



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

February 11, 2016

Mr. Dennis Koehl,
President and Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION – NRC
INTEGRATED INSPECTION REPORT 05000498/2015004
AND 05000499/2015004

Dear Mr. Koehl:

On December 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your South Texas Project Electric Generating Station, Units 1 and 2, facility. On January 7, 2015, the NRC inspectors discussed the results of this inspection with Mr. G. Powell, Site Vice President, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented two findings of very low safety significance (Green) in this report. One of these findings involved a violation of NRC requirements.

If you contest the violation or significance of this non-cited violation (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 IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the South Texas Project Electric Generating Station, Units 1 and 2, facility.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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, Region IV; and the NRC resident inspector at the South Texas Project Electric Generating Station, Units 1 and 2, facility.

D. Koehl

- 2 -

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management 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/

Nicholas H. Taylor, Branch Chief
Project Branch B
Division of Reactor Projects

Docket Nos.: 50-498 and 50-499
License Nos.: NPF-76 and NPF-80

Enclosure: Inspection Report 05000498/2015004
and 05000499/2015004

w/Attachment 1: Supplemental Information
w/Attachment 2: Document Request for
Inservice Inspection

D. Koehl

- 2 -

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management 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/

Nicholas H. Taylor, Branch Chief
Project Branch B
Division of Reactor Projects

Docket Nos.: 50-498 and 50-499
License Nos.: NPF-76 and NPF-80

Enclosure: Inspection Report 05000498/2015004
and 05000499/2015004

w/Attachment 1: Supplemental Information
w/Attachment 2: Document Request for
Inservice Inspection

cc w/ encl: Electronic Distribution

DISTRIBUTION:

See next page

ADAMS ACCESSION NUMBER: ML16042A550

<input checked="" type="checkbox"/> SUNSI Review By: NHT		ADAMS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available		Keyword: NRC-002	
OFFICE	SRI:DRP/B	RI:DRP/B	TL:DRS/TSS	C:DRS/EB1	C:DRS/EB2	C:DRS/OB			
NAME	ASanchez	NHernandez	THipschman	TFarnholtz	GWerner	VGaddy			
SIGNATURE	/RA/E-	/RA/E-	/RA/	/RA/	/RA/	/RA/			
DATE	2/10/16	2/10/16	2/4/16	2/4/16	2/4/16	2/3/16			
OFFICE	C:DRS/PSB1	C:DRS/PSB2	BC:DRP/B						
NAME	MHaire	HGepford	NTaylor						
SIGNATURE	/RA/	/RA/	/RA/						
DATE	2/4/16	2/3/16	2/11/16						

OFFICIAL RECORD COPY

Letter to Dennis Koehl from Nicholas Taylor dated February 11, 2016

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION – NRC
INTEGRATED INSPECTION REPORT 05000498/2015004
AND 05000499/2015004

DISTRIBUTION:

Regional Administrator (Marc.Dapas@nrc.gov)
Deputy Regional Administrator (Kriss.Kennedy@nrc.gov)
DRP Director (Troy.Pruett@nrc.gov)
DRP Deputy Director (Ryan.Lantz@nrc.gov)
DRS Director (Anton.Vegel@nrc.gov)
DRS Deputy Director (Jeff.Clark@nrc.gov)
Senior Resident Inspector (Alfred.Sanchez@nrc.gov)
Resident Inspector (Nicholas.Hernandez@nrc.gov)
Branch Chief, DRP/B (Nick.Taylor@nrc.gov)
Senior Project Engineer, DRP/B (David.Proulx@nrc.gov)
Project Engineer, DRP/B (Shawn.Money@nrc.gov)
Project Engineer, DRP/B (Steven.Janicki@nrc.gov)
STP Administrative Assistant (Lynn.Wright@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Project Manager (Lisa.Regner@nrc.gov)
Team Leader, DRS/TSS (Thomas.Hipschman@nrc.gov)
RITS Coordinator (Marisa.Herrera@nrc.gov)
ACES (R4Enforcement.Resource@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Technical Support Assistant (Loretta.Williams@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
RIV Congressional Affairs Officer (Angel.Moreno@nrc.gov)
OEWEB Resource (OEWEB.Resource@nrc.gov)
OEWEB Resource (Sue.Bogle@nrc.gov)
RIV/ETA: OEDO (Raj.lyengar@nrc.gov)
ROPreports.Resource@nrc.gov
ROPassessment.Resource@nrc.gov

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000498, 05000499

License: NPF-76, NPF-80

Report: 05000498/2015004 and 05000499/2015004

Licensee: STP Nuclear Operating Company

Facility: South Texas Project Electric Generating Station, Units 1 and 2

Location: FM 521 - 8 miles west of Wadsworth
Wadsworth, Texas 77483

Dates: October 4 through December 31, 2015

Inspectors: A. Sanchez, Senior Resident Inspector
N. Hernandez, Resident Inspector
M. Bloodgood, Operations Engineer
J. Braisted, Reactor Inspector
T. Farina, Senior Operations Engineer
G. Guerra, CHP, Emergency Preparedness Inspector
R. Kopriva, Senior Reactor Inspector
R. Kumana, Resident Inspector
B. Larson, Senior Operations Engineer
D. Proulx, Senior Project Engineer
C. Smith, Reactor Inspector

Approved By: Nicholas H. Taylor
Chief, Project Branch B
Division of Reactor Projects

SUMMARY

IR 05000498/2015004, 05000499/2015004; 10/04/2015 – 12/31/2015; South Texas Project Electric Generating Station, Units 1 and 2, Licensed Operator Requalification, and Problem Identification and Resolution

The inspection activities described in this report were performed between October 4 and December 31, 2015, by the resident inspectors at the South Texas Project and inspectors from the NRC's Region IV office. Two findings of very low safety significance (Green) are documented in this report. One of these findings involved a violation of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process," dated April 29, 2015. Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas" dated December 4, 2014. Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding, associated with simulator operability testing, for the failure of the licensee to track and incorporate actual plant data into their cyclic operability tests, as required by American National Standards Institute-3.5-2009, "Nuclear Power Plant Simulators for Use in Operator Training and Examination." With the exception of one transient, the licensee exclusively used engineering analysis from the RETRAN code as baseline data without reference to plant events that may have been related to the required transient tests. This issue was entered into the licensee's corrective action program as Condition Report 15-21463.

The failure to track and incorporate plant events into baseline data for simulator operability testing is a performance deficiency. It is more than minor and, therefore, a finding because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and negatively affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, if simulator performance is not being compared to the most relevant baseline data from the plant, the reliability of the simulator performance is reduced. Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheets, and the corresponding Appendix I, "Licensed Operator Requalification SDP" (block 14), the finding was determined to have very low safety significance (Green) because it is a "Simulator testing, maintenance, or modification deficiency." This finding has a cross-cutting aspect in the procedure adherence component of the human performance cross-cutting area because the licensee failed to ensure that individuals follow processes, procedures, and work instructions in that the American National Standards Institute-3.5-2009 guidance for selecting baseline data for simulator testing was not followed [H.8]. (Section 1R11.3)

Cornerstone: Emergency Preparedness

- Green. The inspectors identified a non-cited violation of 10 CFR 50.54(q)(2) for failure to maintain the emergency plan in accordance with the approved safety evaluation report. Specifically, the licensee failed to meet 10 CFR 50.47(b)(2) requirements for timely

augmentation of response capabilities, in accordance with the approved safety evaluation report. Following an update to the safety evaluation report in 1993, the licensee failed to update the emergency response organization staff augmentation time requirements to commence at the time of an emergency declaration vice from the time of an emergency notification. To restore compliance, the licensee updated the emergency plan in accordance with the current safety evaluation report.

Failure to maintain the site emergency plan in accordance with the approved safety evaluation report, dated May 20, 1993, was a performance deficiency. Specifically, the licensee failed to update the ERO staff augmentation time requirements to commence at the time of an emergency declaration, as required by the NRC safety evaluation report. This performance deficiency is more than minor because it is associated with the procedure quality attribute of the Emergency Preparedness Cornerstone and adversely affected the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding was evaluated using Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process (SDP)," dated September 22, 2015, and was determined to be of very low safety significance (Green) per Table 5.2-1, "Significance Examples 50.47(b)(2)," because the staffing processes do not meet the threshold of "routinely not capable of ensuring timely augmentation of the on shift emergency response staff to the extent that more than one required ERO functional area (in accordance with E-plan commitments) would not be filled." No cross-cutting aspect is assigned because the performance deficiency is not indicative of present performance. (Section 40A2.3)

PLANT STATUS

Unit 1 began the inspection period operating at 100 percent power. On October 18, 2015, Unit 1 entered Mode 3 to begin Refueling Outage 1RE19. On November 13, 2015, Unit 1 entered Mode 3, but identified a reactor coolant pump 1C high seal leak off from the number 1 seal and returned to Mode 5 later that day to replace the seal. On November 17, 2015, following the repair of the reactor coolant pump 1C seal replacement, Unit 1 entered Mode 3. On November 20, 2015, Unit 1 entered Mode 5 to evaluate issues regarding unreliable operation of control rod D-6. Following an NRC emergency license amendment review and approval, the licensee removed control rod D-6 from the reactor and entered Mode 3 on December 18, 2015. On December 20, 2015, Unit 1 closed main generator output breakers ending Refueling Outage 1RE19.

On December 21, 2015, while at 48 percent reactor power, main turbine governor valve number 2 began oscillating uncontrollably. Reactor operators tripped the main turbine. Following the main turbine trip, group one steam dumps failed to operate, which led to rising steam generator levels and resulted in a main feedwater isolation actuation. Reactor operators initiated a manual reactor trip, and entered Mode 3, due to the inability to maintain and control steam generator levels. Following repairs to the main turbine number 2 governor valve and the group one steam dumps, Unit 1 entered Mode 1 on December 24, 2015, and main generator breakers were closed on December 25, 2015. On December 30, 2015, Unit 1 reached 100 percent power and remained there for the remainder of the inspection period.

Unit 2 operated at 100 percent power for the entire inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

On October 13, 2015, the inspectors completed an inspection of the station's readiness for seasonal extreme weather conditions. The inspectors reviewed the licensee's adverse weather procedures for extreme cold weather and evaluated the licensee's implementation of these procedures. The inspectors verified that prior to the onset of cold weather, the licensee had corrected weather-related equipment deficiencies identified during the previous cold weather season.

The inspectors selected two risk-significant systems that were required to be protected from cold weather:

- Units 1 and 2, essential cooling water intake structures
- Units 1 and 2, engineered safety features transformers

The inspectors reviewed the licensee's procedures and design information to ensure the systems would remain functional when challenged by adverse weather. The inspectors verified that operator actions described in the licensee's procedures were adequate to maintain readiness of these systems. The inspectors walked down portions of these systems to verify the physical condition of the adverse weather protection features.

These activities constituted one sample of readiness for seasonal adverse weather, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.2 Readiness to Cope with External Flooding

a. Inspection Scope

On October 14 and December 30, 2015, the inspectors completed an inspection of the station's readiness to cope with external flooding. After reviewing the licensee's flooding analysis, the inspectors chose six plant areas that were susceptible to flooding:

- Units 1 and 2 electrical auxiliary building
- Units 1 and 2 auxiliary feedwater storage tank areas
- Units 1 and 2 tendon access and auxiliary airlock areas

The inspectors reviewed plant design features and licensee procedures for coping with flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether credited operator actions could be successfully accomplished.

These activities constituted one sample of readiness to cope with external flooding, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walk-downs of the following risk-significant systems:

- October 14, 2015, Unit 1, train A high head safety injection system while train B high head safety injection system was out of service for planned maintenance
- October 21, 2015, Unit 1, technical support diesel generator when it was required for backup electrical power for closure of the containment equipment hatch

- December 14 through 15, 2015, Unit 2, train A auxiliary feedwater system while train D auxiliary feedwater pump was out of service for planned maintenance
- December 16 through 17, 2015, Unit 1, train B essential cooling water system while train C essential cooling water was out of service for planned maintenance

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the trains were correctly aligned for the existing plant configuration.

These activities constituted four partial system walk-down samples, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On October 6, 2015, the inspectors performed a complete system walk-down inspection of the Unit 2, train A component cooling water. The inspectors reviewed the licensee's procedures and system design information to determine the correct component cooling water lineup for the existing plant configuration. The inspectors also reviewed open condition reports, temporary modifications, and other open items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

On December 19, 2015, the inspectors performed a complete system walk-down inspection of the Unit 1, train B high pressure safety injection system. The inspectors reviewed the licensee's procedures and system design information to determine the correct high pressure safety injection system lineup for the existing plant configuration. The inspectors also reviewed open condition reports, temporary modifications, and other open items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

These activities constituted two complete system walk-down samples, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on seven plant areas important to safety:

- October 7, 2015, Unit 2, mechanical auxiliary building, Fire Areas 27, 29, and 02; Fire Zones Z128, Z139, and Z140
- October 19, 2015, Unit 1, reactor containment building, Fire Area 63, Fire Zones Z222 and Z203
- November 4, 2015, Unit 1, electrical auxiliary building, Fire Area 04, Fire Zones Z052 and Z054
- November 18, 2015, Unit 1, mechanical auxiliary building, Fire Area 50, Fire Zone 401
- November 18, 2015, Unit 1, mechanical auxiliary building, Fire Area 49, Fire Zone 402
- November 19, 2015, Unit 1, mechanical auxiliary building, Fire Area 48, Fire Zone 403
- November 19, 2015, Unit 1, mechanical auxiliary building, Fire Area 51, Fire Zone 405

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted seven quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose two plant areas containing risk-significant structures, systems, and components (SSCs) that were susceptible to flooding:

- On November 20, 2015, Unit 1, train A auxiliary feedwater pump room
- On December 30, 2015, Unit 1, fuel handling building

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

These activities constitute completion of two flood protection measures samples, as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs to verify heat exchanger performance and operability for the following heat exchangers:

- Unit 1, train A standby diesel generator lube oil and jacket water heat exchangers
- Unit 1, train C essential chilled water chiller
- Unit 2, train A component cooling water heat exchanger
- Unit 2, train C essential chilled water chiller

The inspectors verified whether testing, inspection, maintenance, and chemistry control programs are adequate to ensure proper heat transfer. The inspectors verified that the periodic testing and monitoring methods, as outlined in commitments to NRC Generic Letter 89-13, utilized proper industry heat exchanger guidance. Additionally, the inspectors verified that the licensee's chemistry program ensured that biological fouling was properly controlled between tests. The inspectors reviewed previous maintenance records of the heat exchangers to verify that the licensee's heat exchanger inspections adequately addressed structural integrity and cleanliness of their tubes. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four triennial heat sink inspection samples, as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

The activities described in subsections 1 through 4 below constitute completion of one inservice inspection sample, as defined in Inspection Procedure 71111.08.

.1 Nondestructive Examination (NDE) Activities and Welding Activities

a. Inspection Scope

The inspectors directly observed the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Auxiliary Feedwater System	Component ID # Pipe Lugs/8-AF-1010-GA2[C]/19PL1-19PL8. Drawing # B AF 5. Record # MT-2015-062	Magnetic Particle Examination
Safety Injection System	Component ID # SI-1206-HFW-0191 – FLEX tie-in to Safety Injection System. 3 inch Weld-O-Let to 6 inch pipe. Record # PT-2015-218	Penetrant Examination
Reactor Coolant System	Component ID # Reactor Vessel Head Vent Isolation Valve FW-0015 (10 Pipe-to-Valve HV3658A). Record # PT 2015 222	Penetrant Examination
Reactor Coolant System	Component ID # Reactor Vessel Head Vent Isolation Valve FW-0006 (13 Pipe-to-Valve HV3658B). Record # PT 2015 223	Penetrant Examination
Safety Injection System	Component ID # SI 1206. Weld ID # HFW-0177. Dated 10/27/2015. 3 inch butt weld. Mistras Job # J 4542-4063457	Radiograph Examination
Safety Injection System	Component ID # SI 1106. Weld ID # HFW-0156. Dated 10/22/2015. 3 inch butt weld. Mistras Job # J 4542-40163457	Radiograph Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 23B Pipe to Pipe. Record # UTCAL-2015-84 (Ultrasonic Calibration)	Ultrasonic Examination

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 23B Pipe to Pipe. Record # UTP 2015-15 (Ultrasonic Profile)	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 23B Pipe to Pipe. Record # UT Exam 2015-69	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 25 Valve to Pipe. Record # UTCAL 2015-82 (Ultrasonic Calibration)	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 25 Valve to Pipe. Record # UTP 2015 1 (Ultrasonic Profile)	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 25 Valve to Pipe. Record # UT Exam 2015-68	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # Pipe to Elbow, 16 F 1018-GA2 weld 9.1. Transducer 45/60 degree. Drawing # B-FW-8. Record # UT Exam-2015-076	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # Pipe to Elbow, 16 FW 1018-GA2, weld 9.1. Drawing # B-FW-8. Record # UTP 2015-20 (UT Profile)	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # Elbow to Pipe, 16 F 1018-GA2 weld 8.1. Transducer 45/60 degree. Drawing # B-FW-8. Record # UT Exam-2015-077	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # Elbow to Pipe, 16-FW-1018-GA2, weld 8.1. Drawing # B-FW-8. Record # UTP 2015-21 (UT Profile)	Ultrasonic Examination
Safety Injection System	Component ID # SI-1106HFW- 0190. FLEX tie-in to Safety Injection System. 3 inch Weld-O- Let to Spool SI-1106-F. Record # VTW-2015-427	Visual Examination

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Safety Injection System	Component ID # SI-1206-HFW-0191. FLEX tie-in to Safety Injection System. 3 inch Weld-O-Let to 6 inch pipe. Record # VTW-2015-457	Visual Examination
Component Cooling Water	Component ID # GUIDE/CC-1101-HL5001, Drawing # CC-9101-HL5001. Pipe Support. Report # VTC-2015-80	Visual Examination
Component Cooling Water	Component ID # GUIDE/CC-1102-HL5002, Drawing # CC-9102-HL5002. Pipe Support. Report # VTC-2015-72	Visual Examination
Reactor Coolant System	Component ID # Bottom Mounted Instrument Penetration/No. 1-58. Drawing # A-RPB-BMI. Record # VE 2015-005	Visual Examination
Reactor Coolant System	Component Summary: #100718. RPV1 N1ASE/RPV Loop A Outlet Nozzle to Safe End @ 202 Degrees. Drw. # A-RPV-2	Visual Examination
Reactor Coolant System	Component Summary: #100858. RPV1 N1BSE/RPV Loop B Outlet Nozzle to Safe End @ 338 Degrees. Drw. # A-RPV-2	Visual Examination
Reactor Coolant System	Component Summary: #100998. RPV1 N1CSE/RPV Loop C Outlet Nozzle to Safe End @ 22 Degrees. Drw. # A-RPV-2	Visual Examination
Reactor Coolant System	Component Summary: #101138. RPV1 N1DSE/RPV Loop D Outlet Nozzle to Safe End @ 158 Degrees. Drw. # A-RPV-2	Visual Examination
Reactor Coolant System	Component Summary: # 760180. RPV1 N1ASE/RPV Loop A Outlet Nozzle to Safe End, (Hot Leg). Drw. # A-RPV-2	Visual Examination
Reactor Coolant System	Component Summary: # 760200. RPV1 N1BSE/RPV Loop B Outlet Nozzle to Safe End, (Hot Leg). Drw. # A RPV-2	Visual Examination

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Coolant System	Component Summary: # 760220. RPV1-N1CSE/RPV Loop C Outlet Nozzle to Safe End, (Hot Leg). Drw. # A-RPV-2	Visual Examination
Reactor Coolant System	Component Summary: # 760240. RPV1-N1DSE/RPV Loop D Outlet Nozzle to Safe End, (Hot Leg). Drw. # A-RPV-2	Visual Examination
Component Cooling Water System	Record # VTC-2015-80. Component: Guide/CC-1101-HL5001, pipe support. Drw. # CC- 9101-HL5001	Visual Examination
Component Cooling Water System	Record # VTC-2015-72. Component: Guide/CC-1102-HL5002, pipe support. Drw. # CC- 9102-HL5002	Visual Examination
Reactor Pressure Vessel System	Record # VTW-2015-465. Component: Reactor Vessel Head Vent Isolation Valve FW-0015 (Pipe to Valve HV3658A)	Visual Examination
Reactor Pressure Vessel System	Record # VTW-2015-466. Component: Reactor Vessel Head Vent Isolation Valve FW-0006 (Pipe to Valve HV3658B)	Visual Examination
Chemical Volume Control System	Record # VTC-20105-82. Component: SH-V/CV-1121-HS5004 (Spring Can Hanger). Drawing: CV-9121-HS5004	Visual Examination
Auxiliary Feedwater System	Component ID # Pipe Lugs/8-AF-1010-GA2[C]/19PL1-19PL8. Drawing # B AF 5. Record # MT-2015-062	Magnetic Particle Examination
Safety Injection System	Component ID # SI-1206-HFW-0191 – FLEX tie-in to Safety Injection System. 3 inch Weld-Outlet to 6 inch pipe. Record # PT-2015-218	Penetrant Examination
Reactor Coolant System	Component ID # Reactor Vessel Head Vent Isolation Valve FW-0015 (10 Pipe-to-Valve HV3658A). Record # PT 2015 222	Penetrant Examination

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Reactor Coolant System	Component ID # Reactor Vessel Head Vent Isolation Valve FW-0006 (13 Pipe-to-Valve HV3658B). Record # PT 2015 223	Penetrant Examination
Safety Injection System	Component ID # SI 1206. Weld ID # HFW-0177. Dated 10/27/2015. 3 inch butt weld. Mistras Job # J 4542-4063457	Radiograph Examination
Safety Injection System	Component ID # SI 1106. Weld ID # HFW-0156. Dated 10/22/2015. 3 inch butt weld. Mistras Job # J 4542-40163457	Radiograph Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 23B Pipe to Pipe. Record # UTCAL-2015-84 (Ultrasonic Calibration)	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 23B Pipe to Pipe. Record # UTP 2015-15 (Ultrasonic Profile)	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 23B Pipe to Pipe. Record # UT Exam 2015-69	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 25 Valve to Pipe. Record # UTCAL 2015-82 (Ultrasonic Calibration)	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 25 Valve to Pipe. Record # UTP 2015 1 (Ultrasonic Profile)	Ultrasonic Examination
Main Steam System	Component ID # 30-MS-1002 GA2. Weld 25 Valve to Pipe. Record # UT Exam 2015-68	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # Pipe to Elbow, 16 F 1018-GA2 weld 9.1. Transducer 45/60 degree. Drawing # B-FW-8. Record # UT Exam-2015-076	Ultrasonic Examination

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Safety Injection System	Component ID # SI 1106. Weld ID # HFW-0149. Dated 10/22/2015. 3 inch butt weld. Mistras Job # J 4542-40163457	Radiograph Examination
Safety Injection System	Component ID # SI 1106. Weld ID # HFW-0156. Dated 10/22/2015. 3 inch butt weld. Mistras Job # J 4542-40163457	Radiograph Examination
Safety Injection System	Component ID # SI 1106. Weld ID # HFW-0150. Dated 08/19/2015. 3 inch butt weld. Mistras Job # J 4491-40131645	Radiograph Examination
Safety Injection System	Component ID # SI 1206. Weld ID # HFW-0163. Dated 10/05/2015. 3 inch butt weld. Mistras Job # J 4542-40163457	Radiograph Examination
Auxiliary Feedwater System	Component ID # 4-RC-1320-BB1 weld 4, pipe to elbow. Transducer 45 degrees. Drawing # A-RC-10. Record # UT Exam 2015-064	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # 4-RC-1320-BB1-4, elbow to pipe. Drawing # A-RC-10. Record # UTP 2015-16 (UT Profile)	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # 4-RC-1320-BB1 weld 5, elbow to pipe. Transducer 45 degrees. Drawing # A-RC-10. Record # UT Exam-2015-065	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # 4-RC-1320-BB1-5, elbow to pipe. Drawing # A-RC-10. Record # UTP 2015-17 (UT Profile)	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # 102950 12-RC-1312-BB1 weld 10, elbow to pipe. Transducer 45 degrees. Drawing # A-RC-8. Record # UT Exam-2015-066	Ultrasonic Examination

<u>SYSTEM</u>	<u>IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Auxiliary Feedwater System	Component ID # 12-RC-1312-BB1 weld 10, elbow to pipe. Drawing # A RC-8. Record # UTP 2015-19 (UT Profile)	Ultrasonic Examination
Auxiliary Feedwater System	Component ID # 8-RC-1214-BB1 weld 3, elbow to pipe. Drawing # A-RC-8. Record # UTP 2015-18 (UT Profile)	Ultrasonic Examination

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with ASME Boiler and Pressure Vessel Code requirements and applicable procedures. The qualifications of all nondestructive examination technicians performing the inspections were verified to be current.

The inspectors directly observed a portion of the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELD TYPE</u>
Safety Injection System	FLEX Modification tie-in to Safety Injection System – Train “A”. Line # SI 1106, Weld # HFW0149 LA	Manual Gas Tungsten Arc Welding
Safety Injection System	FLEX Modification tie-in to Safety Injection System – Train “A”. Line # SI 1106, Weld # HFW0190	Manual Gas Tungsten Arc Welding
Safety Injection System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # SI 1206, Weld # HFW0177	Manual Gas Tungsten Arc Welding
Safety Injection System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # SI 1206, Weld # HFW0191	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # AF 1077, Weld # HFW0184	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # AF 1077, Weld # HFW0185	Manual Gas Tungsten Arc Welding

The inspectors reviewed records of the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>WELD TYPE</u>
Safety Injection System	FLEX Modification tie-in to Safety Injection System – Train “A”. Line # SI 1101, Weld # HFW0097	Manual Gas Tungsten Arc Welding
Safety Injection System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # SI 1201, Weld # HFW0097	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # AF 1077, Weld # HFW0190	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # AF 1014, Weld # HFW0198	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # AF 1014, Weld # HFW0199	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “C”. Line # AF 1079, Weld # HFW0191	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “C”. Line # AF 1079, Weld # HFW0192	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “C”. Line # AF 1079, Weld # HFW0197	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “C”. Line # AF 1047, Weld # HFW0204	Manual Gas Tungsten Arc Welding
Auxiliary Feedwater System	FLEX Modification tie-in to Safety Injection System – Train “B”. Line # AF 1047, Weld # HFW0205	Manual Gas Tungsten Arc Welding

The inspectors verified, by review, that the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code, Section IX requirements. The inspectors also verified through record review that essential variables

for the welding process were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications. Specific documents reviewed during this inspection are listed in the attachment.

b. Findings

No findings were identified.

2. Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

During South Texas Project Refueling Outage 1RE19, there was no visual examination of the reactor pressure vessel head performed. In compliance with ASME Code Case N-729-1, "Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1," Table 1 requires licensees that have new reactor heads with nozzles and partial-penetration welds of primary water stress corrosion cracking-resistant materials to perform a 100 percent inspection every third refueling outage or 5 calendar years, whichever is less. The licensee last inspected the Unit 1 reactor pressure vessel head in March 2014.

b. Findings

No findings were identified.

3. Boric Acid Corrosion Control Inspection Activities

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's boric acid corrosion control program for monitoring degradation of those systems that could be adversely affected by boric acid corrosion. The inspectors reviewed the documentation associated with the licensee's boric acid corrosion control walk-down as specified in Procedure OPGP03-ZE-0133, "Boric Acid Corrosion Control Program," Revision 9, and Procedure OPGP03-ZE-0033, "RCS Pressure Boundary Inspection for Boric Acid Leaks," Revision 13. The inspectors reviewed visual records of components and equipment containing boric acid leaks. The inspectors performed walk-downs of portions of the following areas: residual heat removal pump rooms, safety injection pump rooms, reactor pressure vessel hot and cold leg nozzles, and reactor vessel bottom mounted instrument penetrations. The inspectors verified that the visual inspections emphasized locations where boric acid leaks could cause degradation of safety-significant components. The inspectors also verified that the engineering evaluations for those components where boric acid was identified gave assurance that the ASME Code wall thickness limits were properly maintained.

b. Findings

No findings were identified.

.4 Steam Generator (SG) Tube Inspection Activities

a. Inspection Scope

The inspectors reviewed the steam generator tube eddy current (ECT) examination scope and expansion criteria to determine whether these criteria met technical specification requirements, EPRI guidelines, and commitments made to the NRC. The inspectors also reviewed whether the ECT inspection scope included areas of degradations that were known to represent potential ECT test challenges such as the top of tube sheet, tube support plates, and U-bends. The inspectors confirmed that no repairs were required at the time of the inspection.

The scope of the licensee's ECT examinations included:

- Full length bobbin inspection of the outer three peripheral tubes from tube end to tube end, including 10 tubes inwards into the no-tube lane from the periphery
- Fifty percent full length bobbin inspection of all tubes. Scope shall include all remaining tubes not inspected full length during 1RE13
- Twenty percent +point probe inspection of the upper tube sheet plate hot leg to upper tube sheet plate cold leg on rows 1 and 2 (U-bends)
- Twenty percent +point probe inspection of tube sheet hot leg +6 inches/-3 inches
- +Point probe inspection of outer three tubes of periphery and divider lane top of tube sheet
- +6 inches/-3 inches to aid in loose parts detection (hot leg and cold leg)
- >Twenty percent +point probe sample inspection of tube sheet hot leg +6 inches/-16 inches in tube with bulges and over expansions. This includes 65 in SG A, 18 in SG B, 5 in SG C, and 7 in SG D

The primary side inspection also includes the following special interest scope:

- +Point probe inspection of all previously identified dents and dings >5 volts
- +Point probe inspection of all prior and 1RE19 "I-code" and/or non-quantifiable indications as determined by bobbin inspection or any previously reported signal that has changed
- +Point probe inspection of possible loose parts in the ECT database as identified by previous ECT inspections
- +Point probe inspection of all observed loose parts as identified by previous secondary side video inspections and not removed
- +Point probe inspection of a minimum two tube locations surrounding any new possible loose parts or foreign object identified in 1RE16
- Video inspection of all installed plugs

Inspection scope of the secondary side of the SGs for 1RE19 includes the following:

- Top of tube sheet foreign object search and retrieval in all four SGs including annulus and tube lane
- Top of tube sheet in-bundle foreign object search and retrieval as follows:
 - SG 1A inspect every fourth column both hot leg and cold leg
 - SG 1B inspect every fourth column both hot leg and cold leg
 - SG 1C inspect every fourth column both hot leg and cold leg
 - SG 1D inspect every second column both hot leg and cold leg
- Ultra sludge lancing on all four SGs
- Sludge collector inspection and cleaning (if required based on inspection) in SG 1A. The sludge collectors will only be cleaned if more than 0.5 inch of sludge is seen
- Steam drum inspection in SG 1A and 1B
- Upper steam drum inspection of SG 1A
- Foreign object search and retrieval of all possible

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed 54 condition reports which dealt with inservice inspection activities and found the corrective actions to be appropriate. The specific condition reports reviewed are listed in the documents reviewed section. From this review, the inspectors concluded that the licensee has an appropriate threshold for entering issues into the corrective action program and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry operating experience.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On October 12, 2015, the inspectors observed simulator just-in-time training for an operating crew in preparation for the Unit 1, 1RE19 Refueling Outage. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the just-in-time training activities.

These activities constitute completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On October 17, 2015, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to shutting down the reactor for Refueling Outage 1RE19.

In addition, the inspectors assessed the operators' adherence to plant procedures, including OPOP03-ZG-0006, "Plant Shutdown From 100% to Hot Standby," Revision 61, and other operations department policies.

These activities constitute completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.3 Biennial Review

a. Inspection Scope

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination.

To assess the performance effectiveness of the licensed operator requalification program, the inspectors reviewed both the written examination and operating test

quality, and observed licensee administration of an annual requalification test while on site. The operating tests observed included five job performance measures and two scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content and to determine if feedback of performance analyses into the requalification training program was being accomplished.

On December 23, 2015, the licensee informed the inspectors of the completed cycle results for Units 1 and 2, for both the written examinations and the operating tests:

- Thirteen of fifteen crews passed the simulator portion of the operating test
- Eighty-three of eighty-five licensed operators passed the simulator portion of the operating test
- Eighty-five of eighty-five licensed operators passed the job performance measure portion of the operating test
- Eighty-two of eighty-five licensed operators passed the written examination

The individuals that failed any portion of the exam were remediated, retested, and passed their retake examinations. Two operators have not completed their examinations due to extended medical leave, and their licenses have been placed in a suspended status pending completion of missed training and the requalification examinations.

The inspectors observed examination security measures in place during administration of the examinations (including controls and content overlap) and reviewed remedial training and re-examinations, as available. The inspectors also reviewed medical records of 12 licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for five operators.

The inspectors reviewed simulator performance for fidelity with the actual plant and the overall simulator program of maintenance, testing, and discrepancy correction.

The inspectors completed one inspection sample of the biennial licensed operator requalification program.

b. Findings

Failure to Track and Incorporate Actual Plant Data into Simulator Operability Testing

Introduction. The inspectors identified a Green finding associated with simulator operability testing for the failure of the licensee to track and incorporate actual plant data into their cyclic operability tests, as required by American National Standards Institute (ANSI)-3.5-2009, "Nuclear Power Plant Simulators for Use in Operator Training and Examination." With the exception of one transient, the licensee exclusively used engineering analysis from the RETRAN code as baseline data without reference to plant events that may have been related to the required transient tests.

Description. During the week of September 14, 2015, while performing a biennial requalification inspection in accordance with Inspection Procedure 71111.11, "Licensed Operator Requalification Program," the inspectors reviewed the baseline data sources used to evaluate simulator operability testing. South Texas Project's Simulator Configuration Control Procedure (0PNT01-ZA-0037), Section 4.5.5.2, requires that each fuel cycle, benchmark transient tests shall be conducted as delineated in ANSI-3.5-2009. Section B.3.2 of ANSI-3.5-2009 lists 11 transient performance tests that must be performed such as a manual reactor trip, reactor coolant pump trip, maximum design load rejection, and others. Section 5.1.1 of ANSI-3.5-2009 requires that the baseline data against which the simulator is compared shall be used in the following order of preference: 1) actual plant data, 2) engineering analysis, 3) similar plant data, and 4) subject matter expert estimates. Contrary to this standard, South Texas Project cyclic simulator operability testing exclusively used engineering analysis from the RETRAN code without reference to plant events that may be related to the transients (with the exception of the manual reactor trip transient, for which South Texas Project had appropriately demonstrated equivalency with a 2002 plant event). The station does perform post-event simulator testing as required following actual plant events, but this is one-time testing that is not repeated, in contrast with cyclic operability testing which is repeated after each fuel load. Because the station was not actively incorporating plant data into cyclic simulator operability testing at the time of the sample, the station was unable to provide a list of relevant plant events that might qualify as baseline data. This issue was entered into the licensee's corrective action program as Condition Report 15-21463.

South Texas Project's Simulator Configuration Control Procedure (0PNT01-ZA-0037), Section 4.5.5.2, requires that each fuel cycle, benchmark transient tests shall be conducted as delineated in ANSI-3.5-2009. Section 5.1.1 of ANSI-3.5-2009 requires that the baseline data against which the simulator is compared shall be used in the following order of preference: 1) actual plant data, 2) engineering analysis, 3) similar plant data, and 4) subject matter expert estimates. Contrary to the above, the licensee failed to actively track and incorporate actual plant data into cyclic simulator operability testing, instead relying on engineering analysis exclusively. This issue was entered into the licensee's corrective action program as Condition Report 15-21463.

Analysis. The failure to track and incorporate plant events into baseline data for simulator operability testing is a performance deficiency. It is more than minor and, therefore, a finding because it is associated with the human performance attribute of the Mitigating Systems Cornerstone and negatively affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, if simulator performance is not being compared to the most relevant baseline data from the plant, the reliability of the simulator performance is reduced. Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheets, and the corresponding Appendix I, "Licensed Operator Requalification SDP" (block 14), the finding was determined to have very low safety significance (Green) because it is a "Simulator testing, maintenance, or modification deficiency." This finding has a cross-cutting aspect in the procedure adherence component of the human performance cross-cutting area because the licensee failed to ensure that individuals follow processes, procedures, and work instructions in that the ANSI-3.5-2009 guidance for selecting baseline data for simulator testing was not followed [H.8].

Enforcement. This finding does not involve enforcement action because no violation of a regulatory requirement was identified. Because this finding does not involve a violation and is of very low safety or security significance, it is identified as FIN 05000498/2015004-01; 05000499/2015004-01-01, "Failure to Track and Incorporate Actual Plant Data into Simulator Operability Testing."

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed one instance of degraded performance or condition of safety-related SSCs:

- December 28, 2015, periodic assessment of the effectiveness of Maintenance Rule activities from February 2014 through March 2015

The inspectors reviewed the extent of condition of possible common cause SSC failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the SSCs. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of one maintenance effectiveness sample, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed three risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- October 7, 2015, Unit 2, train C, 125-Vdc battery breaker E2C-11 replacement, which required the licensee to enter the Configuration Risk Management Program
- October 8, 2015, installation of corona balls on the shunt reactor in the switchyard on the south bus, which required isolating the Unit 2 standby transformer
- October 16, 2015, Unit 1, train B high head safety injection pump replacement, which required the licensee to enter the Configuration Risk Management Program

The inspectors verified that these risk assessments were performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessments and verified that the licensee implemented appropriate risk management actions based on the result of the assessments.

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected SSCs.

The inspectors also reviewed the licensee's actions for implementing the Configuration Risk Management Program for determining and implementing the risk-informed allowed outage time for the planned activity listed above.

These activities constitute completion of three maintenance risk assessments inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed five operability determinations that the licensee performed for degraded or nonconforming SSCs:

- October 13, 2015, operable but degraded determination of the Unit 1 qualified data processing system upon discovery of a drifting circuit board
- October 15, 2015, operability determination of Unit 1, train B containment spray following the discovery of an air void during fill and vent activity for the system
- November 5, 2015, operable but degraded determination of Unit 1, train A emergency safeguards features sequencer following essential chiller 12A starting time outside surveillance acceptance criteria
- December 28, 2015, operability determination of Unit 1 reactor vessel water level system, train A, following failure of a sensor
- December 31, 2015, the inspectors performed an in-depth follow-up of the Units 1 and 2 cumulative effects of operator workarounds, operator burdens, and control board items to determine the reliability, availability, and potential for incorrect operation of systems or components

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability. The inspectors verified that the licensee

had considered the effect of other degraded conditions on the operability of the degraded SSC.

The inspectors reviewed operator actions taken or planned to compensate for degraded or nonconforming conditions. The inspectors verified that the licensee effectively managed these operator workarounds to prevent adverse effects on the function of mitigating systems and to minimize their impact on the operators' ability to implement abnormal and emergency operating procedures.

These activities constitute completion of five operability review samples, which included one operator work-around sample, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Modifications

a. Inspection Scope

On November 2, 2015, the inspectors reviewed a temporary modification for Unit 1 temporary power to spent fuel pool cooling pump 1B during Refueling Outage 1RE19.

The inspectors verified that the licensee had installed and removed this temporary modification in accordance with technically adequate design documents. The inspectors verified that this modification did not adversely impact the operability or availability of affected SSCs. The inspectors reviewed design documentation and plant procedures affected by the modification to verify the licensee maintained configuration control.

These activities constitute completion of one sample of temporary modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

.2 Permanent Modifications

a. Inspection Scope

The inspectors reviewed two permanent plant modifications that affected risk-significant SSCs:

- December 23, 2015, Unit 1, removal of electrical power, removal of position indication, and modification of plant computer point for the physical removal of control rod D6 from the reactor for operating cycle 20
- December 23, 2015, Unit 1, installation of a flow restrictor at the top of the guide tube in the upper internals, and a partial length guide tube restrictor in the fuel

bundle due to the physical removal of control rod D6 and its drive shaft for operating cycle 20

The inspectors reviewed the design and implementation of the modifications. The inspectors verified that work activities involved in implementing the modifications did not adversely impact operator actions that may be required in response to an emergency or other unplanned event. The inspectors verified that post-modification testing was adequate to establish the operability of the SSCs as modified.

These activities constitute completion of two samples of permanent modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed five post-maintenance testing activities that affected risk-significant SSCs:

- October 15, 2015, Unit 1, train B high head safety injection pump following pump replacement
- November 1, 2015, Unit 1, technical support diesel and load center 1W following supply breaker maintenance
- November 3, 2015, Unit 1, reactor coolant pump 1A seal injection containment isolation valve MOV-33A following stem nut replacement
- November 3, 2015, Unit 1, reactor coolant pump 1C seal injection containment isolation valve MOV-33C following stem nut replacement
- December 21, 2015, Unit 2, train A essential chiller 22a outlet line following flange replacement due to material de-alloying

The inspectors reviewed licensing- and design-basis documents for the SSCs and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected SSCs.

These activities constitute completion of five post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

.1 Unit 1 Refueling Outage 1RE19

a. Inspection Scope

During the station's Refueling Outage 1RE19 that concluded on December 20, 2015, the inspectors evaluated the licensee's outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately managed personnel fatigue, and developed mitigation strategies for losses of key safety functions. This verification included the following:

- Review of the licensee's outage plan prior to the outage
- Review and verification of the licensee's fatigue management activities
- Monitoring of shutdown and cooldown activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Observation and review of reduced-inventory and mid-loop activities
- Observation and review of fuel handling activities
- Monitoring of heatup and startup activities

These activities constitute completion of one refueling outage sample, as defined in Inspection Procedure 71111.20.

b. Findings

No findings were identified.

.2 Forced Outage

a. Inspection Scope

During the station's forced outage that began on December 21, 2015, and concluded on December 25, 2015, the inspectors evaluated the licensee's outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately managed personnel fatigue, and developed mitigation strategies for losses of key safety functions. This verification included the following:

- Review of the licensee's outage plan following the reactor trip
- Review and verification of the licensee's fatigue management activities
- Monitoring of shutdown activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Monitoring of startup activities

These activities constitute completion of one outage activities sample, as defined in Inspection Procedure 71111.20.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed five risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the SSCs were capable of performing their safety functions:

In-service tests:

- October 22, 2015, Unit 1, train C low head safety injection comprehensive pump test
- October 22, 2015, Unit 1, train B high head safety injection comprehensive pump test and pump curve measurement

Containment isolation valve surveillance tests:

- October 23, 2015, Unit 1, safety injection system, train A, local leak rate test of penetration M-18, check valve 1-SI-0005A

Reactor coolant system leak detection tests:

- November 12, 2015, Unit 1, reactor coolant inventory leak rate

Other surveillance tests:

- October 21, 2015, Unit 1, train A emergency diesel generator load reject and safety injection auto-start tests

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected SSCs following testing.

These activities constitute completion of five surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluation (71114.02)

a. Inspection Scope

The inspector verified the adequacy of the licensee's methods for testing the primary and backup alert and notification system (ANS). The inspector interviewed licensee personnel responsible for the maintenance of the primary ANS and reviewed a sample of corrective action system reports written for ANS problems. The inspector compared the licensee's alert and notification system testing program with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; South Texas Project Electric Generating Station Updated Prompt Notification System Design Report, September 30, 2010; and Updated Prompt Notification System Design Report, June 6, 2013. Other documents reviewed are listed in the attachment to this report.

These activities constituted completion of one alert and notification system evaluation sample, as defined in Inspection Procedure 71114.02.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

a. Inspection Scope

The inspector verified the licensee's emergency response organization (ERO) on-shift and augmentation staffing levels were in accordance with the licensee's emergency plan commitments. The inspector reviewed documentation and discussed with licensee staff the operability of primary and backup systems for augmenting the on-shift emergency response staff to verify the adequacy of the licensee's methods for staffing emergency response facilities, including the licensee's ability to staff pre-planned alternate facilities. The inspector also reviewed records of ERO augmentation tests and events to determine whether the licensee had maintained a capability to staff emergency response facilities within emergency plan timeliness commitments.

These activities constitute completion of one emergency response organization staffing and augmentation testing sample, as defined in Inspection Procedure 71114.03.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspector performed an on-site review of the following emergency plan implementing procedures:

- 0ERP01-ZV-IN02, "Notifications to Offsite Agencies," Revision 31
- 0ERP01-ZV-IN02, "Notifications to Offsite Agencies," Revision 32
- 0ERP01-ZV-IN07, "Offsite Protective Action Recommendations," Revision 14
- 0ERP01-ZV-IN07, "Offsite Protective Action Recommendations," Revision 15
- 0ERP01-ZV-TP01, "Offsite Dose Calculations," Revision 24
- 0ERP01-ZV-TP01, "Offsite Dose Calculations," Revision 25

These revisions implemented new administrative instructions because of program or software changes, form updates, and editorial corrections.

Additionally, the inspector reviewed emergency plan change:

- South Texas Project Electric Generating Station Emergency Plan, Revision ICN 20-17

This revision corrected Section C.4 of the plan to state that the augmentation start time for activation of the ERO is from the time of declaration of an event and not from the time of notification to the ERO.

These revisions were compared to previous revisions, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). The inspector verified that the revisions did not reduce the effectiveness of the emergency plan. This review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, the revisions are subject to future inspection.

These activities constitute completion of seven emergency action level and emergency plan changes samples, as defined in Inspection Procedure 71114.04.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness (71114.05)

a. Inspection Scope

The inspector reviewed samples of the following documents for the period of June 2013 to November 2015:

- After-action evaluation reports for licensee drills and exercises

- Independent audits and surveillances of the licensee’s emergency preparedness program
- Self-assessments of the emergency preparedness program conducted by the licensee
- Licensee evaluations of changes made to the emergency plan and emergency plan implementing procedures
- Drill and exercise performance issues entered into the licensee’s corrective action program
- Emergency preparedness program issues entered into the licensee’s corrective action program
- ERO and emergency planner training records

The inspector reviewed summaries of corrective action program reports associated with emergency preparedness and selected 19 to review against program requirements to determine the licensee’s ability to identify, evaluate, and correct problems in accordance with planning standard 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E, IV.F. The inspector verified that the licensee accurately and appropriately identified and corrected emergency preparedness weaknesses during critiques and assessments.

These activities constitute completion of one sample of the maintenance of the licensee’s emergency preparedness program, as defined in Inspection Procedure 71114.05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security

40A1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index: Heat Removal Systems (MS08)

a. Inspection Scope

The inspectors reviewed the licensee’s mitigating system performance index data for the period of April 2014 through September 2015 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for heat removal systems for Unit 1 and Unit 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Residual Heat Removal Systems (MS09)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of April 2014 through September 2015 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for residual heat removal systems for Unit 1 and Unit 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index: Cooling Water Support Systems (MS10)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of April 2014 through September 2015 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for cooling water support systems for Unit 1 and Unit 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspector reviewed the licensee's evaluated exercises and selected drill and training evolutions that occurred between October 1, 2014, and September 30, 2015, to verify the accuracy of the licensee's data for classification, notification, and protective action recommendation opportunities. The inspector reviewed a sample of the licensee's completed classifications, notifications, and protective action recommendations to verify their timeliness and accuracy. The inspector used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the drill/exercise performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.5 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspector reviewed the licensee's records for participation in drill and training evolutions between October 1, 2014, and September 30, 2015, to verify the accuracy of the licensee's data for drill participation opportunities. The inspector verified that all members of the licensee's ERO in the identified key positions had been counted in the reported performance indicator data. The inspector reviewed the licensee's basis for reporting the percentage of ERO members who participated in a drill. The inspector reviewed drill attendance records and verified a sample of those reported as participating. The inspector used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the emergency response organization drill participation performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.6 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspector reviewed the licensee's records of ANS tests conducted between October 1, 2014, and September 30, 2015, to verify the accuracy of the licensee's data for siren system testing opportunities. The inspector reviewed procedural guidance on assessing ANS opportunities and the results of periodic ANS operability tests. The inspector used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the alert and notification system reliability performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program and periodically attended the licensee's condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program, performance indicators, system health reports, list of essential cooling water leaks, condition reports associated with the main cooling reservoir, outage performance indications, hot work activities, outstanding work orders, and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors also interviewed licensee personnel. The inspectors verified that the licensee was taking corrective actions to address identified adverse trends.

These activities constitute completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

b. Observations and Assessments

The inspectors' review of the possible trends noted above produced the following observations and assessments:

- Hot work performance was a focus item for the licensee as well as the resident inspectors in the last half of the year. The licensee has developed a procedure that is specifically for hot work, has conducted training, and provided extra oversight in the field. The licensee has improved performance although, the resident inspectors continued to note deficiencies in this area.
- The residents and the site have identified a number of maintenance issues associated with the main cooling reservoir. Some of the issues include vegetation control in and around the reservoir, relief well washout, outfall piping elevation drop, and piezometer protection piping damaged. The licensee is having an assessment from an outside consultant to help prioritize and correct the issues. The resident

inspectors toured the main cooling reservoir and do not currently have an operability concern.

- The residents have noted several essential cooling water leaks (aluminum-bronze) which were shared with the licensee. The number of noted leaks and condition reports have not identified any trends as the licensee normally identifies 2-3 leaks per year and promptly corrects the issues by replacing the piping as necessary.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected one issue for an in-depth follow-up:

- On December 7, 2015, the inspectors reviewed a discrepancy between the emergency plan and the safety evaluation report.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to bring the emergency plan back into compliance with the safety evaluation report.

These activities constitute completion of one annual follow-up sample, as defined in Inspection Procedure 71152.

b. Findings

Failure to Maintain the Emergency Plan

Introduction: The inspectors identified a Green non-cited violation of 10 CFR 50.54(q)(2) for failure to maintain the emergency plan. Specifically, the licensee failed to meet 10 CFR 50.47(b)(2) requirements for timely augmentation of response capabilities, in accordance with the approved safety evaluation report.

Description: During review of a license amendment request, dated October 6, 2015, regarding the site emergency plan's staff augmentation response times, NRC staff noted a discrepancy between the current site emergency plan and the approved safety evaluation report. The licensee submitted an earlier license amendment request dated November 3, 1992, the purpose of which was to increase the ERO staff augmentation times by 15 minutes. This changed staff augmentation times from 45 minutes (for radiation protection technicians and nuclear engineers) and 60 minutes (for other staff) to 60 minutes and 75 minutes respectively. The license amendment request stated that these times were "following an emergency declaration." Prior to this change, the licensee's emergency plan and the NRC's safety evaluation report required the licensee's staff augmentation time requirements to begin "following an emergency notification," which the licensee was satisfied with. On May 20, 1993, the NRC approved

the licensee's request for extending ERO staff augmentation response times "following emergency declaration," and issued an updated safety evaluation report containing this change on the same date. The licensee updated the emergency plan to reflect the new ERO staff augmentation response times, but failed to update the emergency plan with the change for ERO staff augmentation time requirements from "notification" to "declaration." Table C-1 of Section C of the emergency plan incorrectly stated that time requirements for ERO staff augmentation are from the time of an emergency notification vice the time of an emergency declaration. Failing to implement this change could delay ERO staff augmentation times by as much as 15 minutes causing the licensee to exceed the time requirements set forth by the safety evaluation report.

The licensee has demonstrated through unannounced off-hours activation drills and announced staff drills that a loss of timely ERO staff augmentation would not have occurred as a result of the emergency plan change from time of notification to time of declaration. This issue was entered into the licensee's corrective action program as Condition Report 15-23835. As part of their corrective actions, the licensee updated the emergency plan to accurately show that ERO staff augmentation times are to commence at the time of an emergency declaration.

Analysis: Failure to maintain the site emergency plan in accordance with the approved safety evaluation report, dated May 20, 1993, was a performance deficiency. Specifically, the licensee failed to update the ERO staff augmentation time requirements to commence at the time of an emergency declaration, as required by the NRC safety evaluation report. This performance deficiency is more than minor because it is associated with the procedure quality attribute of the Emergency Preparedness Cornerstone and adversely affected the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. This finding was evaluated using Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process (SDP)," dated September 22, 2015, and was determined to be of very low safety significance (Green) per Table 5.2-1, "Significance Examples 50.47(b)(2)," because the staffing processes do not meet the threshold of "routinely not capable of ensuring timely augmentation of the on shift emergency response staff to the extent that more than one required ERO functional area (in accordance with E-plan commitments) would not be filled." No cross-cutting aspect is assigned because the performance deficiency is not indicative of present performance.

Enforcement: Title 10 CFR 50.54(q)(2) requires, in part, that a holder of a nuclear power reactor operating license shall follow and maintain in effect emergency plans which meet the requirements in Appendix E, part 50, and for nuclear power reactor licensees, the planning standards of 10 CFR 50.47(b). Title 10 CFR 50.47(b)(2) requires, in part, that timely augmentation of response capabilities is available. Contrary to the above, from May 20, 1993, until November 3, 2015, the licensee failed to ensure that timely augmentation of response capabilities was available. Specifically, a change to the safety evaluation report affecting the emergency plan was not appropriately implemented in that Table C-1 of Section C of the emergency plan was not updated to reflect ERO staff augmentation times are from the time of an emergency declaration vice the time of an emergency notification. The licensee restored compliance by revising the site emergency plan to require timely staff augmentation following an emergency declaration. The violation was entered into the licensee's corrective action program as Condition Report 15-23835. Because the finding was of very low safety significance and

has been entered into the licensee's corrective action program, this violation is being treated as a non-cited violation consistent with Section 2.3.2.a of the NRC Enforcement Policy: (NCV 05000498/2015004-02; 05000499/2015004-02, "Failure to Maintain the Emergency Plan Up to Date With the Safety Evaluation Report.")

40A3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 Event Follow-up for Excessive Leakage into a Waste Holding Tank

On November 13, 2015, while in Mode 3, following Refueling Outage 1RE19, Unit 1 experienced increased leakage into the chemical volume control system waste holding tank when a demineralizer was placed on service. Control room operators treated this excessive leakage as reactor coolant system leakage until the source of the leak could be identified and isolated. The licensee declared a Notice of Unusual Event (NOUE) based on Unidentified Reactor Coolant Boundary Leakage. Shortly after entering the NOUE Control room operators identified the leakage was coming from a chemical volume control system drain valve and isolated that valve. The inspectors responded to the control room and observed the licensee's identification and resolution of the issue, including walking down the affected portion of the chemical and volume control system, reviewing operator logs, and interviewing operators. The licensee retracted the NOUE on December 08, 2015 because the source of the leak was from the chemical volume control system and not the reactor coolant system. Inspectors determined that the retraction was appropriate.

No findings were identified.

.2 Event Follow-up for Unit 1 Manual Turbine and Reactor Trip

On December 21, 2015, while Unit 1 was at 48 percent power, turbine governor valve 2 began to oscillate open and closed, resulting in large load swings and steam dump actuation. Operators began to reduce turbine load in order to stabilize the governor valve, but the oscillations continued. The shift manager directed a manual trip of the main turbine. Main turbine governor valve 2 continued to oscillate and the group one steam dumps failed to operate, as designed, to manage the main steam to the condenser on the turbine load reject. Main feedwater continued to fill the steam generators to the main feedwater isolation setpoint of 87.5 percent. All four steam generator power operated relief valves lifted as designed. Steam generator levels lowered, and with no ability to feed the steam generators to maintain levels, the shift manager ordered a manual reactor trip. All control rods fully inserted into the reactor core and all safety-related systems functioned as designed, with the exception of steam generator A blowdown containment isolation valve that failed to isolate on the main feedwater isolation.

The resident inspector responded to the control room upon hearing the load reduction plant announcement. The resident inspector observed all major evolutions and the operating crew's performance, reviewed the licensee's initial investigation and equipment repair prior to starting up the reactor. The inspectors also reviewed the initial licensee notification to verify it met the requirements specified in NUREG-1022, "Event Reporting Guidelines," Revision 3.

No findings were identified.

These activities constitute completion of two event follow-up samples, as defined in Inspection Procedure 71153.

40A6 Meetings, Including Exit

Exit Meeting Summary

On November 5, 2015, the inspectors presented the in-service inspection results to Mr. G. Powell, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors acknowledged review of proprietary material during the inspection which had been or will be returned to the licensee.

On November 19, 2015, the inspector presented the results of the on-site inspection of the emergency preparedness program to Mr. D. Rencurrel, Senior Vice President, Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On December 10, 2015, the inspectors presented the final triennial heat sink inspection results to Mr. D. Rencurrel, Senior Vice President, Operations, and Mr. G. Powell, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

The inspectors briefed Mr. G. Powell, Site Vice President, and other members of the licensee's staff of the preliminary results of the licensed operator requalification program inspection on September 17, 2015. The inspectors conducted a telephonic exit meeting with Mr. G. Janak, Operations Training Manager, and other members of the licensee's staff on January 4, 2016. The licensee representatives acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 7, 2016, the inspectors presented the resident inspection results to Mr. G. Powell, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. Aguilera, Manager, Health Physics
P. Alier, Systems Engineering
J. Ashcraft, Quality Control
J. Atkins, Manager, Systems Engineering
M. Berg, Manager, Design Engineering/Testing and Programs
C. Bowman, Manager, Nuclear Oversight
W. Brost, Engineer III
A. Capristo, Executive Vice President and Chief Administrative Officer
D. Caraballo, Systems Engineering
J. Connolly, General Manager, Engineering
M. Crain, Manager, Emergency Response
R. Dunn Jr., Manager, Nuclear Fuel and Analysis
J. Enoch, Supervisor, Emergency Response
T. Frawley, Manager, Plant Protection/Emergency Response
C. Gann, Manager, Employee Concerns Program
M. Garner, Nondestructive Examination Examiner
R. Gibbs, Manager, Operations, Production Support
R. Gonzales, Senior Licensing Engineer
J. Hartley, Manager, Mechanical Maintenance
J. Heil, TPE Engineer, Programs
G. Hildebrandt, Manager, Operations
K. Hilscher, Manager, Training
S. Horak, Emergency Response Department
R. Hubenak, Supervisor, Licensed Operator Requalification
T. Hurley, Supervisor, Simulator Support
D. Janak, Systems Engineering
G. Janak, Operations Training Manager
D. Koehl, President and CEO
S. Korenek, Emergency Response Department
J. Lovejoy, Manager, I&C Maintenance
R. McNeil, Manager, Maintenance Engineering
B. Migl, Supervisor, Testing and Programs
J. Milliff, Manager, Security
M. Murray, Manager, Regulatory Affairs
R. Nieman, Site Authorized Nuclear Inspector (ANII)
C. Pence, Manager, Chemistry
L. Peter, General Manager, Projects
J. Pierce, Manager, Unit 1 Operations
G. Powell, Site Vice President
F. Puleo, Licensing Staff Specialist
K. Regis, Design Engineering
D. Rencurrel, Senior Vice President, Operations
R. Richardson, Welding Engineer
S. Rodgers, Emergency Response Department
M. Ruvalcaba, Manager, Strategic Projects

R. Savage, Engineer, Licensing Consult Specialist
 R. Scarborough, Manager, Quality Assurance
 M. Schaefer, Plant General Manager
 S. Shojaei, Repair and Replacement Program Engineer, Testing Programs
 L. Spiess, Supervisor, Testing Programs
 R. Stastny, Maintenance Manager
 L. Sterling, Supervisor, Licensing
 S. Taylor, Emergency Response Department
 J. Von Suskil, Owner Rep – NRG South Texas LP
 T. Wacker, Engineer, Quality Programs
 G. Wendel, Emergency Response Department
 J. Williams, Engineer, Testing Programs
 P. Williams, Boric Acid Corrosion Control Program Manager
 C. Younger, Testing Programs
 D. Zink, Supervising Engineering Specialist

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000498/2015004-01	FIN	Failure to Track and Incorporate Actual Plant Data into Simulator Operability Testing (1R11.4)
05000499/2015004-01		
05000498/2015004-02	NCV	Failure to Maintain the Emergency Plan Up to Date With the Safety Evaluation Report (4OA2.3)
05000499/2015004-02		

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0POP01-ZO-0004	Extreme Cold Weather Guidelines	35
0PGP03-ZV-0004	Freezing Weather Plan	6
0POP04-ZO-0002	Natural or destructive Phenomena Guidelines	49
0POP02-MC-0001	Cooling Water Reservoir Spillway Gates and Blowdown Operation	11
0PGP03-ZV-0006	Main Cooling Reservoir Notification Emergency Action Plan (Not a North Face Breach)	0

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
O-H-1155-8	Cooling Reservoir Earthwork Embankment & Interior Dikes	8

Condition Reports (CRs)

15-20464	09-20101	15-27001	15-26702	15-26999
15-26991	15-26992	15-26994	15-26996	15-26700
15-27003	15-26993	15-26997	15-26698	15-22814
09-20101	15-22834	15-22829		

Work Orders (WOs)

34208596	34208283
----------	----------

Section 1R04: Equipment Alignment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0POP02-CC-0001	Component Cooling Water	48
0POP02-SI-0002	Safety Injection System	42
0PGP03-ZO-0055	Protected Components	8

Miscellaneous

<u>Title</u>	<u>Date</u>
Performance Criteria, Goals, and Monitoring List	August 2015

Condition Reports (CRs)

15-10345	15-10822	15-11367	15-12365	15-17166
15-17176	15-23370	15-23387	15-23373	15-21771
15-26644	15-26636	15-26634		

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
5N129F05014	Safety Injection System	19
5N129F05016	Safety Injection System	15
5N129F05016	Safety Injection System	31
5R149F05001	RCS Primary Coolant Loop	42

Section 1R05: Fire Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PGP03-ZF-0001	Fire Protection Program	29
0PGP03-ZF-0001A	Hot Work Program	0

Fire Preplans

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0EAB04-FP-0054	Electrical Auxiliary Building, Motor Generator Room	3
0EAB04-FP-0052	Electrical Auxiliary Building ESF Switchgear Room, Train C	3

Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MC-5800	Combustible Loading of Safety Related Areas	
MC-6023	Appendix R Evaluation	

Design Change Packages (DCP)

08-4843-3

Condition Reports (CRs)

15-25711 13-11761

Section 1R06: Flood Protection Measures

Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MC-5365	Fuel Handling Building Flooding Calculation	8

Section 1R07: Heat Sink Performance

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PCP01-ZQ-0004	Cooling Water System Inspection Guidelines	5
0PEP07-EW-0001	Performance Test For Essential Cooling Water Heat Exchangers	7

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PGP03-ZE-0080	Essential Cooling Water System Reliability Program	0
0POP01-ZA-0001	Plant Operations Department Administrative Guidelines	48
0POP02-EW-0001	Essential Cooling Water Operations	68
0PSP03-EX-0017	Essential Cooling Water System Train A Testing	35
0PSP15-DG-0003	Standby Diesel Generator #11 (#21) System Functional Pressure Test	4
0PSP15-EW-0001	Essential Cooling Water System Pressure Test	9

Condition Reports (CRs)

14-10406	15-5202	15-26296	05-8601	13-3170
12-21573	15-13365	13-12970	13-11380	13-2530
15-26273	13-15904	12-21567	12-21568	15-24763
14-5321	12-21625			

Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MC-6476	Jacket Water and Lube Oil Cooler Performance	0
MC-6084	CCW HX Tube Plugging	1
MC-6255	SBDG Intercooler Performance	0

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
5R209F05019#2	Piping and Instrumentation Diagram Component Cooling Water System	18
5R209F05020#2	Piping and Instrumentation Diagram Component Cooling Water System	16
5R289F05038#2	Piping and Instrumentation Diagram Essential Cooling Water System Train 2C	20

Thermal Performance Analyses

<u>Title</u>	<u>Date</u>
Component Cooling Water Heat Exchanger 2A	May 21, 2015
Component Cooling Water Heat Exchanger 1A	November 12, 2015

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
	STPNOC SDG Performance Trending – SDG 11 Air Manifold vs. ECW Temperature Performance	August 19, 2015
	STPNOC SDG Performance Trending – SDG 11 Jacket Water Cooler Temperature Performance	August 19, 2015
	STPNOC SDG Performance Trending – SDG 11 Lube Oil Cooler Temperature Performance	August 19, 2015
13-6716	Formal Self-Assessment Report – RC System	July 3, 2013
4018-01001-SC	To Provide “As-Built” Information After Rodding and Plugging CCW Heat Exchanger 1A	C
5Q159MB1023	Standby Diesel Generator System	3
ET-2015-002	Report of Eddy Current Inspection on Train C Essential Chilled Water Chiller Unit 22C	May 18, 2015
ST-HL-AE-2400	Final Report Concerning Component Cooling Water Heat Exchangers	November 5, 1987
ST-HL-AE-3341	Response to NRC Generic Letter 89-13, “Service Water System Problems Affecting Safety-Related Equipment”	January 29, 1990

Vendor Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
	Air Cooler Specification Sheet	June 28, 1977
	Jacket Water Cooler Specification Sheet	March 7, 1977
	Lube Oil Cooler Specification Sheet	March 7, 1977
VTD-S445-0001	Installation, Operation, and Maintenance Instructions for Component Cooling Water Heat Exchangers	0
VTD-T950-0001-34035513	Installation of Orifices to Eliminate Cavitation Problems with Butterfly Valves	March 12, 2015

System Health Reports

<u>Title</u>	<u>Revision</u>
(CC) Component Cooling Water System	3 rd Quarter 2015
(CH) Essential Chiller System	3 rd Quarter 2015
(DG, JW, LU, DO, SD, DI, DX) Standby Diesel Generator Systems	3 rd Quarter 2015
(EW) Essential Cooling Water System	3 rd Quarter 2015

System Health Reports

<u>Title</u>	<u>Revision</u>
(HC) Containment HVAC System	2 nd Quarter 2015
(HM) MAB HVAC System	2 nd Quarter 2015
(RH) Residual Heat Removal	3 rd Quarter 2015

Design Change Package

<u>Number</u>	<u>Title</u>	<u>Revision</u>
98-622-15	Standby Diesel Heat Exchanger Tube Plugging	0

Work Activity Numbers

485065	485064	495583	475776	475785
477067	477076	426476		

Section 1R08: In-service Inspection Activities

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
0PEP10-ZA-0001	Non Destructive Examination Written Practice.	10
0PEP10-ZA-0002	In-service Inspection Ultrasonic Non Destructive Examination Written Practice	6
0PEP10-ZA-0004	General Ultrasonic Examination	7
0PEP10-ZA-0009	Recording Data From Direct Visual, Liquid Penetrant, and Magnetic Particle Examinations	2
0PEP10-ZA-0010	Liquid Penetrant Examination (Color Contrast Solvent Removable)	5
0PEP10-ZA-0017	Magnetic Particle Examination (Dry Powder Yoke Method)	5
0PEP10-ZA-0023	Visual Examination of Component Supports For ASME Section XI In-service Inspection	7
0PEP10-ZA-0024	ASME XI Examination for VT-1 and VT-3	4
0PEP10-ZA-0025	ASME Section XI Visual Examination for Containment Metal Liner Inspections	5
0PEP10-ZA-0032	Visual VT-2 Examinations	4
0PEP10-ZA-0054	ASME Section XI VE Visual Examinations	2
0PGP03-ZE-0027	ASME Section XI Repair/Replacement Activities	30

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
0PGP03-ZE-0033	RCS Pressure Boundary Inspection for Boric Acid Leaks	13
0PGP03-ZE-0057	Installation, Field Fabrication and Modification of Piping	5
0PGP03-ZE-0133	Boric Acid Corrosion Control Program	9
0PGP04-ZA-0013	Reactor Coolant System Materials Management Program Quality	4
0PGP04-ZA-0108	Control of Vendor Technical Information	3
0PGP04-ZE-0304	In-service Inspection Program For Welds and Component Supports	13
0PMP02-ZW-0001	General Welding Requirements	11
0PMP02-ZW-0001A	ASME Repair/Replacement Welding Requirements	1
0PMP02-ZW-004	Control of Filler Materials	18
0PSP11-RC-0015	ASME Section XI In-service Inspection	17
0PSP15-SI-0001	Safety Injection System Functional Pressure Test	12
0PSP15-RC-0001	Reactor Coolant System Pressure Test	21
0PSP15-CS-0001	Containment Spray System Pressure Test	12
EPRI-DMW-PA-1	Nondestructive Evaluation: Procedure for Manual Phased Array Ultrasonic Testing (UT) of Dissimilar Metal Welds (DMW)	
EPRI-PA-1	Procedure for Examination of Reactor Piping Using Phased Array Ultrasound	
P1-A-Lh	QW 482 ASME Welding Procedure Specifications (WPS) – Joints (WQ-402), SMAW	8
P1-AT-Lh	QW 482 ASME Welding Procedure Specifications (WPS) – Joints (WQ-402), GTAW and SMAW	6
P1-T	QW 482 ASME Welding Procedure Specifications (WPS) – Joints (WQ-402), GTAW	
P8,P1-T-Ag	QW 482 ASME Welding Procedure Specifications (WPS) – Joints (WQ-402), GTAW	6
P8-T-Ag	QW 482 ASME Welding Procedure Specifications (WPS) – Joints (WQ-402), GTAW	9
PCI-GQP-10.0	General Quality Procedure – Inspection	18
PCI-GQP-12.0	General Quality Procedure – Control of Measuring and Test Equipment	18

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
PCI-GQP-7.1	General Quality Procedure - Procurement, Receipt, Storage and Issue of ASME III Subsection NCA 3800 Weld Materials	7
PCI-GQP-9.6	General Quality Procedure - Visual Examination of Welds	14
PCI-GQP-9.7	General Quality Procedure – Solvent Removable Liquid Penetrant Examination and Acceptance Standards for Welds, Base Materials, and Cladding (50° – 125° F)	16
PCI-GWS-1	Second Edition – General Welding Standard-1, ASME Applications	0
PCI-PQR-063	PCI Energy Services, ASME IX Welding Procedure Qualification Record (PQR)	6
PCI-PQR-600	PCI Energy Services, ASME IX Welding Procedure Qualification Record (PQR), Machine Gas Tungsten Arc Welding (GTAW)	6
PCI-WCP-1	Second Edition – Welding Control Procedure-1, Weld Procedure Preparation and Qualification	0
PCI-WCP-3	Second Edition – Welding control Procedure-3, Weld Material Control	1
PCI-WCP-4	Second Edition – Welding Control Procedure-4, Shielding/Purge Gas Procedure	0
PCI-WCP-5	Second Edition – Welding Control Procedure -5, Weld and Base Metal Repair	0
PCI-WCP-8	Second Edition – Weld Control Procedure – 8, Preheating and Post Weld Heat Treatment	0
PCI-WPS-8 MN-GTAW	PCI Energy Services, ASME IX Welding Procedure Specifications	3
PDI-UT-1	Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds	E
PQR-003	Houston Power and Light, Procedure Qualifications Record, P1-T, GTWA, manual	0
PQR-006	Houston Power and Light, Procedure Qualifications Record, P8, P1-AT-Ag, GTWA/SMAW, manual	0
PQR-016	Houston Power and Light, Procedure Qualifications Record, P8, P1-T-Ag, GTWA, manual	0
PQR-035	Houston Power and Light, Procedure Qualifications Record, P8-T-Ag, GTWA, manual	2

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
PQR-037	Houston Power and Light, Procedure Qualifications Record, P8-T-Ag, P8-A, and P8-AT-Ag, GTWA, manual	September 5, 1989
PQR-040	Houston Power and Light, Procedure Qualifications Record, P1-A/P1-A-Lh, P1-AT-Lh, SMAW, manual	November 17, 1989
PQR-046	Houston Power and Light, Procedure Qualifications Record, P8-A-Ag, P8-AT-Ag, GTAW, manual	January 24, 1990
PQR-058	Houston Power and Light, Procedure Qualifications Record, P43-T-AG, GTWA, manual	November 26, 1991
PQR-087A	Houston Power and Light, Procedure Qualifications Record, P1-AT-Lh(CVN), GTAW, SMAW, manual	October 28, 1991
PQR-087B	Houston Power and Light, Procedure Qualifications Record, P1-AT-Lh(CVN), GTAW, SMAW, manual	October 28, 1991
PQR-126	Houston Power and Light, Procedure Qualifications Record, P1-T (CVN), GTAW, manual	March 16, 1995
PQR-127	Houston Power and Light, Procedure Qualifications Record, P1-T (CVN), GTAW, manual	March 16, 1995
PQR-197	STPNOC, Procedure Qualifications Record, P8-T-Ag, GTAW, manual	April 10, 2003
PQR-199	STPNOC, Procedure Qualifications Record, P1-A-Lh, SMAW, manual	October 14, 2003
PQR-205	STPNOC, Procedure Qualifications Record, P1-a-Lh, SMAW, manual	January 3, 2005
STP NDE DM-001	Dissimilar Metal Weld Site Specific Training	0
UTI-004	ULTRASONIC TECHNICAL INSTRUCTION Manual Ultrasonic Examination Using Longitudinal Wave Straight-Beam Technique	6
UTI-016	ULTRASONIC TECHNICAL INSTRUCTION Manual Ultrasonic Examination of Vessel Nozzle Inner Radius Sections	3
UTI-024	ULTRASONIC TECHNICAL INSTRUCTION Manual Ultrasonic Examination of Ferritic Pressure Vessel Welds (Greater Than 2 to 12 Inches in Thickness)	6

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
UTI-065	ULTRASONIC TECHNICAL INSTRUCTION, Ultrasonic Examination of Small-Diameter Piping Butt Welds and Components for Thermal Fatigue Damage	0
UTI-070	ULTRASONIC TECHNICAL INSTRUCTION, Conducting ultrasonic Examinations of Dissimilar Metal Welds	0
UTI-PDI-UT-01	ULTRASONIC TECHNICAL INSTRUCTON, PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds	3
UTI-PDI-UT-02	ULTRASONIC TECHNICAL INSTRUCTION, PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds	5

Condition Reports (CRs)

13-00217	13-15539	14-27135	15-23185	15-23356
13-01267	14-08121	15-05854	15-23186	15-23379
13-02564	14-08611	15-10423	15-23187	15-23380
13-03645	14-08624	15-22824	15-23284	15-23381
13-03728	14-09112	15-23003	15-23287	15-23382
13-05011	14-12336	15-23091	15-23288	15-23383
13-08238	14-12474	15-23096	15-23286	15-23384
13-10032	14-12553	15-23099	15-23289	15-23386
13-11054	14-13315	15-23172	15-23290	15-23857
13-13209	14-22796	15-23177	15-23291	15-24009
13-14252	14-23083	15-23182	15-23293	15-24020
13-4439	14-27134	15-23184	15-23294	15-24406

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CC-9101-HL5001 Sht. 1 of 2	Train A, Component Cooling Water Pipe Support	4
CC-9102-HL5002 Sht. 1 of 2	Train A, Component Cooling Water Pipe Support	3

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
5M369PCC207 Sht. 10	Component Cooling Water, "CC"	10
2F369PSI0572 Sht. 3	Safety Injection "SI"	10
2F361PSI0572 Sht. 5	Safety Injection "SI"	1
2F361PSI0572 Sht. 8	Safety Injection "SI"	0

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
ACTS; TGX- 003 - 015 0	540" Bobbin Coil Exam at 30IPS	October 20,2015
ACTS; TGX - 004 - 015	Standard 0.560" 3-Coil +PT: NON-MAG	October 20,2015
ACTS; TGX - 005 - 015	0.560" 3-Coil +PT: MAG-BIASED	October 20,2015
ACTS; TGX - 006 - 015	0.520" 1-Coil Ubend design +PT: NON-MAG	October 20,2015
ACTS; TGX - 007 - 015	0.520" 1-Coil Ubend design +PT: MAG-BIASED	October 20,2015
ACTS; TGX - 008 - 015	0.520" G3-G4 Transmit Receive	October 20,2015
ACTS; TGX - 009 - 015	0.560" Bobbin Coil Exam at 80IPS	October 20,2015
ANTS; TGX - A - 015	All bobbin coil probes	October 20,2015
ANTS; TGX - B - 015	3-coil +PT design probe - standard & mag-biased	October 20,2015
ANTS; TGX - C - 015	U-bend RPC design probe - single coil +PT	October 20,2015
ANTS; TGX - D - 015	Ghent - G3-G4 Transmit: Receive	October 20,2015
ANTS; TGX - E - 015	Data quality & general instructions (all probe types)	October 20,2015
ASME Section III – Division 1	ASME Boiler and Pressure Vessel Code, Section III – Division 1, Rules for Construction of Nuclear Power Plant Components, Subsection ND, Class 3 Components	July 1, 1974

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
ASME Section III – Division 1	ASME Boiler and Pressure Vessel Code, Section III – Division 1, Rules for Construction of Nuclear Power Plant Components, Subsection NC, Class 2 Components	July 1, 1974
ASME Section III – Division 1	ASME Boiler and Pressure Vessel Code, Section III – Division 1, Rules for Construction of Nuclear Power Plant Components, Subsection NB, Class 1 Components	July 1, 1974
ASME Section IX	2013 ASME Boiler & Pressure Vessel Code, Section IX, Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators	July 1, 2013
Case N-729-1	Cases Of ASME Boiler And Pressure Vessel Code, Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1	March 28, 2006
CR-10-15719	STP Nuclear Operating Company, Formal Self-Assessment – Secondary Chemistry Program	September 2, 2010
SG-SGMP-15-9	South Texas 1RE19 Steam Generator Degradation Assessment	0
South Texas Project Units 1 and 2	Steam Generator Eddy Current Data Analysis Guidelines	October 2015
STP 8054 Snapshot Self-Assessment Report	2014 SGMP Self-Assessment (Overall) CR 13-12088	0
Westinghouse Letter # SGS-015-002	South Texas Unit 1, Site Validation of Eddy Current Inspection Techniques, Fall 2015 Refueling Outage - 1RE19	October 23, 2015

Relief Requests

<u>Number</u>	<u>Title</u>	<u>Date</u>
	South Texas Project, Units 1 And 2 -Request For Relief RR-ENG-3-03 From ASME Code	April 7, 2011
	Requirements For Pump Casing In-service Inspection Examination (TAC Nos. ME4762 and ME4763)	

Relief Requests

<u>Number</u>	<u>Title</u>	<u>Date</u>
AE-NOC-12002347 STI: 33592900 ML12243A343	South Texas Project, Units 1 And 2 -Request For Relief RR-ENG-3-04 To Apply Alternative To The American Society Of Mechanical Engineers Boiler And Pressure Vessel Code Section XI Requirements For Examination Of Class 1 And Class 2 Piping Welds (TAC Nos. ME7055 and ME7056)	September 10, 2012
	South Texas Project, Units 1 and 2 -Request For Relief From The American Society Of Mechanical Engineers Boiler And Pressure Vessel Code, Section XI, Requirements For Reactor Pressure Vessel Head Flange O-Ring Leakoff Lines Non- Destructive Examination (TAC Nos. ME9863 and ME9864)	March 12, 2013
	South Texas Project, Unit 1 - Request For Relief No. RR-ENG-3-17 For Extension Of The Inspection Frequency Of The Reactor Vessel Cold-Leg Nozzle To Safe-End Welds With Flaw Analysis (TAC No. MF6174)	August 21, 2015

Work Packages

525198 525199 525200 525201 554055
554113

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OPGP03-ZT-0132	Licensed Operator Requalification	12
OPGP03-ZA-0119	Management Oversight of Training Programs	19
OPNT01-TQ-1000	Training System Development Process	0
OPNT01-TQ-1100	Analysis Phase	0
OPNT01-TQ-1200	Design Phase	0
OPNT01-TQ-1300	Developmental Phase	0
OPNT01-TQ-1400	Implementation Phase	0
OPNT01-TQ-1500	Evaluation Phase	0
OPOP01-ZA-0014	Licensed Operator License Maintenance	26
LOR-GL-0001	LOR Training Program Guidelines	26

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
LOR-GL-0002	LOR Annual and Biennial Evaluation Guidelines	19, 20
LOR-GL-0003	LOR Examination Bank Guidelines	7
LOR-GL-0004	Two Year Training Plan Guidelines	10
OPGP03-ZA-0128	Medical Examinations	12
OPNT01-ZA-0037	Simulator Configuration Control	10

Lesson Plans

<u>Number</u>	<u>Title</u>	<u>Revision</u>
JIT154	Plant Shutdown from 100% AND Plant Cooldown to RHR	0
OPGP03-ZG-0006	Plant Shutdown from 100% to Hot Standby	60

Condition Reports (CRs)

15-23457	15-21462	11-17754	15-13338	15-13080
15-21463	14-7485	14-12096	14-10080	13-13390
15-15554	15-21515	15-21513	15-21461	15-21465
15-21485	13-13927	13-14866	13-15861	15-22833

Miscellaneous

<u>Title</u>	<u>Revision/Date</u>
LOR 154 Sim Exam #8	0
LOR 154 Sim Exam #4	0
LOR 154 Sim Exam #1	0
LOR 154 Sim Exam #2	0
2015 LOR Sample Plan	0
JPM 9.01	6
JPM 9.01a	0
JPM 37.01	1
JPM 23.02	7
JPM 36.02	7
JPM 88.01	9
JPM 05.01	7

Miscellaneous

<u>Title</u>	<u>Revision/Date</u>
JPM 72.02	0
JPM 56.02	9
JPM 45.02	7
JPM 136.01	1
STP4047E (03/12), Statement of Health Care Provider for Employee	March 2012
STP3430 (03/12), Restricted Duty Review	March 2012
STP997RO (10/13), Reactor Operator Physical Exam	October 2013
Post-Event Simulator Testing – U2 Transformer Lockout	June 2, 2013
CALC-05-RC-002, Simulator Transient Analysis	January 28, 2009
Simulator Transient Test 2 – Trip of all Feedwater Pumps	February 17, 2015
Simulator Transient Test 6 – Main Turbine Trip without RX Trip	February 17, 2015
Simulator Transient Test 7 – Max Power Ramp 100% to 75% to 100%	February 17, 2015
Cycle 19 BOL Steady State Tests – 100%, 78%, 48%	December 1, 2014
Nursing Procedure and Protocol Manual, Licensed Operator Physical, pp. 27-36	
Simulator Configuration Management Committee Meeting Minutes	December 10, 2014
Simulator Configuration Management Committee Meeting Minutes	August 14, 2014
LOR 155 RO / SRO Biennial Written Exam, Week 1	November 23, 2015

Deficiency Reports

DR-2911	DR-2916	DR-2845	DR-2836	DR-2806
DR-2755	DR-2866			

Section 1R12: Maintenance Effectiveness

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OPGP04-ZE-0313	Maintenance Rule Program	7
SEG-0002	Maintenance Rule Equipment History Review	2
SEG-0009	Maintenance Rule Basis Document	4

Miscellaneous

Title

STP Maintenance Rule Program Assessment

Date

March 5, 2015

Condition Reports (CRs)

15-516

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PGP03-ZO-0039	Operations Configuration Management	29
0PGP03-ZG-RMTS	Risk-Managed Technical Specifications Program	2
0PGP02-ZA-0003	Comprehensive Risk Management Program	13
0POP02-AE-0002	Transformer Normal Breaker and Switch Lineup	61
0PGP04-ZA-0604	Probabilistic Risk Assessment Program	7
0POP01-ZO-0006	Risk Management Actions	23
0PGP03-ZA-0091	Configuration Risk Management Program	13
0PGP03-ZE-0001	PRA Analyses/Assessments	3

Condition Reports (CRs)

15-18736

Work Activity Risk (WAR)

2596

RICTCal Sequence Number

2563

RAStCal Sequence Number

2356

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PGP03-ZO-9900	Operability Determinations and Functionality Assessments Program	7
0POP11-SI-0001	Safety Injection/Containment Spray Pump Insolation and Restoration	12

Calculation

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EC-5100	Standby Diesel Generator Transient Response Model	0

Vendor Technical Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
VDT-G927-0001	Units 1 & 2 Acceptable Gas Void Volumes in ECCS and RHR Suction Piping	0

Design Basis Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
5V369VB00120	DBD Chilled Water System	0

Condition Reports (CRs)

15-24673	15-15339	13-7733	15-16143	15-17109
15-23653	15-24262	07-14959	08-14968	10-9377

Section 1R18: Plant Modifications

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PGP03-ZO-003	Temporary Modifications	27
0PGP04-ZE-0311	Post Modification Acceptance tests	3
0PGP05-ZA-0002	10CFR50.59 Evaluations	16
0PGP04-ZE-0309	Design Change Package	35
DEG-0312	Failure Modes and Effects Analysis (FEMA)	1
0PSP03-RI-0001	Digital Rod Position Indication Operability Test	18

Design Change Package (DCP)

15-25420-9	15-25420-8	15-25696	15-25766	15-25769
15-22820	15-23001			

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
T1-15-2212-55	Temporary Power to Spent Fuel Pool Cooling Water Pump 1B	0
STI 34245464	Part Length Guide Tube Flow Restrictor Installation	2
STI 34246503	CRDM and CETNA Evaluation Due to Removal of CRDM Drive Rod and RCCA for South Texas Unit 1	A

Section 1R19: Post-Maintenance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0POP11-SI-0001	Safety Injection/Containment Spray Pump Isolation and Restoration	11
0PSP03-SI-0011	High Head Safety Injection Pump 1B(2B) Reference Values Measurement	12
0POP07-DB-0005	TSC Diesel Generator Performance Test	28

Condition Reports (CRs)

15-23001	15-23376	15-23374	15-23019
----------	----------	----------	----------

Work Authorization Numbers (WAN)

526899	526896	58731	523361
--------	--------	-------	--------

Section 1R20: Refueling and Other Outage Activities

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0POP03-ZG-0007	Plant Cooldown	76
0PGP03-ZO-0042	Reactivity Management Program	16
0POP03-ZG-0010	Refueling Operations	68
0POP03-ZG-0006	Plant Shutdown from 100% to Hot Standby	60
0POP03-ZG-0009	Mid-Loop Operation	62

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PGP03-ZO-0035	Reduced RCS Inventory Operations	23
0POP02-SI-0003	Filling the Reactor Cavity Using the Safety Injection System	21
0PMP04-RX-0018A	Non-Rapid Refueling Mechanical Support	13
0PGP03-ZA-0101	Shutdown Risk Assessment	29
0POP08-FH-0009	Core Refueling	43
0PGP03-ZO-ECO1A	Equipment Clearance Order Instructions	26
0PGP03-ZA-0114	Fatigue Rule Program	8
0PAP01-ZA-0104	Plant Operations Review Committee	13
0PEP2-ZX-0002	Initial Criticality and Lower Power Physics Testing	28
0POP03-ZG-0005	Plant Startup to 100%	95

Miscellaneous

<u>Title</u>	<u>Date</u>
Shutdown Risk Assessment	September 23, 2015
Shutdown Risk Assessment (Amendment 2)	November 5, 2015
Shutdown Risk Assessment (Amendment 6)	December 14, 2015
1RE19 BECON Startup Prediction (Unit 1 Cycle 20)	December 17, 2015

Work Authorization Numbers (WAN)

505338

Equipment Clearance Order (ECO)

A 79211 A 80158

Condition Reports (CRs)

15-26691 15-26702 15-26719 15-26717 15-26734

Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PSP11-SI-0013	LLRT: M-18 HHSI Pump 1A/2A Discharge	15
0PSP03-SI-0041	Low Head Safety Injection Pump 1C(2C) Comprehensive Pump Test	
0PSP03-SI-0037	High Head Safety Injection Pump 1B(2B) Comprehensive Test Reference Values and Preservice testing Pump Curve Measurement	5
0PSP03-DG-0016	Standby Diesel 11(21) Twenty-Four Hour Load Test	40

Section 1EP2: Alert and Notification System Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PGP05-ZV-0007	Prompt Notification System	10
0PGP05-ZV-0016	Prompt Notification System Implementing Procedure	10
ERDGI ZV-0013	Alert Radio Maintenance and Distribution	0
ERDGI ZV-0016	ENRS Operation and Maintenance	2
0ERP01-ZV-IN03	Emergency Response Organization Notification	18
ERDGI ZV-0023	10CFR50.54(q) Screening Reference Document	0
0PGP03-ZV-0005	Equipment Important to Emergency Response	3
0PGP05-ZV-0014	Emergency Response Activities	14
0ERP01-ZV-IN01	Emergency Classification	9
0ERP01-ZV-IN02	Notifications to Offsite Agencies	30
ERDGI ZV-0006	Letters of Agreement	17

Condition Reports (CRs)

14-3686	14-21527	14-22056	14-22582	14-22644
14-22725	15-2022	15-2221	15-2352	15-3577
15-3937	15-4039	15-4333	15-4631	15-10376
15-13171	15-19620	15-20588	15-21862	

Audits/Surveillance

<u>Number</u>	<u>Title</u>	<u>Date</u>
13-01 (EP)	Emergency Preparedness Quality Audit Report	March 11, 2013
14-01 (EP)	Emergency Preparedness Quality Audit Report	March 12, 2014
15-01 (EP)	Emergency Preparedness Quality Audit Report	March 12, 2015

Drills/Exercises

<u>Title</u>	<u>Date</u>
2014 Environmental Sampling Mini Drill	July 31, 2014
Red Team Combined Functional Drill	August 13, 2014
Dress Rehearsal	September 24, 2015
White Team Combined Functional Drill	June 18, 2014
Blue Team Combined Functional Drill	February 19, 2014
Health Physics Drill	February 19, 2014
Owner Controlled Area Sweep Mini Drill	June 5, 2015
Blue Team Combined Functional Drill	February 11, 2015
White Team Combined Functional Drill	July 22, 2015
Red Team Combined Functional Drill	September 16, 2015
2015 Environmental Sampling Drill	March 16, 2015

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
	South Texas Project Electric Generating Station Updated Prompt Notification System Design Report	September 30, 2010
	Updated Prompt Notification System Design Report	June 6, 2013
	On-shift Staffing Analysis	December 18, 2012
	On-shift Staffing Analysis Supplement 1	March 26, 2013
	On-shift Staffing Analysis Supplement 2	September 25, 2014
NOC-AE-15003218	Changes to STP Emergency Plan Implementing Procedures	January 10, 2015
NOC-AE-15003211	Changes to STP Emergency Plan Implementing Procedures	January 14, 2015
NOC-AE-15003242	Changes to STP Emergency Plan Implementing Procedures	April 2, 2015

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
NOC-AE-15003244	Change to STP Emergency Plan Implementing Procedure	April 23, 2015
NOC-AE-15003258	Change to STP Emergency Plan Implementing Procedure	May 13, 2015
NOC-AE-15003264	Change to STP Emergency Plan Implementing Procedure	June 11, 2015
NOC-AE-15003277	Changes to STP Emergency Plan Implementing Procedures	July 28, 2015
NOC-AE-15003289	Change to STP Emergency Plan Implementing Procedure	September 2, 2015
	South Texas Project Electric Generating Station Emergency Plan	ICN 20-16
	2013 Population Update Analysis	October 11, 2013
	2014 Population Update Analysis	October 11, 2014
	2015 Population Update Analysis	October 10, 2015

Quality Monitoring Reports

MN-13-0-101450	MN-14-0-103202	MN-14-0-103341	MN-14-0-103342	MN-14-0-103397
MN-14-0-103705	MN-14-0-103708	MN-14-1-103349	MN-14-9-103355	MN-14-9-103379
MN-14-9-103384	MN-14-9-103425	MN-15-0-103866	MN-15-0-104344	MN-15-0-104480
MN-15-0-104481	MN-15-0-104491	MN-15-0-104597	MN-15-0-104652	MN-15-1-104590
MN-15-1-104592	MN-15-2-103811	MN-15-9-103780	MN-15-9-103930	MN-15-9-103930

Quarterly ENRS Tests

March 31, 2014	June 13, 2014	September 9, 2014	December 16, 2014	March 3, 2015
June 24, 2015	September 14, 2015			

Section 40A1: Performance Indicator Verification

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OPGP05-ZN-0007	Preparation and Submittal of NRC Performance Indicators	8
SEG-0007	Mitigating System Performance Indicator Collection, Processing and Maintenance of Data	6

Miscellaneous

<u>Title</u>	<u>Date</u>
MSPI Derivation Report	July 2014 through September 2015
Unit 1 Consolidation Data Sheets for Residual Heat Removal, Heat Removal, Cooling Water	April 2014 through September 2015
Unit 2 Consolidation Data Sheets for Residual Heat Removal, Heat Removal, Cooling Water	April 2014 through September 2015

Section 40A3: Follow-up of Events and Notices of Enforcement Discretion

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0PAP01-ZA-0104	Plant Operations Review Committee	13
0PGP03-ZO-0022	Post-Trip Review	10
0POP04-TM-0003	Turbine Trip Below P-9	21
0POP05-EO-ES01	Reactor Trip Response	27
0PMP08-ZI-0025	Pneumatic/Spring Control Valve or Damper Calibration	40

Miscellaneous

<u>Title</u>	<u>Date</u>
South Texas Project Electric Generating Station Emergency Plan	December 03, 2009
License Amendment Request	October 06, 2015
License Amendment Request	May 20, 1993

Condition Reports (CRs)

15-23835	15-26702	15-26719	15-26717	15-26734
----------	----------	----------	----------	----------

Request for Information for In-service Inspection
South Texas Project
October 26, 2015, through November 6, 2015
NRC Inspection Report 05000498/2015004

Please provide the requested information. Thank you for your support.

NOTE: In an effort to keep the requested information organized, please submit the information using the same request designation. For example, the names and phone numbers for the program leads should be in a file/folder titled A.5.b.

If you have any questions or comments, please contact the lead inspector Ron Kopriva at (817) 200-1104 (Ron.Kopriva@nrc.gov)

PAPERWORK REDUCTION ACT STATEMENT

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

IN-SERVICE INSPECTION DOCUMENT REQUEST

Inspection Dates: October 26, 2015, through November 6, 2015

Inspection Procedures: IP 71111.08 "In-service Inspection (ISI) Activities"

Inspectors: Ron Kopriva, Senior Reactor Inspector

A. **Information Requested for the In-Office Preparation Week**

The following information should be sent to the Region IV office in hard copy or electronic format (ims.certrec.com preferred), in care of Ron Kopriva, by October 15, 2015, to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The inspectors will select specific items from the information requested below and then request from your staff additional documents needed during the onsite inspection week (Section B of this enclosure). We ask that the specific items selected from the lists be available and ready for review on the first day of inspection. Please provide requested documentation electronically if possible. If requested documents are large and only hard copy formats are available, please inform the inspector(s), and provide subject documentation during the first day of the onsite inspection. If you have any questions regarding this information request, please call the inspector as soon as possible.

A.1 **ISI/Welding Programs and Schedule Information**

- a) A detailed schedule (including preliminary dates) of:
 - i) Nondestructive examinations planned for Class 1 & 2 systems and containment, performed as part of your ASME Section XI, risk informed (if applicable), and augmented In-service inspection programs during the upcoming outage.

Provide a status summary of the nondestructive examination inspection activities vs. the required inspection period percentages for this interval by category per ASME Section XI, IWX-2400. Do not provide separately if other documentation requested contains this information.
 - ii) Reactor pressure vessel head examinations planned for the upcoming outage.
 - iii) Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable).
 - iv) Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.).

- v) Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components).
- b) A copy of ASME Section XI Code Relief Requests and associated NRC safety evaluations applicable to the examinations identified above.
- c) A list of nondestructive examination reports (ultrasonic, radiography, magnetic particle, dye penetrant, Visual VT-1, VT-2, and VT-3), which have identified relevant conditions on Code Class 1 & 2 systems since the beginning of the last refueling outage. This should include the previous Section XI pressure test(s) conducted during start up and any evaluations associated with the results of the pressure tests. Also, include in the list the nondestructive examination reports with relevant conditions in the reactor pressure vessel head penetration nozzles that have been accepted for continued service. The list of nondestructive examination reports should include a brief description of the structures, systems, or components where the relevant condition was identified.
- d) A list with a brief description (e.g., system, material, pipe size, weld number, and nondestructive examinations performed) of the welds in Code Class 1 and 2 systems which have been fabricated due to component repair/replacement activities since the beginning of the last refueling outage, or are planned to be fabricated this refueling outage.
- e) If reactor vessel weld examinations required by the ASME Code are scheduled to occur during the upcoming outage, provide a detailed description of the welds to be examined and the extent of the planned examination. Please also provide reference numbers for applicable procedures that will be used to conduct these examinations.
- f) Copy of any 10 CFR Part 21 reports applicable to your structures, systems, or components within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.
- g) A list of any temporary noncode repairs in service (e.g., pinhole leaks).
- h) Copies of the most recent self-assessments for the in-service inspection, welding, and Alloy 600 programs.
- i) Provide a copy of the nondestructive examination procedures that will be used to perform the examinations (including calibration and flaw characterization/sizing procedures). For ultrasonic examination procedures qualified in accordance with ASME Section XI, Appendix VIII, provide documentation supporting the procedure qualification (e.g., the EPRI performance demonstration qualification summary sheets).
- j) Provide a copy of the various Welding processes that are scheduled to be used during the outage.

A.2 **Reactor Pressure Vessel Head (RPVH)**

- a) Provide the detailed scope of the planned nondestructive examinations of the reactor vessel head which identifies the types of nondestructive examination methods to be used on each specific part of the vessel head to fulfill commitments made in response to NRC Bulletin 2002-02 and NRC Order EA-03-009. Also, include examination scope expansion criteria and planned expansion sample sizes if relevant conditions are identified. (If applicable)
- b) A list of the standards and/or requirements that will be used to evaluate indications identified during nondestructive examination of the reactor vessel head (e.g., the specific industry or procedural standards which will be used to evaluate potential leakage and/or flaw indications).

A.3 **Boric Acid Corrosion Control Program**

- a) Copy of the procedures that govern the scope, equipment and implementation of the inspections required to identify boric acid leakage and the procedures for boric acid leakage/corrosion evaluation.
- b) Please provide a list of leaks (including Code class of the components) that have been identified since the last refueling outage and associated corrective action documentation. If during the last cycle, the unit was shut down, please provide documentation of containment walkdown inspections performed as part of the boric acid corrosion control program.
- c) Please provide a copy of the most recent self-assessment performed for the boric acid corrosion control program.

A.4 **Steam Generator Tube Inspections**

- a) A detailed schedule of:
 - i) Steam generator tube inspection, data analyses, and repair activities for the upcoming outage (If occurring).
 - ii) Steam generator secondary side inspection activities for the upcoming outage. (If occurring).
- b) Please provide a copy of your steam generator in-service inspection program and plan. Please include a copy of the operational assessment from last outage and a copy of the following documents as they become available:
 - i) Degradation assessment
 - ii) Condition monitoring assessment
- c) If you are planning on modifying your Technical Specifications such that they are consistent with Technical Specification Task Force Traveler TSTF-449, "Steam

Generator Tube Integrity,” please provide copies of your correspondence with the NRC regarding deviations from the standard technical specifications.

- d) Copy of steam generator history documentation given to vendors performing eddy current testing of the steam generators during the upcoming outage.
- e) Copy of steam generator eddy current data analyst guidelines and site validated eddy current technique specification sheets. Additionally, please provide a copy of EPRI Appendix H, “Examination Technique Specification Sheets,” qualification records.
- f) Identify and quantify any steam generator tube leakage experienced during the previous operating cycle. Also provide documentation identifying which steam generator was leaking and corrective actions completed or planned for this condition (If applicable).
- g) Provide past history of the condition and issues pertaining to the secondary side of the steam generators (including items such as loose parts, fouling, top of tube sheet condition, crud removal amounts, etc.)
- h) Provide copies of your most recent self-assessments of the steam generator monitoring, loose parts monitoring, and secondary side water chemistry control programs.
- i) Indicate where the primary, secondary, and resolution analyses are scheduled to take place.
- j) Provide a summary of the scope of the steam generator tube examinations, including examination methods such as Bobbin, Rotating Pancake, or Plus Point, and the percentage of tubes to be examined. Do not provide these documents separately if already included in other information requested.

A.5 Additional Information Related to all In-service Inspection Activities

- a) A list with a brief description of in-service inspection, boric acid corrosion control program, and steam generator tube inspection related issues (e.g., condition reports) entered into your corrective action program since the beginning of the last refueling outage (for Unit 1). For example, a list based upon data base searches using key words related to piping or steam generator tube degradation such as: in-service inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, boric acid, or errors in piping/steam generator tube examinations.
- b) Please provide names and phone numbers for the following program leads:
In-service inspection (examination, planning)

Containment exams
Reactor pressure vessel head exams
Snubbers and supports

Repair and replacement program
Licensing
Site welding engineer
Boric acid corrosion control program

Steam generator inspection activities (site lead and vendor contact)

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (October 26, 2015):

B.1 In-service Inspection/Welding Programs and Schedule Information

- a) Updated schedules for in-service inspection/nondestructive examination activities, including steam generator tube inspections, planned welding activities, and schedule showing contingency repair plans, if available.
- b) For ASME Code Class 1 and 2 welds selected by the inspector from the lists provided from section A of this enclosure, please provide copies of the following documentation for each subject weld:
 - i) Weld data sheet (traveler)
 - ii) Weld configuration and system location
 - iii) Applicable Code Edition and Addenda for weldment
 - iv) Applicable Code Edition and Addenda for welding procedures
 - v) Applicable weld procedures used to fabricate the welds
 - vi) Copies of procedure qualification records supporting the weld procedures from B.1.b.v
 - vii) Copies of mechanical test reports identified in the procedure qualification records above
 - viii) Copies of the nonconformance reports for the selected welds (If applicable)
 - ix) Radiographs of the selected welds and access to equipment to allow viewing radiographs (If radiographic testing was performed)
 - x) Copies of the preservice examination records for the selected welds
 - xi) Copies of welder performance qualifications records applicable to the selected welds, including documentation that welder maintained proficiency in the applicable welding processes specified in the weld procedures (at least 6 months prior to the date of subject work)
 - xii) Copies of nondestructive examination personnel qualifications (Visual inspection, penetrant testing, ultrasonic testing, radiographic testing), as applicable
- c) For the in-service inspection related corrective action issues selected by the inspectors from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.
- d) For the nondestructive examination reports with relevant conditions on Code Class 1 and 2 systems selected by the inspectors from Section A above, provide

a copy of the examination records, examiner qualification records, and associated corrective action documents.

- e) A copy of (or ready access to) most current revision of the in-service inspection program manual and plan for the current Interval.
- f) For the nondestructive examinations selected by the inspectors from section A of this enclosure, provide qualification documentation of the specific equipment to be used (e.g., ultrasonic unit, cables, and transducers including serial numbers) and nondestructive examination personnel qualification records.

B.2 **Reactor Pressure Vessel Head**

- a) Provide the nondestructive personnel qualification records for the examiners who will perform examinations of the reactor pressure vessel head.
- b) Provide drawings showing the following: (If a visual examination is planned for the upcoming refueling outage)
 - i) Reactor pressure vessel head and control rod drive mechanism nozzle configurations
 - ii) Reactor pressure vessel head insulation configuration

Note: The drawings listed above should include fabrication drawings for the nozzle attachment welds as applicable.

- c) Copy of nondestructive examination reports from the last reactor pressure vessel head examination.
- d) Copy of evaluation or calculation demonstrating that the scope of the visual examination of the upper head will meet the 95 percent minimum coverage required by NRC Order EA-03-009 (If a visual examination is planned for the upcoming refueling outage).
- e) Provide a copy of the procedures that will be used to identify the source of any boric acid deposits identified on the reactor pressure vessel head. If no explicit procedures exist which govern this activity, provide a description of the process to be followed including personnel responsibilities and expectations.
- f) Provide a copy of the updated calculation of effective degradation years for the reactor pressure vessel head susceptibility ranking.
- g) Provide copy of the vendor qualification report(s) that demonstrates the detection capability of the nondestructive examination equipment used for the reactor pressure vessel head examinations. Also, identify any changes in equipment configurations used for the reactor pressure vessel head examinations which differ from that used in the vendor qualification report(s).

B.3 **Boric Acid Corrosion Control Program**

- a) Please provide boric acid walkdown inspection results, an updated list of boric acid leaks identified so far this outage, associated corrective action documentation, and overall status of planned boric acid inspections.
- b) Please provide any engineering evaluations completed for boric acid leaks identified since the end of the last refueling outage. Please include a status of corrective actions to repair and/or clean these boric acid leaks. Please identify specifically which known leaks, if any, have remained in service or will remain in service as active leaks.

B.4 **Steam Generator Tube Inspections**

- a) Copies of the Examination Technique Specification Sheets and associated justification for any revisions.
- b) Copy of the guidance to be followed if a loose part or foreign material is identified in the steam generators.
- c) Please provide a copy of the eddy current testing procedures used to perform the steam generator tube inspections (specifically calibration and flaw characterization/sizing procedures, etc.). Also include documentation for the specific equipment to be used.
- d) Please provide copies of your responses to NRC and industry operating experience communications such as Generic Letters, Information Notices, etc. (as applicable to steam generator tube inspections) Do not provide these documents separately if already included in other information requested such as the degradation assessment.
- e) List of corrective action documents generated by the vendor and/or site with respect to steam generator inspection activities.

B.5 **Codes and Standards**

- a) Ready access to (i.e., copies provided to the inspector(s) for use during the inspection at the onsite inspection location, or room number and location where available):
 - i) Applicable Editions of the ASME Code (Sections V, IX, and XI) for the in-service inspection program and the repair/replacement program.
 - ii) EPRI and industry standards referenced in the procedures used to perform the steam generator tube eddy current examination.

Inspector Contact Information:

Ron Kopriva
Senior Reactor Inspector
817-200-1104
Ron.Kopriva@nrc.gov

Mailing Address:
US NRC Region IV
Attn: Ron Kopriva
1600 E. Lamar Blvd
Arlington, TX 76011