

April 4, 2003

Mr. Eugene Grecheck
Vice President Nuclear Support Services
5000 Dominion Boulevard
Glen Allen, VA 23060

SUBJECT: PRE-APPLICATION REVIEW OF DOMINION NORTH ANNA EARLY SITE
PERMIT PROJECT QUALITY ASSURANCE PLAN

Dear Mr. Grecheck:

In a letter to the U.S. Nuclear Regulatory Commission (NRC) dated September 16, 2002, Dominion Energy, Incorporated (Dominion) submitted a Quality Assurance (QA) plan for its North Anna early site permit (ESP) project. Dominion proposes to use this plan for performance of the ESP activities described in 10 CFR 52.17, "Contents of Applications." The letter expressed an objective that its QA plan describe a QA program that could be readily implemented should Dominion decide to accelerate the process of obtaining a limited work authorization (LWA), combined license (COL), or construction permit.

The NRC staff has evaluated the ESP QA plan. During a telephone conversation on October 29, 2002, the staff provided Dominion general comments on the plan, as well as several specific comments related to QA activities beyond the scope of ESP activities that may be applicable to an LWA.

As you may be aware, the staff has recently interacted with the Nuclear Energy Institute (NEI) to resolve an issue regarding whether Appendix B to 10 CFR Part 50 applies to an ESP application. The staff has concluded that the current regulations in 10 CFR Part 52 do not require that a 10 CFR Part 50 Appendix B program be implemented in support of ESP applications, and they also do not require that an ESP applicant submit a QA plan in support of its application. However, ESP activities associated with site safety should be controlled by QA measures equivalent in substance to the controls described in 10 CFR Part 50 Appendix B, to provide reasonable assurance that systems, structures, and components (SSCs) of a nuclear power plant or plants that might be constructed on the site will perform adequately in service. For this reason, the staff evaluated Dominion's ESP QA plan against the criteria of 10 CFR Part 50 Appendix B.

Upon receipt of an ESP application, the staff would evaluate QA measures taken to ensure reliability of safety-related information. While the staff would use 10 CFR Part 50 Appendix B as a guideline for its evaluation, the staff's findings would focus directly on the reliability of the information evaluated and not on compliance with any 10 CFR Part 50 Appendix B criteria. Should the QA measures applied to such information be inadequate and should the NRC determine that the information is not appropriately reliable, the NRC would reflect that determination in its findings on the technical issue that the information was intended to support. The staff's comments in the enclosure to this letter should be considered in that light.

The staff has determined that the QA plan addresses most of the criteria of 10 CFR Part 50 Appendix B. However, some criteria identified in the plan as inapplicable to ESP activities appear to be appropriate for ESP-related activities. Therefore, as stated in the comments, measures equivalent in substance to those specified in 10 CFR Part 50 Appendix B should be addressed in the plan.

In some cases, the plan lacks detailed descriptions of how QA plans will be applied to specific ESP activities. The absence of these descriptions prevented the staff from performing a detailed review of some aspects of the plan. For the same reason, the staff was unable to determine whether certain criteria were inappropriately omitted from the plan or were not applicable to ESP activities.

The plan also states that wherever appropriate, the operational QA program will be applied. The staff was unable to discern from the description of the organization, and the scope of the operational QA program, how the ESP QA program presented in the ESP QA plan and the operations QA program would be related.

Enclosure 1 contains the staff's comments. The intent of these comments is to provide you with general feedback on your QA plan. This was a preliminary review, and the staff comments should not be interpreted to imply the acceptance of your QA plan. If you have any questions regarding this letter, please contact Mike Scott of the NRC staff at (301) 415-1421.

Sincerely,

/RA/

James E. Lyons, Director
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation

Project No. 719

Enclosure: As stated

cc w/encl: See next page

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Sincerely,

/RA/

James E. Lyons, Director
 New Reactor Licensing Project Office
 Office of Nuclear Reactor Regulation

Project No. 720

Enclosure: As stated

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**NRC Staff Pre-Application Evaluation
of Dominion Energy, Incorporated's (Dominion)
Early Site Permit (ESP) Quality Assurance (QA) Plan**

Note: The discussion below is organized by criterion from Appendix B to 10 CFR Part 50, as indicated in each bold heading below. Because Dominion's QA Manual contains an introductory Section 1, Dominion's Item 2 addresses the same subject as Appendix B Criterion I. References in the discussion to Dominion's QA plan are indicated as such and use arabic numbers consistent with Dominion's plan.

Criterion I Organization

Section 2 (Organization) of the QA plan describes the organization that will be responsible for the development of information that will support the ESP application, provides an organization chart, and outlines the responsibilities of supervisors. The plan explains the specific tasks that individuals will be performing that relate to ESP activities.

The section includes statements such as: "Director of Nuclear Protection Services and Emergency Preparedness is also responsible for the overall management of Nuclear Emergency Preparedness activities and is responsible for development of the emergency planning sections of the ESP application." However, it does not describe how some appropriate ESP activities will be controlled. Examples of topics for which information is missing include the following:

- Evaluation of vendors/contractors for soil evaluation and collection of meteorological data
- Description of controls for some ESP activities performed or to be performed in the near future to determine that the site is acceptable to build a nuclear plant or plants, such as site characterization testing and analyses
- Description of controls for some preliminary engineering activities, such as soil boring, testing of soil samples, and preparation of the soil
- Audits performed or planned on vendors who are providing services to collect information during the ESP activities which will be used to prepare the safety analysis report

In addition, the section does not clearly describe the interfacing between the existing operational QA program and the ESP QA plan.

Criterion II Quality Assurance Program

Section 3 of the plan describes the QA program.

To complement the statement, "The goal of this program is to assure the accurate, efficient and detailed development of an ESP in accordance with sound engineering principles," and to enable the NRC staff to better evaluate the implementation of the QA program, the plan should clarify the scope of ESP activities that have been performed or are planned to be performed.

Enclosure

For example, in the paragraph entitled "Identification of Safety Related Design Basis Activities," the plan should provide examples of "sampling, testing, data collection and supporting engineering calculations."

The plan should clearly describe the scope of the ESP activities covered by the QA controls.

Criterion III Design Control

Section 4 (Design Control) of the plan describes the "Nuclear Design Control Program."

The staff could more effectively evaluate the implementation of this criterion if the plan provided examples of design and design verification performed or to be performed for ESP activities.

In this section, the plan states, "Quality measures are assured through all levels of design control organization support organizations. Any errors or deficiencies noted in the design process are documented on design change forms and subsequently corrected." This statement could be interpreted to indicate that design errors or deficiencies might not be entered into a corrective action program, such that actions taken to correct design errors might not preclude repetition. It would assist the staff if Dominion described the connection between the design control process and activities associated with corrective action and nonconforming materials, parts, or components.

Criterion IV Procurement Document Control

Section 5 (Procurement Document Control) of the plan states that Dominion has established administrative procedures to ensure that procurement documents reference all actions required by the supplier in accordance with the applicable codes, specifications, and drawings.

The staff could better evaluate the program if the plan mentioned more specifics, such as the material and services within the scope of the plan, as well as how Dominion intends to prepare purchase orders, including quality and other requirements.

Criterion V Instructions, Procedures, and Drawings

Section 6 (Instructions, Procedures, and Drawings) of the plan states that administrative procedures describe the requirements for developing, reviewing, approving, and controlling procedures used for testing as well as design development, administrative, and other activities performed in support of development of the application.

In this section, the plan describes the control of procedures but not drawings and instructions.

Criterion VI Document Control

Section 7 (Document Control) of the plan states, in part, that Dominion's administrative procedures list certain documents that require strict administrative control for distribution, revision, and routing.

However, the plan does not describe how Dominion intends to recall obsolete drawings issued for distribution and to ensure that only current revisions of drawings, instructions, and procedures are available in the field.

Criterion VII Control of Purchased Material, Equipment, and Services

Section 8 (Control of Purchased Material, Equipment, and Services) of the plan states, in part, that administrative procedures describe the requirements for controlling purchased material, equipment, and services including commercial grade items for use in non-safety-related applications.

The plan states, “The periodic inspections assure that applicable material and equipment received at the station meet the requirements of the specifications, purchase orders, code drawings, or other purchasing documents.” However, it does not elaborate on how Dominion proposes to conduct receipt inspections on all items important to safety, whether it uses an approved check list that contains acceptance criteria, whether it would distinctly identify nonconformance items as those which fail to meet the criteria, and whether it would segregate or quarantine them to prevent their inadvertent use as acceptable components. It would assist the staff if Dominion provided additional detail regarding the controls applied to purchased services. These aspects should be addressed if Dominion expects to purchase any items important to the safety at the ESP stage. The plan does not explicitly state that it would generate a nonconformance report, or equivalent, documenting the criteria the components failed to meet. See comments under Appendix B, Criterion XV, Nonconforming Materials, Parts, or Components.

Criterion VIII Identification and Control of Materials, Parts, and Components

Section 9 (Identification and Control of Materials, Parts, and Components) of the plan indicates that this criterion is not applicable to the development of an ESP application.

Dominion does not state a basis for this conclusion. It would assist the staff if Dominion stated that it will not engage in the types of activities (identifying those activities) that would call for application of this criterion. In previous sections, the plan states that Dominion has developed administration procedures to ensure that materials and services are procured and to ensure that they meet its purchase order requirements. During activities in support of the ESP application, Dominion and its civil engineering contractors may be procuring components for various purposes. For these procured items associated with Criteria IV and VII above, a system should be established to uniquely identify accepted components. For an item that fails to meet acceptance criteria, Dominion should describe a method of identifying the nonconformance. A nonconformance report (or equivalent report) would document the criteria the item failed to meet, and it would be sent to engineering for disposition. Engineering would recommend actions to correct the nonconforming condition, would recommend “use as-is,” or would return it to the vendor for an acceptable replacement item. The supply chain management should also be notified to allow a determination of whether the vendor was at fault. See comments under Appendix B, Criterion XV, Nonconforming Materials, Parts or Components.

Criterion IX Control of Special Processes

Section 10 (Control of Special Processes) of the plan states that this criterion is not applicable to the development of an ESP application.

This statement appears to be somewhat inconsistent with the discussion in Section 11 of the plan regarding inspections. Additional discussion regarding the scope of ESP activities would assist the staff in evaluating the applicability of this criterion to the ESP application.

If the QA plan will be applied to limited work authorization (LWA) activities (such as a batch plant to produce and control concrete, preliminary welding operations to install reactor sump or similar equipment that is installed early, or Nelson stud welding for embedment, which are installed in concrete structures), Dominion should consider including appropriate QA controls for those activities in the ESP QA plan.

Criterion X Inspection

Section 11 (Inspection) of the plan describes Dominion's inspection program.

The plan should more clearly describe activities related to the ESP application that would fall within the scope of the inspection program, and it should provide examples of inspections that might be applied to these activities. For example, the plan should describe how Dominion proposes to inspect the performance of soil boring tests, collection of soil samples, and laboratory testing of soil samples, including planned receipt inspections of incoming procured material, if any, to ensure that only quality products are being utilized.

Criterion XI Test Control

Section 12 (Test Control) of the plan describes a test control program.

The plan should provide examples of ESP activities within the scope of this section of the plan. If Dominion will engage contractors to perform ESP activities, the plan should state whether its contractors will be working in accordance with Dominion's test control program, or in accordance with the contractors' programs. In either case, the plan should describe how Dominion intends to monitor compliance with a test control program. The plan should describe the current or proposed programs for site characterization activities, such as soil investigation and sampling, electronic friction cone and Piezocone penetration testing of soils, and concrete test cylinders.

Criterion XII Control of Measuring and Test Equipment

Section 13 (Control of Measuring and Test Equipment) of the plan describes measures to control measuring and test control equipment.

The staff could better evaluate this section of the QA plan and provide constructive comments if the plan discussed how Dominion plans to control the calibration of instruments used by its civil engineering and mechanical contractors during ESP activities such as soil sampling tests, measuring the depth of borings, penetrometer tests, and measurement of ground water elevations.

Criterion XIII Handling, Storage, and Shipping

Section 14 (Handling, Storage, and Shipping) of the plan states that measures for handling, storage, and shipping are not applicable to the development of an ESP application.

The staff disagrees with this conclusion. For ESP-related activities, Dominion or its contractors, pursuant to 10 CFR 52.17, will collect soil samples by various methods from various locations. The collected samples should be identified (location), and stored in a secure place for retrieval. Purchased material, if any, will arrive and will be handled and stored. The plan should discuss the various levels of cleanliness Dominion proposes to maintain in the storage areas, how it intends to control the storage of materials in those areas, and the capability to retrieve those items and supply them to the field for use. It would be helpful to relate the storage to the procurement, and identification of purchased material, equipment, and services.

Criterion XIV Inspection, Test, and Operating Status

Section 15 (Inspection, Test, and Operating Status) of the plan states that this criterion is not applicable to the development of an ESP application.

The staff notes that situations may arise for which controls of this type are appropriate. For example, a contractor using the Standard Test Method for Penetration and Split-Barrel Sampling of Soils should document the location of the job, the start and finish of the job, boring number and location, depth of water surface, drilling depth at the time of a noted loss of drilling fluid, and time and date when the reading was made. If this bore is not adequately identified with a marker, it would not be possible to proceed with other tests at a later time. Another contractor who might be working on the underground water table level might not know that there was an activity in progress at these coordinates. Identification of those bores with tags would help prevent other contractors from inadvertently tampering with them.

Criterion XV Nonconforming Materials, Parts, and Components

Section 16 (Nonconforming Materials, Parts, and Components) of the plan states that this criterion is not applicable to the development of an ESP application.

The staff notes that situations may arise for which controls of this type are appropriate. For example, nonconforming conditions may be identified as a result of activities associated with the control of purchased material or equipment. If activities will be performed that may identify nonconformances, Dominion should describe the controls that will be used to review and disposition the nonconformance.

Criterion XVI Corrective Action

Section 17 of the plan describes Dominion's proposed corrective action program.

Although the plan states that Criterion XV (Nonconforming Materials, Parts, and Components) is not applicable to ESP activities, Section 17 establishes corrective action measures as an integral part of processing and resolving nonconformances. It is appropriate to have measures to resolve nonconformances, and Section 17 of the plan appears to indicate that such measures are applicable to ESP activities.

Dominion should clarify the connection between the corrective action program and the actions to be taken for correcting errors or deficiencies in the design process (See comments under Criterion III). If portions of the operating plant's QA program will be applied to ESP activities, Dominion should provide additional information related to the relationship between the ESP QA plan and the operational QA program.

Criterion XVII Quality Assurance Records

Section 18 (Quality Assurance Records) of the plan states that its operational quality assurance program topical report, VEP-1-5A, will govern the requirements for QA records.

This approach appears to be acceptable, pending review of information from Dominion on (1) the list of documents on soil density and other soil and other related tests that are deemed to be quality documents, (2) whether they are temporary or permanent records, and (3) how Dominion proposes to preserve the records.

Criterion XVIII Audits

Section 19 (Audits) of the plan describes Dominion's proposed audit program for ESP-related activities.

The plan should provide additional information on how Dominion proposes to implement its audit program on ESP activities. The plan should specifically describe how Dominion intends to audit its ESP contractors.

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