January 30, 2002

LICENSEE: Virginia Electric Power Company

FACILITIES: North Anna, Units 1 and 2
Surry, Units 1 and 2

SUBJECT: SUMMARY OF JANUARY 28 AND 29, 2002, TELECOMMUNICATION WITH VIRGINIA ELECTRIC POWER COMPANY

On January 28 and 29, 2002, the U.S. Nuclear Regulatory Commission (NRC) staff had a conference call with representatives of Virginia Electric Power Company (VEPCO) to discuss the need for additional clarification regarding information provided in Sections 4.4, and B2.2.3 of the license renewal application. The information requested, the applicant's response, and staff evaluation of the applicant's response is provided in Attachment 1. A list of participants is provided in Attachment 2.

A draft of this phone conversation summary was provided to VEPCO to allow them the opportunity to comment prior to the summary being issued.

/***RA***/

Robert J. Prato, Project Manager
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-338, 50-339, 50-280, and 50-281

Attachments: As stated

cc w/ atts: See next page

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SUMMARY OF TELECOMMUNICATION WITH
VIRGINIA ELECTRIC AND POWER COMPANY
JANUARY 28 AND 29, 2002

Section 4.4 Environmental Qualification of Electric Equipment

4.4-1 The NRC staff requested that the applicant provide additional description of its data collection methodology used in its Environmental Qualification (EQ) Program.

The applicant provided the following summary regarding data collection that was performed to establish values of temperature, radiation, and mechanical cycles for the EQ Program within the current licensing basis. The applicant states that it is its intent to apply this methodology for data collection, if warranted by changes in plant conditions, during the period of extended operation.

Three types of data are used for the re-evaluation of EQ analyses. The data collection method is described below:

- Temperature Data: Surry Power Station Unit 1 was a pilot plant for life extension. This program began in the mid-1980's. As a part of this program thermocouples were installed in containment to monitor temperature at various locations inside Unit 1 containment. These thermocouples were connected to a data logger located outside containment. In addition, peak recording thermometers were installed in various accessible locations in both Units 1 and 2. Temperatures were collected in areas of known elevated temperatures such as the reactor coolant pump and loop rooms, the pressurizer cubicle, the pipe penetration areas on both sides of the containment wall, areas above the reactor, the main steam valve house, the turbine building, and the auxiliary building. Similar data were collected and analyzed for North Anna. At the conclusion of the life extension pilot project, data collection was continued as an integral part of the EQ Program. The bulk of the temperature data was collected for a period spanning approximately four years. The EQ Group compiled and analyzed the data and documented the results along with the methodology in technical reports for each station. Analysis of the temperature data consisted of compiling and plotting the total duration at specific temperatures versus the measured temperatures. Typical results of the data plots provided a "bell curve" relationship of duration versus temperature. For each temperature plot, a conservatively high temperature was selected to represent the aging temperature in Arrhenius calculations. The conservatively high temperature selected typically represented greater than 95% of the data under the "bell curve."

- Radiation Data: An additional aspect of Surry Power Station's pilot program for life extension included radiation monitoring in select areas inside Unit 1 containment. At the conclusion of the life extension pilot project, the data collection was continued as an integral part of the EQ Program. Radiation monitoring under the pressurizer and in one reactor coolant loop cubicle has continued since 1988. To date, the average dose rate has been 0.7 and 0.9 Rads per hour respectively. These values are approximately 1/40th the design

values for the non-accident radiation dose (0.325 Mrads per year or 37 Rads per hour.

- Mechanical Cycles: Mechanical cycles counting is based on a review of operational data, periodic test data and maintenance records to determine the total number of cycles to which a component has been subjected.

  The staff found the applicant's response acceptable, and will not need any additional information regarding this matter.

B2.2.3 Boric Acid Corrosion Surveillance

B2.2.3-1 The discussion under "Preventive Actions" in Section B2.2.3 of the LRA states that no preventive actions are performed. The recommendations of GL 88-05 include preventive actions and it appears that preventive actions are included in this AMP. The following information is needed:

a. It is the staff's understanding that the Boric Acid Corrosion Surveillance program will prevent or mitigate boric acid corrosion by frequent monitoring of the locations where potential leakage could occur and timely repair if leakage is detected. The applicant is requested to confirm the staff's understanding of this AMP and to provide an explanation as to why such activities under the program are not considered to be preventive actions.

   The applicant responded that the boric acid corrosion surveillance activities are performed at the beginning of each refueling outage, or when the calculation of primary system leakage rate, that is required by Technical Specifications, indicates an increased level of unidentified leakage. If indications of leakage are found, the boric acid residue is removed, the cause of the leakage is determined, and repairs are implemented in accordance with the Corrective Action System. Operating experience confirms that leakage is discovered and corrected prior to a loss of intended function. In this way, Boric Acid Corrosion Surveillance is considered to be a preventive action.

   The staff found the applicant's response acceptable, and will not need any additional information regarding this matter.

b. GL 88-05 recommends that corrective actions to prevent recurrence of boric acid corrosion should include modifications in the design or operating procedures to reduce the probability of leaks at locations where they may cause corrosion damage and use of suitable corrosion resistant materials or the application of protective coatings or claddings. Based on Dominion's operating experience with the Boric Acid Corrosion Surveillance program, discuss the extent to which the above recommendations have been implemented at all four units. If these recommendations have not been implemented, explain why not.

The applicant responded that the design of the plant includes the use of corrosion-resistant stainless steel for components that are intended to come into contact with boric acid. Carbon-steel components that may be contacted by boric acid leakage are covered with protective coatings, except for bolting. Operating experience with respect to the Boric Acid Corrosion Surveillance program confirms that leakage is discovered and corrected prior to a loss of intended function. This statement also is true for the uncoated bolting which includes a sufficient amount of material for each bolt, and a conservative number of bolts, to ensure that intended function is not lost.

Operating experience has shown that when boric acid leakage does occur, it is typically observed at valve packings and bolted flanges, and is corrected by maintenance tasks. No occurrences of boric acid leakage have necessitated design changes or modifications of operating procedures. Maintenance procedures allow only minimal adjustment of valve packing before a packing replacement is required in order to correct any leakage. Since the same maintenance procedures are used for valve packings and flanges throughout the plant, the randomness of the relatively small number of leakage locations that are found at the beginning of refueling outages confirms the appropriateness of the current maintenance practices. It is typical during a refueling outage boric acid corrosion walkdown to not find active leaks but, instead, walkdowns will more likely find boric acid residue as a result of the previous plant heatup process.

The staff found the applicant's response acceptable, and will not need any additional information regarding this matter.

Attendance list
Telephone Conference Call Virginia Electric Power Company (VEPCO)
January 28 and 29, 2002

Name	Organization
Dr. Saba	NRC/NRR
Robert Prato	NRC/NRR
Michael Henig	VEPCO
Paul Aitkens	VEPCO
Tom Snow	VEPCO
Michael Pinion	VEPCO
Marc Hotchkiss	VEPCO
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Attachment 2

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