UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-335/82-41 and 50-389/82-63

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, Florida 33152

Facility Name: St. Lucie Unit 1 and 2

Docket Nos. 50-335 and 50-389

License Nos. DPR-67 and CPPR-144

Inspection at St. Lucie site near Ft. Pierce, Florida

Inspectors: Kerry D. Landis for — 1/7/83
S. A. Elrod — Date Signed

Kerry D. Landis for — 1/7/83
H. E. Bibb — Date Signed

Approved by: C. Julian for — 1/11/83
H. Dance, Chief — Date Signed
Projects Branch 2
Division of Project and Resident Programs

SUMMARY

Inspection on November 11, 1982 through December 10, 1982

Areas Inspected

This routine inspection involved 268 resident inspector-hours on site in the areas of maintenance, surveillance, procurement, operational safety verification, new fuel handling, operating procedure review, pre-operational testing, bulletins, circulars, information notices, and human engineering discrepancies.

Results

Of the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

C. M. Wethy, Plant Manager
B. J. Escue, Unit 2 Site Manager
J. H. Barrow, Operations Superintendent
D. A. Sager, Operations Supervisor
*N. G. Roos, Quality Control Supervisor
P. L. Fincher, Training Supervisor
R. R. Jennings, Technical Department Supervisor
H. F. Buchanan, Health Physics Supervisor
L. W. Pearce, Nuclear Plant Supervisor
C. L. Burton, Nuclear Plant Supervisor
G. Boissy, Startup Superintendent

Other licensee employees contacted included construction craftsmen, technicians, engineers, operators, shift technical advisors, security force members, and office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 16, 1982, with those persons indicated in paragraph 1 above. The licensee acknowledged the inspector's comments.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. IE Bulletins

The following IE Bulletins were reviewed to ensure receipt, evaluation and appropriate implementation.

(Open - Unit 2) IE Bulletin 79-18 - Audibility Problems Encountered on Evacuation of Personnel from High Noise Areas. During preoperational testing, the inspector observed that the announcing system could not always be heard - especially in the feed pump area. Also, a voice enhancement circuit, such as Unit One enjoys, has not been installed. Design Item Report E192 concerning voice enhancement, has been submitted by the Startup Department to Engineering for resolution.

(Closed - Unit 2) IE Bulletin 80-24 - Prevention of Damage Due to Water Leakage Inside Containment. This bulletin is closed based on a review of the results of an FPL comparison to a previous St. Lucie Unit 1 evaluation. The inspector also investigated the water source for four new fire stations inside containment. The stations are supplied by the primary make up water system, which has a Unit 1 parallel. The inspector had no further questions concerning IEB 80-24. The suitability of the existing primary make up water system for fire protection use is addressed in paragraph 15.

(Open - Unit 1) IE Bulletin 80-19 - Failure of Mercury-Wetted Relays in Reactor Protective Systems. FPL responded to this Bulletin on October 29, 1980 in Letter L-80-356. St. Lucie Unit 1 uses these relays, but has not had a large failure rate, and therefore does not desire to replace them with another type. Action 2 of the bulletin requires the surveillance test interval to not exceed 10 days when operability of the RPS is required (30 days is the technical specification period). St. Lucie 1 normally conducts this surveillance on a weekly basis but is not required to. Site management has agreed to modify the surveillance scheduled with a note to show that the weekly surveillance is not only to satisfy the technical specification requirement for a test within one week of startup but also to satisfy IE Bulletin 80-19. The Bulletin remains open pending modification of the surveillance schedule.

6. IE Circulars

The following IE Circulars were reviewed to ensure receipt, evaluation, and appropriate action taken.

(Closed - Unit 2) IE Circular 77-01 - Malfunctions of Limitorque Operators. This circular addressed requirements to operationally test limitorque operators after maintenance and the setting of limit and torque switches. FPL memo PSL 2-82-647 Boissy/Dotson identifies the requirement of Administrative Procedure 0010132 to operationally test motor operated valves. The inspector also reviewed QI-PR/PSL 11.3 specifying the procedure for setting limit switches and torque switches.

(Open - Unit 2) IE Circular 81-14 - Main Steam Isolation Valve Failures to Close. This was evaluated by FPL in memo PSL-2-82-573 to file L-310.4.2. The evaluation reviewed FSAR Section 10.3.3 and SER Section 10.3.1 through 10.3.3. Subsequent investigation showed that the valves had failed the preoperational test procedure. The circular clearly identified control air quality problems as one of the most prevalent common-mode failure mechanisms. The inspector could identify no FPL program that monitors or samples the quality of control air. This circular remains open pending: (1) completion of the MSIV preoperational test, (2) development of a program to identify in some manner loss of quality of control air, that is, a sampling program, continuous monitor, or periodic physical examination of rubber parts in contact with control air, etc.

7. IE Information Notices

The following IE Information Notices were reviewed to ensure their receipt, evaluation, and that appropriate action was taken.

(Closed - Unit 2) IE Notice 79-15 - Deficient Procedures. This Notice identified a case of disregard for procedural requirements, coupled with failure to correct procedures found deficient. St. Lucie Site Quality Instruction QI 5-PR/PSL-1, Rev. 20, contains the programmatic requirement for procedures to be followed or changed. It also includes the mechanism for effecting temporary changes.

(Closed - Unit 2) IE Notice 79-25 - Reactor Trips at Turkey Point 3&4. This Notice described a situation where failure to produce a temporary procedure contributed to challenges of safety systems. FPL memo PSL-2-82-748 describes the use of the plant work order to highlight the need for temporary procedures. The inspector concluded that the program exists at St. Lucie.

(Closed - Unit 2) IE Notice 79-27 - Steam Generator Tube Rupture at Two PWR Plants. This notice provided information regarding two incidents.

(Closed - Unit 2) IE Notice 79-28 - Overloading of Structural Elements Due to Pipe Support Loads. FPL has evaluated this Notice in memo PSL-2-82-653 to file L-310-4.3. This memo has been reviewed by NRC Region II in conjunction with FPL's IE Bulletin 79-14 program. Since the concerns of IE Notice 79-28 are included in FPL's IE Bulletin 79-14 program, this Notice is administratively closed.

(Closed - Unit 2) IE Notice 79-31 - Use of Incorrect Amplified Response Spectra. This Notice has been evaluated by FPL in memo PSL-2-82-652 to file L-310.4.3. The Notice and memo have been reviewed by NRC Region II against FPL's IE Bulletin 79-14 program. Since the concerns of the Notice are included in FPL's program, this Notice is administratively closed.

(Closed - Unit 2) IE Notice 79-35 - Control of Maintenance and Essential Equipment. This Notice discussed the requirement to ensure operability of remaining safety trains prior to removing equipment from service. As discussed in FPL memo PSL-2-82-749 to file L-310.4.3., Operating Procedure 0010122, Rev. 16, In Plant Equipment Clearance Orders, Section 8.1 addresses the concerns of the Notice.

(Closed - Unit 2) IE Notice 80-16 - Shaft Seal Packing Causes Binding in Main Steam Swing Disc Check and Isolation Valves. The notice is closed based on review of FPL memo PSL-2-82-819 to file L-310-4.3, Ebasco letter SL-2-82-969, FSAR Chapter 10 and on-site review. The subject valves are not used in the St. Lucie 2 main steam header.

(Closed - Unit 2) IE Notice 80-36 - Failure of Steam Generator Support Bolting. FPL evaluated this IE Notice in memo PSL-2-82-743 to file L-310.-

4.3. ASME Boiler and Pressure Vessel Code, Section XI, In Service Inspection, applies to St. Lucie.

(Closed - Unit 2) IE Notice 81-09 - Degradation of Residual Heat Removal Capability. FPL evaluated this Notice in memo PSL-2-82-717 to file L-310.-4.3. It has been included in their response to IE Bulletin 80-12.

(Closed - Unit 2) IE Notice 81-21 - Potential Loss of Direct Access to Ultimate Heat Sink. This notice is closed, based on review of FPL memo PSL-2-82-714 to file L-310.4.3 and Drawing 2998-G-082, Rev. 9 - Circulating and Intake Cooling Water System. St. Lucie uses straight-through, single-pass heat exchangers in the intake cooling water system. Heat exchanger inlet and outlet pressure gages and a flow gage serve to signal flow blockage. The inspector had no further questions.

(Open - Unit 2) IE Notice 81-31 - Failure of Safety Injection Valves to Operate Against Differential Pressure. This Notice discusses the failure of certain Anchor Darling gate valves, with a certain actuator, to operate under design differential pressure conditions. FPL memo PSL-2-82-684 to file L-310.4.3 credits downstream check valves with precluding valve differential pressure, but does not determine whether or not the subject valves are used at St. Lucie.

(Closed - Unit 2) IE Notice 81-34 - Accidental Actuation of Prompt Public Notification System. This notice is closed based on an FPL evaluation in memo PSL-2-82-841 to file L-310.4.3. This evaluation shows that the county authorities have a "No Emergency" procedure in case of accidental siren actuations and that a six-tone sequential encoding is used to actuate sirens. This encoding scheme is less susceptible to accidental actuations than a two-tone code.

(Closed - Unit 2) IE Notice 81-35 - Check Valve Failures. This Notice listed more examples of common problems with check valves, as in IE Circular 78-15. No new types of problems were identified.

(Closed - Unit 2) IE Notice 81-36 - Replacement Diaphrams for Robert Shaw Valve Model VC-210. Closed, based upon FPL/Ebasco evaluation that the subject control valve is not used in safety related applications at St. Lucie 2.

(Closed - Unit 2) IE Notice 82-08 - Check Valve Failures on Diesel Generator Engine Cooling System. Evaluated by FPL in memo PSL-2-82-691 to file L-310.4.3. St. Lucie 2 does not use check valves in diesel engine cooling water systems.

(Closed - Unit 2) IE Notice 82-11 - Potential Inaccuracies in Wide Range Pressure Instruments Used in Westinghouse Designed Plants. This was evaluated as not applicable by FPL in memo PSL-2-82-635 to file L-310.4.3. St. Lucie does not use Westinghouse supplied instruments. Barton instruments are used.

(Closed - Unit 2) IE Notice 82-19 - Loss of High Head Safety Injection, Emergency Boration, and Reactor Coolant Makeup Capability. Closed because the problem was caused by a bladderless, gas-water pulsation damper in the charging pump suction. St. Lucie 2 has pulsation dampers in that location but they are a bladder type and are hand-filled.

(Closed - Unit 2) IE Notice 82-23 - Main Steam Isolation Valve Leakage. FPL reviewed this Notice in memo PSL-2-82-742 to file L-310.4.3. FPL correctly observed that this Notice was primarily addressed to BWR's. However, FPL did refer to pre-operational test procedures for stroke and leakage.

(Closed - Unit 2) IE Notice 82-32 - Contamination of RCS by Organic Cleaning Solvents. FPL has reasoned that, since sump wastes are never recycled, the problem described in the Notice is avoided at St. Lucie 2.

(Closed - Unit 2) IE Notice 82-33 - Control of Radiation Levels Near Brachy Therapy Patients. Closed as not applicable to power reactors.

(Closed - Unit 2) IE Notice 82-39 - Service Degradation of Thick Wall Stainless Steel Recirculation System Piping at a BWR Plant. FPL has evaluated this notice in memo PSL-2-82-666 to file L-310.4.3. St. Lucie's Reactor Coolant System uses stainless-clad carbon steel rather than all-stainless pipe.

(Closed - Unit 2) IE Notice 82-40 - Deficiencies in Primary Containment Electrical Penetration Assemblies. This Notice addressed quality problems with Bunker Ramo brand electrical penetration assemblies. FPL has evaluated in memo PSL-2-82-689 to file L-310.4.3 that Unit 2 uses Conax brand assemblies.

8. Control Room Design Review (Unit 2)

The inspector reviewed corrective action taken by the licensee to address control room human engineering discrepancies identified in NUREG-0843, Supplement 1, Appendix C. This review was requested by the Office of Nuclear Reactor Regulation (NRR). Items reviewed included NUREG 0843, Supplement 1, Appendix C; control panel vendor drawings and various design changes notices. Interviews were conducted with various responsible design and project coordination personnel. On-site inspections were made of work in progress.

During this review, the actual labeling of the RTGBs was in progress and RTGB demarcation had been recently completed. The new hierarchichal lables incorporate a different labeling philosophy than the old labels. This makes closure of many Human Engineering Discrepancies difficult until major portions of the RTGB are both demarcated and labeled - allowing a review of the overall result.

In specific cases, after consultation with NRR, the applicant was requested to provide an amended response to NRR. Subparagraphs (j),(ab), (ac) and (am) refer to these requests.

Specific inspector comments on items, as numbered in NUREG 0843, Supplement 1, are as follows:

(a) (Closed - Unit 2) A.1.1. Floor Obstructions. The two large floor obstructions were due to construction at the time. They have since been filled. Any present disarray is clearly due to construction in progress at this time.

(b) (Closed - Unit 2) A.1.2. Telephone Cords. The long cord for the temporary phone (Gaitronics) has been removed, as was the phone. The permanent phones have coiled cords that do not reach the floor.

(c) (Open - Unit 2) A.1.3. Key Lockers. The Remote Shutdown Panel key and procedure locker are not installed. The Control Room key locker is installed. The procedure for key access control is not published.

(d) (Closed - Unit 2) A.1.4. Control Panel Handrails. The Unit 2 hand rails do not obscure the view of the control panel. The inspector tested switches for inadvertant operation as requested by NRC letter to FPL dated November 8, 1982. The inspector sat well back and slid along the rail. The only switches contacted were non-safety switches with tall handles, i.e., circulating water and turbine auxiliaries. Since this test criteria significantly exceeds the design criteria, the inspector considers the matter closed.

(e) (Open - Unit 2) A.1.7. Testability of Control Room Emergency Lighting. This report updates previous report 389/82-39. The licensee has provided and the inspector reviewed Drawings 2998-B-400 Sheets 216, Rev. 4; 226, Rev. 6; 227, Rev. 4; and 228, Rev. 5. These show the control scheme for testing emergency lights in the control room. This item remains open pending issuance of the administrative procedure scheduling the surveillance.

(f) (Open - Unit 2) A.1.9. Security Seals for Control Transfer Panels. The seals are not installed and the surveillance procedure is not issued.

(g) (Closed - Unit 2) A.3.2. Hydrazine System Annunciation. Four annunciators have been installed. They are for tank low level, tank low-low level, tank high or low pressure and pump motor overloaded. The inspector had no further questions.

(h) (Closed - Unit 2) A.3.5. Volume of Control Room Annunciators. The inspector found the volume to be adjustable and significantly louder than ambient noise. The annunciators also have characteristic signals for identification.

(i) (Closed - Unit 2) A.3.6. Relocate Control Room Audible Alarm Devices. This updates report 389/82-39. FPL provided the inspector FCR 2-5361U of February 1, 1982. This shows the relocation of the speaker boxes

from inside the panels to the top of the panels. The inspector had no further questions.

(j) (Open - Unit 2) A.3.7. Testing of Annunciators. FPL's responses indicated that all annunciator tiles flash during test, thus testing the flasher. Actually, only unalarmed tiles flash - alarmed tiles continue a steady light. This does not appear to test the flasher for each tile. FPL has been requested to update their responses to NRR on this item.

(k) (Closed - Unit 2) A.3.13. Redundant Annunciator Control on Line Repeat Panel. The redundant control has been removed.

(l) (Closed - Unit 2) A.3.14. Alarm Silencing Controls. The alarms are audible for about three seconds each, then are automatically acknowledged (silenced) by a timer. The alarms continue to flash until reset.

(m) (Closed - Unit 2) A.3.15. Annunciator Control Button Sequence. The groups' button order is: Acknowledge, Reset, Test, and, if applicable, First-Out Reset. The groups on RTGB's 201 and 205 are demarcated. The group on RTGB 204 is isolated from other functions.

(n) (Closed - Unit 2) A.3.16. Replace a Specific Temporary Annunciator Label on Panel N. The label was replaced with a plastic tile. Other temporary tile labels have appeared since the last review. These are corrected under HED A.3.10 and A.3.11.

(o) (Closed - Unit 2) A.4.1. Certain Controls Not In Control Room.

(i) The auto-start of Auxiliary Feedwater function has been installed. The switches for the electrical pumps and steam inlet valves to the steam driven pump can bypass the automatic signal to stop pumps and close valves.

(ii) Condensate pump 2C is controlled by either 2A or 2B controls once it is aligned as a replacement pump. NRR accepted this in a meeting dated October 21, 1982.

(p) (Open - Unit 2) A.4.2. Remove Inoperative Push Buttons. This report updates report 389/82-39. FPL has not removed the buttons.

(q) (Closed - Unit 2) A.4.3. Protect Turbine Trip Push Button. An elevated switch guard has been installed.

(r) (Closed - Unit 2) A.4.4. HIC-3638 Reversal. This report updates Report 389/82-39. This HED is example (c) of HED A.4.2. HED A.4.4. is administratively closed.

(s) (Closed - Unit 2) A.4.5. Rotary Switch Convention Violations (3 examples). Examples (a) and (c) were accepted as satisfactory by NRR on October 21, 1982 at a meeting in Bethesda, Md. Example (b) has been changed from open-left/auto-center/close-right to close-left/auto-center/open-right.

(t) (Open - Unit 2) A.4.6. Black Rings Around Some Key Switches. This updates previous report 389/82-39. FPL, in letter L-82-496 of November 10, 1982, has clarified the reason for the black rings to be a change by the manufacturer. FPL intends to paint the silver colored switches black, but has not done so yet.

(u) (Closed - Unit 2) A.4.9. Key Orientation. This updates previous report 389/82-39. The inspector surveyed the control room, found all single-sided key locks to have teeth down. A few double-sided locks have been installed on radiation monitor panels. These have teeth in a vertical plane.

(v) (Open - Unit 2) A.4.10. Unlabled Switch Positions. The examples from the NRC SER were corrected. About fifteen other rotary switches were observed with two positions and an unlabled neutral. The inspector will follow this up with FPL and NRR.

(w) (Closed - Unit 2) A.5.2. Trip Modules on RPS. The plug-in modules were randomly inserted for the Human Factors Review. A year later, modules were installed in correct locations for preoperational testing.

(x) (Closed - Unit 2) A.5.3. Channel Range Identification for Multi-Point Printers. The multi-point printers with multiple ranges have each had a label added to correlate point number to range.

(y) (Open - Unit 2) A.5.4. Generator Exciter Field DC Volts Meter Label Change to Voltage Regulator Null. This has not been done.

(z) (Closed - Unit 2) A.5.5. Vibration and Eccentricity Phase Angle Meter Scale. Closed during the 21 October 1982 meeting between FPL and NRR.

(aa) (OPEN - Unit 2) A.5.7. Scale Range Marks on Circular Meters. This activity is ongoing.

(ab) (Open - Unit 2) A.5.8. Tick Marks on Meters. This item concerned the marks used to extend major tick marks to numerals. They are usually heavier than the tick marks and it was perceived that they could be confused with minus signs. The inspector observed that this condition affects, to some extent, virtually every linear scale meter in the control room. It is not considered to be a problem in that meters with both + and - ranges appeared to be so marked. The remainder appear to be positive range meters. FPL has been requested to revise their response to NRR. This item is open pending a new response.

(ac) (Open - Unit 2) A.5.9. Unconventional Scale Graduations. Four examples: FPL committed to color code normal operating ranges. Example (a) and (d) were color coded. Example (b), a wide-range log-scale power meter 10^{-8} % - 2 x 10^{2}%, has no reason for color coding, example (c) is a narrow range 515°F - 615°F temperature meter with selector switches for various inputs. There is no reason to color code this switch. FPL has been requested to modify their response to NRR. This item is open pending a new response.

(ad) (Open - Unit 2) A.5.11. Light Color Reversal on Line Repeat Panel. This report updates 389/82-39. The panel is not energized fully so corrective action can not be verified.

(ae) (Open - Unit 2) A.5.13. Light Color Reversal on HVAC Panel. This report updates 389/82-39. The system is not energized so corrective action can not be verified.

(af) (Closed - Unit 2) A.5.16. Three-pen recorder CR-05-1 does not have a label to distinguish between colors. The label has been installed.

(ag) (Open - Unit 2) A.5.21. Meaning of 2A and 2B Battery Lights. The lights have not been changed to white and the labels have not been installed. FPL has requested this change of the AE via memo EPP/PSL-2-82-369 of December 2, 1982. The lights are actually powered from the DC Bus, not the battery itself. (The meters of finding A.6.5 are also powered from the bus). FPL has been requested to accurately label the lights.

(ah) (Closed - Unit 2) A.5.22. Labeling of Speed Indicator Lights for Multi-Speed Fans. F and S stickers have been added to the speed indicator lights for the four fans in question.

(ai) (Open - Unit 2) A.5.24. Legend Labels on Trend Recorders. Transparent Labels are installed on five point-printer recorders on the HVAC panel. Five more recorders on the HVAC panel remain to be labeled. There are also other installations of these in the control room that remain to be labeled.

(aj) (Open - Unit 2) A.5.25. Linearize R[illegible] Make-up Water Flow Meter. FPL has started design but the w[illegible]k is not complete.

(ak) (Open - Unit 2) A.6.5. Incorrect Voltmeter Label. The meter label was changed to "Battery Volts 2A" as committed, however, the meter actually reads 2A DC Bus Voltage, not battery voltage. FPL has been requested to accurately label this meter and the B Bus equivalent.

(al) (Closed - Unit 2) A.6.8. Label MSIS Block Key Switches. An unusual label has been applied. It consists of the word Block and an Arrow. This is viewed as satisfactory for the preliminary design review. It is thought that sufficient time will have passed before the Detailed

Control Room Design Review to judge these labels and change them if necessary.

(am) (Open - Unit 2) A.6.11. Mislabeled Condenser Vacuum Display. The discrepancy was that the meter should read "Inches Hg Vacuum" instead of "Inches Hg ABS". FPL did change the scale to "Inches Hg". The scale face also states that it is a vacuum meter. The real problem is that the meter is not a vacuum meter; it is an absolute pressure meter. FPL has been requested to correct this meter and adjacent meter scale labels and to correct the board labels under the meter. An updated response to NRR was also requested.

(an) (Closed - Unit 2) A.6.12. Incorrect Labels on Main Feed Pump Flow. The labels have been replaced.

(ao) (Open - Unit 2) A.6.13. Label Steam Generator Pressure Gaged on ESF Cabinets. The gages are labeled, however, the scales are incorrect.

(ap) (Closed - Unit 2) A.6.15. Component Identification Label Size. The inspector reviewed RTGB 201 - recently relabeled. The component identification labels have letters easily twice as tall as status labels such as "stop", "start", etc.

(aq) (Open - Unit 2) A.6.18. Move a Specific Label on Back of RTGB. No action has been taken.

(ar) (Closed - Unit 2) A.6.19. Waste Gas Trend Recorder Unlabeled for Parameter. It is now labeled as SCFM for Standard Cubic Feet per Minute.

(as) (Open - Unit 2) A.6.21. Replace Ammeter Selector Switch Handles. FPL indicates the handles have been ordered on PO 379180, dated 12 October 1982.

(at) (Closed - Unit 2) A.6.22. Identification of Reading Versus Setpoint on Multipen Recorders. Panel 205. The two recorders FRC 2210x and 2210y have been labeled.

(au) (Closed - Unit 2) A.6.23. Label Reactor Trip Buttons on Panel 204. The buttons are labeled TRIP.

(av) (Closed - Unit 2) A.6.37. Missing Label on 480V Bus Tie Switch. New labels have been provided for all four switches.

(aw) (Closed - Unit 2) A.6.40. Label Reactor Trip Buttons on RTGB 201. The buttons are demarcated, labeled and located inside red elevated switchguards.

(ax) (Closed - Unit 2) A.6.43. Change Color of Push Button for Annunciator Test from the Color Red. The button now has a silver top with a black bezel which matches the other annunciator buttons.

(ay) (Closed - Unit 2) A.8.4. Move Annunciator Controls from the Top of RTGB 203 to RTGB 204. The problem in this case was the need to routinely reach over reactor coolant pump controls to acknowledge annunciators. Relocating annunciator controls has completely alleviated this problem.

(az) (Closed - Unit 2) A.8.10. Relocate Waste Flow Valve Lights To Match Standard Convention. The lights have been relocated such that Valve X is uppermost and switch position X is to the left. Valve Y lights are the lowermost, switch position Y is to the right.

(ba) (Closed - Unit 2) A.8.15. Move CRT on Panel 204. The display was moved closer to the reactor controls and is judged to be quite readable.

(bb) (Closed - Unit 2) A.9.1. Auxiliary Feed Controls Mirror Image Displays. The instrumentation has been rearranged and is more consistent with controls.

9. New Fuel Receipt - Units 1 & 2

During the inspection period, new fuel began arriving for the upcoming refueling of Unit 1 and the first fuel loading of Unit 2. Due to some physical size differences in shipping containers from those encountered during previous shipments, some procedural and physical changes were required for both units. The proper handling of these changes demonstrated that licensee personnel are developing a strong sensitivity to strict procedural compliance. Inspection of fuel receipt will continue during the following report period.

No violations or deviations were identified in this area.

10. Maintenance Observation

Station maintenance activities of safety-related systems and components listed below were observed/reviewed to ascertain that they were conducted in this review: the limiting conditions for operation were met, activities were accomplished using approved procedures, functional testing 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 is assigned to safety-related equipment maintanance which may affect system performance.

No violations or deviations were identified in this area.

11. Surveillance Observation

During the inspection period, the inspector verified plant operations compliance with at least sixteen different technical specification requirements. Typical of these was confirmation of compliance with the technical specification for reactor coolant system leakage, linear heat rate, reactor protection instrumentation, safety injection tanks, containment systems, auxiliary feedwater system, and AC and DC sources.

The inspector verified that testing was performed in accordance with adequate procedures, test instrumentation was calibrated, limiting conditions for operation were met, removal and restoration of the affected components were accomplished, 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.

During review of completed procedure OP 1400057, Rev. 7, Reactor Regulating System Functional Test, the inspector noted several (8) data points that were outside the "desired" reading and allowable tolerance band. The data points were noted in remarks as "failed". Upon discussion with the QC department and subsequent review of I & C department procedure 1400062, Rev. 1, Reactor Regulating System Calibration, it was noted that these particular data points have been deleted from the I & C calibration procedure as meaningless or unnecessary. This was discussed with the Nuclear Watch Engineer who indicated that a procedure change request would be submitted to delete these data points from the operations procedure. This item will be followed up on a subsequent inspection. (IFI-82-41-01).

The inspector also reviewed OP 1400059, Rev. 9, Reactor Protection System Logic Matrix Test.

No violations or deviations were identified in this area.

12. Procurement - (38700)

During this inspection period, the inspector reviewed certain aspects of the licensee's procurement program to ascertain whether the purchase, receipt, handling and storage of components, materials and supplies used for safety-related functions was in conformance with the approved Quality Assurance Program and implementing procedures.

The following licensee procedures were reviewed and compared with guidance outlined in ANSI-N45.2.2 - 1972, Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants:

TQR 15.0 - Non-conforming Materials, Parts or Components

QP 15.2 - Control of Non-conforming Materials, Parts or Components

QI-4PR/PSL-1 - Procurement Document Control

QI-4PR/PSL-2 - Procurement Document Review

QI-7PR/PSL-1 - Control of Purchased Material, Equipment and Services

QI-7PR/PSL-2 - Receiving Inspection

QI-8PR/PSL-1 - Identification Control of Materials, Parts and Components

QI-15PR/PSL-1 - Non-conforming Materials, Parts and Components

QI-18PR/PSL-2 - Quality Control Surveillances

The inspector observed a receipt inspection being conducted on a 0-1600 PSIA sigma meter destined for use in the shutdown cooling/pressurizer pressure permissive circuit. The meter was properly inspected and identified as being acceptable, but a "hold" tag was placed on it and the item was placed in a "QC Hold" area to await a calibration check by I & C technicians prior to release for use. Factory calibration data accompanied the meter. Additionally, the inspector (NRC) reviewed the qualification and requalification records of the FP&L QC inspector who performed the receipt inspection, and determined that his qualifications were current and in compliance with ANSI N45.2.6 and QI-1-PR/PSL-7, Quality Control Organization.

No violations or deviations were identified in this area.

13. Design, Design Changes, and Modifications (37700)

This inspection area has recently been assigned to the resident inspection staff. Review of recent inspection activities shows that this area has been addressed during 1982 in report 335/82-03, paragraph 7; report 335/82-04, paragraph 6f, g, and h; report 335/82-29, paragraph 4a and b; and report 335/82-36, paragraph 8. The various findings will not be reiterated here. As a result of this review, the inspection effort for this area is considered complete. This area will be reinspected as scheduled by the routine program.

14. Licensee Actions Taken on TMI Items

(Closed - Unit 1) Item II.E.1.1 - Auxiliary Feedwater Evaluation and II.E.1.2 - Auxiliary Feedwater Initiation and Flow are closed based upon a letter from NRR to FPL dated September 14, 1982 which indicated completion of NRR review of the safety evaluation report and FPL compliance with NRR's long-term safety grade requirements.

15. St. Lucie 2 Fire Stations Inside Containment

During a review of flooding water sources entering containment, IEB 80-24, the inspector observed that the four fire fighting hose stations added to the primary water make-up system are not reflected on FSAR Figure 9.2.4 or

in valve line up sheets of operating procedure OP 1560020, Rev. 0, Primary Water System. Review of system alignments shows that a normally open manual valve to the Pressurizer Relief Quench Tank would divert fire fighting water when the containment penetration valve is opened to pressurize the interior header. This concern has been communicated to NRC Region II, NRR fire protection reviewers and to FPL engineers on November 15, 1982. For tracking purposes, the system concerns are included in IFI 389/82-47-01. Update of the FSAR figure 9.2.4 is IFI 389/82-63-01.

16. Plant Tours (Unit 2) (71302)

The inspector conducted frequent tours of Unit 2 observing activities in progress regarding fire protection, housekeeping, equipment preservation, condition of installed instrumentation, cable pulling security, and general construction progress.

No violations or deviations were identified in this area.

17. Followup of Potentially Generic Concerns

a. (Open - Units 1 and 2) Inspector Followup Item 335/82-41-02; 389/82-63-02. Barton Model 763 and 764 Electronic Transmitter Thermal Non-Repeatability.

This item was identified to FPL by the inspector in October and again in November from NRC Daily Reports of September 24 and November 3, 1982. ITT Barton had submitted a 10CFR21 report identifying cases of thermal non-repeatability resulting in transmitted performance outside of specifications. FPL has contacted their NSSS Vendor (CE); however, as of the end of this inspection, no evaluation of extent or effect has been completed for St. Lucie Units 1 or 2.

b. (Open - Units 1 and 2) IFI 335/82-41-03; 389/82-63-03. Design Basis Accident Qualification of Coating Systems for Containment Building.

This item was identified to FPL in November by the inspector from an NRC Daily Report dated October 25, 1982. At another utility, Ameron M5-1 and M5-3 containment coating systems were DBA Qualified, and Applied to a "near white blast finish." EBASCO, however, applied the coatings to a "commercial blast cleaning finish." FPL has contacted their Architect/Engineer, although no evaluation of potential effect has been completed.

18. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the report period. The inspector verified the operability of selected emergency systems, reviewed tagout records, and verified proper return to service of affected components. Tours of the reactor, auxiliary and turbine buildings were

conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need for maintenance. The inspector, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the station security plan.

Two reactor trips from power occurred during this time period:

a. Reactor Trip From Addition of Excessive Boric Acid. On the morning of November 14, the control center operator left a switch in the wrong position. At about 1:00 p.m., when he intended to add a small amount of boric acid to the Volume Control Tank, the additional valve in the wrong position effectively caused an emergency boration, shutting down the reactor. The reactor was restarted and placed on line at 12:23 a.m. November 15.

b. Safety Injection Actuation and Reactor Trip

On November 26, two I&C technicians were performing I&C procedure 1400052, Revision 15, Engineered Safeguards Actuation System Channel Functional Test. One placed the trip test switches in the wrong position and produced a simulated safety injection actuation signal. The plant responded as designed.

An apparent design error in the undervoltage relay setpoints on the 480 volt busses caused the 4160 volt emergency busses to separate from a good offsite power source and load onto the emergency diesel generators. The relay setpoint at the time was about 89% with a one-second delay. The equipment starting currents reduced voltage lower than 89% for a time period longer than one second.

The setting and logic of these relays is the subject of current correspondence between FPL and NRR. FPL's final submittal of technical specifications was due November 30; however, this event has caused some delay. Inspection Report 389/82-53 also discusses these relays for St. Lucie 2.

19. Test Program Implementation on Unit 2

The inspector reviewed, in part, the implementation of the preoperational test program. Test Program attributes inspected included documentation of major test events and deviations to procedures, operating practices, instrument calibrations and correction of problems revealed by the test.

Specific activities reviewed included portions of Test 2-0030190 - Remote Cold Shutdown Demonstration. The provisions for cold shutdown from outside the control room were not satisfactory as demonstrated on November 12 and 13. This comment applies to the plant construction, design and the operating procedure and not to operator actions. Extensive notes were kept by the test group. Inspector Followup Item 389/82-63-04 is opened to track the progress in this area.