



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

February 7, 2019

Ernest J. Kapopoulos, Jr.
Site Vice President
H. B. Robinson Steam Electric Plant
Duke Energy Progress, LLC
3581 West Entrance Road, RNPA01
Hartsville, SC 29550

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 05000261/2018004

Dear Mr. Kapopoulos:

On December 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your H. B. Robinson Steam Electric Plant, Unit 2. On January 29, 2019, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC Resident Inspector at the H. B. Robinson Steam Electric Plant.

If you disagree with a cross-cutting aspect assignment 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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC Resident Inspector at the H. B. Robinson Steam Electric Plant.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Randall A. Musser, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos.: 50-261
License Nos.: DPR-23

Enclosure:
IR 05000261/2018004
w/Attachment: Supplemental Information

cc Distribution via ListServ

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT – NUCLEAR REGULATORY
COMMISSION INTEGRATED INSPECTION REPORT 05000261/2018004
February 7, 2019

DISTRIBUTION:

S. Price, RII
M. Kowal, RII
K. Sloan, RII
OE Mail
RIDSNNRRDIRS
PUBLIC
RidsNrrPMRobinson Resource

ADAMS Accession No. ML19038A210

OFFICE	RII:DRP	RII:DRP	RII: DRP	RII: DRP	RII: DRP	RII:DRP
NAME	JHamman	ABeasten	AWilson	RTaylor	MBates	RMusser
DATE	1/29/2019	1/29/2019	2/4/2019	2/4/2019	1/25/2019	2/6 /2019
OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRS	
NAME	RWilliams	SDowney	PCooper	BCollins	WHolston	
DATE	1/25/2019	1/25/2019	1/28/2019	1/28/2019	1/29/2019	

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-261

License Nos: DPR-23

Report Nos: 05000261/2018004

Enterprise Identifier: I-2018-004-0050

Licensee: Duke Energy Progress, Inc.

Facility: H. B. Robinson Steam Electric Plant, Unit 2

Location: 3581 West Entrance Road
Hartsville, SC 29550

Dates: October 1, 2018 through December 31, 2018

Inspectors: J. Rotton, Senior Resident Inspector
A. Beasten, Resident Inspector
A. Wilson, Project Engineer
R. Williams, Senior Reactor Inspector (Section 1R08)
M. Bates, Senior Operations Engineer (Section 1R11)
P. Cooper, Reactor Inspector (Other Activities, IP 71003)
S. Downey, Senior Reactor Inspector (Other Activities, IP 71003)
B. Collins, Reactor Inspector (Other Activities, IP 71003)
W. Holston, Senior Mechanical Engineer (Other Activities, IP 71003)

Approved by: Randall A. Musser, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting a baseline inspection at H. B. Robinson Steam Electric Plant, Unit 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. NRC and self-revealed findings, violations, and additional items are summarized in the table below.

List of Findings and Violations

Inadequate Procedure for Movement of Fuel Assemblies in the Spent Fuel Pool			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000261/2018004-01 Open/Closed	[H.1] – Resources	71111.20- Refueling and Other Outage Activities
A self-revealing Green NCV of Technical Specifications 5.4.1, "Procedures," was identified for the licensee's failure to incorporate (1) specific procedural steps describing the function of the spent fuel pool (SFP) Bridge crane hoist overload trip in FHP-003, "Fuel Assembly Movement in the Spent Fuel Pool" or FHP-001, "Fuel Handling Tools Operating Procedures;" (2) an appropriate trip set point for the SFP Bridge crane hoist overload trip; and (3) previously established vendor recommendations regarding the use of a load cell and weight lift restrictions during fuel assembly movement in the SFP. Specifically, the licensee's failure to include adequate instruction in FHP-003 or FHP-001 resulted in damage to fuel assembly LL50 during pre-outage fuel moves in the SFP.			

Additional Tracking Items

None

PLANT STATUS

Unit 2 began the inspection period in Mode 6 during a planned refueling outage. The unit returned to rated thermal power on December 5, 2018, and remained there for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather (1 Sample)

The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures on November 6, 2018.

External Flooding (1 Sample)

The inspectors evaluated readiness to cope with external flooding on December 19, 2018.

71111.04 - Equipment Alignment

Partial Walkdown (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) 'B' emergency diesel generator (EDG) while unit aligned for backfeed on October 16, 2018
- (2) 'A' residual heat removal (RHR) pump while 'B' RHR pump was unavailable due to E2 switchgear outage on October 31, 2018
- (3) Safety Injection system following performance of OST-163, "Safety Injection Test and Emergency Diesel Auto Start on Loss of Power and Safety Injection," Rev. 72, on November 8, 2018

71111.05AQ - Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Fire Zone 11 – Pipe Alley, on October 10, 2018
- (2) Fire Zone 9 – North Cable Vault, on October 17, 2018
- (3) Fire Zone 10 – South Cable Vault, on October 17, 2018
- (4) Fire Zone 22 – Control Room, on October 24, 2018
- (5) Fire Zone 23 – Hagan Room, on October 24, 2018

71111.06 - Flood Protection Measures

Internal Flooding (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the motor driven auxiliary feedwater pump room (FLC060) on December 19, 2018.

71111.07 - Heat Sink Performance

Heat Sink (1 Sample)

The inspectors observed the 'B' component cooling water heat exchanger during completion of the heat exchanger inspection on October 16, 2018.

71111.08 - Inservice Inspection Activities (1 Sample)

The inspector evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from October 1, 2018 to October 9, 2018:

- (1) Ultrasonic Examination (UT)
 - a) UT of W-109/09, 14" Pipe-to-elbow weld, American Society of Mechanical Engineers (ASME) Class 1 (observed)
- (2) Radiographic Examination (RT)
 - a) RT of W-29, 3" Pipe-to-pipe weld, Class 2 (observed)
 - b) RT of W-46, 3" Pipe-to-elbow weld, Class 2 (observed)
- (3) Liquid Penetrant Examination (PT)
 - a) PT of W-2, 3/4" socket to pipe weld, ASME Class 1 (reviewed) - This review included a pressure boundary welding activity
- (3) Visual Examination (VE)
 - a) VE of reactor vessel head Control Rod Drive Mechanism Penetration Nos. 23, 28, 31, 35, 40, 64, 65, and 66; ASME Code Class 1 (Observed)

The inspector evaluated the licensee's boric acid corrosion control program performance.

71111.11 - Licensed Operator Regualification Program and Licensed Operator Performance

Operator Regualification (1 Sample)

The inspectors observed and evaluated an operator simulator training scenario administered to an operating crew on December 12, 2018, involving system operation and failures leading into several abnormal operating procedures followed by multiple emergency declarations.

Operator Performance (1 Sample)

The inspectors observed and evaluated operator performance during reactor startup and low power physics testing on November 25, 2018.

Operator Exams (1 Sample)

The inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations that were completed on March 19, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Work Order (WO) 20297184, RV1-1 ('A' S/G Power Operated Relief Valve) lifting prior to reaching setpoint, on November 24-25, 2018
- (2) WO 20147611, MS-GV's (Main Steam Turbine Governor Valves) loose wiring, extent of condition investigation on November 30, 2018

71111.13 - Maintenance Risk Assessments and Emergent Work Control (4 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Green risk for switching power supply to the unit 4kV switchgear and 480 V buses via Backfeed procedure, OP-603, from 115kV Startup Transformer to the Unit Auxiliary Transformer on October 20, 2018
- (2) Yellow Defense-in-Depth risk for Inventory Control, Decay Heat Removal, and Power while a Dedicated Shutdown Diesel Generator Bus outage was performed and while E2 safeguard bus was de-energized for scheduled maintenance on October 31, 2018
- (3) Green risk for troubleshooting of Turbine Control System (TCS) system due to MS-GV4 failing closed on November 27, 2018
- (4) Elevated Green risk for planned steam driven auxiliary feedwater maintenance on December 11, 2018

71111.15 - Operability Determinations and Functionality Assessments (4 Samples)

The inspectors evaluated the following operability determinations and functionality

assessments:

- (1) Containment moisture barrier degraded/non-conforming operability evaluation (NCR 02235381) on October 18, 2018
- (2) Potential ECCS sump blockage on sump screens (NCR 2236533) on October 30, 2018
- (3) EDG 'B' vibes points out of in service limit (NCR 02242594) on November 11, 2018
- (4) Service Water Booster Pump 'A' vibrations in "ALERT" (NCR 02245445) on December 4, 2018

71111.18 - Plant Modifications (1 Sample)

The inspectors evaluated the following permanent modification:

- (1) Engineering Change (EC) 402274, Rev. 11, Replacement of Met Tower datalogger and connection to DICSP (Distributed I&C System Platform)

71111.19 - Post Maintenance Testing (6 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) WO 20016479, Actuator diaphragm replacement---SI-855-AO, on October 4, 2018
- (2) WO 20153162, EST-137-5, Local Leak Rate Test of Purge Exhaust Valve after V12-9 replacement on October 25, 2018
- (3) WO 20212841, OP-604, Diesel Generators 'A' and 'B' and OST-411, Emergency Diesel Generator 'B' (24 Hour Load Test) for 'B' EDG runs to test EDG governor replacement on November 3, 2018
- (4) OST-163, Safety Injection Test and Emergency Diesel Auto Start on Loss of Power and Safety Injection, Section 7.8, to demonstrate operability of 'B' EDG following governor overhaul on November 8, 2018
- (5) WO 20260625, MST-023, Safeguard Relay Rack Train 'B', for PC-952(X2) relay replacement regarding AC Eaton (Framatome) NBF relay 10CFR21 issue (NCR 02210482) on November 10, 2018
- (6) WO 20297766, OST-202, Steam Driven Auxiliary Feedwater System Component Test, after pump turbine blade borescope inspection, lube oil heat exchanger clean and inspect, and instrumentation calibrations on December 11, 2018

71111.20 - Refueling and Other Outage Activities (1 Sample)

The inspectors evaluated refueling outage (R2R31) activities from October 1, 2018 through November 25, 2018. The inspectors observed activities related to sections 03.01b, 03.01d.1-11, and 03.01e during this period to complete the inspection samples. The inspectors completed the remaining inspection procedures during the third quarter of 2018, documented in NRC Inspection Report 05000261/2018003 (ADAMS ML18317A229).

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

- (1) MST-E-480V-E1-DV, Degraded Voltage Test E1 Bus on October 7, 2018
- (2) MST-E-480V-E2-UV, Emergency Bus E1 Undervoltage Test and Load Shed Test on November 6, 2018
- (3) OST-163, Safety Injection Test and Emergency Diesel Auto Start on Loss of Power and Safety Injection, Rev. 72, on November 8, 2018

In-service (1 Sample)

- (1) OST-151-3, Safety Injection System Components Test Pump 'C' on November 16, 2018

Containment Isolation Valve (1 Sample)

- (1) EST-062, Local Leak Rate Test of Containment Instrument Air Header Isolation Valves, Rev. 25, on October 10, 2018

71114.06 - Drill Evaluation

Drill/Training Evolution (1 Sample)

The inspectors evaluated a licensed operator continuing training evaluated session which involved multiple equipment failures and entry into multiple abnormal operating procedures and emergency declarations on December 20, 2018.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below for the period from October 01, 2017, through September 30, 2018.

- (1) High Pressure Injection System

71152 - Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed human performance issues with an emphasis on procedure use and adherence.

Annual Follow-up of Selected Issues (3 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Review of emergency response facility information system (ERFIS) reliability and availability as a result of implementation of EC 402274.
- (2) Review of corrective actions implementation for NCR 02109909 related to failure to

conduct required Containment Barrier inspections per ASME Section X1, Subsection IWE.

- (3) Review of corrective action implementation for NCR 468235 related to flooding of the SI pump room during a heavy rain storm in 2011.

71153 - Follow-up of Events and Notices of Enforcement Discretion

Personnel Performance (1 Sample)

The inspectors evaluated a secondary load rejection transient event due to governor valve swing oscillations and the licensee's response on November 28, 2018.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation

The inspectors evaluated the licensee's independent spent fuel storage installation cask loadings.

71003 - Post-Approval Site Inspection for License Renewal

License Renewal – Phase 4 (0 ROP Baseline Samples, 7 LRIP samples)

In accordance with IMC 2516, the license renewal inspection program is the process used by NRC staff to verify the adequacy of aging management programs (AMPs) and other activities associated with an applicant's request to renew an operating license of a commercial nuclear power plant beyond the initial licensing period under 10 CFR Part 54, "Requirements for the Renewal of Operating Licenses for Nuclear Power Plants."

For the following Aging Management Programs and their respective components, the inspectors verified that there is reasonable assurance that the effects of aging are being adequately managed so that the intended function(s) of structures, and components (SCs), for which an aging management review is required, are being maintained consistent with the current licensing basis (CLB).

- (1) Closed Cycle Cooling Water Program (Updated Final Safety Analysis Report (UFSAR) Section 18.1.5)

- a. Component Cooling Water Heat Exchanger A (CCW-HTX-A)
- b. Component Cooling Water Heat Exchanger B (CCW-HTX-B)
- c. Dedicated Service Diesel Radiator (DSD-RADIATOR)
- d. Safety Injection Pump A Lube Oil Cooler (SI-PMP-A)
- e. Component Cooling Water Surge Tank (CCW-SRG-TNK)
- f. Component Cooling Water Pump A (CCW-PMP-A)
- g. Piping Header Downstream of Spent Fuel Pool Heat Exchangers (10-AC-152N-41)

- (2) Open Cycle Cooling Water System Program (UFSAR Section 18.1.13)
 - a. Fan and Motor Cooler – HVAC CV Air Recirculation Cooling Unit (HVH-1)
 - b. Fan and Motor Cooler – HVAC CV Air Recirculation Cooling Unit (HVH-3)
 - c. Motor Driven AFW Pump Lube Oil Cooler (AFW-PMP-B-LO-HTX)
 - d. Service Water Header Piping (30-CW-11)
 - e. Service Water Header Piping (30-CW-12)
 - f. Emergency Diesel Generator Jacket Water Cooler (DG-A-JW-HTX)
 - g. Service Water Strainer (S6-1A)
 - h. Service Water Strainer (S6-1B)

- (3) Buried Piping and Tanks Surveillance Program (UFSAR Section 18.1.16)
 - a. Diesel Fuel Oil Storage Tank
 - b. Unit 1 IC Turbine Fuel Oil Tank
 - c. Underground Piping from DFOT to Each EDG Day Tank
 - d. Underground Piping from Unit 1 to Unit 2 DFOT
 - e. Cathodic Protection System

- (4) ASME Section IX, Subsection IWE Program (UFSAR Section 18.1.21)
 - a. Moisture Barrier at Liner-Concrete Interface
 - b. Sump Moisture Barrier
 - c. Containment Panel 228-D
 - d. Containment Panel 228-F
 - e. Containment Panel 228-VV
 - f. Containment Panel 228-WW
 - g. Containment Panel 228-XX
 - h. Containment Panel 228-BBB
 - i. Equipment Hatch Cylinder and Bolting
 - j. Fuel Transfer Tube Surface and Bolting

- (5) Preventative Maintenance Program (UFSAR 18.1.26)
 - a. Charging Pump Speed Control Positioners (SC-151-V/P, SC-152-V/P)
 - b. Condensate Storage Tank (COND-STRG-TNK)
 - c. Dedicated Shutdown Diesel (DSD-ENG)
 - d. Emergency Diesel Generator Air Start Strainers (S-35A, S-35B)
 - e. HVAC Containment Vessel Air Recirculation Cooling Units (HVH-1; HVH-3)
 - f. Motor Driven Auxiliary Feedwater Pump (AFW-PMP-B)
 - g. Pressurizer Relief Tank (PZR-RLF-TNK)
 - h. Reactor Coolant Pump (RCP-C)
 - i. Service Water Pumps (SW-PMP-B; SW-PMP-D)
 - j. Unit Auxiliary Transformer to 4kV Bus 1 Duct (UAT-BUS1-BUSDUC)

- (6) Pressurized Water Reactor (PWR) Vessel Internals Program (UFSAR 18.1.30)
 - a. Baffle Edge Bolts (Q3-A, Q3-I, Q4-G, Q4-C)
 - b. Upper Core Plate (101/UCP)
 - c. Control Rod Guide Tube Flange Welds (CRGTA-B-10, CRGTA-M-10, CRGTA-M-6, CRGTA-P-6, CRGTA-P-8)
 - d. Upper Support Assembly (101/USA)

- e. Hold Down Spring (101/HDS)
- f. Upper to Lower Girth Weld (W2)
- g. Lower Flange Weld (W4)
- h. Lower Girth Weld (W3)

(7) Non-EQ Cables and Connections Program (UFSAR Section 18.1.33)

- a. Cables inside Containment Vessel
- b. Cables in Auxiliary Building
- c. Cables in Turbine Building
- d. RC-535 Motor Operator (Pressurizer Cubicle)

INSPECTION RESULTS

Observation	71152 Semiannual Trend Review
<p>From July 1, 2018 through December 31, 2018, the inspectors noticed a potential adverse trend in human performance, specifically as it relates to procedure use and adherence with the potential to impact plant health. During this timeframe, seven NCRs were initiated related to human performance errors. Most were significant enough to warrant a Human Performance Review Board or Prompt Investigation Response Team. The most significant events are outlined below:</p> <ul style="list-style-type: none"> • On August 14, 2018, failure to comply with MMM-009-1, Turbine Crane Protocol and General Information, Rev. 6, Step 7.1.5, resulted in the turbine crane impacting and damaging a Sealand container being used as a tool room. While this event did not have an impact on plant equipment, it did have the potential to cause injury to workers in the area. (NCR 02224661) • On August 30, 2018, failure to comply with OST-409-1, EDG 'A' Fast Speed Start, Rev. 63, Step 7.2.92, resulted in an incorrect starting air valve alignment to the 'A' EDG when DA-25A was not returned to the locked open position. Multiple barriers were bypassed, including failure to perform an independent verification following manipulation of the component, as required by procedure. The condition remained undiscovered until September 1, when a security officer discovered a chain with an unlocked valve lock resting on a pipe near DA-25A. This event did have the potential to adversely affect the operability of the 'A' EDG, however, the EDG remained operable because the redundant starting air lineup remained unaffected. The inspectors reviewed this event and the associated corrective actions and determined, based on the redundancy of the starting air lineup, the event was of minor significance. (NCR 02228410) • On October 19, 2018, with the reactor in Mode 6, a failure to verify worker qualifications in accordance with AD-MN-ALL-1000, Conduct of Maintenance, Rev. 17, Step 4.6.2, in conjunction with a failure to provide required supervisory oversight as specified in WO 20234794-70, resulted in an inadvertent start of the 'A' Reactor Coolant Pump (RCP) during testing. While racking in the RCP breaker to the TEST position, the breaker was inadvertently positioned to the CONNECT position. During a subsequent step, the breaker was closed in the CONNECT position. Closure of the breaker in the CONNECT position started RCP-A. The pump ran for approximately 14 seconds before operations secured it. (NCRs 02238258 and 02240888) <p>In two instances, the undesired condition was not discovered for several days (NCR 02225270, OWP-11 switch misposition, and NCR 02228410, DA-25A (DG A Lower Air Start Outlet Isolation) mispositioned). Both of these mispositioning events were not discovered by operations, although presumably both issues would have been discovered on normal rounds and walkdowns.</p> <p>None of the human performance events resulted in a significant impact to plant safety. Upon discovery of each of these events, immediate corrective action was taken. The licensee is aware of the trend in human performance as it relates to procedure use and adherence.</p>	

Inadequate Procedure for Movement of Fuel Assemblies in the Spent Fuel Pool			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000261/2018004-01 Open/Closed	[H.1] – Resources	71111.20 – Refueling and Other Outage Activities
<p>A self-revealing Green NCV of Technical Specifications 5.4.1, "Procedures," was identified for the licensee's failure to incorporate (1) specific procedural steps describing the function of the SFP Bridge crane hoist overload trip in FHP-003, "Fuel Assembly Movement in the Spent Fuel Pool" or FHP-001, "Fuel Handling Tools Operating Procedures;" (2) an appropriate trip set point for the SFP Bridge crane hoist overload trip; and (3) previously established vendor recommendations regarding the use of a load cell and weight lift restrictions during fuel assembly movement in the SFP. Specifically, the licensee's failure to include adequate instruction in FHP-003 or FHP-001 resulted in damage to fuel assembly LL50 during pre-outage fuel moves in the SFP.</p>			
<p><u>Description:</u></p> <p>On August 22, 2018, with the reactor at 100 percent power, while performing pre-outage fuel assembly shuffles in the SFP, control room operators entered AOP-013, "Fuel Handling Accident," due to indications of damage to fuel assembly LL50 in the SFP. While attempting to raise fuel assembly LL50 from its storage location, upward motion was interrupted. Overload indication was received on the SFP bridge crane hoist overload protection, but the technicians on the bridge failed to respond as this indication was not understood or described in FHP-003. The technicians lowered LL50 to verify freedom of movement within the storage rack cell and to verify proper alignment of the SFP handling tool, and proceeded to raise LL50 again. The evolution was stopped a second time due to concerns with binding, and LL50 was returned to fully seated. A third attempt to raise LL50 was made. As LL50 cleared the top of the storage rack cell, an all stop order was issued due to evidence of visible damage to the fuel assembly. Damage observed included fuel assembly grid strap damage and a corner fuel pin, bent down approximately 135 degrees from vertical and pushed into the interior of the fuel assembly behind the first row of fuel rods. Operations was notified of the damaged fuel assembly at this time, and operations entered AOP-013. There were no signs of fuel damage that would have caused a release of fuel pin internals. No changes in radiological conditions or SFP chemistry were identified.</p> <p>The site had implemented a deviation (with vendor concurrence) from the vendor recommendations to use a load cell, resulting in fuel handling technicians relying on feel and the overload protection feature to aid in the identification of fuel assembly binding/interference during movement. Vendor recommendations included an OVERLOAD trip setpoint that should be adjusted to 200 pounds (lbs.) above the upward-moving weight of the fuel assembly to be moved. FHP-003 dictates that the fuel handling technicians are to use the feel of the fuel handling tool to detect perturbations in loading during movement, which limits the ability of the technician to detect excessive loads. Additionally, FHP-003 failed to describe the hoist overload protection feature and lacked guidance for the fuel handling technicians on its purpose or function, with the result that no action was taken when the overload indication was received. At the time of discovery, the overload protection setpoint was found to be at 2550 lbs. This is a non-conservative setpoint with respect to vendor recommendations, which aimed to limit fuel assembly movement to less than 200 lbs. above</p>			

the nominal weight of the fuel assembly (1650 to 1800 lbs., including the fuel handling tool), with the use of a load cell.

Corrective Actions: The licensee took immediate corrective actions to secure fuel assembly LL50 in an elevated position in its storage location. All fuel assembly movement was stopped. The licensee performed visual inspection of all four sides of the entire length of the fuel assembly. After the licensee performed an engineering evaluation to install a temporary storage rack in the Cask Pit Preparation area in the SFP to perform fuel assembly reconstitution at a later time, the damaged fuel assembly was transferred to the temporary storage location and normal fuel assembly movement in the SFP was allowed. Procedure FHP-003 was revised to require the use of a load cell with actions to be taken in the event load cell display read between 100-200 pounds above expected fuel assembly load.

Corrective Action Reference: CR 2226466

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee's failure to establish adequate procedural guidance for SFP bridge crane operations such that early indication of binding/interference during fuel assembly movement is recognized and established was a performance deficiency and a violation of Technical Specification 5.4.1, "Procedures."

Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the objective of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, inadequate procedural guidance on the purpose and function of the overload protection feature, in conjunction with a non-conservative overload protection setpoint, resulted in damage to fuel assembly LL50.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," dated October 7, 2016, and IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated June 19, 2012. The inspectors determined the finding was of very low safety significance (Green) because while the finding did result in mechanical damage to the fuel clad, it did not cause a detectable release of radionuclides.

Cross-cutting Aspect: The inspectors determined the finding had a cross-cutting aspect of resources in the area of human performance (H.1), because the licensee did not ensure that existing procedural resources were available to prevent damage to fuel assembly LL50.

Enforcement:

Violation: Technical Specification Section 5.4.1 states, in part, that "written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978." Section 2.k requires procedures for "Preparation for Refueling and Refueling Equipment Operation" and Section 2.l requires procedures for "Refueling and Core Alterations." Procedure FHP-003, "Fuel Assembly Movement in the Spent Fuel Pool," implements these requirements.

Contrary to the above, on August 22, 2019, while performing a fuel assemble transfer from SFP storage location M05, fuel assembly LL50 was damaged due to the licensee's failure to establish procedural guidance on the use of the hoist overload protection feature to ensure

that adequate protection existed to prevent damage to fuel assemblies during movement in the SFP or the use of a load cell with applicable setpoints installed on the SFP bridge crane hoist per vendor recommendations. Specifically, a lack of instructions in FHP-003 on the function or purpose of the hoist overload protection feature, in conjunction with a failure to use an appropriate hoist overload setpoint or the use of an installed load cell, resulted in damage to a fuel assembly during fuel handling.

Enforcement Action: This violation is being treated as a Non-Cited Violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

On October 9, 2018, the inspectors presented the inservice inspection results via teleconference to Kevin Ellis, Regulatory Affairs Manager, and other members of the licensee staff.

On January 29, 2019, the inspectors presented the quarterly resident inspector inspection results to Ernie Kapopoulos, and other members of the licensee staff.

THIRD PARTY REVIEWS

None

LIST OF DOCUMENTS REVIEWED

71111.01: Adverse Weather Protection

Seasonal Extreme Weather Conditions

AD-WC-ALL-0230, Seasonal Readiness, Rev. 0
AP-058, Seasonal Readiness, Rev. 3
OP-925, Cold Weather Operation, Rev. 71
NCR 02193529, Winter Seasonal Weather Roll Up, 03/22/2018
PRR 02226735, OP-925, 08/23/2018

External Flooding

AP-053, Severe Weather Response, Rev. 8
OMM-021, Operation during Adverse Weather Conditions, Rev. 53
GID/R87038/0007, Generic Issues Document – Hazard Analysis, Rev. 8
RNP-C/YSTR-1004, Site PMP Storm Event Inflow and External Flooding Analysis, Rev. 5
RNP-C/YSTR-1010, Hydrologic and Hydraulic (H&H) Tainter Gate Evaluation, Rev. 1

71111.04: Equipment Alignment

Partial Walkdown

OMM-009, Locked Valve List, Rev. 109
OP-604, Diesel Generators 'A' and 'B', Rev. 123
G-190204A, Emergency Diesel Generator System Flow Diagram, Sheet 1, Rev. 39; Sheet 2, Rev. 20; Sheet 3; Rev. 22
OP-202, Safety Injection and Containment Vessel Spray System, Rev. 99
5379-1082, Safety Injection System Flow Diagram, Sheet 2, Rev. 55
5379-1484, Residual Heat Removal System Flow Diagram, Sheet 1, Rev. 49

71111.05: Fire Protection

Quarterly Inspection

AD-EG-ALL-1520, Transient Combustible Control, Rev. 11
FP-010, Housekeeping Controls, Rev. 37
FP-012, Fire Protection Systems Minimum Equipment and Compensatory Actions, Rev. 30
OMM-002, Fire Protection Manual, Rev. 53
OMM-020, Fire Protection List, Rev. 13
OST-611-22, Low Voltage Fire Detection and Actuation System Zone 22 – Control Room, Rev.03
OST-611-23, Low Voltage Fire Detection and Actuation System Zone 23 – Hagan Room, Rev.04
CSD-RNP-PFP-AB2-0254-001, Auxiliary Building Elev 254 Pre-Fire Plan, Rev. 0
CSD-RNP-PFP-AB2-0226-001, Auxiliary Building Elev 226 Pre-Fire Plan, Rev. 0

71111.06: Flood Protection

AOP-032, Response to Flooding from the Fire Protection System, Rev. 10
RNP-F/PSA-0009, Assessment of Internally Initiated Flood Events, Rev. 2
RNP-F/PSA-0104, RNP Internal Flooding PRA-Plant Partitioning and Walkdown Data, Rev. 0
RNP-F/PSA-0105, RNP Internal Flooding Analysis, Rev. 1
RNP-F/PSA-0113, RNP Internal Flooding PRA Quantification and Results Analysis, Rev. 2
RNP-M/MECH-1881, Internal Flooding Pipe Breaks for Reactor Auxiliary Building, Rev. 0

RNP-M/MECH-1882, Internal Flooding Displacement Evaluation for Reactor Auxiliary Building, Rev. 1

RNP-M/MECH-1883, Internal Flooding Analysis Reactor Auxiliary Building, Rev. 0

71111.07 - Heat Sink Performance

CM-201, Safety Related and Non-Safety Related Heat Exchanger Maintenance, Rev. 57

EGR-NGGC-0512, License Renewal Aging Management Activities, Rev. 8

MMM-010, Cleanliness and Flushing Requirements, Rev. 31

TMM-044, Heat Exchanger NDE Inspection Process, Rev. 2

RNP-M/MECH-1074, Effect of Tube Plugging on CCW HX and Plant Cooldown Capabilities, Rev. 3

WO 20016711, Cleaning and inspection on "B" CCW Heat Exchanger, 10/16/2018

WO 20212855, Clean & repair the coating on the tube sheet and housing on, 10/16/2018

71111.08 - Inservice Inspection Activities

Procedures

AD-EG-PWR-1611, Boric Acid Corrosion Control Program – Implementation, Rev. 2

AD-MN-ALL-0006, Fluid Leak Management, Rev. 1

NDE-NE-ALL-5101, Radiographic Examination, Rev. 0

NDE-NE-ALL-6102, Utilization of PDI-UT-2 Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds, Rev. 2

PD-EG-PWR-1611, Boric Acid Corrosion Control Program, Rev. 1

Welding Procedure Specification No.: GTOO0808-04

Other Documents

0218-AST-101129, Condition Monitoring and Operational Assessment for Robinson Unit 2 R030 Outage, Rev. 001

Certificate of Instrument Calibration for Infrared Thermometer SN: 31420250WS

Certification Report for Calibration Block SN: 7544

NDE Examiner Certification Record for Examiner: 477508, 366449

Procedure Qualification Record No.: L-110D Rev. 0, L-138 Rev. 0, L-148C Rev. 0

Ultrasonic Calibration/Examination Report No.: UT-18-012

Ultrasonic Instrument Linearity Report No.: L-18-029

Welder Qualification Record for Welder: DC0010

Condition Reports

AR 02234771, Potentially abandoned piping with no tag

AR 02234774, Flaking Coating on support structure

NCR 2113517, Boric acid leak on B RHR pump

NCR 2134355, Replace si-857a (boron injection tank to safety injection test line relief)

NCR 2141488, 1 TSP brown/yellow boric acid on Charging Pump A discharge flange

NCR 2150199, Fix the leak at ps-988 and clean boric acid

NCR 2187659, WD-1777 Excessive boric acid at packing

NCR 2202725, CVC-368B Diaphragm leaking

NCR 2222305, Cycle 31 BACCP Active leaks to repair in R231

Work Orders (WO)/Work Requests (WR)

WO 13345169-01

WR 20121494

WR 20121496
WR 20121497
WR 20121500
WR 20121501
WR 20121503
WR 20121503
WR 20121505
WR 20121506
WR 20121507

71111.11: Licensed Operator Regualification

Resident Inspector Quarterly Review of Licensed Operator Regualification

Scenario description: LOCT Segment 18-10, LOCT Simulator Exercise Guide: ATWS/LOCA;
Lesson Number: RNLOC1810R-N-S3, Rev. 00A, 11/06/2018

Resident Inspector Quarterly Review of Licensed Operator Performance in the Actual Plant/Main Control Room

AD-NF-ALL-0201, Reactivity Manipulation Plan Development, Rev. 4
AD-OP-ALL-0203, Reactivity Management, Rev. 11
AD-OP-ALL-1000, Conduct of Operations, Rev. 13
EST-050, Refueling Startup Procedure, Rev. 58
GP-003, Normal Plant Startup from Hot Shutdown to Critical, Rev. 111
RNP Unit 2 Cycle 32 Startup and Power Ascension, Rev. 0

71111.12: Maintenance Effectiveness

AD-EG-ALL-1210, Maintenance Rule Program, Rev. 1
AD-OP-ALL-0201, Protected Equipment, Rev. 5
AD-WC-ALL-0200, On-Line Work Management, Rev. 13
AD-WC-ALL-0410, Work Activity Integrated Risk Management, Rev. 7
OMM-048, Work Coordination and Risk Assessment, Rev. 65
NCR 02245045, RV1-1 Lifting prior to reaching setpoint, 11/24/2018
NCR 02245060, S/G PORV controls not working properly per GP-002, 11/24/2018
WO 20287185 RV1-2 lifting prior to relief setpoint, 11/24/2018
NCR 02245463, RNP TCS - GV-4 Oscillations During Performance of SPP-062, 11/27/2018
NCR 02245464, Governor Valve 4 failed closed at 20% power, 11/27/2018
NCR 02245806, AOP-015 Entry due to Load Swings, 11/28/2018
NCR 02246008, AOP-015 Entry due to Load Swings, Governor Valve Oscillations, 11/28/2018
NCR 02248025, GV3 LVDT1 Erratic Indication, 12/10/2018

71111.13: Maintenance Risk Assessments and Emergent Work Evaluation

AD-NF-ALL-0501, Electronic Risk Assessment Tool (ERAT), Rev. 1

71111.15: Operability Evaluations

AD-OP-ALL-0102, Operational Decision Making, Rev. 2
AD-OP-ALL-0105, Operability Determination and Functionality Assessments, Rev. 4

71111.18: Plant Modifications

AD-EG-ALL-1134, Preparation and Control of Evaluation Engineering Changes, Rev. 2
AD-EG-ALL-1137, Engineering Change Product Selection, Rev. 4
AD-EG-ALL-1180, Engineering Change Walk Downs, Rev. 4
AD-LS-ALL-0008, 10CFR50.59 Review Process, Rev. 0

71111.19: Post Maintenance Testing

PLP-033, Post Maintenance Testing Program, Rev. 67
TMM-043, Air Operated Valve Program, Rev. 17

71111.20: Outage Activities

EST-050, Refueling Startup Procedure, Rev. 58
GP-003, Normal Plant Startup from Hot Shutdown to Critical, Rev. 111
RNP Unit 2 Cycle 32 Startup and Power Ascension, Rev. 0

71111.22: Surveillance Testing

OMM-015, Operations Surveillance Testing, Rev. 49

71151: Performance Indicator (PI) Verification

AD-LS-ALL-0004, NRC Performance Indicators and Monthly Operating Report, Rev. 2
AD-BO-ALL-0002, Performance Measures Program, Rev. 5
RNP-M/MECH-1904, RNP NRC Mitigating System Performance Index (MSPI) Basis Document, Rev. 4

71152: Problem Identification and Resolution

AD-PI-ALL-0100, Corrective Action Program, Rev. 19
MMM-009-1, Turbine Crane Protocol and General Information, Rev. 6
NCR 02221337, Processing Valve Lineup Error, 07/27/2018
NCR 02224661, Lifting and Rigging incident with Turbine Crane, 08/14/2018
NCR 02225270, OWP-11 switch misposition, 08/16/2018
NCR 02228410, DA-25A (DG A Lower Air Start Outlet Isolation) mispositioned, 09/01/2018
NCR 02235329, Inadvertent contact made by polar crane with swing gate, 10/04/2018
NCR 02238258, 'A' Reactor Coolant Pump Breaker closure during testing, 10/20/2018
NCR 02240888, RCP A Inadvertent Start EIT Report, 11/01/2018
NCR 02244511, 'B' EDG Auto start, 11/20/2018
AR 02217105, R2M31A Action Item: Review EC402274, 08/30/2018
AR 02182232, Update Pri. A drawings listed on ADL for EC-413474 & 413533, 10/04/2018
EC 413356, Provide UPS-backed power to 2-PNET-ES005 from power panel PP-8, 09/25/2018
NCR 02134503, RNP – MET Tower Swap-over Modification Stopped, 06/30/2017
NCR 02136956, ERFIS Failover occurred during Software Upgrade, 07/13/2017
NCR 02226089, Power Loss to PNet Components Impacting ERFIS Reliability, 08/21/2018
NCR 02213269, Loss of Control Room ERFIS with OSIP available, 06/15/2018
NCR 02225780, Unplanned LCO entry due to a loss of ERFIS in Control Room, 08/20/2018

60855.1: Operation of an Independent Spent Fuel Storage Installation (ISFSI) Procedures

Certificate of Compliance 1004, Amendment 13, Technical Specifications for the Standardized NUHOMS Horizontal Modular Storage System, Docket 72-1004
H. B. Robinson Steam Electric Plant Independent Spent Fuel Storage Installation, Materials License No. SNM-2502, Amendment 3, May 25, 2018 (Technical Specifications)
ISFS-102, ISFSI DSC Loading and Storage, Rev. 4
ISFS-103, ISFSI HSM Temperature Monitoring, Rev. 1
OST-021, Daily Surveillances, Rev. 48
RNP-B/FP-1012, Fire Hazards Evaluation for the 24P-ISFSI Cask Hauling and Storage, Rev. 3
RNP-B/FP-1013, Explosion Hazards Evaluation for the 24P-ISFSI Cask Hauling and Storage, Rev. 3
RNP-B/FP-1014, Probabilistic Risk Assessment of Explosion Hazards for 24P-ISFSI Cask Hauling and Storage, Rev. 0

71003: Post-Approval Site Inspection for License Renewal

Action Requests

412044-07	556945	2120498-04
417194-26	705596-26	2230740-05
419268	722827-26	2247484
457822	733360-26	22475

Calculations

RNP-L/LR-0642, Aging Management Program - Preventative Maintenance Program for H.R Robinson Unit 2, Revision 10

Condition Reports

0370343	0714514	2109909
0512470	0719666	2110709
0393456	0730164	2140335
0581908	0741180	2157488
0600053	0750731	2157489
0607989	0750869	2162763
0627441	0753999	2213746
0632017	0754218	2215712
0633712	1962902	2221720
0645278	1999604	2235381
0650704	2020104	2235607
0652938	2104555	2236016
0683561	2105259	2239389

Condition Reports Generated During the Inspection

02247484, 2018 NRC LR Inspection: Cable Aging Management
02247520, 2018 NRC LR Inspection: SW Piping Inspection

Engineering Change

47222R5	84562R1	413924R1
---------	---------	----------

Miscellaneous

2018 Triennial Ultimate Heat Sink Self-Assessment

51-9177743-001, Spring 2012 RO-27 Refueling Outage. Reactor Vessel & Internals Remote Visual Examinations, 6/4/12
 DSDG Trend Data Sample 11/27/2016 – 09/20/2018
 EDG Trend Data Sample 09/11/2016 – 09/10/2018
 EST-116, Service Water Piping Inspection, Revision 8, conducted for R229, 05/31/2015
 EST-116, Service Water Piping Inspection, Revision 8, conducted for R230, 03/23/2017
 EST-116, Service Water Piping Inspection, Revision 9, conducted for R231, 11/29/2018
 Final Eddy Current Inspection Report AFW Pump Room Cooler HVH-7B
 HBR2-12414, CV Liner Insulation/Sheathing Insulation Panels Developed Elevation View, Rev. 0
 NLS-90-005, HB Robinson to NRC, Response to NRC Generic Letter 89-13 Service Water System Problems Affecting Safety-Related Equipment, 01/26/1990
 NLS-91-030, HB Robinson to NRC, Supplemental Response to NRC Generic Letter 89-13 Service Water System Problems Affecting Safety-Related Equipment, 11/18/1991
 NLS-91-050, HB Robinson to NRC, Supplemental Response to NRC Generic Letter 89-13 Service Water System Problems Affecting Safety-Related Equipment, 03/08/1991
 Preventative Maintenance Change Requests # 2209037
 Self-Assessment 712884, RNP Closed and Open Colling Water Chemistry Trends and Program Review, 11/17/2014
 Self-Assessment 1967254, PM Program Self-Assessment, completed 12/10/2015
 Self-Assessment 2089149, RNP PM Program Self-Assessment, completed 03/21/2018
 Self-Assessment 2201776, Fleet Closed Cooling Water Chemistry and Monitoring Trends, 04/30/2018
 System Performance Monitoring Plan Dedicated Shutdown Diesel Generator, Revision 2
 VE-18-010, Visual Examination (Panel 228-BBB) dated 10/3/2018
 VE-18-014, Visual Examination (Panel 228-VV) dated 9/28/2018
 VE-18-018, Visual Examination (Panel 228-F) dated 10/3/2018
 VE-18-021, Visual Examination (Panel 228-D) dated 10/3/2018
 VE-18-022, Visual Examination (Panel 228-WW) dated 9/28/2018
 VE-18-023, Visual Examination (Panel 228-XX) dated 9/28/2018
 VT-18-291, Visual Examination of IWE Interfaces (Equipment Hatch Cylinder), dated 10/2/2018
 VT-18-293, Visual Examination of IWE Interfaces (Equipment Hatch Bolting), dated 10/2/2018
 VT-18-298, Visual Examination of IWE Interfaces (Fuel Transfer Tube Bolting), dated 9/24/2018
 VT-18-364, Visual Examination of IWE Interfaces (Moisture Barrier), dated 10/4/2018
 VT-18-365, Visual Examination of IWE Interfaces (Sump Moisture Barrier), dated 11/6/2018
 VT-18-366, Visual Examination of IWE Interfaces (Fuel Transfer Tube Surface), dated 11/7/2018
 WDI-PJF-1308961-FSR-001. Reactor Vessel Lower Internals MRP Visual Inspection, October 2013

Procedures

AD-EG-ALL-1202, Preventative Maintenance and Surveillance Testing Administration, Revision 7
 AD-EG-ALL-1615, Cable Aging Management Program – Implementation, Rev. 1
 AD-EG-ALL-1911, Reactor Internals Program Implementation, Rev. 2
 AD-EG-RNP-1615, Cable Aging Management Program (Robinson), Rev. 0
 AD-PI-ALL-0400, Operating Experience Program, Rev. 7
 CM-201, Safety Related and Non-Safety Related Heat Exchanger Maintenance, Revision 57
 EGR-NGGC-0211, ASME Section XI Repair/Replacement Program, Rev. 3
 OST-013, Weekly Checks and Operations, Revision 141
 OST-201-1 MDAFW System Component Test Train A, Revision 38

OST-201-2 MDAFW System Component Test Train B, Revision 35
 OST-405, TSC/EOF/Security Diesel Generator Operational Test, Revision 39
 OST-406, TSC/EOF/Security Diesel Generator Monthly Test, Revision 36
 OST-409-1, EDG 'A' Fast Speed Start, Revision 63
 OST-409-2, EDG 'B' Fast Speed Start, Revision 66
 OST-410, Emergency Diesel Generator 'A' (24 Hour Load Test), Revision 66
 OST-411, Emergency Diesel Generator 'B' (24 Hour Load Test), Revision 67
 OST-908-2, Component Cooling Water Pump A Test, Revision 4
 OST-908-3, Component Cooling Water Pump B Test, Revision 5
 OST-908-4, Component Cooling Water Pump C Test, Revision 4
 OST-910, Dedicated Shutdown Diesel Generator (Monthly), Revision 59
 PM-E-CATH-MISC-001, Cathodic Protection System Soil to Structure Potential Measurement Test, Rev. 1
 PM-E-CATH-RCTFR-001, Cathodic Protection System Rectifier Inspection and Cleaning, Rev. 1
 PM-M-DSD-COOL-01, DSD Semi-Annual Engine Coolant Maintenance, Revision 2
 PM-M-DSD-INSP-001, DSD 24 Month Inspection, Revision 2
 PM-M-EOFDG-INSP-001, TSC/EOF/Security Diesel Generator Inspection Number 1, Revision 1
 PM-M-FO-PIPE-001, Fuel Oil Transfer Piping Leak Check, dated 10/6/2015
 PM-M-FO-PIPE-001, Fuel Oil Transfer Piping Leak Check, Rev. 8
 RNP-L/LR-0602, Aging Management Program Open Cycle Cooling Water System Program, Revision 7
 RNP-L/LR-0627, Aging Management Program Closed Cycle Cooling Water System Program, Revision 2
 TMM-124, Inservice IWE/IWL Program, Rev. 12

Procedure Change Request

431728	1968689
597537	02247472

Work Orders

00670842-01	20015713-01
00734169-01	20016230
01127879-01	20016407-01
01800270	20016432
01800271	20016718-01
02037023-01	20016735
02066053-01	20057811
10764421	20057812
10888147	20057813
11092369	20058601-01
11672497-01	20146154-01
11813918	20152545-01
11823269	20166986
13399302	20180470
13447937-01	20213005-01
13468733	202840
13477980	
13325834	
20007847	

