



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

April 27, 2011

Mr. Jon A. Franke, Vice President
Crystal River Nuclear Plant (NA1B)
15760 West Power Line Street
Crystal River, FL 34428-6708

**SUBJECT: CRYSTAL RIVER UNIT 3 – NRC INTEGRATED INSPECTION REPORT
05000302/2011002**

Dear Mr. Franke:

On March 31, 2011, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Crystal River Unit 3. The enclosed integrated inspection report documents the inspection findings which were discussed on April 11, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they related to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, one self-revealing finding of very low safety significance (Green) was identified. The finding did not involve a violation of NRC requirements. Additionally, a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with the NRC Enforcement Policy. If you contest any NCV 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 20555-001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at the Crystal River Unit 3 site.

In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, RII, and the NRC Senior Resident Inspector at Crystal River Unit 3.

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 the 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/

Daniel W. Rich, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No. 50-302
License No. DPR-72

Enclosure: Inspection Report 05000302/2011002
w/Attachment: Supplemental Information

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Letter to Jon A. Franke from Daniel W. Rich dated April 27, 2011.

SUBJECT: CRYSTAL RIVER UNIT 3 – NRC INTEGRATED INSPECTION REPORT
05000302/2011002

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RidsNrrPMCrystal River Resource

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-302

License No.: DPR-72

Report No.: 05000302/2011002

Licensee: Progress Energy (Florida Power Corporation)

Facility: Crystal River Unit 3

Location: Crystal River, FL

Dates: January 1, 2011 – March 31, 2011

Inspectors: T. Morrissey, Senior Resident Inspector
R. Reyes, Resident Inspector
N. Childs, Resident Inspector
J. Sowa, Resident Inspector
L. Lake, Senior Reactor Inspector (Section 40A5)
R. Carrion, Senior Reactor Inspector (Section 40A5)
M. Bates, Senior Operations Engineer (Section R11)

Approved by: D. Rich, Chief,
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000302/2011002; 01/01/2011-03/31/2011; Crystal River Unit 3; Licensed Operator Requalification Program; Follow-up of Events and Notices of Enforcement Discretion

The report covered a three month period of inspection by resident inspectors, two regional senior reactor inspectors and one regional senior operations engineer. One Green self-revealing finding was identified. The significance of most findings is identified 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 NRC 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 4, dated December 2006.

A. NRC Identified & Self-Revealing Findings

Cornerstone: Mitigating Systems

Green: A self-revealing Green finding, associated with operating crew performance on the simulator during facility-administered requalification examination was identified. Two of the eight crews evaluated failed to pass their simulator examinations. As immediate corrective action, the failed operating crews were remediated (i.e., the operating crews were re-trained and successfully retested) prior to returning to shift. The licensee has entered this issue into the corrective action program as Nuclear Condition Report (NRC) 450196.

The inspectors determined that the crew failures constituted a performance deficiency based on the fact that licensed operators are expected to operate the plant with acceptable standards of knowledge and abilities demonstrated through periodic testing as required by 10 CFR 55.59(a)(2). Two out of eight crews of licensed operators failed to demonstrate a satisfactory understanding of the required actions and mitigating strategies required to safely operate the facility under normal, abnormal, and emergency conditions. The finding is greater than minor because the performance deficiency potentially affects the Human Performance attribute of the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding reflected the crew's potential inability to take timely actions in response to actual abnormal and emergency conditions. The cause of this finding was directly related to the cross-cutting aspect of personnel training and qualifications in the Resources component of the Human Performance area, in that the licensee failed to ensure the adequacy of the training provided to operators to assure nuclear safety. (H.2(b)) (Section 1R11)

B. Licensee Identified Violations

One violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and corrective action tracking number is listed in Section 4OA7 of this report.

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REPORT DETAILS

Summary of Plant Status:

Crystal River Unit 3 began the inspection period in Mode 5 (< 200°F). Unit 3 remained in Mode 5 for the remainder of the inspection period.

REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

.1 Adverse Weather Protection: Tornado Watch / Warning

a. Inspection Scope

On January 25, 2011, and again on March 30-31 the inspectors evaluated the licensee's preparations when the site was informed of being in a tornado watch then subsequently in a tornado warning. The licensee implemented emergency management procedure EM-220, Violent Weather, for the tornado watches and warnings. The inspectors walked down the outside protective area to ensure actions required by EM-220 were implemented. This constituted two samples representing observation of adverse weather protection activities.

b. Findings

No findings were identified. The tornado watches and warnings expired with no violent weather or tornado formation near the site.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors performed walkdowns of the critical portions of the selected trains to verify correct system alignment. The inspectors reviewed plant documents to determine the correct system and power alignments, and the required positions of select valves and breakers. The inspectors verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability. The inspectors verified the following two partial system alignments in system walkdowns using the listed documents:

- A train nuclear service water (SW) and A train raw water (RW) systems, using operating procedure OP-408, Nuclear Services Cooling System, while B trains of SW and RW were out of service for scheduled maintenance
- Emergency diesel generator EGDG-1B using OP-707, Operation of the Emergency Diesel Generators, while the EGDG-1A was out of service for surveillance testing

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

The inspectors walked down accessible portions of the plant to assess the licensee's implementation of the fire protection program. The inspectors checked that the areas were free of transient combustible material and other ignition sources. Also, fire detection and suppression capabilities, fire barriers, and compensatory measures for fire protection problems were verified. The inspectors checked fire suppression and detection equipment to determine whether conditions or deficiencies existed which could impair the function of the equipment. The inspectors selected the areas based on a review of the licensee's probabilistic risk assessment. The inspectors also reviewed the licensee's fire protection program to verify the requirements of Final Safety Analysis Report (FSAR) Section 9.8, Plant Fire Protection Program, were met. Documents reviewed are listed in the attachment. The inspectors toured the following five areas important to safety:

- Remote shut down panel, and the A and B emergency service 4160-Volt switch gear rooms
- Sea water room 95' elevation auxiliary building
- Intermediate building 95' elevation emergency feed water pump EFP-1 and EFP-2 area
- Unit 3 main control room
- Control complex control rod relay cabinet room

b. Findings

No findings were identified.

.2 Annual Fire Drill

a. Inspection Scope

On January 18 and on January 23, the inspectors observed two separate licensee fire brigade responses to a simulated fire. Both drills involved a fire in the turbine building 480V unit switchgear room 95' elevation. The inspectors checked the brigade's communications, ability to set up and execute fire operations, and their use of fire-fighting equipment. The inspectors verified compensatory actions were in place to ensure that additional alarms which may be received during the drill were addressed. Additionally, the inspectors verified that the licensee considered the aspects as described below when the brigade conducted the firefighting activities and during the post drill critique. The inspectors attended the post-drill critiques to check that the licensee's drill acceptance criteria were met and that any discrepancies were discussed and resolved. Administrative instruction AI-2205, Administration of CR-3 Fire Brigade, was reviewed to assure that acceptance criteria were evaluated and deficiencies were documented and corrected. In addition, the inspectors reviewed the storage, training, expectations for use and maintenance associated with the self-contained breathing apparatus (SCBA) program. This inspection completed one sample representing observation of selected fire drills. Documents reviewed are listed in the attachment. The inspectors observed that:

- The brigade, including the fire team leader, had a minimum of five members.
- Members set out designated protective clothing and properly donned gear.
- SCBA were available and properly used.
- Control room personal verified fire location, dispatched fire brigade and sounded alarms. Emergency action levels were declared and notifications were completed.
- Fire brigade leader as well as the control room senior reactor operator had copies of the pre-fire plans.
- Brigade leader maintained control: Members were briefed, discussed plan of attack, received individual assignments, and completed communications checks. Plan of attack discussions were consistent with pre-fire plans.
- Fire brigade arrived at the fire scene in a timely manner, taking the appropriate access route specified in the strategies and procedures.
- Control and command was set up near the fire scene and communications were established with the control room and the fire brigade members.
- Effectiveness of radio communication between the command post, control room, plant operators and fire brigade members.
- Fire hose lines reached all necessary fire hazard locations, were laid out without flow constrictions, and were simulated as being charged with water.
- The fire area was entered in a controlled manner following the two person rule.
- The fire brigade brought sufficient fire-fighting equipment to the scene to properly perform its fire-fighting duties.
- The fire brigade checked for fire victims and fire propagation into other areas.
- Effective smoke removal operations were simulated in accordance with the pre-fire plan.
- The fire-fighting plan strategies were utilized.
- The drill scenario was followed, and the drill acceptance criteria were met.
- All firefighting equipment was returned to a condition of readiness.

b. Findings

No findings were identified.

1R06 Flood Protection Measures

Internal Flood Protection

a. Inspection Scope

The Inspectors reviewed the Crystal River Unit 3, FSAR, Chapter 2.4.2.4, Facilities Required for Flood Protection, and the Crystal River Unit 3 design basis documents that depicted protection for areas containing safety-related equipment to identify areas that may be affected by internal flooding. A walkdown of the emergency feed pump EFP-1 and EFP-2 area was conducted to ensure that flood protection measures were in accordance with design specifications. Specific plant attributes that were checked included structural integrity, sealing of penetrations, and operability of sump systems.

b. Findings

No findings were identified

1R07 Heat Sink Performance

Annual Review

a. Inspection Scope

The inspectors observed maintenance personnel perform heat exchanger inspections and cleaning for the service water heat exchanger SWHE-1B. The inspector reviewed the as-found conditions when the heat exchanger was opened for inspection and tube cleaning to verify the heat exchanger was in an acceptable condition to perform its design function. In addition, the inspectors observed heat exchanger maintenance that included tube replacement and recoating of the end bell and channel head. The documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On February 1, the inspectors observed and assessed licensed operator crew response and actions for the Crystal River Unit 3 licensed operator simulator evaluated session SES-161. Session SES-161 involved two major transients: B train steam generator tube

leak; and a spurious reactor trip. The plant conditions degraded to a point where the licensee entered an Alert emergency classification. The inspectors observed the operators' use of abnormal procedures AP-545, Plant Runback; and AP-510 Rapid Power Reduction. Additionally, emergency operating procedures used during the scenario included EOP-02, Vital System Status Verification and EOP-06, Steam Generator Tube Rupture. The operators' actions were verified to be in accordance with the above procedures. Event classification and notifications were verified to be in accordance with emergency management procedure EM-202, Duties of the Emergency Coordinator. The simulator instrumentation and controls were verified to closely parallel those in the actual control room. The inspectors attended the management crew critique and evaluation to verify the licensee had entered any adverse conditions into the corrective action program. The inspectors evaluated the following attributes related to crew performance:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of abnormal and emergency operation procedures and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by supervision, including ability to identify and implement appropriate technical specification actions, regulatory reporting requirements, and emergency plan classification and notification
- Crew overall performance and interactions

b. Findings

No findings were identified.

.2 Biennial Review by Regional Inspector

a. Inspection Scope

The inspector reviewed the facility operating history and associated documents in preparation for this inspection. During the week of February 21, 2011, the inspector reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests associated with the licensee's operator requalification program. Each of the activities performed by the inspector was done to assess the effectiveness of the facility licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." Evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspector also evaluated the licensee's simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5-1998, "American National Standard for Nuclear Power Plant Simulators for Use in Operator Training and Examination." The inspector observed a crew during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift records, simulator modification request records, simulator performance test records, operator feedback

records, licensed operator qualification records, remediation plans, and medical records. The records were inspected using the criteria listed in Inspection Procedure 71111.11. Documents reviewed during the inspection are listed in the Attachment.

On February 25, 2011, the licensee completed the comprehensive biennial requalification written examinations and annual requalification operating tests required to be administered to all licensed operators in accordance with 10 CFR 55.59(a)(2). The inspector performed an in-office review of the overall pass/fail results of the written examinations, individual operating tests and the crew simulator operating tests. These results were compared to the thresholds established in Manual Chapter 0609 Appendix I, Operator Requalification Human Performance Significance Determination Process.

b. Findings

Introduction: A self-revealing Green finding, associated with operating crew performance on the simulator during facility-administered requalification examination was identified when two of eight crews failed the simulator portion of the facility-administered annual operating test. Based on the licensee's successful remediation and subsequent re-testing of individuals who failed the simulator portion of the annual operating test, no violation of regulatory requirements occurred.

Description: During the facility-administered annual operating test of licensed operators, covering the period from January 19, to February 24, 2011, the licensee's training staff evaluated crew performance during dynamic scenarios. The evaluations were performed using TRN-NGGC-0420, "Conduct of Simulator Training and Evaluation", Rev. 0. Facility results of crew performance indicated that two of eight crews (25 percent) did not pass their simulator exam. The licensee's training staff determined that two crews failed to meet the criteria for satisfactory performance of critical tasks. The crew failures of simulator operational evaluations on the 2011 annual operating test have been addressed in the licensee's corrective action program with nuclear condition report (NCR) 450196.

Analysis: The inspector determined that the crew failures constituted a performance deficiency based on the fact that licensed operators are expected to operate the plant with acceptable standards of knowledge and abilities demonstrated through periodic testing as required by 10 CFR 55.59(a)(2). Two out of eight crews of licensed operators failed to demonstrate a satisfactory understanding of the required actions and mitigating strategies required to safely operate the facility under normal, abnormal and emergency conditions. The finding was greater than minor because the performance deficiency was associated with the Human Performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding reflected the crew's potential inability to take timely actions in response to actual abnormal and emergency conditions.

The perceived risk associated with the number of crews failing the annual operating test was provided in the Simulator Operational Evaluation matrix of NRC Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)." The matrix was entered based on the number of crews that took the simulator test (eight) and the number of crews with unsatisfactory performance (two). Based on a crew failure rate of 25 percent on the simulator portion of the annual

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operating test, the fact that the failed operating crews were remediated (i.e., the operating crews were re-trained and successfully re-tested) prior to returning to shift, and because there was no similar finding the previous year, this finding was characterized by the SDP as having a very low safety significance, or Green. The cause of this finding was directly related to the cross-cutting aspect of personnel training and qualifications in the Resources component of the Human Performance area, in that the licensee failed to ensure the adequacy of the training provided to operators to assure nuclear safety. (H.2(b))

Enforcement: This finding does not involve enforcement action because no regulatory requirement violation was identified. Because this finding does not involve a violation and has a very low safety significance, it is identified as FIN 5000261/2011002-01, Two of Eight Operating Crew Failures on the Simulator Operational Evaluation Portion of the 2011 Annual Requalification Operating Test.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's effectiveness in performing routine maintenance activities. The review included the identification, scope, and handling of degraded equipment conditions, as well as common cause failure evaluations, and the resolution, of historical equipment problems. For those systems, structures, and components within the scope of the Maintenance Rule (MR) per 10 CFR 50.65 (a)(1) and (a)(2), classifications were justified in light of the reviewed degraded equipment condition. The documents reviewed are listed in the attachment. The inspectors conducted this inspection for the following four items:

- System Engineering (SE) report SE11-0006, Remove Spent Fuel Pump Motor Cooling system (AH-XG) from the Scope of the Maintenance Rule
- NCR 434362, Raw water pump RWP-2B reduced seal flush flow
- SE11-0014, Nuclear Instrumentation Source Range to Return to (a)(2)
- Inspector review of licensee's preventative maintenance program associated with components that have a recommended vendor service life. This completes the NRC review utilizing Operating Experience Smart Sample (OpESS) FY 2010-01 "Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life."

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following two NCRs to verify operability of systems important to safety was properly established, that the affected components or systems remained capable of performing their intended safety function, and that no unrecognized increase in plant or public risk occurred. The inspectors determined if operability of

systems or components important to safety was consistent with Improved Technical Specifications (ITS), the FSAR, 10 CFR Part 50 requirements, and when applicable, NRC Inspection Manual, part 9900, Technical Guidance, “Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety.” The inspectors reviewed licensee NCRs, work schedules, and engineering documents to check if operability issues were being identified at an appropriate threshold and documented in the corrective action program, consistent with 10 CFR 50, Appendix B requirements and licensee procedure CAP-NGGC- 200, Condition Identification And Screening Process. The documents reviewed are listed in the attachment.

- NCR 447026, SWHE-1B front and back channel heads corroded with several areas below the vendor recommended limit
- NCR 436065, Evaluate makeup system valve MUV-163 for possible degradation

b. Findings

No findings were identified.

1R18 Plant Modifications

Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed the engineering change (EC) 76007, Emergency Feedwater Initiation and Control Flow Circuit, to verify it met the requirements of engineering procedures EGR-NGGC-0003, Design Review Requirements, and EGR-NGGC-0005, Engineering Change. The inspectors observed the as-built configuration of the modification and observed installation, and observed testing activities associated with the modification. Documents reviewed included surveillance procedures, design and implementation packages, work orders (WOs), system drawings, corrective action documents, applicable sections of the FSAR, ITS, and design basis information. Post maintenance testing data and acceptance criteria were reviewed. The inspectors verified that issues found during the course of the installation and testing associated with the modification were entered and properly dispositioned in the licensee’s corrective action program.

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors either observed or reviewed post-maintenance test results as appropriate, for selected risk significant systems to verify whether: (1) testing was adequate for the maintenance performed; (2) acceptance criteria were clear, and adequately demonstrated operational readiness consistent with design and licensing

basis documents; (3) test instrumentation had current calibrations, range, and accuracy consistent with the application; (4) tests were performed as written with applicable prerequisites satisfied, and (5) equipment was returned to the status required to perform its safety function. The five post-maintenance tests reviewed are listed below:

- Surveillance procedure SP-354B, Monthly Functional Test of the Emergency Diesel Generator EGDG-1B, after performing maintenance per work orders (WOs) 01706861 and 01435520
- SP-344B, RWP-2B, SWP-1B and Valve Surveillance, after performing maintenance on RWP-2B and SWP-1B per WOs 1852978, 1332475, 1332477, 1848527 and 1852978
- Performance Test PT-445, Control Rod Programming Verification, after performing maintenance per WO 1893481
- SP-354C, Functional Test of the Alternate AC Diesel Generator EGDG-1C, after performing maintenance per WO 1691112
- SP-344A, RWP-2A, SWP-1A and Valve Surveillance, after performing maintenance per WO 1063292

b. Findings

No findings were identified.

1R20 Refueling and Outage Activities

Steam Generator Replacement Refueling Outage (RFO16)

a. Inspection Scope

On September 26, 2009, the unit was shutdown for a planned steam generator replacement refueling outage. The previous quarter's NRC inspection activities in this area were documented in NRC integrated inspection report 05000302/2010005. During this quarter, the inspectors observed and monitored licensee controls over the refueling outage activities listed below. Documents reviewed are listed in the Attachment.

- Outage related risk assessment monitoring
- Controls associated with shutdown cooling, reactivity management, electrical power alignments, containment closure, and spent fuel pool cooling
- Implementation of equipment clearance activities

b. Findings

No findings were identified

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed surveillance tests or reviewed the test results for the six surveillance tests listed below to verify that ITS surveillance requirements were followed and that test acceptance criteria were properly specified. The inspectors verified that

proper test conditions were established as specified in the procedures, that no equipment preconditioning activities occurred, and that acceptance criteria had been met. Additionally, the inspectors verified that equipment was properly returned to service and that proper testing was specified and conducted to ensure that the equipment could perform its intended safety function.

In-Service Test:

- SP-340A, RWP-3A, DCP-1A and Valve Surveillance

Surveillance Test:

- PT-315, Remote Shutdown Relay Operability
- SP-524, Battery Modified Performance Discharge Test (A train only)
- SP-108, Reactor Trip Module And Control Rod Drive Trip Functional Test
- SP-902 4160V ES Bus "A" Undervoltage Trip Test and Auxiliary Relay Calibration (sections 4.3 and 4.4 only)
- SP-354B Functional Test of EDG-1B (Fast Start) and EDG Loading (Sections 4.3 and 4.5)

b. Findings

No findings were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed two emergency response activities to verify the licensee was properly classifying emergency events, making the required notifications, and appropriate protective action recommendations. The inspectors assessed the licensee's ability to classify emergent situations and make timely notification to State and Federal officials in accordance with 10 CFR Part 50.72. Emergency activities were verified to be in accordance with the Crystal River Radiological Emergency Response Plan, Section 8.0, Emergency Classification System, and 10 CFR Part 50, Appendix E. Additionally, the inspectors verified that adequate licensee critiques were conducted in order to identify performance weaknesses and necessary improvements.

- February 1, license operator simulator evaluated session, SES-161, involving a steam generator tube rupture and a spurious reactor trip
- March 1, Crystal River Unit 3 2011 radiological emergency response training drill. The drill scenario included equipment failures on the operating reactor that caused the licensee to make emergency classifications and notifications and activate the technical support center (TSC) and the emergency operating facility (EOF). The inspectors observed the drill activities at the Unit 3 simulator, TSC, and the EOF. The inspectors attended the drill critiques at the TSC and EOF to verify the licensee had adequately identified any performance weaknesses and necessary improvements.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

.1 Daily Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program (CAP). This review was accomplished by attending daily plant status meetings, interviewing plant operators and applicable system engineers, and accessing the licensee's computerized database.

b. Findings

No findings were identified.

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected several NCRs documenting NRC identified deficiencies associated with spent fuel pool foreign material exclusion area (FMEA) controls for a detailed review and discussion with the licensee. These deficiencies were identified by the inspectors over the last several months. The NCRs reviewed are listed in the attachment. The NCRs were written to address improper FMEA log entries, material in the area not properly logged, and expansion of the FMEA without verifying proper cleanliness of the expanded area. The inspectors verified that the issues were completely and accurately identified in the licensee's corrective action program, safety concerns were properly classified and prioritized for resolution, the cause determination was sufficiently thorough, and appropriate corrective actions were initiated. The inspectors also evaluated the NCRs using the requirements of the licensee's CAP as delineated in corrective action procedure CAP-NGGC-200, Condition Identification and Screening Process.

b. Findings and Observations

No findings were identified. The inspectors noted that the licensee took immediate and appropriate actions to address each of the identified deficiencies. The licensee's corrective action to require an FME monitor for all entries into the spent fuel pool FMEA should prevent recurrence of similar issues. The inspectors determined that there were no identified consequences associated with the FMEA issues identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, and licensee trending efforts. The inspectors' review nominally considered the six month period of October 2010 through March 2011. The review also included issues documented in the licensee's Plant Health Committee Site Focus List – March 2011, various departmental CAP Rollup & Trend Analysis reports for the 4th quarter 2010, various nuclear assessment section reports and maintenance rule (MR) reports. Corrective actions associated with a sample of the issues identified in the licensee's corrective action program were reviewed for adequacy.

b. Assessment and Observations

No findings were identified. The inspectors evaluated the licensee's trend methodology and observed that the licensee had performed a detailed review. The inspectors' review of licensee performance over the last six months noted one negative trend associated with spent fuel pool FMEA controls. The licensee is aware of the negative trend and has implemented appropriate corrective actions. Additional detail can be found in section 4OA2.2.

4OA3 Follow-up of Events and Notices of Enforcement Discretion

(Closed) LER 05000302/2010-001-00, -01, -02 As-Found Cycle 16 Pressurizer Code Safety Valve Setpoints Outside Improved Technical Specification Limit

With Crystal River Unit 3 in No Mode (core off loaded), the licensee determined that the as-found lift setpoints of the two pressurizer code safety valves (PCSV) removed after the September 2009 unit shut down were outside Improved Technical Specification (ITS) limits. ITS 3.4.9 requires that two PCSVs shall be operable in Modes 1, 2, and 3. To be operable, the lift setpoints must be within +/- 2 percent of 2500 psig. The lift setpoints for the PCSV's were found to be 5.32 percent and 2.08 percent above the ITS setpoint respectively. The licensee concluded that both PCSVs were inoperable for a period longer than allowed by plant ITS. A root cause could not be determined.

The licensee identified a selected cause associated with the licensee's failure to manage vendor quality. The licensee failed to provide proper relief valve specifications to the vendor including a detailed testing procedure, repair plan and acceptance criteria. Corrective actions planned or completed include: changing the as-left setpoint to +0/-1 percent of the nominal setpoint; installing PCSVs with +0/-1 percent of nominal setpoint prior to unit startup; creation of a test procedure for steam testing the PCSV to meet the licensee's standards; and revision of specifications associated with PCSV repairs.

The finding was evaluated under the Significance Determination Process (SDP) using Inspection Manual Chapter 0609, Attachment 0609.04, Phase 1 - Initial Screening and Characterization of Findings, and was determined to degrade the RCS barrier under the

Enclosure

Barriers Cornerstone. Utilizing Table 4a, Attachment 0609.04, the issue was screened as needing an SDP Phase III evaluation. When notified that an SDP Phase III evaluation was required, the licensee contracted with Areva NP Inc. to analyze the impact of high as-found PCSV setpoints on peak reactor coolant system (RCS) pressure for the most limiting accident transients.

Areva Technical Data Record 12-9154488-000, CR-3 Pressurizer Code Safety Valve Analysis for Licensee Event Report, concluded that for the most limiting transients (startup accident, loss of feed water and feed water line break), the peak RCS pressure remained below the acceptance criteria for each transient and would not impact RCS integrity. Revision 02 of the LER documents this Areva NP Inc. analysis. With this additional information, the inspectors in conjunction with the Regional NRC Senior Reactor Analyst (SRA) concluded that the PCSVs, with their as-found setpoints outside of ITS limits, would have performed their safety function and a formal SDP Phase III evaluation would not be required. Therefore, the finding was determined to be of very low safety significance (Green). The inspectors determined that this violation of ITS 3.4.9, Pressurizer Safety Valves, met the criteria for a licensee-identified violation. The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

b. Finding

No findings were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Finding

No findings were identified.

.2 Steam Generator Replacement Project and Containment Wall Repair (IP 50001)

a. Inspection Scope

Steam Generator Replacement Project Activities

The inspectors reviewed the following issues:

Bulges of Liner Plate The licensee developed an engineering calculation to evaluate bulges in the CR3 liner plate. It was directed at determining an apparent cause for the bulges and establishing an analytically-based acceptance criterion for the bulges within the CR3 design basis. The analyses included finite element modeling of the liner and the associated anchorage to the concrete containment structure. The apparent cause for the bulges was determined to be a combination of elements, including geometrical imperfections in the original liner plate during construction. The calculations considered worst case configurations and a threshold for bulge size was established considering the effects that occur due to normal operation and accident conditions. The primary variables in the bulge evaluation were determined to be bulge size and thermal loading. The calculation found that the bulges have an insignificant effect on the response of the structure due to various load combinations. The current bulges are bounded by the acceptance criteria in the analysis. To ensure that conditions are acceptable in the future, the licensee planned to include bulge surveillance in the international welding engineer (IWE) program. The licensee also planned to validate the effects of retensioning on bulge size by measurement and evaluation of a representative sample before initiating Structural Integrity Test (SIT) pressurization as well as performing a complete baseline scan after completion of the SIT.

50.59 Evaluation The inspectors reviewed the licensee's evaluation of the containment building modification resulting from the introduction of the construction opening and its subsequent restoration with respect to requirements of 10 CFR, § 50.59, Changes, Tests and Experiments, to determine whether the design bases, licensing bases, and performance capability of the containment had been degraded through the modification and to determine whether the design and license basis documentation used to support changes reflected the design and license basis of the facility after the change had been made. This evaluation remained ongoing pending completion of containment repairs, completion of tendon retensioning, completion of post modification testing, and subsequent validation of design parameters.

Vertical Cracks of Containment Building The licensee determined that the vertical cracks discovered on the exterior wall of the Containment Building would close as the building's tendons were retensioned. The inspectors walked down selected vertical cracks being monitored by the licensee to evaluate their condition. The licensee had measured the cracks periodically and determined that they were closing as the tendon retensioning process continued. The inspectors also visited the tendon control center where the retensioning process was controlled and which housed the acoustic monitoring and strain gage instrumentation and interviewed personnel in the center to better understand the operation of the systems being used and how the information obtained was interpreted. Inspection in this area remained ongoing pending completion of tendon retensioning and subsequent validation of design parameters.

Tendon Retensioning Activities The inspectors reviewed the licensee's retensioning plans, procedures, and drawings. Retensioning activities began on January 4, 2011. The inspectors observed some of the retensioning work on selected hoop tendons as it was being performed to verify that the work was being conducted per approved procedures.

Structural Integrity Test (SIT) / Integrated Leak Rate Test (ILRT) Preparations The inspectors interviewed licensee personnel responsible for the planned SIT/ILRT to determine the status of the test preparations, walked down the containment building to verify the locations of the extensometers to be used to measure the containment movements during the SIT/ILRT, and discussed the licensee's procedures to assure that they conformed to industry standards and ASME Code requirements.

Events of March 14, 2011 On the afternoon of March 14, 2011, the licensee had completed the first retensioning sequence (Sequence #100, Hoop Tendons 42H41, 62H41, and 64H41) of the final pass (Pass 11). Per procedure, the licensee was waiting for the containment building to stabilize before beginning the next sequence and was monitoring the structural behavior of the containment building via acoustical emissions monitors and strain gauges, specifically placed at various points of the structure to detect any abnormal/unexpected response to tendon retensioning. During this monitoring period, the strain gauges indicated an increase in strain and then failed high, and the acoustic monitors indicated a high level of acoustic activity in the bay bordered by Buttresses 5 and 6 (Bay 5-6). Sound coming from the bay was reported to sound like "popcorn popping" by workers in the area. The phenomenon reportedly lasted for approximately twenty minutes. The licensee utilized impulse response (IR) non-destructive examination (NDE) techniques to determine the condition of the wall in Bay 5-6. The IR scans of the bay determined that there were numerous indications consistent with a delamination. By the end of the inspection period, the licensee had determined that the delamination was extensive in Bay 5-6 and was continuing to evaluate the condition of the containment structure.

b. Findings

No findings were identified.

4OA6 Exit

Exit Meeting Summary

On April 11, 2011, the resident inspectors presented the inspection results to Mr. J. Franke, Site Vice President and other members of licensee management. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

4OA7 Licensee Identified Violations

The following issue of very low safety significance (Green) was identified by the licensee and was a violation of NRC requirements. This issue met the criteria of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a non-cited violation.

Improved Technical Specification (ITS) 3.4.9 states that two pressurizer code safety valves (PCSVs) shall be operable in Modes 1, 2 and 3. To be operable, the lift setpoints must be within +/- 2 percent of 2500 psig. Contrary to the above, on September 1, 2010 and on October 5, 2010, Progress Energy was notified that the as-found lift setpoints of PCSVs RCV-9 and RCV-8 were outside ITS setpoint limits, respectively. The as-found lift setpoint of RCV-9 was 5.32 percent above the lift setpoint and RCV-8 was 2.08 percent above the lift setpoint. The licensee identified a selected cause associated with the licensee's failure to manage vendor quality. The performance deficiency, failure to provide proper relief valve specifications to the vendor, was determined to be greater than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern regarding the integrity of the reactor coolant system (RCS) barrier during plant transients. Corrective actions planned or completed include: changing the as-left setpoint to +0/-1 percent of the nominal setpoint; installing PCSVs with +0/-1 percent of nominal setpoint prior to unit startup; creation of a test procedure for steam testing the PCSV to meet the licensee's standards; and revision of specifications associated with PCSV repairs. As documented in Section 4OA3, the finding was determined to be of very low safety significance (Green) because there was no loss of safety function due to the lift setpoints being outside of the ITS limit. This issue was documented in the licensee's corrective action program as NCR 426852.

ATTACHMENT: SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

J. Holt, Plant General Manager
D. Douglas, Manager, Maintenance
S. Cahill, Director, Engineering
J. Huegel, Manager, Nuclear Oversight
P. Dixon, Manager Training
B. Wunderly, Manager, Operations
D. Westcott, Supervisor, Licensing
B. Akins, Superintendent, Radiation Protection
C. Poliseno, Supervisor, Emergency Preparedness
R. Wiemann, Acting Director, Engineering
I. Wilson, Manager Outage and Scheduling
J. Franke, Vice President, Crystal River Nuclear Plant
M. Van Sicklen, Superintendent Operations Training
R. Llewellyn, Supervisor – Operations Continuing Training

NRC personnel:

D. Rich, Chief, Branch 3, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED

Opened and Closed

05000302/2011002-01	FIN	Operating Crew Failures on the 2011 Annual Requalification Operating Test (Section 1R11.2)
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Closed

05000302/2010001-00, -01, -02	LER	As-Found Cycle 16 Pressurizer Code Safety Valve Setpoints Outside Improved technical Specification Limit
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LIST OF DOCUMENTS REVIEWED

Section 1R05: Fire Protection

Procedures

AI-2205A, Pre Fire Plan – Control Complex
AI-2205B, Pre Fire Plan – Turbine Building
AI-2205C, Pre Fire Plan – Auxiliary Building
AI-2205F, Pre Fire Plan – Miscellaneous buildings and Components
SP-804, Surveillance of Plant Fire Brigade Equipment
HPP-500, Respiratory Protection Program
HPP-502, Respiratory Equipment Inspection and Maintenance
AP-880, Fire Protection
TRN-NGGC-0010, Fitness-for-Duty, Plant Access, Radiation Worker, and Respiratory Protection Training

Work Requests

WR 446419, Fan Failure
WR 458311, FH-11 hole in roof
WR 458172, FSV-304 packing leak

Work Orders

WO 1870980, Monthly SP-804, Surveillance Of Plant Fire Brigade Equipment, Dated 2/5/11

Section 1R07: Heat Sink Performance

Procedures

PM-275, General Preventative Maintenance
MP-299, Heat Exchanger Tube Plugging and Tube Removal/Replacement

Work Orders

WO 976734 SWHE-1B tube replacement

Section 1R11: Licensed Operator RequalificationRecords

License Reactivation Packages (3)
 LORP Training Attendance records (5)
 Medical Files (10)
 Remedial Training Records (2)
 Remedial Training Examinations (2)
 Feedback Summaries (10)
 Simulator Trouble Reports (11)

Written Examinations

2011 Biennial Written Exam C1 SRO

Procedures

TRN-NGGC-0420, Conduct of Simulator Training and Evaluation, Rev. 0
 TRN-NGGC-0002, Performance Review and Remedial Training, Rev. 0
 TAP-403, Conduct of Written Examinations, Rev. 17
 TAP-413, Conduct of Operator Continuing Training, Rev. 14
 TAP-428, Simulator Scenario-Based Testing, Rev. 1
 TPP-206, Simulator Program, Rev. 9
 TPP-422, Simulator Maintenance, Rev. 4

Simulator Tests

Validation of Simulator to Plant ZPPT Results
 PTT-1, Manual Reactor Trip, Rev 14, 12/21/2010
 PTT-2, Total Loss of Feedwater (Main and Emergency), Rev 16, 12/21/2010
 Scenario-Based Testing for SES-161, 01/07/2011

Scenario Packages

SES-161, 01/11/2011
 SES-134, 01/11/2011
 SES-130, 01/19/2011
 SES-054, 12/21/2009
 SES-143, 01/17/2011
 SES-135, 01/17/2011
 SES-042, 12/21/2009
 SES-030, 12/21/2009

JPM Packages

JPM-109, Transfer Auxiliary Steam from Main Steam to Unit 1 & 2 Steam, 01/19/2011
 JPM-131, Place H2 Analyzer in Service, 01/19/2011
 JPM-117, Perform the Low Vacuum Trip Test, 01/11/2011
 JPM-120, Place EFP-2 in Standby Using AP-990 Enclosure 4, 01/17/2011

Section 1R12: Maintenance EffectivenessProcedures

ADM-NGGC-0203, Preventative Maintenance and Surveillance Testing Administration
ADM-NGGC-0107, Equipment Reliability Process Guidelines
EGR-NGGC-0156, Environmental Qualification of Electrical Equipment Important to Safety

Miscellaneous

Rosemount Report D8300040, Qualified Life Rosemount Transmitters
Calculation E89-0024, Determination of Qualified Life of Rosemount Transmitters
NCR data base review for failures of equipment associated with exceeding Vendor
Recommended Service Life

Nuclear Condition Reports

NCR 124994, EG System margin Recovery
NCR 432380, Functional failure of NI-2 during the period 8/11 – 8/12
NCR 426391, NI-2 is not indicating properly
NCR 434394, NI-15 indications on control board oscillating
NCR 434627, NI-2 is spiking
NCR 434911, NI-2 counts spiking during drain down
NCR 449395, NI-1 is drifting upwards

Maintenance Rule Reports

SE08-0010, January 30, 2008, Maintenance Rule Expert Panel Minutes
SE08-0015, March 26, 2008, Maintenance Rule Expert Panel Minutes
SE11-0011, January 24, 2011, Maintenance Rule Expert Panel Meeting Minutes
SE11-0007, Nuclear Instrumentation Source Range PMG Presentation to Remain in (a)(2)

Section 1R15: Operability Evaluations

NCR 436097, Evaluate MUV-164 for possible degradation
NCR 436075, Evaluate MUV-37 for possible degradation

Section 1R20: Refueling and Outage ActivitiesProcedures

AI-504, Guidelines for Cold Shutdown and Refueling
WCP-102, Outage Risk Management

Section 40A2: Problem Identification and ResolutionNuclear Condition Reports

NCR 458032, Adverse trend in spent fuel pool FME station awareness
 NCR 447796, Foreign material found in the spent fuel pool FMEA
 NCR 447774, Pen used within the FMEA not documented in FME log
 NCR 446420, Spent fuel pool FME log did not reflect material removed from area
 NCR 434504, Spent fuel pool FMEA expanded without sufficient cleanliness inspection of expanded area
 NCR 435274, Plant personnel needlessly logging into spent fuel pool area log

Section 40A5, Other ActivitiesProgress Energy Procedures

PT-178T, Special Procedure - Reactor Building Concrete Structural Integrity Test, Revision 0
 SP-178T, Containment Leakage Test -Type "A" Including Liner Plate, Revision 0

Mistras Group, Inc Procedures.

Crystal River Unit 3 Tendon Retensioning Monitoring Procedure, Revision 4

Precision Surveillance Corporation (PSC) Field and Quality Control Procedures

3.0 Receiving, Handling and Storage, Revision 0
 3.1, Equipment Proof Test, Revision 0
 5.0, Tendon Initial Degreasing and Cap Removal, Revision 1
 6.0, Tendon Detensioning/Removal for Possible Reuse, Revision 0
 8.0, Plasma Cutting Tendon Detensioning, Revision 0
 8.1, Ram Tendon Detensioning, Revision 2
 9.0, Monitor Tendon Force (Lift-Offs), Revision 1
 10.0, Tendon Removal, Revision 0
 11.0, Tendon Void Cleaning, Revision 0
 13.0, Tendon Installation, Revision 2
 14.0, Tendon Field Anchor Head and Buttonheading Application, Revision 2
 15.0, Tendon Restressing, Revision 3
 15.1, Anchorage Inspection of Stressed Tendon, Revision 1
 15.2, Bearing Plate Concrete Inspection, Revision 0
 15.5, Additional Vertical Tendon Restressing, Revision 0
 16.0, Grease Cap Replacement, Revision 0
 17.0, Grease Replacement, Revision 1

Quality Assurance Procedures

10.0, Calibration of Measuring and Test Equipment, Revision 3
 10.1, Verification of Calibrated Status of Hydraulic Pressure Gauges, Revision 0

Nuclear Condition Reports

378555 DBD 1/1, Containment, Has an Incorrect Value for Tendon Wire
 422131 This NCR Tracks SGT NCR 154 Liner Plate Coatings Damage
 422383 This NCR Tracks SGT IIRP 144 Dropped Hard Hat

422487 This NCR Tracks SGT IIRP 145 Finger Injury
 422488 This NCR Tracks SGT NCR 155 Tendon Buttonhead Discrepancies
 440743 This NCR Is to track SGT NCR 148 Broken Tendon Wires
 440778 Lost 0-2 Inch Dial Indicator
 440785 This NCR Tracks SGT NCR 149/IIRP 135 Overlapping Shims
 440833 Transposition Error In Attachment Z50 Caused Work Stoppage
 441233 This NCR Tracks SGT NCR 150 Bent Test Wire
 441239 This NCR Tracks SGT NCR 151 Liner Plate Coatings Defects
 441332 This NCR Is to Track SGT IIRP 136 Dropped Object
 441366 This NCR Tracks SGT NCR 152 Shim Stack Inconsistent
 441394 SGT IIRP 138 Dropped Pendant Controller
 441396 Bent Wire On Tendon 13H18 at Buttress 3
 441453 This NCR Tracks SGT IIRP 140 Adverse Trend
 441648 This NCR Tracks SGT IIRP 141 Dropped Object
 442571 This NCR Tracks SGT NCR 156 Tendon Head Thread Issue
 442706 This NCR Tracks SGT IIRP 146 Summary Of Work Related Issues
 442711 This NCR Tracks SGT IIRP 147 Work Activities Ceased
 442860 This NCR Tracks SGT DR 1024 Untimely Deviation Reporting
 443077 This NCR Tracks SGT NCR 157 Missing Tendon Button Head
 443290 This NCR Tracks SGT NCR 158 Tendon Wire Discrepancy
 443343 This NCR Tracks SGT NCR 159 Broken Tendon Wire
 443379 This NCR Tracks SGT NCR 160 Work Package Discrepancies
 443424 This NCR Tracks SGT DR 26 Weld Rod Log Discrepancy
 443487 Excess Leakage into the Tendon Access Gallery Sump
 443529 Delay In Submitting SGT Qualification Cards
 443563 Radio Repeater Power Loss Affected SGT Radio Communication
 443566 SGT Workers Evacuated Tendon Galley Due To Exhaust Fumes
 443587 FSP-2B Exhaust Disrupted Tendon Tensioning Work
 443605 This NCR Tracks SGT NCR'S 162,163,164,165 Tendon 34V08 Issue
 443606 This NCR Tracks SGT NCR 161 Missing Shim Spacer
 443629 SGT Worker Put TLD Through NSOC X-Ray
 443692 This NCR Tracks SGT DR 28 ILRT Configuration Control
 Deficiencies
 443749 Bottles with Improper Fluids Discovered in Tendon Galley
 443961 This NCR Tracks SGT NCR 166 Tendon Lift Off Pressure Deltas
 443962 This NCR Tracks SGT IIRP 154 Hydraulic Leak
 443966 This NCR Documents PE Observation 47866 Lanyard Not on Tool
 444707 This NCR Tracks SGT IIRP156/DR 29 Lift Off Pressure Delta
 444726 This NCR Tracks SGT NCR 167 Bent Tendon Shims
 444728 This NCR Tracks SGT NCR 168 Water in Tendon Can
 444971 This NCR Tracks SGT NCR 169 Water In Tendon Can
 444972 This NCR Tracks SGT NCR 170 Broken Tendon Wire
 445558 This NCR Tracks SGT NCR 171 Broken Wires 13H32 51H32 51H34
 445761 FSAR Description Not Implemented During Containment Repair
 445762 Tendon Detensioning Basis Doc Does Not Exist For Surveillance
 445853 This NCR Tracks SGT NCR 172-IIRP 161 Shim Spacing Delta
 445982 This NCR Tracks SGT NCR 173/ IIRP 162 Hydraulic Leak

446052 Laser Scan Data Is Outside of What's Expected
 446084 This NCR Tracks SGT IIRP 163 Suspected Dropped Object
 446225 This NCR Tracks SGT IIRP164 Dropped Object
 446232 This NCR Tracks SGT IIRP 165 Broken Tendon Ram Gauge
 446280 This NCR Tracks SGT IIRP 167 Vehicle Incident
 446807 This NCR Tracks SGT NCR 174 Broken Wires 35H19 64H43 13H40
 446808 This NCR Tracks SGT NCR 175 Stressing Sequence Discrepancy
 447042 THIS NCR TRACKS SGT NCR 176 PASS 5 53H21 MISSING WIRE
 447376 This NCR Tracks Tendon 34V08 Issue
 447415 Cannot Couple on Tendon 34V08
 447416 Raised Metal Noted on Tendon 34V01 Anchor Head
 447417 Protruding Buttonhead on Tendon 34V13
 448236 This NCR Tracks SGT NCR 180-34V08 Dome End Foreign Material
 448468 This NCR Tracks SGT IIRP 176 Oil Spill on Dome
 448504 Tendon Tensile Testing Delta between SGR and Design Basis
 448535 This NCR Tracks SGT NCR 183 "As Found" Shim Gap Delta
 448537 This NCR Tracks SGT NCR 181 Documentation Deficiency
 448579 This NCR Tracks SGT NCR 182 Bearing Plate Concrete Gap Delta
 448580 This NCR Tracks SGT NCR 184 Tendon 56V13 Damaged
 Buttonhead
 448581 This NCR Tracks SGT NCR 185 Bearing Plate Pitting 45V14
 448621 Broken Wire On Tendon 45V01 SGT NCR 1186
 448622 As Found Tendon Anchor Head Thread Damage 12V05,07,09,11,13
 448639 SGT NCR 1188 Documents 23V20 Wire Delta
 448640 NCR 1189 Pitting on 23V24 Bearing Plate
 448659 This NCR Tracks SGT IIRP 178 Grease Hose Failure
 449508 This NCR Tracks SGT IIRP 180 First Aid On Pinched Finger
 449562 This NCR Tracks SGT NCR 190 Bearing Plate Concrete Gaps
 450121 This NCR Tracks SGT NCR 191 Broken Tendon Wire 35H29
 450133 This NCR Tracks SGT NCR 192 Bearing Plate Concrete Crack/Gap
 450218 This NCR Tracks SGT IIRP 182 Harrington Hoist Not Working
 450219 Tendon Gallery Bent Junction Box Cover SGT NCR 193
 450591 This NCR Tracks SGT NCR 194 Tendon Elongation Delta Pass 8
 451015 Worker Observed Standing on Platform 6 Hand Rail
 451148 This NCR Tracks SGT NCR 197 As Found Flaking Coatings
 451149 This NCR Tracks SGT NCR 198 Broken Wire 53H23 Shop End
 451151 This NCR Tracks SGT NCR 201 Separated Existing Concrete
 451166 This NCR Tracks SGT NCR 199 Broken Master Pressure Gauge
 451167 This NCR Tracks SGT NCR 200 Gauge No "Post Use" Calibration
 451306 This NCR Tracks SGT NCR 202 Protruding Wires Tendon 53H26
 451412 Final Retensioning Using More Shims Than Anticipated
 451425 This NCR Tracks SGT NCR 203 Pass 8 IWL Concrete Reject
 451426 Strain Gage Alert Limit Exceeded By 0.3 Micro Strain
 451471 This NCR Tracks SGT NCR 204 Bearing Plate Concrete Cracks
 451549 This NCR Tracks SGT NCR 205 Broken Buttonhead 64H21
 451632 This NCR Tracks SGT NCR 1206 Exposed Rebar Azimuth 200
 Dome

451727 This NCR Tracks SGT NCR 207 Bearing Plate Concrete Gaps 53H3
 451730 This NCR Tracks SGT NCR 208 Bearing Plate Concrete Gaps
 451732 This NCR TRACKS SGT IIRP 187 DROPPED OBJECT
 451742 THIS NCR Tracks SGT NCR 209 Bearing Plate Concrete Gap 3H39
 451900 This NCR Tracks SGT NCR 210 Bearing Plate Concrete Gaps
 452030 IWL Inspection 51H41-35H41-53H41 Bearing Plate Concrete Crack
 452032 This NCR Tracks SGT IIRP 190 Dropped Object
 452178 This NCR Tracks SGT NCR 213 Anchorhead Delta 13H37 Field End
 452188 IWL Inspection Bearing Plate Concrete Cracks 51H37 & 53H37

Drawings

75221-103, SIT Instrument Locations – Elevation 103'-0"
 75221-135, SIT Instrument Locations – Elevation 135'-0"
 75221-170, SIT Instrument Locations – Elevation 170'-0"
 75221-205, SIT Instrument Locations – Elevation 205'-0"
 75221-240, SIT Instrument Locations – Elevation 240'-0"
 75221-250, SIT Instrument Locations – Elevation 250'-0"
 75221-DOME, SIT Instrument Locations – From Reactor Building Dome
 75221-EH, SIT Instrument Locations – Elevation 135'-0"
 S-425-004, Revision 1, IWE/IWL Inspection Vertical Tendon Layout
 S-425-005, Revision 1, IWE/IWL Inspection Hoop Tendon "13" Layout
 S-425-006, Revision 1, IWE/IWL Inspection Hoop Tendon "42" Layout
 S-425-007, Revision 2, IWE/IWL Inspection Hoop Tendon "53" Layout
 S-425-008, Revision 1, IWE/IWL Inspection Hoop Tendon "64" Layout
 S-425-009, Revision 1, IWE/IWL Inspection Hoop Tendon "51" Layout
 S-425-010, Revision 1, IWE/IWL Inspection Hoop Tendon "62" Layout
 Z08, Revision 9, Tendon Tensioning

Other Documents

Engineering Change 75221, Revision 3
 Extensometer Installation Specifications and Guidance