

**From:** Michael Scott  
**To:** Joseph\_Hegner@dom.com  
**Date:** Tue, Jan 13, 2004 10:55 AM  
**Subject:** DRAFT REQUESTS FOR ADDITIONAL INFORMATION

Please find attached the NRC staff's first package of preliminary questions, in the form of draft requests for additional information (RAIs) for the North Anna ESP review. The process for handling these draft RAIs, as well as other draft RAIs that will be provided in subsequent packages, is as follows:

1. The NRC staff provides draft RAIs (preliminary questions) by e-mail (e.g., this memo).
2. The applicant looks over the draft RAIs and has the opportunity to request a phone con or meeting with the cognizant staff if the applicant needs clarification of the RAIs or believes the information requested in them has already been provided or is not needed.
3. If additional information is needed from the applicant, the applicant informs the staff of expected date(s) of response to the RAIs.
4. After the phone con or meeting occurs (if requested) and planned response dates are determined (if applicable), the staff sends the RAIs under cover letter with copy to the docket. The letter will also note that the phone con or meeting occurred (if it did) and the mutually agreed upon response date(s) to the RAIs.

The RAIs in this package address the areas of meteorology and emergency planning. Additional RAIs will likely be developed in these areas and will be forwarded to you on or before 6/3/04 in accordance with the planned North Anna review schedule. We are providing these RAIs at this time to facilitate the review and to support meeting the review schedule. Your timely response to them will also support meeting the review schedule milestones. Partial submittals would be welcome to minimize delays.

Please contact me if you have questions.

Sincerely,

Michael L (Mike) Scott  
Senior Project Manager  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Phone (301) 415-1421

**CC:** Andrew Kugler; Bruce Musico; Daniel Barss; Eric Weiss; Jay Lee; Laura Dudes; Laura Zaccari; Leta Brown; Nanette Gilles; R. Brad Harvey; Robert Dennig; Robert Weisman; Stephen Koenick

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# DRAFT

## North Anna ESP Application Site Safety Analysis Report (SSAR) Requests for Additional Information (RAI) RAI LETTER NO. 1

### RAI 2.3.1-1

#### SSAR Section 2.3.1, Regional Climatology

SSAR Section 2.3.1 provides climatological information. However, the section does not provide information sufficient for the staff to reach the conclusion that Dominion has provided, in compliance with 10 CFR 100.20(c) and 10 CFR 100.21(d), adequate site meteorological information to determine whether potential threats from site meteorological characteristics pose any undue risk to the type of facility proposed to be located at the site. Specifically, additional information is needed regarding extreme weather phenomena important to design of structures, systems, and components of a nuclear power plant or plants that might be constructed on the site.

Sections 2.3.1 of Regulatory Guide 1.70 and Review Standard RS-002 describe methods and approaches acceptable to the staff for addressing the regulations. Consistent with the guidance in these documents, please provide maximum wind speed, maximum and minimum temperature, maximum dew point, maximum precipitation rates (1 hr, 6 hr, 12 hr, 24 hr), maximum ice thickness (water equivalent), and maximum snow depth. The information should include estimates of values with 10, 20, 50, 100, 200, 500, and 1000-year recurrence intervals based on available data. For maximum winds, all available data should be evaluated, including fastest mile, fastest minute, 3-second gusts, and peak gusts. The information in the SSAR is based only on fastest mile data. Other available data should be considered and included if they significantly increase the period of record upon which the extreme values are based.

For each climatological variable, please provide the source of the observational data that forms the basis of the extreme values estimates (and the data itself, if available), identify the method used to estimate the extreme values [e.g. log-normal, Weibul, Fisher-Tippett Type 1 (Gumbel) distribution], and identify the method used to estimate the values of the parameters of the distribution (e.g. method of moments, maximum likelihood, order statistics).

For tornadoes, please provide estimates of the wind speed with a probability of occurrence of  $10^{-7}$  per year. The existing table in the SSAR only gives the upper limit of the F3 class. It does not address the probability of occurrence.

Based on the information provided above, please identify the following site characteristics for the North Anna ESP site:

- a) The maximum ground snow and ice load (water equivalent) that the roofs of safety-related structures must be capable of withstanding during plant operation. While a plant parameter envelope (PPE) value is provided for assumed snow and ice loading for a

reactor that might be sited at North Anna, the corresponding site characteristic is not provided in the SSAR.

- b) The ultimate heat sink (UHS) meteorological conditions resulting in the maximum evaporation and drift loss of water from the UHS and minimum cooling by the UHS.
- c) The maximum and minimum ambient temperatures and humidity (wet bulb or dew point) to serve as design bases of plant systems important to safety.

Alternative approaches to evaluating extreme weather phenomena important to design of structures, systems, and components of a nuclear power plant or plants that might be constructed on the site may be used if appropriately justified.

#### RAI 2.3.3-1

#### SSAR Section 2.3.3, Onsite Meteorological Measurements Program

SSAR Section 2.3.3 discusses Dominion's onsite meteorological measurements program. However, additional information is needed for the staff to reach the conclusion that Dominion has, in compliance with the regulations in 10 CFR 100.21(c), evaluated site atmospheric dispersion characteristics and established dispersion parameters. This conclusion is necessary to support the determination of whether radiological effluent releases associated with normal operation and radiological dose consequences of postulated accidents meet regulatory requirements. Specifically, the staff needs to review the 1996-1998 onsite meteorological data base used to generate the SSAR Section 2.3.4 short-term diffusion estimates and the SSAR Section 2.3.5 long-term diffusion estimates.

Sections 2.3.3 of Regulatory Guide 1.70 and Review Standard RS-002 describe methods and approaches acceptable to the staff for onsite meteorological measurement programs. Consistent with these documents, please provide a joint frequency distribution of wind speed and wind direction by atmospheric stability class in the format described in Regulatory Guide 1.23 for the 1996-1998 onsite meteorological data base used to generate the SSAR Section 2.3.4 short-term diffusion estimates and the SSAR Section 2.3.5 long-term diffusion estimates. Also, please provide an hourly listing of this data base on electronic media in the format described in Appendix A to Section 2.3.3 of RS-002. whether site meteorological characteristics pose any undue risk to the type of facility proposed to be located at the site.

#### RAI No. 13.3-1

#### SSAR Section 13.3, Emergency Planning

SSAR section 13.3.1 states that "[t]his chapter provides the emergency planning information required by NRC regulations necessary to support an ESP application. That includes information required by 10 CFR 52.17(b)(1) regarding identification of potential impediments to emergency planning, and information required by 10 CFR 52.17(b)(3) regarding descriptions of contacts and arrangements made with local, state and federal governmental agencies with emergency planning responsibilities."

In addition, Section 13.3.2.2.2.a.6 implies that the existing contacts and arrangements in support of North Anna Units 1 & 2 are applicable to prospective new reactors for the site under

Dominion's ESP project. In Section 13.3.4, the cross-reference to Sections V.A.3 and V.B.2 states that the "[l]etters of agreement with supporting agencies are the existing letters of agreement in the NAEP [North Anna Emergency Plan]." The [19] referenced letters of agreement (LOAs)—which are located in section 10.1 of the NAEP, Rev. 28, and were executed in January, February, and April of 2002—do not, however, address the ESP concept, the extent to which existing arrangements would apply to prospective additional reactors at the North Anna site, or whether agencies would have different or expanded responsibilities associated with new reactors. Section 13.3.2.2.a.6 also provides the following statement:

Dominion provided an overview of the Dominion ESP project to DEM [Commonwealth of Virginia Department of Emergency Management] Management staff members on February 20, 2003 and to risk jurisdiction coordinators of emergency management on March 24, 2003. The NRC licensing process, emergency preparedness requirements for ESP applicants, and Dominion's schedule for preparing and submitting this ESP application were described. No impediment to pursuing an ESP has been identified by Commonwealth of Virginia or risk jurisdiction response organizations.

A similar statement is contained in section 13.3.3. The overview presentations, and statement that "[n]o impediment to pursuing an ESP was identified," do not provide evidence of an understanding, acknowledgment and agreement by offsite emergency response organizations of their specific responsibilities, in relation to construction and operation of additional reactors at the North Anna site under an ESP.

In the NRC's May 30, 2003, letter to NEI [developed jointly with the Federal Emergency Management Agency (FEMA)], the staff response to NEI Item 2 indicated that letters of agreement should be developed, and included in the ESP application. In addition, for an existing reactor site, the presence of an additional reactor (or reactors) at the site should be clearly addressed, including any impact that would have on government agency emergency planning responsibilities, and acknowledgment by the agencies of the proposed expanded responsibilities (if any). This acknowledgment is needed for the NRC and FEMA to reach finality in their conclusions regarding emergency planning for an ESP. Such acknowledgment may be in either a letter of agreement or in separate correspondence. A separate correspondence might be sufficient in a case where an existing letter of agreement is written in a way that is broad enough to cover an expanded site use, and does not need to be revised. The correspondence would identify this fact. Finally, as indicated in evaluation criterion A.3 of Supplement 2 to NUREG-0654/FEMA-REP-1, a signature page in the ESP application may be appropriate for some organizations to signify their agreement with the concept of operations associated with the ESP application.

Consistent with the above discussion, please provide documentation of new arrangements with local, state and federal governmental agencies—with emergency planning responsibilities—that specifically address the impacts of additional reactors at the North Anna site. This information is needed for the NRC, in consultation with FEMA, to reach the conclusion that Dominion has provided an adequate description of contacts and arrangements made with local, state, and federal governmental agencies with emergency planning responsibilities in compliance with the regulations in 10 CFR 52.17(b)(3). The information is also needed for the NRC, in consultation with FEMA, to reach conclusions in accordance with 10 CFR 52.18 regarding whether Dominion's information shows there is no significant impediment to the development of emergency plans.

RAI No. 13.3-2

SSAR Section 13.3. Emergency Planning

SSAR Section 13.3.2.2 states that “[t]he ESP site is one with pre-existing nuclear facilities that has existing state and local emergency plans. The ESP application, therefore, relies on and refers to information contained in these existing plans. No significant differences have been identified between major features proposed in the ESP application and the major features discussed in existing plans and relied on in the ESP application.” Section 13.3.2.2.a.5 states that “[t]he Virginia RERP [Radiological Emergency Response Plans] and the risk jurisdiction RERPs apply to the radiological emergencies caused by events at the existing units and would also apply to events at the new units.”

Please provide a copy of the current Commonwealth of Virginia RERP, referenced in section 13.3.3.2.2.a.2. In addition, please provide a copy of the current risk jurisdiction RERPs; including the Louisa, Caroline, Hanover, Orange, and Spotsylvania County RERPs, referenced in section 13.3.3.2.2.a.1. This information is needed for the NRC staff, in consultation with FEMA, to reach the conclusion that Dominion has provided an adequate description of major features of emergency plans in compliance with the regulations in 10 CFR 52.17(b)(2)(i). The information is also needed for the NRC, in consultation with FEMA, to reach conclusions in accordance with 10 CFR 52.18 regarding whether Dominion’s information shows there is no significant impediment to the development of emergency plans and whether major features of Dominion’s emergency plans are acceptable.