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

Report Nos.: 50-335/89-26 and 50-389/89-26

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33102

Docket Nos.: 50-335 and 50-389 License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie 1 and 2

Inspection Conducted: October 11 - November 13, 1989

Inspectors: _____ 12/12/89
S. A. Elrod, Senior Resident Inspector Date Signed

_____ 12/12/89
M. A. Scott, Resident Inspector Date Signed

Approved by: _____ 12/12/89
R. V. Crlenjak, Chief Date Signed
Reactor Projects Section 2B
Reactor Projects Branch 2
Division of Reactor Projects

SUMMARY

Scope:

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This routine resident inspection was conducted onsite in the areas of plant operations review, maintenance observations, surveillance observations, safety system inspection, review of special reports, review of nonroutine events, and followup of previous inspection findings.

Results:

During this inspection period, both units experienced CEDMCS problems. As a result of these continuing CEDMCS failures the licensee performed an in-depth review of the failures and problem causes. This in-depth review identified the root cause associated with the Unit 2, September 23, 1989, Dropped Rod Event (Paragraph 2). In addition, the licensee corrected the leakage associated with the Atmospheric Dump Valve Muffler (Paragraph 5).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*D. Sager, St. Lucie Site Vice President
*G. Boissy, Plant Manager
*J. Barrow, Operations Superintendent
J. Barrow, Fire Prevention Coordinator
S. Brain, Independent Safety Evaluation Group
H. Buchanan, Health Physics Supervisor
C. Burton, Operations Supervisor
*C. Crider, Outage Supervisor
*D. Culpepper, Site Juno Engineering Manager
*R. Dawson, Maintenance Superintendent
R. Frechette, Chemistry Supervisor
J. Harper, Quality Assurance Superintendent
*C. Leppla, I&C Supervisor
*L. McLaughlin, Plant licensing Supervisor
L. Rogers, Electrical Maintenance Supervisor
*N. Roos, Quality Control Supervisor
R. Sipos, Services Manager
*D. West, Technical Staff Supervisor
W. White, Security Supervisor
*C. Wilson, Mechanical Maintenance Supervisor
G. Wood, Reliability and Support Supervisor
E. Wunderlich, Reactor Engineering Supervisor

Other licensee employees contacted included engineers, technicians, operators, mechanics, security force members and office personnel.

*Attended exit interview .

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. Review of Plant Operations (71707)

Unit 1 began th_ ıspection period at power. The unit ended the inspection period in day 59 of power operation.

Unit 2 began the inspection period at power. The unit ended the inspection period in day 46 of power operation.

a. Plant Tours

The inspectors periodically conducted plant tours to verify that monitoring equipment was recording as required, equipment was properly tagged, operations personnel were aware of plant conditions,

and plant housekeeping efforts were adequate. The inspectors also determined that appropriate radiation controls were properly established, critical clean areas were being controlled in accordance with procedures, excess equipment or material was stored properly and combustible materials and debris were disposed of expeditiously. During tours, the inspectors looked for the existence of unusual fluid leaks, piping vibrations, pipe hanger and seismic restraint settings, various valve and breaker positions, equipment caution and danger tags, component positions, adequacy of fire fighting equipment, and instrument calibration dates. Some tours were conducted on backshifts. The frequency of plant tours and control room visits by site management was noted to be adequate.

The inspectors routinely conducted partial walkdowns of ESF, ECCS and support systems. Valve, breaker, and switch lineups and equipment conditions were randomly verified both locally and in the control room. The following accessible-area ESF/ECCS system walkdowns were made to verify that system lineups were in accordance with licensee requirements for operability and equipment material conditions were satisfactory:

- 1A and 1B EDGs
- Unit 1 CCW
- Unit 1 AFW
- Unit 2 HPSI

No violations or deviations were identified in these areas.

b. Plant Operations Review

The inspectors periodically reviewed shift logs and operations records, including data sheets, instrument traces, and records of equipment malfunctions. This review included control room logs and auxiliary logs, operating orders, standing orders, jumper logs and equipment tagout records. The inspectors routinely observed operator alertness and demeanor during plant tours. During routine operations, control room staffing, control room access and operator performance and response actions were observed and evaluated. The inspectors conducted random off-hours inspections to assure that operations and security remained at an acceptable level. Shift turnovers were observed to verify that they were conducted in accordance with approved licensee procedures. Control room annunciator status was verified.

The inspectors reviewed the following safety-related tagouts (clearances):

- 1-8-404, Tag 52 — Fuel Pool Hatch Circuit Breaker 1-42321
- 1-5-106, Tag 17 — Boric Acid Concentrator Circuit Breaker 1-40915

- 1-8-404, Tag 55 Fuel Building Bulkhead Monorail Hoist Circuit Breaker 1-41515

The inspectors reviewed QA activities and findings concerning control room operations to determine if the objectives were being met. The following QA activities were included:

- Electrical Power Availability Review.
- 1A EDG Out of Service Review.
- Unit 2 MSIV Quarterly Surveillance Review.
- Unit 1 Reactor Restart Review.

No violations or deviations were identified associated with the safety-related tagouts or QA activities inspected.

Unit 1 CEA Problems

On the 26th of October, at approximately 11:05 a.m., during the performance of OP 1-0110050, Control Element Assembly Periodic Exercise, a defective timer card was found in the circuit for CEA 33. Power to the CEA 33 gripper circuit was paralleled from adjacent CEA 31 to allow removal of normal CEA 33 circuitry power for timer card replacement (PWO 7483/61). This paralleling had previously been successfully performed many times. A fuse in the paralleling circuit had failed and, when normal power was removed from CEA 33, the CEA dropped.

The reactor operator had prestaged the dropped CEA off-normal procedure, which was immediately utilized to stabilize power near 96 percent. The CEA was retrieved by 11:40 a.m. A core flux map was analyzed by CE who found that no core physics limits were exceeded.

The remainder of the monthly surveillance was completed as power ascension was resumed; the unit was at 100 percent power by 1:30 p.m.

The licensee did not know the reason for the paralleling circuit fuses and intended to communicate with CE about their possible removal. Since the fuse that blew was thought to have not been used previously, the licensee believed that the fuse failed because of its own aging or an original construction electrical fault.

On October 31, at 5:30 a.m., while Unit 1 was at full power, CEA 33 dropped into the core. Power was stabilized at 94 percent. The CEA was relatched and withdrawn to the TS required group position by 6:31 a.m.

The CEA dropped a second time at 6:48 a.m. PWO 7653 was utilized to trouble shoot and repair the CEA circuits. The CEA was verified to be movable shortly there after as power was being reduced to 70 percent to meet TS requirements. I&C instrumented the CEA, observed its behavior, and, at approximately 8:09 a.m., determined that the

timer card that had been replaced the previous week had failed. The licensee took appropriate steps to stabilize the plant. CEA 33 was withdrawn from the core at 8:48 a.m., two hours after the CEA dropped for the second time. At 9:38 a.m., additional CEAs were driven into control the ASI. The RE, using the incore detectors, determined the core flux profile and the CE performed an analysis of the flux profile. The analysis determined that there were no excessive peaking factors present; however, the quandrant tilt TS requirements were exceeded. The TS was satisfied by holding power at 70 percent until the quandrant tilt stabilized. Quandrant tilt was acceptable by 1:00 p.m., but power was held at 70 percent to allow further stabilization of ASI. The unit returned to full power at 5:00 p.m. with several minor power adjustments for ASI control.

The timer card that had been replaced was receipt inspected. This inspection included an electrical functional test. The card was replaced for a second time; subsequent investigation revealed that the timer board circuit had a manufacture defect which could have not been detected in the receipt inspection process. At present, no other such card was demonstrating the failure mode as seen on the CEA 33. Because of this, no further testing of remaining times cards was planned.

No violations or deviations were identified.

Unit 2 CEA Problems

On the 20th of October with Unit 2 stable at full power, the DDPS (pulse) CEA position information on computer printouts became erroneous and the licensee entered the TS 3.1.3.2 (b) action statement. Since incore flux mapping had occurred that morning, the licensee subsequently credited the maps as providing independent CEA position indication and exited the TS action statement.

The DDPS continued to produce erroneous CEA position information. Since the CEAs were trippable and no other CEA problems were apparent, the licensee attempted to move the CEAs to their upper electrical limits to preclude entering other TS action statements. The CEDMCS would not allow CEA outward motion. The following two equipment problems were identified:

- A disfunctional CEDMCS logic card prevented CEA withdrawal in the manual individual mode; the CEAs could have been operated in the manual group mode.

- Electrical noise, which had been seen on several control room systems early on October 20, 1989, recurred during this subsequent CEA trouble shooting and was traced to the 2B MG set which provided power to the CEDMCS and the DDPS. When the MG

set was removed from service, the noise disappeared and CEA motion was re-established.

Timer cards for CEAs 1 and 70 were replaced. Card damage by the circuit noise discussed above was suspected but could not be substantiated. In reference to Unit 1 CEA problems also listed below, the timer cards associated with each unit are of different designs.

Subsequent trouble shooting, performed under PWO 5751/62, of the 2B MG set, revealed several overheated relay circuit boards and a degraded excitor voltage regulator transistor. The licensee determined that the noise seen on the CEDMCS was caused by the degraded transistor. Following repairs, the MG set was instrumented and tested, without reconnecting it to the CEDMCS, by powering a resistive load for three days. During this period the performance of the MG set was monitored. On October 30, 1989, the 2B MG set was paralleled without incident with the 2A MG set to provide CEDMCS power. During the paralleling, the licensee ensured problem-free equipment operation by technical overview of both the instrumented MG set controls and instrumented CEDMCS.

The licensee is generating PM requirements for the MG set controls to prevent future deterioration and is considering implementing a program to routinely replace and evaluate the degraded items discussed above and other MG set components.

The licensee has determined that the excitor voltage regulator noise problem was directly related to the Unit 2 trip on September 23rd and that the intermittent noise delayed the identification of the root cause of the intermittent, pretrip problems.

During the day shift on November 2, 1989, the Unit 2 control room received annunication of a CEDMCS problem. Operations submitted an urgent PWO, notified appropriate management, and suspended any work work that might jeopardize plant stability. The CEA 35 control circuit had a driver card failure which had left the CEA supported by its lower gripper coil instead of its upper gripper coil. The card was replaced by PWO 7238. Card damage by the circuit noise discussed above was identified as a potential cause of the problems associated with CEA 35.

The licensee took a conservative approach towards testing the CEA 35 circuits. They tested these circuits for several days by inducing electrical noise through the power inputs. As a result of the repairs, the testing performed by the licensee was unable to duplicate conditions, which contributed to the problems associated with the CEA 35 circuits.

c. Technical Specification Compliance

Licensee compliance with selected TS LCOs was verified. This included the review of selected surveillance test results. These verifications were accomplished by direct observation of monitoring instrumentation, valve positions, and switch positions, and by review of completed logs and records. The licensee's compliance with LCO action statements was reviewed on selected occurrences as they happened. The inspectors verified that plant procedures involved were adequate, complete, and the correct revision. Instrumentation and recorder traces were observed for abnormalities.

No violations or deviations were identified in this area.

d. Physical Protection

The inspectors verified by observation during routine activities that security program plans were being implemented as evidenced by: proper display of picture badges; searching of packages and personnel at the plant entrance; and vital area portals being locked and alarmed.

No violations or deviations were identified in this area.

3. Preparation for Refueling (60705)

During this period, the receipt, inspection, and storage of new Unit 1 fuel was observed. This fuel was procured for the February 1990, Unit 1 refueling. Significant elements observed included: security, fuel vendor interface, management involvement, quality organization involvement, procedural controls, and fuel handling activities.

The inspection focus was on fuel handling activities in accordance with OP 1610020, Rev 3, Receipt and Handling of New Fuel and CEAs. Reactor Engineering coordinated the overall effort and provided almost continuous management presence. Shipping casks, both loaded and unloaded, were handled and moved by the maintenance department. Shipping cask unloading and fuel bundle movement were performed by operators under the direction of a licensed SRO. Security activities were appropriate for the circumstances. The fuel vendor provided an inspector who was on the scene and involved with all fuel handling activities. The vendor's inspector also performed a detailed receipt inspection, in conjunction with the licensee's, during the initial unloading of each fuel bundle. Activities observed were well controlled. The licensee's QA organization discussed their pursuit of the root cause of an instance where a fuel bundle was dropped about one half inch in an inspection stand when the lifting hoist was powered up prior to the grapple being completely disengaged from the fuel bundle. Though the fuel bundle received no obvious damage, the fuel vendor was preparing a formal evaluation.

No violations or deviations were identified in this area.

4. Surveillance Observations

Various plant operations were verified to comply with selected TS requirements. Typical of these were confirmation of TS compliance for reactor coolant chemistry, RWT conditions, containment pressure, control room ventilation and AC and DC electrical sources. The inspectors verified that testing was performed in accordance with adequate procedures, test instrumentation was calibrated, LCOs were met, removal and restoration of the affected components were accomplished properly, test results met requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel. The following surveillance tests were observed:

- Unit 1 surveillance OP 3200051, Rev 6, At Power Determination of Moderator Temperature Coefficient and Power Coefficient, was performed without incident on October 31. Data analysis indicated that moderator temperature coefficient was within both TS limits and CE fuel acceptance limits for core mid-life. Operators adequately maneuvered plant conditions during the test.

- Unit 1 surveillance OP 1-2200050, Rev 46, Emergency Diesel Generator Periodic Test and General Operating Instructions, was performed without incident on 1A EDG on November 1. The inspector noted some minor physical EDG problems. These deficiencies did not invalidate the test and were subsequently scheduled for repair in the site's NPWO system.

- Unit 2 surveillance OP 2-1400059, Rev 12, Reactor Protection System - Periodic Logic Matrix Test, was observed in the control room and electrical equipment room. This test was performed by inexperienced operators supervised by the ANPS. Operator performance was professional and the test results were satisfactory. A typographical error was promptly processed by the shift operators.

- Unit 1 surveillance 1-0110050, Rev 18, Control Element Assembly Periodic Exercise, is discussed in Section 2.b. above.

No violations or deviations were identified in these areas .

5. Maintenance Observation (62703)

Station maintenance activities involving selected safety-related systems and components were observed/reviewed to ascertain that they were conducted in accordance with requirements. The following items were considered during this review: LCOs were met; activities were accomplished using approved procedures; functional tests and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; and radiological controls were implemented as required. Work requests were reviewed to determine the status of outstanding jobs and to assure that

priority was assigned to safety-related equipment. Portions of the following maintenance activities were observed:

- PWO 7617/61 was utilized to troubleshoot a Unit 1 air header pressure switch alarm.

- PWO 5280/61 investigated 1D instrument air compressor motor thermal overload problems. The electrical overloads on at least two of the four new instrument air compressor motors had been cycling, which caused some operational concern. The site staff has been investigating the cause. When the 1D overload was tested in accordance with vendor test curve characteristics, normal overload function was indicated. At the time of this work observation, the site staff planned to instrument the cabinet containing the overloads, reset some pressure staging switches, and continue the evaluation.

  PWO 5280/61 above, which tested an instrument air compressor thermal overload, was the beginning of a project to discover why the instrument air systems were not performing as expected. The site technical support group recently found that the systems were providing minimal air header pressure in addition to experiencing periodic motor overload trips. The instrument air systems for both units were modified during the last unit outages to add new large compressors and other significant system improvements. To date, the site staff has found that higher header pressure was needed. Corporate engineering has been tasked to evaluate the system and provide the required modifications. The site has also issued operational night orders to maintain in service a supplemental air compressor, temporarily added to the Unit 1 MSIV accumulator branch line, to preclude inadvertant MSIV closure from low air pressure. The temporary compressor, which had been previously used, was added under an engineering evaluation.

- PWO 0548/61 and three other PWOs were generated to clean out and evaluate mufflers on the Unit 2 atmospheric steam dump valves. On Unit 2, the B train atmospheric steam dump valve, MV 08-18B, muffler began to leak water on the steam trestle space beneath the valve. Increased dump valve seat leakage had increased water vapor in the muffler or flue; some of the vapor in the flue condensed and tended to overflow the drip pans under the flue. The drain collection system, drip pans or the associated drain lines from the pans, were blocked or could not handle the increased valve leak by/condensate.

  The water was continuously wetting the equipment beneath the muffler in the South side of the trestle. This included safety-related equipment such as the 2B AFW pump. The wetting has been occurring since the end of July when the valve seat leak by began to increase. Though the steam trestle area was enclosed by grating and prone to be

cyclically wet and dry from the normal weather pattern, the advent of the additional valve leakage and attendant continuous wetting had caused visible deterioration of the equipment in the space. In mid-September, the A train steam dump valve began to similarly wet the area around the 2C AFW pump. Toward the end of September, the NRC inspectors brought the trestle space wetting to the attention of the licensee. At that time, the focal point of the licensee was the 2B AFW pump which was painted to prevent rusting. About the 20th of October, the combined leakage of both atmospheric dumps and the associated wetting was again raised as a concern. In late October, the licensee evaluated of the situation and began to implement remedial action. Tenting was temporarily installed over the affected portions of the steam trestle. Drain hoses were installed to relief line low points to remove water prior to it reaching the mufflers. These actions were effective. The site investigated the causitive agent in the muffler leakage and found that the muffler/flue drain lines were clogged. The drain lines have been cleared and the temporary tenting has been removed. The complete root cause could not be addressed until a major outage when the flues or mufflers can be visually examined.

- PWOs 5304, 5307, and 0802 worked AFW valve MV 09-11 during the week of November 6. The valve, which is a 1C pump discharge valve, demonstrated some indication of problems on the 4th of November. During subsequent testing, the valve became harder to stroke and required disassembly. The valve was found to have a bent stem in the valve body. The stem and the globe plug were replaced. Subsequent MOVATS testing proved that the valve was satisfactory prior to exceeding TS time limits. The valve had been previously MOVATs tested during the last Unit 1 outage. At the end of the inspection period, the licensee was still performing failure root cause analysis.

No violations or deviations were observed in these areas.

6. Followup (Units 1 and 2) (92701)

a. Followup of Inspection Identified Items

(Open) IFI 335,389/88-07-02, Establish a Program to Trend Valve Stroke Items.

This IFI concerned the ASME Code Section 11 valve stroke time test program controlled by procedure AP 0010132, ASME Code Testing of Pumps and Valves. Several program weaknesses and corrective commitments were identified. The activities committed to were being informally implemented but all had not been incorporated into currently effective AP 0010132, Rev 11. At the time of the current inspection, AP 0010132 was also being changed to accommodate GL 89-04, Developing Acceptable Inservice Testing Programs, with issue planned for early January 1990.

This item remains open pending licensee completion of corrective action.

b. Followup of Unresolved Items

(Closed) URI 335,389/88-25-01, Ultimate Heat Sink Surveillance Interpretation.

This URI involved review of TS surveillance 4.7.5.1.2 which required semiannual operability verification of the UHS valves. The perceived problem was that the valves, which serve both units, were not opened independently from each control room for each test. They were instead opened from Unit 1 for one semi-annual test and from Unit 2 for the next semi-annual test. This did not seem to meet the TS definition of operability, which required that all necessary attendant equipment be capable of performing it's function.

Review of the TS, FSAR, and equipment installation showed that there was neither a valid safety concern nor a TS concern.

Regarding plant safety, review of the FSAR showed that, with two units operating and canal blockage by an earthquake, sufficient water would be present to provide shutdown cooling for 24 hours prior to needing water via the UHS valves. The UHS valves were self-opening and held closed by compressed air controlled by normally-energized solenoid valves. Review of the installed UHS valve control system, showed that there were no separate Unit 1 and Unit 2 control systems. One common control system provides the safety function of interrupting power to the solenoid valves. The solenoid valve power originated in Unit 1, passed through the Unit 2 normally-closed control switch, through the Unit 1 normally-closed control switch, and to the solenoids at the UHS valves as one series circuit. Any interruption of power, including opening the circuit breaker, would cause the UHS valves to open. Even if a switch were postulated to fail closed, multiple means existed to perform that same precise safety function of interrupting control power. The control switches are of a rugged reliable type, used in many places, with no known failures. There is no need to test the switches semi-annually.

The operators would have a full day to interrupt, at any of several locations, power to the solenoid valves or, if necessary, isolate instrument air from the UHS valves.

Review of the TS showed that they focused exclusively on the UHS valves and not the controls. The action statement required forcing open a balky valve, placing stop-logs across the opening, and stationing a crane to remove the stop-logs if necessary. Remote controls did not appear to be 'necessary attendant equipment'. The TS basis focused on cooling water temperature and having a sufficient quantity of water trapped in the canal to last until the UHS valves could be opened.

During discussions, the licensee stated that environmental requirements limit the amount of water allowed to be flushed from the Indian River through the UHS valves for non-emergency purposes.

The inspector concluded that the remote controls under discussion were not necessary to the vital part of the safety function, and that semi-annual testing of both switches would provide an increase in reliability. No violations or deviations were observed. This item is closed.

c. Followup of Headquarters and Regional Requests

(Closed - Units 1 and 2) P2189-11, Design Defect in Tandem EDG Starting Controls.

Licensee actions were reviewed regarding a Morrison-Knudsen Co. 10 CFR 21 report dated September 18, 1989. The report addressed a design defect in tandem EDG starting controls, specifically the pinion recycle feature. The report did not apply to the Unit 1 EDG sets because they were designed by a different vendor.

The EDG starting system was designed to detect starter pinion engagement for all air driven starter motor pairs and if a number adequate to start the EDG were not engaged, would recycle the start sequence in about 1/2 second cycles until successful pinion engagement occurred. The usual reason for pinion engagement failure would be for a pinion tooth to hit an engine turning (starting) gear tooth. Since starter motors rotate slightly during pinion engagement/disengagement, repetition of the event would be unlikely.

The reported problem involved air-start tandem engine EDGs with start system redundance provided by an individual starting system for each engine. It was found that disabling one starting system for maintenance would prevent the other system from starting the EDGs if needed. The recycle relay was common to both start systems and the pinion engagement logic would cause 1/2 second cycling of both start systems when at least one of the inoperable pinion sets did not engage. The corrective action proposed by the vender was to change the pinion engagement [electrical] logic.

At St. Lucie Unit 2, the start system mechanical components were arranged so that each mechanically-redundant start system would operate on both engines. Because of that, the pinion engagement detector relay logic would not disable both start systems upon failure of one air system. This inherently complied with the corrective action suggested in the Morrison-Knudsen report.

The Morrison-Knudsen report states that redundant start systems were employed. Since the recycle relay was common to both start systems, the start systems were not actually redundant. NRC headquarters

review found that redundancy and independence were not required for the components of a specific EDG set. Redundancy and independence were provided by having redundant EDG sets. No violations or deviations were observed. This item is closed.

(Closed - Units 1 & 2) RAI 89-34, Reactor Operator License Verification (71707)

The inspectors reviewed available documentation and interviewed site personnel regarding positive control of licensed operator assignments to control room duties. Administrative procedures reviewed addressing licensed operator qualifications were:

- AP 0005719, Senior Reactor Operator License Training and Qualification, Rev 9.
- AP 0005720, Licensed Operator Requalifications Program, Rev 22.
- AP 0005721; Reactor Control Operator Training and Qualification, Rev 9.
- AP 0010120, Duties and Responsibilities of Operators on Shift, Rev 43.

The above procedures did contain 10 CFR 55 requirements regarding the qualification and requalification of licensed operators. Additionally, the procedures required that the unit and shift supervisors be familiar with the performance of operators on their shift. Further, each licensed operator is required to ensure that his license was in an active status prior to performing any licensed duties.

AP 0005720 requires that the OS be notified immediately (prior to the subject person standing a duty shift) when an operator has a felony conviction, or physical or mental condition which does not meet medical requirements. The FPL fitness for duty program will identify conditions such as drug dependence. The requirement that the unit and shift supervisors be familiar with the operators on their shift will identify certain other problems such as aberrant behavior.

Disqualification Status Control

Aspects of disqualification status control were not procedurally established. The licensees' procedures currently do not detail the actions taken as a result of an operator failing a qualifying test under the requalification program. The inspector could not substantiate that this has created any problems. In the past, based on operator training records, control of the process had been by informal notification with written followup. Recently the OS, through night orders that were reviewed and initiated by the entire

operations staff, established a disqualification status board for both licensed and nonlicensed operators. The locked board was located in the office of the watch engineer, who scheduled the shift manning. The only keys were held by the shift clerk and OS. The board would be used as follows:

- When informed of a change in qualification status by the training staff, plant manager, etc., the OS would write a memo to the operations clerk in the control room identifying the individual or shift crew that had been disqualified or requalified for duty. The clerk, utilizing his key, would change the affected names on the locked status board. The informal notification by training is documented in writing. The inspector examined the clerk's records for the past several months and found no problems. No site licensed operators have been disqualified since the last requalification period in 1988. For example, within the inspection period; but just prior to the inspectors reviewing the operator qualification area, several of the operators on one shift failed a preliminary test battery given by the training staff. This information was known throughout the operations staff within one shift. The shift that had not passed the test battery did not stand licensed duty from that time forward; they had been placed in interim training classes. The OS utilized his status board as described above.

Although no administrative procedure prescribes licensed operators status after failing a test, the site handles the mechanics of the re-establishment of qualification procedurally.

The shift supervisors are aware of the status of crews. The supervisors were very knowledgeable about the staff on both units. The unit supervisors were aware of the disqualification status board. With the closeness and small size of this staff, qualification or other pertinent information about the staff flows freely within the group.

The training department staff did maintain several licenses. The majority of the licenses were inactive and only two were likely for active consideration. Currently, the training staff with active licenses stand shift with two other licensed operators and two supervisors. All of the training staff names are in the disqualification box in the nuclear watch engineers office (ie, not qualified).

12. Exit Interview (30703)

The inspection scope and findings were summarized on November 20, 1989, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection

findings listed below. Proprietary material is not contained in this report. Dissenting comments were not received from the licensee.

Item Number	Status	Description and Reference
335,389/88-07-02	open	IFI - Establish a Program to Trend Valve Stroke Items
335,389/88-25-01	closed	URI - Ultimate Heat Sink Surveillance Interpretation
389/P2189-11	closed	P21 - Part 21; Design Defect in Tandem EDG Starting Controls

13. Abbreviations, Acronyms, and Initialisms

ABB	ASEA Brown Boveri (company)
AB	Auxiliary Building
AC	Alternating Current
AFAS	Auxiliary Feedwater Actuation System
AFW	Auxiliary Feedwater (system)
ALARA	As Low as Reasonably Achievable (radiation exposure)
ANPO	Auxiliary Nuclear Plant [unlicensed] Operator
ANSI	American National Standards Institute
AP	Administrative Procedure
ASI	Axial Shape Index
ASME	American Society of Mechanical Engineers
ATWS	Anticipated Transient Without Scram
BQAP	Backfit Quality Assurance Procedure (EBASCO Services Inc.)
CAR	Corrective Action Request
CCW	Component Cooling Water
CEA	Control Element Assembly
CEDMCS	Control Element Drive Mechanism Control System
CFR	Code of Federal Regulations
CIS	Containment Isolation System
CST	Condensate Storage Tank
CVCS	Chemical & Volume Control System
DC	Direct Current
DDPS	Digital Data Processing System
DEV	Deviation (from Codes, Standards, Commitments, etc.)
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EPRI	Electric Power Research Institute
ESF	Engineered Safety Feature
F	Fahrenheit
FCV	Flow Control Valve
FIS	Flow Indicator/Switch
FPL	The Florida Power & Light Company
FSAR	Final Safety Analysis Report
FT	Flow Transmitter

GDC	General Design Criteria (from 10 CFR 50, Appendix A)
GE	General Electric Company
GL	NRC Generic Letter
GMP	General Maintenance Procedure
HCV	Hydraulic Control Valve
HFA	A GE relay designation
HP	Health Physics
HPSI	High Pressure Safety Injection (system)
HVE	Heating and Ventilating Exhaust (fan, system, etc.)
HX	Heat Exchanger
I&C	Instrumentation and Control
ICW	Intake Cooling Water
IFI	NRC Inspector Follow-up Item
ILRT	Integrated Leak Rate Testing
IN	NRC Information Notice
INPO	Institute for Nuclear Power Operations
IR	NRC Inspection Report
ISI	InService Inspection (program)
IX	Ion Exchanger
JPE	(Juno Beach) Power Plant Engineering
JPN	(Juno Beach) Nuclear Engineering
LIV	Licensee Identified Violation
LTOP	Low Temperature Overpressure Protection (system)
LCO	TS Limiting Condition for Operation
LER	Licensee Event Report
LPSI	Low Pressure Safety Injection (system)
MFIV	Main Feed Isolation Valve
MFP	Main Feed Pump
MOVATS	Motor Operated Valve Actuator testing System
MSIV	Main Steam Isolation Valve
MV	Motorized Valve
MW	Megawatt(s)
NCV	Non-Cited Violation (of NRC requirements)
NPO	Nuclear Plant Operator
NPS	Nuclear Plant Supervisor
NPWO	Nuclear Plant Work Order
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
OI	Operating Instruction
OS	Operations Supervisor
ONOP	Off Normal Operating Procedure
OP	Operating Procedure
PCM	Plant Change/Modification
PCV	Pressure Control Valve
P&ID	Piping & Instrumentation Diagram
PIS	Pressure Indicator/Switch
PM	Preventive Maintenance
PORV	Power Operated Relief Valve
psig	Pounds per square inch (gage)
ppm	Part(s) per Million

PT	Pressure Transmitter
PWO	Plant Work Order
QA	Quality Assurance
QC	Quality Control
QI	Quality Instruction
RAB	Reactor Auxiliary Building
RCB	Reactor Containment Building
RCO	Reactor Control Operator
RCP	Reactor Coolant Pump
RCPB	Reactor Coolant Pressure Boundary
RCS	Reactor Coolant System
RE	Reactor Engineering (department)
Rev	Revision
RG	[NRC] Regulatory Guide
RO	Reactor [licensed] Operator
RPS	Reactor Protection System
RWT	Refueling Water Tank
SAL	Service Advice Letter
SALP	Systematic Assessment of Licensee Performance
SAS	Safety Assessment System
SDC	Shut Down Cooling
SDCS	Shut Down Cooling System
SG	Steam Generator
SIT	Safety Injection Tank
SNPO	Senior Nuclear Plant [unlicensed] Operator
SRO	Senior Reactor [licensed] Operator
Tavg	Reactor average temperature
TCB	Trip Circuit Breaker
TCW	Turbine Cooling Water
TE	Temperature Element
TMI	Three Mile Island
TR	Temperature Recorder
TS	Technical Specification(s)
UHS	Ultimate Heat Sink
URI	NRC Unresolved Item
V	Volt(s)
VIO	Violation (of NRC requirements)