UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

May 10, 2017

Mr. G. T. Powell
Executive Vice President and
Chief Nuclear Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION – NRC INTEGRATED INSPECTION REPORT 05000498/2017001 AND 05000499/2017001

Dear Mr. Powell:

On March 31, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your South Texas Project Electric Generating Station, Units 1 and 2, facility. On April 6, 2017, the NRC inspectors discussed the results of this inspection with Mr. D. Koehl, President and Chief Executive Officer, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

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

Sincerely,

/RA/

John L. Dixon, 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 05000498/2017001
and 05000499/2017001
w/ Attachments:
1. Supplemental Information
2. Information Request for Public Radiation Safety Inspection
3. Information Request for Occupational Radiation Safety Inspection

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION – NRC INTEGRATED INSPECTION REPORT 05000498/2017001 AND 05000499/2017001- DATED MAY 10, 2017

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000498, 05000499
License:	NPF-76, NPF-80
Report:	05000498/2017001 and 05000499/2017001
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:	January 1 through March 31, 2017
Inspectors:	A. Sanchez, Senior Resident Inspector N. Hernandez, Resident Inspector L. Carson, II, Senior Health Physicist J. Drake, Senior Reactor Inspector S. Janicki, Project Engineer S. Money, Health Physicist J. O'Donnell, CHP, Health Physicist M. Phalen, Senior Health Physicist
Approved By:	John L. Dixon, Chief, Project Branch B Division of Reactor Projects

SUMMARY

IR 05000498/2017001, 05000499/2017001; 01/01/2017 – 03/31/2017; South Texas Project Electric Generating Station, Units 1 and 2; Integrated Inspection Report

The inspection activities described in this report were performed between January 1 and March 31, 2017, by the resident inspectors at the South Texas Project and inspectors from the NRC's Region IV office. The significance of inspection findings is indicated by their color (i.e., Green, greater than Green, White, Yellow, or Red), 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. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated July 2016.

No findings were identified.

PLANT STATUS

Unit 1 began the inspection period at 100 percent power. On March 17, 2017, Unit 1 performed a rapid shutdown due to an open loop cooling pipe break that challenged secondary side cooling and flooded portions of the protected area. This unplanned shutdown occurred one day before the planned 1RE20 Refueling Outage. Unit 1 entered Refueling Outage 1RE20 and remained there through the end of the inspection period.

Unit 2 began the inspection period at 100 percent power and remained there for the rest of the inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On February 14, 2017, the inspectors completed an inspection of the station's readiness for impending adverse weather conditions. The inspectors reviewed plant design features, the licensee's procedures to respond to tornadoes and high winds, and the licensee's implementation of these procedures. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

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

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walk-Down

a. Inspection Scope

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

- February 8, 2017, Unit 1, train A essential cooling water
- March 29, 2017, Unit 1, spent fuel pool cooling system

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 systems and trains were correctly aligned for the existing plant configuration.

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

b. Findings

No findings were identified.

.2 Complete Walk-Down

a. Inspection Scope

On February 23, 2017, the inspectors performed a complete system walk-down inspection of the Units 1 and 2 Class 1E DC distribution system. The inspectors reviewed the licensee's procedures and system design information to determine the correct Class 1E DC distribution system lineup for the existing plant configuration. The inspectors also reviewed outstanding work orders, open condition reports, in-process design changes, 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 one complete system walk-down sample, 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 four plant areas important to safety:

- January 9, 2017, Unit 1, train A diesel generator building diesel air intake/exhaust, Fire Area 38, Fire Zone Z514
- February 2, 2017, Unit 1, electrical auxiliary building auxiliary shutdown area, Fire Area 07, Fire Zone Z071
- February 8, 2017, Unit 1, fuel handling building heating, ventilation, and air conditioning equipment, Fire Area 35, Fire Zone Z303
- March 14, 2017, Unit 2, train A electrical auxiliary building engineered safety features switchgear room, Fire Zone Z042

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 four quarterly inspection samples, as defined in Inspection Procedure 71111.05.

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 February 28, 2017, the inspectors observed simulator training for an operating crew. 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 requalification activities.

These activities constituted 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 March 17, 2017, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, Unit 1 was being rapidly shut down due to a significant leak in the open loop cooling system, In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedure and other operations department policies.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

Routine Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed two instances of degraded performance or condition of safety-significant structures, systems, and components (SSCs):

- January 4, 2017, Unit 2, solid state protection system, during a calibration of the over temperature/ delta temperature loop T-420 channel associated with the axial flux difference, the bistable failed to actuate and send a trip signal to solid state protection system as designed

- January 15, 2017, Unit 2, 7300 process control system, while at 100 percent power, the master pressurizer controller failed due to 7300 controller driver board and resulted in operator action to ensure licensed power limits were not exceeded

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 two maintenance effectiveness samples, 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 four 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:

- January 11, 2017, Unit 1, train B 10kVA inverter EIV-1203 entry into the Configuration Risk Management Program for planned maintenance

- January 12, 2017, Unit 1, train B 125 Vdc battery bank E1B11 discharge test and entry into the Configuration Risk Management Program for planned maintenance

- February 3, 2017, Unit 1, train B replacement of train S, loop 2 channel 1 input relay and universal logic card for planned maintenance

- February 27, 2017, Unit 1, train B planned maintenance on electrical auxiliary building heating, ventilation, and air conditioning system

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 also reviewed the licensee's action for implementing the Configuration Risk Management Program for determining and implementing the risk-informed allowed outage time for inverter EIV-1203 and battery bank E1B11 planned maintenance that took place on the dates above.

The inspectors also observed portions of two emergent work activities that had the potential to cause an initiating event, and to affect the functional capability of mitigating systems:

- February 11, 2017, Unit 2, train B essential cooling water pump started, but failed to run due to the failure of the discharge valve MOV-0137 to open

- February 20, 2017, Unit 1, circulating water pump 12 failure due to a sheered shaft while circulating water pump 14 was being overhauled

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.

These activities constituted completion of six maintenance risk assessments and emergent work control 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 four operability determinations and functionality assessments that the licensee performed for degraded or nonconforming SSCs:

- January 13, 2017, operability determination of feedwater temperature sensors drifting and losing calibration

- February 27, 2017, functionality assessment of feedwater heaters 21A and 22B not receiving post weld heat treatments following installation

- March 16, 2017, operability determination for Unit 1 personnel airlock door

- March 29, 2017, operability determination for scratched fuel discovered during new fuel receipt for Unit 1 operating cycle 21

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.

These activities constituted completion of four operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- January 10, 2017, Unit 1, train A emergency diesel generator following replacement of cracked varistors
- February 9, 2017, Unit 2, train A steam generator 2A feedwater regulating valve universal control circuit card following replacement due to erroneous signal
- February 14, 2017, Unit 2, train B essential cooling water pump following breaker auxiliary contact replacement for the discharge motor-operated valve
- February 15, 2017, Unit 2, train B electrical auxiliary building heating, ventilation, and air conditioning following replacement of charcoal adsorber

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 constituted completion of four 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)

a. Inspection Scope

During the Unit 1 Refueling Outage 1RE20, that commenced on March 17, 2017, 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
- Monitoring of shut-down and cool-down activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Observation and review of reduced-inventory activity
- Observation and review of fuel handling activities

These activities constituted completion of one refueling outage 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:

- March 15, 2017, Unit 1, train C essential cooling water pump
- March 23, 2017, Unit 2, train C high head safety injection pump
- March 30, 2017, Unit 2, train D auxiliary feedwater pump
- March 31, 2017, Unit 1, train B high head safety injection pump comprehensive test

Other surveillance tests:

- January 11, 2017, Unit 2, train A nuclear instrument 44 axial flux difference calibration

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 constituted completion of five surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

The inspectors evaluated the licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities. The inspectors assessed the licensee's implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures. During the inspection, the inspectors interviewed licensee personnel, walked down various areas in the plant, performed independent radiation dose rate measurements, and observed postings and physical controls. The inspectors reviewed licensee performance in the following areas:

- Radiological hazard assessment, including a review of the plant's radiological source terms and associated radiological hazards. The inspectors also reviewed the licensee's radiological survey program to determine whether radiological hazards were properly identified for routine and non-routine activities and assessed for changes in plant operations.

- Instructions to workers including radiation work permit requirements and restrictions, actions for electronic dosimeter alarms, changing radiological condition, and radioactive material container labeling.

- Contamination and radioactive material control, including release of potentially contaminated material from the radiologically controlled area, radiological survey performance, radiation instrument sensitivities, material control and release criteria, and control and accountability of sealed radioactive sources.

- Radiological hazards control and work coverage. During walk-downs of the facility and job performance observations, the inspectors evaluated ambient radiological conditions, radiological postings, adequacy of radiological controls, radiation protection job coverage, and contamination controls. The inspectors also evaluated dosimetry selection and placement as well as the use of dosimetry in areas with significant dose rate gradients. The inspectors examined the licensee's controls for items stored in the spent fuel pool and evaluated airborne radioactivity controls and monitoring.

- High radiation area and very high radiation area controls. During plant walk-downs, the inspectors verified the adequacy of posting and physical controls, including areas of the plant with the potential to become risk-significant high radiation areas.

- Radiation worker performance and radiation protection technician proficiency with respect to radiation protection work requirements. The inspectors determined if workers were aware of significant radiological conditions in their workplace, radiation work permit controls/limits in place, and electronic dosimeter dose and dose rate set points. The inspectors observed radiation protection technician job performance, including the performance of radiation surveys.

- Problem identification and resolution for radiological hazard assessment and exposure controls. The inspectors reviewed audits, self-assessments, and corrective action program documents to verify problems were being identified and properly addressed for resolution.

These activities constitute completion of the seven required samples of radiological hazard assessment and exposure control program, as defined in Inspection Procedure 71124.01.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

a. Inspection Scope

The inspectors evaluated whether the licensee controlled in-plant airborne radioactivity concentrations consistent with as ALARA principles and that the use of respiratory protection devices did not pose an undue risk to the wearer. During the inspection, the inspectors interviewed licensee personnel, walked down various areas in the plant, and reviewed licensee performance in the following areas:

- Engineering controls, including the use of permanent and temporary ventilation systems to control airborne radioactivity. The inspectors evaluated installed ventilation systems, including review of procedural guidance, verification the systems were used during high-risk activities, and verification of airflow capacity, flow path, and filter/charcoal unit efficiencies. The inspectors also reviewed the use of temporary ventilation systems used to support work in contaminated areas such as high-efficiency particulate air/charcoal negative pressure units. Additionally, the inspectors evaluated the licensee's airborne monitoring protocols, including verification that alarms and set points were appropriate.

- Use of respiratory protection devices, including an evaluation of the licensee's respiratory protection program for use, storage, maintenance, and quality assurance of National Institute for Occupational Safety and Health certified equipment, air quality and quantity for supplied air devices, and self-contained breathing apparatus (SCBA) bottles, qualification and training of personnel, and user performance.

- SCBA for emergency use, including the licensee's capability for refilling and transporting SCBA bottles to and from the control room and operations support center during emergency conditions, hydrostatic testing of SCBA bottles, status of SCBA staged and ready for use in the plant, including vision correction, mask

sizes, etc., SCBA surveillance and maintenance records, and personnel qualification, training, and readiness.

- Problem identification and resolution for airborne radioactivity control and mitigation. The inspectors reviewed audits, self-assessments, and corrective action documents to verify problems were being identified and properly addressed for resolution.

These activities constitute completion of the four required samples of in-plant airborne radioactivity control and mitigation program, as defined in Inspection Procedure 71124.03.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

a. Inspection Scope

The inspectors evaluated whether the licensee's radiological environmental monitoring program quantified the impact of radioactive effluent releases to the environment and sufficiently validated the integrity of the radioactive gaseous and liquid effluent release program. The inspectors also verified that the licensee continued to implement the voluntary Nuclear Energy Institute (NEI)/Industry Groundwater Protection Initiative. The inspectors reviewed or observed the following items:

- The inspectors observed selected air sampling and dosimeter monitoring stations, sampler station modifications, and the collection and preparation of environmental samples. The inspectors reviewed calibration and maintenance records for selected air samplers, composite water samplers, environmental sample radiation measurement instrumentation, and inter-laboratory comparison program results. The inspectors reviewed selected events documented in the annual environmental monitoring report and significant changes made by the licensee to the offsite dose calculation manual, as the result of changes to the land census. The inspectors evaluated the operability, calibration, and maintenance of meteorological instruments and assessed the meteorological dispersion and deposition factors. The inspectors verified the licensee had implemented sampling and monitoring program sufficient to detect leakage from structures, systems, or components with credible mechanism for licensed material to reach groundwater and reviewed changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater.

- Groundwater protection initiative implementation, including assessment of groundwater monitoring results, identified leakage or spill events and entries made into 10 CFR 50.75 (g) records, licensee evaluations of the extent of the contamination and the radiological source term, and reports of events associated with spills, leaks, and groundwater monitoring results.

- Problem identification and resolution for the radiological environmental monitoring program. The inspectors reviewed audits, self-assessments,

and corrective action program documents to verify problems were being identified and properly addressed for resolution.

These activities constitute completion of the three required samples of radiological environmental monitoring program, as defined in Inspection Procedure 71124.07.

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

4OA1 Performance Indicator Verification (71151)

.1 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors reviewed licensee event reports for the period of October 2015 through December 31, 2016, to determine the number of scrams that occurred. The inspectors compared the number of scrams reported in these licensee event reports to the number reported for the performance indicator. The inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned scrams per 7000 critical hours performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors reviewed operating logs, corrective action program records, and monthly operating reports for the period of October 2015 through December 31, 2016, to determine the number of unplanned power changes that occurred. The inspectors compared the number of unplanned power changes documented to the number reported for the performance indicator. The inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned power changes per 7000 critical hours performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors reviewed the licensee's basis for including or excluding in this performance indicator each scram that occurred between October 2015 and December 31, 2017. The inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported.

These activities constituted verification of the unplanned scrams with complications performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors verified that there were no unplanned exposures or losses of radiological control over locked high radiation areas and very high radiation areas during the period of October 1, 2016, to March 31, 2017. The inspectors reviewed a sample of radiologically controlled area exit transactions showing exposures greater than 100 mrem. The inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constitute verification of the occupational exposure control effectiveness performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.5 Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors reviewed corrective action program records for liquid or gaseous effluent releases that occurred between October 1, 2016, and March 31, 2017, and were reported to the NRC to verify the performance indicator data. The inspectors used definitions and guidance contained in NEI Document 99-02,

"Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the radiological effluent technical specifications (RETS)/ODCM radiological effluent occurrences performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

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.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

Event Follow-up for Forced Shutdown Due to Large Open Loop Cooling Pipe Break

a. Inspection Scope

On March 17, 2017 at 06:03 a.m., while at 100 percent power, Unit 1 experienced a sudden low alarm for the open loop cooling system. Operations had been monitoring leakage from the open loop piping system through several operational decision making (ODMIs) monitoring plans that supported continued operation via shiftly monitoring, leakage trigger points for actions and decisions, as well as operations contingencies for catastrophic failure. The open loop cooling system supplies cooling water to nonsafety-related heat exchangers and coolers in the turbine building, as well as facilitating low level radioactive waste discharge. Operations followed off-normal procedures and commenced a rapid shutdown at 06:08 a.m. Unit 1 entered Mode 3 at 09:01 a.m., all control rods were inserted into the reactor core and all safety-related systems functioned as designed.

The resident inspectors responded to the control room and observed the shutdown evolution and the operating crew's performance, and also reviewed the licensee's initial investigation. Furthermore, the residents walked down the site looking for effects from

the massive water leak. The inspectors also reviewed and verified licensee met reporting requirements specified in NUREG-1022, "Event Reporting Guidelines," Revision 3.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Temporary Instruction (TI) 2515/192, "Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems"

a. Inspection Scope

The objective of this performance based temporary instruction is to verify implementation of interim compensatory measures associated with an open phase condition design vulnerability in electric power system for operating reactors. The inspectors conducted an inspection to determine if the licensee had implemented the following interim compensatory measures. These compensatory measures are to remain in place until permanent automatic detection and protection schemes are installed and declared operable for open phase condition design vulnerability. The inspectors verified the following:

- The licensee identified and discussed with operations staff the lessons-learned from the open phase condition events at U.S. operating plants, including the Byron Station open phase conditions and its consequences. This included conducting operator training for promptly diagnosing, recognizing consequences, and responding to an open phase condition.

- The licensee updated plant operating procedures to help operators promptly diagnose and respond to open phase condition on off-site power sources credited for safe shutdown of the plant.

- The licensee established and continued to implement periodic walk-down activities to inspect switchyard equipment, such as insulators, transmission line, and transformer connections associated with the off-site power circuits to detect a visible open phase condition.

- The licensee ensured that routine maintenance and testing activities on switchyard components have been implemented and maintained. As part of the maintenance and testing activities, the licensee assessed and managed plant risk in accordance with 10 CFR 50.65(a)(4) requirements.

b. Findings

No findings were identified.

The inspectors had the following observations related to the licensee's interim compensatory measures:

- In a letter to the NRC, dated October 25, 2012, South Texas Project (STP) informed the NRC that they were vulnerable to an open phase condition. Since then, STP performed additional analysis using E-Tap analysis software and concluded that their electrical system design was not susceptible to the adverse consequences of an open phase condition. Therefore, they have implemented limited compensatory measures.

- Although the training mentioned the symptoms and effects of the open phase condition, it did not include operator training for promptly diagnosing, recognizing consequences, and responding to an open phase condition.

- The licensee updated plant operating procedures, but the changes were limited to guidance to measure all three phases of voltage on the engineered safety features buses and to conduct visual inspections of the switchyards, including transformers and connections. There was no guidance to help operators promptly diagnose and respond to open phase conditions on off-site power sources credited for safe shutdown of the plant.

- Although the licensee had implemented periodic walk-downs of the switchyard equipment, there was no specific guidance on what the operators should be looking for or how to perform the inspections. No training documents were provided that indicated personnel had received training on how to perform this task.

The licensee initiated Condition Report 17-1004 to capture the NRC observations; however, the only action specified was limited to evaluating if training should be provided to departments outside of operations.

.2 Review of the Implementation of the Industry Groundwater Protection Voluntary Initiative

a. Inspection Scope

The inspectors reviewed the licensee's groundwater protection program to determine whether the licensee implemented NEI 07-07, "Industry Groundwater Protection Initiative," dated August 2007. The inspectors interviewed personnel, performed walk-downs of selected areas, and reviewed the following three recent spill events:

- November 30, 2016: A 200-gallon spill of water, with a concentration of approximately 2,600 picocuries per liter (pCi/l) of tritium, on the owner controlled area (total tritium activity of 2.0E-6 Ci)

- January 14, 2017: A 4500-gallon leak of reservoir water, with a concentration of approximately 10,600 pCi/l of tritium, through a damaged underground pipe (total tritium activity of 1.8E-4 Ci)

- March 17, 2017: A 4.5 million-gallon spill of reservoir water, with a concentration of approximately 10,600 pCi/l of tritium, as a result of the catastrophic failure of the damaged pipe from January 14 (total tritium activity of 1.8E-1 Ci)

b. Observations and Assessments

The inspectors determined that none of the three spill events had radioactivity in excess of 20,000 pCi/l tritium and that no other radioactivity was detected. The inspectors also determined that STP did not notify the NRC or the State of Texas, formally or informally, of any of the three spill events.

The licensee is expected to follow the guidelines of the voluntary initiative described in NEI 07-07 for reporting and evaluating spills, leaks, and groundwater concerns. Section 2.2, "Voluntary Communication," of NEI 07-07 states:

> "Make informal communication as soon as practicable to appropriate State/Local officials, with follow-up notification to the NRC, as appropriate, regarding significant on-site leaks/spills into ground water and on-site or off-site water sample results exceeding the criteria in the radiological environmental monitoring program described in the offsite dose calculation manual."

The guidance in NEI 07-07 provides a threshold for this informal communication to State/Local officials of spills or leaks exceeding 100 gallons from a source containing licensed material. The guidance also recognizes that some states may require different communication thresholds, but specifies that the licensee shall document any agreements with State/Local officials that differ from the industry guidance.

Licensee Procedure 0PGP03-ZO-0053, "Radiological Ground Water Protection Program," provides guidance for documenting and evaluating spills, leaks, or activities that may have released plant-related radionuclides and radioactive materials into the ground or subsurface. Addendum 1 of the procedure documents the licensee's communication protocol for reporting spills and leaks to the state and the NRC. According to the licensee's procedure, they would not report a leak or spill to the NRC or the state informally or formally unless radioactivity in a sample was in excess of 20,000 picocuries/liter (pCi/l) tritium.

When asked the basis for the reporting criteria in Procedure 0PGP03-ZO-0053, the licensee stated it was based on a 2006 conversation with the State of Texas and STP. During this conversation, it was agreed that without some activity level associated with the 100-gallon volume, this reporting would not mean much to them; Texas verbally recommended against informal reporting based merely on a volume. This resulted in an informal agreement on the spill criteria above.

However, the inspectors determined that the licensee did not have a documented mutual agreement with the State of Texas regarding Section 2.2 of NEI 07-07. In addition, the inspectors verified with the State of Texas that they did not have an agreement with STP regarding exceptions to the voluntary communications protocol in NEI 07-07.

The licensee entered this issue in their corrective action program as Condition Report 17-13531, to evaluate their agreement with the State of Texas and whether this verbal agreement meets Section 2.2 of NEI 07-07.

c. Findings

No findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 12, 2017, the inspectors presented the radiation safety inspection results to Mr. G. Powell, Executive Vice President and Chief Nuclear Officer, 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 January 23, 2017, the inspector presented the final inspection results of Temporary Instruction 2515/192 to Mr. G. Powell, Executive Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. No proprietary information was identified.

On March 31, 2017, the inspectors presented the radiation safety inspection results to Mr. G. Powell, Executive Vice President and Chief Nuclear Officer, 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 April 6, 2017, the inspectors presented the inspection results to Mr. D. Koehl, President and Chief Executive Officer, 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, Plant Protection/Emergency Response
M. Berg, Manager, Design Engineering
J. Berrio, Manager, Operations, Production Support & Programs
C. Bowman, Manager, Nuclear Support
W. Brost, Engineer III
A. Capristo, Executive Vice President and Chief Administrative Officer
D. Caraballo, Engineer, Systems Engineering
J. Connolly, Site Vice President
A. Culver, Supervisor, Operations Training
R. Dunn Jr., Manager, Nuclear Fuel and Analysis
S. Feemster, Instructor
T. Frawley, Manager, Corporate Projects
C. Gann, Manager, Employee Concerns Program
C. Georgeson, Supervisor, Electrical Design
R. Gibbs, Manager, Operations Division, Unit Operations
R. Gonzales, Senior Licensing Engineer
G. Hildebrandt, Manager, Training
D. Hubenak, Supervisor, General Health Physics
R. Hubenak, Supervisor, Training
G. Janak, Operations Training Manager
B. Jefferson, Director, Operations
D. Kappler, Health Physicist, Radiation Protection
K. Kawabata, Health Physicist
D. Koehl, President and CEO
B. Lane, Manager, Operations Division, Integrated Work Management & Outage
J. Lovejoy, Manager, I&C Maintenance
E. Matejceck, Manager, Mechanical Maintenance
R. McNeil, Manager, Maintenance Engineering
J. Mertink, Manager, Nuclear Oversight
J. Milliff, Manager, Security
M. Murray, Manager, Regulatory Affairs
K. Nigmatullina, Effluent Primary Chemist, Chemistry
M. Page, General Manager, Engineering
C. Pence, Manager, Chemistry
L. Peter, General Manager, Projects
J. Pointon, Supervisor, ALARA
G. Powell, Executive Vice President and Chief Nuclear Officer
D. Rencurrel, Senior Vice President, Operations
M. Ruvalcaba, Manager, Strategic Projects
R. Savage, Engineer, Licensing Consult Specialist
R. Scarborough, Manager, Operations Training Mentor
M. Schaefer, Plant General Manager
R. Stastny, Maintenance Manager
L. Sterling, Supervisor, Licensing
L. Stoicescu, Health Physicist, Radiological Environmental Monitoring Program

C. Stone, Manager, Health Physics
P. Travis, Supervisor, Environmental
M. Veliz, System Engineer
J. Von Suskil, Owner Rep – NRG South Texas LP
K. Wallis, Acting Manager, Systems Engineering
R. Wied, Respiratory Support, Radiation Protection
D. Zink, Supervising Engineering Specialist

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

2515/192	TI	Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Condition Reports (CRs)

17-11473	17-11478	17-11499	17-11521	17-11575	17-11541	16-4926
16-5029	16-8176	16-8179	16-15253	17-11542	17-11638	17-14434

Procedures

Number	Title	Revision
0PGP03-ZV-0001	Severe Weather Plan	21
0POP04-ZO-0002	Natural or Destructive Phenomena Guidelines	53
ZV-0029	Site Preparation for Tropical Storm or Hurricane	0

Section 1R04: Equipment Alignment

Condition Reports (CRs)

17-727	17-1484	16-8884	16-15174	16-6139

Procedures

Number	Title	Revision
0POP02-EE-0001	ESF (Class 1E) DC Distribution System	35
0POP02-EW-0001	Essential Cooling Water Operations	71

Section 1R05: Fire Protection

Condition Reports (CRs)

13-1982 15-21979 16-1872

Procedures

Number	Title	Revision
0DGB38-FP-0514	Fire Preplan Diesel Generator Building Diesel Air Intake/Exhaust, Train A	3
0EAB07-FP-0071	Fire Preplan Electrical Auxiliary Building Auxiliary Shutdown Area	3
0FHB35-FP-0303	Fire Preplan Fuel Handling Building HVAC Equipment	3
0EAB03-FP-0042	Fire Preplan Electrical Auxiliary Building ESF Switchgear Room Train B	3

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

Procedures

Number	Title	Revision
0POP04-FW-0002	Steam Generator Feed Pump Trip	35
0POP04-AE-0001	First Response To Loss of Any Or All 13.8kV Or 4.16kV Bus	44
0POP05-EO-EC00	Loss of ALL AC Power	29
0POP04-AE-0003	Loss of Power to One or More 13.8 KV Standby Bus	12
0POP05-EO-EO04	Reactor Trip or Safety Injection	24
0POP05-EO-ES01	Reactor Trip Response	29
ERP01-ZV-SH01	Shift Manager	31
ERP01-ZV-IN01	Emergency Classification	10
ERP01-ZV-IN02	Notifications to Offsite Agencies	34

Simulator Deficiency Reports (DRs)

2946

Simulator Scenarios

Number	Title	Revision
RST 217.01	E-Plan Scenario	0

Section 1R12: Maintenance Effectiveness

Condition Reports (CRs)

16-6495	17-232	17-658

Miscellaneous

Title	Date
Maintenance Rule Expert Panel Meeting Agenda	February 22, 2017

Procedures

Number	Title	Revision
SEG-0009	Maintenance Rule Basis Document Guideline	2
0PGP04-ZE-0313	Maintenance Rule Program	7
RECM-0001	Reactivity Management Guidelines	13
0POP04-RP-0001	Loss of Automatic Pressurizer Pressure Control	15

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Condition Reports (CRs)

17-1534	17-1852	17-11750	17-11747	17-12046
17-1895	17-11587			

Procedures

Number	Title	Revision
0PGP03-HU-0001	Human Performance (HU) Program	7
0PGP03-ZA-0010	Performing and Verifying Station Activities	37
0PGP03-ZA-0091	Configuration Risk Management Program	13
0PGP03-ZG-RMTS	Risk-Managed Technical Specifications Program	2
0PGP05-ZE-0001	PRA Analyses/Assessments	3
0PMP04-ZH-0002	Prefilter Removal and Replacement	10
0POP02-CW-0001	Circulating Water System Pump Operations	76

Procedures

Number	Title	Revision
0POP11-DJ-002	Online Class 1E 125V DC Battery and Inverter Removal from Service and Restoration	12
0PSP03-SP-0005S	SSPS Logic Train S Functional Test	41
0PSP06-DJ-007B	Train B 125V Class 1E Battery Modified Performance Test	1
PS-HND-001	Procedure Writer's Handbook	4

RICTCAL Sequence Number

2869 2906 2872 2888 2889 2903

Work Activity Risk (WAR)

2696

Work Authorization Number (WAN)

492619 514524 554747 518064

Section 1R15: Operability Determinations and Functionality Assessments

Condition Reports (CRs)

15-5132 17-1663 13-11380 17-11607

Procedures

Number	Title	Revision
0PEP02-ZM-0002	New Fuel Receipt, Inspection, and Storage	25
0PGP03-ZO-9900	Operability Determinations and Functionality Assessments Program	7
0POP01-ZO-0011	Operability, Functionality, and Reportability Guidance	10
WCG-0008	Preventing Recurring Equipment Problems (PREP)	7
0PMP02-ZW-0005	Control of PWHT	5

Section 1R19: Post-Maintenance Testing

Condition Reports (CRs)

17-442 17-1614 17-1852 17-1895

Procedures

Number	Title	Revision
0PMP08-FW-0551	Steam Generator Level Control Loop Calibration	22
0POP02-DG-0001	Emergency Diesel Generator 11(21)	67
0PSP11-ZH-0009	EAB and FHB HVAC In-Place Adsorber Leak Test	23
0PEP05-ZH-0001	Nuclear Air Cleaning Systems Visual Inspection	9
0PSP11-HE-0001	Control Room Envelope Filter Airflow Capacity Test	12
0PMP05-PK-1001	4160 Volt Class 1E Switchgear Maintenance	13

Work Authorization Number (WANs)

513733	557827	558023	256963

Section 1R20: Refueling and Other Outage Activities

Condition Reports (CRs)

17-13498	17-13440	17-13477	17-13486	17-622
17-13207	17-13221	17-13222	17-13227	17-13228
17-13285	17-13293	17-11729		

Miscellaneous

Title	Date
Shutdown Risk Assessment Report 1RE20	March 6, 2017

Procedures

Number	Title	Revision
0POP04-OC-0001	Loss of Open Loop Cooling	21
0POP03-ZG-0006	Plant Shutdown from 100% to Hot Standby	64
0POP03-ZG-0007	Plant Cooldown	80
0PGP03-ZO-0042	Reactivity Management Program	19
0POP03-ZG-0010	Refueling Operations	71
0POP02-RC-0003	Filling and Venting the Reactor Coolant System	46
0PGP03-ZA-0101	Shutdown Risk Assessment	30
0PSP03-XC-0001	Refueling Containment Penetration Status	29

Procedures

Number	Title	Revision
0PGP03-ZM-0028	Erection and Use of Scaffolding	21

Section 1R22: Surveillance Testing

Condition Reports (CRs)

17-13390	14-8633

Procedures

Number	Title	Revision
0PSP03-AF-0007	Auxiliary Feedwater Pump 14(24) Inservice Test	48
0PSP03-SI-0006	High Head Safety Injection Pump 1C(2C) Inservice Test	18
0PSP05-NI-044A	NIS Axial Flux Difference Calibration (N-0044A)	38
0PSP03-SI-0043	High Head Safety Injection Pump 1b(2B) Comprehensive Pump Test	7
0PGP03-ZE-0022	Inservice Testing Program for Pumps	23
0PGP03-ZE-0004	Plant Surveillance Program	28

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

ALARA Work Packages

Number	Title
17-1078-7	Non-Rapid Refuel 2RE20 Reactor Disassembly

Audits And Self-Assessments

Number	Title	Date
16-02	Radiological Control Quality Audit Report	April 12, 2016
16-679	Self-Assessment - STP Radiation Worker Training Program	June 16, 2016

Condition Reports (CRs)

17-13685	17-13531	17-00622	16-15009	17-13698
17-12580	17-12861	16-14229	17-00144	16-14045

Miscellaneous

Title	Revision/Date
2015 STP Annual ALARA Report	May 30, 2016
1RE19 Refueling Outage ALARA Report	June 1, 2016
2RE18 ALARA Update Report	October 26, 2016
STPNOC Daily Operational Focus Meeting Package	March 27 – 31, 2017
STPNOC ALARA Strategic Planning Guide 2016-2020	July 24, 2016
STPEGS UFSAR – Chapter 12, Radiation Protection	18
SFP Storage & Work Inventory 2016	July 27, 2016
STP Radioactive Source Surveillance	July 26, 2016
STP Radioactive Source Surveillance	January 25, 2017
STP Tech Spec Source Inventory	July 6, 2016
STP Tech Spec Source Inventory	January 25, 2017
National Source Tracking Transaction Report	January 27, 2009
STP Groundwater Protection Plan	October 18, 2017

Procedures

Number	Title	Revision
0PGP03-ZR-0048	Personnel Dosimetry Program	18
0PGP03-ZR-0050	Radiation Protection Program	13
0PGP03-ZR-0051	Radiological Access Controls/Standards	37
0PRP03-ZR-0004	Inventory and Leak Testing of Radioactive Sources	9
0PRP04-ZR-0004	Release of Materials from Radiologically Controlled Areas	23
0PRP04-ZR-0011	Radiation Protection Key Control	32
0PRP04-ZR-0013	Radiological Survey Program	36
0PRP04-ZR-0015	Radiological Posting and Warning Devices	34
0PRP07-ZR-0033	Radiological Briefings	6
0PRP07-ZR-0016	Lockdown and Posting of Transfer of Spent Fuel Irradiated Material through Transfer Tube	8
0PGP03-ZO-0053	Radiological Ground Water Protection Program	5
0PGP-ZA-0002	Condition Report Engineering Evaluation	24
0PSP-08-ZR-0001	Radioactive Source Surveillance	
0PEP02-ZM-0009	Spent Fuel Pool [SFP] Storage and Work	9

Procedures

Number	Title	Revision
0PRP07-ZR-0027	Transfer of Underwater Filters >100 mrem/hr from the SFP	5
0PRP08-ZR-0020	Installation and Operation of Underwater Filtration Equipment	25
0PCP09-ZR-0016	Off-Normal and Abnormal Radiological Effluent Monitoring	3
0PGP03-ZR-0053	Radiological Material Controls Program	19

Radiation Work Permits

Number	Title	Revision
2017-1-0114	1RE20 Reactor Vessel Lower Internals Movement (LHRA)	3
2017-1-0156	Transfer of Underwater Filters >100 mrem/hr from the SFP (LHRA)	1
2017-1-040	1RE20 Mechanical Stress Improvement Process	0
2017-1-0074	1RE20 Major Decon of Reactor Cavity 1	0
2017-1-0115	1RE 20 O-Ring Groove Cleaning	0
2017-1-0095	1RE20 Maintenance and Support Work	0
2017-1-0120	1RE20 Radiography Activities Inside the RCA (HRA)	0

Section 2RS3: In-plant Airborne Radioactivity Control and Mitigation

Audits And Self-Assessments

Number	Title	Date
RC 16-02	Radiological Controls Quality Audit Report	April 13, 2016
15-212	Respiratory Protection Self-Assessment	September 28, 2015

Compressed Air System Testing Records

Number	Title	Date
268952-0	Compressed Air/Gas Quality Testing Bauer A900 Compressor	February 8, 2016
276252-0	Compressed Air/Gas Quality Testing AC 901 Ingersoll Rand 750	May 13, 2016
285967-0	Compressed Air/Gas Quality Testing IA 13 Instrument Air Comp. #13	September 23, 2016
289922-0	Compressed Air/Gas Quality Testing 10127496 Atlas COPCO XAS 750	November 16, 2016

Condition Reports (CRs)

15-08668	15-09238	15-10191	15-12336	15-18158
15-22021	15-25275	16-01209	16-01612	16-02025
16-05699	16-15082	17-00130	17-11578	

Engineered System Filter Test Records

W/O Number	Title	Date
470566	Control Room Clean-up Unit 11-B (008)	February 10, 2016
470733	Control Room Clean-up Unit 11-B (009)	February 9, 2016
472566	Control Room Clean-up Unit 11-B (010)	March 7, 2016
470650	Control Room Make-up Unit 11-B (008)	February 10, 2016
470734	Control Room Make-up Unit 11-B (009)	February 9, 2016
472578	Control Room Make-up Unit 11-B (010)	February 9, 2016
481942	Control Room Clean-up Unit 21-A (008)	August 26, 2016
481906	Control Room Clean-up Unit 21-A (009)	August 23, 2016
481905	Control Room Clean-up Unit 21-A (010)	August 23, 2016
81943	Control Room Make-up Unit 21-A (008)	August 26, 2016
481909	Control Room Make-up Unit 21-A (009)	August 23, 2016
481908	Control Room Make-up Unit 21-A (010)	August 23, 2016

Portable HEPA Filter and Vacuum Test Records

Number	Title	Date
V-28	PAO and Flow Test Performance Checksheet	February 15, 2017
H-125-8	PAO and Flow Test Performance Checksheet	February 20, 2017
H-500-3	PAO and Flow Test Performance Checksheet	February 20, 2017
H-2000-6	PAO and Flow Test Performance Checksheet	March 19, 2017

Procedures

Number	Title	Revision
0PEP05-ZH-0008	MAB, TSC and RCB HVAC In-Place HEPA Filter Leak Test	8
0PGP03-ZI-0015	Control and Use of Industrial Compressed Air and Gases	6
0PGP03-ZR-0054	Respiratory Protection Program	16

Procedures

Number	Title	Revision
0PGP05-ZV-0012	Emergency Facilities Inventory	17
0PRP06-ZR-0005	Maintenance, Inspection, and Storage of Respiratory Protection Equipment	15
0PRP06-ZR-0016	Charging Breathing Air Cylinders	7
0PSP11-ZH-0008	CRE and FHB HVAC In-Place HEPA Filter Leak Test	20

Respirator Testing, Inspection, and Inventory Records

SCBA Number	Location	Date
1	Control Room – Unit 2	February 19, 2017
5	Control Room – Unit 2	February 16, 2017
56	Control Room – Unit 1	February 12, 2017
82	Control Room – Unit 2	February 19, 2017
96	Control Room – Unit 1	February 12, 2017
127	Control Room – Unit 1	February 12, 2017

Section 2RS7: Radiological Environmental Monitoring Program

Audits And Self-Assessments

Number	Title	Date
16-02 (RC)	Radiological Controls Quality Audit Report	April 13, 2016
14-02 (RC)	Radiological Controls Quality Audit Report	March 31, 2014
MN-15-0-103879	Quality Monitoring Report	March 2, 2015
MN-15-0-104298	Quality Monitoring Report	May 5, 2015
MN-15-0-104304	Quality Monitoring Report	May 6, 2015
MN-15-0-104464	Quality Monitoring Report	July 22, 2015
MN-16-0-105057	Quality Monitoring Report	February 9, 2016
MN-16-0-105225	Quality Monitoring Report	May 4, 2016
MN-16-0-105230	Quality Monitoring Report	May 5, 2016

Calibration And Maintenance Records

Number	Title	Date
4326722	Backup Meteorological System Calibration (10 Meter Tower)	April 18, 2016

Calibration And Maintenance Records

Number	Title	Date
482175	Backup Meteorological System Calibration (10 Meter Tower)	August 31, 2016
34310846	Primary Meteorological System Calibration (60 Meter Tower)	February 22, 2016
34343634	Primary Meteorological System Calibration (60 Meter Tower)	June 23, 2016
	Gamma Geometry Standardization Package Detector 2: FILT-0	April 19, 2015
	Gamma Geometry Standardization Package Detector 4: CART-0	March 28, 2015
	Gamma Geometry Standardization Package Detector 1: FILT-0	April 18, 2015

Condition Reports (CRs)

14-16154	14-16627	14-17050	15-15927	15-16975
15-04722	15-16603	15-18419	15-20186	15-20380
15-23059	15-10476	16-8876	16-07072	16-00600
16-00630	16-00926	16-5468	17-00228	17-00238

Miscellaneous

Number	Title	Revision/Date
2014	Annual Environmental Operating Report	April 2015
2015	Annual Environmental Operating Report	April 2016
	Groundwater Protection Plan South Texas Project	October 18, 2016
	Corrective Action Program Query Report 4QQ for 10 CFR 50.75(g) Entries	November 9, 2016
2014	Land Use Census (2014)	November 13, 2014
2015	Land Use Census (2015)	November 23, 2015
	Offsite Dose Calculation Manual	19
	Offsite Dose Calculation Manual	3
2014	Radioactive Effluent Release Report	April 2015
2015	Radioactive Effluent Release Report	April 2016
SRMN-02641	USCEA/NIST MAP Report Package Point Source	August 31, 2016

Procedures

Number	Title	Revision
0PGP03-ZO-0053	Radiological Ground Water Protection Program	5
0PGP03-ZR-0039	Radiological Environmental Monitoring Program	18
0PRP10-ZL-0002	Quality Assurance for the Radiological Laboratory	15
0PRP10-ZL-0023	REMP Interlaboratory Comparison Program	11
0PRP10-ZL-0029	NRMAP Measurement Assurance Program	2
0PRP10-ZL-0030	Interlaboratory Radioassay Measurement Assurance Program	3
0PRP10-ZU-0001	REMP Sample Collection	8
0PSP05-EM-0001	Primary Meteorological System Calibration (60 Meter Tower)	36
0PSP05-EM-0002	Backup Meteorological System Calibration (10 Meter Tower)	23

Section 4OA1: Performance Indicator Verification

Procedures

Number	Title	Revision
PI-0002	NRC & INPO Performance Indicator: Initiating Events Cornerstone (by Unit) and Barrier Integrity Cornerstone (by Unit) Desktop Guide	6

Section 4OA5: Other Activities

Condition Reports (CRs)

12-1901	12-1902	12-8728	12-22996	12-26977
13-7041	15-20941	15-6370	16-7653	

Miscellaneous

Number	Title	Revision/Date
	STP Response to NRC Bulletin 2012-01: Design Vulnerability in Electrical Power System	October 25, 2012
1OOI01-OL-0003	Unit 1 Yard Days Logsheet	32
1OOI01-OL-0010	Unit 1 CP Days Logsheet	29
2OOI01-OL-0010	Unit 2 CP Days Logsheet	28
	Plant Events - POR132 and LOR 133-1 - Combined Class	

Miscellaneous

Number	Title	Revision/Date
	PO CRC agenda minutes package	July 25, 2012
	LOR CRC agenda minutes	August 1, 2012
	LOR 165.01.LP.01 13.8kv	1

Procedures

Number	Title	Revision
0POP01-ZA-0021	AC Electrical Notes and Precautions	16
0POP01-ZQ-0022	Plant Operations Shift Routines	77
0POP02-AE-0002	Transformer Normal Breaker and Switch Lineup	66
0POP04-AE-0001	First Response To Loss Of Any Or All 13.8 KV Or 4.16 KV Bus	44
0POP04-AE-0004	Loss Of Power To One Or More 4.16 KV ESF Bus	17
0POP07-AE-0002	ESF Load Tap Changer Functional Test	5
0POP09-AN-03M3	Annunciator Lamp box 3M03 Response Instructions	33
0POP04-AE-0005	Offsite Power System Degraded Voltage	13
0PSP03-EA-0002	ESF Power Availability	36
0PGP03-ZO-0054	Operational Decision-Making	7

The following items are requested for the
Public Radiation Safety Inspection
at South Texas Project
November 28 – December 2, 2016
Integrated Report 2016004

NOTE: The original dates for the REMP inspection were November 28 – December 2, 2016. The inspection dates changed to January 9 – 13, 2017, after this information request was made.

Inspection areas are listed in the attachments below.

Please provide the requested information on or before November 14, 2016.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.0**1** should be in a file/folder titled "**1**- A," applicable organization charts in file/folder "**1**- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the on-site inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact Louis Carson at (817) 200-1221.

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.

7. Radiological Environmental Monitoring Program (71124.07)
Date of Last Inspection: February 7, 2014

A. List of contacts and telephone numbers for the following areas:

1. Radiological environmental monitoring
2. Meteorological monitoring

B. Applicable organization charts

C. Audits, self-assessments, vendor or NUPIC audits of contractor support, and LERs written since date of last inspection, related to:

1. Radiological environmental monitoring program (including contractor environmental laboratory audits, if used to perform environmental program functions)
2. Environmental TLD processing facility
3. Meteorological monitoring program

D. Procedure index for the following areas:

1. Radiological environmental monitoring program
2. Meteorological monitoring program

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures will be requested by number after the inspector reviews the procedure indexes.

1. Environmental Program Description
2. Sampling, collection and preparation of environmental samples
3. Sample analysis (if applicable)
4. Laboratory instrumentation quality control
5. Procedures associated with the Offsite Dose Calculation Manual
6. Appropriate QA Audit and program procedures, and/or sections of the station's QA manual (which pertain to the REMP)

F. A summary list of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection, related to the following programs:

1. Radiological environmental monitoring
2. Meteorological monitoring

NOTE: The lists should indicate the <u>significance level</u> of each issue and the <u>search criteria</u> used. Please provide in document formats which are "searchable" so that the inspector can perform word searches.

G. Wind Rose data and evaluations used for establishing environmental sampling locations

H. Copies of the 2 most recent calibration packages for the meteorological tower instruments

I. Copy of the 2014 and 2015 Annual Radiological Environmental Operating Report and Land Use Census, and current revision of the Offsite Dose Calculation Manual, or the two most recent reports.

J. Copy of the environmental laboratory's inter-laboratory comparison program results for 2014 and 2015, or the two most recent results, if not included in the annual radiological environmental operating report

K. Data from the environmental laboratory documenting the analytical detection sensitivities for the various environmental sample media (i.e., air, water, soil, vegetation, and milk)

L. Quality Assurance audits (e.g., NUPIC) for contracted services

M. Current NEI Groundwater Initiative Plan and status

N. Technical requirements manual or licensee controlled specifications which lists the meteorological instruments calibration requirements

O. A list of Regulatory Guides and/or NUREGs that you are currently committed to relative to the Radiological Environmental Monitoring Program. Please include the revision and/or date for the committed item and where this can be located in your current licensing basis/UFSAR.

P. If applicable, per NEI 07-07, provide any reports that document any spills/leaks to groundwater since the last inspection.

The following items are requested for the
Occupational Radiation Safety Inspection

SOUTH TEXAS PROJECT

Inspection Dates March 27–31, 2017
Integrated Report 2017001

Inspection areas are listed in the attachments below.

Please provide the requested information on or before **March 20, 2017**

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.0**1** should be in a file/folder titled "**1**- A," applicable organization charts in file/folder "**1**- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact Louis C. Carson II at (817) 200-1221 or Louis.Carson@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.

1. Radiological Hazard Assessment and Exposure Controls (71124.01) and Performance Indicator Verification (71151)
Date of Last Inspection: October 28, 2016

A. List of contacts and telephone numbers for the Radiation Protection Organization Staff and Technicians

B. Applicable organization charts

C. ALL radiation protection related licensee assessments and audits, all independent or third party radiation protection related assessments and audits, all radiation protection related self-assessments, and all radiation safety related LERs, including but not limited to radiation monitoring instrumentation and radioactive effluents, releases and / or spills, written since November 2016.

D. Procedure indexes for the radiation protection procedures

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.

1. Radiation Protection Program Description
2. Radiation Protection Conduct of Operations
3. Personnel Dosimetry Program
4. Posting of Radiological Areas
5. High Radiation Area Controls
6. RCA Access Controls and Radiation Worker Instructions
7. Conduct of Radiological Surveys
8. Radioactive Source Inventory and Control
9. Declared Pregnant Worker Program

F. List of corrective action documents (including corporate and sub-tiered systems) since November 2016.

a. Initiated by the radiation protection organization
b. Assigned to the radiation protection organization

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are "searchable" so that the inspector can perform word searches.

If not covered above, a summary of corrective action documents since November 2016 involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)

Additionally, a copy of ALL radiation protection AND chemistry department root cause evaluations, apparent cause evaluation, and condition evaluations performed since November 2016.

G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a

list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)

H. List of active radiation work permits

I. Radioactive source inventory list

   a. All radioactive sources that are required to be leak tested

   b. All radioactive sources that meet the 10 CFR Part 20, Appendix E, Category 2 and above threshold. Please indicate the radioisotope, initial and current activity (w/assay date), and storage location for each applicable source.

J. The last two leak test results for the radioactive sources inventoried and required to be leak tested. If applicable, specifically provide a list of all radioactive source(s) that have failed its leak test within the last two years

K. A current listing of any non-fuel items stored within your pools, and if available, their appropriate dose rates (Contact / @ 30cm)

L. Computer printout of radiological controlled area entries greater than 100 millirem since the previous inspection to the current inspection entrance date. The printout should include the date of entry, some form of worker identification, the radiation work permit used by the worker, dose accrued by the worker, and the electronic dosimeter dose alarm set-point used during the entry (for Occupational Radiation Safety Performance Indicator verification in accordance with IP 71151).

3. In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

Date of Last Inspection: April 2015

A. List of contacts and telephone numbers for the following areas:

1. Respiratory Protection Program
2. Self-contained breathing apparatus

B. Applicable organization charts

C. Copies of audits, self-assessments, vendor or NUPIC audits for contractor support (SCBA), and LERs, written since date of last inspection related to:

1. Installed air filtration systems
2. Self-contained breathing apparatuses

D. Procedure index for:

1. Use and operation of continuous air monitors
2. Use and operation of temporary air filtration units
3. Respiratory protection

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.

1. Respiratory protection program
2. Use of self-contained breathing apparatuses

3. Air quality testing for SCBAs
4. Use of installed plant systems, such as containment purge, spent fuel pool ventilation, and auxiliary building ventilation

F. A summary list of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection, related to the Airborne Monitoring program including:

1. Continuous air monitors
2. Self-contained breathing apparatuses
3. Respiratory protection program

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are "searchable" so that the inspector can perform word searches.

G. List of SCBA qualified personnel - reactor operators and emergency response personnel

H. Inspection records for self-contained breathing apparatuses (SCBAs) staged in the plant for use since date of last inspection.

I. SCBA training and qualification records for control room operators, shift supervisors, STAs, and OSC personnel for the last year.

A selection of personnel may be asked to demonstrate proficiency in donning, doffing, and performance of functionality check for respiratory devices

J. List of respirators (available for use) by type (APR, SCBA, PAPR, etc.), manufacturer, and model.