

March 22, 2005

MEMORANDUM TO: Laura A. Dudes, Section Chief
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Division of Regulatory Improvement Programs, NRR

FROM: Michael L. Scott, Senior Project Manager */RA B. Sosa for:/*
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SUBJECT: SUMMARY OF JANUARY 25, JANUARY 27, AND FEBRUARY 1, 2005,
TELEPHONE CONFERENCE CALLS WITH DOMINION NUCLEAR
NORTH ANNA, LLC REGARDING OPEN ITEMS IN THE STAFF'S
DRAFT SAFETY EVALUATION REPORT FOR THE NORTH ANNA
EARLY SITE PERMIT APPLICATION

On Tuesday, January 25, Thursday, January 27, and Tuesday, February 1, 2005, telephone conference calls were held among representatives of Dominion Nuclear North Anna, LLC (Dominion) and the Nuclear Regulatory Commission (NRC) staff. A list of participants is attached. The purpose of the conferences, which were held at the request of Dominion, was to discuss certain open items in the staff's draft safety evaluation report (DSER) for Dominion's early site permit (ESP) application for the North Anna ESP site.

January 25, 2005 conference

During the first conference, Dominion and the staff discussed open items in DSER Section 2.3, regarding meteorology. Dominion stated a general concern about the staff's use of the phrase "design basis," in that Dominion believes design is a future issue and that the staff should be focusing on site characteristics at the ESP stage. Dominion added that additional margin may be applied to a site characteristic to produce a design basis value. The staff agreed to consider this point.

Open item 2.3-3. Dominion stated that it finds no requirement or current application that specifies a minimum ultimate heat sink (UHS) temperature, or the basis for a seven-day weather period for determining such a characteristic. The staff responded that freezing could cause loss of water supply. Dominion noted that ice would melt during UHS use, so ice would not reduce the body of water available to meet needs. The staff stated that the issue could be resolved by design. Dominion inquired as to whether its response to the staff's request for additional information (RAI) 2.4.7-4 was a sufficient commitment to address the open item. The staff responded that the staff would review Dominion's request for additional information (RAI) response and determine whether the item should be a permit condition. Dominion added that Dominion was not sure ice sheet thickness can be calculated without knowing the UHS design, and Dominion suggested use of degree-days of freezing as an alternative. The staff agreed that cumulative degree-days are more relevant than the total number of days of cooling.

Dominion and the staff also discussed the fact that Dominion had used one weather station for air temperature data, while the staff had used another in its review.

Open item 2.3-1. Dominion noted that a 70-mile per hour (mph) wind speed presented in the American National Standards Institute (ANSI) standard is a design basis, not a site characteristic. Dominion also contended that a single instance of measuring a speed of 68 mph does not invalidate the 100-year return period value of 64 mph. Dominion added that NRC Review Standard (RS)-002 calls for using the ANSI standard upon which Dominion's figures were based. The staff responded that newer data should be considered, and that this issue would need to be discussed further.

Open item 2.3-2. Dominion stated that ground snow load is a design basis input not appropriate for an ESP. Dominion added that Regulatory Guide 1.102 describes how to combine snow load and probable maximum precipitation (PMP).

Open item 2.3-4. Dominion asked what type of analysis regarding effects of the dry cooling system the staff had in mind. Dominion stated that a quantitative analysis is not feasible at the ESP stage absent a specific design. The staff responded that a relatively general and qualitative analysis based on the approach chosen is acceptable at the ESP stage, and that a more quantitative evaluation would be needed at the combined license (COL) stage.

January 27, 2005, conference

During the January 27 conference, Dominion and the staff discussed open items in DSER Section 2.4, regarding hydrology. Before this discussion began, there was additional discussion on Open Item 2.3-3. Dominion noted that its site safety analysis report (SSAR) already contains 200 degree-days (F) of freezing, and Dominion proposed that this number would be appropriate as a site characteristic related to the potential for freezing in the UHS. The staff noted that the staff obtained 321.8 °F using data from a different weather station. The staff agreed to consider whether one station would be more appropriate than the other.

The staff also provided additional rationale for why the presence of a 68-mph wind speed reading (Open item 2.3-1) needs additional consideration. Dominion noted that the SSAR states that the 68-mph reading was recorded in 1954, before the ANSI standard on the subject was written.

Open item 2.4-1. Dominion stated that it proposed to provide a cross-reference to the Virginia State Coordinate System. The staff responded that this approach was acceptable to address the open item, as long as the coordinate system and units of measure are provided.

Open item 2.4-2. Dominion referred to SSAR Figure 1.2-4 and reminded the staff that Dominion expects to use the discharge structure for canceled North Anna Units 3 and 4 for the new units. Dominion added that this structure runs within 1 foot of existing plant piping. Dominion contended that this should not be an open item or the subject of a permit condition. Interferences would be evaluated under the existing licenses and is a 10 CFR Part 50 issue, while impacts of the existing plants on the new plants would be evaluated at the COL stage. The staff replied that Dominion needs to evaluate, at ESP, the feasibility of using the existing structure given the small separation from the existing unit piping. Dominion and the staff agreed to consider this question further.

Open item 2.4-3. Dominion representatives stated their opinion that Section 5.2.2 of Dominion's environmental report for the ESP application addresses this open item. The staff replied that the analysis does not consider low-flow conditions, and Dominion responded that the water budget reflected 24 years of history. Dominion added that SSAR Table 2.4-6 addresses low-level percentages. The staff noted that the low-level limit for units 1 and 2 has been dropped to 242 feet mean sea level (MSL) and that the ESP applicant could choose to commit to that level to allow closing the open item.

Open item 2.4-4. Dominion noted that Dominion considered breach of upstream reservoirs and found no significant impact on Lake Anna, and Dominion plans to show that the impact of such breaches would bound the impact of an ice jam breakup. The staff stated that this approach was acceptable.

Open item 2.4-5. Dominion stated that Dominion could specify a minimum lake temperature for the new units' intake. The staff stated that this was a concern for frazil ice and that the design needs to address this issue. Dominion stated that such emphasis on non-safety structures is inappropriate, to which the staff replied that the concern is frequent utilization of the UHS. Dominion replied that with any unit operating, lake temperature would be well above freezing. Dominion added that SSAR page 2-2-129 contains the appropriate design commitment. The staff agreed to look at this material.

Open item 2.4-6. Dominion stated that Dominion does not have UHS design details as identified in the open item. Dominion added that Dominion has already discussed the feasibility of the underground UHS in response to an RAI. Dominion believes neither a permit condition nor an open item is needed on UHS level, and that Dominion can show the feasibility of design measures to deal with pressure head of groundwater.

Open item 2.4-7. The staff explained that the staff needs information regarding groundwater level measurements to ensure that the limited data provided to date (one year of measurements) is not anomalous due to the recovery from the recent drought conditions. Gradients observed in this short period of time might underestimate the horizontal gradient. Dominion responded that Dominion plans to obtain one additional data point. The staff replied that Dominion should provide other piezometer measurements for wells P-10, 14, and 18.

Open item 2.4-8. Dominion noted that the open item appears to question the use of a geometric mean to develop hydraulic conductivity. Dominion noted that Dominion could provide a more conservative method. Dominion would propose the maximum observed value as conservative. SSAR Section 2.4-12 (Table 2.4-16) discusses this method.

Open item 2.4-11. Dominion noted that the staff is asking in this open item for adsorption and retention coefficients (k_d). Dominion added that site-specific values for these coefficients have not been obtained for North Anna. At COL, Dominion would rely on analysis at that time. Dominion noted that NUREG/CR-6697, "Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes," states that there is no correlation between k_d and soil texture. Dominion proposed that the open item be closed on the basis of Dominion providing a conservative value at ESP and the approach to be used to provide site-specific values at COL. The staff replied that k_d is specific to radionuclides and that NUREG/CR-6656, "Information on Hydrologic Conceptual Models, Parameters, Uncertainty Analysis, and Data Sources for Dose Assessments at Decommissioning Sites," deals with the same subjects.

Open item 2.4-9. Dominion inquired what the wording would be for a site characteristic to represent upward hydraulic gradient. Dominion noted that there is only a certain amount of data available. Dominion could state that such gradient would be a small fraction of horizontal water movement and "bound it out." The staff replied that Dominion needs to determine whether there is a need to consider upward gradient; i.e., whether a conservative flow path would be affected by it. Dominion asserted that, if Dominion chooses the most conservative flow path, upward gradient would not matter.

Open item 2.4-10. Dominion stated that it would be straightforward to provide an additional three quarters of hydraulic gradient data and that Dominion would provide this information.

February 1, 2005, conference.

Dominion began the discussion by stating that Dominion plans to do the analysis called for in Open Item 2.5-2. Initially, Dominion plans to send the staff a letter that describes its approach and provide a completion date. Dominion expects to send the bulk of the needed information (including an explanation of the analysis method) by the staff's March 3, 2005, due date for applicant responses to open items. However, Dominion will not submit the final results (transfer function and safe shutdown earthquake) until the end of March 2005.

Dominion noted that it was important that Dominion understand the staff's position on the ground motion control point. Dominion proposed to define the control point at the top of the rock surface. The staff responded that the staff understood that the control point would be at a hypothetical rock outcrop at the top of the bedrock. Dominion replied that Dominion planned to choose an average elevation with a median shear wave velocity of 3300 feet per second and an elevation of 250 feet as the control point.

The staff asked what would happen if the transfer function is not flat and the SSE is changed from that in the SSAR. Dominion replied that Dominion would evaluate the effect of any change in the SSE for impact on other sections of the SSAR.

Docket No. 52-008

Attachment: As stated

cc w/att: See next page

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ACCESSION NUMBER: ML050540129 * See previous concurrence

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JANUARY 25 AND 27, 2005, AND FEBRUARY 1, 2005
TELEPHONE CONFERENCE CALL SUMMARY
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