emergency conditions and place the plant in a safe condition and that the operators are adequately trained to utilize the EOPs. A fidelity report is included as Attachment 3.

During pre-inspection activities and during discussions with the licensee following the simulator scenarios, the NRC inspectors questioned the shape of the Primary Containment Pressure Limit (PCPL) curve, Figure 4-6 of EOP-4, Primary Containment Control. The shape of the curve differs from the curve of Emergency Procedure Guidelines (EPG) page PC-10. During an in-depth review of the calculations that support the curve, the licensee identified possible errors in certain calculations. As a consequence, the licensee believed that they did not have confidence in portions of EOP-4 and voluntarily elected to remove the unit from service. The unit was to remain shutdown pending completion of a comprehensive technical review of the calculations supporting the PCPL curve. Additional details and licensee corrective actions are described in NRC Inspection Report No. 50-333/90-06.

3. LICENSEE ACTION IN RESPONSE TO NRC REPORT NO. 50-333/89-04

(Closed) Unresolved (33/89-04-01): Core Power Oscillation Training and Procedures. This item dealt with the training department's incorporation of the guidance given in NRCB 88-07 and Supplement 1. No formal training had been conducted with respect to the Supplement. Also, various procedures had not yet incorporated the changes described in the Supplement. The NRC inspectors audited training records, lesson plans, and examined affected procedures (see Attachment 2) and verified that NRCB 88-07 and Supplement 1 requirements have been incorporated. This item is closed.

A second, but related, issue also dealt with operator training although it has no associated unresolved item number. In NRC Inspection Report 50-333/89-04, the inspector recommended that the basis for the Drywell Spray Initiation Limit be included as a training topic for licensed operator training. The facility agreed and committed to incorporating the topic in licensed operator training. The NRC inspectors audited lesson plans and licensee-prepared simulator scenarios and observed that training materials now incorporate Drywell Spray Initiation Limit basis training. An audit of training records verified that operators had been trained on the subject. Therefore, the NRC inspectors concluded that the licensee had met their commitment made in report 89-04.

4. THREE MILE ISLAND (TMI) ACTION ITEMS

The NRC inspectors verified the proper implementation of procedural control commitments associated with the below listed TMI action items. These items were: 1) II.B.1.3, Reactor Venting procedures; 2) II.F.2.4, Inadequate core cooling detection instrumentation; 3) II.K.3.57, Identifying water sources prior to depressurization; and 4) I.C.1.2.B and .3.B, Inadequate core cooling procedures.

The NRC inspectors verified that the facility has implemented Revision 4 to the Emergency Procedure Guidelines (EPG). This revision encompasses and resolves these TMI action items. The EOPs have, in turn, been revised to incorporate Revision 4 of the EPGs by appropriately addressing how instrumentation and processes covered by these TMI action items are used in the implementation of EOPs. Therefore, the NRC inspectors concluded that the facility has adequately addressed and resolved the procedure control aspects of the above-noted TMI action items by implementing Revision 4 of the EOPs.

5. LICENSEE ACTION IN RESPONSE TO REPORT 50-333/88-200

Report 88-200 originally identified seven concerns with the EOPs. At that time, though, Revision 3 of the EOPs was in use. Since then, three of these concerns have been resolved (Inspection Report No. 50-333/89-12). The inspectors, therefore, reviewed facility actions taken regarding the remaining four concerns to determine whether those concerns had been adequately resolved. Based on a selective review of recently-issued administrative procedures and the incorporation of Revision 4 to the EOPs, the inspectors concluded that the facility's corrective actions were appropriate and that the four remaining concerns had been resolved.

6. MANAGEMENT MEETINGS

During the course of this inspection, the inspectors met periodically with licensee representative and with licensee management at an exit interview of August 23, 1990. Those in attendance are noted in Attachment 1. The inspector summarized the inspection scope and findings.

ATTACHMENT 1

PERSONNEL CONTACTED

Facility Personnel	Notes
D. Simpson, Training Superintendent	1,2
T. Herrmann, System Engineering Superintendent	1,2
D. Burch, Reactor Analyst Supervisor	1
D. Johnson, Assistant Operations Superintendent	1,2
P. Walker, Nuclear Training Specialists	1
W. Fernandez, Resident Manager	1,2
G. Tasick, QA Superintendent	1
R. Liseno, Superintendent of Power	1
J. Romanowski, Simulator Manager	1
R. Locy, Operations Superintendent	1,2
J. Prokup, QA Engineer	2
G. Fronk, Training Instructor	2
NRC Personnel	
W. Schmidt, Senior Resident Inspector	2
R. Plasse, Resident Inspector	1,2
T. Fish, Senior Operations Engineer	1,2
C. Sisco, Operations Engineer	1,2

Notes:

- 1) Attended entrance meeting, August 20, 1990
- 2) Attended exit meeting, August 23, 1990

ATTACHMENT 2

Procedures Affected by NRCB 88-07 and Supplement 1

AOP-2	Turbine Trip Without Scram
AOP-3	High Activity in Reactor Coolant or Off-Gas
AOP-5	Combustion in SJAE After Condenser
AOP-16	Loss of 10300 Bus
AOP-17	Loss of 10400 Bus
AOP-20	Loss of 10400 Bus
AOP-21	Loss of UPS
AOP-31	Loss of Condenser Vacuum
OP-27	Recirculation System
OP-2A	Feedwater System
OP-2B	Feedwater Control System
OP-4	Circulating Water System
OP-11A	Main Generator, Transformer & Isolation Bus Phase Cooling
OP-11B	Generator Stator and Exciter Rectifier Cooling Water System
OP-16	Neutron Monitoring
AOP-6	Malfunction In The EHC System
AOP-12	Loss of Instrument Air
AOP-42	Feedwater Malfunction
AOP-46	Loss of B DC Power System B
AOP-48	Loss of Main Generator Hydrogen
RAP 7.3.16	Reactor Analysis Procedure

ATTACHMENT 3

SIMULATION FIDELITY REPORT

Facility Licensee: James A. Fitzpatrick

Facility Docket No. 50-333

During the EOP exercises on August 21, 1990, the following items were observed:

The drywell temperature model does not account for drywell spray initiation at elevated drywell temperatures.

Reactor power level does not decrease during ATWS scenarios when reactor level is decreased to reduce power.