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

Report No: 50-302/88-01

Licensee: Florida Power Corporation
3201 34th Street, South
St. Petersburg, FL 33733

Docket No: 50-302 Licensee No.: DPR-72

Facility Name: Crystal River 3

Inspection Conducted: December 16, 1987 - February 11, 1988

Inspectors: _____ 3/10/88
T. Stetka, Senior Resident Inspector Date Signed

_____ 3/10/88
J. Tedrow, Resident Inspector Date Signed

Approved by: _____ 3/10/88
R. Crlenjak, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine inspection was conducted by two resident inspectors in the areas of plant operations, security, radiological controls, Licensee Event Reports and Nonconforming Operations Reports, facility modifications, review of special reports, plant startup from refueling, cold weather preparations, and licensee action on previous inspection items. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on backshifts.

Results: Two violations were identified. (Failure to implement plant procedures, paragraphs 3, 5.b(7), and 8; Failure to have seismic monitoring instrumentation with the required measurement range, paragraph 5.a.(7))

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*F. Bailey, Superintendent, Projects
*P. Breedlove, Nuclear Records Management Supervisor
M. Clary, Principal Nuclear Mechanical Engineer
*J. Colby, Manager, Nuclear Mechanical/Structural Engineering Services
*M. Collins, Nuclear Safety & Reliability Superintendent
D. Cook, Nuclear Engineer II
J. Cooper, Superintendent, Technical Support
M. Culver, Senior Nuclear Reactor Specialist
J. Endsley, Nuclear Engineer II
*R. Fuller, Senior Nuclear Licensing Engineer
F. Fusick, Supervisor, Site Nuclear Engineering Services
H. Gelston, Supervisor, Site Nuclear Engineering Services
*B. Hickle, Manager, Nuclear Plant Operations
*M. Jacobs, Area Public Information Coordinator
*S. Johnson, Manager, Site Nuclear Services
*W. Marshall, Nuclear Operations Superintendent
*P. McKee, Director, Nuclear Plant Operations
*W. Neuman, Supervisor, Inservice Inspection (ISI)
*V. Roppel, Manager, Nuclear Plant Technical Support
*W. Rossfeld, Manager, Nuclear Compliance
F. Sullivan, Supervisor, Site Nuclear Engineering Services
R. Thompson, Supervisor, Site Nuclear Engineering Services
K. Walters, Nuclear Engineer I
*E. Welch, Manager, Nuclear Electrical/Instrumentation & Control Engineering Services
*C. Williams, Nuclear Fire Protection Specialist
*M. Williams, Nuclear Compliance Specialist
*K. Wilson, Manager, Nuclear Licensing

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation and corporate personnel.

Howard & Associates, Inc. Attendees

*H. Howard, Fire Protection

*Attended exit interview

2. Exit Interview (30703)

The inspector met with licensee representives (denoted in paragraph 1) at the conclusion of the inspection on February 11, 1988. During this meeting, the inspector summarized the scope and findings of the inspection

as they are detailed in this report with particular emphasis on the Violations and Inspector Followup Items (IFI).

The licensee representatives acknowledged the inspector's comments and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previously Identified Inspection Findings (92702 & 92701)

(Closed) *Unresolved Item 302/87-40-04: Investigation into transfer switch operation. The licensee has completed their investigation into this matter and has reported this event as LER 87-28 dated January 4, 1988. On December 5, 1987, an ES actuation occurred during efforts to power down the "B" Inverter for maintenance. The "B" and "D" vital AC buses were being supplied by alternate AC sources via manual bypass switches, rather than the normal power supply from the inverter. The licensee's investigation concluded that due to improper operation of the transfer switches and bypass switches, the vital buses were momentarily de-energized which actuated two channels of the ES system. The licensee determined that had the appropriate directions provided in procedure OP-703, Plant Distribution System, been utilized, the inverter would have been restored to the desired lineup without an ES actuation.

Failure to implement the requirements of procedure OP-703 is contrary to the requirements of TS 6.8.1.a and is considered to be a violation. Although this matter is licensee identified, it is being cited as a violation due to the self disclosing nature of the event. Violation (302/88-01-01): Failure to implement the requirements of plant procedures as required by TS 6.8.1. For record purposes this Unresolved Item will be closed and further action tracked by the Violation.

(Open) Violation 302/87-34-02: Failure to adhere to the requirements of procedure MP-109 for setting of relief valve ring settings and failure to implement the requirements of procedure CP-118 for fire watch conditions. The inspector verified that the actions delineated in the licensee's response to this violation dated December 1, 1987, were completed for the violation involving procedure CP-118. With respect to the violation involving procedure MP-109, the NRC has accepted the licensee's denial of this example of a violation. However, in their response to the example, the licensee committed to revise procedure MP-109 to provide a positive means of ring setting verification and to have maintenance personnel review the procedure changes. The licensee expects to have this revision completed by June 1988. This item remains open pending completion of revisions to procedure MP-109.

(Closed) Violation 302/87-17-01: Failure to adhere to the requirements of plant procedures as required by TS 6.8.1. The inspector reviewed and verified the implementation of the corrective actions stated in the Florida Power Corporation (FPC) letter of October 8, 1987.

(Closed) Violation 302/87-17-02: Failure to demonstrate the operability of the transformer supplying power to Vital Bus Distribution Panel (VBDP)-3 within 24 hours as required by TS 4.8.2.1.2. The inspector reviewed and verified the implementation of the corrective actions stated in the FPC letter of October 8, 1987.

(Open) Violation 302/87-17-06: Failure to review and approve the ISI program and changes to this program as required by TS 6.8.2.b. The inspector reviewed and verified the implementation of the corrective actions stated in the FPC letter of October 8, 1987. One of the corrective actions discussed in this letter was that procedure AI-701, Conduct of Inservice Inspection; would be revised to better define the ISI program. This procedure revision is expected to be issued by March 18, 1988. This item remains open pending implementation of the revised procedure AI-701.

(Closed) Violation 302/87-17-05: Failure to conduct the Inservice Testing (IST) of pumps and valves as required by TS 4.0.5.b. The inspector reviewed and verified the implementation of the corrective actions stated in the FPC letter of November 9, 1987.

(Closed) Unresolved Item 302/87-12-04: Implement procedures that will provide positive control over fossil plant activities which affect CR-3. The inspector reviewed administrative instruction AI-1300, Crystal River Coal Plants Interface with Crystal River Unit 3, and Fossil Engineering Administrative Procedures FEAP 18, Interface Procedure for the Coexisting Systems at the CR Complex, and FEAP 30, Interface Procedure for Control of Crystal River Fossil Plant Design Changes Affecting CR-3. These procedures require a review of fossil plant modifications by nuclear engineering for identified systems which have an interface with the licensing basis of the nuclear unit. These procedures, if properly implemented, should provide adequate control of modifications and maintenance performed by fossil plant personnel.

(Closed) Violation 302/87-28-05: Failure to recertify the Qualified Reviewers on a periodic basis as required by TS 6.8.2.c. The inspector reviewed and verified the implementation of the corrective actions stated in the FPC letter of October 23, 1987.

(Closed) IFI 302/87-34-06: Review investigation into the missing part from valve MSV-56. The licensee has completed their inspection of strainers in the downstream steam piping to the steam driven emergency feedwater pump to verify that these lines were not obstructed or damaged. No material or damage was identified.

(Closed) IFI 302/86-31-03: Separate safety related electrical cables for EFIC cabinets from non-safety cables. The licensee initiated and performed work request (WR) #84330 to separate the non-safety related cables from the safety related cables. This work was completed October 20, 1987.

(Closed) IFI 302/86-12-03: Revise procedure CP-115, In - Plant Equipment Clearance and Switching Orders, to include the safety related portions of the emergency diesel generator lube oil (DL), domestic water (DO), main steam (MS), feedwater (FW), and auxiliary steam (AS) systems as systems which require independent valve lineup verification when returned to service from a maintenance condition. The licensee has revised procedure CP-115, Revision 61 dated January 9, 1988, to include these systems for independent verification.

(Closed) IFI 302/86-35-08: Review procedure for draining the separator tank on the waste gas compressors and provide caution note for makeup tank (MUT) venting. The licensee has added a caution note to procedure OP-402, Makeup and Purification System, to ensure that no other draining or venting operations are in progress while venting the MUT. The licensee has further revised procedure OP-412A, Waste Gas Disposal System, to provide instructions for draining the separator tank.

(Open) IFI 302/80-42-06: The Nuclear Services Closed Cycle Cooling Pump (SWP-1C) check valve (SWV-10) was replaced this past refuel outage under modification (MAR) 83-02-01. This valve was of a different design which was supposed to cure the valve slamming problem. Following system startup, it was determined that the valve slamming is still a problem. The licensee is presently evaluating additional actions that could be taken including an evaluation of the effect of the slamming upon system integrity. This item remains open pending NRC review of this evaluation.

(Closed) IFI 302/87-10-03: Review calibration procedure for reactor coolant pump vibration detectors. The licensee has implemented procedure PM-296, Calibration of Reactor Coolant Pump Vibration Monitors (LP-010-SI 1A, LP-010-SI 1B, LP-010-SI 1C, LP-010-SI 1D), dated December 16, 1987, to provide the necessary instructions to calibrate these detectors.

(Closed) IFI 302/87-40-07: Review efforts to resolve the discrepancy between the Final Safety Analysis Report (FSAR) and normal operation of the Reactor Coolant Drain Tank (RCDT). Further engineering analysis by the licensee has determined that the 561 cubic feet tank capacity specified in the FSAR, Table 11-5, is equivalent to a tank level of 8 feet 3.25 inches. The licensee is maintaining the tank level between 6 feet 8.5 inches and 9 feet and has determined that

this level should be adequate to ensure the tank can perform its function of quenching steam.

(Closed) IFI 302/84-09-10: Review corrective actions associated with the February 28, 1984 reactor trip. The licensee has completed modification MAR 80-09-13-01 to provide overcurrent and directional power relays for the emergency diesel generators.

(Closed) IFI 302/87-10-06: The licensee has completed their evaluation of the feedwater isolation matrix and determined that the present time delay relays would be removed and interposing relays installed that would allow testing of the matrix without causing valve movement. A modification to install the new relays is being developed (MAR 87-04-13-01) and it is expected that this modification will be installed during the next refueling outage.

*Unresolved items are a matter about which more information is required to determine whether they are acceptable or may involve violations or deviations.

4. Review of Plant Operations (71707)

The plant began this inspection period in the cold shutdown (Mode 5) condition. A plant heatup was conducted and the hot standby (Mode 3) condition reached at 10:47 PM on January 3, 1988. At 8:43 PM on January 8, a reactor startup was performed and criticality achieved. Power operation (Mode 1) was commenced at 4:30 AM on January 10. The plant remained in power operation for the remainder of this inspection period.

a. Shift Logs and Facility Records (71707)

The inspector reviewed records and discussed various entries with operations personnel to verify compliance with the Technical Specifications (TS) and the licensee's administrative procedures.

The following records were reviewed:

Shift Supervisor's Log; Reactor Operator's Log; Equipment Out-Of-Service Log; Shift Relief Checklist; Auxiliary Building Operator's Log; Active Clearance Log; Daily Operating Surveillance Log; Work Request Log; Short Term Instructions (STI); and Selected Chemistry/Radiation Protection Logs.

In addition to these record reviews, the inspector independently verified clearance order tagouts.

No violations or deviations were identified.

b. Facility Tours and Observations (71707)

Throughout the inspection period, facility tours were conducted to observe operations and maintenance activities in progress. Some operations and maintenance activity observations were conducted during backshifts. Also, during this inspection period, licensee meetings were attended by the inspector to observe planning and management activities.

The facility tours and observations encompassed the following areas: security perimeter fence; control room; emergency diesel generator room; auxiliary building; intermediate building; battery rooms; and, electrical switchgear rooms.

During these tours, the following observations were made:

(1) Monitoring Instrumentation - The following instrumentation and/or indications were observed to verify that indicated parameters were in accordance with the TS for the current operational mode:

Equipment operating status; area atmospheric and liquid radiation monitors; electrical system lineup; reactor operating parameters; and auxiliary equipment operating parameters.

No violations or deviations were identified.

(2) Safety Systems Walkdown (71710) - The inspector conducted a walkdown of the Containment Hydrogen Monitoring (WSV) system to verify that the lineup was in accordance with license requirements for system operability and that the system drawing and procedure correctly reflect "as-built" plant conditions.

No violations or deviations were identified.

(3) Shift Staffing (71707) - The inspector verified that operating shift staffing was in accordance with TS requirements and that control room operations were being conducted in an orderly and professional manner. In addition, the inspector observed shift turnovers on various occasions to verify the continuity of plant status, operational problems, and other pertinent plant information during these turnovers.

No violations or deviations were identified.

(4) Plant Housekeeping Conditions (71707) - Storage of material and components, and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed.

No violations or deviations were identified.

(5) Radiological Protection Program (71709) - Radiation protection control activities were observed to verify that these activities were in conformance with the facility policies and procedures and in compliance with regulatory requirements. These observations included:

- Selected licensee conducted surveys;
- Entry and exit from contaminated areas including step-off pad conditions and disposal of contaminated clothing;
- Area postings and controls;
- Work activity within radiation, high radiation, and contaminated areas;
- Radiation Control Area (RCA) existing practices; and,
- Proper wearing of personnel monitoring equipment, protective clothing, and respiratory equipment.

Area postings were independently verified for accuracy by the inspectors. The inspectors also reviewed selected Radiation Work Permits (RWPs) to verify that the RWP was current and that the controls were adequate.

The implementation of the licensee's As Low As Reasonably Achievable (ALARA) program was reviewed to determine personnel involvement in the objectives and goals of the program.

No violations or deviations were identified.

(6) Security Control (71881) - In the course of the monthly activities, the Resident Inspectors included a review of the licensee's physical security program. The composition of the security organization was checked to insure that the minimum number of guards were available and that security activities were conducted with proper supervision. The performance of various shifts of the security force were observed in the conduct of daily activities to include; protected and vital area access controls, searching of personnel, packages, and vehicles, badge issuance and retrieval, escorting of visitors, patrols, and compensatory posts. In addition, the Resident Inspectors observed the operational status of Closed Circuit Television (CCTV) monitors, the Intrusion Detection system in the central and secondary alarm stations, protected area lighting, protected and vital area barrier integrity, and the security organization interface with operations and maintenance.

No violations or deviations were identified.

(7) Fire Protection (71707) - Fire protection activities, staffing and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.

During a review of the Nuclear Operators (NO) logs on January 22, the inspector verified fire brigade team member qualifications utilizing the licensee's computerized qualification list. The inspector noted that two individuals listed in the NO logs as fire brigade team members during January 19 through January 22, were not listed on the computerized qualification list. This finding was discussed with the licensee's training personnel who confirmed that the two individuals had been removed from the list since the beginning of the year due to expired qualifications.

Administrative procedure AI-2205, Administration of CR-3 Fire Brigade Organization, Sections 4.2 and 4.4, require that the fire brigade team be composed of qualified fire brigade team members. Failure to have qualified team members on the plant's fire brigade is contrary to the requirements of procedure AI-2205 and is considered to be a violation of TS 6.8.1.f. This violation is considered to be another example of the violation discussed in paragraph 3 of this report (88-01-01).

(8) Surveillance (61726) - Surveillance tests were observed to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated equipment was utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- SP-317, RC System Water Inventory Balance;
- SP-321, Power Distribution Breaker Alignment and Power Availability Verification;
- SP-323, Evacuation and Fire Alarm Demonstration;
- SP-349B, Emergency Feedwater Pump (EFP-2) Monthly Operability Demonstration;
- SP-354A, Monthly Functional Test of the Emergency Diesel Generator EGDG-1A;
- SP-417, Refueling Interval Integrated Plant Response to Engineered Safeguards Actuation;
- SP-421, Reactivity Balance Calculations;
- SP-422, RC System Heatup and Cooldown Surveillance;
- SP-430, Containment Air Locks Seal Leakage Test;
- SP-455, Functional Test of Vital Bus Redundant Transformers and Static Transfer Switches;
- SP-650, ASME Code Safety Valve Test;
- SP-715, Containment Building Spray Semiannual Surveillance Program;
- SP-744, Waste Gas Decay Tank (3A, 3B, & 3C) Nonscheduled Surveillance Program;
- PT-136, Decay Heat and Nuclear Services Closed Cycle Cooling (DC & SW) System Flow Measurements

and EGDG-1A KW Loading Due to ES Pumps;

- PT-312, Nuclear Services Pump 2A and Decay Heat Seawater Pump 3A (RWP-2A & RWP-3A) Power Inflow Measurement for EGDG-1A KW Loading Verification.

During the performance of SP-417, the "C" Inverter (VBIT-1C) failed which caused the "C" Vital AC Bus to receive AC power from the alternate (transformer) power supply. The licensee has declared VBIT-1C inoperable and is presently operating with this inverter bypassed. The licensee is developing two modifications (MAR 86-03-04-06, FCN#2 to add an in-line resistor to the inverter control power circuit, and MAR T86-03-04-07, to install a shunt trip in the 480v AC input to the inverter) to return the inverter to operable status.

Inspector Followup Item (302/88-01-02): Review the installation of plant modifications to return VBIT-1C to operable status.

(9) Maintenance Activities (62703) - The inspector observed maintenance activities to verify that correct equipment clearances were in effect; work requests and fire prevention work permits, as required, were issued and being followed; quality control personnel were available for inspection activities as required; and, TS requirements were being followed.

Maintenance was observed and work packages were reviewed for the following maintenance activities:

- Troubleshooting of the "in limit" indication for control rod group number 4 in accordance with procedure MP-531, Troubleshooting Plant Equipment;
- Troubleshooting and repair of startup feedwater control valve FWV-39 in accordance with procedure MP-531;
- Replacement of seismic monitors SI-004-MEI and SI-005-MEI and post maintenance testing in accordance with procedure SP-155, Channel Check of the Triaxial Peak Accelographs;
- Troubleshooting of the "C" Inverter (VBIT-1C) failure in accordance with procedure MP-531;
- Troubleshooting the Engineered Safeguards (ES) test light for valve CFV-16 in accordance with procedures MP-531 and SP-356, Operations ES Refueling Manual Actuation Channel Functional Test for Reactor Building (RB) Isolation and Cooling;
- Testing of the Emergency Feedwater Initiation and Control (EFIC) relays in accordance with procedure PM-167, EFIC Time Delay Relay Testing;
- Troubleshooting the absolute position indication for control rods 1-1 and 3-7 in accordance with procedure MP-531; and,

- Troubleshooting of emergency containment cooling fan AHF-1A in accordance with procedure MP-531.

No violations or deviations were identified.

(10) Radioactive Waste Controls (71707) - Solid waste compacting and selected liquid and gaseous releases were observed to verify that approved procedures were utilized, that appropriate release approvals were obtained, and that required surveys were taken.

No violations or deviations were identified.

(11) Pipe Hangers and Seismic Restraints (71707) - Several pipe hangers and seismic restraints (snubbers) on safety-related systems were observed to insure that fluid levels were adequate and no leakage was evident, that restraint settings were appropriate, and that anchoring points were not binding.

No violations or deviations were identified.

5. Review of Licensee Event Reports (92700) and Nonconforming Operations Reports (71707)

a. Licensee Event Reports (LERs) were reviewed for potential generic impact, to detect trends, and to determine whether corrective actions appeared appropriate. Events, which were reported immediately, were reviewed as they occurred to determine if the TS were satisfied. LERs 84-23, 85-26, 86-20, 87-06, 87-11, 87-21, 87-23, 87-25, 87-28, 87-29, 87-30, 87-31, 88-01 and 88-02 were reviewed in accordance with the current NRC Enforcement policy. LERs 84-23, 85-26, 86-20, 87-06, 87-21, 87-23, 87-25, 87-29, 87-30 and 87-31 are closed.

(1) (Closed) LER 84-23: This LER reported a deviation from the administrative controls for Low Temperature Overpressure Protection (LTOP). The licensee has installed modification (MAR) 86-10-09-01 to add computer alarms to alert operators when the low pressure setpoint for the Power Operated Relief Valve (PORV) has not been selected and when power has not been removed from the high pressure injection valves. The inspector reviewed the installation and associated testing documentation for this modification and verified inclusion of the appropriate alarms in the plant computer.

(2) (Closed) LER 85-26: This LER reported a plant trip caused by problems with the plant's feedwater system. The licensee has completed the following corrective actions:

- recommendations have been provided to operators for optimal methods to be utilized for transfer of feedwater control between feedwater control valves;

- additional operator training has been conducted regarding the operation of the Emergency Feedwater Initiation and Control (EFIC) system; and,
- a detailed study of the PORV relay failure have been conducted. This study ultimately resulted in the replacement of the failed relay with a higher current relay which will utilize two contacts in the opening circuit. This action should prevent this type of failure in the future.

(3) (Closed) LER 86-20: This LER reported the failure to meet the required time interval for three consecutive 18 month surveillance tests. The licensee is developing a computer program to track accomplishment of surveillance procedures, however this system is not yet fully functional and reliable. In the interim the licensee is manually tracking the 3.25 time interval allowed for the performance of three consecutive surveillance tests to ensure that this interval is not exceeded. The inspector verified that the five surveillance procedures of concern were adequately tracked by the manual system and scheduled for accomplishment within required due dates.

(4) (Closed) LER 87-06: This LER reported that the "B" channel of the Toxic Gas Monitoring system had been inadvertently left in the "test" position. The licensee has revised procedures CP-123, Key Control (Revision 21 dated August 11, 1987), SP-326A, Toxic Gas Detection System (Weekly) (Revision 8 dated January 1, 1988) and SP-326B, Toxic Gas Detection System (Semiannual) (Revision 3 dated January 6, 1988) to provide formal control over the test keys.

(5) (Closed) LER 87-21: This LER reported that an Engineered Safeguards (ES) actuation occurred as a result of personnel error while deenergizing the 4160v ES Bus 3A. A brief summary of this event has been included in the Operator's Study Book which is required reading for all plant operators.

(6) (Closed) LER 87-23: This LER reported the failure to have audible neutron flux indication during refueling operations. The licensee has revised procedures SP-406, Refueling Operations Daily Data Requirements (revision 12 dated November 20, 1987), and SP-441, Unit Shutdown Surveillance Plan (Revision 32 dated November 27, 1987) to ensure that this requirement is implemented before refueling operations are commenced.

(7) (Closed) LER 87-31: This LER reported that an inadequate procedure change safety evaluation review resulted in the use of seismic monitoring instrumentation with a measurement range not in compliance with the TS. The triaxial peak accelographs of the seismic monitoring system are required by TS 3.3.3.3 and Table 3.3-7 to have a measurement range of $\pm$ 2.0 G. During a review of instrumentation channel check and vendor calibration

data. the licensee discovered that the installed triaxial peak accelographs had the measurement range of ± 1.0 G. The licensee has determined that this condition has existed since approximately June 1979 when the calibration procedure for the three triaxial peak accelographs was changed to require a measurement range of ± 1.0 G.

Although this matter was identified by the licensee, this matter is considered to be a violation of TS 3.3.3.3 due to the extensive period of time which elapsed before this problem was detected and the opportunities which were available via the periodic procedure review process to provide early identification.

Violation (302/88-01-03): Failure to have seismic monitoring instrumentation with measurement ranges as required by TS 3.3.3.3.

LERs 87-11, 87-28, 88-01 and 88-02 will remain open for the following reasons:

(8) (Open) LER 87-11: This LER reported a reactor trip which occurred as a result of a failure with a reactor coolant pump power monitor. During this event, a lockout relay failed and prevented an automatic turbine trip when the reactor tripped. As the result of this failure, the licensee has revised procedure AP-580, Reactor Protection System Actuation, to require operators to depress the turbine trip button following a reactor trip. The inspectors noted that this lockout relay is currently tested by the licensee on a refueling interval basis. Following additional discussions with the inspectors, the licensee will evaluate testing these relays more frequently than the present refueling interval test. This LER will remain open pending completion of this evaluation.

(9) (Open) LER 87-28: This LER reported an ES system actuation which occurred during the operation of a vital bus transfer switch and inverter manual bypass switch. This event is discussed further in section 3 of this report. The licensee's corrective actions concerning this event will include the following:

- enhanced operator training will be given to all licensed operators; and,
- a schematic diagram of the vital bus power supplies and switching arrangements will be provided as operator aids in each of the inverter rooms.

This LER will remain open pending completion of the licensee's corrective actions.

(10) (Open) LER 88-01: This LER reported two actuations of the Emergency Feedwater (EFW) system on January 7 and January 9, 1988, due to a low level condition in the "B" steam generator. The following corrective actions remain to be accomplished:

- development of preventive maintenance procedures for the Integrated Control System (ICS);
- an Operational Study Book entry to remind operators of the increased monitoring required as a result of having multiple control stations in manual; and,
- a revision to procedure SP-102, Control & Drop Time Tests, to require the turbine bypass valves be placed in manual, and a caution note added for operators to closely monitor steam header pressure with these valves in manual.

The inspectors had further discussions regarding the events reported in LER 88-01 in a meeting with senior licensee management personnel. The inspectors expressed their concern over the apparent lack of extensive maintenance troubleshooting techniques employed by the licensee to determine and correct contributing causes for the first EFW actuation on January 7 which could have prevented the second actuation on January 9. During this meeting the licensee stated that in addition to the actions already mentioned above, the main feedwater control valves would be included in the plant's non-safety related equipment reliability improvement policy. This policy directs that improvements be made in operation, maintenance and failure analysis measures thereby increasing the reliability of this equipment. This LER will remain open pending completion of the licensee's corrective actions.

(11) (Open) LER 88-02: This LER reported an EFW actuation and overspeed trip of the steam driven emergency feedwater pump. This LER will remain open pending a supplemental report regarding an engineering review of feedwater pump governor drawings to determine if the feedwater pump should have tripped when the control power was removed from the governor.

b. The inspector reviewed Nonconforming Operations Reports (NCORs) to verify the following: compliance with the TS, corrective actions as identified in the reports or during subsequent reviews have been accomplished or are being pursued for completion, generic items are identified and reported as required by 10 CFR Part 21, and items are reported as required by TS.

All NCORs were reviewed in accordance with the current NRC Enforcement Policy.

(1) NCOR 88-06 reported the potential for inadequate flow from the "A" Nuclear Services Seawater Pump (RWP-2A). After performing a

flow measurement test on this system, the licensee throttled the discharge valve for RWP-2A in an effort to reduce this system's flow to the design system flow. Subsequent flow measurements, at various tide levels, have produced system flow rates lower than those initially measured with the discharge valve throttled. The licensee had their architect engineer analyze the flow and tide data. This analysis confirmed that adequate cooling water flow is available with the discharge valve throttled to remove the designed system heat loads during the worst case maximum hurricane blowout tide level.

Since the discharge valve for this pump will be subsequently throttled using a "turns open" technique, and without installed system flowmeters, the licensee intends to perform a test by installing flowmeters and verifying that the throttling method being used will repeatedly provide the required system flow. This test will also verify pump performance at various tide levels.

Inspector Followup Item (302/88-01-04): Review the licensee's flow measurement test for RWP-2A to verify discharge valve throttling method and pump performance at different tide levels.

(2) NCOR 88-16 reported errors in the test load profile for the service test of the "A" station battery. During an engineering review of the load profile on the station battery following a loss of offsite power event, the licensee determined that a turbine bearing oil pump would start sooner than previously calculated. Subsequent engineering calculations have determined that this change in the load profile would have a negligible effect on the results of the previous service tests since the total amp-hours discharged from the battery remained unchanged. The licensee is presently revising procedure SP-523, Station Battery Service Test, to more accurately reflect the load profile on the battery for future service tests.

Inspector Followup Item (302/88-01-05): Review the licensee's revision to procedure SP-523 to reflect the actual load profile on the battery.

6. Design, Design Changes and Modifications (37700)

Installation of new or modified systems were reviewed to verify that the changes were reviewed and approved in accordance with 10 CFR 50.59, that the changes were performed in accordance with technically adequate and approved procedures, that subsequent testing and test results met acceptance criteria or deviations were resolved in an acceptable manner, and that appropriate drawings and facility procedures were revised as necessary. This review included selected observations of modifications and/or testing in progress.

The following modification approval records (MARs) were reviewed and/or associated testing observed:

- MAR T88-01-07-01, Control Rod Number 4-5 "In-Limit" Switch Modification;
- MAR 87-11-19-01, Replace Containment Hydrogen Monitoring Valves WSV-659, WSV-660, WSV-661, and WSV-662;
- MAR 86-04-24-02, Nuclear Services Closed Cycle Cooling Pump (SWP) Vent and Recirculation;
- MAR 85-09-05-01, Nuclear Services and Decay Heat Seawater Pump (RWP) Flush Water; and,
- Functional Testing of MAR 86-05-25-01, Emergency Feedwater (EFW) Control and Interlock, in accordance with test procedure TP#2.

No violations or deviations were identified.

7. Review of Special Reports (90713)

The licensee submitted a special report dated January 20, 1988 regarding the performance of steam generator eddy current testing and results of this testing. The inspectors reviewed this report to determine compliance with the TS.

No violations or deviations were identified.

8. Plant Startup From Refueling (71711)

The inspector observed plant activities during unit startup following refueling to verify that plant systems were properly returned to service and that the startup was conducted in accordance with approved procedures and in compliance with the TS. These observations were conducted following review of the following procedures:

- OP-210, Reactor Startup;
- PM-118, AC and DC Breakers - Control Rod Drive System;
- PT-100, Controlling Procedure for Precritical Testing;
- PT-110, Controlling Procedure for Zero Power Physics Testing;
- SP-102, Control Rod Drop Time Tests;
- SP-224, Reactor Coolant (RC) Flow Measurement Determination; and,
- SP-401, Control Rod Programming Verification.

The plant began deboration to criticality on January 8 and entered the startup mode (Mode 2) at 7:53 PM. Initial criticality was achieved at 8:43 PM on January 8. The inspector observed the approach to criticality and verified that criticality occurred within the limits calculated by the licensee and independently calculated by the inspector.

While observing the approach to criticality, at approximately 7:45 PM, the inspector noted that the Integrated Control System (ICS) control stations for the low load feedwater valves were in the manual mode. Step 8.1.04 of procedure PT-110 requires these valves to be in the automatic mode.

Following discussion of this observation with licensee representatives, the valves were placed in the automatic mode. Subsequent discussions with licensee representatives resulted in a reverification that plant conditions were in accordance with approved procedures.

Failure to adhere to the requirements of procedure PT-110 is contrary to the requirements of TS 6.8.1.c and is considered to be a violation. This violation is considered to be another example of the violation identified in paragraph 3 of this report (88-01-01).

9. Cold Weather Preparations (71714)

The inspector reviewed the licensee's preparations and administrative controls established to protect plant equipment during cold weather. The licensee has established an Adverse Weather Conditions Checklist which is implemented when freezing weather conditions are imminent. The inspector also observed the implementation of this checklist.

No violations or deviations were identified.