



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

May 10, 2019

Mr. Daniel G. Stoddard
Senior Vice President and Chief Nuclear Officer
Virginia Electric & Power Co.
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: SURRY UNITS 1, 2 – NUCLEAR REGULATORY COMMISSION INTEGRATED
INSPECTION REPORT 05000280/2019001 AND 05000281/2019001

Dear Mr. Stoddard:

On March 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Surry Units 1, 2. On April 17, 2019, the NRC inspectors discussed the results of this inspection with Mr. Fred Mladen and other members of your staff. The results of this inspection are documented in the enclosed report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. The finding did not involve a violation of NRC requirements.

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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC resident inspector at Surry.

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/

Lundy F. Pressley, Acting Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos.: 05000280 and 05000281

License Nos.: DPR-32 and DPR-37

Enclosure:

Inspection Report 05000280/2019001 and 05000281/2019001

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ADAMS ACCESSION NUMBER: **ML 19130A018**

OFFICE	RI/DRP	RII/DRP	RII/DRS	RII/DRS	RII/DRP	RII/DRP	RII/DRP
NAME	BLin	CRead	DBacon	MMeeks	JDodson	LPressley	PNiebaum
DATE	5/6/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/9/2019	5/1/2019

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U.S. NUCLEAR REGULATORY COMMISSION

Inspection Report

Docket Numbers: 05000280 and 05000281

License Numbers: DPR-32 and DPR-37

Report Numbers: 05000280/2019001 and 05000281/2019001

Enterprise Identifier: I-2019-001-0028

Licensee: Virginia Electric & Power Co.

Facility: Surry, Units 1 and 2

Location: Surry, VA 23883

Inspection Dates: January 01, 2019 to March 31, 2019

Inspectors: B. Lin, Acting Senior Resident Inspector
C. Read, Acting Senior Resident Inspector
D. Bacon, Senior Operations Engineer (Section 71111.11B)
M. Meeks, Senior Operations Engineer (Section 71111.11B)

Approved By: Lundy F. Pressley, Acting Chief
Reactor Projects Branch 4
Division of Reactor Projects

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a Quarterly inspection at Surry Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. Findings and violations being considered in the NRC's assessment are summarized in the table below.

List of Findings and Violations

Failure to Enter Turbine Building Degradation in the Corrective Action Program			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Initiating Events	Green FIN 05000280,05000281/2019001-01 Open/Closed	[H.13] - Consistent Process	71153
A self-revealed Green finding was identified when the licensee failed to document, evaluate and implement adequate corrective actions in accordance with PI-AA-200, Corrective Action Program (CAP), upon discovery of the degraded turbine building (TB) roof. Subsequently, TB roofing material contacted the 'A' reserve service station transformer (RSST) during Tropical Storm Michael on October 11, 2018, which caused electrical isolation of the 'A' RSST, the 'D' transfer bus and the '1J' 4kV emergency bus.			

Additional Tracking Items

Type	Issue number	Title	Report Section	Status
LER	05000280, 05000281/ 2018-002-00	LER 2018-002-00 for Surry Power Station, Unit 1, Regarding Windblown Debris Caused Transformer Fault Resulting in Auto-Start of Emergency Diesel Generator.	71153	Closed
LER	05000280, 05000281/ 2018-003-00	LER 2018-003-00 for Surry Power Station, Unit 1 Regarding Auto-Start of Emergency Diesel Generators Due to Pilot Wire Lockout on 'C' Reserve Station Service Transformer.	71153	Closed

PLANT STATUS

Unit 1 operated at or near rated thermal power for the entire inspection period.

Unit 2 operated at or near rated thermal power for the entire inspection period.

INSPECTION SCOPE

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

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.02) (1 Sample)

From January 30 to February 1, 2019, the inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal freezing temperatures for the following systems and components:

- condensate storage tanks
- auxiliary feedwater systems
- fire protection system
- emergency diesel generators

71111.04 - Equipment Alignment

Partial Walkdown (IP Section 02.01) (4 Samples)

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

- (1) Unit 2 auxiliary feedwater system on January 23, 2019, while the Unit 1 turbine driven auxiliary feedwater pump was unavailable
- (2) Unit 1 charging pumps' service water and component cooling water systems on March 16, 2019

- (3) Unit 1 outside recirculation spray (RS) System on March 20, 2019, following lowered inventory in the 'A' RS pump seal head tank
- (4) Units 1 and 2 uninterruptable power supplies and batteries for vital loads on March 29, 2019

71111.05A - Fire Protection (Annual)

Annual Inspection (IP Section 03.02) (1 Sample)

The inspectors evaluated fire brigade performance on February 7, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (4 Samples)

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

- (1) 'A' and 'B' fuel oil pump house CO2 system testing on January 29, 2019
- (2) 1-FS-FP-142, Rev. 1, Main Steam Valve House (MSVH) on January 3, 2019
- (3) Compensatory measures for fire protection piping replacement project in the Unit 1 and Unit 2 turbine buildings on February 14, 2019
- (4) 0-OPT-FP-008, Fire Pump Flow Rate Test, on the diesel-driven fire pump on March 1, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

Unit 1 and Unit 2 turbine building basements, including water level detection, alarms, automatic controls, and flooding response procedures

Inspection Activities - Underground Cables (IP Section 02.02c.) (1 Sample)

The inspectors evaluated cable submergence protection in:

Unit 2 alleyway in cable vault 1-EP-MH-2 and at the Unit 2 trackbay in cable vaults 1-EP-MH-3E and 1-EP-MH-3W

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered in March of 2018.

Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee's annual requalification operating test.

Administration of an Annual Requalification Operating Test

The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives.

Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee, and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

Problem Identification and Resolution

The inspectors evaluated the licensee's ability to identify and resolve problems associated with licensed operator performance.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

The inspectors observed and evaluated licensed operator performance in the control room during Unit 2 power reduction to 98 percent and high pressure heater drain pump swaps on February 6, 2019 and March 13, 2019.

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

On February 5, 2019, the inspectors observed and evaluated a scenario in which a main steam flow transmitter fails, an electrical bus is lost, emergency diesel generators fail to start and load, and the station loses all offsite power.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

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

- (1) Main control room chiller service water pumps, including replacement of the 'B' main control room chiller service water pump on February 19, 2019
- (2) On the 'A' emergency service water pump, alignment of the motor due to a degraded concrete pedestal on February 20, 2019, and replacement of the oil cooler on February 21, 2019, after foreign material caused a through-wall leak

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

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

- (1) Unit 2 yellow risk due to intake canal level logic testing concurrent with the '1B' circulating water pump being out for maintenance, on February 5, 2019
- (2) Unit 2 unplanned orange risk during plant heatup when transitioning from the site shutdown risk model to the probabilistic risk assessment model on December 3, 2018
- (3) Unit 2 risk during replacement of the 'A' bearing cooling heat exchanger, including flooding mitigation and movement of the heat exchanger beside sensitive equipment, on March 5-6, 2019
- (4) Unit 1 and Unit 2 risk during emergency diesel generator #2 testing with transformer #1 and Bus 5 tagged out for maintenance in the switchyard, on March 11, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determinations and Functionality Assessments Sample (IP Section 02.01) (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) CR 1115210, NRC identified foreign material in relay 2-EP-86-25H6 (CH PUMP 1C LOCKOUT RELAY)
- (2) CR 1113542, K-10 CERPI indication erratic during performance of 1-OPT-RX-005, retested on 1/9/2019
- (3) CR 1114684, Service Water piping low pipe wall thickness on January 25, 2019.
- (4) CRs 1111789 and 1112113, 'A' main feedwater pump breaker closed in test without entering technical specifications
- (5) CR 1116136, safeguards exhaust fan rotating backwards while secured with opposite fan running

71111.19 - Post Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) 1-OPT-RX-005, Control Rod Assembly Partial Movement, following erratic Computer Enhanced Control Rod Position Indication (CERPI) indications and corrective maintenance, on January 9, 2019
- (2) 0-OPT-VS-002, Auxiliary Ventilation Filter Train Test, after preventative maintenance and pressure switch calibration for the 'A' Auxiliary Building filtered exhaust fan, on February 13, 2019.
- (3) 1-OSP-IA-001, Instrument Air Compressor 1-IA-C-1 Performance Test, following controller reprogramming and modification to testing strategy, on February 19, 2019
- (4) 0-OPT-SW-001, Emergency Service Water Pump 1-SW-P-1A, performance test following motor alignment and oil cooler replacement, on February 21, 2019.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

In Service Testing (IST) (IP Section 03.01) (1 Sample)

- (1) 2-OPT-CS-002, Containment Spray System Test, on February 26, 2019

Surveillance Testing (IP Section 03.01) (3 Samples)

- (1) 2-OPT-EG-001, Number 2 Emergency Diesel Generator Start Exercise Test, Revision 77 on January 15, 2019
- (2) 1-OPT-FW-002, Motor Driven Auxiliary Feedwater Pump 1-FW-P-3B, Revision 36 on January 3, 2019
- (3) 0-OSP-AAC-001, Quarterly Test of 0-AAC-DC-0M, alternate AC Diesel Generator, Revision 45 on March 18, 2019

71114.06 - Drill Evaluation

Drill and/or Simulator-Based Licensed Operator Requalification Training (IP Section 02.01) (1 Sample)

On March 26, 2019, the inspectors evaluated a full-scale emergency preparedness drill that involved a flammable atmosphere in the emergency service water pump house leading to an Alert declaration, followed by a loss of fuel clad barrier and loss of coolant accident outside of containment leading to a General Emergency declaration.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (2 Samples)

- (1) Unit 1 (January 1 to December 31, 2018)
- (2) Unit 2 (January 1 to December 31, 2018)

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (2 Samples)

- (1) Unit 1 (January 1 to December 31, 2018)
- (2) Unit 2 (January 1 to December 31, 2018)

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (2 Samples)

- (1) Unit 1 (January 1 to December 31, 2018)
- (2) Unit 2 (January 1 to December 31, 2018)

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

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

A review of recent actuations of thermal overload protection devices on breakers for plant equipment and other condition reports related to design adequacies of thermal overloads. These issues were chosen due to the importance the thermal overload devices. Failures can prevent plant equipment from performing safety functions. These issues were reviewed for deficiencies in maintenance and engineering. Specifically, inspectors reviewed the issues for deficiencies in maintenance practices, preventative maintenance schedules, foreign material exclusion practices, design attributes, and change management.

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (2 Samples)

The inspectors evaluated the following licensee event reports which can be accessed at <https://lersearch.inl.gov/LERSearchCriteria.aspx>:

- (1) LER 05000280, 05000281/2018-002-00, Windblown Debris Caused Transformer Fault Resulting in Auto-Start of Emergency Diesel Generator (ADAMS accession: ML18351A089). The circumstances surrounding this LER are documented in the Results section.
- (2) LER 05000280, 05000281/2018-003-00, Auto-Start of Emergency Diesel Generators due to Pilot Wire Lockout on 'C' Reserve Station Service Transformer (ADAMS accession: ML19016A133). The circumstances surrounding this LER are documented in the Results section.

INSPECTION RESULTS

Failure to Enter Turbine Building Degradation in the Corrective Action Program			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Initiating Events	Green FIN 05000280,05000281/2019001-01 Open/Closed	[H.13] - Consistent Process	71153
<p>A self-revealed Green finding was identified when the licensee failed to document, evaluate and implement adequate corrective actions in accordance with PI-AA-200, Corrective Action Program (CAP), upon discovery of the degraded turbine building (TB) roof. Subsequently, TB roofing material contacted the 'A' reserve service station transformer (RSST) during tropical storm Michael on October 11, 2018, which caused electrical isolation of the 'A' RSST, the 'D' transfer bus and the '1J' 4kV emergency bus.</p> <p><u>Description:</u> On October 11, 2018, degraded TB roofing material contacted the 'A' RSST and caused a pilot wire lockout signal which resulted in an undervoltage condition on the '1J' 4kV emergency bus and subsequent automatic start of the #3 emergency diesel generator (EDG). At the time of the event, the site was experiencing rain and winds (approximately 55 miles per hour (mph)) associated with tropical storm Michael. The licensee evaluated this issue with a level of effort evaluation, CA 7407559. This evaluation determined, in part, that documentation and tracking of deficiencies associated with the TB roof, as identified in vendor inspection reports, have not been tracked in the CAP. The TB roof was determined to be degraded during a roof inspection by a vendor in 2016 and again in June of 2018. The vendor estimated the overall remaining life of the TB roof as 2 to 4 years following the roof inspections in 2016 and 2018, while noting specific deficiencies associated with loose flashing and loose or degraded fasteners. While the licensee did not track the TB roof condition in the CAP, the TB roof replacement project was tracked with the station's long range plan and originally planned to begin in 2017. It was subsequently rescheduled for 2019. The inspectors concluded that the licensee did not adequately evaluate the condition of the TB roof following the vendor inspections or implement a bridging strategy/interim corrective actions before the TB roof could be replaced. This was due in part, because the issue was not tracked in the station's CAP.</p>			

The licensee informed the NRC of the event on October 11, 2018 with licensee event report (LER) 05000280, 05000281/2018-002-00, "Windblown Debris Caused Transformer Fault Resulting in Auto-Start of Emergency Diesel Generator" in accordance with 10CFR50.73(a)(2)(iv)(A) and also made an 8-hour non-emergency event notification (EN #53662) on October 12, 2018.

Corrective Actions: The licensee conducted inspections and tests of the 'A' RSST and restored the normal alignment of the #3 EDG and the '1J' emergency bus. TB roof repairs were made so that the damaged materials were replaced and new anchoring strips and fasteners were installed. The frequency of roof inspections has been increased until the roof is replaced, and all deficiencies are being entered into the CAP. The TB roof replacement project was scheduled to begin in 2020.

Corrective Action Reference: CR1107393

Performance Assessment:

Performance Deficiency: The licensee failed to document, evaluate and implement adequate corrective actions upon discovery of TB roof degradation in accordance with the corrective action program. Specifically, licensee procedure PI-AA-200, "Corrective Action", Rev. 34 paragraph 3.1.4 required, in part, a condition report (CR) for any issue or concern that does not meet specific requirements of procedures, policies, management expectations, or accepted industry standards.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Factors attribute of the Initiating Events cornerstone. Specifically, as a result of the PD and high winds at the site, degraded TB roofing material contacted the 'A' RSST and caused a pilot wire lockout signal which resulted in an undervoltage condition on the '1J' emergency bus and subsequent automatic start of the #3 emergency diesel generator (EDG) on October 11, 2018.

Significance: The inspectors assessed the significance of the finding using Inspection Manual Chapter (IMC) 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At - Power Situations." This finding was determined to be Green, very low safety significance, because the finding did not involve the complete or partial loss of a support system that contributed to the likelihood of, or cause, an initiating event that also affected mitigation equipment.

Cross-cutting Aspect: H.13 - Consistent Process: Individuals use a consistent, systematic approach to make decisions. Risk insights are incorporated as appropriate. The inspectors determined the finding had a cross-cutting aspect of Consistent Process in the Human Performance area because; while the licensee has conducted TB roof inspections, they were controlled informally and were not conducted or tracked by a procedure or preventive maintenance (PM) task/assignment.

Enforcement: Inspectors did not identify a violation of regulatory requirements associated with this finding.	
Observation	71153
<p>The licensee conducted a level of effort evaluation (LEE) and determined the cause of the failed underground splice was poor craftsmanship by a company transmission team in 2009. To detect degradation of cabling, including splices, tan delta testing is performed on a six-year frequency. The splice that failed had been tan delta tested satisfactorily in 2009 and 2012. During testing in 2018, a few days before the fault occurred, two separate test sets were used, both producing erratic results. These results were attributed to issues with the testing equipment. The licensee deferred the tan delta testing based on recommendations from electrical subject matter experts given tan delta testing was not required as a part of the reserve station service transformer (RSST) replacement project. The inspectors determined that cable splice degradation was identified by the erratic results and further testing could have identified the degraded splice prior to returning the RSST to service. After the cable fault and RSST lockout, all plant safety systems responded as designed. This observation was associated with closure of Licensee Event Report (LER) 2018-003-00, Auto-Start of Emergency Diesel Generators Due to Pilot Wire Lockout on 'C' Reserve Station Service Transformer.</p>	

EXIT MEETINGS AND DEBRIEFS

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

- On February 7, 2019, the inspector presented the Telephonic Exit Meeting for Biennial Licensed Operator Requalification Inspection (IP 71111.11B) to F. Mladen, Site Vice President and other members of the licensee staff.
- On April 17, 2019, the inspector presented the Quarterly Resident Inspector Exit Meeting to Mr. Fred Mladen and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Procedures	0-OP-ZZ-021	Severe Weather Preparation	Rev. 21
71111.04	Corrective Action Documents	CR1088426 CR1111368 CR1111510 CR1093547 CR1111509 CR1053312 CR1118589 CR1114023		
71111.04	Drawings	11448-FE-11B	Wiring Diagram Vital Bus Dist Pnls 1-II & 1-IV Unit 1	Rev. 44
		11448-FE-1G	125V DC One Line Diagram Unit 1	Rev. 42
		11448-FM-071B	Flow/Valve Operating Numbers Diagram Circulating and Service Water System Unit 1	Sheet 1 Rev. 63, Sheet 2 Rev. 39
		11548-FE-11B	Wiring Diagram Vital Bus Dist Pnls 2-II & 2-IV Unit 2	Rev. 36
		11548-FE-1G	125V DC One Line Diagram Unit 2	Rev. 37
		11548-FM-075D	Flow/Valve Operating Numbers Diagram Compressed Air System Surry Power Station Unit 2	Rev. 39
71111.04	Procedures	0-OP-SW-002A	Emergency Service Water System Alignment	Rev. 10
		1-OP-51.5A	Charging Pump CC and SW Systems Valve Alignment	Rev. 20
		1-OP-RS-001A	Outside Recirc Spray System Alignment	Rev. 10
		2-OP-FW-001A	Auxiliary Feedwater System Valve Alignment	Rev. 8
71111.04	Work Orders	38103676030 38103774764 38203871003 38203875616 38204179424		
71111.05A	Procedures	SA-AA-115	Conduct of Fire Drills	Rev. 4

71111.05Q	Corrective Action Documents	CR1115033 CR1090227		
71111.05Q	Drawings	11448-FB-047B	Flow/Valve Operating Numbers Diagram Fire Protection System	Sheet 2 Rev. 25, Sheet 3 Rev. 27
71111.05Q	Fire Plans	1-FS-FP-142	Emergency Switchgear Room	Rev. 1
71111.05Q	Miscellaneous	N/A	Compensatory Measures for TRM Hose Stations in U2 Turbine Building, Compensatory Measures for TRM Hose Stations in U1 Turbine Building	2/14/2019
71111.05Q	Procedures	0-LPT-FP-022	Operability Test of Fuel Oil Pump Houses High Pressure CO2 System	Rev. 12
71111.05Q	Procedures	0-LSP-FP-102	Establishment of Hose House or Hose Station Compensatory Measures	Rev. 1
71111.05Q	Procedures	0-OPT-FP-008	Fire Pump Flow Rate Test	Rev. 24
71111.06	Corrective Action Documents Resulting from Inspection	CR1115416		
71111.06	Drawings	11448-ESK-11M	Elementary Diagram Circulating Water Flooding Trip	Rev. 11
71111.06	Procedures	0-AP-13.00	Turbine Building or MER 3 Flooding	Rev. 31
71111.06	Procedures	0-AP-13.01	Uncontrollable Turbine Building Flooding	Rev. 10
71111.06	Procedures	1-ECM-0102-01	Turbine Building Flood control Novus Micro 1000 UPS Inverter and Battery Maintenance	Rev. 6
71111.06	Procedures	1-EPM-0805-01	Turbine Building Flood Control Testing	Rev. 11
71111.06	Work Orders	38103850377		
71111.11B	Miscellaneous	1.	10 Licensed Operator Medical Records	
71111.11B	Miscellaneous	2.	Qualification Revocation/Reinstatements (TR-AA-600 Att. 4) and Remedial Training Plans (TR-AA-400 Attachment 5) for seven (7) Licensed Operators from 2018 examinations	
		3.	Shift B Licensed Operator RQ 17.1-17.7 Training Attendance Records	
		4.	Shift B Licensed Operator RQ 18.1-18.7 Training Attendance Records	

71111.11B	Miscellaneous	5.	Shift B Licensed Personnel Quarterly Proficiency Time Records (OP-AA-103 Att. 7)	
		Job Aid 030	Simulator Steady State (ANSI09), tests performed on 05/31/18, 06/01/18, and 06/02/18	Rev. 2
71111.11B	Miscellaneous	Job Aid 030	Simulator Steady State (ANSI09), tests performed on 11/11/16, 11/12/16, and 01/05/17	Rev. 0
		Job Aid 033	Simulator Simultaneous Trip of All Main Steam Isolation Valves (ANSI12), test performed on 09/23/18	Rev. 1
		Job Aid 036	Simulator Main Turbine Trip From Maximum Power Level (<10%) That Does Not Result in Immediate Reactor Trip (ANSI15), test performed on 10/9/18.	Rev. 1
		Job Aid 037	Simulator Maximum Rate Ramp (5%/min) From 100% Down To 75% (ANSI16), test performed on 07/25/18.	Rev. 2
		Job Aid 043	Simulator Real Time and Repeatability (ANSI20), tests performed on 08/03/18	Rev. 1
		JPM LO18-01	Locally Operate a 4160V AC Breaker	Rev. 16
		JPM LO23-04	Respond to a Secondary System Transient	Rev. 25
		JPM LO26-02	Locally Isolate the AFW Header	Rev. 13
		JPM LO26-05C	Locally Swap AFW Pump Supply to Fire Water	Rev. 4
		JPM LO26-12	Establish Alternate Feed Source to SGs Using FR-H.1	Rev. 7
		JPM LO52-03B	Transfer SI System to Hot Leg Recirculation	Rev. 11
		JPM LO81-04	Load AAC Diesel Onto Unit One "J" Bus	Rev. 23
		JPM LO88-34	Classify a Station Event IAW EPIP-1.01	Rev. 4
		JPM LO88-44	Classify a Station Event IAW EPIP-1.01	Rev. 4
		JPM LO99-20C	Evaluate Critical Safety Function Status Trees	Rev. 4
		RQ-18.2-XB-5	Biennial Written Examination (RO and SRO)	Rev. 0
Scenario Based Test (SBT) Records	Requalification Scenario RQ-19.1-SE-3, LBLOCA with Multiple ECCS Failures, Test performed on 12/06/2018	Rev. 0		
Scenario Based Test (SBT) Records	Requalification Scenario RQ-19.1-SE-4, LOCA Outside Containment From Charging Line, Test performed on 12/06/2018	Rev. 0		
Scenario RQ-19.1-SE-3	LBLOCA with Multiple ECCS Failures	Rev. 0		

71111.11B	Miscellaneous	Scenario RQ-19.1-SE-4	LOCA Outside Containment From Charging Line	Rev. 0
		Scenario RQ-19.1-SE-7	Ruptured and Faulted Steam Generator	Rev. 0
		Scenario RQ-19.1-SE-8	Loss of Secondary Heat Sink	Rev. 0
71111.11B	Procedures	DTS-001	Test and Exam Security	Rev. 3
		NISP-TR-01	Systematic Approach to Training Process	Rev. 1
		OP-AA-103	Operator Qualifications	Rev. 7
		SA-AA-122	Medical Evaluation	Rev. 7
		TR-AA-10	Systematic Approach to Training (SAT) Process	Rev. 4
		TR-AA-101	Conduct of Training	Rev. 13
		TR-AA-710	NRC Exam Security Requirements	Rev. 8
		TR-AA-730	Licensed Operator Biennial and Annual Operating Requalification Exam Process	Rev. 11
		TR-AA-740	Administrative Requirements for Application and Maintenance of Operator Licenses	Rev. 2
		TR-AA-750	Conduct of Simulator Training and Evaluation	Rev. 10
		TR-AA-SIM-100	Simulator Modification Process	Rev. 9
		TR-AA-SIM-101	Simulator Configuration Control Committee	Rev. 5
71111.11B	Procedures	TR-AA-SIM-200	Simulator Hardware Management	Rev. 4
		TR-AA-SIM-300	Simulator Software Management	Rev. 4
71111.11B	Procedures	TR-AA-SIM-400	Simulator Performance Testing	Rev. 8
71111.12	Corrective Action Documents	CR1046703 CR1064874 CR1116581 CR1116585 CR1104834 CR568763		
71111.12	Procedures	0-MCM-0101-01	Ingersoll-Rand Inliner Pump Overhaul	Rev. 12
		0-MCM-0101-01	Ingersoll-Rand Inliner Pump Overhaul	Rev. 11
		0-MCM-0210-01	Control Room Chillers Performance Checks	Rev. 30

71111.12	Work Orders	38103749617 38103777224 38103808936 38103807372 38203876621 38203876579 38204182357 38203875791 38103807372 38103749612 38203575885		
71111.13	Corrective Action Documents	CR1111789 CR1112489		
71111.13	Drawings	11548-FM-088B	Flow/Valve Operating Numbers Diagram Chemical and Volume Control System	Rev. 49
71111.13	Miscellaneous	N/A	EOOS Scheduler's Evaluation of Surry Power Station, February 5-10, 2019	
		N/A	High Risk Plan Actions for Unit 2 Bearing Cooling Heat Exchanger Replacement	3/4/2019
71111.13	Procedures	2-PT-8.5	Consequence Limiting Safeguards Logic (Hi-Hi Train)	Rev. 34
		WM-AA-20	Risk Assessment of Maintenance Activities	Rev. 2
		WM-AA-301	Operational Risk Assessment	Rev. 20
71111.15	Corrective Action Documents	CR1115210 CR1116136 CR1112113		
71111.15	Drawings	11448-FB-006D	Flow/Valve Operating Numbers Diagram Auxiliary Ventilation System	Sheet 1 Rev. 14, Sheet 2 Rev. 18
71111.15	Engineering Evaluations	ETE-SU-2014-1017	Safety Re-Classification of Auxiliary Ventilation System Components	Rev. 0
71111.15	Procedures	2-MOP-CN-002	Returning Secondary Systems to Service	Rev. 20
		2-OP-FW-004	Main Feedwater System Operation	Rev. 21
		2-OP-FW-004A	Main Feedwater System Alignment	Rev. 13
		OP-AA-1500	Operational Configuration Control	Rev. 19

71111.15	Procedures	OP-AA-200	Equipment Clearance	Rev. 31
		OP-AA-2000	Tagging Administration	Rev. 9
71111.15	Work Orders	38204194067		
71111.19	Corrective Action Documents	CR1116581 CR1116585 CR1116455		
71111.19	Corrective Action Documents Resulting from Inspection	CR1116455		
71111.19	Procedures	0-OPT-SW-001	Emergency Service Water Pump Operation	Rev. 48
71111.19	Procedures	0-OPT-VS-002	Auxiliary Ventilation Filter Train Test	Rev. 31
71111.19	Procedures	1-OPT-RX-005	Control Rod Assembly Partial Movement Test	Rev. 37
		1-OSP-IA-001	Instrument Air Compressor 1-IA-C-1 Performance Test	Rev. 21
		2-LOG-TB-001R	U2 Turbine Building Operations Normal Default Tour	Rev. 173
		2-OSP-IA-001	Instrument Air Compressor 2-IA-C-1 Performance Test	Rev. 16
71111.22	Corrective Action Documents	CR1116811 CR1117565		
71111.22	Procedures	0-OSP-AAC-001	Quarterly Test of 0-AAC-DG-0M, Alternate AC Diesel Generator	Rev. 45
		1-OPT-FW-002	Motor Driven Auxiliary Feedwater Pump 1-FW-P-3B	Rev. 36
		2-OPT-CS-002	Containment Spray System Test	Rev. 18
		2-OPT-EG-001	Number 2 Emergency Diesel Generator Start Exercise Test	Rev. 77
71111.22	Work Orders	38204195718		
71114.06	Corrective Action Documents	CR1119402 CR1119470 CR1118062		
71114.06	Procedures	0-AP-35.02	Response to Potential Toxic, Corrosive, Asphyxiant, or Flammable Atmosphere	Rev. 3
		1-E-0	Reactor Trip or Safety Injection	Rev. 74
		EPIP-1.03	Response to Alert	Rev. 23
		EPIP-1.05	Response to General Emergency	Rev. 25

71114.06	Procedures	EPIP-1.06	Protective Action Recommendations	Rev. 12
		EPIP-2.01	Notification of State and Local Governments	Rev. 44
71151	Miscellaneous	NEI 99-02	Regulatory Assessment Performance Indicator Guideline	Rev. 7
		Q4/2018 Performance Indicators - Surry 1 and 2 - Unplanned Power Changes per 7000 Critical Hours		dated 3/8/2019
		Q4/2018 Performance Indicators - Surry 1 and 2 - Unplanned Scrams per 7000 Critical Hours		dated 3/8/2019
71151	Miscellaneous	Q4/2018 Performance Indicators - Surry 1 and 2 - Unplanned Scrams with Complications		dated 3/8/2019
71152	Corrective Action Documents	CR1088022 CR1110299 CR1110296 CR1091318 CR1056169 CR1063590 CR1117624 CR1116277 CR1115665 CR1113049 CR1113030 CR1116277 CR1115665		

71152	Procedures	1-DRP-007	Motor Operated Valve Operating Bands	Rev. 46
71152	Work Orders	38203871020 38203874647 38204195738		
71153	Corrective Action Documents	1110265		
71153	Miscellaneous	N/A	Vendor Inspection Report of Surry Turbine Building Roof	dated 6/21/2018