UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

June 13, 2003

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

SUBJECT: V. C. SUMMER NUCLEAR STATION - NRC INSPECTION REPORT 50-395/03-07

Dear Mr. Byrne:

On May 16, 2003, the NRC completed an inspection regarding the application for license renewal for your Summer facility. The enclosed report documents the inspection findings, which were discussed on May 16, 2003, with members of your staff in an exit meeting open for public observation at the V. C. Summer Nuclear Training Center.

The purpose of this inspection was an examination of activities that support the application for a renewed license for the Summer facility. The inspection consisted of a selected examination of procedures and representative records, and interviews with personnel regarding the process of scoping and screening plant equipment to select equipment subject to an aging management review. For a sample of plant systems, inspectors performed visual examination of accessible portions of the systems to observe any effects of equipment aging.

The inspection concluded that the scoping and screening portion of the license renewal activities were conducted as described in the License Renewal Application and that documentation supporting the application is in an auditable and retrievable form. With the exception of the items identified in this report, your scoping and screening process was successful in identifying those systems, structures, and components required to be considered for aging management.

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).

Should you have any questions concerning this letter, please contact Caudle Julian at 404-562-4603.

Sincerely,

\\RA

Victor M. McCree, Deputy Director
Division of Reactor Projects

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

Enclosure: Inspection Report 50-345/03-07

cc w/encl: See page 3

cc w/encl:
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No:	50-395
License No:	NPF-12
Report No:	50-395/03-07
Licensee:	South Carolina Electric & Gas Company
Facility:	V. C. Summer Nuclear Station
Location:	P.O. Box 88 Jenkinsville, SC 29065
Dates:	May 12 - 16, 2003
Inspectors:	R. Moore, Senior Reactor Inspector M. Scott, Senior Reactor Inspector K. Van Doorn, Senior Reactor Inspector H. Wang, Operations Engineer, NRR
Approved by:	Caudle Julian Team Leader Division of Reactor Safety

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SUMMARY OF FINDINGS

IR 05000395-03-07; 5/12-16/2003; South Carolina Electric & Gas Company; V. C. Summer Nuclear Station; License Renewal Inspection Program, Scoping and Screening.

This inspection of License Renewal (LR) activities was performed by four regional office engineering inspectors, and one staff member from the office of Nuclear Reactor Regulation. The inspection program followed was NRC Manual Chapter 2516 and NRC Inspection Procedure 71002. This inspection did not identify any "findings" as defined in NRC Manual Chapter 0612.

The overall conclusion of this inspection was that the license renewal scoping and screening process was successful. The inspection did reveal the following discrepancies in the applicant's supporting documentation.

The inspectors found that the list of mechanical plant systems used as the basis for the license renewal application (LRA) contains many (approximately 25) systems which are not actually installed in the plant. LRA table 2.2-1 lists most of the actual plant systems and an additional group of about 25 systems that were never actually installed in the plant. Technical report TR00160-001, MECHANICAL SYSTEMS SCOPING FOR LICENSE RENEWAL, ATTACHMENT I: MECHANICAL SYSTEM SCOPING RESULTS contains the same list of systems. This TR is an applicant document that provides part of the engineering bases for the LRA. The applicant initiated a Condition Evaluation Report (CER) 0-C-03-1666 to take corrective action to correct erroneous information in the various documents. The results of this CER will be reviewed during a future inspection. This issue was communicated to NRR for their information and further action.

Document TR00160-002, Borated Water Systems, contained several examples where component table entries for pump suction strainers say the strainers are not in LR scope because the strainers have been removed from the system. The inspectors learned that only the strainer internals were removed after system flush and the strainer body remains in the system. The inspectors expressed the view that the strainer bodies should still be in LR scope for the pressure boundary function. The applicant stated agreement with the inspector's views and initiated CER-0-C-03-1667 to revise the document.

In walking down plant systems and examining plant equipment the inspectors found no significant adverse conditions and it appears plant equipment was being maintained adequately.

Attachment 1 to this report contains a partial list of persons contacted and a list of documents reviewed. The systems and structures selected for review during this inspection are listed in Attachment 2 to this report. Attachment 3 is a list of acronyms used in this report.

Report Details

I. Inspection Scope

This inspection was conducted by NRC Region II inspectors and members of the NRR staff to interview applicant personnel and to examine a sample of documentation which supports the license renewal application (LRA). This inspection reviewed the results of the applicant's scoping of plant systems and screening of components within those systems to identify the list of components that need evaluation for aging management. The team selected a sample of plant systems, structures, and components (SSC) from the LRA scoping results to verify the adequacy of the applicant's scoping and screening documentation and implementation activities. For the selected in-scope systems/structures, the associated boundary drawings, and the active/passive and short/long lived determinations of the selected SSCs were reviewed to confirm the accuracy of the applicant's results. In addition to the in-scope systems and structures, some systems that the applicant had determined not to be in scope for license renewal were selected for inspection. The inspectors reviewed supporting documentation and interviewed applicant personnel to confirm the accuracy of the LRA conclusions. For a sample of plant systems and structures, inspectors performed visual examination of accessible portions of the systems to observe any effects of equipment aging.

II. Findings

A. Evaluation of Scoping and Screening of Mechanical Systems

The inspectors evaluated the applicant's scoping and screening process for mechanical components by reviewing a number of plant systems that the applicant determined to be within the scope of license renewal (LR). The applicant performed scoping at the system level by first identifying safety-related (SR) mechanical systems via review of the equipment data base called Computerized History and Maintenance Planning System (CHAMPS), system drawings, and other design information. In addition, through review of the CHAMPS and other license basis information, non-nuclear-safety-related (NNS) mechanical systems which could adversely affect safety-related systems were identified and systems committed to support the five NRC regulated events in 54.4(a)(3) were identified.

After system scoping, screening was accomplished by: establishment of LR system boundaries by creating, from official station drawings, highlighted license renewal boundary drawings: identifying components and component groups subject to an aging management review using CHAMPS; and identification of intended LR function(s) of each mechanical component. The screening process and results were documented in individual Technical Reports (TRs) organized by internal environment with attachments covering specific systems.

1. Non-Existent Plant Systems

The inspectors found that the list of mechanical plant systems used as the basis for the license renewal application contains many (approximately 25) systems which are not actually installed in the plant. The list was apparently extracted from a Design Engineering Guideline DB-02 titled ABBREVIATIONS, ACRONYMS, AND SYMBOLS, Revision 0 Change C. The stated purpose of the DB-02 document was to "establish standard abbreviations, acronyms, and symbols, regarding tagging and naming of equipment, for use in Virgil C. Summer Nuclear Station (VCSNS) databases and other controlled documents unless defined otherwise by

document owners." Change A had an effective date of 9/19/96 so DB-02 is a rather old document. Attachment IV of DB-02 is a two page table titled VCSNS SYSTEM DESIGNATOR / ABBREVIATION. The table lists most of the actual plant systems and an additional group of about 25 systems that were never actually installed in the plant. This table was apparently used as the source document for composing Table 2.2-1 "MECHANICAL SCOPING RESULTS" of the LRA. The table contains a column headed "Mechanical Systems in License Renewal Scope" and each system is designated in the column as yes or no. All the non existent systems are marked no with no further information provided. This would lead a reader to conclude that the applicant decided that a system is not in scope for license renewal rather than the system doesn't exist. The inspectors pointed out to the applicant that this situation could lead to some confusion for individuals reviewing the LRA and cause one to question the overall accuracy of the LRA.

Technical report TR00160-001, MECHANICAL SYSTEMS SCOPING FOR LICENSE RENEWAL, ATTACHMENT I: MECHANICAL SYSTEM SCOPING RESULTS contains the same list of systems included in document DB-02. This TR is an applicant document that provides part of the engineering bases for the LRA. In the "NOTES" column beside each non existent system there is a note saying "System listing, from DB-02, is inactive and/or no components were identified". The applicant stated that this note was intended to communicate that the electronic equipment data base CHAMPS has the system marked as inactive with no equipment associated with the system and that the system doesn't actually exist in the plant. The inspectors stated that this note did not clearly communicate to them the intended meaning. The inspectors questioned why the non existent systems were included in the LRA and basis documents at all since they are not part of plant design. No clear reason was identified.

The applicant initiated a Condition Evaluation Report (CER) 0-C-03-1666 to take corrective action to correct erroneous information in the various documents. The results of this CER will be reviewed during a future inspection. This issue was communicated to NRR for their information and further action.

2. Non-Safety Equipment Potentially Affecting Safety Related Equipment

Subsequent to the initial LR application, additional NRC guidance was issued for consideration of the effects of NNS systems on SR systems, such as via spray, leakage, pipe whip, jet impingement, flooding, and displacement/falling. The inspectors reviewed the applicant's methodology for inclusion of NNS mechanical systems in scope which could affect SR systems which was documented in TRs and a supplement to the application, RC-02-0159, dated September 12, 2002. The applicant's methodology consisted of: determining all areas where SR and NNS systems were located in the same area via review of the D-303-200 drawing series, Building Composites for Safe Shutdown and Accident Mitigation Essentials; considering all NNS systems within these areas to be in scope for LR; and confirming via documentation and walkdowns which NNS systems were in proximity to SR systems for screening considerations. For those additional systems and NNS portions of SR systems added which had existing credited aging management programs, the applicant simply credited the existing program. In some cases, these systems were added as an expanded scope for already proposed new programs such as Liquid Waste System Inspection and Inspections for Mechanical Components. One new program, Area Based Inspections for Refined 10CFR54.4(a)(2) Criteria, was added for portions of five systems as a result of the review. The inspector reviewed portions of the Building Composite drawings, reviewed applicable TRs, and discussed the process with responsible applicant personnel. The inspectors concluded that the applicant had added the appropriate NNS equipment for aging management.

3. Visual Observation of Plant Equipment

Areas containing the following systems/structures were observed for effects of aging:

Chemical and Volume Control System
Residual Heat Removal System
Service Water System
Emergency Feedwater
Condensate System
Feedwater System
Main Steam System
Main Steam Dump System
Diesel Generators
Liquid Waste Processing System
Gaseous Waste Processing System
Service Water System
Fire Service Pumphouse
Service Water Pumphouse
Service Water Intake Structure
Electrical Transformer Area

No significant material condition problems were noted during the field observations.

4. Scoping and Screening Basis Document Review

The bases documents supporting the scoping and screening results for the following mechanical systems were reviewed:

a. Reactor Coolant System (RCS) (including Reactor Vessel and Internals; Incore Instrumentation; Pressurizer; and Steam Generators)

These systems are designed to contain and support the nuclear fuel, contain the reactor coolant, and transfer heat produced in the reactor to the steam and power conversion systems for the production of electricity. The applicant essentially considered all of these system/components to be in the scope of LR. The inspectors reviewed LR boundary drawings, the Updated Final Safety Analysis Report (UFSAR), engineering documentation, and associated TR information. The inspectors concluded that the applicant had performed scoping and screening for these systems and identified the mechanical components subject to aging management in accordance with the methodology described in the LRA and the rule.

b. Chemical and Volume Control System (CS) (including the CS Vents and Drains System)

The CS System functions to provide high head emergency core cooling injection, reactor coolant pump seal injection, maintain proper RCS inventory, adjust RCS boron concentration, and maintain RCS chemistry control. Essentially all of the system has been included for LR aging management due to being SR or NNS affecting SR systems. The inspectors reviewed LR boundary drawings, the UFSAR, and TR information. The inspectors also conducted field observations of the system. The inspectors concluded that the applicant had performed scoping and screening for these systems and identified the mechanical components subject to aging management in accordance with the methodology described in the LRA and the rule.

c. Spent Fuel Cooling System (SF)

The SF System functions primarily to remove decay heat from the spent fuel pool and to maintain pool inventory and is largely a SR system. The applicant included the SR portions of the system in scope, excluding the demineralizer portion. The inspectors reviewed the LR boundary drawings, the UFSAR, and TR information. The inspectors concluded that the applicant had performed scoping and screening for these systems and identified the mechanical components subject to aging management in accordance with the methodology in the LRA and the rule.

d. Residual Heat Removal System (RH), Safety Injection System (SI), and Refueling Water System (RW)

The RH System functions to remove heat from the RCS during normal plant shutdown conditions, provides borated water to RCS during a design basis accident, and recirculates water from the containment sump during a postulated loss of coolant accident. The SI System includes the piping and valves which provide the discharge flow path from RH and CS for RCS injection after a postulated accident and also includes accumulators and associated components for each RCS loop. The RW System includes the Refueling Water Storage Tank and associated piping and components which provide a source of borated water for RCS injection. Essentially all of these systems were determined to be in scope and require aging management. The inspectors reviewed LR boundary drawings and TR information and conducted field observation of the RH system. The inspectors noted that for pump suction strainers listed for these systems, the licensee had listed these as not in scope. The reasoning was that the drawing note stated the strainer used for construction flush had been removed. However, only the internals of the strainers had been removed and the strainer body, still in the field and shown on the drawings was still in place. The applicant stated that this was an error and would be corrected. The applicant initiated CER-0-C-03-1667 to revise the document. Except for the strainer problem, which the applicant plans to correct, the inspectors concluded that the applicant had performed scoping and screening for these systems and identified the mechanical components subject to aging management in accordance with the methodology described in the LRA and the rule.

e. Reactor Building Spray System (SP)

The SP System functions in the event of a LOCA to remove heat from containment, reduce containment overpressure, and reduce airborne iodine. Essentially all of this system was determined to be in scope and requiring aging management. The inspectors reviewed LR boundary drawings and TR information. The inspectors concluded that the applicant had performed scoping and screening for this system and identified the mechanical components subject to aging management in accordance with the methodology described in the LRA and the rule.

f. Nuclear (ND) and Non-Nuclear (MD) Plant Drain Systems

The ND System maintains containment isolation and provides reactor cavity drainage. The MD System provides circulating water pump trip capabilities in the event of area flooding. Both systems provide fire water drainage and holdup. The MD System was considered in scope for the pump trip function but not requiring aging management since the components were considered active. The SR containment penetration portion of ND was considered in scope and requiring aging management. The inspectors reviewed LR boundary drawings, design basis

information, and TR information. The inspectors concluded that the applicant had performed scoping and screening for these systems and identified the mechanical components subject to aging management in accordance with the methodology described in the LRA and the rule.

g. Nuclear Sampling System (SS)

The SS System provides sampling capability for RCS and containment atmosphere and maintains pressure boundary and containment integrity. Portions of the system are SR and therefore considered in scope and requiring aging management. The inspectors reviewed LR boundary drawings and TR information. The inspectors concluded that the applicant had performed scoping and screening for these systems and identified the mechanical components subject to aging management in accordance with the methodology described in the LRA and the rule.

h. Circulating Water (CW)

The CW system removes thermal energy from the main and auxiliary condensers and dissipates this energy to the Monticello Reservoir. This system is not required to function under plant emergency or fault conditions. The LR function is to provide level indication in the main amertap pit in the Turbine Building that will trip the CW pumps to prevent flooding in the Intermediate and Control Buildings. The level indication was identified as in-scope in the application but screened out as not requiring aging management review in TR00160-003, Treated Water Technical Report. The inspectors reviewed the system scoping and screening documents, design basis information, applicable UFSAR sections, and system boundary drawings. The inspectors concluded that the applicant had performed scoping and screening for the CW system in accordance with the LRA and the Rule.

i. Emergency Feedwater (EF)

The EF system is designed to deliver sufficient feedwater to the steam generators subsequent to a loss of the normal feedwater supply and during an anticipated transient without scram (ATWS) event. The components included in the LR scope for aging management review are identified in LRA Table 2.3-40. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the EF system in accordance with the LRA and the Rule.

j. Condensate System (CO)

The CO system is designed to pump condensed turbine exhaust steam (condensate) from the main condenser hotwell via low pressure heaters to the deaerator storage tank to maintain level for anticipated operating conditions. The LR function of the system is limited to the condensate storage tank (CST) which is the primary inventory source for the Emergency Feedwater (EF) system. The component subject to aging management review (CST) is identified in LRA Table 2.3-39. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the CO system in accordance with the LRA and the Rule.

k. Feedwater System (FW)

The FW system is designed to pump feedwater from the deaerator storage tank via high pressure heaters to the steam generators to maintain an adequate steam generator level during normal plant operation and transients. The LR function for this system include containment isolation, reliable isolation of the main feed pump discharge path, and pressure boundary integrity. The in-scope portion of the system is identified in drawing D-302-083 and includes the nuclear safety class piping located in the Intermediate Building. The components subject to aging management review are identified in LRA Table 2.3-42. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the FW system in accordance with the LRA and the Rule.

l. Main Steam System (MS)

The MS system conveys saturated steam from the three steam generators to the turbine generator and via branch lines to the feedwater pump turbines, EF pump turbine, and the steam relief path for heat removal and steam generator depressurization. The system equipment included in the LR scope for aging management review is identified in LRA Table 2.3-44. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the MS system in accordance with the LRA and the Rule.

m. Main Steam Dump System (MB)

The MB system provides the capability to sustain a large turbine generator load reduction without a reactor trip using steam bypass flow paths to the main condenser or atmosphere. The LR function is to provide an alternate main steam isolation for a Mains Steam Line Break, if one of the Main Steam Isolation Valves fail to fully close. The components included in the LR scope for aging management review are identified in LRA Table 2.3-45. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the MB system in accordance with the LRA and the Rule.

n. Diesel Generator Services (DG)

The DG system consists of the emergency diesel generators and the systems providing mechanical support functions. The mechanical support functions include lube oil, fuel oil, cooling water, air intake and exhaust, starting air, and crank case vacuum. The LR function of the DG system is to provide emergency power to the IE onsite buses during a loss of offsite power. The system components included in the LR scope for aging management review are identified in LRA Table 2.3-23. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the DG system in accordance with the LRA and the Rule.

o. Liquid Waste Processing System (WL)

The WL system collects, segregates, and processes reactor grade and non-reactor grade liquid wastes produced during plant operation, refueling, and maintenance activities. The system is designed to control and minimize releases of radioactivity to the environment. The LR intended functions are to maintain pressure boundary integrity with the interfacing component cooling and spent fuel pool cooling systems and containment isolation. The system components included in the LR scope for aging management review are identified in LRA Table 2.3-28. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the WL system in accordance with the LRA and the Rule.

p. Gaseous Waste Processing System (WG)

The WG system removes fission product gases from the rector coolant in the volume control tank and collects gases from the boron recycle and waste evaporators, reactor coolant drain tanks, recycle holdup tanks, and reactor vessel. The LR functions for WG are containment isolation and pressure boundary integrity for the interfacing component cooling and chemical and volume control systems. The system components included in the LR scope for aging management review are identified in LRA Table 2.3-26. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, system boundary drawings, and performed a system field walk down to assess the present material condition of equipment. The inspectors concluded that the applicant had performed scoping and screening for the WG system in accordance with the LRA and the Rule.

q. Air Handling and Local Ventilation and Cooling Systems (AH)

The LR in-scope AH systems include the following HVAC systems:

Control Building Ventilation System
Reactor Building Cooling and Filtering System
Auxiliary and Radwaste Area Ventilation System
Fuel Handling Building Ventilation System
Engineered Safety Features Ventilation System
Intermediate Building Ventilation System
Miscellaneous building Ventilation and Cooling system
Turbine Building Ventilation System.

The LR functions for the AH systems include ventilation, cooling, filtration, and maintaining air quality in spaces containing safety related equipment or occupied during normal and emergency plant conditions. The AH components included in the LR scope for aging management review are identified in LRA Table 2.3-18. The inspectors reviewed the system screening and scoping documents, design basis information, applicable UFSAR sections, and system boundary drawings, The inspectors concluded that the applicant had performed scoping and screening for the AH systems in accordance with the LRA and the Rule.

r. Component Cooling (CC)

This closed loop cooling system removes heat from several safety-related systems, non-safety systems, and components. It's associated heat exchanger is cooled by Service Water. With minor exception, the entire system is within license renewal scope. The inspectors examined the portions of the system not included in scope and detailed system drawings indicating component locations that were not in scope to verify that those portions were properly evaluated. The primary intended functions of the CC system are: provide cooling for essential equipment; provide the reactor coolant pump thermal barrier flow; maintain containment integrity via isolable system valves; and, provide cooling to residual heat removal system. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, scoping documents, and application details. The inspectors determined that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

s. Service Water (SW) System

SW is an open cycle cooling loop that removes heat from various safety-related systems, non-safety-related systems, and components. With expected exceptions (turbine building, air compressor systems' cooling, etc.), the system is within scope under license renewal. The primary intended functions of the system are: provide cooling water to safety-related heat loads, e.g., emergency diesel generators; maintain containment integrity; and provide a back up source of water to the fire protection and emergency feedwater systems. The inspectors walked down the major piping runs of the system finding them in generally good condition. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, scoping evaluations, and application details. The inspectors determined that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

t. Instrument and Service Air (IA, SA) Systems

These compressed air systems provide air for normal system operations and outage uses. Their critical functions for other off normal conditions identified during the licensee renewal scoping review are: containment isolation for containment integrity; provide a reliable source of instrument air to operate critical valves; and, provide air of sufficient quality for smooth air operated component operation. The majority of these systems' components are not in scope and this was found to be acceptable by the inspectors. Off-normal air motive force for critical component operation (e.g., pressurizer power operated relief valves) is provided by instrument air contained in pressurized accumulators isolated by check valves. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, generic interface documents, and scoping documents. The inspectors determined that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

u. Fuel Handling (FH), Nuclear

The components of this assemblage support fuel movement in and out of containment. The fuel transfer tube is normally blind flanged when fuel is not being moved [power operation]. The primary intended functions of this assemblage are: maintain the ability to safely transfer fuel; maintain fuel pool leak-tight integrity; and maintenance of containment integrity. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, generic interface documents, and scoping documents. The inspectors determined

that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

v. Radiation Monitoring (RM) System

The RM system monitors and analyzes process and effluent flows to assist in the prevention of unintended release of radioactive material to the public. It monitors the component cooling, spent fuel cooling and chemical and volume control systems. With minor exceptions, the system is in scope. The primary intended functions are pressure boundary maintenance with the monitored systems and post accident monitoring capability for containment activity. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, generic interface documents, and scoping documents. The inspectors determined that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

w. Hydrogen Removal (HR)

The HR components control the potential post accident hydrogen accumulation in containment following a loss of coolant accident. The primary components are the hydrogen recombiners located inside of the containment. The piping and valves, that run from containment to the hydrogen analyzer, are also in scope. Pressure sensing tubing from containment to transmitters outside the containment is in scope. The system's primary intended functions are: maintain containment isolation for containment integrity; monitor and control hydrogen concentration within prescribed limits; and provide indication of containment pressure. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, generic interface documents, and scoping documents. The inspectors determined that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

x. Leak Detection (LD)

Undetected leaks from the Engineered Safety Features Systems in the auxiliary building could have adverse effects upon the safety functions of these systems. For this reason, means for detecting leakage is provided. With the issue of the applicant's letter RC-02-0159 (September 12, 2002), additional piping came in scope on systems that support leak detection. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, generic interface documents, and scoping documents. The inspectors determined that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

y. Reactor Building Leak Rate Testing

This assemblage consists of a containment penetration and two blind flanges. The safety-related assemblage maintains containment integrity. When containment pressure testing is required, the access piping is the point of pressurization. The inspectors reviewed the license renewal boundary drawings, system descriptions, applicable UFSAR sections, generic interface documents, and scoping documents. The inspectors determined that the system was appropriately scoped in the application, TRs, and associated boundary drawings.

B. Evaluation of Scoping and Screening of Electrical Systems

The inspectors observed that the scoping and screening of electrical systems employed significantly different methods than the mechanical or structural disciplines. During this inspection the inspectors reviewed Technical Reports TR00150-001, Electrical Systems Scoping for License Renewal and TR00150-002, Electrical Screening for License Renewal. These documents described how the applicant accomplished scoping and screening of electrical commodities to determine those needing an aging management review. Electrical components at VCSNS are classified as either Class 1E, as defined in industry electrical standard IEEE-380 or as Non-Nuclear Safety (NNS). Class 1E is the safety classification of the electrical equipment and systems that are essential to emergency reactor shutdown, containment isolation, reactor core cooling, and containment and reactor heat removal, or are otherwise essential in preventing significant release of radioactive material to the environment. All electrical systems that contain equipment classified as Class 1E were considered to be safety-related and are within the scope of license renewal. Class 1E equipment was identified through a review of the VCSNS component database.

A listing of electrical component commodity groups for the electrical and I&C systems within the scope of license renewal at VCSNS as well as active/passive determinations were developed following the guidance of NEI 95-10, Appendix B. No commodity groups, beyond those listed in Appendix B of NEI 95-10, were identified for VCSNS. Only the commodity groups that perform a passive function are subject to aging management review. The passive electrical commodity groups were reviewed to identify those commodity groups or components that are not subject to replacement based on a limited qualified life or specified time period. Most electrical components included in the VCSNS Environmental Qualification (EQ) Program do not meet the long-lived screening criterion of 10 CFR 54.21(a)(1)(ii). Consequently, the insulated cables and connections, terminal blocks, and electrical portions of electrical and I&C containment penetration assemblies within the scope of the VCSNS EQ program were not subject to an aging management review.

The results of the screening effort identified the following electrical and I&C commodity groups or subgroups that require an aging management review:

- Non-EQ Insulated Cables
- Non-EQ Connectors
- Non-EQ Splices
- Non-EQ Electrical Penetration Assemblies
- Non-EQ Terminal Blocks
- High Voltage Electrical Switchyard Bus
- High Voltage Transmission Conductors and Connections
- High Voltage Insulators

The applicant concluded that all of the other electrical and I&C commodities identified for VCSNS are either active, are subject to replacement based on a qualified life or specified time period, or do not perform any intended safety functions and are thus not subject to aging management review. The inspectors agreed with this conclusion.

C. Evaluation of Scoping and Screening of Structural Components

The applicant documents its scoping and screening methodology and results in Technical Reports, TR00170-001 and TR00170-002, respectively. Section 3.0 of TR00170-001 contains the methodology and results of the scoping for structures. Section 5.0 of TR00170-002 describes the grouping of structures and structural components. They are: concrete in air environment, concrete in fluid environment, steel in air environment, steel in fluid environment, fire barriers, earthen structures, and elastomers. This section also contains the structures and structural components screening methodology and the screening results are listed in Appendix II.

a. Auxiliary Building

The Auxiliary Building (AB), as described in Section 2.4.2.1 of the LRA, is a seismic category I structure with four foot thick reinforced concrete mat supported by filled concrete down to competent rock and reinforced concrete shear walls. There are two large tanks supported by the AB. They are the Refueling Water Storage Tank and the Reactor Make-up Water Storage Tank. The West Penetration Access Area, which houses the containment personnel airlock, is located in the southeastern portion of the AB. The applicant concluded that the entire AB is within the scope of license renewal due its intended safety functions as listed on Page 158 of the LRA. As listed in Appendix II of TR00170-002, all structural components in the AB require an AMR. The inspectors agreed with this determination.

b. Hot Machine Shop

The Hot Machine Shop, which is a non-seismic category I structure located just north of the AB was originally considered to be within the scope of license renewal. The applicant decided later that the Hot Machine Shop does not perform any intended safety function and concluded it to not be in the scope of license renewal. The inspectors agreed with this determination.

c. Reactor Building and Internal Structures

The Reactor Building (RB), as described on Page 54 of TR00170-002, is a post tensioned, reinforced concrete structure with an integral steel liner. The RB shell has three large hatches; the 16 foot ID equipment hatch, the 9 foot OD personnel airlock, and a 5 foot OD personnel emergency airlock. There are numerous penetrations of the RB shell, including the main steam and feedwater lines, the fuel transfer tube, and electrical penetrations. The RB internal structure consists of the primary shield wall, the secondary shield wall, refueling cavity and fuel transfer canal, polar crane support, and concrete base mat and floors. The foundation mat of the RB is a reinforced concrete mat with a thickness of 12 foot and is supported on filled concrete to bedrock. The RB performs many intended safety functions and the applicant assesses it is within the scope of license renewal. The inspectors agreed with this assessment. Structural components contained within the RB requiring an AMR are listed in Appendix II of TR00170-002.

d. Diesel Generator Building

Section 2.4.2.3 of the LRA describes the Diesel Generator Building (DGB) as a seismic category I structure. The superstructure is a reinforced concrete shear wall structure containing three main floor levels above the foundation mat, and a roof designed to withstand the various combinations of dead and live loads. The reinforced concrete foundation mat is supported on

reinforced concrete caissons drilled to competent rock. The LRA states that the DGB is in the scope of license renewal because it performs several license renewal intended safety functions. Table 2.4-5 of the LRA lists all the DGB structural component types subject to aging management review. The inspectors agreed with this decision.

e. Control Building

Section 2.4.2.2 of the LRA describes that the Control Building (CB) as a seismic category I structure. The superstructure of the CB is a steel frame structure with concrete exterior shear walls containing four main floor levels and a concrete roof. The structure is designed to withstand the various combinations of dead and live loads, design basis event loads, and other generic design criteria loads as defined in the UFSAR. The CB is in the scope of license renewal because it performs many license renewal intended safety functions, such as provides fire barriers to contain the spreading of fire, provides shelter for safety related components, provides structural support for safety related equipment, provides shielding against radiation, etc. Appendix II of TR00170-002 provides a list of the CB structural components and their intended safety functions. The applicant determined that the entire CB is within the scope of license renewal. The inspectors agreed with this decision.

f. Intermediate Building

The Intermediate Building (IB) lays between the Reactor Building and the Turbine Building. The IB is a seismic category I structure and is designed to withstand all the combinations of dead, live, and design basis event loads. As described in Section 6.3 of TR00170-002, the IB superstructure is a L-shaped reinforced concrete shear wall structure containing two main floor levels above the foundation. The IB has a low roof and a partial concrete third floor with a high roof. The IB has a reinforced concrete foundation which is supported by concrete caissons drilled to competent rock. Part of the IB is called the East Penetration Access Area where two of the three the main steam and feedwater lines penetrate the RB. The main steam lines join together at the IB to a common header prior to entering the Turbine Building as depicted on Drawing E001-022. The applicant determined that the IB is within the scope of license renewal and the inspectors agreed with that decision.

g. Yard Structures

The Yard Structures that are determine to be within the scope of license renewal at VC Summer Nuclear Station include the Condensate Storage Tank Foundation, Electric Manhole MH-2, Fire Service Pumphouse, and Earthen Embankments (the North Berm and the Service Water Pond Dams and Embankments).

g. 1 Condensate Storage Tank Foundation

The Condensate Storage Tank (CST) foundation is a 4 foot thick reinforced concrete mat supported by fill material. An integral reinforced concrete ring wall, with an outside diameter of 49.5 foot and 2 foot high by 2.5 foot wide, directly supports the CST. The CST is secured by 80 equally spaced 2.5 inch diameter and 2.5 foot long bolts. Since the CST is safety related, the applicant assessed that the CST foundation is within the scope of license renewal. The inspectors agreed with this assessment.

g. 2 Electrical Manhole MH-2

Electrical Manhole MH-2 is mostly below grade. It is a non-seismic reinforced concrete structure consisting of one foot thick walls and foundation mat. MH-2 contains and supports safety related 1E and non safety related cables for the service water pumps. The applicant assesses that MH-2 is within the scope of license renewal and the inspectors agreed with this assessment.

g. 3 Fire Service Pumphouse

The Fire Service Pumphouse is a concrete block building founded upon the reinforced concrete Circulating Water Intake Structure. This structure houses one electric motor-driven fire pump and one diesel engine-driven fire pump. The fire pumps are part of the station fire protection requirements. The applicant correctly determined that the Fire Service Pumphouse is within the scope of license renewal and the inspectors agreed with this decision. The inspectors walked down the Fire Service Pumphouse and found the structure is in adequate condition.

g. 4 Service Water Pond Dams

The Service Water Pond (SWP) is formed by three earthen dams (the North Dam, the South Dam, and the East Dam) and the West Embankment. The SWP serves as the ultimate heat sink for the plant. Section 6.10.1 of TR00170-002 describes that the three dams and the West Embankment are homogeneous earth structures. The West Embankment merges with the west abutments of the North and South Dams. The dams and the West Embankment are designed as seismic category I structures and are capable resisting Operational Basis and Safe Shutdown Earthquake seismic loads. A single-line grout curtain is installed along the centerline of the North Dam to prevent seepage of water into or out off the SWP to Monticello Reservoir. The applicant concluded that the three dams and the West Embankment are within the scope of license renewal because they are safety related. The inspectors agreed with this assessment.

g. 5 North Berm

The shoreline along Monticello Reservoir north of the plant and west of the north dam is extended to elevation 438’-0" by a 3 foot high earthen dike, called the North Berm, constructed above the 435’-0" site grade, as described in Section 6.10.2 of TR00170-002. The primary function of the North Berm is to protect the site from the potential of external flooding from Monticello Reservoir. The maximum wave action from the reservoir during a worst scenario storm could be over the site grade and flood the plant. Failure of the North Berm could prevent safety related structures and components from performing their intended functions if flooded, therefore, the applicant determined that the North Berm is within the scope of license renewal. The inspectors agreed with this assessment.

h. Service Water Structures

This group of structures includes the Service Water Intake Structure, the Service Water Discharge Structure, and the Service Water Pumphouse.

h. 1 Service Water Intake Structure

The Service Water Intake Structure (SWIS), as described on Page 70 of TR00170-002, is a reinforced concrete rectangular box culvert with two reinforced concrete wing walls at the intake end. An expansion joint separates the SWIS from the Service Water Pumphouse to accommodate relative settlement and seismic movement. The inspectors walked down the accessible part of the SWIS and found that the material condition of the above water portion of the SWIS is good. The applicant determined that the SWIS is within the scope of license renewal and the inspectors agreed with that decision.

h. 2 Service Water Discharge Structure

The Service Water Discharge Structure (SWDS) is a rectangular reinforced concrete basin mostly buried in the West Embankment of the Service Water Pond. A 2 foot thick foundation mat forms the floor of the basin. The four sides of the basin are formed by walls of different heights. Service water is discharged to the SWDS through two 30" diameter service water pipes. The SWDS was designed to withstand various combinations of loads. The applicant determined that the SWDS is within the scope of license renewal and the inspectors agreed with that decision.

h. 3 Service Water Pumphouse

Section 6.8 of TR00170-002 describes the Service Water Pumphouse (SWPH) as a reinforced concrete building containing three floor levels above the foundation mat and the roof. The SWPH houses the service water pumps that pump water from the Service Water Pond to supply the service water system. The SWPH is separated from the SWIS, from buried connecting pipes, and electrical duct banks by flexible joints to accommodate relative settlement and seismic movement. The inspectors walked down the accessible portion of SWPH and found the material condition to be good. The applicant assessed that the SWPH is within the scope of license renewal and the inspectors agreed with that assessment.

i. Electrical Substation

Section 2.4.2.8.5 of the LRA describes the Electrical Substation yard, located south of the Turbine Building, which contains power circuit breakers, transformers, bus lines, electrical switching equipment, and their supports (transmission towers, concrete foundations, etc.). The transformer area within the site protected area is treated as part of the Electrical Substation for license renewal purposes. The Electrical Substation and Transformer Area provide structural support to non-safety related components required for recovery from a station blackout (SBO), therefore, the applicant determined this area is within the scope of license renewal. The inspectors agreed with that assessment. However, the inspectors pointed out to the applicant that only part of the transformers located in the Transformer Area are within the scope of license renewal. The transformers assessed to be in scope are the 115 kV transformer and the Emergency Auxiliary transformer. The main transformers located in the same yard are not in scope. The applicant agreed with the inspectors. The inspectors also walked down the Transformer Area and found the structural supports for the bus lines and transformers are in good material condition. The inspectors did not walk down the Substation due the plant being in the process of restart following a trip. The inspectors will complete the walk down in August, 2003 during the AMP inspection.

j. Fuel Handling Building

The Fuel Handling Building (FHB) is constructed of reinforced concrete, steel, and metal siding. The reinforced concrete mat foundation is supported by reinforced concrete piers on the south and west sides, and by reinforced concrete caissons on the north and east sides. The FHB superstructure is a steel frame structure containing two floor levels and a roof. The FHB is a seismic category I structure and houses various safety related and non-safety related equipment including the spent fuel pool. The applicant determined that the FHB is within the scope of license renewal and the inspectors agreed.

j. 1 Turbine Building

The Turbine Building (TB) is a non seismic category I structure comprised of reinforced concrete and steel. The reinforced concrete foundation mat is supported by fill material. The superstructure of steel framing, metal siding, and metal roof deck is supported on reinforced concrete substructure. The feedwater pumps pedestal and the turbine generator pedestal are supported separately. The applicant assessed the TB to be within the scope of license renewal due to housing non-safety related equipment near safety related equipment and fire protection equipment. The inspectors agreed with that decision.

k. Circulating Water Structures

This group of structures included the Circulating Water Intake Structure, the Circulating Water Pumphouse, and the Circulating Water Canal

k. 1 Circulating Water Intake Structure

The Circulating Water Intake Structure (CWIS) is a reinforced concrete structure located on the north side of the plant on the shore of Monticello Reservoir. The CWIS provides a means to supply cooling water to the main and auxiliary condensers. The structure is non-seismic and it does not provide any license renewal intended safety functions. The applicant correctly assessed that the CWIS is not in the scope of license renewal.

k. 2 Circulation Water Pumphouse

The Circulating Water Pumphouse (CWPH) houses and supports the circulating water pumps which provide cooling water to the main and auxiliary condensers. The CWPH does not perform any license renewal intended safety functions and the applicant assessed that the CWPH is not within the scope of license renewal. The inspectors agreed with that decision.

k. 3 Circulating Water Discharge Canal

In order to dissipate the impact on water temperature of Monticello Reservoir, the circulating water is discharged through a long canal prior to merging with the reservoir. The Circulating Water Discharge Canal (CWDC) is a earthen dike connecting the discharge pipes to the Circulating Water Discharge Structure. The main function of the CWDC is to carry discharged circulating water to the reservoir and it does not perform any license renewal intended safety function. The applicant correctly assessed that the CWDC is not within the scope of license renewal.

D. Evaluation of Scoping and Screening of Fire Protection Systems

The inspectors examined boundary diagrams which show the evaluation boundaries for the portions of fire protection systems that the applicant concluded are within the scope of license renewal. The inspectors found no significant discrepancies in the fire protection equipment highlighted as being in LR scope on the boundary drawings. NRR, however, has issued an RAI to the applicant questioning why certain additional fire protection equipment is not in scope for LR. These contested items are the following.

1. Jockey Pump XPP-1333-FS including the FP piping, fittings up to the first isolation valve in the drawing (D-302-231, Sht 1)

2. FP piping, fittings, and valves and fire hose connections in the reactor building, intermediate building, Fuel handling building and auxiliary building (D-302-231, Sht 3)

3. The FP piping, fittings, valves, and fire hose connections in the turbine building (D-302-231, Sht 4)

4. The FP piping, fittings, and valves in turbine building south area at EL 412 (D-302-231, Sht 5)

5. Deluge water spray systems - deluge valve station in the turbine building (1MS-55-059)

During the scoping inspection the above out-of-scope items were resolved and the applicant agreed to bring these items into the LRA scope. The RAI responses are yet to be issued and the applicant agreed to revise their draft response to reflect that the above equipment is in LR scope.

Exit Meeting Summary

The results of this inspection were discussed on May 16, 2003, with members of the applicant staff in an exit meeting open for public observation at the V. C. Summer Nuclear Training Center. The applicant acknowledged the results presented and presented no dissenting comments. The inspectors asked if any of the applicant materials reviewed were proprietary and were told none were proprietary.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Applicant

M. Browne, Manager Nuclear Licensing
S. Byrne, Senior Vice President Nuclear Operations
R. Clary, Manager, Plant Life Extension
S. Crumbo, Senior Engineer
M. Dantzler, Engineer
G. Halnon, General Manager Nuclear Plant Operations
J. LaBorde, Senior Engineer
T. Matlosz, Manager, Organizational Development & Performance
A. Paglia, Supervisor, Plant Life Extension
F. Rehrig, Manager Quality Systems
R. White, Nuclear Coordinator, Santee-Cooper Public Service Authority
R. Whorton, Senior Engineer

NRC

R. Auluck, Senior project Manager
C. Fong, Reactor Inspector
R. Hannah, RII Public Affairs Officer
T. Liu, Project Manager
R. Subbaratnam, Project Manager
M. Widmann, Senior Resident Inspector

Public

M. Gandy, South Carolina Department of Health
and Environmental Control

LIST OF DOCUMENTS REVIEWED

License Renewal Boundary Drawings

E-302-601, Reactor Coolant, Rev. 15
E-302-602, Reactor Coolant System, Rev. 26
D-302-812, ECCS Check Valve Testing, Rev. 16
D-302-606, Reactor Coolant Pumps Oil Collection System, Rev. 0
1-MS-44-014, Bottom Mounted Instrument Standard Layout, Rev. 1
E-302-671, Chemical and Volume Control, Rev. 7
E-302-672, Chemical and Volume Control, Rev. 7
E-302-673, Chemical and Volume Control, Rev. 14
E-302-674, Chemical and Volume Control, Rev. 10

E-302-675, Chemical and Volume Control, Rev. 19
E-302-676, Chemical and Volume Control, Rev. 9
E-302-677, Chemical and Volume Control, Rev. 9
E-302-751, Boron Recycle, Rev. 16
1-MS-12-004, Charging/Safety Injection Pumps, Rev. 2
D-302-651, Spent Fuel Cooling, Rev. 39
E-302-641, Residual Heat Removal, Rev. 14
E-302-691, Safety Injection, Rev. 10
E-302-692, Safety Injection, Rev. 11
E-302-693, Safety Injection, Rev. 18
D-302-861, Post Accident Hydrogen Removal and Alternate Purge System, Rev. 30
D-302-661, Reactor Building Spray System, Rev. 31
D-302-821, Reactor & Auxiliary Building Sump Pumps, Rev. 26
D-302-352, Non -Nuclear Plant Drains, Rev. 26
D-302-771, Nuclear Sampling, Rev. 35
D-302-772, Normal and Post Accident Sampling, Rev. 19
D-912-102, R. B. Cooling System, Rev. 20
D-302-085, Emergency Feedwater Piping System Flow Diagram, Rev. 40
D-302-101, Condensate Piping system Flow Diargram, Rev. 50
I-MS-17-125, Terry Diagram - Oil Piping (EFW Pump), Rev. 1
D-302-Feedwater Piping System Flow Diagram, Rev. 47
D-302-181, Turbine Cycle Sampling Piping System Flow Diagram, Rev. 13,
D-302-012, Main Steam System (non-nuclear) Piping System Flow Diagram, Rev. 24
D-302-011, Main Steam System (nuclear) Piping System Flow Diagram, Rev. 34
D-302-014, Main and Reheat Steam (non-nuclear), Rev. 9
D-302-351, Diesel Generator (DG) Fuel Oil Piping System Flow Diagram, Rev. 10
1-MS-32-005, DG Starting and Control Air System Piping System Flow Diagram, Rev. 20
1MS-32-005, sheet 7, DG Intercooler and Injector Cooling, Rev. 15
1-MS-32-005, sheet 4, DG Jacket Water System, Rev. 16
D-302-353, DG Miscellaneous Services Piping System Flow Diagram, Rev, 11
1-MS-302-005, sheet 3, DG Lube Oil System, Rev. 20
D-302-222, Service Water Cooling Piping System Flow Diagram, Rev. 42
E-302-745, Catalytic hydrogen Recombiner B Piping System Flow Diagram, Rev. 3
E-302-741, Waste Processing Piping System Flow Diagram, sheet 1, Rev.16
E-302-742, Waste Processing Piping System Flow Diagram, sheet 3, Rev.11
E-302-744, Catalytic Hydrogen Recombiner A Piping System Flow Diagram, Rev. 3
1MS-09-012, AL-623C Waste Gas Compressor, Rev. 11
D-912-136, Relay and Computer Room Cooling, Rev. 21
D-192-138, Battery Room and Charging Room BOP Charger Area, Rev. 14
D-912-139, CRDM Switchgear Room Cooling system, Rev. 10
D-912-140, Normal and Emergency air Handling System, Rev. 28
D-912-141, Technical support center and Main Control Board Ventilation system, Rev. 4
D-912-155, Service Water Intake Screen and Pump House Ventilation system, Rev. 16
D-806-001, Atmospheric Radiation Monitoring System Diagram, Rev. 7
D-912-134, DG Areas Ventilation system, Rev. 10
D-912-132, Auxiliary Building Pump Room Cooling System, Rev. 21
D-912-131, Fuel Handling Bldg. Charcoal Exhaust system and Air Supply Distribution, Rev. 22
D-912-158, Intermediate Bldg. General Ventilation Pump Area Cooling Systems, Rev. 15
D302-611, Component Cooling System[RM], Rev. 31
D-302-612, Component Cooling System [Reactor Building], Rev. 23
D-302-613, Component Cooling System [Non ESS Equipment Cooling], Rev. 19

D-302-614, Component Cooling System [to NSSS Pumps], Rev. 13
D-302- 221, Service Water Cooling System, Rev. 20
D-302- 222, Service Water Cooling System, Rev. 42
D-912-155, Service Water Intake Screen & Pump House building Ventilation System, Rev. 16
D-302-842, Chilled water system, Rev. 17
D-806-005, Radiation Monitoring System, Rev. 8
D-806-005, Radiation Monitoring System [Liquid], Rev. 8
D-806-010, Radiation Monitoring System Diagram Area Gamma, Rev. 7
D-302-811, Reactor Building Leak Rate Testing System, Rev.9
D-302-311, Nitrogen Blanketing, Rev. 12
B-816-051, Instrument Air Supply Diagram [Intermediate Building], Rev. 4
D-302-271, Instrument Air Flow Diagram, Rev. 4
B-616-001, Instrument Air Auxiliary Building, Rev. 10
D-302-273, Reactor Building Instrument Air Services, Rev. 11
D-302-274, Instrument Air Backup, Rev. 11
D-302-241, Station Service Air Services, Rev. 31
D-302- Station Air Supply to CO2 Personnel, Emergency Personnel & Equipment Hatch Service
1-MS-94B-045, Vendor Manual - Hydrogen Recombiner
B-817-026, Control Air Tubing Diagram, Rev. 13
B-817-042, Control Air Tubing Diagram, Rev. 10
B-817-047, Control Air Tubing Diagram, Rev. 6
B-817-048, Control Air Tubing Diagram, Rev. 11
B-817-056, Control Air Tubing Diagram, Rev. 13
B-817-130, PZR PORV Control Air Supply Tubing Diagram, Rev. 0

Plant Drawings

E-534-501, Hot Machine Shop Steel Framing, Rev 3
E-434-091, Hot Machine Shop - Foundation Concrete Outline and Reinforcement Placing, Rev. 0
E-036-001, Plot Plan, Rev. 59
E-026-102, Service Water Intake Screen and Pump House and Sections, Rev. 24
E-001-021, Auxiliary, Reactor & Fuel Handling Buildings Plan Above Mezzanine Floor EL 436'-0", Rev. 53
E-001-022, Intermediate BLDG & Diesel Generator BLDG Plan Above Mezzanine Floor EL 436'-0", Rev. 46
E-001-033, Turbine Building Operating Floor Plan Above EL 463'-0", Rev. 26
E-001-061, Building Arrangement Drawing, Rev. 22
E-026-101, Condensate Circulating Water Intake Screen & Pump House, Rev. 16

License Renewal Technical Reports

TR00150-001, Electrical Systems Scoping for License Renewal, Rev. 0
TR00150-002, Electrical Screening for License Renewal, Rev. 0
TR00160-001, Mechanical Systems Scoping for License Renewal, Rev. 0
TR00160-018, Refined 10CFR Part 54.4(a)(2) Criteria Evaluations for License Renewal, Rev. 0
TR00160-002, Mechanical Component Screening for License Renewal (Borated Water Systems), Rev. 0 and the Mechanical Component Screening Results attachments for the following systems:

I. Boron Recycle System
II. Chemical and Volume Control System, Including Vents and Drains
III. Fuel Handling, Refueling Water, and Spent Fuel Cooling Systems
VI Liquid Waste Processing System
VII. Nuclear Plant Drains
VIII. Nuclear Sampling System
X. Reactor Building Spray System
XI. Roof Drains System
XII. Reactor Coolant System, Class 1 Piping and Components
XII-1. Reactor Coolant Pumps
XII-2. Pressurizer
XII-3. Reactor Vessel and CRDM Boundary
XII-4. Reactor Vessel Internals
XII-5. Steam Generators
XIII. Reactor Coolant System, Non-Class 1 Piping and Components
XIV. Residual Heat Removal System
XV. Safety Injection System

TR00160-003, Mechanical Component Screening for License Renewal (Treated Water Systems) Rev. 0 and the following attachments

Attachment VII, Mechanical Component Screening Results for the Emergency Feedwater System, Rev. 0
Attachment IV, Mechanical Component Screening Results for the Circulating Water System, Rev. 0
Attachment VI, Mechanical Component Screening Results for the Condensate System, Rev. 0
Attachment X, Mechanical Component Screening Results for the Feedwater System, Rev. 0
Attachment XIII, Mechanical Component Screening Results for the Main Steam System, Rev. 0

TR00160-007, Mechanical Component Screening for License Renewal (Ventilation Systems), Rev. 0
TR00160-006, Mechanical Component Screening for License Renewal (Air/gas Systems), Rev. 0

Attachment VII, Mechanical Component Screening Results for the Gaseous Waste Processing, Rev. 0

TR-00160-005, Mechanical Component Screening for License Renewal (Lube/Fuel Oil Systems), Rev. 0

Attachment III, Mechanical Component Screening Results for the Emergency Diesel Generator System, Rev. 0

TR00160-004, Mechanical Component Screening for License Renewal (Raw Water Systems), Rev. 0
TR00160-13, Mechanical Component Aging Management Review for License Renewal (Treated Water Systems)

Attachment VI, Radiation Monitoring, Rev. 0

Attachment IV, Component Cooling system, Rev. 0

TR00170-001, Structures Scoping for License Renewal, Rev. 0
TR00180-002, Structures Screening for License Renewal, Rev. 0

License Renewal Procedures

ES-701, Mechanical System Scoping for License Renewal, Rev. 1
ES-702, Mechanical Component Screening for License Renewal, Rev. 1

Support References

Design Basis Document for Drains, Sumps, and Leak Detection, Rev. 2

WCAP-14577, License Renewal Evaluation Aging Management for Reactor Internals, Rev. 1A

Letter SCE&G to NRC, ATTN: Mr. Rajender Auluck, RC-02-0159, Criteria 2 Supplement to the Application for Renewed Operating License, September 12, 2002

ATTACHMENT 2

VIRGIL C. SUMMER NUCLEAR STATION

LICENSE RENEWAL INSPECTION PLAN
MECHANICAL SYSTEMS

System Name	System in License Renewal Scope ?
AH - Air Handling (HVAC)	Yes
CC - Component Cooling	Yes
CO - Condensate	Yes
CS - Chemical and Volume Control	Yes
CV - Chemical & Volume Control Vents & Drains	Yes
CW - Circulating Water	Yes
Diesel Generator Fuel	No
DG - Diesel Generator Services	Yes
EF - Emergency Feedwater	Yes
FH - Fuel Handling	Yes
FS - Fire Service	Yes
FW - Feedwater	Yes
GE - Gas Sampling	No
HR - Hydrogen Removal, Post Accident	Yes
IA - Instrument Air	Yes
IC - Incore Instrumentation (Tubes/Thimbles)	Yes
IV - Isolation Valve Seal Water	No
LD - Leak Detection	Yes
LR - Reactor Building Leak Rate Testing	Yes
MB - Main Steam Dump	Yes
MS - Main Steam	Yes
ND - Nuclear Plant Drains	Yes
PC - Penetration Cooling (Liquid)	No
PP - Penetration Pressurization	No
RC - Reactor Coolant	Yes
RH - Residual Heat Removal	Yes
RM - Radiation Monitoring	Yes
RW - Refueling Water	Yes
SA - Station Service Air	Yes
SF - Spent Fuel Cooling	Yes
SI - Safety Injection	Yes
SP - Reactor Building Spray	Yes
SS - Nuclear Sampling	Yes
SW - Service Water	Yes
WG - Gaseous Waste Processing	Yes
WL - Liquid Waste Processing	Yes

VIRGIL C. SUMMER NUCLEAR STATION

LICENSE RENEWAL INSPECTION PLAN
STRUCTURAL

Structure Name	Structure in License Renewal Scope ?
Auxiliary Building [includes Refueling Water Storage Tank & Reactor Makeup Water Storage Tank foundations & West Penetration Access Area (WPAA), all of which are part of the Auxiliary Building structure]	Yes
Condensate Storage Tank (CST) Foundation - Yard structure	Yes
Control Building	Yes
Diesel Generator Building	Yes
Electrical ManHole MH-2 - Yard structure	Yes
Electrical Substation (230 KV substation 2000 amp bus 1 power circuit breaker)	Yes
Fire Service Pumphouse - Yard structure	Yes
Fuel Handling Building	Yes
Intermediate Building [includes East Penetration Access Area (EPAA), which is part of the Intermediate Building structure]	Yes
North Berm - Yard structure	Yes
Reactor Building (includes interior structures)	Yes
Service Water Pond Dams (North Dam, South Dam, East Dam) and West Embankment - Yard structures	Yes
Service Water Discharge Structure	Yes
Service Water Intake Structure	Yes
Service Water Pumphouse	Yes
Transformer Areas (South of Turbine Building) Foundation	Yes
Transmission Towers & Foundation (Emergency Auxiliary Transformers to 230 KV substation 2000 amp bus 1 power circuit breaker)	Yes
Turbine Building	Yes

VIRGIL C. SUMMER NUCLEAR STATION

LICENSE RENEWAL INSPECTION PLAN
STRUCTURAL (CONT.)

Structure Name	Structure in License Renewal Scope ?
Circulating Water Discharge Structure	No
Circulating Water Discharge Canal	No
Circulating Water Intake Structure	No

VIRGIL C. SUMMER NUCLEAR STATION

LICENSE RENEWAL INSPECTION PLAN
ELECTRICAL SYSTEMS

System Name	System in License Renewal Scope ?
BP - Balance of Plant I&C	Yes
CE - Control Room Evacuation Panel	Yes
CR - Rod Control & Position System	Yes
DG - Diesel Generator Services	Yes
EC - Grounding & Cathodic Protection	No
ED - DC Distribution	Yes
EM - Miscellaneous AC Distribution	Yes
EP - Emergency Power	No
ES - Electrical System	Yes
ET - Heat Tracing	Yes
EV - AC Vital Buses (120 Volt Distribution)	Yes
MC - Main Control Board	Yes
MI - Misc. Instrumentation (Pressure Flow Monitor System only)	Yes
MI - Misc. Instrumentation (Incore Temperature Monitoring System)	Yes
MI - Misc. Instrumentation (Reactor Vessel Level Indication System)	Yes
NI - Nuclear Instrumentation	Yes
PS - Plant Surveillance	Yes
RM - Radiation Monitoring	Yes
RP - Reactor Protection Control System	Yes
SG - Engineered Safety Features	Yes
TS - Substation	Yes
XI - Process Instrumentation/Control	Yes

ATTACHMENT 3

LIST OF ACRONYMS USED

AB	Auxiliary Building
AH	Air Handling
AMR	Aging Management Review
CB	Control Building
CC	Component Cooling Water System
CER	Condition Evaluation Report
CHAMPS	Computerized History and Maintenance System
CO	Condensate System
CST	Condensate Storage Tank
CS	Chemical and Volume Control System
CW	Circulating Water System
CWDC	Circulating Water Discharge Canal
CWIS	Circulating Water Intake Structure
CWPH	Circulating Water Pump House
DG	Diesel Generator
DGB	Diesel Generator Building
ECCS	Emergency Core Cooling Systems
EF	Emergency Feedwater System
EQ	Environmental Qualification Program
FH	Fuel Handling Nuclear System
FHB	Fuel Handling Building
FW	Feedwater System
HR	Hydrogen Removal System
IA	Instrument Air
IB	Intermediate Building
LD	Leak Detection System
LR	License Renewal
LRA	License Renewal Application
MB	Main Steam Dump System
MD	Non-Nuclear Plant Drain System
MS	Main Steam System
ND	Nuclear Drain System
NNR	Non Nuclear Safety Related
NRR	NRC Office of Nuclear Reactor Regulation
RAI	Request for Additional Information
RCS	Reactor Coolant System
RB	Reactor Building
RH	Residual Heat Removal System
RM	Radiation Monitoring System
RW	Refueling Water System
SBO	Station Blackout Event
SCE&G	South Carolina Electric and Gas
SA	Service Air System
SF	Spent Fuel Cooling System
SI	Safety Injection
SP	Reactor Building Spray System

SR	Safety Related
SS	Nuclear Sampling System
SSC	Systems, Structures, and Components
SW	Service Water System
SWDS	Service Water Discharge Structure
SWIS	Service Water Intake Structure
SWP	Service Water Pond
SWPH	Service Water Pump House
TB	Turbine Building
TR	Technical Report
UFSAR	Updated Final Safety Analysis Report
VCSNS	Virgil C. Summer Nuclear station
WG	Gaseous Waste Processing System
WL	Liquid Waste Processing System