

July 29, 2003

LICENSEE: South Carolina Electric and Gas Company

FACILITY: V. C. Summer Nuclear Station

SUBJECT: SUMMARY OF TELECOMMUNICATION (TELECON) WITH SOUTH CAROLINA ELECTRIC AND GAS (SCE&G) COMPANY REPRESENTATIVE TO DISCUSS APPLICANT'S RESPONSES TO VARIOUS STAFF REQUESTS FOR ADDITIONAL INFORMATION (RAI) - LICENSE RENEWAL APPLICATION (LRA) FOR THE V. C. SUMMER NUCLEAR STATION (VCSNS)

On June 22, July 7 and July 9-31, 2003, the NRC staff (the staff) and representative from VCSNS held four telephone conversations (telecons) to discuss the applicant's responses to the request for additional information (RAI). These discussions related to additional clarifications that the staff needed to complete their safety review of the VCSNS License Renewal Application (LRA). A list of telecon participants are enclosed (see Enclosure 1). The following is a summary of the discussions and the dates of those discussions.

Date of the Discussion:

June 22, 2003

RAI 3.1.2.2.2-1

This RAI relates to the cracking in the steam generator shell caused by flaw growth. The staff requested that the applicant provide a summary description of the 100% secondary side inspection. The summary should identify all of the components inspected (e.g., tube support plates, anti-vibration bars, flow-distribution baffle, etc.), inspection method used, and frequency of such inspections during the license renewal period. The applicant needs to commit to perform one-time inspection prior to extended period of operation to verify whether loss of material due to pitting and crevice corrosion is present on the inside surface of the steam generator (SG) shell. If present, the applicant will submit corrective action plan to monitor loss of material due to pitting and crevice corrosion and ensure that the steam generator shell's intended function will be maintained during the extended period.

RAI 3.1.2.2.15-1b

The staff requested the applicant to confirm that it has no alternate regulatory basis (i.e., alternate repair criteria) for the V.C. Summer SGs

RAI 3.1.2.3.5-1

The staff requested the applicant to indicate the frequency of SG secondary side inspections.

RAI 3.1.2.4.6-5

The staff requested the applicant to consider that the Heat Affected Zone (HAZ) of the welds between the support brackets for the heater supports and pressurizer cladding, may be susceptible to cracking because the operating conditions may result in an environment conducive to stress corrosion cracking (SCC). For example, energized pressurizer heaters,

while uncovered, can cause the temperatures to approach the sensitization temperature. (See 4th paragraph in Section 3.2.3, Final Safety Evaluation Report for B & W Owner's group (B&WOG) Topical Report, "Demonstration of the Management of Aging Effects for the Pressurizer," BAW-2244)).

#### RAI 3.1.2.4.7-5

The staff requested that the applicant should identify the specific industry guidelines (e.g., Electrical Power Research Institute (EPRI) guidelines and specify the report/guidelines) that it follows for managing the aging effects of steam generator secondary manway and handhole bolting.

#### RAI 3.1.2.4.7-11

The applicant's response appeared inconsistent with LRA Table 3.1-2, Item 9. Item 9 lists two AMPs, the chemistry control program and ISI program, for managing cracking in Alloy 690 components; but, the response indicates that only the chemistry program is needed. The applicant should discuss the discrepancy.

#### RAI 3.1.2.4.7-12

The applicant's response appeared inconsistent with LRA Table 3.1-2, Item 10. Item 10 lists two aging management programs (AMPs), the chemistry control program and ISI program for managing loss of material in alloy steel components; but, the response indicates that only the chemistry program is needed. The applicant should discuss the discrepancy.

#### RAI 3.1.2.2.9-1 and RAI 3.1.2.4.2-4 (Part b)

The staff requested that the applicant provide a statement that aging management of dissimilar metal welds (Alloy 82/182 welds) is within the scope of LRA Appendix B.1.1, Alloy 600 Aging Management Program.

#### RAI 3.1.2.4.4-1

Regarding management of loss of fracture toughness due to irradiation, the applicant stated that it would follow what other applicants of Westinghouse-designed PWRs (e.g., Robinson) did. The staff requests that the applicant provide a specific response to this RAI.

#### RAI B.1.2.4.6-3

The staff requested that the applicant provide clarification on pressurizer manway materials and AMP applicability.

#### RAI B.1.3-2

The staff requested that the applicant provide the Westinghouse topical report (WCAP) reference and/or appropriate discussion from the WCAP to explain the basis of acceptance criteria, projection criteria, etc.

## RAI B.1.3-3

The staff requested that the applicant address how the recorded measurements during refueling outage 13 compares with the corresponding predicted results using the wear formula.

## NOTE:

In the applicant's response to the RAIs and during the telecon, the applicant indicated that it will follow and implement the recommendations of the industry initiatives for various aging management programs (i.e., Alloy 600 AMP, reactor vessel inspection program, small bore Class 1 piping inspection program). The staff requests that the applicant confirm that it will implement those recommendations that are approved by the staff.

Date of Discussion:

July 7, 2003

## RAI 2.3.1-1

The staff requested clarification why the pressurizer spray head was not included in the license renewal scope. The concern was impairment of power-operated relief valves (PORVs) during a pressurization transient. The staff was concerned that loose debris from pressurizer spray head could block the seat of the PORV.

The licensee responded that there were existing plant program on loose part monitoring in the reactor cooling system (RCS) consisting of 10-channels that constantly monitors loose parts in the RCS. Proper loose part surveillance is covered under the current technical specification in T.S. 3.3.10. The licensee did not expect any loose part originating from the pressurizer spray head to be carried into the RCS flow during normal operation as it would sink to the bottom. The applicant stated that this is because of low entrainment from branch flow to main RCS loop and also the debris weight. But, the staff was not sure where the debris would go during a transient.

The staff requested additional information from the licensee based upon operating experience, whether loose parts management program would detect parts during a transient soon after it happens. The staff said that there is a potential that a part, lying on the bottom of a stagnant pressurizer may not be detected.

Date of Discussions:

July 9, and 10, 2003

RAIs 3.3-2, 3.3-3, 3.3.2.4.6-2, 3.3.2.4.12-1, 3.3.2.4.16-1, 3.3.2.4.17-1, 3.3.2.4.18-1, 3.3.2.4.21-3, 3.3.2.4.22-1, 3.3.2.4.23-1

The staff requested clarification that the applicant elaborate on external microbiologically induced corrosion (MIC) in environment and material combination such as identified in Generic Aging Lessons Learnt (GALL) report i.e. in warm, moist air environment without nutrients present. The staff also requested that the applicant include operating experience if any, inspection findings for mechanical components and details on abnormalities, if any surfaced. The licensee will provide additional information as appropriate.

## RAIs 3.3.2.4.1-2, 3.3.2.4.4-3

This RAI related to carbon steel cooling coil headers in a treated water environment that are subject to stress corrosion cracking (SCC) and the staff wanted to know why no AMP has been provided to address this aging effect. The staff requested supplemental information related to the levels of nitrate which will cause stress corrosion cracking (SCC) in carbon steel. The staff also requested that the licensee commit to an one-time inspections to verify chemistry that is attributed to the SCC and conduct the inspection at low flow and stagnant flow areas.

## RAI 3.3.2.4.7-1

This RAI is related to the Aging Management Review (AMR) results on the flexible hose and flexible coupling and loss of material due to wear. The staff requested that the applicant provide additional information to justify why for flexible neoprene hoses, the external surface conditions would be indicative of internal conditions of deterioration.

## RAIs 3.3.2.4.7-2, 3.3.2.4.21-2

These questions are similar to the previous one. The staff requested that the applicant supplement the response with additional information on the AMP that manage galvanic corrosion for various material/environment combination in the diesel generator and the service water systems.

## RAI 3.3.2.4.12-1

This RAI relates to the instrument air supply system. The staff will get back to the applicant regarding the extent of the license renewal scope that applies to instrument air supply system. Therefore no action was requested of the applicant at this time.

## RAI 3.3.4.14-1

This RAI was related to the heat exchanger/condenser components of the liquid waste processing (WL) system. The staff indicated that no further action was requested of the applicant at this time. The applicant committed to an one-time inspection of this item.

## RAI B.1.4-1

The staff requests the applicant to discuss the one-time inspection for the most susceptible location for the components which credit the Chemistry Program for aging management, i.e., the inspection and evaluation of the effectiveness of the program for various chemistry regime/material combinations.

The staff also requests the applicant to discuss the inspection of non-class 1 SS piping and piping system which are susceptible to stress corrosion cracking (Table 3.1-2, AMR item 6) to verify the effectiveness of the Chemistry Program.

## RAI B.1.4-5

The staff requested supplemental information related to the renewal applicant action Item 3.2.2.1-1 for AMPs of other aging effects found in WCAP-14574-A, "License Renewal Evaluation: Aging Management Evaluation for Pressurizers," page 51. The renewal action item is to provide a basis for the plant specific applications about how the water chemistry control programs will provide for a sufficient level of hydrogen overpressure to manage crevice corrosion of the internal surfaces of the pressurizer.

## RAI B.1.6-2

While the reference to the Inspection Report (50-395/92-20) provided some assurance of the effectiveness of the flow-accelerated corrosion (FAC) program, the report did not provide the information sought by the staff. The staff requested that the applicant provide information to demonstrate how effective the FAC program is in predicting the wall thicknesses of the susceptible components, validate the predictions with the measured thicknesses if any, and elaborate the actions performed to ensure appropriate management of FAC.

## RAI B.1.6-3

The staff requested clarifications related to the FAC monitoring program using predictive method to calculate the wall thinning of components susceptible to FAC. In order to evaluate the accuracy of the prediction, the staff requested a sample list of components for which wall thinning is predicted and measured by volumetric examination. A sample list of systems could be provided in lieu of individual components.

RAI B.2.10-3

The staff requested supplemental information on the operating history; i.e., applicant should summarize the most recent excavations (systems/components) and the determinations or the lack of onset/or otherwise of components degradation.

VCSNS has reviewed this telecon summary and did not provide any comments.

***/RA/***

Ram Subbaratnam, Project Manager  
License Renewal Section B  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No.: 50-395

Enclosures: As stated

cc w/encl: See next page

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JUNE 22, JULY 7, 9-10, 2003

Telecon Participants

**Attendees**

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