

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

Report Nos.: 50-348/91-20 and 50-364/91-20

Licensee: Alabama Power Company

600 North 18th Street Birmingham, AL 36291

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

Facility name: Farley 1 and 2

Inspection Conducted: October 19 through November 25, 1991

Inspection at Farley site near Dothan, Alabama

Inspectors: Jol 7 Murde A G. F. Maxwell, Senior Resident Inspector Date Signed

M. J. Morgan, Resident Inspector

Approved by: Rection Chief. Division of Reactor Projects

SUMMARY

Scope:

This routine onsite inspection involved review of operational safety verifications, emergency preparedness, emergency diesel generators, fire protection, monthly surveillance observations, monthly maintenance observations, walkdowns of the Unit 1 and Unit 2 containment spray systems and a continuing evaluation of licensee self-assessment capability. A deep backshift inspection was conducted November 7, 1991.

Results:

Unit 1 operated at approximately 100 percent power for the reporting period. On October 25, service water (SWS) pump "1C" was found to be administratively inoperable due to low flow characteristics. Plans have been made to remove the pump from service for overhaul, paragraph 2.b.(1). On October 29, Region II Operator Licensing (OLB) personnel, administered a requalification "retake" licensing examination for a senior reactor operator, paragraph 1. On November 7, an emergency notification network (ENN) operability test was performed, paragraph 2.b.(2). On November 7, the motor driven fire pump (MDFP) was taken out of service due to low pump flow problems, paragraph 7. On November 12, heater drain tank "1A" discharge valve positioner failed, creating a moderate but controllable transient in the feedwater system, paragraph 2.b.(3). On November 14, a plant emergency preparedness "dress rehearsal"

exercise was performed by both FNP operations and designated site personnel. The exercise also called for the involvement of designated county and state emergency preparedness personnel, paragraph 6. Unit 2 operated at approximately 100 percent power for most of the reporting period. On November 9, the w power switchyard isophase duct blower bearings were replaced. This repair required a reduction in plant power from normal 100 percent power operations. paragraph 4.b. On November 15, the number four main turbine governor valve failed to a closed position and momentarily reduced plant power to about 98 pe cent power, paragraph 2.b.(4). On November 18, the "R-7" seal table radiation monitor detector was replaced and repairs were performed on accumulator "2A" nitrogen vent valve to reduce a slow leaking condition on the accumulator. Both of these repairs required Unit 2 containment entry while at power, paragraph 4.c. On November 24, Steam Generator Feed Pump (SGFP) "2A" low pressure governor valve operated erratically due to circuitry card problems and upon placing SGFP control on the high pressure governing system, the pump attempted to overspeed, paragraph 2.b.(5). During this reporting period, the resident inspectors conducted a detailed walkdown of the accessible portions of the containment spray systems for both Units 1 and 2, paragraph 5.

Improvements have been made in supervisory oversight of day-to-day plant operations which can be attributed to changes in plant morning meeting format, facility organization and improved face-to-face communications between the plant workers and management personnel. The inspectors have noted a greater exercise of responsibilities of the day-to-day, decision-making function to a greater number of "first line" and "middle management" plant supervisory personnel, paragraph 2.a.

No violations or deviations were identified for either unit.

REPORT DETAILS

1. Licensee Employees Contacted

R. M. Coleman, Modificz ion Manager

L. W. Enfinger, Administrative Manager

W. R. Bayne, Supervisor Safety Audit and Engineering Review L. M. Stinson, Assistant General Manager - Plant Operations

D. N. Morey, General Manager - Farley Nuclear Plant

C. D. Nesbitt, Operations Manager J. K. Osterholtz, Technical Manager

R. D. Hill, Assistant General Manager - Plant Support

J. J. Thomas, Maintenance Manager

L. S. Williams, Training Manager

Other licensee employees contacted included, technicians, operations personnel, maintenance and 1&C personnel, security force members, and office personnel.

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

Other Inspections:

October 29, Region II Operator Licensing Branch (OLB) personnel conducted a requalification "retake" licensing examination for one (1) senior reactor operator. The results of this examination is documented in Region II Operator Licensing Branch examination report (50-348/91-301).

October 21 - November 1, Institute of Nuclear Power Operations (INPO) conducted an evaluation of overall licensee performance.

November 19 - 22, NRR personnel performed an inspection of facility responses to NRC bolt degradation concerns as outlined in NUREG-1339, Generic Safety Issue (GSI) 29 and Generic Letter (GL) 91-17.

Operational Safety Verification (71707) and Evaluation of Licensee Self-Assessment (40500)

a. Plant Tours

The inspectors conducted routine plant tours during this inspection period, in accordance with guidance provided by NRC inspection procedure NC71707 to verify licensee requirements and commitments were being implemented. Inspection tours included review of site documentation, interviews with plant personnel and an on-going evaluation and observation of site security.

Some points of special interest noted by the inspectors included continued improvements in plant housekeeping, emergency planning preparations, event notification communications and supervisory oversight of day-to-day plant operations. This improvement in management and supervisory awareness can be attributed to changes in plant morning meeting format, facility organization and better face-to-face communications between management and plant workers. The inspectors have also noted a greater exercise of responsibilities for routine day-to-day decision-making and oversight of plant operations by more "first line" and "middle management" personnel.

b. Plant Events and Observations

(1) "1C" Service Water Pump Administrative Inoperability - Unit 1

On October 25, service water system (SWS) pump surveillance tests were performed and a low SWS flow measurement with a "18"/"10" pump combination was identified. The annubar for the system had been removed and replaced the previous day so the licensee determined that errors were not caused by flow test equipment/instrumentation anomalies. Since other testing was satisfactory for both the "1A" and "18" pumps and pump combination "1A"/"18", the "10" pump was individually tested. Test results indicated a significant degradation in the pump. A check of the PM schedule indicated that this pump, "10", was last overhauled in February, 1988 and was not due for another overhaul until June, 1992. Facility management has concluded that the pump should be removed from service at the earliest possible time and overhauled. Two SW pumps per loop are required for normal operations. After maintenance all pump combinations will be rerun to determine new baseline data.

(2) Emergency Notification Network (ENN) Test

On November 7, the emergency preparedness communications system was tested using procedure STP-60.0, Emergency Communications Operability Tests. As a result of the test, ENN communications was found to be satisfactory. A minor problem was found in the State of Alabama emergency notifications office, in that, the communications switchbox was inadvertently left in a "telephone" contact position rather than the called for "fax" position. Another minor problem was found in the Houston County office. The "fax" machine paper supply was empty. No other concerns were identified during or following performance of the test.

(3) Heater Drain Tank (HDT) "1A" Discharge Valve Positioner Failure

On November 12, heater drain tank (HDT) "1A" discharge valve oscillated to a full open position and then proceeded to drift to a closed position. This oscillation created a moderate feedwater flow/pressure transient and low feedwater suction pressure alarms were momentarily actuated. Board operators immediately

dispatched a turbine building systems operator (SC) to the valve, and after opening the discharge bypass valve he took manual control of the oscillating valve and closed it. Operations personnel manually controlled heater drain tank level, fluid flow and pressure on the HDT discharge bypass valve, until the discharge valve positioner repairs were completed the following day. Rapid response to this incident by the unit operators, the shift supervisor, the shift foreman and the systems operator, prevented further, more serious, problems.

(4) Number Four Main Turbine Governor Valve Failure - Unit 2

On November 15, at approximately 3:43 A.M., the main turbine governor valves started to ramp closed. The control board operators placed the turbine control system in manual and stabilized plant conditions at approximately 98 percent power. Governor Valve (GV) 1 was found to be in an 85 percent open position, GV 2 and GV 3 in a 69 percent position and GV 4 was noted as "closed". The valves were adjusted in order to stabilize main turbine generator temperatures.

After about two minutes, with no operator action, GV 4 then repositioned itself to a 60 percent "open" position. Manual control of the turbine was maintained and maintenance was performed on GV 4. Westinghouse and FNP personnel noted the problem, removed and replaced the associated GV 4 circuit card. The suspect card was given to Westinghouse for further analysis and diagnosis. The above concern was discussed with appropriate plant personnel. Further evaluation of the incident is ongoing. No violations or deviations were identified.

(5) SGFP "2A" Erratic LP Governor Valve Operation - Unit 2

On November 24, at approximately 9:14 p.m., SGFP "2A" low pressure governor valve closed indicator began flashing and the feedwater pump RPM began swinging from about 4000 RPM to about 4500 RPM. A shift foreman and the turbine building systems operator were immediately dispatched and noted an erratic movement of the low pressure (LP) governing system. Observation of the pump itself revealed no obvious problems or abnormalities which could account for the erratic operation of the governor.

Efforts were made to stabilize the swing by isolating the reheat steam supply to the LP governor; however, upon isolating the reheat steam, the "A" pump's RPM was much lower than the "B" pump's; i.e., 4300 versus 4800 RPM.

Efforts were made to match SGFP speeds by increasing the speed of the "A" pump, however, the "A" pump speed quickly increased to about 5475 RPM when manual operation was attempted. The operator immediately lowered the demand on the controller from

about 91 percent to about 20 percent with no results on SGFP speed. A rapid plant rampdown was commenced at about 9:49 p.m. as a precautionary measure. The manual steam supply isolation valve for the HP governor was throttled in an attempt to match pump speeds and to aid in lowering pump "A" speed as the plant was shutdown at a ramp rate of about 2 MW per minute. Reactor power was reduced to approximately 55 percent and feedwater pump "A" was removed from service at about 12:57 a.m., November 25.

An analysis of this incident is ongoing and results will appear in the next monthly report.

3. Monthly Surveillance Observation (61726)

The inspectors witnessed surveillance test activities performed on safety-related systems and components in accordance with guidance contained in NRC inspection procedure MC61726 in order to verify that such activities were performed in accordance with facility procedures and technical specification requirements.

Portions of the following surveillance activities were observed:

0-STP-54.1	Motor Driven Fire Pump Flow Test
0-STP-80.1	Diesel Generator 1-2A Operability Test
0-STP-80.6	Diesel Generator 1-2A 24 Hour Load Test
0-STP-80.8	Diesel Generator 1-2A 1000 kw Load Rejection Test
1-STP-80.6	Diesel Generator 1B 24 Hour Load Test
2-STP-1.0	Operations Daily/Shift Surveillance Reqts Modes 1, 2, 3, 4
2-STP-5.0	Control Rod Operability Test
2-STP-11.2	RHR Pump 2B Quarterly Inservice Test
2-STP-62.0	Main Turbine Governor Valve Operability Test
2-STP-80.1	Diesel Generator 2B Operarility Test
2-STP-80.2	Diesel Generator 2C Operability Test

No violations or deviations were identified. The results of inspections in the surveillance area indicate that both operations and maintenance personnel conducted the above tests in accordance with applicable procedures.

4. Monthly Maintenance Observation (62703)

The inspectors reviewed various preventative and corrective maintenance activities, in accordance with guidance provided by NRC inspection procedure MC62703, to determine conformance with facility procedures, plant work requests, and NRC regulatory requirements.

Portions of the following maintenance activities were observed:

MWR-225786	Intercooler temperature control valve on D/G 1B chattering excessively; investigate and repair.
MWR-236953	Control room "B" train air compressor discharge pressure high; investigate and repair.
MWR-242666	Replace clogged floor drain tank filter.
MWR-245308	Investigate and repair small EHC system leak on crossover piping from "2B" MSR to "2B" intercept valve.
MWR-245474A	Charging pump "1A" auxiliary lube oil pump continues to run after start of charging pump; investigate and repair.
MWR-245425	Check met tower "delta T" recorders for proper operation.
MWR-245532	heater drain tank "A" level positioner not maintaining proper heater drain tank level; investigate and repair.
WA-W00358676	Calibrate pressure transmitter for waste monitor pump discharge per FNP-0-IMP-415.1.

a. Diesel Generator "1-2A" Maintenance Activities

During this inspection period, the inspectors monitored maintenance activities associated with D/G "1-2A".

 On November 19, after running both a 24 hour load test and a 1000 kw load rejection test, D/G 1-2A was taken out of service for performance of minor preventative maintenance. A voluntary entry was made into the technical specification limiting condition for operation (LCO) at that time.

After cleaning the lubricating oil, flushing the jacket water cooling system for removal of residual chromates, performance of turbocharger preventative maintenance and a follow-up run of the D/G, using STP~80.1 for guidance, the D/G was returned to service on November 21.

- 2) On October 30, the "B" air compressor was tagged out and taken out of service to investigate and repair a sticking unloader. Repair of internals were made and the air compressor was returned to service the following day (MWR 225256)
- b. Isophase Duct Blower Shaft Bearing Replacement Unit 2

On November 9, Unit 2 load was reduced to approximately 50 percent and replacement of the low voltage switchyard isophase ductwork system blower bearings was performed. This repair was performed the night of the 9th in order for the cooler ambient temperatures to aid in the cooling of the isophase ductwork during the performance of the maintenance. During the bearing replacement, surveillance STP-62.0, Governor Valve Operability Testing was performed. The isophase duct blower/cooling system was returned to service the following morning, November 10.

c. Repair of Seal Table Monitor R-7 Detector and Leaking accumulator 2A Nitrogen Vent Valve - Unit 2

On November 18, a containment entry was made while at power by facility maintenance and operations personnel for repair and replacement of seal table monitor R-7 detector and investigation and repair of a leaking nitrogen (N2) vent valve on ESF accumulator 2A. The R-8 drumming room monitor detector had been removed the previous week for use as a replacement for the R-7 detector. This course of action was necessitated by the failure of a spare detector drawn from stores. The R-8 detector is scheduled to be replaced toward the and of this reporting period when an operable "spare" is obtained.

Upon investigation of the suspect accumulator vent valve, operations and maintenance personnel noted a small packing leak. The gland was tightened and nitrogen leakage was reduced. The inspectors will continue to monitor follow-up activities associated with this repair.

No violations or deviations were identified. Activities in this area were effective in meeting safety/operational requirements.

5. Engineered Safety System Inspection Unit 1 and Unit 2 (71710)

The inspectors conducted a detailed walkdown of the accessible portions of the containment spray systems for both Units 1 and 2. The walkdown was conducted in accordance with guidance provided by NRC inspection procedure MC 71710. The walkdown included comparing the current line-up procedure to plant drawings D-205038 and D-175038 and Sections 6.2.2. through 6.2.3 of the FSAR.

The inspectors looked for equipment conditions which could have degraded the plant performance. Some of those specific conditions which were considered included; the correct alignment of system hangers and supports, housekeeping, freeze protection, general condition of valves, system

component labeling, the instrumentation installation, instrument calibration, positioning of valves, proper electrical breaker position at local electrical boards and indication at the main control boards.

During the walkdown the inspectors observed the reactor operators in the control room and the system operators (SO) which were at assigned plant locations. Each of the operators were found to be alert and cognizant of the plant system and component operability status. No violations or deviations were identified.

5. In-House Emergency Preparedness Exercise and Contaminated Injured Man Scenario (82301)

The resident inspectors observed a site emergency training exercise which was conducted on November 14. The exercise scenario started at about 8:00 a.m. and consisted of a simulated stuck, then dropped control rod in Unit 1. During the simulated rod recovery actions, the scenario proceeded to a loss of start-up transformer (SUT) "1A" with a subsequent loss of all auxiliary feedwater. At approximately 8:10 a.m., an Alert emergency preparedness condition was declared by the licensee. At approximately 8:20 a.m., auxiliary feedwater was restored, however, the Alert condition remained in effect. At approximately 10:30 a.m., the scenario proceeded to an ejected rod condition and the licensee escalated the event classification to a Site Area Emergency. At approximately 1:30 p.m., drill activities were terminated.

During the drill the Technical Support Center (TSC) was fully staffed and the Emergency Operations Facility (EOF) was activated. Representatives from APCO/Southern Nuclear, the State of Alabama, Houston County, the State of Georgia and Early County participated in the exercise.

The resident inspectors also observed a contaminated injured man training exercise which was conducted on November 22. The exercise scenario consisted of a simulation of a man with a leg injury located on the 139 foot elevation of the auxiliary building, near the associated unit cable spreading room. The simulation continued until noon on the 22nd.

Following both the drill and the contaminated injured man scenarios, critiques were held to discuss the strengths of each drill and areas where improvements could be made. During these training scenarios, performance was evaluated by APCO designated monitors but such performance was not thoroughly evaluated by the NRC. Currently the NRC plans to also observe the Farley exercise scheduled to be conducted on December 11, 1991. In this area no violations or deviations were identified.

7. Fire Protection/Prevention Program (64704)

The inspectors have continued to note maintenance-related and material condition problems with the licensee's Fire Protection System (FPS), specifically, the condition of the system motor d. ven fire pump (MDFP).

The inspectors noted that this particular pump was removed from operation on November 7, after failing to meet the acceptance criteria found in FNP-0-STP-54.1, Motor Driven Fire Pump Operability Test. The acceptance criteria, Step 5.40.3 of the above procedure, calls for a "delta P" (psid) of greater than or equal to 125 psid with an operating output of greater than or equal to 2500 gpm.

The motor-driven pump was only capable of approximately 121 µsid. The facility maintenance group has performed repairs of discharge flow components and dismantled and reassembled the pump in an attempt to achieve the called for 125 psid. The pump, as of the end of this reporting period, has not been returned to service.

Even though the plant has three fire pumps (2 diesel and 1 motor driven), a concern with the length of time in which this pump has remained in a degraded condition has been discussed with management personnel and a follow-up review of ongoing repairs and corrective actions will be performed. No violations or deviations were identified during this reporting period.

8. Action on Previous Inspection Findings and 10CFR Part 21 Items (36100 and 92701)

(Closed) Licensee Event Report 364/90-05, S/G tube degradation. The inspectors discussed the specifics of this LER with the licensee NRR Project Manager and nc'ed in follow-up, that plans are currently underway for action by site personnel. During the upcoming March 1992 Unit 2 outage, these plans are to be implemented. The plans include special welding and mechanical fabrication processing for repair of damaged and degraded S/G tubes. Since the above has been found acceptable by NRR, this item is closed.

(Open) Licensee Event Report 364/91-01, Dropped control rod causes reactor trip. The inspectors reviewed specifics of this LER and noted that a "failure analysis report" from Westinghouse has not yet been sent to site personnel. During conversations the I&C superintendent stated that he is continuing to follow-up on this item and he will notify the inspectors upon receipt of analysis results. Until such time that the site receives the Westinghouse analysis, and evaluates it, this item remains open.

(Closed) Notice of Violation 50-364/90-33-01, Inadequate procedures for mid-loop operation. The inspectors reviewed specifics of this NOV and noted that the licensee has taken the following corrective actions to avoid similar violations:

- 1. Personnel responsible for identification of procedures needing revision to correct the oversight have been counseled.
- Maintenance procedures have been changed to provide additional guidance during activities involving reduced inventory operation.

- 3. Operations procedures have been changed to require more frequent checks of items required for reduced inventory conditions.
- 4. Operations procedures have been changed to require use of facility administrative controls to prevent change in conditions once they have been established.
- Operations procedures have been changed to address requirements necessary after reactor head reinstallation.
- 6. All commitments made in response to Generic Letter 88-17 have been reviewed. The licensee has determined that existing procedures and administrative controls are adequate for implementation of mid-loop requirements.

In that the above corrective actions have been implemented this item is closed.

(Closed) Notice of Violation 50-364/90-36-01 Inadvertent reactor coolant system (RCS) depressurization due to inadequate maintenance procedure for setting of the pressure operated relief valve (PORV) 445A setpoint. The inspectors reviewed specifics of this NOV and noted that the licensee has taken the following corrective actions to avoid similar violations:

- I&C personnel have been instructed to ensure proper calibration and that proper setpoints are used when performing maintenance on air operated valve actuators.
- Licensee Daily Planning Group has been instructed to include detailed instructions for removing, reinstalling and calibrating air operated valve actuators.
- I&C procedure FNP-0-IMP-444.1 has been revised to include instructions for the removal, reinstallation and calibration of air operated valve actuators. The PZR PORV is included in this procedure.

In that the above corrective actions have been implemented this item is closed.

(Closed) Licensee Event Report 348/90-04, Procedural inadequacy caused improper surveillance of accumulators. The inspectors reviewed specifics of this LER and noted that the licensee has revised the procedures for sampling of the accumulators on both Unit 1 and Unit 2. The revised procedures ensures that an adequate purge time is allowed prior to the sample being taken. Since the procedure change corrects the previously inadequate length of time for a sample purge, this item is closed.

(Closed) Licensee Event Report 348/91-01, Missed fire watch due to personnel error. The inspectors reviewed specifics of this LER and noted that the licensee counseled a shift foreman who had mistakenly established a fire watch in a wrong area upon disabling a fire projection system alarm. It was also noted that the licensee immediately established the correct and proper fire watch upon discovering the error. Since these corrective actions have adequately resolved this cognitive personnel error, this item is closed.

(Closed) Licensee Event Report 348/91-02, Temporary strainers found in the suction piping of the 1B and 1C charging pumps. The inspectors reviewed specifics of this LER and noted that the licensee removed the strainers and checked other ESF pump suctions for similar problems. Nother strainers were found. The licensee's current documentation practices are more extensive and specific than those used during the early phases of plant construction/operation. Since corrective actions have resolved the above event and various checks have been conducted to provide assurance that similar problems do not currently exist, this item is closed.

(Closed) Licensee Event Report 348/91-04, RWST water inadvertently drained to containment. The inspectors reviewed specifics of this LER and noted that the licensee disciplined the SS that authorized the maintenance which brought about the associated valve misalignment. The inspectors also noted that the licensee further emphasized the importance of properly controlling work activities by all other plant operations supervisors. In light of the fact that, 1) many extensive meetings were held to remind all supervisory personnel of the importance of clearly understanding the full scope of work being performed prior to authorization of maintenance, and 2) that this event was used as an example of a failure to follow plant procedures for NOV 50-348,364/91-10-01 and 3) that since event corrective actions taken by management and directed specifically toward supervisors have been adequate for correction of this event, this item is closed.

(Closed) Licensee Event Report 348/91-05, Mode changes performed while a bypass valve in the Turbine Driven Auxiliary Feedwater Pump (TDAFP) system was misaligned. The inspectors reviewed specifics of this LER and noted that each of the concerns have been identified by NRC Inspection Report 348/91-17. Therefore, based on documentation in report 348/91-17, this item is closed.

(Closed) Notice of Violation 50-348/91-18-01, Repair of equipment without proper written authorization and without the prescribed clearance of system components. The inspectors reviewed specifics of this NOV and noted that the licensee has taken the following corrective actions to avoid similar violations:

- 1. The SS involved was counseled.
- This event has been discussed with all SSs.

3. Appropriate licensee form(s) were completed which allowed for use of a "live clearance" in lieu of a normal clearance/tagout.

In that the previous corrective actions have been implemented this item is closed.

9. Exit Interview

The inspection scope and findings were summarized during management interviews throughout the report period, and on November 26, with the plant manager and selected members of his staff. The inspection findings were discussed in detail. The licrosee acknowledged the inspection findings and did not identify as proprietary any material reviewed by the inspectors during this inspection.

Licensee was informed that the items discussed in paragraph 8 were closed.

10. Acronyms and Abbreviations

AFW - Auxiliary Feedwater

ALARA- "As Low As Reasonably Achievable"

AOP - Abnormal Operating Procedure

AP - Administrative Procedure

APCO - Alabama Power Company

BIRS - Boron Thermal Regeneration System

CFR - Code of Federal Regulations

CVCS - Chemical and Volume Control System

CCW - Component Cooling Water

D/G - Emergency Diesel Generator

DPM - Disintegration Per Minute

ENN - Emergency Notification Network

EOF - Emergency Operations Facility

ESF - Engineered Safety Features

F - Fahrenheit

FNP - Farley Nuclear Plant

FPS - Fire Protection System

FSP - Fire Surveillance Procedure

GPM - Gallons Per Minute HDT - Heater Drain Tank

INPO - Institute of Nuclear Power Operations

ISI - Inservice Inspection

IST - Inservice Test

KV - Kilo-volt

LCO - Limiting Condition for Operation

MDFP - Motor-Driven Fire Pump MOV - Motor-Operated Valve

MOVATS - Motor-Operated Valve Actuation Testing

MWR - Maintenance Work Request

NOV - Notice Of Violation

NRC - Nuclear Regulatory Commission

NRR - NRC Office of Nuclear Reactor Regulation

OATC - Operator at the Controls PAP - Primary Access Point

PCCV - Positive Closing Check Valve

PCN - Plant Change Notice

PMD - Plant Modifications Department PORV - Power Operated Relief Valve

PPB - Parts Per Billion PPM - Parts Per Million

PRT - Pressurizer Relief Tank

PSID - Pressure per Square Inch Differential

PZR - Pressurizer

RCP - Reactor Coolant Pump RCS - Reactor Coolant System RHR - Residual Heat Removal

RTD - Resistance Temperature Detector

SI - Safety Injection S/G - Steam Generator

SAER - Safety Audit and Engineering Review

SFO - Shift Foreman - Operating

SO - Systems Operator SFP - Spent Fuel Pool

SGFP - Steam Generator Feed Pump SOP - Standard Operation Procedure SPDS - Safety Parameter Display System

SS - Shift Supervisor

SSPS - Solid State Protection System STP - Surveillance Test Procedure

SWS - Service Water System
TS - Technical Specification
TSC - Technical Support Center

WA - Work Authorization