UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323

Report No.: 50-302/92-07

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

Docket No.: 50-302 License No.: DRP-72

Facility Name: Crystal River 3

Inspection Conducted: February 29 - April 4, 1992

Inspector: P. Holmes-Ray 4-22-92
P. Holmes-Ray, Senior Resident Inspector Date Signed

Inspector: Richard J. Freudenberger 4/22/92
R. Freudenberger, Resident Inspector Date Signed

Inspector: Richard J. Freudenberger 4/22/92
for D. Beaulieu, Resident Inspector, TMI Date Signed

Approved by: K. Landis 4/22/92
K. Landis, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope:

This routine inspection was conducted by two resident inspectors and a visiting inspector in the areas of plant operations, security, radiological controls, facility modifications, and licensee action on previous inspection items. Numerous facility tours were conducted and facility operations were observed. Some of these tours and observations were conducted on backshifts.

Results:

One Unresolved Item (URI)** was identified regarding the implementation of reviews of work request instructions in the performance of maintenance and testing on safety related components.

The licensee's reactor trip analysis included testing which demonstrated the suspected cause of the reactor trip, identified potential areas for improvement in the operation of plant systems, and generated comprehensive corrective actions.

An update on the status of long term corrective actions as a result of the generic implications of the reactor trip events in December, 1991, is provided in paragraph 5.

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

REPORT DETAILS

1. Persons Contacted

Licensee Employees

* J. Alberdi, Manager, Nuclear Plant Operations
* G. Boldt, Vice President Nuclear Production
* J. Brandely, Manager, Nuclear Integrated Scheduling
* P. Breedlove, Nuclear Records Management Supervisor
* J. Buckner, Nuclear Regulatory Specialist
* J. Campbell, Superintendent, Nuclear Plant Security
* E. Froats, Manager, Nuclear Compliance
R. Fuller, Senior Nuclear Licensing Engineer
* A. Gelston, Manager, Site Nuclear Engineering Services
* G. Halnon, Manager, Nuclear Plant System Engineering
* B. Hickle, Director, Quality Programs
* M. Jacobs, Area Public Information Coordinator
* S. Johnson, Manager, Nuclear Quality Assessments
* D. Kurtz, Manager, Nuclear Operations Quality Assurance
* K. Lancaster, Superintendent, Nuclear Maintenance Work Control
W. Marshall, Nuclear Operations Superintendent
* P. McKee, Director, Nuclear Plant Operations
* B. Moore, Maintenance Superintendent
* S. Robinson, Superintendent, Nuclear Chemistry and Radiation Protection
V. Roppel, Manager, Nuclear Plant Maintenance
* W. Rossfeld, Manager, Site Nuclear Services
* R. Widell, Director, Nuclear Operations Site Support
* K. Wilson, Manager, Nuclear Licensing

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

NRC Resident Inspectors

* P. Holmes-Ray, Senior Resident Inspector
* R. Freudenberger, Resident Inspector
D. Beaulieu, Resident Inspector, TMI

* Attended exit interview

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

2. Plant Status and Activities

The plant was in power operation (Mode 1) at the beginning of the inspection period. On March 27, a reactor trip from full power occurred. The reactor was taken critical on April 4 and power escalation was in progress at the end of the report period.

During the week of March 23, a team inspection of procurement and commercial grade dedication of safety related components was performed. The results of this inspection were documented in NRC Inspection Report 50-302/92-201.

Also during the week of March 23, a specialist inspection of radiological controls was conducted. The results of this inspection were documented in NRC Inspection Report 50-302/92-08.

3. Plant Operations (71707, 93702, & 40500)

Throughout the inspection period, facility tours were conducted to observe operations and maintenance activities in progress. The tours included entries into the protected areas and the radiologically controlled areas of the plant. During these inspections, discussions were held with operators, health physics and instrument and controls technicians, mechanics, security personnel, engineers, supervisors, and plant management. Some operations and maintenance activity observations were conducted during backshifts. Licensee meetings were attended by the inspector to observe planning and management activities. The inspections confirmed FPC's compliance with 10 CFR, Technical Specifications, License Conditions, and Administrative Procedures.

a. Reactor Trip due to Partial Loss of Offsite Power

On March 27, the plant was operating at 98 percent power with feedwater and reactor control stations in manual. The 4160 V engineered safeguard buses were powered from the offsite power transformer which is fed by the 230 kV switchyard. The non-safeguard 4160 V buses were powered from the Unit 3 startup transformer which is also fed from the 230 kV switchyard. The 6900 V buses, supplying power to the reactor coolant pumps, were powered by the auxiliary transformer which is fed from the output of the main generator.

Troubleshooting had been in progress on the "C" inverter since March 23, when its input fuse blew. The power supply to the "C" 120 VAC vital bus had automatically transferred to its backup power supply, a 480 V engineered safeguard motor control center. Troubleshooting had progressed to the point that the failure was isolated to one of the two output transformers. The suspect transformer was partially isolated and the inverter energized in an attempt to positively determine which output transformer was failed.

When the inverter was energized, the offsite power transformer breakers opened, de-energizing both 4160 V engineered safeguard buses. These buses remained de-energized until the emergency diesel generators restored voltage. Since the "C" vital bus was being powered from its backup power supply which was now de-energized, the "C" channel of the reactor protection system tripped and the "C" control rod drive mechanism breaker tripped. This de-energized the primary power supply to the control rod drive motors. The secondary

power supply to the control rod drive motors de-energized because it was fed from the 4160 V engineered safeguard bus "B." This resulted in a similar effect as tripping reactor protection system channels "B" and "D". The control rod drive motors were de-energized, allowing all control rods to fall into the core although only the "C" channel of the reactor protection system was tripped at this time.

The remaining reactor protection system channels tripped approximately four seconds after the control rods began falling into the core due to decreasing reactor coolant system pressure (1800 psig) as a result of the reactor trip. The main turbine and generator tripped due to the reactor protection system trip. The emergency diesel generators both successfully re-energized their buses. During the post trip recovery, the operators took manual actions to reseat a main steam safety valve (MSV-41), by reducing main steam header pressure, and to control feedwater flow to the "A" OTSG. Following the trip, the startup feedwater control valve, and the low load feedwater control valve, were in manual with a 100% demand. The operator closed the startup feedwater block valve and verified closed the low load feedwater block valve. He then reset the air fail circuit for the startup feedwater control valve, opened the startup feedwater block valve and returned the startup feedwater control valve to automatic operation. These actions terminated an overfeed of the "A" OTSG. No other significant manual operator actions were necessary to stabilize the plant.

(1) Operator Performance

The inspectors were onsite at the time of the event and were able to observe control room activities immediately following the trip. The immediate actions of Abnormal Operating Procedure, AP-580, Reactor Trip, were implemented and verified by the Reactor Operators at the controls. The assistant shift supervisor was not in the control room at the time of the trip. When he arrived, he confirmed that the immediate actions had been completed and directed a spare Reactor Operator on shift to perform the followup actions of the procedure. Actions were then taken to diagnose plant conditions and take manual actions to stabilize the plant as described above.

Since this trip occurred on day shift there were additional operations personnel available to aid in the post trip recovery. For example, a fourth licensed operator was available and utilized to reset the trip of channel "C" of the reactor protection system and an extra Shift Supervisor performed a review of the Emergency Action Level entry conditions and performed NRC notification duties. This allowed the Shift Supervisor On Duty to remain attentive to plant conditions. Communication between the Shift Supervisors was good and the Shift Supervisor On Duty remained cognizant of his assigned responsibilities. Communications with the licensed operators at

the controls was inconsistent and informal immediately following the trip, with both the Assistant Shift Supervisor and the Shift Supervisor On Duty providing direction to the operators at the controls. A member of the operations department staff, who was not on shift, also attempted to communicate with one of the operators at the controls and was appropriately referred to the Shift Supervisor. The control of communications improved later in the reactor trip response.

In summary, the operators responded appropriately, utilized the abnormal operating procedure in accordance with plant policy, quickly diagnosed plant conditions and took the manual actions necessary to stabilize plant conditions. Additional attention to standardized lines of communication during plant transients and the control of non-operations shift personnel in the control room during plant transients appears warranted.

(2) Post Trip Review

The licensee's post trip review, cause determination, corrective action identification and restart authorization following reactor trips is implemented by Administrative Instruction AI-704, Reactor Trip Review and Analysis. The review identified a probable cause of the trip and recommended testing to confirm the suspected cause.

The cause of the reactor trip was the result of the inadvertent actuation of the interposing relays in the control circuit of breakers 4900 and 4902, which opened the breakers and de-energized the offsite power transformer. The breakers opened concurrently with the energization of the "C" inverter during troubleshooting. The postulated cause of the inadvertent actuation of the interposing relays was that the energization of the inverter, as configured for troubleshooting, induced spikes on the "A2" 125 VDC battery bus. This bus provided input power to the inverter and supplied primary control power to the offsite transformer feeder breakers (4900/4902). Prior to restarting the plant, the licensee performed a test to validate the postulated cause. The test consisted of preserving the configuration of the "C" inverter, and re-energizing it while monitoring "A2" battery bus, "C" inverter, and interposing relay parameters. This was accomplished with the control function of the interposing relays disabled. The results of repeating the troubleshooting steps superimposed a 350 V peak to peak square wave on the "A2" battery bus with respect to ground. The cable for the 4900/4902 control room switch had a degree of capacitance, referenced to ground. This capacitance provided a path around the open control switch allowing 250 V spikes to develop across the primary trip interposing relays, intermittently energizing them. The test satisfactorily demonstrated that the troubleshooting of the "C" inverter caused

the offsite power transformer feeder breakers to open. Further discussion of inspector observations of this test is included in paragraph 4.c, below.

Following the repair of the "C" inverter, a similar test was performed as a post maintenance test. This test demonstrated that with the inverter operating properly and restored to its normal configuration, only a minor disturbance was generated on the "A2" battery bus when the inverter was initially energized.

The post trip review also addressed several apparent equipment operation anomalies identified by plant operators and by review of the post trip data. The inspector noted that several items initially identified as improper operation of plant equipment during the transient, such as the air failure/reset of the "A" OTSG low load and startup feedwater valves and the response of the atmospheric dump valves were evaluated and determined to be normal responses of the equipment to the conditions which existed. This indicated a questioning attitude on the part plant personnel, mainly operators, who analyzed the transient, however, it also indicates a potential weakness in training on the anticipated response of this equipment to plant transients.

The inspector noted that the post trip review was hampered since both the annunciator alarm and the Recall data retrieval systems were powered from the "C" vital bus. Since the "C" vital bus was temporarily de-energized during this transient, the Recall data was unavailable and the annunciator data was limited. A record of plant computer alarms remained available throughout the transient. The licensee's corrective actions address this issue as a long term corrective action.

Corrective actions implemented prior to the restart of the plant included the installation of a temporary modification which relocated the manual trip function of the offsite power transformer feeder breakers to the relay house in the 230 kV switchyard. This removed the need for the interposing relays. Manual control for closing the feeder breakers remained in the control room. The equipment operation anomalies mentioned above were either understood as expected for the plant conditions or corrected. Long term corrective actions included a permanent redesign of the controls for the offsite power transformer feeder breakers, monitoring of plant DC buses for interference, and a review of all battery and vital buses for common functions supplied by one bus.

In summary, the licensee's implementation of Administrative Instruction AI-704, Reactor Trip Review and Analysis, included testing which demonstrated the suspected cause of the reactor trip, identified potential areas for improvement in the operation of plant systems, and generated comprehensive

corrective actions. Further review of long term corrective actions as a result of this reactor trip will be reviewed as part of the LER review.

b. Spent Fuel Pool Missile Shield Installation

During this inspection period the licensee was in the process of receiving new fuel for the upcoming refueling outage. Work was also in progress on the spent fuel floor to prepare fuel handling equipment for outage activities. This resulted in the need to have the spent fuel pool missile shields removed for an extended period of time. TS 3.9.11 requires the missile shields to be installed whenever irradiated assemblies are in the storage pool. The action statement for this specification requires that all missile shields be immediately installed upon notification of a Tornado Watch. The missile shields were reinstalled twice during the inspection period. Once upon notification of a Tornado Watch and once when minimal work was in progress and a storm front was expected to pass through the area. The licensee's actions regarding compliance with this TS were appropriate.

c. Radiological Protection

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:

- Entry to 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;
- RCA exiting practices; and
- Proper wearing of personnel monitoring equipment, protective clothing, and respiratory equipment.

The implementation of radiological controls observed during this inspection period were proper and conservative.

d. Security Control

In the course of the monthly activities, the inspector included a review of the licensee's physical security program. The performance of various shifts of the security force was observed in the conduct of daily activities to include: protected and vital areas access controls; searching of personnel, packages, and vehicles; badge issuance and retrieval; escorting of visitors; patrols; and compensatory posts. In addition, the inspector observed the operational status of protected area lighting, protected and vital areas barrier integrity, and the security organization interface with

operations and maintenance. No performance discrepancies were identified by the inspectors.

4. Maintenance and Surveillance Activities (62703 & 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 appropriately implemented.

The following tests were observed and/or data reviewed:

- SP-333, Control Rod Exercises;
- SP-349A, EFP-1 and Valve Surveillance; and
- SP-340B, DHP-1A, BSP-1A and Valve Surveillance in conjunction with PT-338.

In addition, 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 performed inspection activities as required; and TS requirements were being followed.

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

- WR 0293541, DHV-9 weld cap on leakoff line;
- WR 0293540, Valve reliability packing program;
- WR 0295473, Troubleshoot "C" inverter auto transfer to alternate source;
- WR 0295610, FWV-40 troubleshoot air fail system operation;
- WR 0267908, 0267909, 0267910, & 0268708, Preventive Maintenance on FWV-37, 38, 39 & 40;
- WR 0294723, ICS troubleshooting of minor feedwater transients which occurred on March 6, 1992;
- WR 0292666, DHV-35 insulated wiring within MCC cubicle which requires replacement;
- WR 0292663, DHV-111 insulated wiring within MCC cubicle which requires replacement; and
- WR 0284949, DCHE-1B, Decay Heat Closed Cycle Heat Exchanger "B" Cleaning, and

- WR 0270991, Instrument BS-1-DPT2 calibration (Reactor Building Spray Pump BSP-1B discharge flow transmitter).

The following items were considered noteworthy.

a. System Outage Control

In February 1992, the licensee had established a system outage schedule that included five system outages that required entry into Technical Specification Action Statements. The system outages included an outage on each of the Emergency Diesel Generators, each of the Decay Heat Removal Systems and a Reactor Building Spray System. These five system outages were to be implemented during the final ten weeks of an operating cycle, prior to a refueling outage scheduled to begin during the last week of April.

At the time that these outages were planned, the inspectors questioned the basis for removing safety systems from service for what appeared to be mainly preventive maintenance activities. NRC policy states that voluntary entry into Technical Specification Action Statements should only be performed when improved overall safety realized as a result of improved overall availability and reliability of the safety system.

Partially as the result of the inspectors' questioning the basis for the system outages and partially as the result of licensee internal discussions of the issue, the licensee postponed the system outages and initiated the development of an Administrative Instruction to control the review and authorization of the scheduling of system outages.

During this inspection period the licensee performed a system outage on the "A" train of the Decay Heat Removal System, utilizing the draft Administrative Instruction as guidance for the authorization and control of the system outage. Lessons learned from this system outage are planned to be incorporated into the Administrative Instruction.

b. Emergency Diesel Generator Radiator Fan Angle Gear Maintenance

On November 2, 1989, the "A" Emergency Diesel Generator at Three Mile Island was disabled due to lack of lubrication to its radiator fan angle drive gear bearing. Operating Experience Report 3668 was written to address the concern. The inspector evaluated the licensee's actions to ensure a similar failure does not occur at Crystal River.

The EDG is water cooled by a self-contained radiator system. The radiator and its associated fan unit are located in a separate housing apart form the diesel engine. The radiator fan is driven via a right angle gear drive located in the radiator housing. The

bearing at the top of the vertical shaft is lubricated by a gear driven lubricating oil pump which takes suction from the right angle gear drive oil sump. The oil sump has an immersion heater to maintain oil temperature above 80°F. At TMI, the radiator fan angle gear drive upper bearing seized due to lack of lubricating oil. Overheating of oil in the right angle gear drive oil sump created a sludge which lodged in the lubricating oil pump suction check valve. The sludge caused the check valve to stick open, resulting in a loss of pump prime, which led to the right angle gear drive upper bearing failure from lack of forced lubrication. The overheating of the lubricating oil and resulting sludge was caused by the failure to deenergize the immersion heater prior to draining the oil for periodic maintenance.

The inspector interviewed the Crystal River - 3 cognizant engineer to determine if any maintenance procedure had been changed to verify that the immersion heater was deenergized prior to draining the right angle gear box oil. The inspector found that no procedure had been changed. However, the operating experience report did not mention that the sludge buildup was caused by the failure to deenergize the heater. The OE report indicated that the oil break down was caused by an oversized heater, which caused the oil to crack. The licensee evaluated whether the heater was oversized and determined that it was not based on (1) the year round environmental temperature of the gear box was relatively high and, therefore, operation of the heater, whose setpoint is 80°F, would be infrequent, and (2) inspection of the gear in both diesels revealed that there was no sludge buildup and that there was a minimal amount of burned oil on the heater surface after 10 years of operation. Based on the discussion, the cognizant engineer plans to initiate action to add a caution statement in the applicable procedures to verify the heater is deenergized prior to draining the oil.

The failure of the TMI diesel was caused by the sludge buildup in the angle gear drive lubricating oil pump suction check valve. Sludge was also found in the lubricating oil pump suction strainer. Routine inspection of the strainer could have identified the oil breakdown as well as any other buildup of material. The inspector questioned the licensee whether cleaning of the lubricating oil pump suction strainer was in the preventive maintenance program. The Crystal River - 3 cognizant engineer indicated that the suction strainer on the lubricating oil pump was one of three strainers that was not in the preventive maintenance program. The engineer intended to put the strainers in the program prior to the next diesel overhaul in May, 1992. However, there was no REA written to ensure that the strainer inspections were entered into the preventive maintenance program. Consequently, the engineer wrote REA 920418 to address strainer inspections.

The inspector concluded that the licensees evaluation of the potential oversizing of the lubricating oil heater was comprehensive

and well documented. The licensee's inspection of the gear box, suction check valve and strainer was adequate to ensure an oil breakdown of the type experienced at TMI was not occurring. The inspector also concluded the engineer's identification that three strainers on the diesel generators were not part of the preventive maintenance program demonstrates that the licensee is proactive identifying program weaknesses. However, it was inappropriate that no REA or other tracking mechanism was written to ensure the preventive maintenance program weakness was corrected.

c. Work Instruction Review

(1) Decay Heat Closed Cycle Heat Exchanger "B" Cleaning

On March 18, the inspector observed the performance of Preventative Maintenance Procedure 112, "DC, SW and SC Heat Exchanger Maintenance Inspection/Cleaning/Shooting and Plugging" for "B" Decay Heat Closed Cooling Water Heat Exchanger per Work Request 0284949. Past inspections of the heat exchanger revealed a buildup of mineral deposits (calcium carbonate and magnesium carbonate) primarily in the heat exchanger heads and on some of the tubes. After completing an engineering evaluation, the licensee decided to remove the mineral deposits by loosening them with a hydrochloric acid solution. However, this additional work was beyond the scope of PM-112. Work Instructions were added to Work Request 0284949 to include additional instructions for cleaning the tubes using 5% hydrochloric acid solution. The additional work instructions were not reviewed in accordance with the qualified review program required by TS 6.8.2.

The inspector reviewed the engineering documentation associated with the mineral deposit removal. The inspector found that the use of the acid solution to remove the deposits was thoroughly reviewed by plant engineering and documents existed which demonstrated that personnel who constituted a qualified review were briefed on the cleaning method to be used and approved it prior to its use. Therefore, it was determined that the safety significance of not obtaining a formal qualified review was minimal in this case.

(2) Offsite Power Transformer Feeder Breakers Interposing Relay Test

On April 1, the inspector observed the performance of the test which recreated the conditions during troubleshooting the "C" inverter which led to the inadvertent opening of the feeder breakers to the offsite power transformer and plant trip (see paragraph 3.a, above). The test was performed in accordance with Work Request 0295619. Work instructions for the performance of the test were reviewed and approved utilizing the

qualified review process prior to the implementation of the test.

The work instructions initially included prerequisites that allowed the test to be performed in operating mode 3, 4, or 5 (Hot Standby, Hot Shutdown, or Cold Shutdown). The initial work instructions also included detailed instructions for disabling the interposing relays and connecting test equipment.

Senior licensee management chose to place additional restrictions on the plant conditions required to perform the test. The plant was to be in mode 5, with both emergency diesel generators operable and offsite power being supplied to the plant through the Unit 3 Startup Transformer, as a precaution in case the offsite power transformer was inadvertently de-energized during the test. Additional work instructions were added to the work request which provided for the installation of additional test equipment. The connections of the additional test equipment was not detailed within the work instructions.

The Plant Review Committee was briefed on the purpose and plant condition requirements of the test but did not perform a review and approval of the test prior to its implementation. TS 6.5.1.6.b requires that all proposed tests that affect nuclear safety be reviewed by the PRC. The inspector noted that a quality review of the test instructions with a focus of maintaining the plant in a safe configuration during the test, would have identified the need to improve the prerequisites to accurately reflect the backup power supply availability deemed important to maintain plant safety by senior plant management.

The safety significance of the failure of PRC to review the test instructions was minimized by the fact that the PRC was informed of the intent, plant conditions, and methodology of the test. Also, the availability of backup power supplies and the power system configuration prescribed by senior plant management was implemented prior to the test although it was not included in the test procedure or any other formal document provided to plant operators.

(3) Summary

The inspector concluded that the failure to perform a qualified review of the additional work instructions to remove the mineral deposits from the Decay Heat Exchanger and the failure of PRC to formally review the test instructions for the offsite power transformer feeder breaker interposing relay test were of minimal safety significance in the examples reviewed. However, the examples indicated that a potential existed for a weakness in the implementation of technical reviews of work request work instructions. Further inspection of the implementation of

reviews required by T.S 6.5.1.6 is warranted. Therefore, this issue is unresolved pending further inspection of the licensee's controls to ensure work request work instructions receive required reviews (URI 50-302/92-07-01).

5. Self Assessment Capability (40500)

As part of continuing reviews of the licensee's self assessment capability, the inspectors reviewed completed Quality Assurance audits performed during 1991 and 1992. The primary focus of this review was to verify the training and qualification of the auditors who performed these audits. All audits included lead auditors who were qualified per ANSI N45.2.23. Further evaluation of the effectiveness of the licensee's Quality Programs Organization will performed in accordance with the NRC inspection program.

6. Licensee Action on Previously Identified Inspection Findings (92702, 92701, 40500, & TIA 91-34)

Region II reviewed the FPC Final Report dated January 10, 1992, titled "Florida Power Corporation Generic Implications of Reactor Trip Events in December, 1991". The report includes a list of recommended corrective actions with assigned responsibilities and due dates by functional area. The completion of the licensee's short-term corrective actions was documented in NRC Inspection Report 50-302/92-03. The long-term corrective actions with due dates during this reporting period were reviewed by the resident inspectors and the results of that review is documented below.

a. Operations - Correct any information resource deficiencies. Revise procedures and operating practices as necessary to assure predictable/consistent operation of systems and plant evolutions.

Status - Complete. Revisions have been made to several operating procedures to strengthen the consistency of operation and require the use of briefings prior to the commencement of operations of a complex nature, such as plant startup. The topics to be covered in the pre-startup shift briefing are included in OP-203, Plant Startup, as a prerequisite. The RCS Pressure Guidelines have been included in OP-301, Operation of the Reactor Coolant System, and referenced by other procedures, such as the annunciator procedure for RCS pressure low.

b. Operations - Conduct a review and issue a report/recommendation regarding a proposed "Shift Manager" who would replace the "Man On Call".

Status - The completion date for this item was extended from March 1, 1992, to May 1, 1992, to allow time to prepare the report in final form.

c. Operations - Abolish six Nuclear Operator positions and create six Chief Nuclear Operator positions.

Status - Complete. The Chief Nuclear Operator positions have been posted on the Bargaining Unit Posting Notice.

d. Maintenance - Revise the procedure for final reactor building walkdown prior to startup to assure that the refueling canal seal plate is verified to be in the raised position.

Status - Complete.

e. Maintenance - Reduce maintenance overtime in future outages.

Status - Complete. Maintenance personnel will not be scheduled for more than 60 hours per week and will not work more than 72 hours. The Facility Administrative Policies, AI-100, also addresses the limits for overtime.

f. Training - Ensure that "lessons learned" items added to operator training program receive review and approval of operations and training prior to revising training program.

Status - Complete. Operations and training will coordinate items to be added to the operations training.

g. Training - Ensure training that is conducted on the simulator evaluates the shift willingness and capability to use outside resources in decision making.

Status - Complete. The SOTA's fully participate in simulator requalification, sometimes located outside the control room and called by the shift when appropriate. The instructors act as the "Man on Call". The actual man on call will be included in the future.

h. Training - Revise current methods for determining shift crew composition.

Status - Complete. The method of determining shift crew composition were reviewed and enhancements included in a revision to AI-500, Conduct of Operations.

i. Training - Identify methods to develop the "questioning attitude" of shift personnel.

Status - Complete. AI-501, Shift and Simulator Assessment, will be used to stress a questioning attitude as part of the management overview.

j. Training - Emphasize the use of annunciator response procedures.

Status - Complete. AI-500, Conduct of Operations, was revised to include criteria addressing operator response to annunciator alarms and annunciator procedures. Criteria for assessment of the use of annunciator procedures by operators is contained in AI-501, Shift and Simulator Assessment.

The inspectors plan to continue to review the corrective actions as a result of this report as they become due.

7. Exit Interview

The inspection scope and findings were summarized on April 6, 1992 with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed below. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

Item Number	Description and Reference
50-302/92-07-01	Unresolved Item - Review of licensee's controls to ensure work request work instructions receive TS 6.5.1.3 required reviews, see paragraph 4.c.

8. Acronyms and Abbreviations

ALARA - As Low as Reasonably Achievable
a.m. - ante meridiem
B&W - Babcock & Wilcox
CCTV - Closed Circuit Television
CFR - Code of Federal Regulations
DC - Direct Current
DEV - Deviation
ECCS - Emergency Core Cooling System(s)
EDG - Emergency Diesel Generators
EFP - Emergency Feedwater Pump
F - Fahrenheit
FPC - Florida Power Corporation
FSAR - Final Safety Analysis Report
gpm - gallons per minute
HP - Health Physics
I&C - Instrumentation and Control
ICC - Inadequate Core Cooling
ICS - Integrated Control System
kV - kiloVolt - 1000 Volts
LCO - Limiting Condition for Operation
LER - Licensee Event Report
MP - Maintenance Procedure
MW - Megawatt
NRC - Nuclear Regulatory Commission
OTSG - Once Through Steam Generator

p.m. - post meridiem
PM - Preventive Maintenance
psig - pounds per square inch gauge
QC - Quality Control
QA - Quality Assurance
RCA - Radiation Control Area
RCS - Reactor Coolant System
REA - Request for Engineering Assistance
RO - Reactor Operator
RWP - Radiation Work Permit
SOTA - Shift Operating Technical Advisor
SP - Surveillance Procedure
TMI - Three Mile Island Nuclear Power Station
TS - Technical Specification
URI - Unresolved Item
V - Volt
VAC - Volts - Alternating Current
VIO - Violation
WR - Work Request