



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931**

January 31, 2003

South Carolina Electric & Gas Company
ATTN: Mr. Stephen A. Byrne
Senior Vice President, Nuclear Operations
Virgil C. Summer Nuclear Station
P. O. Box 88
Jenkinsville, SC 29065

**SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION - NRC INTEGRATED INSPECTION
REPORT NO. 50-395/02-04**

Dear Mr. Byrne:

On January 4, 2003, the NRC completed an inspection at your Virgil C. Summer Nuclear Station. The enclosed report documents the inspection findings which were discussed on January 8, 2003, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified four issues of very low safety significance (Green). These issues were determined to involve violations of NRC requirements. However, because of the very low safety significance and because these issues have been entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. In addition, one licensee identified violation is listed in Section 4OA7 of this report. If you contest any NCV in this report, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the United States 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 Virgil C. Summer Nuclear Station.

Since the terrorist attacks on September 11, 2001, the NRC has issued two Orders (dated February 25, 2002, and January 7, 2003) and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance access authorization. The NRC also issued Temporary Instruction 2515/148 on August 28, 2002, that provided guidance to inspectors to audit and inspect licensee implementation of the interim compensatory measures (ICMs) required by the February 25th Order. Phase 1 of TI 2515/148 was completed at all commercial nuclear power plants during calendar year (CY) '02, and the remaining inspections are scheduled for completion in CY '03. Additionally, table-top security drills were conducted at several licensees to evaluate the impact of expanded adversary characteristics and the ICMs on licensee

protection and mitigative strategies. Information gained and discrepancies identified during the audits and drills were reviewed and dispositioned by the Office of Nuclear Security and Incident Response. For CY '03, the NRC will continue to monitor overall safeguards and security controls, conduct inspections, and resume force-on-force exercises at selected power plants. Should threat conditions change, the NRC may issue additional Orders, advisories, and temporary instructions to ensure adequate safety is being maintained at all commercial power reactors.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document 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/

Kerry D. Landis, Chief
Reactor Projects Branch 5
Division of Reactor Projects

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

Enclosure: Integrated Inspection Report No. 50-395/02-04
w/Attachment: Supplementary Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

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

Report No.: 50-395/02-04

Licensee: South Carolina Electric & Gas (SCE&G) Company

Facility: Virgil C. Summer Nuclear Station

Location: P. O. Box 88
Jenkinsville, SC 29065

Dates: September 29, 2002 through January 4, 2003

Inspectors: M. Widmann, Senior Resident Inspector
M. King, Resident Inspector
M. Scott, Senior Reactor Inspector, RII (Sections 1R12.2 and 1R17.2)
K. Davis, Physical Security Inspector, RII (Section 4OA5.3)

Approved by: K. D. Landis, Chief, Reactor Projects Branch 5
Division of Reactor Projects

Attachment: Supplementary Information

Enclosure

SUMMARY OF FINDINGS

IR 05000395/02-04; South Carolina Electric & Gas Co.; 09/29/2002 - 01/04/2003, Virgil C. Summer Nuclear Station; Surveillance Testing, Identification and Resolution of Problems.

The inspection was conducted by resident inspectors, a regional senior reactor inspector, and a regional physical security inspector. The inspection identified four Green findings, which were non-cited violations. The significance of the findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process." The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified and Self-Identified Findings

Cornerstone: Mitigating Systems

- Green. Performing a system re-alignment prior to stroke time testing two component cooling water valves resulted in the valves being preconditioned, i.e., not being tested under as-found conditions.

An inspector-identified non-cited violation of 10 CFR 50 Appendix B, Criterion XI was identified. This finding is more than minor because preconditioning can mask the as-found condition of the valves and any potential performance issues. The finding is of very low safety significance due to the limited impact that the preconditioning had on the valve stroke times. (Section 1R22)

- Green. After May 12, 2002, the licensee failed to take corrective actions to preclude repetition of high strainer differential pressure on the lube oil strainer for A emergency diesel generator (EDG). As a result, high strainer differential pressure re-occurred in September, October and November 2002. The EDG was declared inoperable in November due to the high strainer differential pressure.

An inspector-identified non-cited violation of 10 CFR 50, Appendix B was identified. The finding is more than minor because it affected the capability of the EDG to respond to initiating events i.e., loss of offsite power. The finding is of very low safety significance because of the low likelihood that a loss of offsite power event would occur and that the B train EDG was available and operable to supply onsite electrical power. (Section 4OA2.2)

- Green. Corrective actions to evaluate increased service water system pressure on internal flooding calculations addressed only the emergency diesel generator buildings. Other flooding calculations were not evaluated involving other cooling water systems, affected buildings, and other areas containing safety-related equipment which could also be impacted by increased flooding levels or spray.

An inspector-identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI was identified. The finding is more than minor because it affected the cornerstone objective to ensure the availability, reliability and capability of safety-related equipment in areas, other than the EDG building, from the effects of internal flooding. The finding is of very low safety significance because the increase in flood levels in other areas did not

adversely impact affected equipment or render them unable to perform their intended safety function. (Section 4OA5.1)

Cornerstone: Emergency Preparedness

- Green. The licensee failed to take timely corrective action to address emergency preparedness procedure deficiencies which resulted in an emergency classification misclassification of an event during training. The licensee had identified the issue in April 2001; however, corrective actions were not implemented to preclude similar misclassification errors during training sessions in September and October 2002.

An inspector-identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI was identified. The finding is more than minor because it affected the licensee's capability to properly classify an event. The finding is of very low safety significance because the misclassification of the different events was identified during training scenarios and the performance indicator for drill / exercise performance did not change thresholds. (Section 4OA2.1)

B. Licensee-Identified Violation

- One violation of very low safety significance, which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking number is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status

The unit began the inspection period at 100 percent power and operated at or near 100 percent power for the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed records and performed walkdowns of equipment to verify if the licensee was prepared for cold weather operations. A review of Condition Evaluation Reports (CERs) issued from January 1, 2000 to October 22, 2002, was performed to assess if cold weather protection heat tracing circuits problems were adequately addressed and whether chronic problems exist with this heat tracing. The inspectors reviewed recently completed inspections under Electrical Maintenance Procedure EMP-120.002, "Freeze Protection Heat Tracing Inspection." These records and data were evaluated to determine if the heat tracing circuits were working properly and if identified deficiencies were corrected. The inspectors discussed with operations and engineering personnel if the plant had experienced any significant cold weather problems last winter.

Operation Administrative Procedure (OAP)-109.1, "Guidelines for Severe Weather," was evaluated to determine if instructions adequately coordinated cold weather preparations. The inspectors also reviewed OAP-106.1, "Operating Logs," to verify provisions were in place to monitor snow and ice buildup on building roofs such that their weight would not exceed roof loading values in the Final Safety Analysis Report (FSAR).

The inspectors performed walkdowns to evaluate the physical condition of the accessible portions of the heat tracing and insulation associated with the condensate storage tank instrumentation and the refueling water storage tank (RWST). Documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Availability of Redundant Equipment

a. Inspection Scope

The inspectors verified through plant walkdowns that with a train of equipment removed from service that the opposite train of equipment was correctly aligned, available and operable. The following systems / components were verified:

- B emergency diesel generator (EDG) (while the A EDG was out of service for routine maintenance);
- Instrument air (IA) system (while temporary instrument air system was in service and following restoration upon completion of permanent plant modifications);
- B EDG following unplanned removal of the A EDG due to lube oil strainer becoming clogged during surveillance testing.

Correct alignment and operating conditions were determined from the applicable portions of drawings, system operating procedures (SOPs), final safety analysis report (FSAR), and technical specifications (TSs). The inspection included review of outstanding maintenance work requests (MWRs) and related CERs to verify that the licensee had properly identified and resolved equipment alignment problems that could impact mitigating system availability. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Semiannual Inspection

a. Inspection Scope

The inspectors performed a detailed review and walkdown of the control building air handling (AH) ventilation system, specifically the control room and relay room to identify any discrepancies between the current operating system equipment lineup and the designed lineup. In addition, the inspectors reviewed outstanding maintenance work requests and related CERs to verify that the licensee had properly identified and resolved equipment problems that could affect the availability and operability of the control building AH ventilation system. Specific procedures and documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Routine Inspection

a. Inspection Scope

The inspectors reviewed recent CERs, work orders (WO), and impairments associated with the fire suppression 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 areas:

- Heating ventilation and air conditioning (HVAC) chiller equipment rooms (fire zones IB-7.2, 9, and 23.1);
- Cable spreading rooms (fire zones CB-4 and CB-15);
- Control building cable spread rooms (fire zones CB-1.1, 1.2, CB-2, and CB-5);
- Control room and surrounding administrative areas (fire zone CB-17.1);
- Turbine driven emergency feedwater pump room (fire zone IB-25.2);
- Charging pump rooms A, B, C (fire zones AB-1.5, 1.6, and 1.7).

These areas are important to safety based on the licensee's fire risk analysis (Individual Plant Examination for External Events Internal Fires Request for Additional Information, dated January 1999).

The inspectors also observed and reviewed data for the following fire protection systems related Surveillance Test Procedure (STP) and Preventative Test Procedure (PTP) during plant status walkdowns:

- STP-228.001, "Fire Protection System Fire Pump Test," for the electric driven fire pump;
- PTP-114.020, "Auxiliary Building Charcoal Exhaust Filter System Plenum B Fire Detector Functional Test."

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Inspection

a. Inspection Scope

The inspectors observed performance of the licensee's annual fire drill that used offsite assistance on October 16, 2002, to evaluate the coordination efforts between onsite and offsite personnel. The fire drill scenario involved a simulated fire due to lightning striking causing the igniting of the main transformer cooling oil. This drill met the requirements of Emergency Plan Procedure (EP)-100, "Radiation Emergency Plan," Section 8.1.2.b, Fire Emergency Drill. The inspectors also observed a quarterly fire drill, conducted on November 7, involving a simulated fire in the safety-related A train battery room in the intermediate building to evaluate the licensee's onsite response.

The inspectors evaluated the readiness of the licensee's personnel to prevent and fight fires including the following aspects:

- Observe whether protective clothing and self-contained breathing apparatus (SCBA) 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 fire fighting directions were thorough, clear and effective, and coordinated with offsite fire team assistance;
- 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 other plant areas;
- Observe if effective smoke removal operations were simulated;
- Verify that the fire fighting pre-plans were properly utilized and were effective;
- Verify that the licensee pre-planned drill scenario was followed and the drill objectives met the acceptance criteria, and deficiencies were captured in post drill critiques.

The inspectors attended and provided feedback during a drill critique to ensure that the licensee addressed all observed areas for improvement. Recommendations and corrective actions were appropriately captured in CER 0-C-02-3388 in accordance with Fire Protection Procedure (FPP)-026, "Fire / Hazmat Response."

Documents used to conduct this inspection included:

- Virgil C. Summer FPP-026, Attachment 1, "Drill Planning Guide," Drill Scenario Number 29;
- Fire Protection Pre-Plan for Transformer Area (fire zone TA, 436' elevation);
- FPP-026, "Fire / Hazmat Response;"
- Virgil C. Summer Nuclear Station Critique for Annual Offsite Drill, October 16, 2002 and CER 0-C-02-0388;
- NRC Inspection Procedure 71111.05, "Fire Protection."

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

On October 7, 2002, the inspectors observed senior reactor operators' and reactor operators' performance on the plant simulator during licensed operator requalification training. The training scenario involved a sheared shaft on the A train charging pump, loss of feedwater booster pump, a reactor trip and safety injection, an earthquake, and steam generator C tube rupture (LOR-SA-15A). The inspectors evaluated training to verify that the scenario incorporated risk-significant operator actions, implementation of emergency classification and the emergency plan (reference Section 4OA2.1 for a finding concerning detection method guidance). The inspectors assessed overall crew performance, communication, oversight of supervision and the evaluator's critique.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

.1 Routine Evaluation (Quarterly)

a. Inspection Scope

For the equipment issues described in the CERs and nonconformance notices (NCNs) listed below, the inspectors evaluated the licensee's activities to verify the effectiveness of the corresponding preventive and corrective maintenance associated with structures, systems or components (SSCs). Inspectors performed in-office reviews of procedures and evaluations and held discussions with system engineers as appropriate to better understand implementation of the program. Inspectors compared the licensee's actions with the requirements of the Maintenance Rule (MR), 10 CFR 50.65, using Engineering Services procedure ES-514, "Maintenance Rule Implementation," and the Virgil C. Summer "Important To Maintenance Rule System Function and Performance Criteria Analysis." The inspectors' review also evaluated if maintenance preventable functional failures or other MR findings existed that the licensee did not capture in their program.

- NCNs 01-1004, 01-1179, review of Leak Detection System a(1) status goals and corrective actions (maintenance preventable functional failures for residual heat removal (RHR) sump level switches ILS1903 and 1907);
- CERs 0-C-02-0053, 0-C-02-1556, 0-C-02-1647, 0-C-02-2759, 0-C-02-3097, 0-C-02-3196, all on breaker mechanical interlock issues.

b. Findings

No findings of significance were identified.

.2 Periodic Evaluation (Biennial)

a. Inspection Scope

The inspectors reviewed the licensee's MR periodic assessment, "Virgil C. Summer Nuclear Station Maintenance Rule Periodic Assessment [Report] TR00010-004," Revision 0, dated January 10, 2002, the week of November 18, 2002. The report was issued to satisfy paragraph (a)(3) of 10 CFR 50.65, and covered the period May 11, 1999, through March 3, 2001, for the single unit. The inspection was to determine the effectiveness of the assessment and to verify that the report was issued in accordance with the time requirements of the rule. The licensee's assessment evaluated balancing reliability and unavailability, (a)(1) activities, (a)(2) activities, and use of industry operating experience. The inspectors reviewed selected MR activities covered by the assessment period to verify compliance with 10 CFR 50.65, for the following risk significant systems: Level Detection, Instrument Air, Control Room Chillers, and Air Handling.

During the inspection, the inspectors reviewed selected plant WOs, station implementing procedures, walked down several systems' related problems, discussed and reviewed relevant corrective action issues, reviewed generic operations event data, and discussed technical issues with system engineers and the probabilistic risk staff. Operational event information was evaluated by the inspectors in its use in licensee's MR activities and processes. The inspectors selected WOs and other corrective action documents of systems recently out of 10 CFR 50.65 a(1) status and those in a(2) status for some period to assess the justification for their status. The documents were compared to the station's maintenance rule criteria and the MR a(1) evaluations and rule related data bases. Specific procedures and documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's assessments of the risk impacts of removing from service those components associated with emergent work items. The inspectors evaluated the selected SSCs listed below for, (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 determination to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for the planned and emergent work activities listed below:

- A train EDG unplanned maintenance that caused a yellow equipment out of service (EOOS) risk monitor condition, and delayed work on A train RHR;
- A train charging/safety injection (SI) pump out of service and main steam valve test per STP-121.002, "Main Steam Operability Test;"
- Troubleshooting plan risk assessment (WO 0217223) during temporary modification on XVC-08330-CS, "Boric Acid CHG/SI Pump Suction Header Check Valve," including 50.59 evaluation review;
- STP-222.002, "Surveillance Test of Component Cooling Pump Test," (for A train pump) and XFN0168D, closed cycle cooling fan, out of service;
- Turbine driven emergency feedwater pump inoperable due to scheduled maintenance with station batteries XBA1A and XBA1B tested per STP-501.001, "Battery Weekly Test."

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

This inspection evaluated operator preparations and response for non-routine plant evolutions to ensure they were appropriate and in accordance with the required procedures. The inspectors also evaluated performance and equipment problems to ensure that they were entered into the corrective action program.

- Failure of B train digital rod position indication (DRPI) that caused preparation activities to commence for an unanticipated down power to < 50 percent power (CER 0-C-02-3438). No power reduction was performed due to the repair to the DRPI being completed within the TS time constraints. However, the inspectors reviewed pre-job briefs, station procedures and component MWRs initiated to verify that all the preparations and precautions were appropriately and properly planned for the emergent work activity.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations 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) where compensatory measures were involved, whether the compensatory measures were in place, would work as intended, and were appropriately controlled; and (5) the impact on TS limiting conditions for operations (LCOs) and the risk significance in accordance with the significance determination process (SDP). The inspectors reviewed the following CERs, issues and evaluations:

- 0-C-02-3176, "Voiding discovered in gravity drain line boric acid flow path to charging pump suction;"
- 0-C-02-3413, "Determination of EDG operability when paralleled with offsite power," OE 14874 Comanche Peak issue;
- 0-C-02-3669, "Limit switch on control room outside air intake damper not operating properly impacting emergency makeup capability;"
- 0-C-02-3876, "C chiller and pump test reviewed to understand if logic test had been performed in wrong sequence, thereby impacting operability."

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the licensee's list of identified operator workarounds dated February 15 and July 24, 2002 to determine whether any identified workarounds had a cumulative effect on the functional capability, reliability or availability of any related mitigating system. The inspectors also reviewed the human reliability aspect of the operator workarounds to determine the impact on the operator's ability to respond in a correct and timely manner to an initiating event. During these reviews, the inspectors specifically considered whether any identified workaround affected the operators' ability to implement abnormal or emergency operating procedures.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

.1 Plant Instrument Air System

a. Inspection Scope

The inspectors reviewed design change package engineering change request (ECR)-50464B to evaluate an upgrade and redesign of instrument air system. The modification added a demister, drain traps and associated ball valves to allow improved moisture removal. The inspectors observed portions of the modification installation while the unit was on-line and operation of temporary instrument air compressors and dryer during implementation phase of the modification. The inspectors also reviewed an associated Station Order (SO) 02-05, restricted procedure changes to Station Operating Procedure (SOP)-220, "Station and Backup Instrument Air Systems;" Abnormal Operating Procedure (AOP)-220.1, "Loss of Instrument Air," and the training material associated with the permanent plant modification. The inspectors reviewed the modification package to confirm that in-plant emergency and AOP actions were not adversely affected. The inspectors reviewed the associated 10 CFR 50.59 documentation and assessed the ECR's impact on plant risk to verify the performance capability of risk significant SSCs would not be degraded through the modification process.

b. Findings

No findings of significance were identified.

.2 Spent Fuel Pool (SFP) Reracking

a. Inspection Scope

The inspectors evaluated portions of a design change package to evaluate the modification for adverse effects on system availability, reliability, and functional capability.

During the week of November 18, 2002, the inspectors reviewed activities on the early phases of the rerack work in the SFP including modification package ECR-50183, "Spent Fuel Pool Reracking." Inspectors also reviewed several of the calculations associated with the modification for completeness, intent, and conceptual correctness. The calculations were: Holtec Bulk Temperature Analysis Report, HI-2012612, Revision 1; [Site] Calculation DC04680-024, "Spent Fuel Pool Pump Available NPSH," Revision 1; DC04680-015, "Spent Fuel Cooling HX Performance Evaluation," Revisions 1 and 2; and, DC04680-031, "SFP Pipe-FLO Model," Revision 1. The Holtec report was accepted by the licensee via letter, SCE&G to Holtec CGSV-01-0045, dated April 2, 2001. Additionally, the inspectors reviewed the temporary crane procedure (HPP-1093-11, "Procedure for Erection and Handling of the Temporary Crane for the Virgil C. Summer Rerack Project," Revision 0) during the inspection to verify the crane testing instruction's suitability. Further, the inspectors inspected the nearly completed temporary crane and SFP area to verify proper control of heavy loads and foreign material exclusion over the SFP and cask loading areas. On November 25, 2002, the inspectors also witnessed the 125 percent full load test of the temporary crane to verify the licensee met the American Society Mechanical Engineers (ASME) code requirements.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (PMT)

a. Inspection Scope

For the post-maintenance tests listed below, the inspectors reviewed the test procedure and witnessed either the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable:

- WO 216383, PMT for repair of jacket water return line piping leaks on (XEG0001A-E) A train EDG;
- WO 029717, PMT for cell (IAE08263A) replacement per STP-301.004, "Train A Containment Hydrogen Monitor Calibration;"
- WO 021157, PMT for B component cooling water pump following preventative maintenance (megger, bridge, and bearing oil change) per EMP-295.022 and STP-222.002;
- WO 218353, PMT for replacing failed 48 volt DC power supply XPN7010 for A train solid state protection system;

- WO 218433 to retest EDG jacket water temperature switch ITS15437B setpoint change per Instrumentation Control Procedure (ICP)-180.003 and ECR-70227;
- WO 219563, PMT for A EDG retest following STP-125.002A failure, lube oil strainer / filter change outs.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the surveillance tests listed below, the inspectors examined the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable:

- STP-124.001, "Control Room Emergency Air Cleanup System Operational Test;"
- STP-125.013, "Diesel Generator Semiannual Operability Test," (A train);
- STP-215.001B, "Reactor Building Personnel Escape Airlock Test;" and General Test Procedure (GTP)-007, "General Procedure for Operation of Leak Rate Monitors;"
- STP-222.002, "Component Cooling Water Pump and Valve Test;"
- STP-393.004, "Meteorological Tower Calibration;"
- STP-503.003, "Functional Test of Service Water to Emergency Feedwater Cross Connect Circuits," for valves XVG01001B-EF, XVG01002B-EF and XVG01037B-EF.

b. Findings

1. Introduction

An inspector-identified green non-cited violation (NCV) was identified for not performing stroke time testing under suitable conditions. System re-alignment prior to stroke timing two component cooling water cross-connect valves preconditioned the valves.

2. Description

The inspectors observed activities to support the swapping of operating trains of component cooling water equipment and the subsequent performance of surveillance test STP-222.002, "Component Cooling Pump Test." The test, in part, timed stroked two cross-connect valves, XVB09524B-CC and XVB09526B-CC in accordance with ASME inservice testing requirements. The inspectors questioned the licensee whether ASME stroke time testing valves after a train-swap, which cycled the valves previously, constituted preconditioning. Preconditioning is discussed in NRC Information Notice 97-16, "Preconditioning of Plant Structures, Systems, and Components before ASME Code Inservice Testing or Technical Specification Surveillance Testing;" NRC Inspection Manual, Part 9900, "Technical Guidance on Maintenance - Preconditioning of Structures, Systems, and Components before Determining Operability;" and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants." These

references state that valves are to be tested from an as-found condition which is defined to be the condition of a valve without pre-stroking or maintenance. In addition, NUREG-1482 states that inservice testing is performed in a manner that generally represents the condition of a standby component if it were actuated in the event of an accident. Stroking closed valves XVB09524B-CC and XVB09526B-CC to perform their intended accident function after they were cycled previously during the train-swap represents unacceptable preconditioning.

3. Analysis

The failure to properly test the component cooling water valves is considered more than minor because if left uncorrected the finding would become a more safety significant safety concern. Continued preconditioning if left uncorrected could allow the practice to bypass or mask the as-found condition of a valve and any potential performance issues. The finding is in the mitigating systems cornerstone. The finding was determined to be of very low safety significance (Green) due to the limited impact that the preconditioning had on the results of the surveillance test stroke time. A review of previous stroked times for both valves indicated a variance of tenths of a second between surveillance tests. Consequently, there was no impact on the valve operation due to the preconditioning.

4. Enforcement

10 CFR 50, Appendix B, Criterion XI, "Test Control," requires, in part, "that the test is performed under suitable environmental conditions." Suitable environmental conditions include conditions representative of the expected conditions when the equipment is required to perform its safety function. The cycling of component cooling water cross-connect valves XVB09524B-CC and XVB09526B-CC in support of train-swap activities prior to their ASME code and TS 4.0.5 required testing, represented a failure to test under expected conditions (i.e., the equipment was pre-conditioned). Because the finding is of very low safety significance and has been entered into the corrective action program (CER 0-C-02-3562), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 50-395/02004-01, failure to properly test the component cooling water valves resulting in preconditioning.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications to assess the impact on risk-significant SSC parameters, such as, availability, reliability and functional capability. The inspectors verified the temporary modifications had not adversely affected safety functions of required systems:

- WO 217223, Install temporary vent rig on XCV08330-CS (boric acid charging/SI pump suction header check valve) for venting, sampling and refilling the gravity drain portion of the emergency boration system;
- ECR-50464B, Installation of temporary instrument air compressor and dryer for support. Reviewed revised procedure SOP-220 to operate station and backup instrument air system.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Unplanned Power Changes per 7000 Critical Hours PI (Cornerstone: Initiating Events)

a. Inspection Scope

The inspectors assessed the accuracy of the PI for "Unplanned Power Changes per 7000 Critical Hours" through the third quarter of 2002. The inspectors reviewed selective samples of station logs, NRC inspection reports, licensee event reports, monthly operating reports, and corrective action program database for the period of June 2001 through September 2002.

b. Findings

No findings of significance were identified.

.2 Reactor Coolant System (RCS) Activity PI

a. Inspection Scope

The inspectors verified the accuracy of the PI through the third quarter of year 2002. The inspectors reviewed selective samples of station logs, RCS specific activity surveillance test records, TS requirements and corrective action program database for the period of January through September 2002.

b. Findings

No findings of significance were identified.

.3 RCS Leak Rate PI

a. Inspection Scope

The inspectors evaluated the accuracy of the PI through the third quarter year 2002 for "RCS Leak Rate." The inspectors reviewed selective samples of station logs, RCS leak rate surveillance test procedures, TS requirements and corrective action program database for the period of September 2001 through September 2002. The inspectors monitored through plant status the results of RCS leak rates on a routine basis to assess overall leakage trend. During the inspection period the inspectors observed performance of the surveillance activity (STP-114.002, "Operational Leakage Test,") that determines RCS identified leakage rate to verify reported data accuracy.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Selected Issue Follow-up Inspection - Emergency Preparedness Procedure Deficiency in Detection Method Guidance

a. Inspection Scope

Inspectors observed recent drill evaluations and Senior Reactor Operator (SRO) license activities in the area of emergency action level classifications, in part, to determine whether the licensee had provided adequate guidance to operators. The inspectors reviewed corrective actions taken within CER 0-C-02-3087 to assess the emergency procedures in the following ways:

- Complete and accurate identification of the problem in a timely manner commensurate with its significance and ease of discovery;
- Consideration of extent of condition, common cause, and previous occurrences;
- Classification and prioritization of the resolution of the problem commensurate with its safety significance;
- Identification of root and contributing causes of the problem;
- Identification of corrective actions which are appropriately focused to correct the problem;
- Completion of corrective actions in a timely manner commensurate with the safety significance of the issue.

b. Findings

1. Introduction

The inspectors identified a green NCV involving the licensee's failure to take timely corrective action to address emergency preparedness procedure deficiencies which resulted in an emergency classification mis-classification of an event during training. The licensee had identified the issue in April 2001; however, corrective actions were not implement to preclude similar mis-classification errors during training sessions in September and October 2002.

2. Description

The inspectors observed licensed operator requalification and SRO license examinations in September and October 2002. The inspectors observed instances where Shift Supervisors (SSs) failed to declare proper emergency action level classifications for security-based event scenarios. Specifically, the SSs in two scenarios declared a Site Area Emergency whereas the scenario called for an Alert classification. Due to evolving conditions of the scenario, the SSs declared a Site Area Emergency due the potential impact to their shutdown capability. Their declaration hinged on their understanding and definition of what could "affected shutdown capability." The inspectors reviewed Emergency Preparedness Procedure (EPP)-001, "Activation and Implementation of the Emergency Plan," and determined that additional guidance was

necessary to enable supervisors to consistently classify security-based events. The licensee generated CER 0-C-02-3087 as a result of the inspectors observations and concerns. However, the inspectors learned during their followup review that the licensee had previously documented the same deficiency concerning missed classified simulator scenarios. In April 2001, CER 0-C-01-0554 documented two additional instances of improperly classified event scenarios involving “affected shutdown capability.” They also involved two scenarios that required a lower classification to be declared than was declared during the scenario (i.e., Alert declared versus a Site Area Emergency). A review of actions taken to address CER 0-C-01-0554 indicated that actions proposed were transferred to another CER (0-C-01-2166) that remains open with all actions pending completion. The timeliness of these corrective actions were not appropriate to address Emergency Plan classification issues.

3. Analysis

The failure to take timely corrective actions is considered more than minor, because the finding is associated with the Emergency Preparedness cornerstone attributes and affected the cornerstone objective to ensure that the licensee was able to properly classify an event. The finding was determined to be of very low safety significance (Green) because the mis-classification of the different events was identified during training scenarios and the performance indicator for drill / exercise performance did not change thresholds.

4. Enforcement

10 CFR 50, Appendix B, Criterion XVI, states in part for significant conditions adverse to quality, that measures shall assure that the cause of the condition is determined and corrective actions taken to preclude repetition. The licensee failed to take actions to preclude repetition in September and October 2002. Because the finding is of very low safety significance and has been entered into the corrective action program (CER 0-C-02-3087), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 50-395/02004-02, failure to take timely corrective action to address emergency preparedness procedure detection methods deficiencies.

.2 Selected Issue Follow-up Inspection - Emergency Diesel Generator High Differential Pressure Across Lube Oil Strainer

a. Inspection Scope

The inspectors evaluated the immediate corrective actions of the licensee as a result of the A train EDG being declared inoperable to determine if those actions were appropriate. Specifically, the inspectors reviewed licensee actions to assess why a high lube oil strainer differential pressure (Dp) condition developed during a monthly surveillance test. The inspectors also followed-up on licensee corrective action documents CERs 0-C-02-3687 and 0-C-02-3688 to assess their effectiveness and review long term actions in the following ways:

- Complete and accurate identification of the problem in a timely manner commensurate with its significance;

- Evaluation and disposition of performance issues associated with maintenance effectiveness, including maintenance practices, work controls, and risk assessment;
- Evaluation and disposition of operability / reportability issues;
- Consideration of extent of condition, generic implications, common cause, and previous occurrences;
- Classification and prioritization of the resolution of the problem commensurate with its safety significance;
- Identification of root and contributing causes of the problem;
- Identification of corrective actions which are appropriately focused to correct the problem;
- Completion of corrective actions in a timely manner commensurate with the safety significance of the issue.

b. Findings

1. Introduction

An inspector-identified green NCV was identified for not taking evaluated as having very low safety significance (Green). This violation resulted from a failure of the licensee to take timely and adequate corrective action to address A train EDG high lube oil strainer differential pressure (Dp) condition that was recognized and documented during previous surveillance testing.

2. Description

During the April 2002 refueling outage, the licensee replaced the lube oil and the strainers in both the A and B train EDGs. A second set of strainers were installed in the A train EDG following a 24-hour surveillance test on May 12, 2002 due to an elevated Dp of 10 psid at the strainer. Vendor manual instructions for the Colt-Pielstick EDG state that strainer change-out was to occur at the 10 psid and that it is "imperative to investigate any drop in lube oil pressure at constant operating temperature." The licensee theorized that a detergent effect caused by the lube oil change-out resulted in carbon deposits being removed from the pistons heads and valves and transported to the strainer causing the high Dp condition. The same condition was not noted on the B train EDG. The licensee believes the difference in EDG lube system performance to be a function of the amount of time the A train was operated unloaded during governor troubleshooting and other maintenance activities. The licensee determined that the amount of time the A train EDG operated unloaded resulted in a buildup of carbon within the engine.

During surveillance testing on September 7 the licensee noted a high strainer Dp of 10 psid. On September 7, MWR 0211950 was generated to clean the strainer, but the work was not implemented because maintenance personnel determined that cleaning would only reduce the Dp approximately one to two psid. No further actions were taken at this time.

During surveillance testing on October 30 the licensee noted a high strainer Dp of 11 psid. Following the October 30 monthly surveillance test, MWR 0218316 was initiated to again address the high Dp condition, but the activity had yet to be planned or scheduled

when the next monthly surveillance test was performed on November 27. The inspectors noted that MWRs 0211950 and 0218316 were originally categorized as "2S" priority, but were downgraded to a "3" priority, based on the licensee's perspective that cleaning the strainers was ineffective. The priority "2S" MWRs are normally completed as quickly as possible whereas priority "3" category MWRs are worked within 30 days. The inspectors learned that the MWRs were also delayed due to a lack of available replacement strainer cartridges. The strainers were placed on the critical items order list coming out of the April - May 2002 refueling outage, but no replacements had been received until after November 27.

On November 27, 2002, during a monthly surveillance test STP-125.002A, "Diesel Generator A Operability Test," the licensee noted high lube oil strainer Dp and low lube oil supply pressure. The Dp across strainer XEG0001A-ST1 was approximately 23 psid (pounds per square inch differential) and increased to 28 psid over an one-hour period, while the corresponding EDG lube oil supply pressure decreased from approximately 83 to 79 psig. The EDG was secured and declared inoperable, based on low lube oil supply pressure to the engine. An automatic EDG trip would have occurred if lube oil supply pressure had reached 60 psig, however, the diesel was secured by the licensee when pressure fell below 80 psig. Investigation into the high Dp across the strainer revealed a collection of debris on the strainer cartridges (i.e., small grit and a black soft compound). Immediate corrective actions taken included replacement of the strainers and fiberoptic examination of the lube oil inlet and outlet piping of the strainer to verify that no additional debris were evident. No additional debris were identified.

The set of strainers which had been installed on May 12 remained in the A train EDG until November 27, even though the high Dp on September 7 and October 30, 2002, revealed that there was a recurring problem. The licensee failed to place this problem in the corrective action program on either September 7 or October 30, 2002. The licensee obtained replacement strainers from another utility in an effort to return the inoperable diesel to service prior to end of the 72-hour TS limiting condition of operation.

3. Analysis

The failure to take timely corrective actions is considered more than minor, because the finding is associated with the mitigating systems cornerstone attributes and affected the cornerstone objective to ensure availability, reliability, and capability of the EDG to respond to initiating events (i.e., loss of offsite power). The finding was determined to be of very low safety significance (Green) because of the low likelihood that a loss of offsite power event would occur and that the B train EDG was available and operable to supply onsite electrical power.

4. Enforcement

10 CFR 50, Appendix B, Criterion XVI, states in part for significant conditions adverse to quality, that measures shall assure that the cause of the condition is determined and corrective actions taken to preclude repetition. The licensee failed to take adequate corrective actions after May 12, 2002, to preclude repetition of the high differential pressure condition which occurred on September 7, October 30, and November 27, 2002. The licensee failed to place the recurring high Dp problem into the corrective action program on September 7 or October 30. In addition, the licensee did not have the necessary parts onsite to address the condition and had not planned or scheduled

the maintenance activity with the appropriate priority given the importance of EDGs. Because the finding is of very low safety significance and has been entered into the corrective action program (CERs 0-C-02-3687, 0-C-02-3688, 0-C-02-3698, and 0-C-02-3713), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 50-395/02004-03, failure of the corrective action program to adequately evaluate flood protection design control problems.

4OA3 Event Followup

a. Inspection Scope

The inspectors reviewed the events and licensee activities in response to the failure of the A train EDG due to low lube oil supply pressure to ascertain whether those activities were appropriate.

b. Findings

The inspectors reviewed and documented identified issues in the previous section of this report (Section 4OA2.2).

4OA5 Other

- .1 (Closed) Unresolved Item (URI) 50-395/02002-02: failure of the corrective action program to adequately evaluate flood protection design control problems. The inspectors questioned the licensee actions pertaining to addressing flooding concerns of all safety-related / risk-significant rooms as a result of increased flood heights and water spray distances. The licensee had originally identified that in April 2002 service water modifications had increased system pressure and had affected flood levels in the diesel generator building. However, the corrective actions: 1) failed to evaluate flood levels and revise the associated calculations for other cooling water systems, affected buildings, and other areas containing safety-related equipment and 2) failed to evaluate the cause for not maintaining design control and assuring that the revised design basis was propagated through all effected design documents.

As a result of NRC questions, the licensee initiated development of the necessary calculations to better understand the extent of condition of the flooding impacts. The inspectors reviewed the revised calculations for the affected areas and concluded that if a water pipe break occurred in the service water, component cooling water, feedwater or chill water systems, there would be no adverse impact on equipment in the area or overall system operation.

The issue is more than minor because the finding is associated with the mitigating system cornerstone attributes and affected the cornerstone objective to ensure availability, reliability and capability of safety-related equipment in areas, other than the EDG building, from the effects of internal flooding from service water, component cooling water, feedwater or chill water systems. However, the determination that the new flood height and spray distances would have no adverse impact mitigated the finding to very low significance (Green) in accordance with the Significance Determination Process. 10 CFR 50, Appendix B, Criterion XVI, states in part that

measures shall be established to assure that conditions adverse to quality are to be promptly identified and corrected. The licensee failed to take adequate corrective actions to perform an evaluation of the impact of increased system pressure on flooding within buildings other than the emergency diesel generator building and to revise the affected calculations. Because the finding is of very low safety significance and has been entered into the corrective action program (CER 0-C-02-1329), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 50-395/02004-04, failure to take adequate corrective actions to perform an evaluation of the impact of increased system pressure on flooding within buildings other than the emergency diesel generator building and to revise the affected calculations.

.2 Response to Contingency Events: observance of a Security / Local Law Enforcement Agency (LLEA) Integrated Exercise

The NRC issued an Order (February 25, 2002) to all nuclear power plant licensees, requiring them to take certain additional interim compensatory measures to address the generalized high-level threat environment since the attacks on the World Trade Center and the Pentagon. To date, the inspectors have monitored the South Carolina Electric & Gas Company's actions in response to the terrorist attacks through a series of audits and inspections (see also Section 40A5.3).

The resident inspectors observed an onsite Security / LLEA Integrated Exercise (drill) conducted on November 15, 2002. The purpose of the exercise was to evaluate the ability of the Virgil C. Summer Nuclear security organization to interface with the response organizations of State, and Local Law Enforcement agencies during a simulated security event. The residents provided feed back to the licensee during the drill critique process.

This observation did not constitute an inspection, however, feedback was provided to NRC security inspectors responsible for upcoming planned inspections and audits designed to evaluate Virgil C. Summer's compliance with the interim compensatory measures and the February 25, 2002 Order and provide the NRC with reasonable assurance that public health and safety and security continued to be adequately protected.

.3 Temporary Instruction (TI) 2515/148, Appendix A, Pre-inspection Audit for Interim Compensatory Measures (ICMs) at Nuclear Power Plants

The inspectors conducted an audit of the licensee's actions in response to a February 25, 2002 Order, which required the licensee to implement certain interim security compensatory measures. The audit consisted of a broad-scope review of the licensee's actions in response to the Order in the areas of operations, security, emergency preparedness, and information technology as well as additional elements prescribed by the TI. The inspectors selectively reviewed relevant documentation and procedures; directly observed equipment, personnel, and activities in progress; and discussed licensee actions with personnel responsible for development and implementation of the ICM actions.

The licensee's activities were reviewed against the requirements of the February 25, 2002 Order; the provisions of TI 2515/148, Appendix A; the licensee's response to the Order; and the provisions of the NRC-endorsed NEI Implementation Guidance, dated July 24, 2002.

No findings of significance were identified. A more in-depth review of the licensee's implementation of the February 25, 2002 Order, utilizing Appendix B and C of TI 2515/148 is scheduled for March 2003.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. S. Byrne and other members of the licensee's staff on January 8, 2003. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violation

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as an NCV.

10 CFR 50 Appendix B Criterion III requires, in part, that measures be established to assure applicable design basis, design documents (including calculations) be properly controlled. The licensee failed to correctly incorporate plant design into loss of coolant accident (LOCA) dose calculations. Specifically, RHR and Charging/SI pump seal leakage was not considered in the LOCA dose calculations (all leakage was assumed to be routed to a drain tank with no release to auxiliary building atmosphere). This had the potential to affect post-LOCA offsite and control room doses in excess of regulatory limits. Because the probability of a large break LOCA is very low and the operational leakage rates for the pumps in question would not have resulted in LOCA offsite or control room dose analysis exceeding regulatory limits, this violation is not more than of a very low significance and is being treated as a non-cited violation. This issue was entered into the licensee corrective program under CERs 0-C-01-1664 and 0-C-02-1819.

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Archie, General Manager, Engineering Services
F. Bacon, Manager, Chemistry Services
L. Blue, Manager, Health Physics Services
M. Browne, Manager, Nuclear Licensing and Operating Experience
D. Gatlin, Manager, Operations
G. Halnon, General Manager, Nuclear Plant Operations
L. Hipp, Manager, Nuclear Protection Services
D. Lavigne, General Manager, Organization Effectiveness
N. Lorrick, President and Chief Operating Officer, SCE&G
G. Moffatt, Manager, Design Engineering
K. Nettles, General Manager, Nuclear Support Services
W. Stuart, Manager, Plant Support Engineering
A. Torres, Manager, Planning / Scheduling and Project Management
R. White, Nuclear Coordinator, South Carolina Public Service Authority
S. Zarandi, Manager, Maintenance Services

ITEMS OPENED AND CLOSED

Opened and Closed

50-395/02004-01	NCV	failure to properly test the component cooling water valves resulting in preconditioning (Section 1R22)
50-395/02004-02	NCV	failure to take timely corrective action to address emergency preparedness procedure detection methods deficiencies (Section 4OA2.1)
50-395/02004-03	NCV	failure to take timely corrective action on A train EDG high lube oil strainer differential pressure condition (Section 4OA2.2)
50-395/02004-04	NCV	failure to take adequate corrective actions to perform an evaluation of the impact of increased system pressure on flooding within buildings other than the emergency diesel generator building and to revise the affected calculations (Section 4OA5.1)

Closed

50-395/02002-02	URI	failure of the corrective action program to adequately evaluate flood protection design control problems (Section 4OA5.1)
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Discussed

2515/148 TI Appendix A, Pre-inspection Audit for Interim Compensatory Measures (ICMs) at Nuclear Power Plants (Section 4OA5.3)

List of Documents Reviewed**Section 1R01 - Adverse Weather**Document

- FSAR Section 2.3.1.3, "Severe Weather;"

Procedures

- Annunciator Response Procedure (ARP)-002-XPN-6031;
- Electrical Maintenance Procedure (EMP)-120.001, "Heat Tracing;"
- EMP-120.002, "Freeze Protection Heat Tracing Inspection;"
- Operation Administrative Procedure (OAP)-109.1, "Guidelines for Severe Weather;"

Maintenance Work Requests

- 0120062, Add heat tracing on valve XVT00846A, circulating water pump;
- 0211202, Replace missing insulation on XVG000813F traveling screen;
- 0211203, Replace missing insulation on service water chemical injection line;
- 0211205, Replace missing insulation on RWST pit wall penetration;
- 0211206, Replace missing insulation on IPS04658 at turbine closed cycle cooling tower;
- 0211199, Repair damaged cable in RWST pit;
- 0211207, Repair heat tracing on breaker XPN5206 for sodium hydroxide tank.

Condition Evaluation Reports

- 0-C-00-0181, Circulating water pump lube water pressure control;
- 0-C-00-0306, Condensate makeup freeze protection lineup affecting demineralized level;
- 0-C-01-0035, B train circulating water pump valve freezing;
- 0-C-01-1981, Freeze protection walkdown equipment issues;
- 0-C-02-2728, Condensate storage tank freeze protection plan not in accordance with engineering documents.

Section 1R04 - Equipment AlignmentDocuments

- ECR-50464B, Instrument Air Modification;
- FSAR Section 6.4.1, "Habitability System Functional Design;"
- FSAR Sections 8.3.1, 3.11.4, 9.3.1, 9.4, 14.1.3.1;

- FSAR Section 9.4.1, "Control Building Ventilation System;"
- FSAR Section 9.4.1.2.2, "Relay Room System;"
- FSAR Section 15.4.1.4.4, "Radiological Consequences to Control Room."

Drawings

- D-302-271, "Instrument Air;"
- D-302-273, "Reactor Building Instrument Air Services;"
- D-302-274, "Instrument Air Backup;"
- D-302-351, "Diesel Generator - Fuel Oil;"
- D-302-351, "Diesel Generator - Miscellaneous Services;"
- D-802-065, "Control Room Normal and Emergency Air Handling System and Main Control Room Damper Control Function Diagram;"
- D-912-136, "Relay and Computer Room Cooling System;"
- D-912-140, "Control Room Normal and Emergency Air Handling System Flow Diagram."

Procedures

- Abnormal Operating Procedure (AOP)-220.1, "Loss of Instrument Air," and associated
- Annunciator Response Procedures (ARP)-001-XCP-606, 607;
- GTP-302, "Inservice Testing of Valves Second Ten Year Interval;"
- Station Operating Procedure, (SOP)-121, "Reactor Building Instrument Air Services;"
- SOP-220, "Station and Backup Instrument Air Systems;"
- SOP-306, "Emergency Diesel Generator;"
- SOP-307, "Diesel Generator Fuel Oil System;"
- SOP-505, "Control Building Ventilation System;"
- STP-105.014, "Train A Slave Relay Go Circuit Testing;"
- STP-124.001, "Control Room Emergency Air Cleanup System Operability Test;"
- STP-130.005B, "Air Handling Operability Test (Mode 5);"
- STP-224.004, "Backup Air Supply Accumulator Check Valve Test for Control Outside Air Intake Isolation Valves;"
- STP-454.002B, "Control Room Emergency Air Cleanup System Performance Test;"
- TS Sections: 3.6.1.1, 3.8.1, 4.0.5, 4.3.2.1, 4.6.4.1, 4.6.4.3 and 4.7.6.

Nonconformance Notice

NCN 99-1289, Control Ventilation System Outside Air Problems

Condition Evaluation Reports

- 0-C-00-0107, AH valve closure time not consistent with FSAR stated design requirement;
- 0-C-00-0413, XFN0032A tripped on overload;
- 0-C-00-0935, Train A CR ventilation bypass damper not controlling properly;
- 0-C-00-1013, while performing RMA-1 operational test, XFN0030A fan breaker tripped;
- 0-C-00-1177, Train A CR emergency fan tripped during STP-360.031;
- 0-C-00-1292, During performance of STP-454.002, outside air measurement was greater than 1000 cfm;
- 0-C-00-1320, failed surveillance test (STP-224.004A) for XVB00003A-CVI-AH;

- 0-C-01-0059, Train B CR ventilation fan tripped; 01-1346, fan tripped within seconds after starting;
- 0-C-02-0177, with XFN0032A fan running, noise level affecting 3-way communication.
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1R12.2 (Biennial) Documents Reviewed

Corrective Action Program Documents

Condition Evaluation Report

- 0-C-01-1400, Document Maintenance Rule Cause Evaluation for CER C-00-413;
- 0-C-00-0187, XHX001C would not Reduce Chilled Water Temperature;
- 0-C-01-2316, CER is to Document Review of Unplanned Capability Loss Factor;
- 0-C-01-2134, CER Documents two ES-514 Cause Determinations;
- 0-C-02-2500, ILS01929 would not Actuate;
- 0-C-02-3175, ILS01921 Failed to Provide its Maintenance Rule Function;
- 0-C-01-2142, CER is Generated for Cause Evaluation;
- 0-C-02-3258, Trip of "A" Instrument Air Compressor;
- 0-C-02-0053, PIP/NCN Described a Functional Failure;
- 0-C-02-3568, OE14944 - Lubrication Vendor Leads;
- 0-C-02-3097, Failure of Reactor Head Vent Valve XVT08096B.

NonConformance Notice

02-1708, ES-514 Cause Determination for "B" Chiller Broken Shaft.

Technical Work Record

- RS14830, Breaker Mechanical Interlock Sticking, date 9-26-02;
- MT17700, Magnetrol Level Switches.

Procedures

- Engineering Services, ES-514, "Maintenance Rule Program Implementation," Revision 2;
- Probabilistic Risk Assessment Procedure, PSA-08, PRA Model Updates, Revision 2;
- SAP-1120, "Operating Experience," Revision 4;
- SAP-1131, "Corrective Action Program," Revision 3.

Quality Assurance

- AP-913, Equipment Reliability Self Assessment, dated 10/31/02;
- Bench Marking Assist Visit Report, C-02-3436, dated 11/01/02;
- QA-Aud-200108-0, Support Engineering Support, dated 10/30/2001 [C-01-1937].

Miscellaneous

TR00010-003, "Virgil C. Summer Nuclear Station Maintenance Rule Second Period Assessment," Revision 0, November 7, 1997 to May 11, 1999.