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

May 11, 2016

EA-16-103

Mr. George A. Lippard, III
Vice President, Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
P.O. Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 – NRC INTEGRATED INSPECTION REPORT 05000395/2016001 AND NOTICE OF ENFORCEMENT DISCRETION

Dear Mr. Lippard:

On March 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Virgil C. Summer Nuclear Station (VCSNS), Unit 1. On April 25, 2016, the NRC inspectors discussed the results of this inspection with you and members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented noncompliances for which the NRC is exercising enforcement discretion in accordance with Section 9.1 of the NRC Enforcement Policy, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." The noncompliances are associated with your implementation of the requirements and standards of your technical specifications, as well as 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." The inspectors have screened the violation and determined that it warrants enforcement discretion per the Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues, and processed it in accordance with Section 11.05 of Inspection Manual Chapter (IMC) 0305.

NRC inspectors also documented one NRC-identified finding of very low safety significance (Green), in this report. The finding involved a violation of NRC requirements. The inspectors also documented one licensee-identified violation, which was determined to be of very low safety significance, in this report. The NRC is treating the violations as non-cited violations (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the VCSNS, Unit 1.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the VCSNS, Unit 1.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, “Public Inspections, Exemptions, Requests for Withholding,” of the NRC's "Agency 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’s Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Mark E. Franke, Acting Director
Division of Reactor Projects

Docket No.: 50-395
License No.: NPF-12

Enclosure:
IR 05000395/2016001
w/Attachment: Supplementary Information

cc: Distribution via ListServ

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Letter to George A. Lippard, III from Mark E. Franke dated May 11, 2016

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 - NRC INTEGRATED INSPECTION REPORT 05000395/2016001 AND NOTICE OF ENFORCEMENT DISCRETION

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REGION II

Docket No.	50-395
License No.	NPF-12
Report Nos.	05000395/2016001
Licensee:	South Carolina Electric & Gas (SCE&G) Company
Facility:	Virgil C. Summer Nuclear Station, Unit 1
Location:	P.O. Box 88 Jenkinsville, SC 29065
Dates:	January 1, 2016, through March 31, 2016
Inspectors:	J. Reece, Senior Resident Inspector E. Coffman, Resident Inspector R. Fanner, Senior Reactor Inspector (Section 4OA3.2)
Approved by:	Mark E. Franke, Acting Director Division of Reactor Projects

Enclosure

SUMMARY

IR 05000395/2016001; 01/01/2016 – 03/31/2016: Virgil C. Summer Nuclear Station, Unit 1; Other Activities.

The report covered a three-month period of inspection by resident inspectors, and a senior reactor inspector. One NRC-identified violation was identified and documented in this report. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP), dated April 29, 2015. The cross-cutting aspects were determined using IMC 0310, "Aspects Within the Cross Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Severity Level IV, non-cited violation (NCV) of 10 CFR 50.9(a), "Completeness and accuracy of information," and an associated Green non-cited violation of V.C. Summer, Operating License Condition 2.C.(18) for a NFPA 80-1973 code deviation that was not discussed in the licensee's NFPA 805 license amendment request (LAR), and would adversely affect the ability to achieve and maintain safe shutdown in the event of fire. The associated engineering evaluation relied on inadequate administrative controls to ensure the associated replacement doors in the intermediate building, DRIB/105A&B, were kept closed as a basis for not following NFPA 80-1973 which required the fire doors be self-closing. The licensee entered the violations into their corrective action program as condition reports CR-15-04027 and CR-16-00242 respectively.

  The inspectors identified a reactor oversight process (ROP) performance deficiency (PD) for the failure to provide adequate administrative controls to allow departure from NFPA 80-1973 requirements, which resulted in replacement of a self-closing fire door with two non-self-closing fire doors, DRIB/105A&B, that adversely affected the ability to achieve and maintain safe shutdown in the event of fire since they were found open on multiple occasions. The inspectors reviewed Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening," dated September 7, 2012, and determined the ROP PD was more than minor because it was associated with the mitigating systems cornerstone attribute of protection against external factors, such as fire, and adversely affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors used IMC 0609, "Significant Determination Process," Appendix F, "Fire Protection Significance Determination Process," Attachment 1, dated September 20, 2013, to perform a Phase 1 analysis and determined that the ROP finding was of very low safety significance (Green) based on the response for Question 1.4.3.A in which the combustible loading on both sides of DRIB/105A&B was less than 120,000 BTU/ft2. Furthermore, the inspectors determined that the associated fire zone area (IB 7) with multiple equipment trains used a pre-action sprinkler system and automatic fire detection.

The inspectors also determined that the licensee's failure to include the departure from NFPA 80-1973 in their NFPA 805 license amendment request was a violation of 10 CFR 50.9(a). Because this violation of 10 CFR 50.9(a) had the potential to impact the NRC's ability to perform its regulatory function, the inspectors evaluated this violation using traditional enforcement (TE). Since the TE violation is associated with a Green ROP violation, and the misinformation was identified after the NRC relied on it for issuing a previous operating license amendment, the TE violation was determined to be a Severity Level IV violation, consistent with the language of the NRC Enforcement Policy, Section 2.3.11, "Inaccurate and Incomplete Information." The inspectors reviewed IMC 0310, "Aspects Within Cross Cutting Areas," dated December 14, 2014, and determined the cause of this finding involved the cross-cutting area of problem identification and resolution, P.3, because the licensee failed to ensure that adequate administrative controls were in place after the fire doors were found open multiple times. (Section 4OA5)

One violation of very low safety significance that was identified by the licensee has been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at full Rated Thermal Power (RTP) and operated at or near full RTP for the remainder of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

Partial System Walkdowns

a. Inspection Scope

The inspectors conducted five partial equipment alignment walkdowns which are listed below, to evaluate the operability of selected redundant trains or backup systems with the other train or system inoperable or out of service. Correct alignment and operating conditions were determined from the applicable portions of drawings, system operating procedures (SOP), and technical specifications (TS). The inspections included review of outstanding maintenance work orders (WOs) and related condition reports (CRs) to verify that the licensee had properly identified and resolved equipment alignment problems that could lead to the initiation of an event or impact mitigating system availability.

- Partial walkdown of 'B' emergency diesel generator (EDG) during planned maintenance on the 'A' EDG
- Partial walkdown of 'B' motor driven emergency feedwater (MDEFW) and turbine driven emergency feedwater (TDEFW) during planned maintenance on 'A' MDEFW
- Partial walkdown of 'A' EDG during major maintenance on 'B' EDG
- Partial walkdown of 'B' reactor building (RB) spray during planned maintenance on 'A' RB spray
- Partial walkdown of TDEFW during control valve testing impacting both MDEFW pumps

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Quarterly Fire Protection Walkdowns

a. Inspection Scope

The inspectors reviewed recent CRs, WOs, and impairments associated with the fire protection system. The inspectors reviewed surveillance activities to determine whether they supported the operability and availability of the fire protection system. The inspectors assessed the material condition of the active and passive fire protection

systems and features, and observed the control of transient combustibles and ignition sources. The inspectors conducted routine inspections of the following seven areas (respective fire zones also noted):

- Auxiliary building switchgear room 412' elevation (fire zone AB-1.10)
- Auxiliary building switchgear room 463' elevation (fire zone AB-1.29)
- Battery and charger rooms 'A' and 'B' (fire zones IB-2, 3, 4, 5, and 6)
- Charging pump rooms 'A', 'B' and 'C' (fire zones AB-1.5, AB-1.6, and AB-1.7)
- Control building 482' elevation (fire zones CB-22 and CB-23)
- Diesel generator rooms 'A' and 'B' (fire zones DG-1.1, 1.2, and DG-2.1, 2.2)
- Relay room solid state protection system (SSPS) instrumentation and vital inverters (fire zones CB-6, CB-10, and CB-12)

b. Findings

No findings were identified.

.2 Annual Fire Brigade Drill Observation

a. Inspection Scope

The inspectors observed the performance of an unannounced fire brigade drill on January 28, 2016. The inspectors evaluated the readiness of licensee personnel to respond and fight fires including the following aspects:

- Observe whether turnout clothing and self-contained breathing apparatus equipment were properly worn.
- Determine whether fire hose lines were properly laid out and nozzle pattern simulated being tested prior to entering the fire area of concern.
- Verify that the fire area was entered in a controlled manner.
- Review if sufficient firefighting equipment was brought to the scene by the fire brigade to properly perform their firefighting duties.
- Verify that the fire brigade leader's firefighting directions were thorough, clear and effective, and that, if necessary, offsite fire team assistance was requested.
- Verify that radio communications with plant operators and between fire brigade members were efficient and effective.
- Confirm that fire brigade members checked for fire victims and fire propagation into applicable plant areas.
- Observe if effective smoke removal operations were simulated.
- Verify that the firefighting pre-plans were properly utilized and were effective.
- Verify that the licensee pre-planned drill scenario was followed, drill objectives met the acceptance criteria, and deficiencies were captured in post drill critiques.

b. Findings

No findings were identified.

1R06 Flood Protection Measures

Internal Flooding

a. Inspection Scope

The inspectors reviewed and walked down portions of 'A', 'B', and 'C' service water (SW) pumps located in the SW pumphouse regarding internal flood protection features and equipment to determine consistency with design requirements, Updated Final Safety Analysis Report (UFSAR), and flood analysis documents. Risk significant structure, system, and components (SSCs) in these areas included the SW pumps, SW pump motor switchgear, and associated SW valves. The inspectors reviewed the licensee's corrective action program (CAP) database to verify that internal flood protection problems were being identified at the appropriate level, entered into the CAP, and appropriately resolved. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R07 Heat Sink Performance

Annual Review

a. Inspection Scope

The inspectors conducted one heat sink performance sample. The inspectors observed inspections and cleaning of the 'B' EDG intercooler jacket water, and lube oil heat exchangers. The inspectors reviewed the applicable health reports, inspection results, and verified that the heat exchanger performance issues were entered into the licensee's CAP.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed an operator requalification simulator training scenario occurring on February 23, 2016, and involving multiple failures leading to entry into abnormal operating procedures followed by emergency operating procedures in order to combat the problems. The inspectors observed crew performance in terms of communications; ability to prioritize failures in order to take timely and proper actions; prioritizing, interpreting, and verifying alarms; correct use and implementation of procedures, including the alarm response procedures; timely control board operation and manipulation, including high-risk operator actions; and oversight and direction provided by the shift supervisor, including the ability to identify and implement appropriate TS actions and emergency action levels. The inspectors reviewed the licensee's critique

comments to verify that performance deficiencies were captured for appropriate corrective action.

b. Findings

No findings were identified.

.2 Resident Quarterly Observation of Control Room Operations

a. Inspection Scope

During the inspection period, the inspectors conducted observations of licensed reactor operator activities to ensure consistency with licensee procedures and regulatory requirements. For the four listed activities, the inspectors observed the following elements of operator performance: 1) operator compliance and use of plant procedures including TS; (2) control board component manipulations; 3) use and interpretation of plant instrumentation and alarms; 4) documentation of activities; 5) management and supervision of activities; and 6) control room communications.

- Rod insertion testing
- 'A' EDG testing
- Emergency feedwater valves backup air supply testing
- 'A' EDG operation for common mode failure evaluation

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors evaluated equipment issues described in the two CRs listed below to verify the licensee's effectiveness with the corresponding preventive or corrective maintenance associated with SSCs. The inspectors reviewed Maintenance Rule (MR) implementation to verify that component and equipment failures were identified, entered, and scoped within the MR program. Selected SSCs were reviewed to verify proper categorization and classification in accordance with 10 CFR 50.65. The inspectors examined the licensee's 10 CFR 50.65(a)(1) corrective action plans to determine if the licensee was identifying issues related to the MR at an appropriate threshold and that corrective actions were established and effective. The inspectors' review evaluated if maintenance preventable functional failures or other MR findings existed that the licensee had not identified. The inspectors reviewed the licensee's controlling procedures consisting of engineering services procedure (ES)-514, Revision (Rev.) 6, "Maintenance Rule Program Implementation," and station administrative procedure (SAP)-0157, Rev. 1, "Maintenance Rule Program," to verify consistency with the MR program requirements.

- CR-13-02307, Return containment spray system to (a)(2) status based on successful completion of (a)(1) goals

- CR-15-06345, Failure of XVC01009B-EF to close (emergency feedwater check valve)

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control

a. Inspection Scope

The inspectors performed risk assessments, as appropriate, for the four scheduled work activities involving a yellow risk condition for the associated components listed below to assess, as appropriate: 1) the effectiveness of the risk assessments performed before maintenance activities were conducted; 2) the management of risk; 3) that, upon identification of an unforeseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and 4) that emergent work problems were adequately identified and resolved. The inspectors evaluated the licensee's work prioritization and risk characterization to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for the planned and emergent work activities.

- 'A' EDG planned maintenance
- TDEFW planned maintenance
- Fire risk red condition for 'B' EDG planned maintenance
- 'B' EDG emergent maintenance

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed the four operability evaluations listed below, affecting risk significant mitigating systems to assess, as appropriate: 1) the technical adequacy of the evaluations; 2) whether operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred; 3) whether other existing degraded conditions were considered; 4) that the licensee considered other degraded conditions and their impact on compensatory measures for the condition being evaluated; and 5) the impact on TS limiting conditions for operations and the risk significance in accordance with the significance determination process. The inspectors verified that the operability evaluations were performed in accordance with SAP-209, Rev. 1B, "Operability Determination Process," and SAP-999, Rev. 13A, "Corrective Action Program."

- CR-15-04395, Low refrigerant found in circuit number (No.) 2 of 'A' train chiller
- CR-16-00543, 'A' chiller found with low refrigerant in No. 2 circuit
- CR-16-00972, Piping upstream of 'B' emergency feedwater (EFW) header discharge isolation check valve abnormally hot

- CR-16-01493, 'B' EDG exciter diode voltage is marginal

b. Findings

The enforcement aspects associated with CR-15-04395 are discussed in Section 4OA7 of this report.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed one permanent modification or engineering change request (ECR) as noted below, to evaluate the change for adverse effects on system availability, reliability, and functional capability. Documents reviewed included engineering calculations, WOs, site drawings, applicable sections of the UFSAR, supporting 10 CFR 50.59 evaluations, TS, and design basis information. The inspectors evaluated the change documents and associated 10 CFR 50.59 reviews against the system design basis documentation and UFSAR to verify that the changes did not adversely affect the safety function of safety systems. The inspectors reviewed any related CRs to confirm that problems were identified at an appropriate threshold, were entered into the CAP, and appropriate corrective actions had been initiated.

- ECR-51003B, "Flex Alternate EFW Suction Source"

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the seven maintenance activities listed below, the inspectors reviewed the associated post-maintenance testing procedures and either witnessed the testing and/or reviewed test records 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) test 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 its safety function. The inspectors verified that these activities were performed in accordance with general test procedure, (GTP)-214, "Post Maintenance Testing Guideline," Rev. 5F.

- WO1512969, Rework limit switch on 'A' steam generator (SG) EFW header discharge isolation valve
- WO1512533, Perform annual preventive maintenance (PM) on 'C' safety-related chiller including condenser cleaning

- WO1507407, Perform post maintenance testing of 'C' charging pump room cooling unit
- WO1600723, Perform operability testing for Loop 3 delta T-Taverage
- WO1601302, Repair refrigerant leak on 'A' chiller circuit No. 2
- WO1513533, Retest of XVC01009B-EF following repairs for valve not closing
- WO1606110, Repair fuel oil leak on 'B' emergency diesel generator

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed and/or reviewed the six surveillance test procedures (STPs) listed below to verify that TS or risk significant surveillance requirements were followed and that test acceptance criteria were properly specified to ensure that the equipment could perform its intended safety function. The inspectors verified that proper test conditions were established as specified in the procedures, that no equipment preconditioning activities occurred, and that acceptance criteria were met.

In-Service Tests

- STP-229.001, "HVAC Chilled Water Pump Test," Rev. 11A
- STP-220.001A, "Motor Driven Emergency Feedwater Pump and Valve Test," Rev. 11C
- STP-120.006, "Emergency Feedwater Valves Backup Air Supply Test," Rev. 7F

Other

- STP-125.002A, "Diesel Generator 'A' Operability Test," Rev. 2E
- STP-106.001, "Moveable Rod Insertion Test," Rev. 6B
- STP-345.037, "Solid State Protection System Actuation Logic and Master Relay Test Train A," Rev. 18B

b. Findings

No findings were identified.

1EP6 Drill Evaluation

a. Inspection Scope

On February 17, 2016, the inspectors reviewed and observed the performance of an emergency preparedness (EP) drill that involved a large fuel oil fire impacting a crane in the yard area, crane boom failure damaging the reactor water storage tank, a design basis loss of coolant accident, a lockout on the 'A' train emergency switchgear bus, loss of the 'B' train charging pump, and a failure of the transfer switch for the 'C' charging pump which required entry into increasing emergency action levels starting with a Notification of Unusual Event and ending in a General Emergency. The inspectors

assessed abnormal and emergency procedure usage, emergency plan classifications, protective action recommendations, respective notifications and the adequacy of the licensee's drill critique. The inspectors verified that drill deficiencies were captured into the licensee's corrective action program.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors verified the accuracy of the licensee's PI submittals listed below for the period January 1, 2015 through December 31, 2015. The inspectors used the performance indicator definitions and guidance contained in Nuclear Energy Institute NEI 99-02, Rev. 7, "Regulatory Assessment Performance Indicator Guideline," and licensee procedure SAP-1360, Rev. 2, "NRC and INPO/WANO Performance Indicators," to check the reporting of each data element. The inspectors sampled licensee event reports (LERs), operator logs, plant status reports, CRs, and performance indicator data sheets to verify that the licensee had properly reported the PI data.

- Unplanned Scrams per 7000 Critical Hours
- Unplanned Power Changes per 7000 Critical Hours
- Unplanned Scrams with Complications

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by inspection procedure IP 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 either attending daily screening meetings that briefly discussed major CRs, or accessing the licensee's computerized corrective action database and reviewing each CR that was initiated.

b. Findings

No findings were identified.

.2 Annual Sample Review of CR-15-01672

a. Inspection Scope

The inspectors reviewed CR-15-01672, 'C' steam generator (SG) emergency feedwater header discharge isolation check valve seat leaking, in detail to evaluate the effectiveness of the licensee's corrective actions for important safety issues. The inspectors assessed whether the issue was properly identified, documented accurately and completely, properly classified and prioritized, adequately considered extent of condition, generic implications, common cause, and previous occurrences, adequately identified root causes/apparent causes, and identified appropriate and timely corrective actions. Also, the inspectors verified the issues were processed in accordance with procedure, SAP-999, "Corrective Action Program," Rev. 12A.

b. Findings

No findings were identified. On April 15, 2015, elevated temperatures were noted on the 'C' SG line, and CR-15-01672 was initiated. The condition report noted that the cause was failure of the XVC01009C-EF check valve to reseat following TDEFW testing on April 13, 2015. The licensee declared the valve operable, but degraded with interim actions to ensure the valve reseats following the TDEFW pump being run.

The resident inspectors further reviewed past issues with XVC01009C-EF and noted that the valve was also found leaking by under CR-14-03039 when a fire alarm in the area of XVC01009C-EF was received. Building operators found the discharge piping for the TDEFW to be very hot causing the paint to bubble along with a loud water hammer noise coming from the lines (after securing the 'A' MDEFW pump from Mode 4 testing).

The equipment apparent cause evaluation (EACE) under CR-14-03039 noted that XVC01009C-EF's leakby was cause by binding at both the stem packing adjacent to the limit switch and the actuator linkage itself. Also, the return spring, which provides additional force for closing the check valve, was found shorter than required due to apparent fatigue. The EACE included adding Action 6 to CR-14-03039, which would in part add a step to the associated maintenance procedure to include inspecting the "spring for degradation or loss of length."

The inspectors reviewed mechanical maintenance procedure MMP-445.045, "Anchor Darling Pressure Seal Swing Check Valve with Actuator Maintenance and Inspection," Rev. 4 and noted that the step to inspect the return spring as described in Action 6 of CR-14-03039 was never completed, but that Action 6 along with CR-14-03039 were closed. The licensee initiated CR-16-01598 to capture the inspectors concern. CR-16-01598 also included an action to incorporate changes to MMP-445.045.

The inspectors also noted that the licensee was using a 1989 vendor manual for XVC01009C-EF that did not specify any recommendations for inspecting/replacing the return spring. The inspectors questioned if more recent vendor guidance was available, and the licensee contacted Flowserve which recommended the springs be periodically checked; this issue is documented under CR-16-01462.

In addition during review of CR-15-01672, the inspectors noted that no maintenance rule evaluation was performed, but that the condition report describes a condition adverse to

quality, and that operability was also degraded, requiring interim actions. As a result, the licensee subsequently initiated CR-16-01137 to perform a maintenance rule evaluation.

The inspectors also noted that CR-15-01672 was correctly categorized as a category 2 condition report since it describes a non-conforming condition. However, the inspectors noted that a similar condition on 'B' SG piping documented under CR-16-00972, XVC01009C-EF 'B' steam generator (SG) emergency feedwater header discharge isolation check valve leaking, was categorized as a category 3 condition report. As a result, the licensee wrote CR-16-01210 which changed CR-16-00972 to a category 2 condition report. The residents continue to monitor leakby of XVC01009B-EF, which is considered to be operable but degraded with interim actions involving periodic monitoring of piping temperature following each emergency feedwater pump run.

4OA3 Event Followup

.1 (Closed) LER 05000395/2016-001-00: Low Refrigerant Renders Chiller Non-Functional and 'A' Train of Charging System Inoperable

On December 16, 2015, a past operability evaluation conducted by the licensee concluded that safety-related mechanical water chiller 'A' (XHX0001A) had been non-functional from July 24, 2015, through September 17, 2015, due to a refrigerant leak in circuit 2. This rendered XHX0001A incapable of removing the design basis heat load of the system which, in part, supports room cooling for the 'A' charging/safety injection pump (XPP0043A). Consequently, TS 3/4.5.2 action requirements for XPP0043A were exceeded. The licensee entered the problem into their CAP as CR-15-04395. The enforcement aspects are documented in Section 4OA7 of this report. This LER is closed.

.2 (Closed) LER 05000395/2013-005-00: Unfused Direct Current (DC) Ammeter Circuits in Control Room Result in 10 CFR Part 50 Appendix R Unanalyzed Condition

a. Inspection Scope

On December 11, 2013 VCSNS submitted an LER documenting the discovery of a condition of noncompliance with the site's fire protection program (FPP). These conditions could prevent operators from achieving and maintaining safe shutdown (SSD) of the plant, in the case of a postulated fire.

The inspectors performed a detailed review of the information related to these LERs. Inspectors reviewed documents, and discussed the events with plant personnel to gain an understanding of the events. The inspectors assessed the licensee's compensatory measures and corrective actions to determine if they were adequate.

b. Findings

Introduction: The licensee identified a noncompliance with V.C. Summer Operating License Condition 2.C (18) for Unit 1. Specifically, the licensee failed to provide short circuit protection for safety-related and non-safety-related associated circuits credited for safe shutdown. As a result, a postulated fire could result in a secondary fire in another fire areas. The postulated secondary fire could adversely affect SSD capability.

Description: As a result of recent industry operating experience (OE 305419, EN 49411, EN 49419) regarding the impact of unfused Direct Current (DC) ammeter circuits in the Control Room, VCSNS performed a review of ammeter circuitry. On October 16, 2013, the review determined that the described condition was applicable to VCSNS. This resulted in an unanalyzed condition with respect to 10 CFR Part 50 Appendix R analysis requirements. The licensee review determined that certain DC ammeter circuits at V.C. Summer did not have the required short circuit protection. A fire induced hot short on these circuits could result in excessive current flow in the DC ammeter cables. This excessive flow could result in a secondary fires in other fire areas. As a result of the secondary fires, the inspectors postulated that credited SSD equipment or cables for SSD equipment could be adversely affected. This adverse effect could not be mitigated utilizing the current licensee procedures. Based upon the routing information reviewed by the inspectors, multiple fire zones in the Intermediate Building and Control Building were potentially affected.

The licensee committed to implement the fire protection program consistent with Appendix A to Branch Technical Position 9.5-1. The applicable sections contained the guidelines set forth for V.C. Summer Nuclear Station to satisfy the requirements of 10 CFR 50.48. In addition, the provisions of 10 CFR Part 50, Appendix R, subsections III.G, III.J, III.O, and III.L also applied to the fire protection program for the V. C. Summer Nuclear Station. 10 CFR Part 50 Appendix R, Section III.G.2 stated in part that the licensee shall ensure one redundant train credited for safe shutdown remains free of fire damage for cables or equipment, including associated non-safety circuits that could prevent operation or cause mal-operation due to hot shorts, open circuits or shorts to ground, of redundant trains and systems necessary to achieve and maintain hot shutdown conditions. Consistent with Updated Final Safety Analysis Report (UFSAR), Section 9.5.1.1, Design Basis, the licensee stated the application of the Appendix R subsections including commitment to the Branch Technical Position as stated above establish the basis for meeting the commitments to 10 CFR 50.48 for fire protection, as well as Criterion 3 of 10 CFR Part 50, Appendix A, "Fire Protection."

Upon discovery of the issue, the licensee entered the condition into the corrective action program (CR-13-04265), and implemented compensatory measures in the form of roving fire watches for the affected areas. Plant modifications specified in ECR 50810, "Hazards Protection for NFPA 805 Transition," Rev. 5 have been implemented to provide the applicable short circuit protection for the affected DC ammeter circuitry.

Analysis: The licensee's failure to provide short circuit protection for DC ammeter circuits is a performance deficiency (PD). This PD is more than minor because it is associated with reactor safety Mitigating System cornerstone attribute of Protection Against External Events (i.e., fire). Specifically, by not providing circuit protection for associated circuits, this negatively affected the reactor safety mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Because this issue was associated with fire protection, and this noncompliance was identified as a part of the licensee's transition to NFPA 805, this issue is being screened and dispositioned in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)."

In order to verify that this noncompliance was not associated with a finding of high safety significance (Red), a bounding phase 3 SDP risk analysis was performed by a regional SRA using the guidance from NRC Inspection Manual Chapter 0609 Appendix F and NUREG/CR 6850, Revision 0 and Supplement 1. The analysis used inputs from the licensee's NFPA 805 project for ignition frequency, conditional core damage probability, and cable routing data. The major analysis assumptions were: a one year exposure period, two proper DC polarity hot shorts required to achieve the high current conditions for secondary fires, and all ignition sources for each affected fire zone assumed to damage the ammeter cables. Based on this bounding risk analysis, the regional SRA determined that this performance deficiency resulted in a CDF increase for V.C. Summer Unit 1 of less than 1E-4/year (i.e., less than Red). The licensee risk assessment of the PD also determined the CDF increase was <1E-4/year. No cross-cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance.

Enforcement: V.C. Summer Operating License Condition 2.C (18) for Unit 1 states, in part, Virgil C. Summer Nuclear Station shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, and as approved in the Safety Evaluation Report (SER) dated February 1981 (and Supplements dated January 1982 and August 1982) and Safety Evaluations dated May 22, 1986, November 26, 1986, and July 27, 1987. In V.C. Summer UFSAR Section 9.5.1.1, Design Basis, the section stated in part that station's commitments with respect to the FPP are consistent with Appendix A to Branch Technical Position 9.5-1 as well as the provisions of 10 CFR Part 50, Appendix R, subsections III.G, III.J, III.O, and III.L. Part 50 of 10 CFR, Appendix R, Section III.G.2, states, in part, that where cables or equipment, including associated non-safety circuits, that could prevent operation or cause mal-operation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment, one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided:
(a) separation of cables and equipment by a fire barrier having a 3-hour rating,
(b) separation of cables and equipment by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards and with fire detectors and an automatic fire suppression system in the fire area, or
(c) enclosure of cables and equipment in a fire barrier having a 1-hour rating and with fire detectors and an automatic fire suppression system in the fire area.

Contrary to the above, from initial operation and continuing as of today, VCSNS failed to ensure that associated circuits that share common enclosures with safe shutdown circuits were protected from fire damage. Specifically, on October 16, 2013, the licensee determined various direct current (DC) ammeter circuits were unfused. This represented an unanalyzed condition with respect to 10 CFR Part 50 Appendix R analysis and inconsistent with the safe shutdown requirements. Upon discovery, the licensee entered the condition into the corrective action program (CR-13-04265), and implemented appropriate compensatory measures for the affected areas.

Because the licensee committed to adopt NFPA 805, the NRC has dispositioned this violation in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and granted VCSNS enforcement discretion, and processed this finding in accordance with Inspection Manual

Chapter 0305, Section 11.05. This issue was 1) identified and will be addressed during transition to NFPA 805, 2) entered into the licensee's corrective action program, 3) addressed for now, with immediate corrective actions and compensatory measures, 4) not likely to have been previously identified by routine licensee efforts, 5) not willful, and 6) not associated with a finding of high safety significance (Red). The licensee's license amendment request to transition to NFPA 805 has been reviewed by the NRC and was approved based upon the NRC's issuance of Amendment No. 199 to Renewed Facility Operating License. No. NPF-12 for the VCSNS.

4OA5 Other Activities

.1 (Closed) URI 05000395/2015004-01, Departure from NFPA 80-1973 for Replacement Fire Doors

a. Inspection Scope

NRC integrated inspection report 05000395/2015004 documented Unresolved Item (URI) 05000395/2015004-01, that identified during the walkdown of the intermediate building fire area an issue of concern regarding a departure from National Fire Protection Association (NFPA) 80-1973 as required by the Fire Protection Program for replacement fire doors DRIB/105A&B located in the intermediate building. Specifically, intermediate building self-closing fire door, DRIB/105, was replaced with a single door jamb containing two fire doors, DRIB/105A&B. These replacement doors were installed in a back to back configuration to provide a pressure barrier function in addition to the fire barrier function, but were not self-closing as required by NFPA 80-1973. The licensee subsequently initiated CR-15-04027 to evaluate this issue of concern.

This issue was unresolved because the licensee had not yet evaluated the concern under CR-15-04027, and the inspectors were awaiting this additional evaluation to determine the existence of any related performance deficiencies. This inspection closes this URI and identifies a finding which is presented below. Other related documents are listed in the attachment.

b. Findings

Introduction: The inspectors identified a Severity Level IV, non-cited violation (NCV) of 10 CFR 50.9(a), "Completeness and accuracy of information," and an associated Green non-cited violation of V.C. Summer, Operating License Condition 2.C.(18) for a NFPA 80-1973 code deviation that was not discussed in the licensee's NFPA 805 license amendment request (LAR), and would adversely affect the ability to achieve and maintain safe shutdown in the event of fire. The associated engineering evaluation relied on inadequate administrative controls to ensure the associated replacement doors were kept closed as a basis for not following NFPA 80-1973 which required the fire doors be self-closing.

Description: On August 05, 2015, the inspectors identified that back to back fire intermediate building (IB) fire doors DRIB/105A&B, installed in a single door jamb did not meet NFPA 80-1973 requirements because the fire doors were not self-closing. These doors are located on the IB 412' elevation, between fire area IB 23.1 ('A' safety related chiller room) and IB 7 ('A', 'B', and 'C' chiller pump rooms).

The inspectors reviewed historical information and noted that the previous fire door, DRIB/105, was a self-closing, UL listed fire door that was replaced with doors DRIB/105A&B under engineering change request, ECR 50585. In 2010, following replacement of the doors under ECR 50585, the licensee identified that these doors were not self-closing, and initiated condition report CR-10-00302. Inspectors reviewed CR-10-00302 which stated that "EIR 81702 was completed by the Fire Protection group to evaluate the issues with DRIB/105 and DRIB/106 and concluded that administrative controls would be acceptable to assure that the door will perform its design function."

The inspectors noted that engineering information request, EIR 81702, Rev. 0, dated August 17, 2010, states in part that the DRIB/105A&B were not installed with automatic closure devices in accordance with NFPA 80-1973 and will rely on administrative controls to ensure that they are closed. The inspectors also noted that EIR 81702 states for administrative controls: "These Chiller Rooms are locked and Operations must be notified to gain access. Signs will be provided to manually close these doors. Operations will monitor the access to these rooms and the closure of these fire doors."

Inspectors also reviewed fire protection program procedure (FPP)-025, "Fire Containment," Rev. 4, which was revised as designated by ECR 50585 to state: "Door opening IB-105 consists of two door leafs in series. Only one leaf (105A or 105B) is required to provide the Appendix R fire door (FRA) function. Steam propagation barrier (SPB) function is only required during work activities that require train separation. In those cases both IB-105A and IB-105B must be closed to provide SPB function. Doors IB-105A and IB-105B are not required to be self-closing."

The inspectors verified through a fire protection walk-down that normal plant alignment for DRIB/105A&B is with one door chained open and the opposite door closed. The inspectors also reviewed past condition reports for doors DRIB/105A&B, noting that condition reports CR-10-00302, CR-11-03306, CR-11-04205, CR-11-04442 and CR-14-02658 were initiated after the associated door serving as the fire barrier was found open by plant personnel. After reviewing past CR's, the inspectors, with concurrence from regional fire protection inspectors, determined that the administrative controls discussed in EIR 81702 were ineffective.

Following discussions with the resident inspectors, the licensee initiated CR-15-04027 to evaluate the effectiveness of the existing administrative controls to ensure DRIB/105A&B are closed and initiated CR-15-04504 to enhance EIR 81702.

On September 24, 2015, the inspectors determined that LAR-06-00055, "Licensee Amendment Request to Adopt NFPA 805 Performance-based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition)," dated November 15, 2011, was incomplete in that it did not reference the associated deviation from NFPA 80-1973 as discussed in EIR 81702.

Specifically, LAR-06-00055, Enclosure 1, Transition to 10 CFR Part 50.48(c) – NFPA 805 Performance-Base Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition, Attachment A, "NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements," identifies for NFPA 80, "Standard for Fire Doors and Windows," that: "The fire door design has been evaluated against the requirements of NFPA 80," with design calculation, DC0780D-007, "Passive Fire Protection Features," Rev. 0, dated November 15, 2011, listed as the applicable

reference document. DC0780D-007, Attachment 1, “Fire Protection Code Compliance Reviews, NFPA 80 - 1973, “Fire Doors and Windows,” states in the results summary for section 2-1.7.4.5: “Closing devices have been installed on fire doors used for personnel openings.” The inspectors concluded this information was not accurate when compared to DRIB/105A&B.

Additionally, the inspectors noted that the same section of Table B-1 identified technical report, TR0787E-006, "Fire Protection Features Fire Protection Engineering Equivalency Evaluations," Rev. 0, dated November 10, 2011, listed as a reference document. The inspectors reviewed TR0787E-006 which stated in part that the purpose is to record the Fire Protection Engineering Equivalency Evaluations (FPEEE) that are developed for Fire Protection Features for VCSNS and that the evaluations identify and document the results of specific issues and/or are the basis for the FPP compliance with NFPA 805-2001. The inspectors concluded that TR0787E-006 did not address the equivalency evaluation documented in EIR 81702 for DRIB/105A&B, and was therefore, incomplete.

Subsequently, using the inaccurate information in DC0780D-007 and the incomplete information from TR0787E-006, NRC staff stated in Amendment No. 199, dated February 11, 2015, of V.C. Summer’s facility operating license that: “The basis for approval as described by the licensee in LAR Attachment K is that bullet resistant and pressure doors, doors that were manufactured of similar materials and construction to rated fire doors and doors that do not have any openings or ports, and are self-closing, were found to be acceptable in the areas where they were used.”

Analysis: The inspectors identified an ROP PD for the failure to provide adequate administrative controls to allow departure from NFPA 80-1973 requirements, which resulted in replacement of a self-closing fire door with two non-self-closing fire doors, DRIB/105A&B, that adversely affected the ability to achieve and maintain safe shutdown in the event of fire since they were found open on multiple occasions. The inspectors reviewed Inspection Manual Chapter (IMC) 0612, Appendix B, “Issue Screening,” dated September 7, 2012, and determined the ROP PD was more than minor because it was associated with the mitigating systems cornerstone attribute of protection against external factors, such as fire, and adversely affected the cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors used IMC 0609, “Significant Determination Process,” Appendix F, “Fire Protection Significance Determination Process,” Attachment 1, dated September 20, 2013, to perform a Phase 1 analysis and determined that the ROP finding was of very low safety significance (Green) based on the response for Question 1.4.3.A in which the combustible loading on both sides of DRIB/105A&B was less than 120,000 BTU/ft2. Furthermore, the inspectors determined that the associated fire zone area (IB 7) with multiple equipment trains used a pre-action sprinkler system and automatic fire detection.

The inspectors also determined that the licensee’s failure to include the departure from NFPA 80-1973 in their NFPA 805 license amendment request was a violation of 10 CFR 50.9(a). Because this violation of 10 CFR 50.9(a) had the potential to impact the NRC’s ability to perform its regulatory function, the inspectors evaluated this violation using traditional enforcement (TE). Since the TE violation is associated with a Green reactor oversight process violation, and the misinformation was identified after the NRC relied on it for issuing an operating license amendment, the TE violation was determined to be a Severity Level IV violation, consistent with the language of the NRC Enforcement

Policy, Section 2.3.11, “Inaccurate and Incomplete Information.” The inspectors reviewed IMC 0310, “Aspects Within Cross Cutting Areas,” dated December 14, 2014, and determined the cause of this finding involved the cross-cutting area of problem identification and resolution, P.3, because the licensee failed to ensure that adequate administrative controls were in place after the fire doors were found open multiple times.

Enforcement: V.C. Summer Operating License condition 2.C.(18), Fire Protection System (Section 9.5.1, SSER 4) states in part that VCNS shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report (FSAR) for the facility and that the licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of fire. Fire Protection Evaluation Report Section 2.2.2.5, “Door Openings,” which is considered a part of V.C. Summer’s FSAR, states in part that fire barriers are protected by doors and frames with the hardware required to satisfy UL A or B Label requirements, tested in accordance with UL 10B, "Fire Tests of Door Assemblies," and UL 63, "Fire Door Frames," and installed in accordance with instructions in NFPA 80 dated 1973. NFPA 80-1973 states in Section 2-1.7.4.5 A that a closing device shall be installed on every fire door except elevator and power-operated dumbwaiter doors equipped with electric contacts or interlocks. Contrary to the above on August 17, 2010, the licensee performed EIR 81702 which evaluated the replacement of an existing fire door with back to back fire doors DRIB/105A&B where the door assembly as a whole was not UL listed and the doors did not include a closing device as required by NFPA 80-1973. The evaluation included a technical point that credited administrative controls by plant staff to ensure the proper closure of the fire doors, and further stated that “technical points provide the basis for this engineering judgment that a variance is technically sound and that there is no adverse impact on fire protection.” However, since the doors have been found open multiple times since installation, the fire protection program changes evaluated under EIR 81702 resulted in a plant change that does adversely affect the ability to achieve and maintain safe shutdown in the event of fire since multiple trains of a required safety related chilled water system could be impacted by the degraded barrier.

Additionally, 10 CFR 50.9(a), “Completeness and accuracy of information,” requires, in part, that “information provided to the Commission by an applicant for a license…be maintained by the applicant or licensee shall be complete and accurate in all material aspects.” Contrary to the above, on November 22, 2011, under LAR-06-00055, “Licensee Amendment Request to Adopt NFPA 805 Performance-based Standard for Fire Protection for Light Water Reactor Electric Generating Plants (2001 Edition),” the licensee failed to provide complete and accurate information regarding a deviation from NFPA 805, “Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants,” 2001 edition, which requires that fire doors conform to NFPA 80. Specifically, DRIB/105A&B lack self-closing mechanisms as required by NFPA 80, this information and the associated engineering evaluation were not provided as part of LAR-06-00055, which was material because licensing decisions were made in the development of the operating license.

Because the finding is of very low safety significance, the associated traditional enforcement violation was screened as Severity Level IV, and each violation has been entered into the licensee’s corrective action program as CR-15-04027 and CR-16-00242,

respectively, this violation is being treated as a Green NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000395/2016001-01, Failure to Implement Adequate Administrative Controls Following a Departure from NFPA 80-1973 and Provide NRC Staff Complete and Accurate Information.

4OA6 Meetings, Including Exit

On April 25, 2016, the resident inspectors presented the integrated inspection report results to Mr. G. Lippard and other members of the licensee staff. The licensee acknowledged the results of these inspections. The inspectors confirmed that inspection activities discussed in this report did not contain proprietary material.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section 2.3.2 of the NRC Enforcement Policy for characterization as an NCV:

- TS 3/4.5.2, "ECCS Subsystems – $T_{avg} \geq 350\ ^{o}F$" states in part that two independent emergency core cooling system (ECCS) subsystems shall be OPERABLE with one OPERABLE centrifugal charging pump in Modes 1, 2 and 3. TS 1.18, "OPERABLE – OPERABILITY," definition states in part that a subsystem shall be OPERABLE when all necessary auxiliary equipment that are required for the subsystem are capable of performing their related support functions. Contrary to this, from July 24, 2015, through September 17, 2015, safety-related subsystem chiller, XHX0001A, an auxiliary component supporting the 'A' train charging pump (XPP0043A) was incapable of performing its safety function resulting in the inoperability of XPP0043A for greater than the allowed action times of TS 3/4.5.2. A review of IMC0609, Appendix A, determined the finding was of very low safety significance (Green) because the finding was not a design deficiency and it did not result in a loss of function. The licensee has documented this problem in their CAP as CR-15-04395.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

A. Barbee, Director, Nuclear Training
C. Calvert, Manager, Design Engineering
M. Coleman, Manager, Health Physics and Safety Services
N. Constance, Manager, Nuclear Training
G. Douglass, Manager, Nuclear Protection Services
D. Edwards, Supervisor, Operations
J. Garza, Supervisor, Nuclear Licensing
L. Harris, Manager, Quality Systems
R. Haselden, General Manager, Organizational / Development Effectiveness
R. Justice, General Manager, Nuclear Plant Operations
G. Lippard, Vice President, Nuclear Operations
R. Mike, Manager, Chemistry Services
M. Moore, Supervisor, Nuclear Licensing
R. Ray, Manager, Maintenance Services
S. Reese, Licensing Specialist
D. Shue, Manager, Nuclear Operations
W. Stuart, General Manager, Engineering Services
W. Taylor, Nuclear Licensing Engineer
B. Thompson, Manager, Nuclear Licensing
J. Wasieczko, Manager, Organization Development and Performance
D. Weir, Manager, Plant Support Engineering
R. Williamson, Manager, Emergency Services
S. Zarandi, General Manager, Nuclear Support Services

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000395/2016-001-00	LER	Low Refrigerant Renders Chiller Non-Functional and 'A' Train of Charging System Inoperable (Section 4OA3.1)
05000395/2013-005-00	LER	Unfused Direct Current (DC) Ammeter Circuits in Control Room Result in 10 CFR Part 50 Appendix R Unanalyzed Condition (Section 4OA3.2)
05000395/2015004-01	URI	Departure from NFPA 80-1973 for Replacement Fire Doors (Section 4OA5)

Opened and Closed

05000395/2016001-01	NCV	Failure to Implement Adequate Administrative Controls Following a Departure from NFPA 80-1973 and Provide NRC Staff Complete and Accurate Information (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R06: Flood Protection Measures

CR-06-02315: Fire barrier installed in annulus prevents flood water from draining
Design basis document, Service Water System, Rev. 11
Design Calculation (DC) 03690-004, SWPH Flooding Evaluation, Rev. 1A
DC 03690-005, Evaluation for SWPH Pipe Rupture/Flooding Effects, Rev. 1A
Technical Work Record (TWR) 71244, DC 03690-005 Rev. 1: Service Water Pump House Calulation, Dated 11/18/2009
DC0399C-002, Evaluation of Fire Seal Pressure Capacity for Openings 2' x 2' or less, Rev. 2A
CR-16-01117, NRC identifies issue with fire barrier TR62 being used as flood barrier

4OA2: Problem Identification and Resolution

Annual Sample Review of CR-15-00541
MMP-445.045, Anchor Darling Pressure Seal Swing Check Valve with Actuator Maintenance and Inspection, Rev. 4
SAP-0999, Corrective Action Program, Rev. 13A
WO's: 1504364-001, 1410958-001

Section 4OA5: Other Activities

Corrective Action Documents
CR-15-04504, NRC identifies that GL 86-10 evaluation is inadequate
CR-15-04027, NRC identifies a concern that administrative controls for DRIB/105 A&B were ineffective