August 8, 2001

LICENSEES: Virginia Electric Power Company

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

SUBJECT: SUMMARY OF JULY 31, 2001, TELECOMMUNICATION WITH VIRGINIA ELECTRIC POWER COMPANY

On July 31, 2001, the U.S. Nuclear Regulatory Commission (NRC) staff had a conference call with representatives of Virginia Electric Power Company (VEPCO) to discuss information relating the the staff's review of the North Anna and Surry license renewal application review. A list of participants is attached. The information discussed, the applicant's responses, and the follow-up actions are provided below.

NAS and SPS License Renewal Applications, Sections 3.3.1 to 3.3.6, "Auxiliary Systems"

1. The staff requested a clarification as to the results of the applicant's operational history review that led them to manage loss of material on stainless steel components in an air environment (water-ladened or intermittently exposed to water).

   The applicant stated that they have no operating history of aging of stainless steel components in an air environment (water-ladened or intermittently exposed to water), however, they decided to manage these components for potential loss of material to ensure a conservative approach will detect such aging in the period of extended operation.

   The staff found this response acceptable and will not need any additional information relating to this matter.

2. In both LRAs, Tables 3.3.1-1, "Chemical and Volume Control System," and Table 3.3.1-4, "Sampling System," the applicant identifies loss of pre-load as an applicable aging effect for bolting. The applicant credits the ISI Program - Component and Component Support Inspections as the aging management program to manage loss of pre-load in these applications. The staff requested that the applicant provide additional description on how this aging management program will be used to detect loss of pre-load.

   The applicant stated that the intent of this program is to identify gross loss of pre-load (lose bolts) through visual inspections. The program is not intended to detect a reduction in torque.

The staff found this response acceptable and will not need any additional information relating to this matter.

NAS and SPS License Renewal Applications, Section 2.5, "Screening Results: Electrical and Instrumentation and Controls Systems"

1. The staff requested that the applicant explain the exclusion of offsite power systems from the scope of license renewal as required by 10 CFR 54.4(a)(3) with regards to station blackout (10 CFR 54.63).

   The applicant stated that the North Anna and Surry station blackout analysis relied primarily on the recovery of the emergency diesel generators.

   The staff disagreed with the applicant and stated that, for North Anna and Surry, the specified duration for recovery was based on Regulatory Guide 1.155 and NUMARC 87-00 that includes the recovery of offsite power. In addition, 10 CFR 50.63(a) states that the station blackout duration shall be based on "[t]he expected frequency of loss of offsite power" and "[t]he probable time needed to restore offsite power." Based on this information, the staff requires that applicable offsite power structures and components need to be included within the scope of license renewal and subject to an aging management review, or additional justification for its exclusion needs to be provided. The staff will forward a request for additional information as a follow-up to this concern.

2. In both LRAs, Table 2.2-2, the applicant states that the AAC diesel service air system (BSR), is not within the scope of license renewal. The staff requested a clarification as to the function of the AAC diesel service air system, and any support functions regarding the emergency diesel generators (EDG) or any other safety related function.

   The applicant stated that the AAC diesel service air system is primarily used for maintenance purposes and does not provide a support function to the EDG or any other safety related component. The AAC Diesel Starting Air System is the air system that supports the EDG safety related function, and is in the scope of license renewal. Refer to the LRAs, Table 2.2-1.

   The staff found this response acceptable and will not need any additional information relating to this matter.

3. In the NAS LRA, Table 2.2-2, the applicant states that the 4kV System and above (PH) is not within the scope of license renewal. The staff requested a clarification as to the function of the PH systems, and any safety-related or support function(s).

   The applicant stated that the PH System is unique to NAS. Its primary function is to support the main generator output breaker, which is non-safety-related. It has no other safety-related or support function.

   The staff found this response acceptable and will not need any additional information relating to this matter.

4. In the SPS LRA, Table 2.2-3, the applicant states that the high level and low level intake structures are within the scope of license renewal. However, in Table 2.2-4 of the SPS LRA, the applicant states that the high level intake structure control house and the low level intake structure switchgear building are not within the scope of license renewal. The staff requested a clarification as to the function of the high level intake structure control house and the low level intake structure switchgear building, and verify that the structures in questions do not have any safety-related or support equipment located within these structures.

   The applicant stated that the high level intake structure control house and the low level intake structure switchgear building are unique to SPS because of its natural circulation service water and circulating water systems. The high level intake structure control house contains such components as the screen drive motors, the screen wash pumps, and hotel loads. The low level intake structure switchgear building primarily houses the switch gear for the 4160 volt, 480 volt, and 120 volt power supplies, switchgear, and transformers to the non-safety-related circulating water systems. It has no other safety-related or support function.

   The staff found this response acceptable and will not need any additional information relating to this matter.

5. In the SPS LRA, Table 2.2-4, the applicant states that the local emergency operating facility is not within the scope of license renewal. The staff requested a clarification as to the function of the local emergency operating facility, and any safety-related or support function(s).

   The applicant stated that the local emergency operating facility was originally built to support an emergency response. These functions have since been transferred to the applicant's headquarters in Richmond, VA and other on-site locations. The only emergency response function of this facility is that it serves as a gathering place for State and local officials during an emergency, as appropriate. This structure has no other safety-related or support function and, therefore, is not within the scope of license renewal.

   The staff found this response acceptable and will not need any additional information relating to this matter.

6. In both LRAs, Section 2.5.2, the applicant states that the evaluation boundaries generally includes all cables and connectors in these areas to provide the complete coverage of cables and connectors in the scope of license renewal. The staff requested a clarification as to the use of the term "generally" in this statement.

   The applicant stated that the term "generally" was used because the evaluation boundries included all cables and connectors with the exception of those supplying the control rod drive mechanisms (CRDMs) and the bare grounding conductors. The applicant explained the CRDMs are included within the scope of license renewal because it serves a safety-related pressure boundary function. However, the rod

movement function is not safety-related and is not within the scope of license renewal and, therefore, the associated cables and connectors are also not within the scope of license renewal. The bare grounding conductors were found to be outside the scope of license renewal on several past license renewal applications.

The staff will request additional information relating to this concern to more formally document the information provided during this telecommunication.

NAS and SPS License Renewal Applications, Appendix B, Section B2.1.1, "Buried Piping and Valve Inspection Activities"

Scoping

1. The staff requested a clarification if the buried pipe inspection program include periodic inspections when components in the applicable systems are excavated for any reason, and how often does the applicant expect these inspections to take place.

   The applicant stated that the work control program includes the inspection of components when they are excavated. However, both NAS and SPS have not needed excavation of buried component very often in the past. Therefore, the applicant's program will ensure that a sample of each component, based on material and environment, will be excavated at least once prior to the period of extended operation to ensure adequate aging management prior to entering the period of extended operation.

   The staff found this response acceptable and will not need any additional information relating to this matter.

2. In the SPS LRA, page B-9, the applicant identifies copper-nickel as one of the materials for the piping buried on-site. In the LRA, page B-8, copper-nickel is not identified as one of the representative samples of material/buried conditions. The staff requested the applicant to provide a justification for the exclusion of copper-nickel material for the representative sample of materials.

   The applicant stated that the exclusion of copper-nickel as one of the representative samples of materials was an administrative oversight and should have been identified on page B-8.

   The staff found this response acceptable. However, the staff will follow-up with a request for additional information to more formally document this information.

3. The staff requested the applicant to clarify the criteria that will be used to select the representative samples of buried pipes.

   The applicant explained that the representative samples for buried pipes will be solely based on material of the buried components and the burial conditions of each component. The applicant also confirmed that there is no significant difference in the soil conditions at the different sites that would make a difference in the aging management activities needed at each site.

The staff found this response acceptable and will not need any additional information relating to this matter.

Detection of Aging Effects

1. The staff requested a clarification as to use of visual inspections that will be used to detect gross indications of changes in material properties for copper-nickel components, what changes in material properties the program is attempting to detect and how this will be accomplished by visual inspections.

   The applicant stated that copper-nickel piping is primarily used underground and in air environments with intermittent wetted conditions in service water lines that connect to chillers that are within the scope of license renewal. The applicant stated that they do not expect to see any changes in material properties (such as selective leaching) in the buried copper-nickel piping, and that the changes in material properties of the service water lines to the chillers will be their lead indication of any potential aging. Because the service water lines to the chillers are available for visual inspections, the applicant will be able to observe any changes in material properties.

   The staff recognizes that certain grades of copper-nickel are susceptible to selective leaching and, therefore, requested that the applicant formally identify the grade of copper-nickel used in buried piping applications on-site to verify that selective leaching is not a concern.

2. In the SPS LRA, the applicant identifies cast iron as one of the materials for the piping buried on-site. Because this material is susceptible to selective leach, the staff requested the applicant to provide a justification for not including hardness measurements as part of its aging management program in determining loss of material properties.

   The applicant stated that the buried piping inspection activities are intended to detect any damage to the protective coating that would allow damage to the buried piping. If damage to the coating is found, the applicant would then take the appropriate steps, including hardness testing when appropriate, to identify any damage to the pipe as a result of the piping being exposed to underground conditions.

   The staff found this response acceptable and will not need any additional information relating to this matter.

3. In the NAS LRA, the applicant states that some of the buried piping uses cathodic protection. The staff recognizes that monitoring cathodic current is a good means of identifying potential damage to coating material of buried components and questioned the applicant, as to why they did not take advantage of this indication in its aging management activities.

   The applicant explained that its current aging management activities are adequate as described in the LRA. However, they stated that they do monitor cathodic protection current along with pipe-to-soil potential current as a means of identifying degradation of

buried component coating but do not take credit for these activities as aging management activities.

The staff found this response acceptable and will not need any additional information relating to this matter.

Operating Experience

In both LRAs, the applicant states that significant degradation of buried piping has not been found at either site. This statement is based on the experience that has been gained through the Work Control Process with respect to buried fire protection piping (all four units) and service water system piping (NAS 1 and2). In order to assess the significance of the operating experience, the staff requested the applicant to describe how many sample opportunities of buried piping and valves have occurred over the life of the buried pipe within the scope of license renewal and correlate the inspections performed with the material/burial condition combinations identified under the scope section of this AMP.

The applicant identified the service water system, fuel oil systems, and the fire protection systems as the systems that are within the scope of license renewal that contain buried components subject to an AMR. The applicant stated that a review of their operating experience for each of these systems did not identify any failure of buried components due to aging or failure of coating material.

The staff found this response acceptable. However, the staff will follow-up with a request for additional information to more formally document this operating experience.

Draft Generic RAIs Regarding Seismic II/I Piping Systems and Other Related SSCs That Meet 10 CFR 54.4(a)(2) Scoping Criterion

Attached for your information are generic RAIs relating to Seismic II/I and other related SSCs (Attachment 2). These RAIs are not being asked of you, but identify the basic information needed in a LRA relating to the SSCs in questions, and its AMR. The staff is reviewing your LRA, and will follow-up with any appropriate RAIs needed for the staff to complete its evaluation.

A draft of this telephone conversation summary was provided to VEPCO to allow them the opportunity to comment on the contents of its input prior to the summary being issued.

/RA/

Robert J. Prato, Project Manager
License Renewal and Standardization Branch
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/att: See next page

A draft of this telephone conversation summary was provided to VEPCO to allow them the opportunity to comment on the contents of its input prior to the summary being issued.

/***RA***/

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

Attachments: As stated

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Telephone Conference Call Virginia Electric Power Company (VEPCO)
July 31, 2001

Name	Organization
James Davis	NRC/NRR
Jame Lazevnick	NRC/NRR
Paul Shemanski	NRC/NRR
Meena Khanna	NRC/NRR
Robert Prato	NRC/NRR
Michael Henig	VEPCO
Paul Atkins	VEPCO
H.V. Le	VEPCO
Preston Dougherty	VEPCO
Julius [Lucky] Wroniewicz	VEPCO
Tom Snow	VEPCO
Ben Rodill	VEPCO

Draft Generic RAIs Regarding Seismic II/I Piping Systems and Other Related SSCs

10 CFR 54.4(a)(2) - Scoping

RAI #1 An applicant for license renewal should consider two configurations of non-safety-related piping systems that could potentially meet the 54.4(a)(2) scoping criterion. The first configuration includes non-safety-related piping systems (including piping segments and supports) which are connected to safety-related piping. These non-safety-related piping systems should be included within the scope of license renewal up to and including the first seismic support past the safety-related/non-safety-related interface. The second configuration involves non-safety-related piping systems which are not connected to safety-related piping, but have a spatial relationship such that their failure could adversely impact on the performance of an intended safety function. For this piping system configuration, the applicant has two options when performing its scoping evaluation; a mitigative option or a preventive option. With the mitigative option, the applicant must demonstrate that plant mitigative features (e.g., pipe whip restraints, jet impingement shields, spray and drip shields, seismic supports, flood barriers, etc.) are provided, which are provided to protect safety-related SSCs from a failure of non-safety-related piping segments. When evaluating the failure modes of non-safety-related piping segments and the associated consequences, age-related degradation must be considered. The staff notes that pipe failure evaluations typically do not consider age-related degradation when determining pipe failure locations. Rather, pipe failure locations are normally postulated based on high stress. Industry operating experience has shown that age-related pipe failures can, and do, occur at locations other than the high-stress locations postulated in most pipe failure analyses. Therefore, to utilize the mitigative option, an applicant should demonstrate that the mitigating devices are adequate to protect safety-related SSCs from failures of non-safety-related piping segments at any location where age-related degradation is plausible. If this level of protection can be demonstrated, then only the mitigative features need to be included within the scope of license renewal, and the piping segments need not be included within the scope. However, if an applicant cannot demonstrate that the mitigative features are adequate to protect safety-related SSCs from the consequences of non-safety-related pipe failures, then the applicant should utilize the preventive option, which requires that the entire non-safety-related piping system be brought into the scope of license renewal and an AMR be performed on the components within the piping system. Finally, an applicant may determine that in order to ensure adequate protection of the safety-related SSC, a combination of mitigative features and non-safety-related SSCs must be brought within scope. Again, it is incumbent upon the applicant to provide adequate justification for the approach taken with respect to scoping of non-safety-related SSCs in accordance with the Rule.

To determine if all SSCs which meet the 54.4(a)(2) scoping criterion have been included within the scope of license renewal, the staff requests that the applicant identify the following:

a. Whether non-safety-related piping that is connected to safety-related piping is within the scope of license renewal, up to the first seismic support past the

safety-related/non-safety-related interface. If not, please provide the basis for not including this piping within scope.

b. Whether the mitigative option, the preventive option, or a combination, is used for non-safety-related piping systems which are not connected to safety-related piping, but have a spatial relationship such that their failure could adversely impact on the performance of an intended safety function. For each non-safety-related piping system which would normally be included within the scope of license renewal, but is excluded because mitigative features have been credited for protecting safety-related SSCs from the failure of the non-safety-related piping system, please identify

1. the mitigative feature(s) that is credited for protection,
2. the hazard (e.g., failure mechanisms and postulated failure locations) for which the mitigative feature(s) is providing protection, and
3. a summary discussion (including references, such as reports, analyses, calculations, etc.) of the basis for the conclusion that the mitigative feature(s) is adequate to protect safety-related SSCs.

The staff will review the information to determine whether the mitigative features are adequate for protecting safety-related SSCs from aging-related failures of non-safety-related piping systems.

RAI #2 Given the methodology used to identify piping systems that meet the 54.4(a)(2) scoping criterion, the staff is concerned that there may be other non-safety-related mechanical or structural components which would normally be included within the scope of license renewal, but are excluded because mitigative features have been credited for protecting safety-related SSCs from the failure of the non-safety-related mechanical or structural component. If such credit is being taken, please identify these non-safety-related mechanical or structural components and indicate:

a. the mitigative feature(s) that is credited for protection,
b. the hazard (e.g., failure mechanisms and postulated failure locations) for which the mitigative feature(s) is providing protection, and
c. a summary discussion (including references, such as reports, analyses, calculations, etc.) of the basis for the conclusion that the mitigative feature(s) is adequate to protect safety-related SSCs.

The staff will review the information to determine whether the mitigative features are adequate for protecting safety-related SSCs from the aging-related failures of non-safety-related mechanical and structural components.

10 CFR 54.4(a)(2) - Aging Management Review

RAI #1 An applicant for license renewal should consider two configurations of non-safety-related piping systems that could potentially meet the 54.4(a)(2) scoping criterion. The first configuration includes non-safety-related piping systems (including piping segments and supports) which are connected to safety-related piping. These

non-safety-related piping systems should be included within the scope of license renewal up to and including the first seismic support past the safety-related/non-safety-related interface. In addition, aging management of these non-safety-related piping segments should be the same as for the safety-related piping to which it is connected. Please confirm that the same aging management programs and activities used to manage aging of safety-related piping will be used to manage the connected non-safety-related piping, up to the first seismic support past the safety-related/non-safety-related interface. If the non-safety-related piping will be managed different from the connected safety-related piping, please provide a basis for managing it differently.

RAI#2 The second configuration involves non-safety-related piping systems which are not connected to safety-related piping, but have a spatial relationship such that their failure could adversely impact on the performance of an intended safety function. For these piping systems that are within the scope of license renewal, please provide information regarding how these piping systems will be managed to mitigate or reduce age-related degradation. The response should identify all aging management programs and other activities which will be credited for managing the aging effects associated with these piping systems.

RAI#3 For other non-safety-related mechanical and structural components which meet the 54.4(a)(2) scoping criterion, and are within the scope of license renewal, please provide information regarding how these mechanical and structural components will be managed to mitigate or reduce age-related degradation. The response should identify all aging management programs and other activities which will be credited for managing the aging effects associated with these mechanical and structural components.

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