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

February 10, 2014

Mr. David A. Heacock
President and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060

SUBJECT: NORTH ANNA POWER STATION - NRC INTEGRATED INSPECTION REPORT 05000338/2013005, AND 05000339/2013005

Dear Mr. Heacock:

On December 31, 2013, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your North Anna Power Station Units 1 and 2. On February 12, 2014, the NRC inspectors discussed the results of this inspection with Mr. G. Bischof and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

The enclosed inspection report documents one self-revealing finding of very low safety significance (Green). 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 this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the North Anna Power Station.

As a result of the Safety Culture Common Language Initiative, the terminology and coding of cross-cutting aspects were revised beginning in calendar year (CY) 2014. New cross-cutting aspects identified in CY 2014 will be coded under the latest revision to IMC 0310. Cross-cutting aspects identified in the last six months of 2013 using the previous terminology will be converted to the latest revision in accordance with the cross-reference in IMC 0310. The revised cross-cutting aspects will be evaluated for cross-cutting themes and potential substantive cross-cutting issues in accordance with IMC 0305 starting with the CY 2014 mid-cycle assessment review.

In accordance with Title 10 Code of Federal Regulations 2.390, “Public Inspections, Exemptions, Requests for Withholding,” of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael F. King, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 05000338, 05000339
License Nos.: NPF-4, NPF-7

Enclosure: Inspection Report 05000338/2013005, and 05000339/2013005
w/ Attachment: Supplemental Information

cc distribution via ListServ

In accordance with Title 10 Code of Federal Regulations 2.390, “Public Inspections, Exemptions, Requests for Withholding,” of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Michael F. King, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 05000338, 05000339
License Nos.: NPF-4, NPF-7

Enclosure: Inspection Report 05000338/2013005, and 05000339/2013005
w/ Attachment: Supplemental Information

cc distribution via ListServ

☒ PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE ☒ NON-SENSITIVE
ADAMS: ☒ Yes ACCESSION NUMBER:_____ ☒ SUNSI REVIEW COMPLETE ☐ FORM 665 ATTACHED

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRS	RII:DRP	RII:DRS	
SIGNATURE	Via email	Via email	RLC /RA/	Via email	JTR /RA/	Via email	
NAME	GKolcum	KMiller	RClagg	DBacon	JReece	JLauglin	
DATE	02/07/2014	02/07/2014	02/10/2014	02/07/2014	02/07/2014	02/07/2014	
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
OFFICE	RII:DRP	RII:DRP					
SIGNATURE	SON /RA/	MFK /RA/					
NAME	SNinh	MKing					
DATE	02/10/2014	02/10/2014					
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DRPII\RPB5\NORTH ANNA\REPORTS\2013\2013-005\NORTH ANNA 2013005.DOCX

Letter to David A. Heacock from Michael F. King dated February 10, 2014

SUBJECT: NORTH ANNA POWER STATION – NRC INTEGRATED INSPECTION REPORT 05000338/2013005, AND 05000339/2013005

DISTRIBUTION:
C. Evans, RII
L. Douglas, RII
OE Mail
RIDSNRRDIRS
PUBLIC
RidsNrrPMNorthAnna Resource

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-338, 50-339
License Nos:	NPF-4, NPF-7
Report No:	05000338/2013005, and 05000339/2013005
Licensee:	Virginia Electric and Power Company (VEPCO)
Facility:	North Anna Power Station, Units 1 & 2
Location:	Mineral, Virginia 23117
Dates:	October 1, 2013, through December 31, 2013
Inspectors:	G. Kolcum, Senior Resident Inspector K. Miller, Acting Senior Resident Inspector R. Clagg, Resident Inspector D. Bacon, Senior Operations Engineer, Section 1R11 J. Reece, Senior Resident Inspector V.C. Summer, Section 4OA2.5 J. Laughlin, Emergency Preparedness Inspector, Section 1EP4
Approved by:	Michael F. King, Chief Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000338/2013-005, 05000339/2013-005; 0/01/2013 – 12/31/2013; North Anna Power Station, Units 1 and 2. Problem Identification and Resolution.

The report covered a three month period of inspection by resident inspectors, emergency preparedness inspectors, and reactor inspectors from the region. One self-revealing finding was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspect was determined using IMC 0310, "Components Within the Cross Cutting Areas." Findings for which the SDP does not apply may be Green or may be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Initiating Events

- Green. A Green, self-revealing finding was identified for failure to follow procedure for the replacement of protective relays that resulted in a Unit 1 trip. Specifically, the instructions in work order (WO) 59102618778 stated to "Have Control Ops install shorting screws for CT circuit," and "Have Control Ops remove shorting screws for CT circuit." Maintenance personnel failed to remove the current transformer terminal block shorting screws installed inside the 1C switchgear breaker 15C2 cubicle and caused the turbine to trip and the reactor to trip from the loss of the 1C station service transformer after the start of the 'C' condensate pump. This was entered into the licensee's CAP as CR528984.

  The inspectors determined that the licensee's failure to follow work instructions in WO59102618778 which stated to "Have Control Ops install shorting screws for CT circuit," and "Have Control Ops remove shorting screws for CT circuit" for the replacement of protective relays was a performance deficiency. The performance deficiency was more than minor because it was associated with the Initiating Events cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective in that maintenance personnel left the current transformer terminal block shorting screws installed inside the 1C switchgear breaker cubicle which caused the turbine trip and subsequent reactor trip from the loss of the 1C station service transformer after the start of the 'C' condensate pump. Using Inspection Manual Chapter 0609, Attachment 4, Initial Characterization of Findings, issued June 19, 2012, the finding was determined to be of very low safety significance (Green) because it was a transient initiator, but did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. In addition, this finding involved the cross cutting area of human performance, the component of resources, and the aspect of complete, accurate, and an up-to-date work instructions, H.2(c), because the work order job steps did not contain adequate means for documenting the installation and removal of shorting screws, which resulted in a loss of configuration control for the 1C switchgear 15C2 breaker cubicle. (Section 4OA2.4)

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period in a planned outage for refueling which started September 8, 2013. Unit 1 returned back online on October 3, 2013. On October 11, 2013, Unit 1 experienced an automatic reactor trip due to a protection relay that was not returned to its proper operational configuration. Unit 1 was back on line 2 days later and operated at full rated thermal power (RTP) for the remainder of the report period.

Unit 2 began the inspection period at full RTP and operated at full power for the entire report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

Seasonal Susceptibilities

a. Inspection Scope (cold)

The inspectors reviewed the licensee's adverse weather preparations for cold weather operations specified in 0-GOP-4, "Cold Weather Operations," Revision 54, 0-GOP-4.2, "Extreme Cold Weather Operations," Revision 34, and 0-GOP-4.2A, "Extreme Cold Weather Daily Checks," Revision 7, as well as the licensee's corrective action data base for cold weather related issues. The inspectors walked down the three risk-significant areas listed below to verify compliance with procedural requirements and to verify that the specified actions provided the necessary protection for the applicable structures, systems, or components (SSCs). The inspectors reviewed the licensee's corrective action program (CAP) database to verify that weather related problems due to temperature were being identified at the appropriate level, entered into the CAP, and appropriately resolved.

- Unit 1 and 2 Emergency Diesel Generator Rooms
- Station Blackout Diesel
- Unit 1 Safeguards

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial Walkdowns

a. Inspection Scope

The inspectors conducted four equipment alignment partial walkdowns, listed below, to evaluate the operability of selected redundant trains or backup systems with the other train or system inoperable or out of service. The inspectors reviewed the functional systems descriptions, Updated Final Safety Analysis Report (UFSAR), system operating procedures, and Technical Specifications (TS) to determine correct system lineups for the current plant conditions. The inspectors performed walkdowns of the systems to verify that critical components were properly aligned and to identify any discrepancies which could affect operability of the redundant train or backup system.

- 1H Emergency Diesel Generator (EDG) during 1J EDG unavailability due to right angle drive failure
- 1J EDG during 2H EDG unavailability due to right angle drive maintenance
- Unit 1 & 2 electric fire pump during replacement of the diesel fire pump
- 2H EDG during 2J EDG unavailability due to right angle drive maintenance

b. Findings

No findings were identified.

1R05 Fire Protection

Quarterly Fire Protection Walkdowns

a. Inspection Scope

The inspectors conducted focused tours of the six areas listed below that are important to reactor safety to verify the licensee's implementation of fire protection requirements as described in fleet procedures CM-AA-FPA-100, "Fire Protection/Appendix R (Fire Safe Shutdown) Program," Revision 9, CM-AA-FPA-101, "Control of Combustible and Flammable Materials," Revision 4, and CM-AA-FPA-102, "Fire Protection and Fire Safe Shutdown Review and Preparation Process and Design Change Process," Revision 5. The inspectors evaluated, as appropriate, conditions related to: 1) licensee control of transient combustibles and ignition sources; 2) the material condition, operational status, and operational lineup of fire protection systems, equipment, and features; and, 3) the fire barriers used to prevent fire damage or fire propagation.

- 1H and 2H EDGs
- 1J and 2J EDGs
- Containment Unit 1
- Charging Pump Cubicles 1-1A, 1-1B, 1-1C, 2-1A, 2-1B, and 2-1C

- Cable Vault and Tunnel Unit 1 (includes Control Rod Drive Room)
- Cable Vault and Tunnel Unit 2 (includes Control Rod Drive Room)

b. Findings

No findings were identified.

1R07 Heat Sink Performance

System Heat Exchangers

a. Inspection Scope

The inspectors selected the risk significant Unit 1 A, B, C, and D recirculation spray (RS) heat exchangers (HX) and reviewed inspection records, test results, maintenance work orders, and other documentation to ensure that deficiencies which could mask or degrade performance were identified and corrected. The test procedures and records were also reviewed to verify that they were consistent with Generic Letter 89-13 licensee commitments, and Electric Power Research Institute (EPRI) Heat Exchanger Performance Monitoring Guidelines. In addition, the inspectors reviewed inspection documentation of the related service water piping to assess general material condition and to identify any degraded conditions. Other documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

.1 Resident Inspector Quarterly Review

a. Inspection Scope

The inspectors reviewed a licensed operator simulator performance on October 16, 2013, using Simulator Exercise Guide 4F. The scenario involved a loss of bearing cooling, a reactor coolant system (RCS) leak, loss of instrument air, a small break loss of coolant accident, and an Alert entry. The scenario required classifications and notifications that were counted for NRC performance indicator input.

The inspectors observed the following elements of crew performance in terms of communications: 1) ability to take timely and proper actions; 2) prioritizing, interpreting, and verifying alarms; 3) correct use and implementation of procedures, including the alarm response procedures; 4) timely control board operation and manipulation, including high-risk operator actions; and, 5) oversight and direction provided by the shift supervisor, including the ability to identify and implement appropriate TS actions. The

inspectors observed the post training critique to determine that weaknesses or improvement areas revealed by the training were captured by the instructor and reviewed with the operators.

b. Findings

No findings were identified.

.2 Quarterly Control Room Operator Performance Observations

a. Inspection Scope

During the inspection period, the inspectors conducted observations of licensed reactor operators actions and activities during a Unit 1 power ascension following a forced outage on October 14, 2013, to ensure that the activities were consistent with the licensee procedures and regulatory requirements. This observation took place during off-normal plant working hours. As part of this assessment, the inspectors observed the following elements of operator performance: 1) operator compliance and use of plant procedures including technical specifications; 2) control board/in-plant component manipulations; 3) use and interpretation of plant instruments, indicators and alarms; 4) documentation of activities; 5) management and supervision of activities; and, 6) communication between crew members.

b. Findings

No findings were identified.

.3 Annual Review of Licensee Requalification Examination Results

a. Inspection Scope

On February 15, 2013, the licensee completed the comprehensive biennial requalification written examinations and the annual requalification operating examinations required to be administered to all licensed operators in accordance with Title 10 of the Code of Federal Regulations 55.59(a)(2), “Requalification requirements,” of the NRC’s “Operators’ Licenses.” The inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations in accordance with inspection procedure (IP) 71111.11, “Licensed Operator Requalification Program and Licensed Operator Performance.” The results were compared to the thresholds established in Section 3.02, “Requalification Examination Results,” of IP 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

For the two equipment issues listed below, the inspectors evaluated the effectiveness of the respective licensee's preventive and corrective maintenance. The inspectors performed walkdowns of the accessible portions of the systems, performed in-office reviews of procedures and evaluations, and held discussions with licensee staff. The inspectors compared the licensee's actions with the requirements of the Maintenance Rule (10 CFR 50.65), and licensee procedure ER-AA-MRL-10, "Maintenance Rule Program," Revision 5.

- CR527516, "1J EDG Tripped due to failed Radiator Shaft," and related maintenance rule evaluation MRE 016829
- CR528850, "Work Order Required for 1H-EDG expansion joints," and related work order (WO) 59102667542

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated, as appropriate, emergent work for the Station Blackout Diesel during maintenance after a failure on November 25, 2013, as documented in CR533586, for the following: 1) effectiveness of the risk assessments performed before maintenance activities were conducted; 2) management of risk; 3) upon identification of an unforeseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and, 4) maintenance risk assessments and emergent work problems were adequately identified and resolved. The inspectors verified that the licensee was in compliance with the requirements of 10 CFR 50.65 (a)(4) and the data output from the licensee's safety monitor associated with the risk profile of Units 1 and 2. The inspectors reviewed the corrective action program to verify that deficiencies in risk assessments were being identified and properly resolved.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed six operability determinations and functionality assessments, listed below, affecting risk-significant mitigating systems, to assess, as appropriate: 1) the technical adequacy of the evaluations; 2) whether continued system operability

was warranted; 3) whether other existing degraded conditions were considered as compensating measures; 4) whether the compensatory measures, if involved, were in place, would work as intended, and were appropriately controlled; and 5) where continued operability was considered unjustified, the impact on TS Limiting Conditions for Operation and the risk significance in accordance with the Significant Determination Process (SDP). The inspectors' review included a verification that operability determinations (OD) were made as specified by procedure OP-AA-102, "Operability Determination," Revision 11.

- Review of OD000550, "Perform formal evaluation of Containment peak pressure calculations"
- Review of OD000554, "Perform Evaluation and Calculation to Verify AFW Piping is Operable"
- Review of OD000555, "Manual Emergency Stop Pushbutton did not trip 1H EDG"
- Review of OD000563, "An OD Assignment is Required to Process OD for Valve 2-MS-117"
- Review of OD000566, "OD to Support Comp Measures for Restoration of OSRS operability" after casing cooling tank low setpoint did not account for vortexing
- Review of OD000568, "OD required to Demonstrate Operability of Recirc Spray System"

b. Findings

No findings were identified.

1R18 Plant Modifications

Permanent Modifications

a. Inspection Scope

Two of the following inspection samples examined modifications associated with Fukushima Mitigating Strategies-related (FMS). The inspection scope for these modifications was restricted to those elements necessary to satisfy the stated objectives of IP 71111.18, specifically:

- To verify that modifications have not affected the safety functions of important safety systems;
- To verify that the current design bases, licensing bases, and performance capability of risk significant SSCs have not been degraded through modifications; and
- To verify that modifications performed during increased risk-significant configurations did not place the plant in an unsafe condition.

The inspection did not address whether the associated FMS modifications satisfactorily addressed the objectives of the order.

- DC-NA-13-01017, “FLEX - Power for Essential Instrumentation and Equipment” for Unit 1
- DC-NA-12-01217, “Unit 1 Flex Mechanical Connections for BDB Events”

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed five post maintenance test procedures and/or test activities, listed below, for selected risk-significant mitigating systems to assess whether: 1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; 2) testing was adequate for the maintenance performed; 3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; 4) test instrumentation had current calibrations, range, and accuracy consistent with the application; 5) tests were performed as written with applicable prerequisites satisfied; 6) jumpers installed or leads lifted were properly controlled; 7) test equipment was removed following testing; and, 8) equipment was returned to the status required to perform in accordance with VPAP-2003, “Post Maintenance Testing Program,” Revision 14.

- WO59102659921, 1J EDG Replacement of right angle gear drive
- WO59102665544 and WO59102665565, 1H EDG GOV Mod Failure and related, DC-NA-11-01183
- 1-PT-83.12H, “1H Diesel Generator Test (Start by ESF Actuation) Followed by 24-Hour Run and Hot Restart Test”
- 1-PT-82.12H, “1H Diesel Generator Isochronous Mode (Start by ESF Actuation)
- 1-PT-211.5, “Valve Inservice Inspection (MOV Test for Verification of Disc Closure on MS NRV)

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

Refueling Outage

a. Inspection Scope

The inspectors reviewed the Outage Safety Review (OSR) and contingency plans for the Unit 1 refueling outage, which began September 8, 2013, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. The inspectors used NRC inspection procedure 71111.20, "Refueling and Outage Activities," to observe portions of the refueling, maintenance activities, and startup activities to verify that the licensee maintained defense-in-depth commensurate with the outage risk plan and applicable TS. The inspectors monitored licensee controls over the outage activities listed below. Unit 1 came back on line on October 3, 2013.

- Licensee controls for scheduling covered workers such that the minimum days off for individuals working on outage activities are in compliance with 10 CFR26.205(d)(4)
- Walkdown of containment to verify SSCs do not show evidence of boric acid leaks, that structures, piping and supports in containment do not include stains or deposited materials that could indicate previously unidentified leakage from components containing reactor coolant, inspection of containment sump for damage or debris, and checks for items that could be indicative of a larger problem (blistered paint, rust, cracks, etc.)
- Processes to ensure that control room operators were kept cognizant of plant configuration
- Controls to ensure containment penetrations were according to TS and that containment closure can be achieved at all times
- Verification of fatigue management through review of samplings of waiver requests (26.207), self-declarations (26.20) or fatigue assessments (26.211)
- Controls over activities that could affect reactivity
- Refueling activities, including fuel handling and sipping to detect fuel assembly
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system strainers, and reactor physics testing
- Licensee identification and resolution of problems related to refueling outage activities

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the seven surveillance tests listed below, the inspectors examined the test procedures, witnessed testing, or reviewed test records and data packages, to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable, and that the surveillance requirements of TS were met. The inspectors also determined whether the testing effectively demonstrated that the systems or components were operationally ready and capable of performing their intended safety functions.

In-Service Test:

- 1-PT-71.2Q, "1-FW-P-3A, A Motor-Driven AFW Pump and Valve Test," Revision 40
- 1-PT-71.3Q, "1-FW-P-3B, B Motor-Driven AW Pump and Valve Test," Revision 48

Containment Isolation Valve:

- 1-PT-61.3, "Containment Type C Test," Revision 35, for valve 1-SI-TV-1842

Other Surveillance Tests:

- 0-PT-77.15A, "ECCS Preacs Flow Test – Train A Filter," Revision 21
- 1-PT-62.4, "Personnel Air Lock Seal Leakage," Revision 22
- 1-PT-10.3, "Shutdown Margin Determination Before Initial Criticality," Revision 13
- 1-PT-94.0, "Refueling Nuclear Design Check Test," Revision 35

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures and the Emergency Plan located under ADAMS accession numbers ML13029A219, ML131090226, ML13037A621, and ML13109A224, as listed in the Attachment to this report.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and

did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection. Documents reviewed are listed in the Attachment. This inspection activity satisfied one inspection sample for the emergency action level and emergency plan changes on an annual basis.

b. Findings

No findings were identified.

1EP6 Drill Evaluation

Emergency Preparedness (EP) Drill

a. Inspection Scope

On October 29, 2013, the inspectors reviewed and observed the performance of an Emergency Preparedness Full Participation Exercise NOCT13FE planning drill that involved a simulated dropped fuel assembly, loss of feedwater, steam generator tube rupture, and stuck open steam generator safety valve. The inspectors assessed emergency procedure usage, emergency plan classification, notifications, and the licensee's identification and entrance of any problems into their corrective action program. This inspection evaluated the adequacy of the licensee's conduct of the drill and critique performance. Exercise issues were captured by the licensee in their corrective action program as CR530871. Requalification training deficiencies were captured within the operator training program.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors performed a periodic review of the Unit 1 and 2 Safety System Functional Failures (MS05) PI to assess the accuracy and completeness of the submitted data and whether the performance indicators were calculated in accordance with the guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspection was conducted in accordance with NRC inspection procedure 71151, "Performance Indicator Verification." Specifically, the inspectors reviewed the Unit 1 and Unit 2 data reported to the NRC for the period October 1, 2012, through September 30, 2013. Documents reviewed included applicable NRC inspection reports, licensee event reports, operator logs, station performance indicators, and related CRs.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.1 Review of Items Entered into the Corrective Action Program

As required by NRC inspection procedure 71152, “Identification and Resolution of Problems,” and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee’s CAP. This review was accomplished by reviewing daily CR report summaries and periodically attending daily CR Review Team meetings.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee’s corrective action program documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors’ review was focused on repetitive equipment and corrective maintenance issues but also considered the results of daily inspector corrective action program item screening discussed in Section 4OA2.1. The review included issues documented outside the normal corrective action program in system health reports, corrective maintenance work orders, component status reports, site monthly meeting reports, and maintenance rule assessments. The inspectors’ review nominally considered the six month period of July 2013 through December 2013, although some examples expanded beyond those dates when the scope of the trend warranted.

The inspectors compared and contrasted their results with the results contained in the licensee’s latest integrated quarterly assessment report. Corrective actions associated with a sample of the issues identified in the licensee’s trend report were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified. Trends noted by the inspectors were previously identified by the licensee and addressed in their correction action program.

.3 Annual Sample: Review of CR527516, 1J EDG Tripped due to Failed Radiator Shaft

a. Inspection Scope

The inspectors performed a review regarding the licensee’s assessments and corrective actions for CR527516, “1J EDG tripped due to failed radiator shaft,” and root cause evaluation (RCE) 001109, “1J EDG tripped due to failed radiator shaft,” to ensure that the full extent of the issue was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated

the CR against the requirements of the licensee's CAP as specified in procedure, PI-AA-200, "Corrective Action Program," Revision 21, and 10 CFR 50, Appendix B.

.

b. Findings and Observations

Although no findings were identified, the inspectors noted a weakness in the licensee's corrective action program based on an independent review of the licensee's extent of condition reviews from the root cause and apparent cause evaluations issued between 2004 and 2007. Specifically, the inspectors determined that the extent of condition and the extent of causes for these evaluations were overly narrow in focus and the corrective actions implemented from these evaluations did not consider all possible failure modes of all small copper tubing on the EDGs.

.4 Annual Sample: Review of RCE001110, Inadequate Work Instructions for the Replacement of Protective Relays Causes a Unit 1 Reactor Trip Due to Loss of Station Service Bus Transformer After Start of 1C Condensate Pump

a. Inspection Scope

The inspectors performed a review regarding the licensee's assessments and corrective actions for RCE001110, "Unit 1 Reactor Trip due to shorting screws left installed inside the 15C2 breaker cubicle," to ensure that the full extent of the issue was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors also evaluated the RCE against the requirements of the licensee's CAP as specified in procedure, PI-AA-200, "Corrective Action Program," Revision 21, and 10 CFR 50, Appendix B.

b. Findings and Observations

Introduction: A Green, self-revealing finding (FIN) was identified for failure to follow the procedure for the replacement of protective relays that resulted in a Unit 1 trip. Specifically, the work instructions in work order (WO) 59102618778 stated to "Have Control Ops install shorting screws for CT circuit," and "Have Control Ops remove shorting screws for CT circuit." Maintenance personnel failed to remove the current transformer terminal block shorting screws installed inside the 1C switchgear breaker 15C2 cubicle and caused the turbine to trip and a subsequent reactor trip from the loss of the 1C station service transformer after the start of the 'C' condensate pump.

Description: On October 11, 2013, at 1319 hours, Unit 1 was automatically tripped at 48% reactor power due to a lockout relay actuation for 1C Station Service Transformer. The lockout occurred simultaneously with the start of the 'C' condensate pump during power ascension. A design change, NA-12-00052, was issued to replace Unit 1 relays with improved protective relays having better accuracy and less drift. WO59102618778 was issued on September 9, 2013, to perform the necessary electrical modifications. The investigation determined that the 1C station service transformer lockout occurred because maintenance personnel failed to remove the shorting screws. The maintenance personnel removed the shorting screws installed in the breaker cubicle associated with overload relay protection, located on the left hand side of the cabinet,

but the shorting screws located on the right hand side for the differential relay protection were not removed. When the 'C' condensate pump was started, the increase in starting amps caused a current imbalance in 1C Station Service Transformer differential circuit which exceeded the protective relay's trip point. Once this trip point was exceeded, the differential protective relay initiated a trip signal to its associated Station Service Transformer 1C lockout relay. This current imbalance was falsely created due to the current transformer shorting screws being left installed in the 1C switchgear breaker 15C2 cubicle, which disabled half of the needed current inputs into the differential protective relay.

Analysis: The inspectors determined that the licensee's failure to follow work instructions in WO59102618778 which stated to "Have Control Ops install shorting screws for CT circuit," and "Have Control Ops remove shorting screws for CT circuit." for the replacement of protective relays was a performance deficiency. The performance deficiency was more than minor because it was associated with the Initiating Events cornerstone attribute of equipment performance and adversely affected the associated cornerstone objective in that maintenance personnel left the current transformer terminal block shorting screws installed inside the 1C switchgear breaker cubicle which caused the turbine trip and the reactor trip from the loss of the 1C station service transformer after the start of the 'C' condensate pump. Using Inspection Manual Chapter 0609, Attachment 4, Initial Characterization of Findings, issued June 19, 2012, the finding was determined to be of very low safety significance (Green) because it was a transient initiator, but did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. In addition, this finding involved the cross cutting area of human performance, the component of resources, and the aspect of complete, accurate, and an up-to-date work instructions, H.2(c), because the work order job steps did not contain adequate means for documenting the installation and removal of shorting screws, which resulted in a loss of configuration control for the 1C switchgear 15C2 breaker cubicle.

Enforcement: This finding did not involve enforcement action because no violation of a regulatory requirement was identified. This finding was determined to be of very low safety significance, Green, and was entered into the licensee's CAP as CR528984. This finding is identified as FIN 05000338/2013005-01, Failure to Follow Work Instructions for the Replacement of Protective Relays Causes a Unit 1 Reactor Trip Due to Loss of Station Service Bus Transformer After Start of 1C Condensate Pump.

.5 Review of Operator Workarounds

a. Inspection Scope

The inspectors performed a review regarding the licensee's assessments and corrective actions for operator workarounds (OWAs). The inspectors reviewed the cumulative effects of the licensee's OWAs and procedure OP-AA-1700, Revision 6, "Operations Aggregate Impact." The inspectors reviewed the data package associated with this procedure which included an evaluation of the cumulative effects of the OWAs on the operator's ability to safely operate the plant and effectively respond to abnormal and emergency plant conditions. The inspectors reviewed and monitored licensee planned

and completed corrective actions to address underlying equipment issues causing the OWAs. The inspectors also evaluated OWAs against the requirements of the licensee's corrective action program as specified in PI-AA-200, "Corrective Action," Revision 21, 10 CFR 50, Appendix B, and OP-AA-100, "Conduct of Operations," Revision 25. Other documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified. In general, the inspectors verified that the licensee has identified operator workaround problems at an appropriate threshold and entered them in the corrective action program, and has proposed or implemented appropriate corrective actions

.6 Annual Sample: Review of CR529000, While Closing 1-MS-NRV-101A Both Light Indications Went Out, Possible Thermal

a. Inspection Scope

The inspectors performed a review regarding the licensee's assessments and corrective actions for CR529000, "While closing 1-MS-NRV-101A both light indications went out. possible thermal," and apparent cause evaluation ACE19596, "1-MS-NRV-101A motor locked rotor failure," to ensure that the full extent of the issue was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated the CR against the requirements of the licensee's CAP as specified in procedure, PI-AA-200, "Corrective Action Program," Revision 21, and 10 CFR 50, Appendix B.

b. Findings and Observations

No findings were identified. On October 11, 2013, following a Unit 1 reactor trip during startup from the Unit 1 Fall 2013 RFO, the Unit 1 'A' steam generator non-return valve, 1-MS-NRV-101A, failed to close remotely. The licensee declutched the MOV actuator and attempted to close the valve manually without success. The licensee was able to close the valve after removing the motor from the actuator and mechanically agitating it in the closed direction. The licensee initiated CR529000, "While closing 1-MS-NRV-101A both light indications went out, possible thermal" and ACE19596, "1-MS-NRV-101A motor locked rotor failure." ACE19596 determined the apparent cause of the condition to be "The 1-MS-NRV-101A MOV gear train jammed causing the motor to have a locked rotor condition. Failure is attributable to a piece/part of component binding or sticking to another part such that movement did not occur as expected." 1-MS-NRV-101A is a stop check valve that uses the check valve portion to achieve the safety related function of preventing the uncontrolled blowdown of the remaining steam generators if a faulted condition exists in the upstream steam generator. A motor operated valve actuator is also present to allow for electric or manual operation of the valve to isolate the steam generator. This function is not safety related.

The inspectors reviewed licensee work orders and corrective action program documents dating from the Unit 1 Fall 2009 refueling outage (RFO) until October 11, 2013. The inspectors noted multiple instances of the condition of the 1-MS-NRV-101A actuator being documented as degraded with corrective maintenance being deferred. The inspectors noted that no corrective maintenance had been performed for the 1-MS-NRV-101A actuator at the time of its failure during startup from the completion of the Unit 1 Fall 2013 RFO.

The inspectors determined that the degraded condition of the 01-MS-NRV-101A actuator was a condition adverse to quality. The inspectors determined that this condition adverse to quality was well documented (identified), beginning during the Unit 1 Spring 2009 RFO, within the licensee's CAP, thus providing the licensee a reasonable ability to correct this condition prior to the failure of 01-MS-NRV-101A on October 11, 2013. The inspectors concluded that this failure to correct a condition adverse to quality was a performance deficiency. This performance deficiency was determined to be minor because the safety related functions of the valve were not impacted by the actuator failure and the resulting inability of the valve to be closed electrically or manually.

.7 Annual Sample: Review of CR528386, Operator tripped 1H EDG during 24 hour run due to loss of load indication

a. Inspection Scope

The inspectors performed a review regarding the licensee's assessments and corrective actions for CR528386, "Operator tripped 1JH EDG during 24 hour run due to loss of load indication" and ACE019593, "ACE to Engr for Operator tripped 1H EDG during 24 hour run due to load loss" to ensure that the full extent of the issue was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated the CR against the requirements of the licensee's CAP as specified in procedure, PI-AA-200, "Corrective Action Program," Revision 21, and 10 CFR 50, Appendix B.

b. Findings and Observations

Introduction: An unresolved issue (URI) was identified by the inspectors relating to an issue involving the licensee's failure to establish and implement adequate PM for the 1H EDG control system fuse holders that were susceptible to relaxation of the spring clips.

Description: At 0005 on October 6, 2013, during the performance of 1-PT-83.7H, "1H EDG 24-Hour Run," the 1H EDG unexpectedly unloaded without warning or operator action and was tripped from the control room by the operators after 15 hours of operation. The 1H EDG is the Unit 1 Train A EDG that supplies emergency 4160V AC power to the Vital Electrical Distribution System Bus 1H.

The 1J and 1H EDGs are the Unit 1 dedicated redundant power supplies of emergency 4160V AC power to the Vital Electrical Distribution System. At the time of the event 1J EDG was operable. The licensee entered this event in their corrective action program as CR528386 and initiated an apparent cause evaluation ACE19593, "1H-EDG Loss of

Load During 24-hr Testing." The licensee stated in their ACE of the 1H EDG that the fatigue of the fuse clip most likely occurred from repeated insertion and removal of the fuses during the recent troubleshooting, maintenance, and the recent outage upgrade of the governor control system."

The inspectors require additional information from the licensee to determine if there is a performance deficiency which is more than minor. This issue is identified as URI 05000338/2013005-02, Fuse Failures in 1H Emergency Diesel Generator Governor Circuit.

4OA3 Event Follow-up

.1 Unit 1 Reactor Trip Due to Loss of Station Service Bus

The inspectors reviewed the licensee's response to the turbine/reactor trip due to the loss of the Unit 1 'C' station service transformer (SST) from the lockout of the 'B' phase differential current monitoring circuit. The differential monitoring for Unit 1 'C' SST had shorting screws left from a maintenance activity on the low side current transformer terminal block which resides within the 1C switchgear 15C2 breaker cubicle. The shorting screws were being installed associated with design change NA-12-00052. The shorting screws were removed for an overload circuit and were inadvertently left in a differential circuit. The cause of the error was human performance related. The inspectors discussed the event with operations, engineering, and licensee management personnel to gain an understanding of the event and assess follow up actions. The inspectors reviewed operator actions taken in accordance with licensee procedures and reviewed unit and system indications to verify that actions and system responses were as expected. The inspectors also reviewed the initial licensee notifications to verify that the requirements specified in NUREG-1022, "Event Reporting Guidelines" were met. The licensee documented this in their corrective action program as CR528984.

.2 (Closed) LER 05000338/2013-002 Automatic Reactor Trip Following Actuation of the 1C Station Service Transformer Lockout Relay

On October 11, 2013, with Unit 1 in operating at 48 percent power, Mode 1, an automatic turbine trip and subsequent reactor trip occurred due to a lockout relay actuation for the 1C Station Service Transformer. The lockout occurred simultaneously with the start of the 1C Condensate Pump. The direct cause of the lockout was the presence of six shorting screws that were not removed from the 1-EP-BKR-15C2 cubicle following design change replacement of the under voltage relay. The root cause of the event was less than adequate written instructions for documenting the installation and removal of the shorting screws, which resulted in a loss of configuration control.

Visual inspections were performed of all current transformer blocks for the generator, main transformers, and station service transformers. No additional shorting screws were inappropriately installed. Visual inspection was performed of the 1-EP-SST-1C and no visual signs of damage or abnormal conditions were observed. Corrective actions are being tracked under a root cause evaluation RCE001110. The enforcement aspects of this are discussed in section 4OA2.4 of this report. This LER is closed.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Review of the Operation of an Independent Spent Fuel Storage Installation – Programs and Procedures (Inspection Procedure 60855.1)

a. Inspection Scope

Inspectors reviewed the changes made to programs and procedures listed below to verify that changes made were consistent with the license and did not reduce the effectiveness of the program. The inspectors verified that the procedures still fulfill the commitments and requirements specified in the Safety Analysis Report, Certificate of Compliance, the site-specific license 10 CFR Part 72, the TS as applicable, any related 10 CFR 50.59 and 72.48 evaluations, and 10 CFR 72.212(b) evaluation for general licensed ISFSIs.

- Plant Operations
- Radwaste Storage and Handling
- Control of Heavy Loads
- Radiation Protection
- Security and Safeguards
- Emergency Preparedness
- Maintenance
- Surveillance
- Fire Protection
- Training
- Environmental Monitoring
- QA Activities
- Administrative Procedures

b. Findings

No findings were identified.

.3 Review of the Operation of an Independent Spent Fuel Storage Installation – Selected Records Review (Inspection Procedure 60855.1)

a. Inspection Scope

Inspectors verified by direct observations and review of selected records, that the licensee had identified each fuel assembly placed in the ISFSI, recorded the parameters and characteristics of each fuel assembly, and maintained a record of each fuel assembly as a controlled document.

b. Findings

No findings were identified.

.4 (Closed) NRC Temporary Instruction 2515/190, "Inspection of Proposed Interim Actions Associated with Near-Term Task Force (NTTF) Recommendation 2.1 Flooding Hazard Evaluations"

a. Inspection Scope

The Inspectors verified that the licensee's submitted interim actions, associated with the NTTF recommendation 2.1 for flooding hazard evaluations, will perform their intended function for flooding mitigation.

The inspectors conducted an independent verification to confirm the following:

- The procedures or activities can be executed as specified/written, and within available time, if time-dependent
- Water levels and associated effects, and severe weather conditions would not impair support functions and would not impede performing necessary interim actions
- Equipment availability or staffing issues would not prevent implementation of the interim actions
- Proposed interim actions do not result in adverse consequences

Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

On February 12, 2014, the senior resident inspector presented the inspection results to Mr. G. Bischof and other members of the staff, who acknowledged the findings. The inspectors verified no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:
M. Becker, Manager, Nuclear Outage and Planning
G. Bischof, Site Vice President
J. Daugherty, Director, Nuclear Station Safety & Licensing
R. Evans, Manager, Radiological Protection
B. Gaspar, Manager, Nuclear Site Services
R. Hanson, Manager, Nuclear Protection Services
E. Hendrixson, Director, Nuclear Site Engineering
J. Jenkins, Manager, Nuclear Maintenance
P. Kemp, Supervisor, Station Licensing
J. Leberstien, Technical Advisor, Licensing
C. McClain, Manager, Nuclear Training
F. Mladen, Plant Manager
J. Plossl, Supervisor, Nuclear Station Procedures
J. Schleser, Manager, Nuclear Organizational Effectiveness
J. Slattery, Manager, Nuclear Operations
M. Whalen, Technical Advisor, Licensing

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000338/2013005-02	URI	Fuse Failures in 1H Emergency Diesel Generator Governor Circuit (Section 4OA2.7)

Opened and Closed

05000338/2013005-01	FIN	Failure to Follow Work Instructions for the Replacement of Protective Relays Causes a Unit 1 Reactor Trip Due to Loss of Station Service Bus Transformer After Start of 1C Condensate Pump (Section 4OA2.4)

Closed

05000338/2013-002-00	LER	Automatic Reactor Trip Following Actuation of the 1C Station Service Transformer Lockout Relay (Section 4OA3.2)
TI 2515/190	TI	Inspection of Proposed Interim Actions Associated with Near-Term Task Force (NTTF) Recommendation 2.1 Flooding Hazard Evaluations (Section 4OA5.4)

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R07: Heat Sink Performance

1-PT-64.1.1, "Outside Recirculation Spray Pump 1-RS-P-2A," Revision 28
1-MOP-49.31, "Draining Recirc Spray Heat Exchangers (Service Water Side)," Revision 20
1-MOP-49.34, "Leak Checking Recirc Spray Heat Exchanger Using Service Air," Revision 4
VPAP-0811, "Service Water System Inspection and Maintenance Program," Revision 6
ER-AA-HTX-1003, "Heat Exchanger Monitoring and Assessment," Revision 5
WO 59102345719, Remove/Install Diaphragm Plate for Eddy Current Inspection

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Change Packages
Emergency Plan, Revision 38
Emergency Plan, Revision 39
Emergency Action Level Technical Bases Document, Revision 4
Evacuation Time Estimate Study Update

Section 4OA2: Identification and Resolution of Problems

List of open Operability Determination documents
List of open Operation Decision Making documents
List of open Reasonable Assurance of Safety documents
List of Operations Shift Orders, August – November, 2013

Section 4OA3: Event Followup

CR528984, RX first out Turbine Trip-RX Trip; Turbine first out SS XFMR 1C LO Relay Turb Trip
MRE016866, RX first out Turbine Trip-RX Trip
RCE001110, RX first our Turbine Trip-RX trip

Section 4OA5: Other Activities

TI 2515/190 Documents Reviewed

Virginia Electric and Power Company, North Anna Power Station Units 1 & 2, Flooding Hazard Reevaluation Report for Resolution of Fukushima Near-Term Task Force, Recommendation 2.1: Flooding, dated March 2013
Virginia Electric and Power Company, North Anna Power Station Units 1 & 2, Flooding Hazard Reevaluation Report in Response to March 12, 2012 Information Request Regarding Flooding Aspects of Recommendation 2.1, Letter No. 13-121, dated March 11, 2013
Virginia Electric and Power Company, North Anna Power Station Units 1 & 2, Flooding Hazard Reevaluation Report in Response to March 12, 2012 Information Request Regarding Flooding Aspects of Recommendation 2.1, Letter No. 13-121A, dated August 23, 2013
0-AP-40, Abnormal Level in North Anna Reservoir (Lake), (With Five Attachments), Revision 19
0-AP-41, Severe Weather Conditions, (With Eleven Attachments), Revision 58
0-MPM-1207-04, Mechanical Preventive Maintenance, Annual Pumping of Security and Electrical Cable Vaults, Revision 6
NA-13-00039, Intake Structure Manhole Lid Sealing and Repairs
0-GEP-31, General Engineering Procedure, Walkdown of Flood Protection Features, Revision 0
0-PT-9.4, Inspection of Roof Drains, Yard Drains, and Roof, Revision 0
11715-FC-29A, Fuel Oil Pump House & Tanks, Sheets 1and 3

Beyond Design Basis Project Walk Down Package (WDP)
WDP NA-F-2102-014-00, Manhole 01-EP-MH-1A Yard
WDP NA-F-2102-015-00, Manhole 01-EP-MH-1B Yard
WDP NA-F-2102-016-00, Manhole 01-EP-MH-1C Yard
WDP NA-F-2102-017-00, Manhole 01-EP-MH-1 Yard
WDP NA-F-2102-018-00, Manhole 02-EP-MH-1 Yard
WDP NA-F-2102-020-00, Manhole 01-BLD-MBAR-2MH04 Yard
WDP NA-F-2102-021-00, Manhole 01-BLD-MBAR-2MH03 Yard
WDP NA-F-2102-045-00, Hand Hole 01-SEC-HH-SS9 Yard

Condition Reports (CR)
CR487822, "BDB 2.3 Flooding Walkdown – Storm Drains Identified w/heavy covers for Security"
CR507753, Potential BDB Vulnerabilities – Flooding Hazards Re-evaluation Rsults
CR489242, BDB 2.3 Flooding Walkdown; Electrical Conduits NOT sealed at TB or RSST end
CR487474, BDB 2.3 Flooding Walkdown – Site Drainage features obstructed with debris
CR 487477, BDB 2.3 Flooding Walkdown – Enhancements to 0-AP-40 and 0-AP-41
CR489905, BDB 2.3 Flooding – Rainfall flooding at door 1-BLD-DR-A74-1 Aux Bldg
CR490120, BDB 2.3 Flooding – Rainfall flooding at door 1-BLD-DR-A74.1 Aux Bldg
CA244061, NAPS Project Engineering – Track the site re-evaluation for flooding
CA244062, NAPS Civil Design Engineering – Develop DC for Site Drains Enhancements
CA244063, INNS BDB – Reflect action plans for the site drainage system within the BDB
CA256686, Complete Site BDB Flooding Re-Evaluation Action Assignments
CA256688, Complete NAPS BDB Flooding Re-evaluation Action Assignments
CA256689, Complete NAPS BDB Flooding Re-evaluation Action Assignment – Unit 3 Evaluation
CA262764, Complete Implementation of WOs 59102575859, 59102575827, and 59102576176
CA247514, Revise 0-MPM-1207 per FIP provided
CA245154, Evaluate Options for sealing the 1-EP-MH-16
CA245150, Incorporate the steps to inspect/clean the sealing surfaces
CA243868, BDB 2.3 Flooding Walkdown – Enhancements to 0-AP-40 and 0-AP-41

Licensing Commitments(LC)
LC001063, NAPS – Report in Response to March 12, 2012 Information Request Regarding Flooding Aspects of Recommendation 2.3
LC001103, NAPS – Flood Hazard Reevaluation Report

Licensing Actions (LA)
LA004206, NAPS – Report in Response to March 12, 2012 Information Request Regarding Flooding Aspects of Recommendation 2.3

LIST OF ACRONYMS

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access and Management System
CA	Corrective Action
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
EDG	Emergency Diesel Generator
IMC	Inspection Manual Chapter
ISFSI	Independent Spent Fuel Storage Installation
JPM	Job Performance Measures
LHSI	Low Head Safety Injection
NCV	Non-cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OD	Operability Determination
PARS	Publicly Available Records
PI	Performance Indicator
PRT	Pressurizer Relief Tank
QS	Quench Spray
RCE	Root Cause Evaluation
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RTP	Rated Thermal Power
SBO	Station Blackout
SDP	Significance Determination Process
SR	Surveillance Requirements
TDAFWP	Turbine Driven Auxiliary Feedwater Pump
TI	Temporary Instruction
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
VEPCO	Virginia Electric and Power Company
VPAP	Virginia Power Administrative Procedure
WO	Work Order