UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-8931

July 23, 2004

Florida Power and Light Company
ATTN: Mr. J. A. Stall, Senior Vice President
Nuclear and Chief Nuclear Officer
P. O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: TURKEY POINT NUCLEAR PLANT - NRC SAFETY SYSTEM DESIGN AND PERFORMANCE CAPABILITY INSPECTION REPORT NOS. 05000250/2004008 AND 05000251/2004008

Dear Mr. Stall:

On June 24, 2004, the Nuclear Regulatory Commission (NRC) completed a safety system design and performance capability inspection at your Turkey Point Nuclear Plant, Units 3 and 4. The enclosed report documents the inspection findings which were discussed on June 24, 2004, with Mr. M. Pearce and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your operating license. Within these areas, the inspection involved selected examination of procedures and representative records, observations of activities, and interviews with personnel.

This report documents one NRC-identified finding of very low safety significance (Green) involving a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator Region 2; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Turkey Point Nuclear Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Charles R. Ogle, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos.: 50-250, 50-251
License Nos.: DPR-31, DPR-41

Enclosure: NRC Inspection Report Nos. 05000250/2004008, 05000251/2004008
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-250, 50-251
License Nos.:	DPR-31, DPR-41
Report Nos.:	05000250/2004008 and 05000251/2004008
Licensee:	Florida Power & Light Company (FPL)
Facility:	Turkey Point Nuclear Plant, Units 3 & 4
Location:	9760 S. W. 344th Street Florida City, FL 33035
Dates:	June 7-10, 2004 and June 21-24, 2004
Inspectors:	J. Moorman, Lead Inspector C. Smith, P.E., Senior Reactor Inspector R. Cortes, Reactor Inspector R. Taylor, Reactor Inspector R. Rodriguez, Reactor Inspector W. Holland, Contract Operations Inspector
Accompanying Personnel:	C. Fong, Co-op student
Approved by:	Charles R. Ogle, Chief Engineering Branch 1 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000250/2004-008, 05000251/2004-008; 06/07-10/2004 and 06/21-24/2004; Turkey Point Nuclear Plant, Units 3 & 4; Safety System Design and Performance Capability Inspection.

This inspection was conducted by a team of regional inspectors and a contract inspector. One Green finding of very low safety significance was identified during this inspection and was classified as a non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, “Significance Determination Process” (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, “Reactor Oversight Process,” Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green: A non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified for failure to implement configuration control measures for the calculation of record for the steam generator water high-high level overfill protection function instrument uncertainty calculation. This resulted in Calculation WCAP-12745, “Westinghouse Set point Methodology for Protection Systems, Turkey Point Units 3 & 4 Thermal Uprate Project,” Revision 1, dated December 1995, not containing the correct “Allowable Value” for the steam generator high-high level protection function set point.

This finding is greater than minor because inadequate design control for engineering calculations can propagate incorrect information into subsequent plant modifications. This could eventually result in plant operation outside of analyzed conditions, which could affect the availability, reliability, and capability of mitigating systems to respond to initiating events and prevent undesirable consequences. This finding is of very low safety significance because it is a design deficiency that did not result in a loss of system function per Generic Letter 91-18. (Section 1R21.23)

B. Licensee-Identified Violations

None.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events and Mitigating Systems

1R21 Safety System Design and Performance Capability (71111.21)

This team inspection reviewed selected components and operator actions that would be used to prevent or mitigate the consequences of a steam generator tube rupture (SGTR) event. Components in the main steam (MS), auxiliary feedwater (AFW), safety injection (SI), steam generator (SG) blowdown, chemical volume and control (CVCS), reactor coolant (RCS), and radiation monitoring systems were included. This inspection also covered supporting equipment, equipment which provides power to these components, and the associated instrumentation and controls. The SGTR event is a risk-significant event as determined by the licensee's probabilistic risk assessment.

.1 System Needs

.11 Process Medium

a. Inspection Scope

The team conducted system walkdowns, observed instrument indications, and reviewed selected operations surveillances to verify that the process medium for the main feedwater (MFW), AFW, CVCS, boron addition, and MS systems would be available and unimpeded during accident/event conditions. Reviews were based on the Updated Final Safety Analysis Report (UFSAR) system descriptions and Technical Specification (TS) requirements.

Specifically, the team reviewed procedures used by operators associated with refilling of the refueling water storage tank (RWST); reviewed the common valves associated with flow paths to the AFW pumps from the condensate storage tanks (CSTs) to verify proper configuration control; reviewed valve line-ups to verify that the CST on the non-accident unit could be used, if necessary, for the accident unit; and reviewed MFW recovery procedures to verify they were up-to-date and directed use of MFW through the bypass lines.

The team reviewed the AFW and SI net positive suction head (NPSH) and water source calculations, operating/lineup procedures, drawings, licensing and design basis information, surveillance procedures, and vendor manuals. The review also included the RWST, the CST, minimum-flow flowpaths for AFW and SI pumps, and vortexing considerations. The team reviewed AFW common cause failure possibilities with an emphasis on steam supply valves (MOV-3-1403, -1404, -1405 and CV-3-10-381, -382, -383), discharge check valves (20-143, -243, -343), and AFW flow control valves (FCVs)(CV-3-2816, -2817, -2818, -2833, -2832, -2831).

b. Findings

No findings of significance were identified.

.12 Energy Sources

a. Inspection Scope

The team conducted walkdowns, and control room and equipment status reviews of selected energy sources to verify availability during accident/event conditions. Reviews were based on design basis documents, system operating procedures, TS, and UFSAR requirements. Systems of focus included instrument air, pressurizer power operated relief valves (PORVs), and the process radiation monitoring system.

Specifically, the team assessed selected portions of valve lineup procedures, reviewed procedures for operation of back-up nitrogen supplies to the SG steam dump to atmosphere valves (SDAVs) and the pressurizer PORVs to verify that they would accomplish the stated task; and assessed applicable system lineups for MODE of operation by control room walkdowns (equipment status based on control board indication).

The team reviewed appropriate test and design documents to verify that the 4160 volt alternating current (VAC) and 600VAC power sources, as well as 125 volt direct current (VDC) power sources, were adequate to meet minimum voltage specifications for electrical equipment during and following an SGTR event. Among the reviewed components were the SI pump motors and the boric acid transfer pump motors, as well as, the Unit 3 standby steam generator feedwater (SSGFW) pump motor. Specific valves reviewed were:

- Pressurizer PORV solenoid valves
- Steam Generator SDAV solenoid valves
- AFW Pump Steam Supply Motor Operated Valves (MOVs)
- Boric Acid Transfer MOVs
- AFW Flow Control Air Operated Valves (AOVs)
- SI discharge MOVs
- MFW bypass line valves

Additionally, the team reviewed the power supplies for the steam generator blowdown, main steam line, and condenser air ejector radiation monitors to verify conformity with RG 1.97, “Instrumentation for Light-Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident.”

The team walked down the energy sources of selected components to verify that selected system alignments were consistent with the design basis assumptions, performance requirements, and system operating procedures. The team reviewed valve lineup procedures for the steam supply to the turbine-driven AFW pumps and the sources of instrument air for the air operated valves (AOVs) such as the steam generator SDAVs (CV-3-1606, -1607, -1608), main steam isolation valves (MSIVs)(POV-3-2604, -2605, -2606), pressurizer PORVs (PCV-3-455C, -456), and AFW FCVs. The team also reviewed the testing and maintenance history for these AOVs to verify that the system design basis assumptions were consistent with the actual capability of the system.

b. Findings

No findings of significance were identified.

.13 Instrumentation and Controls

a. Inspection Scope

Auxiliary Feed Water Suction Sources

The team reviewed the instrument uncertainty calculation for the RWST level instruments to verify that the recommendations of NRC Information Notice 83-03, "Calibration of Liquid Level Instruments," dated 01/28/1983, had been incorporated into the calculation for density compensation of the borated water. The review was also performed to verify the accuracy of the level instruments for satisfying TS requirements and to determine the following instrument uncertainties: (1) the total loop uncertainty associated with the RWST high and low alarm; (2) the total loop uncertainty associated with the RWST main control room indication, and (3) the total loop uncertainty associated with the TS minimum indicated volume required for operability of the RWST. The team reviewed plant change/modification PC/M 99-048 that was prepared by the licensee to rescale the RWST level instruments to account for the density compensation discussed in NRC Information Notice 83-03. The team also reviewed additional scaling requirements implemented by Plant Change/Modification 99-048 to provide a consistent zero gallon reference.

Steam Generator Level (Narrow Range) Channel Calibration

The team reviewed the plant procedures used for performing steam generator narrow range level instrumentation calibration to verify correct acceptance criteria as delineated in the instrument uncertainty calculations of record. The team reviewed completed data sheets for Unit 3 steam generator level (narrow range) protection instrumentation sets 1, 2, and 3. The team also evaluated the results of the calibration activities for several instrument channels in terms of satisfying the acceptance criteria specified in the following procedure sections of the steam generator level calibration procedures: (1) Section 6.2, Loop Power supply LQ-4x5 Check and Calibration; (2) Section 6.9, Signal Isolator LM-4x5 Check and Calibration; (3) Section 6.10, Recorder, Indicator and Computer Signal Conditioner Check and Calibration; and Section 6.11, As-found Overall Rack Accuracy. The team also reviewed the completed data sheets for the calibration of the Unit 3 steam generator level (narrow range) protection instrumentation set III, instrument channels L-476, 486, and 496 performed under work order number 32006593 01 dated March 3, 2003 to verify that the acceptance criteria of the calibration procedure were satisfied. Refer to the Attachment for a list of the steam generator level calibration procedures reviewed.

b. Findings

No findings of significance were identified.

.14 Operator Actions

a. Inspection Scope

The team reviewed plant operating procedures, emergency operating procedures (EOPs), off-normal operating procedures (ONOPs), and annunciator response procedures (ARPs) that would be used in the identification and mitigation of the SGTR event. The team's focus was on SGTR mitigation strategy (ruptured SG identification/ isolation, RCS cooldown, RCS depressurization) to stop leakage from the RCS to the environment.

Specifically, the team reviewed the operating, EOP, ONOP, and ARP procedures to verify that they were available to operators, were consistent with the UFSAR description of an SGTR event, and were consistent with EOP writer's guide requirements. This review was also conducted to verify that procedures called out in EOPs were properly referenced and maintained; that ONOP and EOP steps requiring health physics (HP) monitoring of radiation levels during SGTR mitigation could be properly performed and that chemistry procedures for sampling to support mitigation of an SGTR event could be properly performed. The team reviewed the SG leak monitoring program and associated procedures for consistency with Electric Power Research Institute guidelines, to verify that operators were provided with information on very low SG primary to secondary leakage rates and that procedures were in place for plant shutdown prior to exceeding established limits. The team reviewed information in procedures used to correlate radiation monitor readings with primary-to-secondary leakage to ensure that the correlation was valid. The team reviewed alarm setpoints, annunciator functions, and ARPs for consistency with UFSAR, EOPs, and operator training lesson plans. In addition, the team reviewed selected operations procedures (EOPs and surveillances) associated with SGTR event response to verify EOP setpoint document information had been incorporated, as appropriate, into procedures. The team reviewed applicable procedures to verify that they provided proper direction on use of cooldown and depressurization consistent with calculations and/or requirements. Further, the team reviewed radiation monitors and setpoints to ensure consistency with ARPs/EOPs. The reviews included the following radiation monitors:

- Condenser air ejector radiation monitors (RAD-3/4-15 and RAD-3/4-6417)
- S/G blowdown radiation monitor (RAD-3/4-19)
- Main steam line radiation monitor (RAD-6426)

Additionally, the team reviewed accident analysis assumptions to verify that they had been implemented into appropriate procedures and could be accomplished as described. The team observed operator performance of procedures during the simulator demonstration of an SGTR event to verify that the procedures were performed as required by administrative requirements (EOP Users Guide) and were consistent with owner's group procedure guidelines. The team reviewed SGTR EOPs to verify that step deviations from the Westinghouse Owner's Group emergency response guidelines were justified. The team reviewed selected training lesson plans for the SGTR event to evaluate consistency with EOPs. The team specifically reviewed the EOPs to verify that they directed refill of RWST when required and referenced the appropriate procedure(s). The team also verified that actions by operators to conduct the EOP action to manually isolate a stuck open SG SDAV could be accomplished when required.

The team observed crew performance of SGTR event mitigation on the plant simulator. The following actions were observed by the team:

- EOP actions to control SG level
- EOP actions to identify the ruptured SG
- EOP actions to isolate a ruptured SG
- EOP actions to cooldown the RCS
- EOP actions to depressurize the RCS

b. Findings

No findings of significance were identified.

.15 Heat Removal

a. Inspection Scope

The team reviewed design calculations, drawings, and surveillance test procedures for selected equipment to assess the reliability and availability of cooling for equipment required to mitigate an SGTR event. The team conducted field walkdowns of the equipment to verify that operating conditions were consistent with design assumptions. The equipment reviewed included SI and AFW pumps and testing of these pumps at both full and minimum flow conditions. The team also reviewed design calculations and machinery history to verify that the SI pump jacket water cooler had adequate capacity to remove heat from the mechanical seals and the thrust bearing housing during design basis accidents.

b. Findings

No findings of significance were identified.

.2 System Condition and Capability

.21 Installed Configuration

a. Inspection Scope

The team performed field inspections of the Hagan instrument racks associated with Unit 3 steam generators level (narrow range) protection instrumentation sets I, II, and III. The instrument racks installation was compared to as-built instrument installation drawings. Additionally, the instrument racks were evaluated in connection with aging and end-of-life related problems. Failures of instrument rack components that have occurred and the corrective actions taken for resolution of the equipment aging problems were discussed with the licensee’s engineering personnel to determine the extent of condition and corrective actions taken.

The team performed field walkdowns of selected portions of the AFW, MS, FW, CVCS, SG blowdown, SI and process radiation monitoring systems to assess observable material condition and the installed configuration of components. This review was also conducted to verify that selected valves and components in these systems were in their required position and that the configuration was consistent with design drawings. For the SI, AFW, and MS systems, particular attention was placed on verifying selected valves and components that could cause a common mode failure in these systems. The team also reviewed human factors items in the walkdown areas (e.g. lighting, noise, accessability, labeling) to verify proper consideration had been given to these areas for SGTR mitigation actions.

The team reviewed system health reports for selected systems and met with selected system engineers to discuss system design basis and to evaluate identified degraded components.

The team walked down portions of the 125VDC and 480VAC systems to verify that the installed configuration was consistent with design basis information. Also, the team visually inspected 480VAC Motor Control Centers 3B and 3C, as well as, the 125VDC vital batteries 3A and 3B along with their respective chargers, inverters and DC distribution panels to evaluate observable material condition.

The team reviewed condition reports for the CST and RWST to determine if water supplies to AFW and SI systems would be obstructed by foreign material or tank degradation.

b. Findings

No findings of significance were identified.

.22 Operation

a. Inspection Scope

The team performed field walkdowns of selected components specified in the SGTR EOP for which local operation or main control room operation was required to verify that operators could adequately determine component status and that the components could be operated. These components included the backup nitrogen supplies for AFW flow control valves, turbine driven AFW steam supply motor operated valves MOVs, the manual isolation valves for the SG SDAV flowpaths, and the SG SDAVs.

The team conducted walkdowns with appropriate HP and/or Chemistry personnel to observe performance of actions required by ONOPs and EOPs to verify that the actions could be conducted under conditions that would exist during an SGTR event. Team focus areas included chemistry sampling and HP surveys that would be used to help operators identify which SG was ruptured. Another aspect reviewed was post-accident RWST make-up using the CVCS and boron addition system. The team performed field walkdowns of the boric acid transfer pumps, boric acid tanks, and selected valves between the boric acid tanks and the volume control tank to verify that operators could operate the system during an SGTR event.

b. Findings

No findings of significance were identified.

.23 Design

a. Inspection Scope

Mechanical Design

The team reviewed the TS, the UFSAR, and vendor manuals for the AFW and SI pumps to verify that vendor recommendations and licensing basis requirements had been appropriately translated into the surveillance requirements and design calculations. The team also reviewed operating experience (OE) applicability for the AFW FCVs and minimum-flow lines potential for failure and isolation, respectively. NPSH calculations and head curve data for both the AFW and SI pumps was reviewed to verify that adequate water levels were available and vortexing was considered for both the CST and RWST. In addition, the team reviewed the pressurizer PORV backup nitrogen accumulator volume and regulator setting controls to verify that backup nitrogen would be available if needed.

The team reviewed records of preventive maintenance and performed field walkdowns of selected components in the SI, MS and AFW systems to verify that these activities were maintaining the assumptions of the licensing and design bases. During these reviews, the team focused on potential common mode failure vulnerabilities that could be introduced by design or maintenance activities.

The team also reviewed the standby steam generator feedwater system machinery history, completed surveillances, oil analysis and valve lineup flow path to verify proper maintenance of the system and availability during SGTR. A more detailed list of components reviewed in this section is provided in the Attachment.

Electrical Design

The team reviewed the battery sizing calculation for the Units 3 and 4 class 1E 125VDC electrical distribution system to assess the adequacy of the batteries to provide power for selected components required to mitigate an SGTR event.

Instrument Uncertainty Calculations

The team reviewed the steam generator level (narrow range) protection instrument uncertainty calculation of record, and set point and scaling documents, to verify that the instruments were sufficiently accurate to comply with the set point requirements delineated in Technical Specification Table 3.3.3, Item 5C, Steam Generator Water Level High-High.

b. Findings

Introduction

The team identified a green non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Control, in that the licensee failed to establish control of instrument uncertainty Calculation WCAP-12745, “Westinghouse Set point Methodology for Protection Systems, Turkey Point Units 3 & 4 Thermal Uprate Project,” Revision 1, dated December 1995.

Description

The nominal trip set point value for initiation of the steam generator high-high level protection function is listed in TS Table 3.3-3. The TS table also provides an “Allowed Value” for the trip set point. The calculations of record which established these values were: 1) Westinghouse Thermal Uprate Calculation CN-TSS-94-54, dated July 17, 1995, that determined the setpoint, and; 2) Calculation WCAP-12745, “Westinghouse Set point Methodology for Protection Systems, Turkey Point Units 3 & 4 Thermal Uprate Project,” Revision 1, dated December 1995 that determined setpoint uncertainty and established the values for use in the TS. The team compared Calculation WCAP-12745 to the TS and determined that the “Allowable Value” listed in Calculation WCAP-12745 was 80.9% of the steam generator narrow range span while TS table 3.3-3 listed an “Allowed Value” for the trip set point as 81.9%. This represented a non-conservative discrepancy between the plants licensing and design bases for the steam generator overfill protection function and the value listed in TS table 3.3-3.

In discussions with the licensee’s engineering personnel, the team determined that the original calculation of record that established the set point value for this protection function was Calculation PTN-BFJ1-93-019, prepared by FP&L in 1993. This calculation was subsequently replaced by Westinghouse Thermal Uprate Calculation CN-TSS-94-54, issued in July 17,1995. Several revisions of Calculation CN-TSS-94-54 were issued by Westinghouse. Revision 7, was issued on July 17, 1995 and determined an “Allowable Value” of 80.9% of the narrow range for the steam generator overfill protection function set point drift. Revision 6A, issued subsequently on September 26, 1995, determined an “Allowable Value” of 81.9% of the narrow range span for the steam generator overfill protection function set point drift.

In December 1995, Westinghouse issued WCAP-12745, Revision 1 using the “Allowable Value” of 80.9% of the narrow range for the steam generator overfill protection function set point from Revision 7 of Calculation CN-TSS-94-54 instead of the “Allowable Value” of 81.9% from Revision 6A.

Attachment 3 of Procedure STD-F-004, “FPL / WEC Design Interface Procedure,” Revision 16 administers and controls the design interface between FP&L and Westinghouse. Section 5.22 of this procedure requires that design integration be achieved by using specific tools. Among the tools listed is a calculation index. This calculation index lists Engineering and Contractor calculations and is searchable by combinations of input fields. It is the responsibility of the FP&L Engineering organization to ensure that each design activity is integrated into any changes to the existing plant configuration. Failure to do so can result in conflicting designs, redundant designs, or exceeding Design Bases parameters with cumulative changes. For Calculation WCAP-12745, "Westinghouse Set point Methodology for Protection Systems, Turkey Point Units 3 & 4 Thermal Uprate Project," Revision 1, the licensee failed to insure all design activities were integrated such that the calculation was maintained up to date.

The team concluded that the licensee failed to establish configuration control of the instrument uncertainty calculations of record, and this failure resulted in the discrepancy between the TS and WCAP-12745 for the steam generator water level high-high protection function set point "Allowable Value." The licensee initiated condition report 2004-3487-CR and entered this performance deficiency in the corrective action program. The licensee also performed an operability assessment by reviewing records of the past four surveillance performed for the steam generators protection sets I, II, and III analog channel tests. The more restrictive acceptance criteria for the Allowable Value listed in WCAP-12745 was used during this review. The review included data for both Units 3 and 4. All as-found data was within the "Allowable Value" listed in WCAP-12745. The licensee also performed an extent of condition review for condition report 2004-3487-CR by completing an initial review of Technical Specification Reactor Protection System (RPS) and Engineered Safety Features Actuation System (ESFAS) set points against applicable instrument uncertainty calculations of record. No discrepancies with RPS or ESFAS set points were identified between the technical specification, the set point drawings, and the calculations of record.

Analysis

This finding is associated with the design control attribute of the mitigating system cornerstone. It is greater than minor because inadequate design control for engineering calculations can propagate incorrect information into subsequent plant modifications. This could eventually result in plant operation outside of analyzed conditions, which could affect the availability, reliability, and capability of mitigating systems to respond to initiating events and prevent undesirable consequences. This finding is of very low safety significance (Green) because it is a design deficiency that did not result in loss of system function per Generic Letter 91-18.

Enforcement

10 CFR 50 Appendix B, Criterion III, Design Control, requires, in part, that measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations. These measures shall include the establishment of procedures among participating design organizations for the review, approval, release, distribution and revision of documents involving design interfaces. Attachment 3 of Procedure STD-F-004, "FPL / WEC Design Interface Procedure," Revision 16 administers and controls the design interface between FP&L and Westinghouse. Section 5.22 of this procedure requires that design integration be

achieved by using specific tools. Contrary to the above, from December 1995, the licensee failed to implement configuration control measures for the calculation of record for the steam generator water high-high level overfill protection function. The licensee entered this issue into their corrective action program as 2004-3487-CR. Because the identified design deficiency is of very low safety significance and the issue has been entered into the licensee’s corrective action program, this violation is being treated as a non-cited violation (NCV), consistent with Section VI.A of the NRCs Enforcement Policy: NCV 05000250, 251/2004008-01, Failure to Implement Configuration Control of Steam Generator Water High-high Level Instrument Uncertainty Calculation of Record.

.24 Testing and Inspection

a. Inspection Scope

Steam Generator Level (Narrow Range) Channel Operational Tests

The team reviewed data sheet records for Units 3 and 4 steam generator protection set 1, 2, and 3 analog channel tests that were completed for several quarters. The reviews were performed to verify that the analog operational tests demonstrated that the instruments were sufficiently accurate to comply with the plants licensing bases as shown by the as-found and as-left conditions. The reviews were also performed to verify that the plant surveillance procedures had correctly incorporated acceptance criteria and instrument uncertainties that were specified in the instrument loop uncertainty calculations of record.

The team reviewed the 125VDC batteries (3A, 3B, 4A & 4B) surveillance test records to verify that the batteries were capable of meeting design basis load requirements. The team also reviewed calibrations for the overcurrent protective relays to support proper operation of 4160VAC safety buses 3A and 3B. Additionally, the team reviewed inservice test performance data for SI pump motors 3A, 3B, 4A and 4B to verify that the motor current and vibrations under full load conditions were consistent with the manufacturer’s guidelines.

The team reviewed records of preventive maintenance, surveillance tests, maintenance history, and performed field walkdowns of selected components in the SI, AFW, and MS systems to verify that the tests and inspections were appropriately verifying that the assumptions of the design and licensing bases were being maintained. This review included testing of SI and AFW pumps discharge pressures and flowrates during full and recirculation flow conditions, relief valve pressure set points, check valve operation; and analysis of pump bearing oil. A more detailed list of the components is provided in the Attachment.

b. Findings

No findings of significance were identified.

.3 Selected Components

.31 Component Degradation

a. Inspection Scope

The team reviewed condition report CR-02-0475, prepared on March 19, 2002, which determined that a failed Hagan Analog Computer, FM-4-476 was the cause of the failure of flow indicator FI-4-485. Additionally, the team reviewed the generic implications for the reliability of the Hagan instrument rack components with respect to the age-related failure mode identified in CR-02-0475. The team evaluated the short term and long term corrective actions for this issue.

The team reviewed preventive maintenance records for 125VDC batteries to assess the licensee's actions to verify and maintain the safety function, reliability, and availability of the components in the system.

The team reviewed systems with Maintenance Rule functional failures, maintenance records, condition reports, vendor bulletins, and performance trending of selected components in the SI, AFW, MS, standby steam generator feedwater system, demineralizer, instrument air, and nitrogen backup systems to verify that components that were relied upon to mitigate an SGTR event were not degrading to unacceptable performance levels. Among the selected components were AOVs, MOVs, Main Steam Safety Valves (MSSVs), check valves, pumps, and air compressors. A more detailed list of components reviewed is provided in the Attachment.

The team reviewed the licensee's analysis that justified the absence of oxygen control methods for the CST to determine if the tank could be operated with acceptably low levels of oxygen. The team also reviewed the turbine driven AFW pump steam supply piping for inclusion of steam traps. In addition, the team reviewed surveillance tests for the MSIVs to verify that stroke time requirements were met.

b. Findings

No findings of significance were identified.

.32 Equipment Protection/Loose Parts Monitoring

a. Inspection Scope

The team performed field walkdowns of selected components in the SI, MS, and AFW systems to verify that the components were adequately protected from the potential effects of missiles, flooding, high winds, impacts from other equipment and scaffolding as well as high or low outdoor temperatures.

The team reviewed current work orders and other records for the metal impact monitor system (MIMS) to determine if the system was operational and was being used by the licensee to monitor for loose parts in the RCS and SGs consistent with the licensing and design basis for the plant. The team reviewed with operators in the control room how the MIMS was used based on annunciator response requirements. The team reviewed applicable ARPs and ONOPs to evaluate plant response to MIMS alarms.

b. Findings

No findings of significance were identified.

.33 Component Inputs/Outputs

a. Inspection Scope

The team reviewed MOV operator torque requirements calculations for the Unit 3 SI discharge MOVs as well as the Boric Acid Transfer MOVs and evaluated their capability to perform their design safety function under degraded voltage conditions.

b. Findings

No findings of significance were identified.

.34 Environmental Qualification

a. Inspection Scope

The team reviewed preventive maintenance records for selected Class 1E electrical equipment to verify that environmental qualification test report requirements, where applicable, were being adequately implemented.

The team reviewed environmental qualification requirements in the vendor manuals for major components in the AFW, MS, and SI systems. The team then performed field walkdowns of the components to assess suitability of the environment in terms of temperature and humidity anticipated under accident conditions, including high energy line breaks.

b. Findings

No findings of significance were identified.

.35 Operating Experience

a. Inspection Scope

The team reviewed the licensee’s dispositions of operating experience reports applicable to the SGTR event to verify that applicable insights from those reports had been applied to the appropriate components. The team specifically reviewed recent operator lesson plans to verify that applicable significant operating experience report insights were being incorporated into operator lesson plans and training. The specific operating experience documents reviewed are listed in the Operating Experience Documents section of the Attachment to this report.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed the adequacy of plant change/modification PC/M-00006. This plant modification was developed and implemented by the licensee to correct a problem with the Westinghouse 7100 Hagan comparators. This was a component level design change for the steam generator narrow range level loop instrumentation.

The team reviewed a sample of Condition Reports (CRs) initiated over the past three years for systems, structures, or components, and/or processes required to mitigate an SGTR event to confirm that the licensee was adequately identifying, evaluating, and dispositioning adverse conditions. In addition, open operator workaround and temporary alteration lists were reviewed to determine if the open items would hinder operators during response to an SGTR event. The specific documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings, Including Exit

The lead inspector presented the inspection results to Mr. M. Pearce and other members of the licensee staff at an exit meeting on June 24, 2004. The licensee acknowledged the findings presented. Proprietary information is not included in this inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

P. Barnes, Mechanical Design Engineer
S. Chaviano, Design Engineering Manager
C. Connelly, Health Physics Supervisor
M. Constable, Quality Assurance
P. Czaya, Licensing Engineer
R. Earl, Corrective Action Supervisor
G. Mendoza, Chemistry Supervisor
K. Mohindrou, Senior Engineering Project Manager
M. Murray, Emergency Planning Supervisor
W. Parker, Licensing Manager
M. Pearce, Plant Manager
D. Russell, Operations Training Supervisor
T. Scott, Operations
B. Stamp, Assistant Operations Manager

NRC (attended exit meeting)

H. Christensen, Deputy Director, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000250/2004008-01 05000251/2004008-01	NCV	Failure to Implement Configuration Control of Steam Generator Water High-high Level Instrument Uncertainty Calculation of Record. (Section1R.21.23)

LIST OF DOCUMENTS REVIEWED

Section 1R.21.11 - Process Medium

Instructions/Procedures
0-ONOP-103.2, Cold/Hot Weather Conditions, Revision Approval Date 3/22/04
0-OP-046, CVCS - Boron Concentration Control, Revision Approval Date 3/29/04C
0-OP-074.1, Standby Steam Generator Feedwater System, Revision Approval Date 2/6/02
0-OSP-074.3, Standby Steam Generator Feedwater Pumps Availability Test, Rev. 05/14/2001
0-OSP-075.11, Auxilliary Feedwater Inservice Test, Rev. 03/31/2004
0-OSP-075.11, Auxiliary Feedwater Inservice Test, Rev. 08/07/2002
0-PMM-062.5, Safety Injection System Hi Head Safety Injection Pump Visual Inspection, Rev. 6/12/01
0-PMM-075.2, Auxiliary Feedwater Pump General Inspection, Approval Date 1/20/04
0-PMM-74.2, Standby Steam Generator Feedwater Pump General Inspection, Rev. 09/28/2001
3-OP-018.1, Condensate Storage Tank (CST) Revision Approval Date 5/27/04
3-OP-018.1, Condensate Storage Tank, Approval Date 3/04/2002
3-OP-062, Safety Injection pages12 through 30, Approval Date 3/04/02
3-OP-074, Steam Generator Feedwater Pump, Revision Approval Date 5/27/04
3-OP-075, Auxiliary Feedwater System, Approval Date 9/30/03
3-OSP-075.10, AFW Flow Control Valve Operability Test, Rev. 02/10/2003
3-OSP-075.2, AFW Train 2 Operability Verification, Rev. 10/22/02
3-OSP-206.1, Inservice Valve Testing - Cold Shutdown, Rev. 1/29/03

Drawings
5613-M-3075, Sheet 2, Auxiliary Feedwater System Auxiliary Feedwater to Steam Generators, Rev. 12
5610-C-18-392, Condensate and Diesel Fuel Storage Tank, Rev. 5
5610-M-3074, Feedwater System Demineralized Storage & Deaeration Sheet 1-2, Rev. 24
5613-M-3062 Safety Injection System Sheet 1, Rev. 27
5613-M-3062 Safety Injection System Sheet 2, Rev. 17
5613-M-313 Setpoint List for RWST and CST, Rev. 40

UFSAR
Section 9.2, Chemical and Volume Control System
Section 9.11, Auxiliary Feedwater System
Section 10, Steam and Power Conversion System

Technical Specifications and Bases
3.1.2.2, Reactivity Control Systems Flow Paths - Operating, Amendment Nos. 144 and 139
3.1.2.3, Reactivity Control Systems Charging Pumps - Operating, Amendment Nos. 138 and 133
3.1.2.5, Reactivity Control Systems Borated Water Sources - Operating, Amendment Nos. 203 and 197
3.5.4, Emergency Core Cooling System Refueling Water Storage Tank, Amendment Nos. 138 and 133
3.7.1.2, Plant Systems Auxiliary Feedwater System, Amendment Nos. 137 and 132
3.7.1.3, Plant Systems Condensate Storage Tank, Amendment Nos. 191 and 185

3.7.1.6, Plant Systems Standby Feedwater System, Amendment Nos. 224 and 219

Calculations and Evaluations
PTN-BFJM-95-008, CST Volume/Setpoints, Rev. 03/90
SE/SS-FPL-2054, FPL/FLA RWST Maximum/Minimum Delivered Volumes, Rev. 0
PTN-BFSM-97-032, Minimum Containment Sump Level for ECCS Switchover, Rev. 2
PTN-BFSI-94-010, Condensate Storage Tank Level Indication, Rev. 3
PTN-ENG-SEMS-00-0052, Potential Impact of Oxygenated Steam Generator Impact, Rev. 0
M12-383-01, Vortex Design Evaluation of Refueling Water Storage Tank, Rev. 2
M08-266-02, Standby Steam Generator Feed Pump NPSH, Rev. 12/16/82

Miscellaneous Documents
PTN-BFSM-98-010, AFW Pump NPSH Assessment, Rev. 03/90

Section 1R.21.12 - Energy Sources

Instructions/Procedures
0-ONOP-013, Loss of Instrument Air, Revision Approval Date 1/28/03
0-OSP-075.5, AFW System Flowpath Verification, 10/31/2002
3-OSP-075.10, AFW Flow Control Valve Operability Test, Rev. 02/10/2003
3-OP-075, Auxiliary Feedwater System, Approval Date 9/30/03
PTN-BCJM-93-005, MOV GL 89-10 Diagnostic Test Data Evaluation, Rev. 4
PTN-BCJM-93-006, MOV GL 89-10 Design Database, Rev. 09

Drawings
5613-M-3075, Sheet 1, Auxiliary Feedwater System Steam to Auxiliary Feedwater Pump Turbines, Rev. 14
5613-M-3075, Sheet 3, Auxiliary Feedwater System Nitrogen Supply to Afw Control Valves, Rev. 4
5613-M-3075, Sheet 1, Auxiliary Feedwater System Steam to Auxiliary Pump Turbines, Rev 14
5610-E-1, Main Single Line Unit 4, Sheet 2, Rev. 9
5610-E-1, C-Bus Auxiliary Power Upgrade, Sheet 3, Rev. 9
5610-E-1, Main Single Line Unit 3, Sheet 1, Rev. 34
5610-T-E-1591, Operating Diagram Electrical Distribution, Sheet 1, Rev. 57
5610-T-E-1592, 125VDC & 120V Instrument AC Electrical Distribution, Sheet1, Rev. 39
5610-T-E-1592, Auxiliary 125VDC & 120V Instrument AC Electrical Distribution, Sheet 2, Rev. 1
5613-E-10, Motor Control Centers 3A, NV3A, 3B, NV3B, 3C, NV3C, Sheet 1, Rev. 39

Design Basis Documents
5610-046-DB-001, CHEMICAL AND VOLUME CONTROL SYSTEM, Rev. 11
5610-067-DB-001, PROCESS RADIATION MONITORING SYSTEM, Rev. 11
5610-075-DB-001, AUXILIARY FEEDWATER SYSTEM, Rev. 11

UFSAR
Section 9.17, Instrument Air System

Technical Specifications and Bases
3.5.2, Emergency Core Cooling Systems Eccs Subsystems - Tavg Greater than or Equal to 350 F, Amendment Nos. 212 and 206
3.7.1.2, Plant Systems Auxiliary Feedwater System, Amendment Nos. 137 and 132

Condition Reports
33010885 01, 3CM IA - Air Leak At Throttle Valve Flange, 6/11/2003
33012384 01, 3CD IA - Tripped At End Of 1 Hr Loaded Run, 07/07/2003
32019296 01, 3CD IA - Check Valve Stuck Open, 11/02/02
32018241 01, 3CD IA - Compressor Tripped / Troubleshoot, 10/17/02

Calculations
18712-473-E-01 DC Voltage Drop Calculation for Safe Shutdown, Rev. 1
PTN-BFJE-90-006 Motor Operated Valve Voltage Drop Calculation (GL 89-10), Rev. 19
PTN-BFSE-97-003, PSB-1 Voltage Analysis for Electrical Auxiliary Systems, Rev. 6
M12-222-02, Minimum Initial Nitrogen Bottle Pressure for Pressurizer PORV, Rev. 0
M08-420-32, AFW Nitrogen Backup System Flow Control Valve Manual Steady State Operation, Rev. 03/90
M08-420-22, AFW Nitrogen Backup System Low Pressure Alarm Setpoint, Rev. 03/90
M08-420-28, Auxiliary Feedwater Nitrogen Back-up System Design, Rev. 1
M08-462-03, Auxiliary Feedwater Nitrogen Back-up System Design Basis Calculation, Rev. 2

Components Referenced
SDAVs (CV-3-1606, 1607, 1608)
PORVs (PCV-3-455C, 456)

Miscellaneous Documents
4-OSP-075.7, Auxiliary Feedwater Train 2 Back-up Nitrogen Test, Rev. 05/27/04
PTN-BFSM-98-011, Auxiliary Feedwater Nitrogen Back-up System Design Basis, Rev. 0
PTN-BFSI-98-004, AFW Nitrogen Back-up Low Pressure Alarm Setpoint Uncertainty Determination, Rev. 0

Section 1R.21.13 - Instrumentation and Controls

UFSAR
Section 7.5.4, Regulatory Guide 1.97, Revision 3
Section 14.2.4, Steam Generator Tube Rupture
Table 7.5.-1, Parameter Listing Summary Sheets Unit 3 Turkey Point

Calculations
Calculation No. PTN-BFJI 94-006, Refueling Water Storage Tank Level Uncertainty Determination, Revision 3

Surveillance Test Procedures
Calibration Procedure 3-PMI-071.3, Steam Generator Level (Narrow Range) Protection Instrumentation Set II L-475 Channel Calibration, dated May 26, 2004

Calibration Procedure 3-PMI-071.3, Steam Generator Level (Narrow Range) Protection Instrumentation Set II L-495 Channel Calibration, dated May 27, 2004
Calibration Procedure 3-PMI-071.4, Steam Generator Level (Narrow Range) Protection Instrumentation Set III L-476 Channel Calibration, dated March 3, 2004
Calibration Procedure 3-PMI-071.4, Steam Generator Level (Narrow Range) Protection Instrumentation Set III L-486 Channel Calibration, dated March 3, 2004
Calibration Procedure 3-PMI-071.4, Steam Generator Level (Narrow Range) Protection Instrumentation Set III L-496 Channel Calibration, dated March 3, 2004
Calibration Procedure 3-PMI-071.5, Steam Generator Level (Alternate Control) L-478 Channel Calibration, dated March 4, 2000
Calibration Procedure 3-PMI-071.5, Steam Generator Level (Alternate Control) L-488 Channel Calibration, dated March 4, 2000
Calibration Procedure 3-PMI-071.5, Steam Generator Level (Alternate Control) L-498 Channel Calibration, dated March 4, 2000

Design Change Packages (DCP)
PC/M No. 99-048, RWST Level Scaling and Indication Enhancement, Revision 1, approved July 24, 2000

Section 1R.21.14 - Operator Actions

Instructions/Procedures
0-ADM-060, Steam Generator Integrity Program Administration, Revision Approval Date 9/26/02C1
0-ADM-101, Procedure Writer's Guide, Revision Approval Date 3/30/01C1
0-ADM-211, Emergency and Off-Normal Procedure Usage, Revision Approval Date 9/27/02
3-EOP-E-0, Reactor Trip or Safety Injection, Revision Approval Date 2/12/04
3-EOP-E-3, Steam Generator Tube Rupture, Revision Approval Date 3/29/04
3-EOP-ECA-0.0, Loss of All AC Power, Revision Approval Date 11/12/03
3-EOP-ECA-3.1, SGTR With Loss of Reactor Coolant - Subcooled Recovery Desired
3-EOP-ES-3.1, Post-SGTR Cooldown Using Backfill, Revision Approval Date 12/14/02
3-EOP-ES-3.2, Post-SGTR Cooldown Using Blowdown, Revision Approval Date 12/14/02
3-EOP-ES-3.3, Post-SGTR Cooldown Using Steam Dump, Revision Approval Date 12/14/02
3-ONOP-004.1, System Restoration Following Loss of Offsite Power, Revision Approval Date 3/20/03
3-ONOP-046.1, Emergency Boration, Revision Approval Date 10/30/02
3-ONOP-071.2, Steam Generator Tube Leakage, Revision Approval Date 3/26/03C
3-OP-023, Emergency Diesel Generator, Revision Approval Date 3/22/04
3-OP-062, Safety Injection, Revision Approval Date 12/02/03
3-OP-072, Main Steam System, Revision Approval Date 9/16/03
3-OP-075, Auxiliary Feedwater System, Revision Approval Date 2/15/04
4-OP-023, Emergency Diesel Generator, Revision Approval Date 12/19/03C

UFSAR
Section 11.2.3, Radiation Monitoring System
Section 14.2.4, Steam Generator Tube Rupture

Training Material
Lesson Package No. 6900123, SD-117, Auxiliary Feedwater System
Lesson Package No. 6916168, SD-068, Radiation Monitoring & Protection
Lesson Package No. 6900236, 3/4-ONOP-071.2, Steam Generator Tube Leak
Lesson Package No. 6900339, E-3, Steam Generator Tube Rupture
Lesson Plan No. 7702025, NAP-402, FPL Nuclear Division, Conduct of Operations
SES-043, SGTR / Loss of Offsite Power
SPS-049.7, S/G Tube Rupture (no failures)

Miscellaneous Documents
BASIS DOCUMENT for EOP-E-0 dated 2/12/04
BASIS DOCUMENT for EOP-E-3 dated 4/30/02
BASIS DOCUMENT for EOP-ECA-0.0 dated 4/30/02
BASIS DOCUMENT for ONOP-071.2 dated 6/28/01
EOP Setpoints Document
Westinghouse Owners Group Emergency Response Guidelines, E-0, LP Rev. 1C
Westinghouse Owners Group Emergency Response Guidelines, E-3, LP Rev. 1C

Components referenced
Condenser air ejector radiation monitors ®-3/4-15 and RAD-3/4-6417)
S/G blowdown radiation monitor ®-3/4-19)
Main steam line radiation monitor (RAD-6426)

Section 1R.21.15 - Heat Removal

Calculations and Evaluations
SEC-SAII-4669-CO, T.P. Units 3/4 SGTR Analysis For Plant Uprating
P-EC-318, CCW Evaluation for the Charging Pumps, RHR Pumps, CS Pumps, and HHSI Pumps, Rev. 0
M08-266-03, Temperature Rise Through Standby S.G.F.P. at Minimum Flow, Rev. 12/01/82

Procedures
3-OSP-075.7, Auxiliary Feedwater Train 2 Backup Nitrogen Test, 5/27/2004
3-OSP-075.2, AFW Train 2 Operability Verification, Rev. 10/22/02
0-OSP-075.11, Auxilliary Feedwater Inservice Test, Rev. 03/31/2004
0-OSP-075.11, Auxiliary Feedwater Inservice Test, Rev. 08/07/2002
3-OSP-62.4, Safety Injection System - Full Flow Test, 12/11/03
0-PMM-062.5, Safety Injection System Hi Head Safety Injection Pump Visual Inspection, Rev. 6/12/01
0-PMM-075.2, Auxiliary Feedwater Pump General Inspection, 1/20/2004

Drawings
5613-M-3030, Component Cooling Water System Sheet 1, Rev. 19
5613-M-3030, Component Cooling Water System Sheet 2, Rev. 9

Surveillance Test Procedures
3-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, Revision Approval Date 2/15/04
3-OSP-075.2, Auxiliary Feedwater Train 2 Operability Verification, Revision Approval Date 2/15/04
4-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, Revision Approval Date 2/15/04
4-OSP-075.2, Auxiliary Feedwater Train 2 Operability Verification, Revision Approval Date 2/15/04

Section 1R.21.21 - Installed Configuration

Procedures
3-OP-062, Safety Injection pages12 through 30, Approval Date 3/04/02
3-OP-075, Auxiliary Feedwater System, Approval Date 9/30/03

Drawings
5610-M-3046, Sheet 1, Chemical And Volume Control System, Boric Acid System, Rev. 24
5610-M-3075, Sheet 1, Auxiliary Feedwater System Turbine Drive For Afw Pumps, Rev. 23
5610-M-3075, Sheet 2, Auxiliary Feedwater System Auxiliary Feedwater Pumps, Rev. 15
5613-M-3032, Sheet 1, Sample System - Secondary Steam Generator Blowdown, Rev. 10
5613-M-3032, Sheet 2, Sample System - Secondary Main Steam, Rev. 4
5613-M-3047, Sheet 1, Chemical And Volume Control System Charging And Letdown, Rev. 17
5613-M-3047, Sheet 2, Chemical and Volume Control System Charging and Letdown, Rev. 38
5613-M-3062, Sheet 1, Safety Injection System, Rev. 27
5613-M-3062, Sheet 2, Safety Injection System, Rev. 17
5613-M-3072, Sheet 1, Main Steam System, Rev. 29
5613-M-3074, Sheet 1, Feedwater System, Rev. 13
5613-M-3074, Sheet 2, Feedwater System, Rev. 21
5613-M-3074, Sheet 3, Feedwater System, Rev. 16
5613-M-3074, Sheet 4, Feedwater System, Steam Generator Blowdown Recovery, Rev. 20
5610-E-1, Main Single Line Unit 4, Sheet 2, Rev. 9
5610-E-1, C-Bus Auxiliary Power Upgrade, Sheet 3, Rev. 9
5610-E-1, Main Single Line Unit 3, Sheet 1, Rev. 34
5610-T-E-1591, Operating Diagram Electrical Distribution, Sheet 1, Rev. 57
5610-T-E-1592, 125VDC & 120V Instrument AC Electrical Distribution, Sheet1, Rev. 39
5610-T-E-1592, Auxiliary 125VDC & 120V Instrument AC Electrical Distribution, Sheet 2, Rev. 1
5613-E-10, Motor Control Centers 3A, NV3A, 3B, NV3B, 3C, NV3C, Sheet 1, Rev. 39

Technical Specifications and Bases
3.4.6.2, Reactor Coolant System Operational Leakage, Amendment Nos. 137 and 132
3.7.1.1, Plant Systems Turbine Cycle Safety Valves, Amendment Nos. 172 and 166
3.7.1.5, Plant Systems Main Steam Line Isolation Valves, Amendment Nos. 137 and 132
0-ADM-536, Technical Specification Bases Control Program, Revision Date 12/23/03

Design Change Packages (DCP)
PC/M No. 00006, Hagan Enhancements, Revision 0, approved January 5, 2001.
PC/M No. 99-048, RWST Level Scaling and Indication Enhancement, Revision 1, approved July 24, 2000

Condition Reports
Condition Report No.02-0324, OEF# 2002-015, NSAL-02-4, Maximum Reliable Indicated Steam Generator Water Level,dated February 26, 2002.
Condition Report No.02-0475, FI-4-485 Indication Failed Low, dated March 20, 2002.
Condition Report No.02-2355, During Performance of 3-SMI-071.7, Steam Generator Protection Set IV (QR 25) Analog Channel Test, PC-3-486 failed to Trip on Demand, dated December 12, 2002.
Condition Report No.03-1285, FI-4-476 Indication Failed Low, dated June 5, 2003.
Condition Report No.03-1334, Sporadic Tripping of PC-4-496A Bi-stable, dated June 11, 2003.
Condition Report No.03-3989, On 11/27/2003, The Controller for FCV-3-498 was found in the Manual instead of Auto position. All attempts to return the controller to Auto were unsuccessful dated December 1, 2003
Condition Report No.04-1152, Unit 3 3C Feedwater Regulating Valve, FCV-3-498 Failed Open, dated March 15, 2004.

Miscellaneous Documents
System Checklist/Health Report, Unit 3, Aux Feedwater, Period 2004-1
System Checklist/Health Report, Unit 4, Aux Feedwater, Period 2004-1
System Checklist/Health Report, Unit 3, CVCS Boron Addition, Period 2004-1
System Checklist/Health Report, Unit 4, CVCS Boron Addition, Period 2004-1
System Checklist/Health Report, Unit 3, Process Rad Monitors, Period 2004-1
System Checklist/Health Report, Unit 4, Process Rad Monitors, Period 2004-1

Section 1R.21.22 - Operation

Instructions/Procedures
0-NCAP-103, Secondary Radiochemistry Sampling and Analysis, Revision Approval Date 5/6/04
0-NCAP-104, Primary to Secondary Leak Detection, Revision Approval Date 11/20/02
0-NCZP-032, Obtaining Steam Generator Samples, Revision Approval Date 12/16/02
0-NCZP-046.1, Boric Acid Storage Tank Sampling, Revision Approval Date 10/31/02C
0-NCZP-051.4, Obtaining Plant Effluent Samples Via the SPING Monitors During Accident Conditions, Revision Approval Date 12/8/01
3-ARP-097.CR, Control Room Annunciator Response, A 4/1, PORV/SAFETY VALVE OPEN, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, A 4/6, VCT HI/LO LEVEL, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, A 5/2, CHARGING PUMP B TRIP, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, C 1/3, SG C NARROW RANGE LO/LO-LO LEVEL, Approval Date 7/23/02

3-ARP-097.CR, Control Room Annunciator Response, C 5/3, SG C STEAM>FEED, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, C 6/1, SG A LEVEL DEVIATION, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, D 4/2, CONDENSATE STORAGE TANK HI/LO LEVEL, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, F 7/6, 4KV BUS A/B TIE BKR OVERCURRENT TRIP, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, F 8/6, 4KV SWING BUS D TIE BKR OVERCURRENT TRIP, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, G 1/1, CHARGING PUMP LO SPEED, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, G 8/2, RWST TECH SPEC MIN LEVEL, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, H 1/4, PRMS HI RADIATION, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, H 4/2, SI PP 3B MOTOR OVERLOAD, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, H 4/4, SI PP 4B MOTOR OVERLOAD, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, I 6/1, INST AIR SYSTEM HI TEMP/LO PRESS, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, I 8/2, NITROGEN STATION 1 TRAIN 1 LO PRESS, Approval Date 7/23/02
3-ARP-097.CR, Control Room Annunciator Response, X 5/6, BAST TECH SPEC LO LEVEL, Approval Date 7/23/02

Surveillance Test Procedures
0-OSP-200.1, Schedule of Plant Checks and Surveillances, Revision Date 4/13/04
3-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, Revision Approval Date 2/15/04
3-OSP-075.2, Auxiliary Feedwater Train 2 Operability Verification, Revision Approval Date 2/15/04
3-OSP-075.5, AFW Train 1 Alignment Verification Data Sheet completed 6/3/04
3-OSP-075.5, AFW Train 2 Alignment Verification Data Sheet completed 5/19/04
4-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, Revision Approval Date 2/15/04
4-OSP-075.2, Auxiliary Feedwater Train 2 Operability Verification, Revision Approval Date 2/15/04
4-OSP-075.5, AFW Train 1 Alignment Verification Data Sheet completed 6/3/04
4-OSP-075.5, AFW Train 2 Alignment Verification Data Sheet completed 5/19/04
U3 RCO MODES 1-4 performed 06-08-2004 to 06-11-2004, Revision Approval Date 5/20/04

Components Referenced
SDAVs manual isolation valves (3-10-001, 002, 003)
AFW flow control valves (CV-3-2816, 2817, 2818, 2831, 2832, 2833)
Boric Acid Transfer Pumps (3A, 3B, 4A, 4B)

Boric Acid Tanks (A, B, C)
Volume Control Tank

Section 1R.21.23 - Design

Procedures
3-OP-074, Steam Generator Feedwater Pump, Revision Approval Date 5/27/04
0-OSP-074.3, Standby Steam Generator Feedwater Pumps Availability Test, Rev. 05/14/2001

UFSAR
Section 9.11, Auxiliary Feedwater System
Section 7.5.4, Regulatory Guide 1.97, Revision 3
Section 14.2.4, Steam Generator Tube Rupture
Table 7.5.-1, Parameter Listing Summary Sheets Unit 3 Turkey Point

Technical Specifications and Bases
3.7.1.2, Plant Systems Auxiliary Feedwater System, Amendment Nos. 137 and 132
TS Section 3/4.3.3, Monitoring Instrumentation
TS Table 3.3-2, Engineered Safety Features Actuation System Instrumentation
TS Table 3.3-3, Engineered Safety Features Actuation System Instrumentation Trip Setpoints

Design Basis Documents
5610-075-DB-001, Turkey Point - Auxiliary Feedwater System, Rev. 11
5610-062-DB-001, Turkey Point - Safety Injection System Appendix A, Rev. 11
5610-062-DB-002, Turkey Point - Safety Injection System Appendix A, Rev. 11
5610-050-DB-001, Turkey Point - Residual Heat Removal, Rev. 11
5610-072-DB-001, Turkey Point - Main Steam Isolation Valve Assemblies, Rev. 11
5610-030-DB-001, Turkey Point - Component Cooling Water System, Rev. 11
5610-013-DB-001, Turkey Point - Instrument Air System, Rev. 11

Calculations
M12-222-02, Minimum Initial Nitrogen Bottle Pressure for Pressurizer PORV, Rev. 0
M08-266-02, Standby Steam Generator Feed Pump NPSH, Rev. 12/16/82
M08-266-03, Temperature Rise Through Standby S.G.F.P. at Minimum Flow, Rev. 12/01/82
M08-420-32, AFW Nitrogen Backup System Flow Control Valve Manual Steady State Operation, Rev. 03/90
M08-420-22, AFW Nitrogen Backup System Low Pressure Alarm Setpoint, Rev. 03/90
M08-420-25, Standby Steam Generator Feedwater System, Rev. 1
M08-420-26, Exposure Dose Calculation for Manual Operation of AFW Nitrogen Bottles under Post-Accident Conditions, Rev. 0
M08-420-28, Auxiliary Feedwater Nitrogen Back-up System Design, Rev. 1
M08-462-03, Auxiliary Feedwater Nitrogen Back-up System Design Basis Calculation, Rev. 2
M08-462-05, Operator Action Time Available Based on Low Pressure Alarm in the Nitrogen Back-up Supply System, Rev. 2
PTN-BFJE-94-002, Battery Size and Voltage Drop Calculations for Stationary Batteries 3A, 3B, 4A, and 4B, Rev. 4.
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SE/SS-FPL-2054, FPL/FLA RWST Maximum/Minimum Delivered Volumes, Rev. 0
PTN-BFSM-97-032, Minimum Containment Sump Level for ECCS Switchover, Rev. 2
PTN-BFSI-94-010, Condensate Storage Tank Level Indication, Rev. 3
PTN-ENG-SEMS-00-0052, Potential Impact of Oxygenated Steam Generator Impact, Rev. 0
PTN-BFJI-93-019, Steam Generator Level Instrument Loop Uncertainty, Revision 0, dated December 4, 1993
21701-566-J01, Steam Generator (S/G) Level Transmitter Scaling Determination, Revision 1, dated January 13, 1993
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CN-TSS-94-54, FPL Uprating initial Conditions Calculations Turkey Point Units 3 and 4, Revision 6A, dated September 22, 1995
CN-TSS-94-54, FPL Uprating initial Conditions Calculations Turkey Point Units 3 and 4, Revision 9, dated November 13, 1995
WCAP-12745, Westinghouse Setpoint Methodology for Protection Systems, Turkey Point Units 3 and 4, Thermal Uprate Project, Revision 1,dated December 1995

Drawings
5610-M-1100-132, Valve Assembly Mark II, 4", CL. 900 100 SQ IN, Air to Open, Torkmatic Actuator, Rev. 3
5613-M-3050, Residual Heat Removal System Sheet 1, Rev. 25
5613-M-3072, Main Steam System Sheet 1, Rev. 29
5613-J838, RPS/ESFAS Input Parameters References and Assumptions, Sheet 2, Revision 2.
5613-J838, RPS/ESFAS Input Parameters NIS Functions, Sheet 3, Revision 2.
5613-J838, RPS/ESFAS Input Parameters Pressure Channels, Sheet 4, Revision 6.
5613-J838, RPS/ESFAS Input Parameters DP Pressure Channels, Sheet 5, Revision 4.
5613-J838, RPS/ESFAS Input Parameters DP Pressure Channels, Sheet 5A, Revision 2.
5613-J838, RPS/ESFAS Input Parameters Electrical Protection, Sheet 6, Revision 2.
5613-J838, RPS/ESFAS Input Parameters Electrical Protection, Sheet 7, Revision 1.
5613-J838, RPS/ESFAS Input Parameters Containment Radiation, Sheet 8, Revision 2.
5613-J838, RPS/ESFAS Input Parameters Overtemperature Delta-t, Sheet 9, Revision 3.
5613-J838, RPS/ESFAS Input Parameters Overpower Delta-t, Sheet 10 Revision 3.
5613-J838, RPS/ESFAS Input Parameters T-avg, Sheet 11 Revision 3.
5613-J838, RTDP Input Parameters Document Control Channels, Sheet 12 Revision 1.
5613-J838, RTDP Input Parameters Document Flow Calorimetric, Sheet 13, Revision 1.
5613-J838, RTDP Input Parameters Document Power Calorimetric, Sheet 14, Revision 1.
5613-j-839, Instrument Setpoints, Sheet 1, Revision 2
5613-J-839, Instrument Setpoints, Sheet 1A, Revision 0
5613-J-839, Instrument Setpoints, Sheet 3, Revision 7
5610-J-844, Scaling Diagram, S/G A Level Narrow Range (L-474), Sheet 8A1, Revision 1
5610-J-844, Scaling Diagram, S/G A Level Narrow Range (L-475), Sheet 8A2, Revision 1
5610-J-844, Scaling Diagram, S/G A Level Narrow Range (L-476 , L-478), Sheet 8A3, Revision 1
5613-M-3074, Feedwater System, Sheet 3, Revision 16
5610-T-D-17, Steam Generator Level Control and Protection, Sheet 1, Revision 24.
5610-T-L1, Turbine Trips, Sheet 3, Revision 15.

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5610-M-430-257, Steam Generator A Protection Channel II & III Sheet 1, Revision 5, (Level transmitter No. LT-3-476 Instrument loop)
5610-M-430-257, Steam Generator A Protection Channel II & III Sheet 2, Revision 1, (Level Transmitter No. LT-3-475 Instrument loop)
5610-M-430-258, Steam Generator B Protection Channel II & III Sheet 1, Revision 4, (Level Transmitter No. LT-3-485 Instrument loop)
5610-M-430-258, Steam Generator B Protection Channel II & III Sheet 2, Revision 1, (Level Transmitter No. LT-3-486 Instrument loop)
5610-M-430-259, Steam Generator C Protection Channel II & III Sheet 1 Revision 4, (level Transmitter No. LT-3-496 Instrument loop)
5610-M-430-254, Steam Generator A Protection Channel I & Wide Range Level, Sheet 2, Revision 2

Miscellaneous Documents

2004-3137-CR, C AFW Pump Discharge Piping Warm To The Touch 06/08/2004
04-0300, Review of Applicability for Flow Orifices in AFW Pump Recirculation IN04-01, 03/25/04
4-OSP-075.7, Auxiliary Feedwater Train 2 Back-up Nitrogen Test, Rev. 05/27/04
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PC/M No. 86-175, Summary of Revised Low Pressure Alarm Setpoint and Tolerance on the Trip Setpoint Change Request 1
Evaluation No. 035287, Impeller A296 or A743 Grade CA-15, or A743 Grade CA6NM for Worthington Pump Model 3WTS-811, 11/04/94
PTN-BFSM-98-010, AFW Pump NPSH Assessment, Rev. 03/90
PTN-BFSM-98-011, Auxiliary Feedwater Nitrogen Back-up System Design Basis, Rev. 0
PTN-BFSI-98-004, AFW Nitrogen Back-up Low Pressure Alarm Setpoint Uncertainty Determination, Rev. 0
PTN-BFJM-80-001, PTP-3 & 4 RWST Venting Analysis, Rev. 05/91
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MSP 03-006, Auxiliary Feedwater Pump, S/N 0368-88, Refurbishment, Rev. 1
VTM A2223 Installation, Operation And Maintenance For CNTAM Pump, JPN 3
NRC Information Notice 04-01, Auxiliary Feedwater Punp Recirculation Line Orifice - Potential Common Cause Failure
Standby Steam Generator Feed Pump Oil Analysis for Two Years
Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 163 to facility Operating License No. DPR-31, and Amendment No. 157 to facility Operating License No. DPR-41,
NRC Generic letter 89-19, Request for Action Related to resolution of Unresolved Safety Issue A-47, “ Safety Implications of Control Systems in LWR Nuclear Power Plants” Pursuant to 10cfr 50.54(f)-Generic Letter 89-19, dated September 20, 1989.
NRC Administrative Letter 98-10, Disposition of Technical Specifications that are Insufficient to Assure Plant Safety, dated December 29, 1998

FPL/WEC Design Interface Procedure STD-F-004, Design Interface Procedure between Florida Power and Light and Westinghouse Electric Company, LLC for Turkey Point Units 3 & 4, Revision 16, Attachment 3 Amendment 3, 5/30/03.

Components

Pumps
SI 3A, 3B (SI pumps)
TDAFW P2A, P2B, P2C (AFW pumps)
Standby Feedwater Pumps A and B

AOVs
PCV-3-455C, 456 (Pressurizer PORVs)
CV-3-2816, 2817, 2818, 2833, 2832, 2831 (AFW FCVs)

Valves
3-20-401 (CST to AFW pumps suction check valve)
3-20-400, 144, 244, 344 (CST unit 3 to AFW pumps suction manual valve)
4-20-400, 144, 244, 344 (CST unit 4 to AFW pumps suction manual valve)

Section 1R.21.24 - Testing and Inspection

Completed Work Orders
33017061, 125VDC Station Battery 3A Quarterly Maintenance, 1/12/04
33020853, 125VDC Station Battery 3A Quarterly Maintenance, 4/05/04
33022759, 125VDC Station Battery 3B Quarterly Maintenance, 4/19/04
33017114, 125VDC Station Battery 3B Quarterly Maintenance, 1/26/04
99016075, Overhaul POV-3-2604, 3/25/00
96014466, Overhaul POV-3-2606, 4/2/97
97001258, Overhaul POV-2606 & Perm. Repair Hinge Pin Cover, 10/4/97
95022522, Overhaul POV-4-2604, 3/30/96
30010579, POV-4-2605 MSIV Schedule Valve Overhaul, 11/4/03
31006598, POV-2605 Overhaul Valve, 3/27/03
31010007, POV-2604 MSIV “A” Actuator Testing, 10/20/01
31010012, POV-2605, MSIV “B” Actuator Testing, 10/20/01
31010089, POV-2606, MSIV “C” Actuator Testing, 10/20/01
31022726, POV-4-2604 Actuator Surveillance, 3/24/02
31022758, POV-4-2605 Actuator Surveillance Test, 3/24/02
31022784, POV-4-2606 MSIV “C” Actuator Testing, 3/24/02
32007540, POV-2604, MSIV “A” Actuator Testing, 3/11/03
32007541, POV-2605, MSIV “B” Actuator Testing, 3/18/03
32007542, POV-2606, MSIV “C” Actuator Testing, 3/16/03
33002928, POV-4-2604 Actuator Surveillance, 10/12/03
33005130, POV-4-2605 Actuator Surveillance Test, 10/29/03
33005183, POV-4-2606 Actuator Surveillance Test, 10/23/03
33008386, 3P215B Inspection, 8/21/03

Completed Calibration Reports
98-0024, Bus Tie Breaker to 3D Bus Overcurrent Type IAC Test Report, 10/9/98
98-0027, 3A EDG Breaker Overcurrent Type IAC Test Report, 10/9/98
99-0102, Aux. Trans. Tie Overcurrent Type IAC Test Report, 3/6/00
99-0116, Tie Breaker to 3D Bus Overcurrent Type IAC Test Report, 3/6/00
99-0117, 3B EDG Overcurrent Type IAC Test Report, 3/6/00
99-0119, Bus Tie to 3A Bus Overcurrent Type IAC Test Report, 3/6/00
01-0038, Aux. Trans. Tie Overcurrent Type IAC Test Report, 10/06/01
01-0038, Bus Tie Breaker Overcurrent Type IAC Test Report, 10/06/01
01-0038, Bus Tie Breaker to 3D Bus Overcurrent Type IAC Test Report, 10/6/01
01-0038, 3A EDG Breaker Overcurrent Type IAC Test Report, 10/6/01
03-0015, Aux. Trans. Tie to 3B Bus Overcurrent Type IAC Test Report, 3/6/03
03-0015, 3B EDG Overcurrent Type IAC Test Report, 3/6/03
03-0015, Bus Tie to 3A Bus Overcurrent Type IAC Test Report, 3/6/03

Surveilance Test Procedures
Surveillance Test Procedure, 3-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (First quarter 2004)
Surveillance Test Procedure,3-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (First quarter 2004)
Surveillance Test Procedure,3-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (First quarter 2004)
Surveillance Test Procedure, 3-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (Second Quarter 2004)
Surveillance Test Procedure,3-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (Second Quarter 2004)
Surveillance Test Procedure,3-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (Second Quarter 2004)
Surveillance Test Procedure, 3-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (Fourth Quarter 2003)
Surveillance Test Procedure,3-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (Fourth Quarter 2003)
Surveillance Test Procedure,3-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (Fourth Quarter 2003)
Surveillance Test Procedure, 3-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (Third Quarter 2003)
Surveillance Test Procedure,3-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (Third Quarter 2003)
Surveillance Test Procedure,3-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (Third Quarter 2003)
Surveillance Test Procedure, 4-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (First quarter 2004)
Surveillance Test Procedure,4-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (First quarter 2004)
Surveillance Test Procedure,4-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (First quarter 2004)

Surveillance Test Procedure, 4-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (Second Quarter 2004)
Surveillance Test Procedure,4-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (Second Quarter 2004)
Surveillance Test Procedure,4-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (Second Quarter 2004)
Surveillance Test Procedure, 4-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (Fourth Quarter 2003)
Surveillance Test Procedure,4-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (Fourth Quarter 2003)
Surveillance Test Procedure,4-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (Fourth Quarter 2003)
Surveillance Test Procedure, 4-SMI-071.1, Steam Generator Protection Set I (QR-3), Analog channel Test, (Third Quarter 2003)
Surveillance Test Procedure,4-SMI-071.2, Steam Generator Protection Set II (QR-13), Analog channel Test, (Third Quarter 2003)
Surveillance Test Procedure,4-SMI-071.4, Steam Generator Protection Set III (QR-16), Analog channel Test, (Third Quarter 2003)

Condition Reports
CR 96-999, For 96-040, Failure of MSSV to Close after Actuation, 8/6/96
CR 02-1526, Unit 3 Local Indication for AFW Flow Oscillationg, 8/5/02
CR 02-1639, Water Observed Dripping from beneath insulated Train 2 Steam piping, 8/21/02
CR 03-0649, During 3-OSP-206.1, CV-3-1607 and 1608 failed the stroke times for Closure, 3/13/03
CR 04-1316, External Pipe Corrosion in AFW Feedwater Hanger Area, 3/22/04

Procedures
3-OSP-041.4, Overpressure Mitigating System Nitrogen Back-up Leak and Functional Test, Rev. 3/7/03
3-OSP-072.5, MSSV Setpoint Verification Test, Rev. 02/20/2003
3-OSP-075.10, AFW Flow Control Valve Operability Test, Rev. 02/10/2003
3-OSP-075.2, AFW Train 2 Operability Verification, Rev. 10/22/02
3-OSP-206.1, Inservice Valve Testing - Cold Shutdown, Rev. 1/29/03
0-OSP-075.11, Auxilliary Feedwater Inservice Test, Rev. 03/31/2004
0-OSP-074.3, Standby Steam Generator Feedwater Pumps Availability Test, Rev. 05/14/2001
0-PMM-74.2, Standby Steam Generator Feedwater Pump General Inspection, Rev. 09/28/2001
0-PMM-062.5, Safety Injection System Hi Head Safety Injection Pump Visual Inspection, Rev. 6/12/01
0-OSP-075.11, Auxiliary Feedwater Inservice Test, Rev. 08/07/2002
0-GMM-102.1, Valve Repacking, Rev. 4/17/03
0-GMM-072.3, Steam Generator Valve Repair Procedure, Rev. 12/7/01C
0-CMM-072.1, Main Steam Isolation Valve Repair, Rev. 2/7/00C
3-PMI-072.10, MSIV Actuator Surveillance and Overhaul, Rev. 1/12/01
4-PMI-072.10, MSIV Actuator Surveillance and Overhaul, Rev. 1/12/01

Drawings
5613-M-3075, Auxiliary Feedwater System Nitrogen Supply to AFW Control Valves Sheet 3, Rev. 4
5613-M-3020, Primary Water Makeup System Sheet 1, Rev. 17
5613-M-3041, Reactor Coolant System Sheet 1, Rev. 21
5613-M-3041, Reactor Coolant System Sheet 2, Rev. 32
5613-M-3041, Reactor Coolant System Sheet 4, Rev. 7
5613-M-3047, Chemical and Volume Control System Charging and Letdown Sheet 1, Rev. 17
5613-M-3047, Chemical and Volume Control System Charging and Letdown Sheet 2, Rev. 38

Miscellaneous Documents
SI and AFW, Analysts Maintenance Labs Oil Analysis for Two Years
Standby Steam Generator Feed Pump Oil Analysis for Two Years

Components

Pumps
SI 3A, 3B (SI pumps)
TDAFW P2A, P2B, P2C (AFW pumps)
Standby Feedwater Pumps A and B

AOVs
PCV-3-455C, 456 (pressurizer PORVs)
CV-3-1606, 1607, 1608 (ADVs)

Relief valves
RV-3-1400 through 1403, 1405 through 1408, 1410 through 1413 (MSSVs)

Closing stroke times
POV-2604 through 2606 (MSIVs)

Check valves
20-143, 20-243, 20-343 (AFW discharge check valves)

Section 1R.21.31 - Component Degradation

Calculations and Analyses
PTN-BFSM-02-005, AOV Program - Atmospheric Dump Valve/Actuator Capability, Rev. 1
PTN-BFSM-02-002, AOV Program - Auxiliary Feedwater (AFW) FCV Valve Actuator Capability, Rev. 1
PTN-BFSM-02-001, AOV Program - Power Operated Relief Valve (PORV) Valve/Actuator Capability, Rev. 1
PTN-BFSM-02-003, AOV Program - Main Steam Isolation Valve (MSIV) Valve/Actuator Capability, Rev. 0
M12-169-01, Air Accumulator to Replace Nitrogen Bottles for the MSIVs, Rev. 1
M12-169-02, MSIV Air Accumulator Sizing, Rev. 3

Condition Reports

Condition Report No.02-0475, FI-4-485 Indication Failed Low, dated March 20, 2002.

Completed Work Orders

20041945, Boot Needs Replacing, 06/18/91
23018796, Valve is 40% Open (should be closed), 07/07/93
28014770, CV-4-1512A Broken Stem Boot, 07/30/98
29016755, PCV-456 Pzr. PORV Inspect/Test, 3/17/00
30004120, SV-3-455C, Leaks Nitrogen, 3/17/00
31004560, T.S. Pzr. PORV PCV-456 / Inspect / Adjust, 10/14/01
31014561, Replace RV-4-6587 N2 B/U Supply to PORV RV, 10/12/03
31018536, Cal PI-4-4885A/B N2 to PORV PCV-456, 10/12/03
31018539, Cal PI-4-4886A/B N2 to PORV PCV-455C, 10/12/03
31019719, PCV-3-4886, Drifts Low, 3/14/03
31022726, POV-4-2604 Actuator Surveillance, 3/24/02
31022758, POV-4-2605 Actuator Surveillance Test, 3/24/02
32007542, POV-2606, MSIV “C” Actuator Testing, 3/16/03
33002928, POV-4-2604 Actuator Surveillance, 10/12/03
33005130, POV-4-2605 Actuator Surveillance Test, 10/29/03
33005183, POV-4-2606 Actuator Surveillance Test, 10/23/03
91058342, Sealtite Outer Jacket is Ripped and Peeled Back, 11/07/92
98007165, T.S. Pzr. PORV PCV-456 Replace Diaphram, 10/01/98
99014213, RV-6587 N2 Back-up Supply to PORV, 3/20/00

Drawings

5610-M-3075, Auxiliary Feedwater System Turbine Drive for AFW Pumps Sheet 1, Rev. 22
5610-M-3075, Auxiliary Feedwater System Auxiliary Feedwater Pumps Sheet 2, Rev. 15
5613-M-3013, Instrument Air System Air Compressors Sheet 1, Rev. 23
5613-M-3013, Instrument Air System Turbine Building Sheet 2, Rev. 14
5613-M-3013, Instrument Air System Turbine Building Sheet 3, Rev. 6
5613-M-3013, Instrument Air System Turbine Building Sheet 4, Rev. 8
5613-M-3013, Instrument Air System Turbine Building Sheet 5, Rev. 11
5613-M-3013, Instrument Air System Auxiliary Building Sheet 8, Rev. 13
5613-M-3013, Instrument Air System Auxiliary Building Sheet 9, Rev. 14
5613-M-3013, Instrument Air System Auxiliary Building Sheet 10, Rev. 14
5613-M-3013, Instrument Air System Auxiliary Building Sheet 11, Rev. 6

Miscellaneous Documents

2003-1009-CR, PM Program Does Not Include AFW Terry Turbine Trip and Throttle Valves
2004-211-CR, External Pipe Corrosion in AFW Feedwater Hanger Area, 3/22/04
2004-3099-CR, Unit 3A Hi-Head Safety Injection Pump Seal Leakoff Leakage
0-PMM-075.2, Auxiliary Feedwater Pump General Inspection
SI and AFW, Analysts Maintenance Labs Oil Analysis for Two Years
Standby Steam Generator Feed Pump Oil Analysis for Two Years
TP-611, MSIV Closing Test Under Low Air Accumulator Pressure, 07/20/90
System Analysis For Implementation Of The NRC Maintenance Rule, RWST and CST

3-PMI-041.39, RCS PORV Actuator Overhaul/Maintenance PCV-3-455C and PCV-3-456 pages 28-29, 03/09/03

Components

Pumps
SI 3A, 3B (SI pumps)
TDAFW P2A, P2B, P2C (AFW pumps)

AOVs
PCV-3-455C, 456 (pressurizer PORVs)
CV-3-2816, 2817, 2818, 2833, 2832, 2831 (AFW FCVs)
CV-3-1606, 1607, 1608 (ADVs)

Relief valves
RV-3-1400 through 1403, 1405 through 1408, 1410 through 1413 (MSSVs)

Valves
POV-3-2604, 2605, 2606 (MSIVs)
MOV-3-864A, B, C (RWST to SI pumps suction)
3-886A, B (RWST to SI pumps suction)
SV-456A, 456, 455D, 455C (pressurizer PORV IA solenoid valves)
1512, 1511, 245, 255, 246, 256 (pressurizer PORV IA check valves)
RV-3-6587, 6588 (pressurizer PORV IA relief valves)
3-20-401 (CST to AFW pumps suction check valve)
3-20-400, 144, 244, 344 (CST unit 3 to AFW pumps suction manual valve)
4-20-400, 144, 244, 344 (CST unit 4 to AFW pumps suction manual valve)

Section 1R.DS1.32 - Loose Parts Monitoring

Instructions/Procedures
3-ONOP-099.1, Response to Metal Impact Monitor Alarm, Revision Approval Date 4/17/97C
3-ARP-097.CR, Control Room Annunciator Response, G 4/3, RCS METAL IMPACT, Approval Date 7/23/02

Condition Reports
CR 03-0774, Reactor Upper Head Accelerometers Maintenance Not Performed During Scheduled Outage, dated 3/20/03

Completed Work Orders and Work Requests
31022885 dated 03/31/02
31022287 dated 03/31/02

Plant Specific Technical Guidelines Documents
3-PMI-099.2, Loose Parts Monitoring System Calibration, Revision Date 6/24/03

Section 1R.21.33 - Component Inputs/Outputs

Drawings
5610-E-1, Main Single Line Unit 4, Sheet 2, Rev. 9
5610-E-1, C-Bus Auxiliary Power Upgrade, Sheet 3, Rev. 9
5610-E-1, Main Single Line Unit 3, Sheet 1, Rev. 34
5610-T-E-1591, Operating Diagram Electrical Distribution, Sheet 1, Rev. 57
5610-T-E-1592, 125VDC & 120V Instrument AC Electrical Distribution, Sheet1, Rev. 39
5610-T-E-1592, Auxiliary 125VDC & 120V Instrument AC Electrical Distribution, Sheet 2, Rev. 1
5613-E-10, Motor Control Centers 3A, NV3A, 3B, NV3B, 3C, NV3C, Sheet 1, Rev. 39

Calculations
PTN-BFJE-90-006 Motor Operated Valve Voltage Drop Calculation (GL 89-10), Rev. 19
PTN-BFJE-92-032 125 VDC Valve Actuator Motor Voltage Drop Calculation (GL 89-10), Rev. 0

Section 1R.21.34 - Environmental Qualification

Completed Work Orders
33017061, 125VDC Station Battery 3A Quarterly Maintenance, 1/12/04
33020853, 125VDC Station Battery 3A Quarterly Maintenance, 4/05/04
33022759, 125VDC Station Battery 3B Quarterly Maintenance, 4/19/04
33017114, 125VDC Station Battery 3B Quarterly Maintenance, 1/26/04
34001942, 125VDC Station Battery 3A Weekly Maintenance, 5/24/04
34001941, 125VDC Station Battery 3B Weekly Maintenance, 5/24/04
34001952, 125VDC Station Battery 4A Weekly Maintenance, 5/24/04
34001949, 125VDC Station Battery 4B Weekly Maintenance, 5/24/04
34001977, 125VDC Station Battery 3A Weekly Maintenance, 6/01/04
34001975, 125VDC Station Battery 3B Weekly Maintenance, 6/01/04
34001987, 125VDC Station Battery 4A Weekly Maintenance, 6/01/04
34001986, 125VDC Station Battery 4B Weekly Maintenance, 6/01/04

Vendor Technical Manuals
V000126 Auxillary Feedwater Pump Vendor Technical Manual
V000234 Safety Injection Pump Vendor Technical Manual
V000281 Charging Pump Vendor Technical Manual

Section 1R.21.35 - Operating Experience

Training Documents
Lesson Package No. 6900610, Steam Generator Tube Rupture

Operating Experience Documents
OE-11813, Transport Time to Radiation Monitor During SGTR

Condition Reports Written Due To This Inspection

2004-2500-CR, Incorporation of Human Error Reduction Tools required by NAP-402 results in significant change to Operator response times during performance of Emergency Operating Procedures.
2004-2550-CR, Vital Power for Chemistry Detectors used in determining the primary to secondary leak rate.
2004-3053-CR, Editorial changes required in DBDs
2004-3069-CR, 1 hour is needed to isolate a ruptured SG vice the 30 minutes assumed by FSAR 14.2.4.
2004-3122-CR, FSAR Section 14.2.4, Steam Generator Tube Rupture, refers to the affected SG as the "faulted" SG.
2004-3126-CR; DBD Vol. 1, Auxiliary Feedwater System, in discussing the safety-related functions of AFW during a main steamline break refers to the affected SG as "ruptured."
2004-3197-CR, Revise 0-NCZP-032 for better contamination control.
2004-3220-CR, Review 0-NCAP-103 for procedural enhancements.
2004-3286-CR; HP response during Safety System Design Performance Capability Inspection
2004-3324-CR, Operations Department evaluate questions raised during NRC SSDPC inspection walkthroughs
2004-3427-CR, One RO unsure of the reason for keeping 3B PZR B/U Heaters energized.
2004-3444-CR, Present practices for Primary to Secondary Leak not fully covered by procedure
2004-3447-CR, Is 0-ONOP-103.2, Cold Weather Operations, Step 7 written appropriately to provide freeze protection to RWST level instrument lines?
2004-3462-CR, Determine if Operators should wear dosimetry outside of the RCA in case of emergency.
2004-3471-CR, During an NRC review of E-3, Steam Generator Tube Rupture, some questions arose related to the Procedure Writer's Guide (0-ADM-101).
2004-3473-CR, Concerning E-3, is an RNO step needed for step 20.d.?
2004-3475-CR, Concerning E-3, step 33.a., Makeup set for greater that RCS concentration, should specific instruction be given for step 33.a.?
2004-3484-CR, OE 11813, Transport Time to Radiation Monitor During SGTR
2004-3489-CR, E-3, step 3 and ONOP-071.2, step 29 set the ruptured SDTA valve to 1060#. WOG-ERG setpoint basis says this may result in SG code safety lifting first when all accuracies and drifts are accounted for.
2004-3491-CR, Is one-year look-back sufficient for the enhanced OE program at PTN?
2004-3493-CR, AOV Component Engineer Unaware of FCV-3-113B issue as identified in CR03-3986
2004-3501-CR, CR 03-3986 Extent of Condition Scope
2004-3514-CR, 0-ADM-211 needs clarification in sections 5.1.2.2 and 5.1.2.3.
2004-3521-CR, CR03-4085 (FCV-3-399 not repaired during SNO) to address the condition associated with the valve.
2004-3527-CR, There appears to be a foreign object (a small piece of wood) inside the overflow line at U3 RWST.
2004-3540-CR, Should a specific procedure be developed or specific pre-planning occur to respond to an overflowing RWST?
2004-3546-CR, Expanded discussion for 2004-3501-CR

2004-3416-CR, Calculations not “superseded” in Passport
2004-3510-CR, MSSV cotter plate missing setscrews
2004-3523-CR, Use of cotter pins in MSSVs

Section 1R.21.4 - Identification and Resolution of Problems

Condition Reports
CR 03-0147, Process Radiation Monitor R-15 spiked and alarmed during the Unit 3 manual reactor trip.
CR 03-0489, FCV-3-499 testing provided out of tolerance data
CR 03-0548, 3SJAE Pump tripped and would not restart.
CR 03-1169, FCV-3-499 valve positioner left out of calibration
CR 03-2061, FCV-4-113A has flow isolations while borating.
CR 03-2623, QA finding # 1, Audit Report QAO-PTN-03-006
CR 03-2624, QA finding # 2, Audit Report QAO-PTN-03-006
CR 03-3000, CV-4-1607 and CV-4-1608 failed closing time tests
CR 03-3558, QA finding # 3, Audit Report QAO-PTN-03-006
CR 03-3067, Unexpected Increase in RCS Level During Outage
CR 03-3986, FCV-4-113B tubing to actuator air leak
CR 03-3991, FCV-4-113B degraded condition requiring operator compensation
CR 03-4085, FCV-3-499 failed to work as expected
CR 04-0235, 3SAJE Pump Tripped and Would Not Restart.
CR 04-0427, The SJAE SPING Particulate Filters Clog and Remove the SPING from Service.
02-1051, “Potential Part 21 - Solidstate Controls - Problems with fan blade part for Solid state Controls Inverters.”, 5/24/02.
03-0733, “Lockout relay 186/3C failed to trip with normal voltage applied via relay.”, 4/17/03.
CR No.02-0324, OEF# 2002-015, NSAL-02-4, Maximum Reliable Indicated Steam Generator Water Level,dated February 26, 2002.
CR 02-0475, FI-4-485 Indication Failed Low, dated March 20, 2002.
CR 02-2355, During Performance of 3-SMI-071.7, Steam Generator Protection Set IV (QR 25) Analog Channel Test, PC-3-486 failed to Trip on Demand, dated December 12, 2002.
CR 03-1285, FI-4-476 Indication Failed Low, dated June 5, 2003.
CR 03-1334, Sporadic Tripping of PC-4-496A Bi-stable, dated June 11, 2003.
CR 03-3989, On 11/27/2003, The Controller for FCV-3-498 was found in the Manual instead of Auto position. All attempts to return the controller to Auto were unsuccessful dated December 1, 2003
CR 04-1152, Unit 3 3C Feedwater Regulating Valve, FCV-3-498 Failed Open, dated March 15, 2004.

Design Change Packages (DCP)
PC/M No. 00006, Hagan Enhancements, Revision 0, approved January 5, 2001.

Miscellaneous Documents

Quality Assurance Audit QAO-PTN-03-006, Site Engineering Functional Area Audit, dated September 12, 2003
Quality Assurance Audit QAO-PTN-02-004, Training, dated September 20, 2002

Operator Workaround Summary dated June 21, 2004
Unit 3 and Common TSA LOG-TRACKING SHEET updated 6/7/04
Unit 4 TSA LOG -TRACKING SHEET updated 6/7/04