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September 12, 2002
RC-02-0159

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. Rajender Auluck

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
CRITERIA 2 SUPPLEMENT TO THE APPLICATION FOR
RENEWED OPERATING LICENSE

Reference: Letter from SCE&G (S. A. Byrne) to NRC (Document Control Desk) dated August 6,
2002 (RC-02-0123)

South Carolina Electric & Gas Company (SCE&G), acting for itself and as agent for South Carolina Public Service Authority, submitted, via letter dated August 6, 2002, an application for the renewal of the operating license for the Virgil C. Summer Nuclear Station (VCSNS). During the preparation of the application for license renewal additional guidance emerged (STAFF POSITION ON SCOPING OF SEISMIC III/ PIPING SYSTEMS dated December 3, 2001 and STAFF POSITION ON SCOPING OF SEISMIC III/ PIPING SYSTEMS dated March 15, 2002) regarding the identification and treatment of structures, systems, and components which meet 10 CFR 54.4(a)(2).

In Section 2.1.1.3.1 of our License Renewal Application we stated that the review of insulation, ductwork, and piping would be provided in a supplementary submittal. Attachment 1 of this letter provides the results of the additional reviews called for in the guidance provided in the STAFF POSITION ON SCOPING OF SEISMIC III/ PIPING SYSTEMS dated December 3, 2001 and March 15, 2002. Should have any questions, please call Mr. Ron Clary at (803) 345-4757.

I certify under penalty of perjury that the foregoing is true and correct.

September 12, 2002
Executed on

Stephen A. Byrne for
Stephen A. Byrne

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WRH/SAB/wh
Attachment

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SECTION 2.0 SCOPING AND SCREENING REFINED CRITERIA 2

The following information is provided in addition to the Scoping and Screening review discussion of the original Section 2.0 of the application [Reference 16].

BACKGROUND

The previous Virgil C. Summer Nuclear Station (VCSNS) license renewal evaluations included the determination of the non-nuclear safety-related (NNS and/or QR) SSCs that meet the original industry interpretation of the 10 CFR Part 54.4(a)(2) criteria. The original evaluation is documented in the VCSNS application that was submitted August 6, 2002 [Reference 16]. Following the original Scoping, the applicable Systems, Structures, and Components (SSCs) carried forward through the Integrated Plant Assessment (IPA) process, as detailed in the applicable sections of the application. That process considered both plant-specific and industry failures of non-nuclear safety-related SSCs as well as non-nuclear safety-related SSCs which may not have failed during the current term, but may have a reasonable expectation of failure during the extended term.

Seismic II/I, referred to as Anti-Falldown at VCSNS, considerations for license renewal were originally limited to the seismically designed supports, such that Anti-Falldown pipe failures were considered to be hypothetical and excluded from license renewal evaluations as per the Statements of Consideration (SOC). However, the interpretation of the 10 CFR Part 54.4(a)(2) criteria has evolved during the past few years (1999 to 2002). The NRC staff has issued generic Requests for Additional Information (RAIs) to applicants on this topic, followed by letters stating their staff position. In a letter dated December 3, 2001 [Reference 8], the staff position on scoping of Seismic II/I systems was presented. A related letter dated March 15, 2002 [Reference 9] presented the staff position on 54.4(a)(2) scoping criterion and supplements the position on the identification and treatment of Seismic II/I components above.

The NRC staff has agreed that operating experience shows that seismically supported piping has not failed during a seismic event. However, the staff maintained that industry operating experience had also shown that piping had failed for reasons other than a seismic event and, therefore, non-safety related pipe failures due to age-related degradation are not hypothetical and should be included in the scope of license renewal. [Reference 8] Furthermore, the NRC staff has requested that an applicant address the criteria used to postulate breaks and cracks in non-safety-related piping systems that are within the

seismic II/I scope, if it wishes to take credit for protection of safety-related systems [Reference 10].

The refined interpretation of the 10 CFR Part 54.4(a)(2) criteria is restated in the March 15, 2002 letter from C. I. Grimes to A. Nelson (NEI) and D. Lochbaum (UCS) [Reference 9].

Accordingly, VCSNS understands that, considering the refined 10 CFR Part 54.4(a)(2) criteria (refined criteria), non-nuclear safety-related (NNS and/or QR) piping and piping system components that are not encompassed in specific intended system functions or CLB issues which meet the criteria of 54.4(a)(2) required license renewal evaluation. This refined license renewal evaluation serves to provide additional assurance that failures of non-nuclear safety-related SSCs that are spatially related (connected or unconnected) to nuclear safety-related components, with a focus on piping segments, will not result in adverse impact on the performance of nuclear safety-related functions during the period of extended operation.

SCOPING & SCREENING REFINEMENTS

VCSNS determined those systems that contain non-nuclear safety-related (NNS and/or QR) components that meet the criteria of 10 CFR Part 54.4(a)(2). In order to provide the desired reassurance that each of these areas meets the criteria of 10 CFR Part 54.4(a)(2), each required reevaluation. The reevaluation identified non-nuclear safety-related SSCs whose failure may adversely impact nuclear safety-related equipment due to spatial interactions. Identified SSCs were brought into the scope of license renewal and aging management activities assigned as appropriate.

This reassessment considered the refined criteria with the following clarification. As indicated on plant design documents and the Final Safety Analysis Report (FSAR) [Reference 7], the following buildings are those which contain both nuclear safety-related (NSR) and non-nuclear safety-related (NNS and/or QR) equipment/components:

- Auxiliary Building (AB),
- Control Building (CB),
- Diesel Generator Building (DG),
- Fuel Handling Building (FH),
- Intermediate Building (IB),
- Reactor Building (RB), and
- Service Water Pump House (SWPH).

Consistent with the relevant NRC correspondence, the primary focus of this reevaluation was on piping segments and piping system components in fluid systems. However, non-fluid containing mechanical system portions, as well as non-mechanical SSCs, were also addressed herein for completeness.

All plant systems or system portions having non-nuclear safety-related (NNS and/or QR) piping and piping system components in one of the above buildings were conservatively considered herein to be in the scope of license renewal per the refined criteria.

ANTI-FALLDOWN (SEISMIC II/I)

Anti-Falldown components or structures, some of which are quality related, are those that might otherwise be classified as non-nuclear safety-related. However their failure, i.e. collapse, could impair the functioning of a nuclear safety-related (NSR) structure, system, or component, or could result in injury to occupants of the Control Room. Anti-Falldown components or structures are designed and constructed so that the Safe Shutdown Earthquake (SSE) would not cause such failure.

VCSNS established methods to assure the protection of Essential Equipment/Services, Control Room Operators and NUREG 0737 Equipment during a seismic event from the potential effects of falling non-seismically supported components. Anti-Falldown criteria was developed to address the requirements of Regulatory Guide 1.29 [Reference 4] Section C.2 and FSAR [Reference 7] Section 3.7.2.8. The initial license renewal evaluations assumed that structural supports would prevent the non-nuclear safety-related piping or components from falling onto equipment that is performing a safety function. For the initial IPA evaluation, only the structural supports were required to remain intact in order to fulfill the function during the period of extended operation and as such only the structural supports were carried forward through the IPA, as documented in the sections 2.4 and 3.5 of the application.

However, as described in the staff position letter dated December 3, 2001 [Reference 8], based on Information Notice 2001-09 [Reference 12], the refined license renewal concern for such components is not that piping segments and piping system components could fall during the period of extended operation but that these piping segments and piping system components would be subject to the same plausible aging effects as in-scope piping with the possible resulting degradation causing an adverse spatial interaction with NSR equipment. Specifically, the Information Notice addresses erosion-corrosion related pipe wall thinning issues.

Considering the refined criteria the list of systems was reassessed for the further identification/clarification of systems and system portions that have non-nuclear safety-related components located in plant areas containing nuclear safety-related equipment/components.

Piping & Piping System Components

All systems having NNS and/or QR piping and piping components that are located in the designated buildings (AB, CB, DG, FH, IB, RB, SWPH) are conservatively in the scope of license renewal for spatial interaction considerations. However, not all areas within these buildings are configured such that adverse spatial interaction between NSR and NNS or QR components is plausible. Also, some of these system portions were initially included in the scope of license renewal for other considerations and do not require reevaluation. As such, not all systems or system portions within these buildings required further aging management review. While it was not necessary to establish precise boundaries using this area approach, it was also not necessary to include NNS and/or QR portions in scope and subject to aging management review if clarification could be provided. Accordingly, the plant design documents were evaluated to further clarify those plant areas of concern for spatial interaction with NSR components.

Initially, all systems having NNS and/or QR mechanical components in one of the designated buildings were assumed to be in the scope of license renewal. A review of the routing/configuration of system piping provided justification for removing certain portions of systems. Through this screening type clarification, subsequent aging management review and credited aging management activities are not necessary on those system portions.

Insulation

Insulation of the following types are used at VCSNS: MIRROR, Mechanically Bonded Glass Fiber Blanket, Calcium/Silicate, and Fiberglass. Insulation does not generally perform a license renewal intended function. However the application of the limited structural integrity function associated with the refined criteria of conservatively calls for the evaluation of the possible age-related degradation of insulation and the impact, if any, of falling insulation on NSR components.

Ductwork

Some of this HVAC ductwork in the designated buildings (AB, CB, DG, FH, IB, RB, SWPH) is considered Anti-Falldown. Those portions of the ductwork are in

the scope of license renewal. These existing IPA results, documented in the application for ductwork, can be applied to the Anti-Falldown ductwork.

Non-Mechanical

VCSNS addresses Anti-Falldown requirements for various structures and components in the applicable sections of the application. These are requirements for structural supports, rather than assuring the function of the supported mechanical components. Structural supports have been evaluated in section 2.4 and 3.5 of the application. No further evaluation per the refined criteria is required for those items addressed in section 2.4 and 3.5 of the application.

Non-Code Pressure Boundary

Consistent with NRC correspondence [References 9, 11, and 12], the reevaluation of pipe failures per the refined criteria involved the following:

- Non safety-related SSCs that are connected to safety-related SSCs (i.e. Code Breaks), and
- Non safety-related piping that has a spatial relationship such that the results of a failure, such as a jet or pipe whip, could adversely impact a safety-related SSCs intended function(s).

More specifically, the latter issue involves the location of postulated breaks and the corresponding mitigative features within the existing CLB versus the supposed potential for ruptures at any location due to age-related degradation, and the requisite preventive options.

Below is a discussion of each of the categories of non-code pressure boundary pipe interactions, some of which were previously included in the scope of license renewal.

Code Break Piping

Although not called out explicitly during the initial screening process or highlighted on the license renewal evaluation boundary drawings, code break piping is within the scope of license renewal to preclude adverse affects on safety-related equipment and functions. Furthermore, consistent with the related staff position, the screening and/or aging management review results, including the credited aging management programs/activities, for the in-scope (e.g. nuclear

safety-related) portions shown on the boundary drawings are also applicable to the adjoining code break piping.

A review of plant documentation was conducted, per the refined criteria, to ascertain that the material/environment of code break piping corresponded to the attached nuclear safety-related piping and piping components. If so, the IPA conclusions documented in the application were applied to the adjoining piping, without qualification. Exceptions were also addressed, as applicable.

Interfaces between the NSR Service Water [SW] system and the NNS closed-cycle Industrial Cooler [CI] system were identified as an area requiring further evaluation. The process environment for the SW system (NSR side of the code break) is raw water from the Service Water Pond. However, the process environment for the CI system (NNS side of the code break) is closed-cycle treated water as described in FSAR [Reference 7] Section 9.4.7.2.5. This NNS piping has been included in the scope of license renewal as meeting the refined criteria.

Pipe Failure/Rupture

Protection of structures, systems, and components important to safety from the dynamic effects of piping failure is provided in accordance with the requirements of 10 CFR Part 50, Appendix A, General Criterion 4.

High energy systems are systems with normal operating temperatures in excess of 200°F or normal operating pressures above 275 psig. FSAR Reference 7, Section 3.6.1.2 provides more detail on the high energy systems at VCSNS.

With respect to the nuclear safety-related high energy piping, all such portions were initially included in the scope of license renewal and subject to aging management review as documented in the appropriate section of the application. Also, restraints, barriers, and shields installed at required locations, based on NSR and NNS pipe rupture postulations, were also initially included in the scope of license renewal and subject to aging management review as documented in section 2.4 and 3.5 of the application. As such, neither required further evaluation, per the refined criteria, to ensure that pertinent portions have been included in the scope of license renewal.

Additionally, non-nuclear safety-related portions of several mechanical systems at VCSNS are classified quality-related (QR) based on pipe rupture and/or seismic considerations. The classification of such piping was made to maintain the seismic design and retain a significant margin of safety.

Analyzed (High-Energy)

QR high energy piping received this QR designation based on the piping being analyzed for pipe rupture considerations. The QR classified piping portions were initially included in the scope of license renewal and the corresponding SSCs carried forward through the integrated plant assessment process, as detailed in the applicable sections of the application. As such, those SSCs require no further evaluation per the refined 10 CFR Part 54.4(a)(2) criteria.

Un-Analyzed (High-Energy)

In order to provide additional assurance that all high-energy piping in non-nuclear safety-related system portions are included in the scope of license renewal and aging management activities credited as appropriate, per the refined criteria, a review was performed. This review identified non-nuclear safety-related portions of high energy systems, if any, that were not analyzed and previously in scope. Portions of piping in the Blowdown system (BD) and several Main Steam (MS) drains are unanalyzed high energy piping. This piping was brought into the scope of license renewal per the refined criteria.

Flow Limitation/Blockage

The non-nuclear safety-related portions of systems are classified as QR to ensure that function is not inhibited by restricted flow during or after a seismic event. Applicable systems/functions were included in the scope of license renewal, as documented in the applicable sections of the application. As such no further evaluation of this issue or the associated SSCs is required per the refined criteria.

Wetting (Moderate or High-Energy)

The effects of wetting (such as from spray and/or leakage) on nuclear safety-related components are not explicitly addressed on the building composites drawings. However, the areas identified on those drawings as containing NSR equipment are the areas where wetting due to a failure of NNS and/or QR fluid piping and piping components could adversely impact NSR components.

NNS and/or QR fluid systems piping and piping components located in the designated buildings (AB, CB, DG, FB, IB, RB, SWPH) are conservatively considered in the scope of license renewal for wetting considerations. However, not all areas within these buildings are configured such that adverse interaction is plausible. More detailed evaluations removed portions of systems from scope. Also, some of these system portions were initially included in the scope of license renewal for other considerations and did not require reevaluation.

Essential equipment in the Reactor Building (RB) is designed to withstand the effects of the most limiting LOCA, and is qualified for service in harsh environments, including spray and/or steam. As such, all possible flooding and spray effects have been factored into the design of this equipment. Therefore, the failure of NNS and/or QR components in the RB will not result in the failure of NSR components in that vicinity.

The general practice at VCSNS has been the use of enclosures (such as NEMA class spray-proof electrical enclosures) in general plant (AB, CB, DG, FB, IB, RB, SWPH) areas. Spray-proof enclosures are used for termination boxes splice boxes and for field mounted equipment like fuses relays. Field mounted devices like transmitters, limit switches, solenoid valves, valve motor operators are also spray-proof. As such, electrical equipment rooms and other unique locations are considered to be the most susceptible to spray/leakage concerns.

Leakage cracks are postulated to occur in moderate energy piping systems based on stress ranges. FSAR [Reference 7] Section 3.6.2.1.4 provides information on the CLB of postulated moderate energy piping leakage.

As such, a license renewal evaluation, on a commodity basis, of all non-nuclear safety-related moderate and high-energy fluid systems in areas of concern, regardless of postulated break location, is conservative.

Flooding & Leak Detection

Flooding due to large amounts of leakage from mechanical system components into nearby areas (AB, CB, DG, FB, IB, SWPH) may prevent the performance of a safety function. In this case, the detection of the mechanical component failure and its isolation are of concern. Based on the FSAR [Reference 7], Section 3.4, and various design documents, systems that are credited for detection and isolation of leaks to preclude adverse effects on nuclear safety-related equipment and functions are within the scope of license renewal. However, Reactor Building (RB), flooding is not considered to be a concern based on the design of the NSR equipment located in that building.

Flooding of the Turbine Building (TB) above elevation 426'-9" (interfacing wall is designed water tight to that elevation) could result in flooding of the adjacent buildings (CB, IB, and DG) that contain nuclear safety-related components. This was addressed in section 2.3.3.5 of the application.

A reevaluation of the flooding analysis calculation and plant design documents was conducted to ascertain that no other plant SSCs needed to be included in the scope of license renewal per the refined criteria.

The plant design includes sloping floors, floor drains, grates, sumps and curbs that preclude flooding from adversely impacting nuclear safety-related components. Furthermore, protection of equipment from flooding in safety-related areas is accomplished by providing a design flood level. The structural aspects of plant design (protective/mitigative features) that preclude an adverse impact on nuclear safety-related components due to flooding are also in the scope of license renewal and the associated IPA results are documented in section 2.3.5 and 3.5 of the application and thus require no further evaluation herein.

COMMODITY GROUPING

A reevaluation was necessary for the SSCs that were added to meet the refined criteria. These newly identified SSCs perform the limited structural integrity/limited pressure boundary function instead of supporting a specific system intended function.

Identification of SSCs using a commodity approach was preferred rather than a system approach. This approach ensures that spatial interaction between NSR/QR components and NSR SSCs does not result in loss (impairment) of a safety function during the period of extended operation. This approach is similar to the Civil/Structural and Electrical IPA evaluations documented in the application. Additionally, the NRC position letters [References 8 and 9] support the use of a commodity approach. Therefore, systems, system portions and components (component types) meeting only the refined criteria, were grouped together according to the material type and/or the environments experienced in the designated buildings (AB, CB, DG, FB, IB, RB, SWPH) for subsequent aging management evaluations.

The materials of construction for NNS and/or QR system portions are similar to those material types evaluated in the initial IPA evaluations. The material determination methodology is similar to that used in the present application.

For those commodities included in the scope of license renewal solely for meeting the refined criteria, a simplification was made to the environments. All external environments were considered to be "Ambient Air" as defined below. The previously utilized internal environments were utilized for the commodities meeting the refined criteria with the addition of "Uncontrolled Water". These environments are defined as follows:

- Ambient Air – Ambient air is moist air at atmospheric conditions in the area of interest. This environment includes the Reactor Building, sheltered, yard, and ventilation environments. Similar to those environments, ambient air does not contain contaminants in sufficient levels to cause corrosion, except in wetted locations (such as due to condensation and/or water pooling). Fluid system portions with temperatures well below ambient are susceptible to the presence of condensation, whereas other portions are expected to be dry.
- Uncontrolled Water – Uncontrolled water comes from various sources (including rain/storm water, raw water, borated water, treated water, waste water and drainage water) that is not controlled or maintained for a specific plant purpose. The uncontrolled water environment in some cases may normally be dry and only periodically and/ or partially wetted. Drainage and waste water could also include oil, corrosion products, etc. For license renewal purposes the most aggressive fluid environment the system is expected to see was assumed.

The environment determination methodology is the same as that used for the present application. Plant documentation were reviewed to determine the various environments.

SECTION 3.0 AGING MANAGEMENT REVIEW REFINED CRITERIA 2

The following information is provided in addition to the Aging Management review discussion of the original Section 3.0 of the application [Reference 16].

AGING EFFECT IDENTIFICATION

Consistent with the related NRC staff position, non-nuclear safety-related piping that is seismically supported would be subjected to the same plausible aging effects as safety-related piping. If not properly managed, those aging effects could result in age-related degradation failures that adversely impact the safety functions of safety-related SSCs. [Reference 8]

Those mechanical commodities, that are in the scope of license renewal solely by meeting the refined criteria, require an aging management review. The methodology used for the original submittal [Reference 16] was used to determine the aging effect requiring management for particular material/environment combinations.

The traditional aging management review (AMR) for mechanical components provided justification for aging effects/mechanisms that did not require aging management for particular system component types. This reevaluation relied on these base IPA results in determining those aging effects requiring management for commodities meeting the refined criteria. The aging effects of concern for these commodities during the period of extended operation are cracking and/or loss of material.

Loss of Material due to boric acid corrosion is a concern only in areas of the plant containing systems and components that contain/transport borated water, such as areas of the Auxiliary Building, Fuel Handling Building, Intermediate Building, and Reactor Building. As such, commodities that are located in the CB, DG, SWPH are not susceptible to boric acid corrosion.

Cracking due to Stress Corrosion Cracking (SCC), is a concern for commodities that have process temperatures greater than the 140°F threshold. Furthermore, Intergranular Attack is considered to be included with SCC.

AGING MANAGEMENT REVIEW (AMR)

An aging management review was conducted for each commodity group identified with the refined criteria. Either the aging effects requiring management

were identified or, justification has been provided that aging management for the subject commodities is not required. Also, the credited aging management program/ activity for the corresponding aging effect of the material/environment combination was identified.

Based on the program/activity evaluations the attributes of the identified license renewal program/activity were reviewed. Particularly, the scope portion was reviewed to ascertain if the credited program/activity could be applied to the identified new commodity. The review was to determine if the program provides reasonable assurance that the failure of a refined commodity would not result in adverse impact on the performance of a safety function. Based on the review, one of the following was performed and documented:

1. An evaluation of the credited program/activity and associated revision such that the subject NNS and/or QR commodities would be managed as well, or
2. A new program/activity was identified, as applicable, and an evaluation performed consistent with the required attributes.

The following programs/activities credited for aging management and evaluated for effectiveness are those that also apply to the added scope commodities:

- Boric Acid Corrosion Surveillances (Appendix B.1.2),
- Chemistry Program (Appendix B.1.4),
- Flow-Accelerated Corrosion Monitoring Program (Appendix B.1.6),
- Inspections for Mechanical Components (Appendix B.2.11), and
- Service Water System Reliability and In Service Testing Program (Appendix B.1.9).

One new program is required. The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria Commodities is a new one-time inspection that will detect and characterize loss of material due to general, crevice, and pitting corrosion resulting from exposure to an unmonitored and uncontrolled water environment.

REFINED EVALUATION RESULTS

The results of the reevaluation of non-nuclear safety-related mechanical systems, system portions, and components/component types are contained in the attached table. This reevaluation was performed for spatial interactions that

could adversely affect the performance of a safety-related function during the period of extended operation.

Civil/Structural and Electrical portions did not require reevaluation per the refined 10 CFR Part 54.4(a)(2) criteria. Additionally, NNS and/or QR mechanical components/component types associated with a specific system intended function were included in the initial license renewal IPA evaluations.

Plant systems were reevaluated for inclusion in the scope of license renewal. From this review, the following mechanical systems were added to the scope of license renewal due to the potential for spatial interactions with NSR SSCs in the designated buildings (AB, CB, DG, FB, IB, RB, SWPH):

1. Condenser Air Removal [AR]
2. Demineralized Water [DW]
3. Fuel Handling, Oil [FO]
4. Hydrogen-Nuclear Plant Use [HN]
5. Liquid Effluents from Nuclear Plant to Penstock [LW]
6. Nuclear Blowdown Processing [NB]
7. Nitrogen-Nuclear Plant Use [NN]
8. Oxygen-Nuclear Plant Use [ON]
9. Sewer [SE]]
10. RW Solidification & Solids Handling [WD]
11. Excess Liquid Waste [WX]

Also from this review, the following mechanical systems had their scope expanded to include NNS and/or QR portions that have a potential for adverse spatial interactions with NSR equipment in the designated buildings (AB, CB, DG, FB, IB, RB, SWPH):

1. Auxiliary Coolant (Closed Loop) / CRDM Cooling Water [AC]
2. Air Handling (HVAC) [AH]
3. Steam Generator Blowdown [BD]
4. Boron Recycle [BR]
5. Component Cooling [CC]
6. Industrial Cooler System [CI]
7. Chemical and Volume Control [CS]
8. Diesel Generator Services [DG]
9. Demineralized Water-Nuclear Service [DN]
10. Emergency Feedwater [EF]
11. Hydrogen Removal - Post Accident [HR]
12. Instrument Air Supply [IA]
13. Leak Detection [LD]
14. RB Leak Rate Testing [LR]

- 15. Main Steam Dump [MB]
- 16. Non-Nuclear Plant Drains [MD]
- 17. Main Steam [MS]
- 18. Reactor Makeup Water Supply [MU]
- 19. Nuclear Plant Drains [ND]
- 20. Nitrogen Blanketing [NG]
- 21. Reactor Coolant [RC]
- 22. Roof Drains [RD]
- 23. Radiation Monitoring [RM]
- 24. Station Service Air [SA]
- 25. Spent Fuel Cooling [SF]
- 26. Safety Injection [SI]
- 27. Reactor Building Spray [SP]
- 28. Nuclear Sampling [SS]
- 29. Service Water [SW]
- 30. Thermal Regeneration [TR]
- 31. Local Ventilation & Cooling [VL]
- 32. Chilled Water [VU]
- 33. Radwaste Gas Handling [WG]
- 34. Radwaste Liquid Handling [WL]

Three systems that have a potential for adverse spatial interactions with NSR equipment in the designated buildings were already included in the existing scope. These systems, Auxiliary Boiler Steam & Feedwater [AS], Fire Service [FS], and Feedwater [FW], required no additional aging management reviews.

With the exception of the Service Water [SW] / Industrial Cooler [CI] interfaces, the NSR/NNS interfaces were verified to be of the same material/environment combination on each side of the code break. The credited aging management program/activity on the NSR side of the code break also applies to the NNS portion. As such, the applicable sections of the application, address the IPA conclusions for NSR/NNS interfaces. The conclusions are applied to the NNS portion, although that portion is not depicted on screening evaluation boundary drawings that were previously submitted for information.

The location of the NSR/NNS interfaces between the Service Water [SW] system and the closed-cycle Industrial Cooler [CI] system are at the Reactor Building Cooling Unit (RBCU) supply and return valves. The process environment for the SW system (NSR side of the code break) is raw water from the service water pond. However, the process environment for the CI system (NNS side of the code break) is closed-cycle treated water as described in FSAR [Reference 7] Section 9.4.7.2.5. While the CI system is the normal supply for RBCU cooling, this closed-cycle treated water is mixed with raw water from the NSR SW portion each refueling outage during supply/return switchover. Even though NSR SW

system portions downstream of the above valves are normally exposed to the treated water of the CI system, the more aggressive raw water environment was conservatively selected for license renewal aging management review of SW. The raw water program credited for the NSR SW portion is not applicable to the NNS CI (code-break) piping, even though mixing with raw water occurs. (CI is normally treated water but is infrequently exposed to raw water during refueling outages and during testing.) The NNS CI piping has been included in the scope of license renewal as meeting the refined criteria and is further addressed in the Table I of this document.

Based on the listing of high-energy fluid systems in the FSAR Reference 7, Section 3.6.1.2 and plant design documents, the Steam Generator Blowdown [BD] system and several Main Steam (MS) drains have the only high-energy non-nuclear safety-related piping that was evaluated by criteria (based on postulating breaks at each fitting). As such, this system piping was not analyzed and was not initially included in the scope of license renewal. The BD system piping from the containment isolation valve to the Turbine Building/Intermediate Building wall is included in the scope of license renewal and is subject to AMR. The Main Steam (MS) drains in the Auxiliary Building and Intermediate Building are included in the scope of license renewal and subject to AMR.

Table I provides a listing of the aging management review results for the commodities that were determined to meet refined criteria but that were not initially included in the IPA evaluations as documented in the initial submittal. The following information is included in the table:

- Item number,
- Component Type (commodity grouping including pertinent systems),
- Material,
- Environment (internal or external environment to which the commodity is exposed)
- Aging Effect Requiring Management (including mechanism as applicable)
- Aging Management Program (program or activity credited with management of the aging), and
- Discussion (summary and/or clarifying discussion).

Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
1.	Piping and piping system components in: BR, CS, DN, DW, IA, LD, LW, MD, MU, NB, ND, RC, RM, SA, SF, SI, SP, SS, TR, WD, WL, WX	Stainless steel	Ambient air	None identified	None required	This grouping includes external surfaces of stainless steel piping system components. This grouping also includes internal surfaces of stainless steel piping system components exposed to non-corrosive gas environment. At VCSNS, the ambient environment of the yard and plant buildings do not contain contaminants of sufficient concentration to cause aging effects that require aging management.
2.	Piping and piping system components in: BR, CS, DN, DW, MU, RC, RM, SF, SI, SP, SS, TR	Stainless steel	Treated water, chemically treated borated water	Loss of material due to crevice corrosion, pitting corrosion, crack initiation and growth/ stress corrosion cracking	Chemistry Program	This grouping includes stainless steel piping and piping system components in chemically treated water. The Chemistry Program alone provides aging management for loss of material and cracking of stainless steel in chemically treated water environment.

Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
3.	Piping and piping system components in: LD, LW, MD, NB, ND, WD, WL, WX	Stainless steel	Uncontrolled water	Loss of material due to crevice corrosion, pitting corrosion, crack initiation and growth/ stress corrosion cracking	Liquid Waste System Inspection	This grouping includes internal surfaces of stainless steel piping system components exposed to uncontrolled water environment. Uncontrolled water is defined as low temperature liquid (less than 140°F) that may be raw water or waste water. The Liquid Waste System Inspection is a new one-time inspection that will detect and characterize loss of material due to crevice and pitting corrosion, and cracking due to stress corrosion cracking (SCC) in unmonitored and uncontrolled borated water environments. The results of the inspection are considered to bound the conditions found in the identified systems.

Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
4.	Piping and piping system components in: AC, AR, BD, CC, CI, CS, DG, EF, FO, HN, HR, IA, LR, MB, MD, MS, NB, NG, NN, ON, RC, RD, SA, SE, SI, SP, SW, TR, VU, WD, WG, WL	Carbon steel	Ambient air	Loss of material due to general and /or galvanic corrosion	Inspections for Mechanical Components	This grouping includes external surfaces of carbon steel piping system components exposed to a moist air environment or that are subject to wetting from condensation, etc. Inspections for Mechanical Components will manage the relevant aging effects for the external surfaces of mechanical components constructed of carbon steel, low alloy steel.

Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
5.	Piping and piping system components in: AC, BD, CC, CI, CS, EF, HN, HR, IA, LR, MS, NB, NG, NN, ON, RC, RD, SA, SE, SI, SP, SW, TR, VU, WD, WG, WL	Carbon steel	Ambient air with leaking boric acid	Loss of material due to boric acid corrosion	Boric Acid Corrosion Surveillances	This grouping includes external surfaces of carbon steel piping and piping system components potentially exposed to leaking borated water. Boric Acid Corrosion Surveillances will look for leaking boric acid and take required corrective action on any system or component affected. These surveillances are done in areas with borated water sources. Portions of systems not located in these areas are not subject to these inspections.

Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
6.	Piping and piping system components in: AR, CS, DG, HN, HR, IA, LR, NB, NG, NN, ON, RC, SA, SI, SP, WD, WG, WL	Carbon steel	Air-gas	None identified	None required	<p>This grouping includes the internal surface of components when exposed to dry air or non-corrosive process gasses.</p> <p>This grouping also includes the internal surface of system components that contain non-dried air. These system components may experience internal surface corrosion but they are not expected to have a loss of structural integrity.</p>

**Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS**

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
7.	Piping and piping system components in: MB, MD, MS, RD, SE	Carbon steel	Uncontrolled water	Loss of material due to crevice, pitting, general, and galvanic corrosion	Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria	This grouping includes carbon steel piping and piping system components subjected to uncontrolled water. Uncontrolled water is defined as low temperature liquid (less than 140°F) that may be rainwater, condensation, raw water or wastewater. Piping may normally be dry and only periodically and/ or partially wetted. (Carbon steel piping in not used for drains and sumps that are expected to carry acids or chemical.) Inspection will be performed to determine if aging is occurring and appropriate actions will be taken based on the results of the inspections.

Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
8.	Piping and piping system components in: AC, BD, CC, CI, DG, EF, MS, TR, VU	Carbon steel	Treated water	Loss of material due to crevice corrosion, pitting corrosion, crack initiation and growth/ stress corrosion cracking	Chemistry Program	This grouping includes carbon steel piping and piping system components in chemically treated water. The Chemistry Program alone provides aging management for loss of material of carbon steel in chemically treated water environment. Industry operating experience with SCC of carbon steel is limited to components exposed to nitrite based corrosion inhibitors.
9.	Piping and piping system components in: BD, MS	Carbon steel	Treated water	Loss of material due to flow accelerated corrosion	Flow - Accelerated Corrosion Monitoring Program	This grouping includes carbon steel piping and piping system components subject to flow - accelerated corrosion. The Flow Accelerated Corrosion Program provides aging management for FAC. Only the steam drains portion of MS is susceptible to FAC.

**Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS**

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
10.	Piping and piping system components in: DG, FO	Carbon steel	Fuel oil	None identified	None required	This grouping includes carbon steel piping and piping system components potentially exposed to fuel oil. As pooling water is not expected to occur in the subject piping, no aging effect requiring management were identified for carbon and low alloy steel piping in oil/fuel oil service.
11.	Piping and piping system components in: SW	Carbon steel	Raw water	Loss of material due to crevice, pitting, general, and galvanic corrosion, Microbiologically Induced Corrosion (MIC), erosion	Service Water System Reliability and In-Service Testing	This grouping includes carbon steel Service Water piping and piping system components subjected to raw water. Inspection will be performed to determine if aging is occurring and appropriate actions will be taken based on the results of the inspections.
12.	Ventilation ductwork in: AH, VL	Galvanized Steel	Ambient air (Dry)	None identified	None required	This grouping includes internal surfaces of galvanized steel ductwork exposed to air that are not subject to wetting.

Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
13.	Ventilation ductwork in: AH, VL	Galvanized Steel	Ambient air	Loss of Material due to general and galvanic corrosion	Inspections for Mechanical Components	This grouping includes external surfaces of galvanized Steel ductwork exposed to air.
14.	Ventilation ductwork in: AH, VL	Galvanized Steel	Ambient air with leaking boric acid	Loss of material due to boric acid corrosion	Boric Acid Corrosion Surveillances	This grouping includes galvanized steel ductwork potentially exposed to leaking borated water. Boric Acid Corrosion Surveillances will look for leaking boric acid and take required corrective action on any affected system component.
15.	Piping and component insulation	Stainless steel and various insulation types encapsulated in stainless steel	Air-gas	None identified	None required	This grouping includes stainless steel piping and component insulation and insulation encapsulated in stainless steel exposed to a moist air environment. At VCSNS, the ambient environment does not contain contaminants of sufficient concentration to cause aging effects that require aging management. (The stainless steel contains the encapsulated insulation)

**Table 1:
REFINED CRITERIA 2 AGING MANAGEMENT REVIEW RESULTS**

Item	Component Type	Material	Environment	Aging Effect/ Mechanism	Aging Management Program	Discussion
16.	Piping and component insulation	Fiberglass	Air-gas	None identified	None required	This grouping includes fiberglass piping insulation exposed to a moist air environment. At VCSNS, the ambient environment does not contain contaminants of sufficient concentration to cause aging effects that require aging management.
17.	Piping and component insulation	Calcium silicate	Air-gas	None identified	None required	This grouping includes calcium silicate piping insulation exposed to an air environment. At VCSNS, the ambient environment does not contain contaminants of sufficient concentration to cause aging effects that require aging management.

APPENDIX A: FSAR CHAPTER 18 FOR REFINED CRITERIA 2

The application [Reference 16] provided a revision to the FSAR to add chapter 18. The existing program discussions in Appendix A do not require revision for the reevaluation of 10 CFR 54.4(a)(2) system structures and components. The new program, Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria, requires an addition to the proposed chapter 18. This addition is provided below.

18.2.26 AREA BASED INSPECTIONS FOR REFINED 10 CFR 54.4(A)(2) CRITERIA

The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria is a new one-time inspection activity that will determine if aging management is required for components that have an anti falldown requirement during the period of extended operation. The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria will detect and characterize loss of material or cracking resulting from exposure to an unmonitored and uncontrolled water environment. The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria will use volumetric and/or visual examination techniques at the most susceptible (sample) locations in the piping in carbon steel piping anti falldown systems with uncontrolled water.

APPENDIX B: PROGRAM/ACTIVITY EVALUATION/REVISION REFINED CRITERIA 2

The evaluation of plant programs/activities credited for aging management of mechanical components/component types during the period of extended operation is documented in the application.

For the aging management of those commodities meeting the refined criteria, as identified in Table I, five (5) of the previously evaluated programs/activities have been credited. Also, one (1) new activity has been credited to address aging management of commodities for which a previously evaluated program/activity would not manage the aging effect or relevant conditions leading to the onset and propagation of the aging effect.

Details of the reevaluation of the credited programs/activities, to ensure that the associated reasonable assurance applies to the pertinent commodities meeting the refined criteria is provided below along with a full evaluation of the new activity.

B.1.0 EXITING AGING MANAGEMENT ACTIVITIES FOR REFINED CRITERIA 2

The below discussions are to supplement the existing program discussions of the original Appendix B.1 of the application [Reference 16].

B.1.2 BORIC ACID CORROSION SURVEILLANCES

As described in the application appendix B.1.2, the Boric Acid Corrosion Surveillances will manage loss of material due to boric acid corrosion of mechanical components constructed of carbon steel, low alloy steel and other susceptible materials that are located in the Auxiliary, Intermediate, and Fuel Handling buildings. These buildings are included in the designated buildings that contain both non-nuclear safety related and nuclear safety related components.

Based on reevaluation of each attribute of the activity, no revisions/clarifications to the previous evaluation are necessary to ensure management is provided to commodities meeting the refined criteria. As such, the Boric Acid Corrosion Surveillances activity provides reasonable assurance that the corresponding aging effect will be managed such that spatial interactions will not result in an adverse impact to the performance of a safety-related function consistent with the current licensing basis during the period of extended operation.

B.1.4 CHEMISTRY PROGRAM

As described in the application appendix B.1.4, the Chemistry Program is to manage the relevant conditions required for applicable aging effects/mechanisms to occur for a variety of component materials that are exposed to borated water, closed cycle cooling water or other forms of treated water. Since the Chemistry Program is a mitigative program that is applicable to various mechanical systems initially in the scope of license renewal, the program will also manage the same relevant conditions for onset and propagation of the same aging effects in mechanical system portions that meet only the refined 10 CFR 54.4(a)(2) criteria, but have similar materials of construction and environment.

A reevaluation of each attribute of the Chemistry Program evaluation confirms that, with the following clarification, the program provides reasonable assurance that relevant conditions will be managed such that spatial interactions will not result in an adverse impact to the performance of a safety-related function consistent with the current licensing basis during the period of extended operation.

The **Scope** attribute of the program evaluation identifies those mechanical systems to which the program is considered applicable for aging management. The boundaries of many of these systems were expanded to include the newly identified piping. The Demineralized Water System has been added to the scope of license renewal. The corresponding commodities, as indicated in Table I, experience a similar treated water environment and credit the Chemistry Program for aging management.

The **Monitoring and Trending** attribute evaluation provides additional detail, on a system basis, as to how the relevant conditions that could lead to the onset and propagation of the applicable aging effects are monitored/trended. It does not address the above systems. As such, the following detail is provided:

The Demineralized Water System [DW] provides treated water to various plant locations and supplies the Nuclear Services [DN] portion in the Auxiliary and Reactor Buildings. The Demineralized Water System treats filtered water to remove impurities for use as the water source in all treated and borated water systems. Demineralizer effluent conductivity is monitored continuously, and the demineralizer train is automatically removed from service on high conductivity. Demineralized Water Storage Tank (DWST) samples are collected. The concentrations are sampled and analyzed to ensure that the VCSNS make-up water systems maintain water quality within specifications with respect to chlorides, sulfate, sodium, silica, magnesium, calcium, aluminum, potassium, Total Suspended Solids (TSS), pH, and Total Organic Carbon (TOC). In

addition, the values for silica, magnesium, calcium and aluminum are used to demonstrate conformance to the specifications for reactor make-up water.

B.1.6 FLOW-ACCELERATED CORROSION MONITORING PROGRAM

As described in the application appendix B.1.6, the purpose of the Flow-Accelerated Corrosion Monitoring Program is to manage loss of material for carbon and low alloy steel components/component types in systems within the scope of license renewal that are susceptible to flow-accelerated corrosion (FAC), also known as erosion-corrosion. The program is a condition-monitoring program developed to ensure the integrity of piping systems susceptible to FAC is maintained. The program is applicable to systems, or portions of systems, that meet the susceptibility criteria and is not dependent on a safety classification. Therefore, the Flow-Accelerated Corrosion Monitoring Program is also applicable to the susceptibility system portions that meet the refined criteria.

A reevaluation of each attribute of the Flow-Accelerated Corrosion Monitoring Program confirms that the program, as described, provides reasonable assurance that loss of material due to FAC will be managed during the period of extended operation. As such, spatial interactions will not result in an adverse impact to the performance of a safety-related function consistent with the current licensing basis during the period of extended operation.

B.1.9 SERVICE WATER SYSTEM RELIABILITY AND IN-SERVICE TESTING PROGRAM

As described in the application appendix B.1.9, the purpose of the Service Water System Reliability and In-Service Testing Program is to manage fouling due to particulates and/or biological materials as well as a loss of material due to general, crevice, pitting, galvanic and/or microbiologically induced corrosion or erosion of the internal portions of the Service Water system and components serviced by that system due to exposure to raw water. As discussed in Table I of this technical report, the Service Water system includes non-nuclear safety-related components that were not initially included in the scope of license renewal, but that meet the refined 10 CFR 54.4(a)(2) criteria.

These portions have the same material/environment combination as that portion initially in the scope of license renewal and are susceptible to the same aging effects/mechanisms. Likewise, the credited program will also manage the pertinent aging effects in the non-nuclear safety-related portions whose failure could result in adverse impact to nuclear safety-related SSCs in the same area.

A reevaluation of each attribute of the Service Water System Reliability and In-Service Testing Program confirms that the program, as described, provides reasonable assurance that loss of material will be managed during the period of extended operation. As such, spatial interactions will not result in an adverse impact to the performance of a safety-related function consistent with the current licensing basis during the period of extended operation.

B.2.0 NEW AGING MANAGEMENT ACTIVITIES FOR REFINED CRITERIA 2

The below discussion on B.2.11 is to supplement the program discussions of the original Appendix B.2.11 of the application [Reference 16]. B.2.13 is a new program that was not in the original application.

B.2.11 INSPECTIONS FOR MECHANICAL COMPONENTS

As described in the application appendix B.2.11, the Inspections for Mechanical Components is a new inspection activity that will manage loss of material due to general and/or galvanic corrosion on the external surface of susceptible materials such as carbon and low alloy steel. Additionally, the activity will manage cracking of non-metallic (e.g. elastomer seal) portions of in-scope mechanical components due to embrittlement. The activity involves the visual examination of the exposed external surfaces of mechanical components in areas of the plant containing components/component types in the scope of license renewal. Therefore, the areas of the plant containing nuclear safety-related SSCs are addressed by the inspection activity, and are those areas of concern for spatial interactions per the refined criteria.

A reevaluation of each attribute of the Inspections for Mechanical Components activity confirms that the activity, as described, provides reasonable assurance that loss of material on the external surface will be managed during the period of extended operation. As such, spatial interactions will not result in an adverse impact to the performance of a safety-related function consistent with the current licensing basis during the period of extended operation.

The following systems that meet only the refined criteria are not included with the list of applicable systems in the **Scope** portion of the program/activity evaluation documented in the application appendix B.2.11. These systems' pertinent commodities will be addressed by this aging management activity:

- Condenser Air Removal,
- Industrial Cooler,
- Demineralized Water (non-nuclear services portions),

- Fuel Handling, Oil,
- Hydrogen – Nuclear Plant Use,
- Leak Detection,
- RB Leak Rate Testing,
- Non-Nuclear Plant Drains,
- Nuclear Blowdown Processing,
- Nitrogen Blanketing,
- Nitrogen – Nuclear Plant Use,
- Oxygen – Nuclear Plant Use,
- Roof Drains,
- Turbine Cycle Sampling, and
- Sewer.

B.2.13 AREA BASED INSPECTIONS FOR REFINED 10 CFR 54.4(A)(2) CRITERIA

The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria is a new one-time inspection that will detect and characterize loss of material due to general, crevice, and pitting corrosion resulting from exposure to an unmonitored and uncontrolled water environment. The environment results from uncontrolled sources such as rainwater, leaking ground water and water drained from equipment. The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria Commodities will be performed prior to the period of extended operation.

Scope:

The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria is applicable to carbon steel pipe exposed to an uncontrolled water environment in the following systems: Steam Dump (MB) discharge piping, Non-Nuclear Plant Drains (MD), Main Steam (MS) safety and relief valve discharge piping, Roof Drains (RD), and Sewer (SE).

Preventive Actions:

No actions are taken as part of the Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria to prevent aging effects or to mitigate aging degradation.

Parameters Monitored or Inspected:

The parameters inspected by the Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria are wall thickness as a measure of loss of material, and visual evidence of loss of material or other age-related degradation.

Detection of Aging Effect(s):

The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria will use a

combination of volumetric and visual examination techniques at sample locations in the drain lines determined by engineering evaluation to be most susceptible to the applicable aging effects. If no parameters are known that would distinguish the susceptible locations, sample locations will be selected based on accessibility and radiological concerns, and the results will be applied to the associated piping. The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria will detect the presence and extent of any loss of material prior to a loss of component intended function. Effective and proven volumetric and visual examination techniques will be selected for use in performing the inspection.

Monitoring and Trending:

No actions are taken as part of the Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria to trend inspection results. This is a one-time inspection used to determine if further actions are required.

Acceptance Criteria:

The acceptance criteria for the Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria is no unacceptable loss of material of subject components that could result in a loss of the component intended function(s), as determined by engineering evaluation.

Corrective Actions:

If engineering evaluation determines that continuation of the aging effects will not cause a loss of component intended function(s) for the period of extended operation, then the aging management review is complete and no further action is required. If the engineering evaluation determines that additional information is required to more fully characterize the aging effects, then additional inspections will be completed or other actions taken in order to obtain the additional information. If further engineering evaluation determines that continuation of the aging effects could cause a loss of component intended function(s), then programmatic oversight will be defined. The VCSNS Corrective Action Program is utilized to provide specific corrective and confirmatory actions.

Confirmation Process:

Engineering reviews the inspection results for completeness and acceptability. The corrective action processes ensure that degraded conditions are tracked and corrected in a timely manner. Engineering reviews the previous inspection reports to ensure implementation of recommended corrective actions and to determine their effectiveness.

Administrative Controls:

The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria will be implemented in accordance with controlled station procedures and work processes.

Operating Experience / Objective Evidence of Aging Management Program Effectiveness:

The Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria is a new one-time inspection for which there is no operating experience.

Conclusion(s):

Implementation of the Area Based Inspections for Refined 10 CFR 54.4(a)(2) Criteria will either verify that there are no aging effects requiring management for the subject components or appropriate corrective actions will be taken so that the component intended functions will be ensured for the period of extended operation.

REFERENCES

The following list of references is provided for this supplement.

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15. NUREG-1801, Volumes 1 & 2, "Generic Aging Lessons Learned (GALL) Report", USNRC, Manuscript date, April 2001.
16. Letter from SCE&G (S. A. Byrne) to NRC (Document Control Desk, Attention Rajender Auluck), "Application for Renewed Operating License", Dated August 6, 2002 (RC-02-0123).