



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W.
ATLANTA, GEORGIA 30323

ENCLOSURE 1

EXAMINATION REPORT - 50-335/OL-88-01

Facility Licensee: Florida Power and Light Company
P. O. Box 14000
Juno Beach, FL 33408

Facility Name: St. Lucie Nuclear Plant

Facility Docket No.: 50-335 and 50-389

Examinations administered at St. Lucie Nuclear Plant near Stuart, Florida.

Chief Examiner: Charles A. Cisto 11/30/88
C. Cisto Date Signed

Approved by: J. F. Munro 11/30/88
J. F. Munro, Chief Date Signed
Operator Licensing Section 1

Summary:

Examinations on July 25 and September 12, 1988.

Written examinations and operating tests were administered to five SRO and fifteen RO applicants. Five SROs and twelve ROs passed these examinations. Three of thirteen (23%) comments regarding changes to the written examination were due to inadequate or insufficient reference material provided by your staff to the NRC for examination development.

REPORT DETAILS

1. Examiners:

*C. Casto, NRC
W. Dean, NRC
J. Moorman, NRC
J. Arildsen, NRC
P. Isaksen, INEL

*Chief Examiner

2. NRC Residents

G. Paulk
P. Bibb

3. Licensee Personnel at Exit Meeting(s)

M. Shepherd, Operations Training
B. Jones, Instrument and Controls
C. Burton, Operations Manager
W. Webster, Simulator Engineer
F. Roger, Procedures
L. McLaughlin, Technical
J. Spodick, Operations Training
J. Barrow, Operations Superintendent
P. Fincher, Training Superintendent

4. Exit Meetings

Two exit meetings were conducted with the licensee, one on July 29, 1988, and the other on September 16, 1988. The July meeting consisted of presenting findings noted during the administration of the written and walk-through examinations. The following findings and resolutions were addressed as a result of the July meeting:

Finding #1 -

The checksheets performed by the operators in the control room to satisfy the Technical Specification requirement of a "Channel Check" apparently did not have tolerances or procedures to verify instrument readings by comparison with redundant parameters. If such tolerances or procedures exist, several candidates were not aware of it.

Resolution #1 -

The licensee generated a memorandum to all operators, instrument technicians, and department heads in 1987 explaining the methodology used to conduct Channel Checks. This memo was again promulgated, including placing it in the night order book. The licensee has committed to establishing a permanent plant procedure to ensure qualitative channel checks are performed. This concern will remain open (IFI-389/OL-81-01) until resolution by future inspections.

Finding #2 -

During the walk-through examination, several candidates were asked to drain the Safety Injection Tanks. It was identified that the licensee did not have a procedure covering this evolution. However, after researching flow diagrams the candidates were able to complete the evolution.

Resolution #2 -

The licensee has generated a procedure to drain the Safety Injection Tanks.

Finding #3 --

Through simulated response to malfunctions in the control room, the examiners noted that the Off Normal Operating Procedures books were cumbersome.

Resolution #3 -

The licensee is procuring racks to hold individual procedures.

Finding #4 -

During control room observations the examiners noted excessive unauthorized use of the plant public address system. This inappropriate use of the system could distract the control room operators from their duties.

Resolution #4 -

The licensee is reviewing alternatives to mitigate the unauthorized usage of the public address system.

Two generic weaknesses demonstrated by the candidates were identified to the licensee:

1. Lack of skill/familiarity with the Plant Work Order computer.
2. Knowledge of neutron and radiation detector theory.

As a result of the simulator examinations during the week of September 12, 1988, the following findings were identified to the licensee:

Finding #5 -

The Auxiliary Feedwater Actuation Signal (AFAS) actuates the auxiliary feedwater to a steam generator on low level unless the steam generator or its associated auxiliary feedwater supply header has been identified as being ruptured. A steam generator or auxiliary feedwater header is considered ruptured when the header pressure is approximately 100 psi below the opposite steam generator or auxiliary feedwater header pressure. A separate actuation signal is generated for each steam generator.

During a simulator examination, it was noted that the AFAS system isolated auxiliary feedwater to an intact steam generator during plant cooldown under post-steam generator tube rupture conditions. While cooling down the RCS with the intact steam generator, the steam generator's pressure drops while the ruptured steam generator pressure remains constant (the ruptured steam generator is manually isolated to prevent feeding and releases). The resultant differential pressure sends a false "faulted" steam generator signal to the AFAS which isolates auxiliary feed to the intact generator.

Compounding the problem of loss of auxiliary feedwater to an intact steam generator, the operators are trained not to interfere with the operation of the AFAS by overriding the system's actions.

The examiners pursued this with the licensee and determined that the system was not designed to address this specific casualty.

Resolution #5 -

The licensee consulted Combustion Engineering and verified that the simulator accurately models plant/system (AFAS) operation during this event. In response the licensee has generated several procedure changes to mitigate the consequences of a false AFAS signal. In addition, the training department will address this contingency during training exercises with their licensed operators. This concern will remain open (IFI-335, 389/OL-81-02) until resolution by future inspections.

Finding #6 -

During the administration of the simulator examinations it was noted by the examiners that upon loss of power or with a valid signal, the plant evacuation alarm(s) continually sounds in the control room with no override or silencing mechanism available. This action may distract operations personnel while performing their duties, including execution of the Emergency Operating Procedures.

Resolution #6 -

The licensee is investigating this condition. This concern will remain open (IFI-335, 389/OL-81-03) until resolution by future inspections.

Generic weaknesses of the candidates from evaluation of the written and simulator examinations are as follows:

1. During the use of the Emergency Operating Procedures (EOP), the Senior Reactor Operators (SRO), at times, used the procedures for "guidance" versus direction. Examples include taking action prior to procedural direction, using alternate methods of control not identified by the procedure and assuming systems/components were available when their supporting systems were unavailable.
2. The examiners noted a tendency of the SROs to hesitate in implementing EOP-08, "Functional Recovery". Once implemented, several SROs demonstrated a lack of familiarity with this procedure.
3. On several occasions, the SROs manipulated the controls without informing the Reactor Operators (RO) of their actions. This could lead to miscommunication between the plant operators.
4. The ROs demonstrated a lack of control board awareness during several events. Numerous examples were cited to the licensee and noted on the NRC Form 157 for the individuals.
5. At times, communication by the ROs was imprecise and contained extraneous information. Several examples were provided to the licensee.
6. Evaluation of the written examination identified inconsistent responses for the resetting of an electrical overspeed trip on the Auxiliary Feedwater Pump turbine. EOP-6, Total Loss of Feedwater, addressed this evolution, however, the Off Normal Operating Procedure and Annunicator Response Procedures did not properly address the resetting method. Additionally, the Training Department did not identify the incorrect answer on the examination answer key nor did the training lesson plans sent to the NRC describe the correct method for resetting the overspeed trip. Subsequently, the licensee has responded to, and has corrected these deficiencies.
7. In their answers on the written examinations, the candidates also demonstrated weakness in identifying a failed reactor coolant pump seal.
8. It was noted that the role of the Shift Technical Advisor (STA) was not clearly defined during the simulator examinations. The licensee is re-assessing what role the STA will perform during the implementation of the EOPs. This area will be reviewed during future observation of the requalification training program.

For this exam the majority of the RO candidates were granted waivers of previous power plant experience eligibility requirements. The licensee was informed of the acceptable standard for satisfying 10 CFR Part 55 Operator Licenses, eligibility requirements, i.e., Reg Guide 1.8, revision 2, which endorses ANSI Standard 3.1, 1981. Alternative methods to meet this requirement must be approved by the NRC in accordance with 10 CFR Part 55 and associated NUREGs.

Several items which were also identified as deficiencies in the Emergency Operating Procedure Team Inspection Report (NRC Inspection Report Nos. 50-335/88-08 and 50-389/88-08 dated August 26, 1988) were observed during the simulator examinations. They were:

1. Figure 2 Safety Injection Flow, does not indicate a normal range.
2. Isolation of AFW flow requires local manipulation of valves. This is not specifically addressed by the EOP.

The licensee addressed these comments in their response to the EOP Team Inspection Report dated September 22, 1988.

Additional minor changes in the written examination questions and answers were made as a result of informal facility discussions during administration of the examinations. These changes are noted on the master examination.

The cooperation given to the examiners, the accommodations provided for the examiners and the effort to ensure an atmosphere in the control room conducive to oral examinations was also noted and appreciated.

The licensee did not identify as proprietary any of the material provided to or reviewed by the examiners.