UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-348/95-19 and 50-364/95-19

Licensee: Southern Nuclear Operating Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

Docket Nos.: 50-348 and 50-364 License Nos.: NPF-2 and NPF-8

Facility Name: Farley Nuclear Plant, Units 1 and 2

Inspection Conducted: October 23 through November 25, 1995

Inspectors: FOR R W Wright — 12/21/95
T. M. Ross, Senior Resident Inspector — Date Signed

FOR R W Wright — 12/21/95
M. A. Scott, Resident Inspector — Date Signed

FOR R W Wright — 12/21/95
M. N. Miller, Reactor Engineer — Date Signed

FOR R W Wright — 12/21/95
S. G. Tingen, Project Engineer — Date Signed

Approved by: P. H. Skinner — 12/22/95
P. H. Skinner, Chief — Date Signed
Reactor Projects, Branch 2
Division of Reactor Projects

SUMMARY

Scope:

This routine resident inspection was conducted onsite in the functional areas of plant operations, maintenance/surveillance, engineering/technical support and plant support. The inspection included a review of nonroutine events and a follow-up of previous inspection findings. Backshift inspections were conducted on October 23, 29, 30, 31, and, November 5, 6, and 10, 1995.

Results:

Operations

Operations personnel and management maintained excellent control over routine full power operation of Unit 2, Unit 1 shutdown conditions, and Unit 1 mode changes. Operators remained attentive to changing plant conditions and were knowledgeable of plant status and ongoing activities. The return to service of Unit 1 systems during startup, and the low power physics testing following

the refueling outage were well controlled and accomplished according to established procedures. Operators did an excellent job responding to plant transients initiated by steam generator feed pump (SGFP) startup problems. In one instance, poor judgement by operators, plus inadequate procedural guidance caused the 1B SGFP to trip. Unit 1's return to power was delayed considerably by numerous balance of plant problems. Overall housekeeping and material conditions of Unit 1 and 2 improved considerably since last month. However, general physical appearances of numerous areas in the radiologically controlled area (RCA) and around the plant remained poor. Neither unit has been restored to pre-Unit 1 outage levels of cleanliness and physical appearance.

Maintenance/Surveillance

Maintenance and surveillance test activities were generally performed in accordance with work order instructions, associated procedures, and applicable clearance controls. Responsible personnel demonstrated familiarity with administrative and radiological controls. Surveillance tests were routinely performed in a deliberate step-by-step manner by knowledgeable plant personnel. Safety-related maintenance and testing evolutions were well planned and executed.

Engineering/Technical Support

Overall engineering and technical support of operations, maintenance, modification, and surveillance activities remained excellent. Onsite engineering continued to interface well with the corporate office. A special task force to address persistent SGFP reliability problems was formed and appeared to be handling the issue properly.

Plant Support

Health physics (HP) personnel provided good support of Unit 2 steady-state operations and the Unit 1 startup. Considering some of the poor housekeeping practices exhibited throughout the Unit 1 outage, plant personnel and HP support did an exemplary job in clearing out and cleaning up Unit 1 containment. However, final cleanup of the Unit 1 and 2 RCA proceeds slowly. Dose reductions achieved during the repair of LCV-460 were outstanding. Security personnel were consistently alert and implemented the site's security plan in an appropriate manner. Personnel entry into the protected area was well controlled at the primary access point. However, additional information regarding vital area access control is needed and was identified as an unresolved item (paragraph 6.b). Fire protection features were adequately maintained and compensatory measures (i.e., fire watches) were implemented. Emergency preparedness, planning and response capabilities were exercised during a dress rehearsal on November 14. Drill player performance was adequate.

REPORT DETAILS

1. PERSONS CONTACTED

Southern Nuclear Operating Company Employees:

W. Bayne, Chemistry/Environmental Superintendent
C. Buck, Technical Manager
R. Coleman, Maintenance Manager
L. Enfinger, Administrative Manager
*H. Garland, Mechanical Maintenance Superintendent
*D. Grissette, Operations Manager
*C. Hillman, Security Manager
R. Hill, General Manager - Farley Nuclear Plant
R. Johnson, Instrumentation and Controls Superintendent
J. Kale, Maintenance Engineering Support Group Supervisor
*D. Martz, Safety Audit and Engineering Review
*M. Mitchell, Health Physics Superintendent
R. Monk, Engineering Support Supervisor - Equipment Evaluation
C. Nesbitt, Assistant General Manager - Plant Support
J. Odom, Superintendent Unit 1 Operations
J. Powell, Superintendent Unit 2 Operations
*L. Stinson, Assistant General Manager - Plant Operations
*J. Thomas, Engineering Support Manager
*B. Yance, Plant Modifications and Maintenance Support Manager
*W. Warren, Engineering Support Supervisor - Performance Review
*G. Waymire, Safety Audit and Engineering Review Site Supervisor
P. Webb, Technical Training Supervisor
L. Williams, Training/Emergency Preparedness Manager

NRC Personnel:

*T. Ross, Senior Resident Inspector
*M. Scott, Resident Inspector

*Attended the exit interview

Other licensee employees contacted included, HP, operations, technical, engineering, security, maintenance, I&C, and administrative personnel.

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

2. PLANT STATUS AND ACTIVITIES

a. Unit 1 and 2 Status:

Unit 1 was still in a refueling outage (U1RF13) at the beginning of the report period, with the unit in Mode 5 and the reactor refueled. Unit restart began on October 31. The MTG was tied to the grid at 3:45 a.m. CST on November 4 which constituted the official end of U1RF13. Although scheduled for 33 and a half days, U1RF13 lasted slightly more than 49 days. Unexpected SGFP, MTG, and 1A circulating water pump problems delayed Unit 1 power escalation. Although the unit finally reached 99% power on November 15, full power operation was not achieved

until November 27 due to RCS hot leg temperature streaming problems.

Unit 2 operated continuously at full power for the entire inspection report period.

b. Other NRC Inspections/Meetings:

1) During the week of October 23, NRC inspector S. Tingen (Region II/DRP) was onsite to support the resident staff in accomplishing the core inspection program and closing open items.

2) During October 30 and 31 Region II DRP Branch Chief P. Skinner was onsite to meet with the resident staff and plant management and tour the facility.

3. OPERATIONS

a. Plant Operations (71707)

1) Routine Plant and Facility Tours

Tours of FNP facilities were performed to verify that operating license and regulatory requirements were being met. In general, inspectors looked for indications of plant degradation, improper tagouts, incorrect operation, and improper system alignment. Tours were performed on both dayshift and backshifts to ensure conduct of plant Operations and Security remained at acceptable levels.

The inspection staff reviewed various logs, reports, and tagouts and compared them with actual plant conditions. The staff also monitored CR demeanor, staffing, access, turnovers and operator performance during routine and transient operations. Annunciator status and alarms were verified.

Limited walkdowns of accessible portions of safety-related structures, systems and components were also performed in the following specific areas:

a. Unit 1 Main Steam Valve Room - MSIVs and MSSVs
b. Units 1 and 2 EDGs 1-2A, 1B, 2B, 1C and 2C
c. Unit 2 Charging (HHSI) pump rooms
d. Unit 1 and 2 piping penetration rooms (100 and 121 ft. elev.)
e. Unit 2 CCW pumps and heat exchangers
f. Unit 1 and 2 RHR (LHSI) pump and heat exchanger rooms
g. Unit 1 and 2 CS pump rooms
h. Unit 1 Containment
i. Turbine building
j. Primary Access Point

Breaker/switch positions and valve line-ups for safety-related systems were verified, both locally and in the CR, for consistency with operability requirements. The inspectors observed that very few

MCB and EPB annunciators were in an alarm condition for any extended period. The inspectors routinely observed only four or five annunciators in alarm at any one time for the entire control room. However, the inspectors have noticed that one or two annunciators on the Unit 1 and 2 MCBs have been persistently in alarm preventing the control room from achieving "blackboard." In the past, either or both unit MCBs and the EPB were frequently blackboard. The number of MCB deficiencies continued to remain low, the aggregate number for the entire control room being about 15. Only a few MCB deficiencies were noted and these were actively tracked.

In general, material conditions and housekeeping for both units were acceptable. Significant progress was observed in the cleanup of both units (especially Unit 1) following the completion of U1RF13. However, plant physical conditions and housekeeping were still considerably worse than they were early last summer. Although, almost all plant areas were free of debris and abandoned tools/equipment, cleanliness and physical appearance of many areas were poor. Specific problems (e.g., packing and oil leaks, inadequate lighting) were reported to the responsible on-shift SS and/or maintenance management for resolution. The inspectors also discussed the overall physical condition of both units and the slow rate of improvement with senior plant management.

On October 27, two inspectors conducted a closeout tour of the Unit 1 containment just prior to restart from U1RF13. Overall, material appearances and equipment conditions looked very good. Only a few minor leaks and insignificant equipment problems were identified by the inspectors and reported to the SS. Considering the extremely poor housekeeping practices exhibited during U1RF13, the final cleanup of the Unit 1 containment was exemplary.

2) Plant Tagout Orders

During the course of other routine inspections, selected equipment clearance tags were examined by the inspectors and determined to be properly implemented. No problems were identified.

3) Technical Specification LCO Compliance

Selected TS LCO status sheets were reviewed on a regular basis in order to confirm that entries into action areas were recognized, tracked, and in compliance. No problems were identified.

4) Restart of Unit 1

Unit 1 entered Mode 2 on October 31. Operators then diluted the RCS until the reactor went critical for the first time of fuel cycle 14 at 3:00 a.m. on November 1. Inspectors observed the conduct of initial low power testing as discussed in subparagraph 7 below.

An inspector reviewed completed procedures FNP-1-UOP-1.1B, Mode 3

Surveillance Checklist; STP-35.1, Unit Startup Technical Specifications; and STP-35.1A, Mode 2 Surveillance Check List to confirm all TS requirements were met prior to startup. The inspector also reviewed FNP-0-SOP-103, Return To Service Checklist and Return To Service Systems Lineup, to confirm all system lineups and Unit 1 restart commitments were signed off as complete. Additionally, the inspector reviewed FNP-1-UOP-1.2, Startup of Unit From Hot Standby To Minimum Load, to confirm procedural steps were being followed as required and properly signed off. No inspection findings were identified.

On November 3, an inspector observed the initial Unit 1 entry into Mode 1 for fuel cycle 14. Operators increased reactor power to 10 percent at approximately 10:00 a.m. with all interlocks for that power level being satisfied. The new reactor core appeared to perform within expected design parameters. The entry into Mode 1 and subsequent power escalation went smoothly and was well controlled by the operators.

5) Containment Spray System Walkdown

The inspector walked down the Unit 1 and 2 CS systems and verified that valves were properly labeled and in their required position, tank levels were in the range specified by TS, and snubbers were operational. Minor leakage or the presence of boric acid was noted at the following locations:

CS pump 1B suction, discharge and drain pipe flanges.

CS pump 1A discharge piping flange.

Pipe cap in the drain line between MOV 1-8827A and MOV 1-8826A.

Pipe cap in the vent line between MOV 2-MOV 8827B and MOV 2-8826B.

The inspector also noted that actuator stem dust covers were not installed on MOVs 8817A, B and 8827A, B for both units. Housekeeping in the Unit 1 CS auxiliary building areas was acceptable. There was candy below the Unit spray additive tank, which is inside the RCA. During the refueling outage there was a significant amount of work performed in the Unit 1 CS pump rooms. Although this maintenance was complete and the CS system returned to service, these areas were not cleaned up after the maintenance was complete. Plastic tubing, anti-contamination clothing, tools, ladders, tape were examples of items that were abandoned after maintenance activities were finished. The Unit 2 auxiliary building CS areas were clean. Inspector identified leaks and housekeeping findings were discussed with the licensee. No deficiencies were identified that effected the operability of the Unit 1 and 2 CS systems.

6) Unit 1 Loss of Main Feedwater Transient During Initial Startup (93702)

On November 5, during the startup of Unit 1, the 1B SGFP tripped on low lube oil pressure while the reactor was at 28 percent power. The 1A SGFP was unavailable at the time due to maintenance. Control room operators responded to the 1B SGFP trip by manually tripping the MTG, placing control rods in automatic, and starting the TDAFW pump (both MDAFW pumps started automatically). The operators' prompt response, along with the new expanded SG water level control band installed during U1RF13, managed to prevent a reactor trip. Within a few minutes after the loss of MFW, Unit 1 plant conditions were stabilized in Mode 2. An inspector arrived at the site shortly after the SGFP trip to evaluate the operators' response, verify plant conditions, and ascertain the cause of the event. The inspector reviewed available trend chart data and operator logs, interviewed reactor operators and the SS, and independently examined existing plant conditions. The licensee initiated two FNPIRs, 95-308 and 312, which were also reviewed by the inspector.

On November 5, the vendor and unit operators noticed that the 1B SGFP lube oil pressure was decreasing. Local pressure had dropped from 20 psig (normal range 20 - 22 psig) to 15 psig with only one AC lube oil pump running (low pressure trip set at 8 - 10 psig). The vendor recommended running the DC lube oil pump in conjunction with the AC pump until the problem could be resolved. Operators subsequently started the DC pump, whereupon lube oil pressure increased to 30+ psig. The SS questioned the vendor regarding possible adverse effects associated with high lube oil pressure. The vendor replied that even though extended operation with high SGFP bearing lube oil pressure was not desirable, due to potential seal leakage, it was advisable to do so until the original low lube oil pressure problem was fixed. Still concerned about high lube oil pressure, operators attempted to return to a one AC lube oil pump lineup by securing the one DC pump and switching to the second (previously untried) AC lube oil pump. Lube oil pressure for the 1B SGFP immediately dropped below the low pressure set point resulting in the above transient. Poor judgement by Operations, plus inadequate procedural guidance, led to the decision to realign the 1B SGFP lube oil system.

Subsequent investigation revealed the common AC lube oil pump check valve (N1N33V0702B of Drawing D-170814) had an adjustment screw problem that prevented the valve from centering properly causing reduced pressure conditions. With the vendor's assistance, the licensee repaired the check valve adjustment screw. Post repair testing was observed by the inspector. After the repair, the 1B SGFP lube oil system exhibited a nearly constant lube oil pressure in the acceptable range irrespective of which oil pump was used.

7) Unit 1 Low Power Physics Testing (71711)

On November 1 and 2, the inspectors observed various portions of the Unit 1 low power physics testing, including an excellent pre-evolution brief by the ES manager. Testing activities were conducted IAW O-ETP-3601, Zero Power Reactor Physics Test Procedure. These activities went smoothly, except for some minor NIS power range channel N44 noise problems which required additional attention and data reduction efforts. Actual test results were very close to the predicted as-designed values and well within the acceptable limits.

In concert with the above testing, ES engineers performed parallel testing using one of the NIS intermediate range detectors. The advantage to using an intermediate range channel rather than a power range channel was the virtual elimination of extraneous signal noises. The parallel data collection and results were very close to that of the power range channel results. The inspector observed the data reduction and comparison. During the period in which channel N44 was producing noisy data, the intermediate range data was consistently useful.

b. Review of Licensee Control in Identifying, Resolving, and Preventing Problems (40500)

The inspectors scanned all FNPIRs initiated during the inspection period to ensure that plant incidents that effect or could potentially effect safety were properly identified, documented and processed IAW FNP-0-AP-30, "Preparation and Processing of Incident Reports ...". These reviews were performed to determine licensee's effectiveness in: 1) identifying/describing problems; 2) elevating problems to the proper level of management; 3) problem/root-cause determination and/or analysis; 4) assessing operability and reportability; 5) developing appropriate corrective actions and 6) evaluating cause/corrective action scope for generic implications. During the review, the inspectors did not identify any significant findings regarding implementation of the incident report process.

SGFP Unreliability

Unit 1 and 2 have experienced persistent problems with SGFP reliability, particularly during startup from a refueling outage. These problems and licensee efforts to correct them are described in paragraph 5, below.

Operations personnel and management maintained excellent control over routine full power operation of Unit 2, Unit 1 shutdown conditions, and Unit 1 mode changes. Operators remained attentive to changing plant conditions and were knowledgeable of plant status and ongoing activities. The return to service of Unit 1 systems during startup, and low power physics testing following the refueling outage were well controlled and accomplished according to established procedure. Operators did an excellent job responding to plant transients initiated by SGFP startup

problems. In one instance, poor judgement by operators, plus inadequate procedural guidance caused the 1B SGFP to trip. Unit 1 return to power was delayed considerably by numerous BOP-related equipment problems. Overall housekeeping and material conditions of Unit 1 and 2 improved considerably since last month. However, general physical appearances of numerous areas in the RCA and around the plant remained poor. Neither unit has been restored to pre-Unit 1 outage levels of cleanliness and physical appearance.

4. MAINTENANCE/SURVEILLANCE

a. Maintenance Observations (62703)

Inspectors observed and reviewed portions of various licensee corrective and preventative maintenance activities, to determine conformance with procedures, work instructions and regulatory requirements. Work orders were also evaluated to determine status of outstanding jobs and to ensure that proper priority was assigned to safety-related equipment. The following maintenance activities were observed.

1) WO 443775; Charging/HHSI Pump 1B Disconnect Switch 1A, and WO 443776; Charging/HHSI Pump 1B Disconnect Switch 1B, Switch Maintenance and Space Heater Check

On November 14, an inspector observed EM personnel perform preventative maintenance for the two disconnect switches using FNP-1-EMP-1102.01, 4 KV Disconnect Switch Maintenance And Space Heater Operability Check. The 4.16 KV breaker was tagged out and the test equipment was properly calibrated. The EM personnel followed the procedure closely while performing the work. In addition, the switch cubicles were vacuumed and cleaned prior to securing the panels. All work was accomplished in a satisfactory manner.

2) WO 441798; 4160/480 VAC Service Transformer NSR11B009-N, and 120/208 VAC Control Power Panels 1S A and B, and WO 441736; Motor Control Center 2C, Infrared Thermographic Inspections

On November 15, an inspector observed EM personnel perform several infrared thermographic inspections on electrical equipment to determine if any abnormal "hot spots" existed. The inspections were also conducted to obtain data for the licensee's infrared survey trending program. Electricians followed FNP-0-EMP-2007.01, Infrared Survey Program. A "hot spot" was identified on the transformer phase A connection in MCC 2C cubicle FC-B4, 2A Radwaste Air Exhaust Fan. The electricians wrote deficiency report DR 531030 identifying the "hot spot" problem. All work observed was accomplished in a satisfactory manner.

3) WO 533569; Service Water 600 VAC Feeder For Motor Control Center 1K Circuit Breaker Tripped Open

On November 16, at the SWIS, an inspector observed EM personnel

remove tripped circuit breaker, EK03, and replace it. The inspector verified the replacement breaker, 2-074, was installed correctly and had a current calibration sticker. The tripped breaker was returned to the Breaker Shop for corrective maintenance.

b. Surveillance Observation (61726)

Inspectors witnessed surveillance activities performed on safety-related systems/components in order to verify that activities were performed IAW licensee procedures, FNP Technical Specifications and NRC regulatory requirements. Portions of the following surveillances were observed:

1) FNP-2-STP-226.1; B2F Sequencer Operability Test

On November 17, I&C personnel set-up and conducted an operability test of the 2B diesel generator automatic load sequencer B2F. An inspector observed I&C technicians connect the test equipment and perform the test as required by STP-226.1. The inspector verified the six test runs were satisfactorily performed and the time periods were within TS requirements. The technicians conducted the test in a step-by-step manner per procedure.

2) FNP-1-STP-45.7; MSIV and Bypass Valves Inservice Test

On November 2, two inspectors observed the "hot stroking" of Unit 1 MSIVs IAW STP-45.7. One inspector observed operator actions and valve position indications from the control room, while the other observed MSIV operation and SO actions locally in the MSVR. All MSIVs functioned per design. Operator performance and communications were good. Only one minor equipment problem was observed with a non-interlocked upper limit switch on MSIV 3369C. This open position limit switch was sticking causing dual indication. The switch was promptly repaired per WO 535570. Once STP-45.7 was completed, an inspector observed the satisfactory retest of MSIV 3369C IAW 1-STP-21.1, MSIV Inservice Test - Part Stroke.

c. Followup Maintenance/Surveillance (92902)

1) (Closed) IFI 50-348, 364/94-24-01; Non-Functioning EDG Tunnel Emergency Lights

On September 27, 1994, an inspector conducted walkdowns of the underground cable tray tunnels located between the EDG Building and the Unit 1 and 2 Auxiliary Buildings. The inspector observed that 20 to 80 percent of both normal and emergency DC lighting were not functional.

Electrical Maintenance submitted REA 95-0821 to address the lighting problem and the high failure rate of the "E-lites". The engineering response addressed the cause of the failures and recommended appropriate corrective action that was implemented. Work order WO

509382 was implemented to repair the dysfunctional "E-lites" and WO 510056 was implemented to repair weak lights in the East Tunnel. This IFI is closed.

2) (Closed) IFI 50-364/94-31-01; Post Trip Review

On December 25, 1994, an automatic reactor trip of Unit 2 occurred from 100% power. During the review of post-mortem and sequence of events information, a number of inconsistencies were identified. The principal cause of these inconsistencies appeared to be the internal clocks used by the plant computer and the DEHC system were not synchronized.

The inspector reviewed the design change requests and work orders to verify that the plant computer and the DEHC internal clocks were modified to ensure proper synchronization. Unit 1 modification DCR 95-1-8791 was implemented using WO 68658 dated October 23, 1995. Unit 2 modification DCR P-2-8792 was implemented using WO 644432 dated April 29, 1995. This IFI is closed.

3) (Closed) IFI 50-348, 364/95-03-02; Solid State Protection System Input Relay Configuration

The RPS was experiencing intermittent spiking of OTDT trip channel 2 during preparation for a Unit 2 startup. During the licensee's investigation, a diode across input relay CR 235 for channel N42 was found to be failing intermittently. In addition, the relay was discovered to be an AC relay instead of the DC type called for by the drawing. Both relay and diode were replaced which resolved the spiking problem. However, another AC relay, CR 236, was found and replaced. The NSSS vendor was requested to evaluate the use of AC relays in SSPS circuitry, and the licensee inspected the Unit 1 SSPS cabinets for any irregularities.

The inspector reviewed the response from Westinghouse in letter ALA-95-578, dated April 18, 1995. In summary, the response concluded that a 24 VAC relay could operate in place of the 24 VDC relay. However, it would suffer reduced life from heating and its silver contacts were susceptible to chlorine corrosion. The 24 VDC type relay has gold contacts. The inspectors reviewed completed Unit 1 work orders WO 69218 and WO 692219 to verify the licensee inspected the Unit 1 SSPS cabinets for the correct type of relays. All the relays in the Unit 1 SSPS cabinets were found to be the correct type. The inspector concluded the licensee adequately addressed this concern and implemented appropriate corrective action. This IFI is closed.

4) (Closed) Violation 50-364/95-10-02; OTDT Channel 2A Setpoint Failed High, and LER 50-364/95-003; Loop 2A OTDT Channel Inoperable

The licensee operated Unit 2 in Mode 1 with the Loop 2A OTDT channel inoperable from April 29 through May 7, 1995. The licensee

determined the violation was attributable to personnel error. An individual inadvertently adjusted the wrong potentiometer while calibrating the associated NIS power range channel. The pressurizer pressure input potentiometer had been inadvertently miss-adjusted for the Loop 2A OTDT setpoint. This resulted in a failed high 2A OTDT channel reactor trip setpoint. Resident inspectors concluded that Operations had several opportunities to discover the failed OTDT channel setpoint sooner. These inspectors also verified that the 2A OTDT channel setpoint was performing normally once the immediate corrective action to recalibrate the channel was completed.

An inspector reviewed the licensee's root cause analysis and proposed corrective actions. In addition, the inspector verified that the licensee's operations and I&C personnel received appropriate coaching and lessons learned training concerning this event. The inspector also reviewed the applicable LER 95-003 and determined it adequately addressed the event. The inspector concluded that corrective actions were adequately accomplished for the VIO and LER. This violation and LER are closed.

Maintenance and surveillance test activities were generally performed in accordance with work order instructions, associated procedures, and applicable clearance controls. Responsible personnel demonstrated familiarity with administrative and radiological controls. Surveillance tests were routinely performed in a deliberate step-by-step manner by knowledgeable plant personnel. Safety-related maintenance and testing evolutions were well planned and executed.

5. ENGINEERING AND TECHNICAL SUPPORT

Onsite Engineering (37551)

Inspectors periodically inspected onsite engineering/technical support activities (e.g., design control, configuration management, system performance monitoring, plant modification, etc.). Effectiveness of on-site engineering and technical group support of licensee efforts to identify, resolve and prevent incidents or problems were also inspected.

In general, onsite engineering continued to provide good support of plant operations and maintenance activities. No violations or deviations were identified.

SGFP Reliability Task Force

During the Unit 1 startup following the completion of U1RF13, the unit experienced a number of significant SGFP and MFW control problems that delayed its return to full power operation. The most significant of these problems included:

- 1B SGFP trip and loss of all MFW (see paragraph 3.a.6 above)
- 1A SGFP speed limited to 600 RPM due to improperly modified control card (FNPIR 95-311)

- MFW flow controller (FK 478) failure caused 1A FRV to fail full open (FNPIR 95-310)
- Inoperable 1A SG MS flow channel FT-474 (FNPIR 95-309)
- 1A SGFP HP stop valve did not stop steam flow (FNPIR 95-305)
- Numerous water and oil leaks were identified by the licensee and inspector following SGFP return to service that warranted repairs

Unit 2 also experienced a large number of significant SGFP and MFW control startup problems following the completion of U2RF10 early this year. These problems were documented in previous inspection reports as follows:

- 2A SGFP EHC line ruptures result in two manual reactor trips (see IR 95-11, paragraph 3.b.1)
- 2B SGFP trip and loss of all MFW (see IR 95-11, paragraph 3.b.2)
- 2B SGFP governor valve oscillations result in rapid downpower (see IR 95-13, paragraph 3.a.6)
- 2B SGFP speed control circuit problems contribute to causing and automatic reactor trip (see IR 95-13, paragraph 3.b.1)
- SGFP and MTG EHC servo valve corrosion and fluid chemistry control inadequacies (see IR 95-13, paragraph 3.c.1)

In response to these and other persistent problems with the reliability of Unit 1 and 2 SGFPs, senior plant management requested the ES manager to form a task force that would address this issue. The ES manager promptly assembled a multi-discipline task force with members from onsite and corporate to develop specific short and long term recommendations. This task force has met several times. The resident inspectors will continue to followup on licensee efforts to improve SGFP reliability.

Overall engineering and technical support of Unit 1 and 2 operations, maintenance, modification, and surveillance activities remained excellent. Onsite engineering continued to interface well with the corporate office.

6. PLANT SUPPORT (71750)

a. Routine Inspection of Fire Protection Activities

During normal tours, inspectors routinely examined aspects of the plant FP Program (e.g., transient fire loads, flammable materials storage, fire brigade readiness, ignition source/risk reduction efforts & FP features). In general, plant personnel and equipment conformed with the established FP Program. Minor problems were discussed and resolved with the onsite Fire Marshall.

b. Routine Security Inspection Activities

During routine inspection activities, inspectors verified that security program plans were being properly implemented. This was evidenced by: proper display of picture badges; appropriate key carding of vital area doors (except as noted below); adequate stationing/tours of security

personnel; proper searching of packages/personnel at the Primary Access Point; and adequacy of compensatory measures during disablement of vital area barriers. Licensee activities observed during the inspection period appeared to be adequate to ensure proper plant physical protection. Guards were observed to be alert and attentive while stationed at disabled doors, and responded promptly to open door alarms. Posted positions were manned with frequent relief.

Uncontrolled Vital Area Access

During the course of monitoring plant personnel access and egress from vital areas, an inspector questioned security management regarding the prolonged card reader delay times (approximately 15 seconds) and the prospect of unauthorized entries. Security and I&C personnel promptly evaluated the card reader delay times for all vital area doors and made adjustments to significantly reduce the inordinately long delay times. Plant management also instituted a new policy requiring site personnel to ensure they receive positive indication from the card reader that access is authorized prior to entering any vital area.

After reviewing the FNP Security Plan, the inspector also questioned security management regarding the implementation of audits and physical checks of designated vital areas. Pending additional review by the inspectors, one issue was identified as URI 95-19-01, Vital Area Access and Physical Checks.

c. Routine Health Physics Inspection Activities

Inspectors routinely examined postings and surveys of radiological areas and labelling of radioactive materials in the RCA. Work activities of plant personnel in the RCA were observed to adhere to established administrative guidelines for radiation protection and ALARA work practices. Effluent and environmental radiation monitors were monitored on a routine basis for any significant changes in radiological conditions or indications of uncontrolled releases. No significant findings were identified. HP technicians maintained positive control over the RCA and provided good support of Unit 2 steady-state operations and Unit 1 startup efforts. HPS efforts to cleanup the Unit 1 containment were commendable. However, cleanup in the Unit 1 RCA following the outage continues at a slow pace. At the current rate of progress, it may take months before the Unit 1 and 2 RCA are restored to pre-outage conditions. ALARA planning efforts and previous lessons learned resulted in an exceptional reduction in dose for the late identified repair of a leaking letdown valve on Unit 1 (LCV-460). This high dose job ended up with 4 rem of exposure versus 12 rem the last time similar work was done.

d. Emergency Plan Dress Rehearsal

On November 14, the licensee conducted a dress rehearsal exercise of its emergency plan and implementing procedures. This dress rehearsal was intended as a final practice exercise prior to the Annual Emergency Exercise scheduled to be held on December 13, 1995. Unlike routine EP drills conducted earlier in the year, dress rehearsals are not considered training exercises. The licensee uses the dress rehearsal to evaluate drill team performance. An inspector fully participated in the November 14 exercise as a drill player in the TSC. The inspector also observed and participated in the subsequent critique of TSC players. Overall drill team performance was adequate, all major exercise objectives were met. However, the ED was not completely satisfied with drill team performance and another dress rehearsal has been scheduled for December 7.

Health physics personnel provided good support of Unit 2 steady-state operations and the Unit 1 startup. Considering some of the poor housekeeping practices exhibited throughout the Unit 1 outage, plant personnel and HP support did an exemplary job in clearing out and cleaning up Unit 1 containment. However, final cleanup of the Unit 1 and 2 RCA proceeds slowly. Dose reductions achieved during the repair of LCV-460 were outstanding. Security personnel were consistently alert and implemented the site's security plan in an appropriate manner. Personnel entry into the protected area was controlled at the primary access point. However, certain questions regarding vital area access control were identified as an unresolved item (paragraph 6.b). Fire protection features were adequately maintained and compensatory measures (i.e., fire watches) were implemented. Emergency preparedness, planning and response capabilities were exercised during a dress rehearsal on November 14. Drill player performance was adequate.

7. EXIT INTERVIEW

On November 30, 1995, the inspectors met with the licensee representatives identified in paragraph 1. During this meeting the inspectors summarized the scope and findings of the inspection as detailed in this report. SNC management at FNP acknowledged these findings and did not identify as proprietary any material provided to or reviewed by the inspectors nor did they express any dissenting comments.

ITEM NUMBER	DESCRIPTION AND REFERENCE
IFI 50-348, 364/94-24-01 (Closed)	Non-Functioning EDG Tunnel Emergency Lights (paragraph 4.c.1)
IFI 50-364/94-31-01 (Closed)	Post Trip Review (paragraph 4.c.2)
IFI 50-348, 364/95-03-02 (Closed)	SSPS Input Relay Configuration (paragraph 4.c.3)

VIO 50-364/95-10-02 (Closed)	OTDT Channel 2A Setpoint Failed High (paragraph 4.c.4)
LER 50-364/95-003 (Closed)	Loop 2A OTDT Channel Inoperable (paragraph 4.c.4)
URI 50-348, 364/95-19-01 (Open)	Vital Area Access and Physical Checks (paragraph 6.b)

8. ACRONYMS AND ABBREVIATIONS

AC - Alternating Current
ALARA - As Low As Reasonably Achievable
AP - Administrative Procedure
CCW - Component Cooling Water
CR - Control Room
CS - Containment Spray
CST - Central Standard Time
DC - Direct Current
DCR - Design Change Request
DEHC - Digital Electrohydraulic Control
DR - Deficiency Report
DRP - Division of Reactor Projects [NRC Region II]
ED - Emergency Director
EDG - Emergency Diesel Generator
EHC - Electrohydraulic Control
EM - Electrical Maintenance [Department]
EMP - Electrical Maintenance Procedure
EP - Emergency Planning
EPB - Emergency Power Board
ES - Engineering Support [Department]
ETP - Engineering Test Procedure
FNP - Farley Nuclear Plant
FNPIR - Farley Nuclear Plant Incident Report
FP - Fire Protection
FT - Flow Transmitter
FRV - Feed [MFW] Regulating Valve
HHSI - High-Head Safety Injection
HP - Health Physics
HPS - Health Physics Support
I&C - Instrumentation and Control [Department]
IAW - In Accordance With
IFI - Inspector Followup Item
IR - Inspection Report
KV - Kilovolt
LCO - Limiting Condition for Operation
LCV - Level Control Valve
LER - Licensee Evaluation Report
LHSI - Low-Head Safety Injection
MCB - Main Control Board
MCC - Motor Control Center
MDAFW - Motor-Driven Auxiliary Feedwater

MFW - Main Feedwater
MOV - Motor-Operated Valve
MS - Main Steam
MSIV - Main Steam Isolation Valve
MSSV - Main Steam Safety Valve
MSVR - Main Steam Valve Room
MTG - Main Turbine Generator
NIS - Nuclear Instrumentation System
NRC - U.S. Nuclear Regulatory Commission
NSSS - Nuclear Steam Supply System
OTDT - Overtemperature Delta Temperature
PSIG - Pounds Per Square Inch (gravity)
RCA - Radiological Control Area
RCS - Reactor Coolant System
REA - Request For Engineering Assistance
RPM - Revolutions Per Minute
RPS - Reactor Protection System
RHR - Residual Heat Removal
SG - Steam Generator
SGFP - Steam Generator Feed Pump
SNC - Southern Nuclear Operating Company
SO - Systems Operator
SOP - Site Operating Procedure
SS - Shift Supervisor
SSPS - Solid State Protection System
STP - Surveillance Test Procedure
SWIS - Service Water Intake Structure
TDAFW - Turbine-Driven Auxiliary Feedwater
TS - Technical Specification
TSC - Technical Support Center
U1RF13 - Unit 1 Thirteenth Refueling Outage
U2RF10 - Unit 2 Tenth Refueling Outage
URI - Unresolved Item
UOP - Unit Operating Procedure
VAC - Volts - Alternating Current
VDC - Volts - Direct Current
VIO - Notice of Violation
WO - Work Order