January 7, 2000

Mr. J. P. O'Hanlon
Senior Vice President
Virginia Electric and Power Company
5000 Dominion Boulevard
Glen Allen, VA 23060

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 RE: REQUEST FOR ADDITIONAL INFORMATION RELATED TO CONTROL ROOM HABITABILITY AND LICENSE AMENDMENT REQUEST (TAC NOS. MA5376 AND MA5377)

Dear Mr. O'Hanlon:

The purpose of this letter is to request additional information so that we may continue to review your license amendment request dated May 3, 1999, related to control room habitability.

Our questions are provided in the Enclosure. The questions were discussed with Tom Shaub of your licensing staff on December 27, 1999, and he agreed to provide a response to these questions by April 1, 2000.

Sincerely,

Original signed by:
Gordon Edison, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos.: 50-338 and 50-339

Enclosure: Request for Additional Information

cc w/encl: See next page

DISTRIBUTION:

File Center	PUBLIC	PDII RF	ACRS	R. Haag
S. Black	R. Emch	E. Dunnington	G. Edison	OGC
L. Berry				

DOCUMENT NAME: G:\PDII-1\NOANNA\RAIMA5376.WPD

OFFICE	PM:PDII/S1	LA:PDII/S2	SC:PDII/S1	
NAME	GEdison:cn	EDunnington EJD	REmch RLE	
DATE	1/7/99 00	1/7/99 00	1/7/00	
COPY	Yes / No	Yes / No	Yes / No	

OFFICIAL RECORD COPY

DF01

PDR ADOCK

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 7, 2000

Mr. J. P. O'Hanlon
Senior Vice President
Virginia Electric and Power Company
5000 Dominion Boulevard
Glen Allen, VA 23060

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 RE: REQUEST FOR ADDITIONAL INFORMATION RELATED TO CONTROL ROOM HABITABILITY AND LICENSE AMENDMENT REQUEST (TAC NOS. MA5376 AND MA5377)

Dear Mr. O'Hanlon:

The purpose of this letter is to request additional information so that we may continue to review your license amendment request dated May 3, 1999, related to control room habitability.

Our questions are provided in the Enclosure. The questions were discussed with Tom Shaub of your licensing staff on December 27, 1999, and he agreed to provide a response to these questions by April 1, 2000.

Sincerely,

G E Edison

Gordon Edison, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosure: Request for Additional Information

cc w/encl: See next page

Mr. J. P. O'Hanlon
Virginia Electric & Power Company

North Anna Power Station
Units 1 and 2

cc:
Mr. J. Jeffrey Lunsford
County Administrator
Louisa County
P.O. Box 160
Louisa, Virginia 23093

Mr. Donald P. Irwin, Esquire
Hunton and Williams
Riverfront Plaza, East Tower
951 E. Byrd Street
Richmond, Virginia 23219

Dr. W. T. Lough
Virginia State Corporation
Commission
Division of Energy Regulation
P. O. Box 1197
Richmond, Virginia 23209

Old Dominion Electric Cooperative
4201 Dominion Blvd.
Glen Allen, Virginia 23060

Mr. J. H. McCarthy, Manager
Nuclear Licensing & Operations
Support
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Office of the Attorney General
Commonwealth of Virginia
900 East Main Street
Richmond, Virginia 23219

Senior Resident Inspector
North Anna Power Station
U.S. Nuclear Regulatory Commission
1024 Haley Drive
Mineral, Virginia 23117

Mr. W. R. Matthews
Site Vice President
North Anna Power Station
P. O. Box 402
Mineral, Virginia 23117

Mr. E. S. Grecheck
Site Vice President
Surry Power Station
Virginia Electric and Power Company
5570 Hog Island Road
Surry, Virginia 23883

Robert B. Strobe, M.D., M.P.H.
State Health Commissioner
Office of the Commissioner
Virginia Department of Health
P.O. Box 2448
Richmond, Virginia 23218

REQUEST FOR ADDITIONAL INFORMATION
NORTH ANNA
CONTROL ROOM HABITABILITY AMENDMENT REQUEST
TAC NOS. MA 5376 AND MA5377

The following information is needed to confirm that the inputs, assumptions, and methodologies used in the North Anna design basis accident dose assessments are appropriate to demonstrate compliance with applicable portions of 10 CFR Part 50 and 10 CFR Part 100. The response to the first question will enable staff to perform a confirmatory calculation of the main steam line break analysis. Questions related to the meteorological data are to ensure that the data are of high quality and representative of long-term overall site conditions. Questions about the inputs and assumptions used are to ensure acceptable merging of engineering-related considerations (e.g., effluent release characteristics) with meteorological characteristics to estimate atmospheric dispersion for each release scenario. The final question addresses confirmation of the most limiting scenario for the steam generator tube rupture analysis.

1. Provide the unaffected steam generator steaming rates for the main steamline break (MSLB).

2. Were all data used in the analysis collected under Regulatory Guide 1.23, "Onsite Measurement Programs," guidelines? If not, how were the data collected that did not meet the recommendations of Regulatory Guide 1.23 and why are the collection methodologies/ conditions acceptable?

3. During the period of data collection, was the tower area free from obstructions (e.g., structures, trees) and micro scale influences to ensure that the data collected were representative of the overall site area?

4. What quality assurance checks were performed on the meteorological measurement systems prior to, and during the period of collection to assure that the data are of high quality? What additional checks were performed on the data following collection and prior to input into the atmospheric dispersion calculations?

5. Page 13 of 37 states that the meteorological data used in the analysis are from 1989 through 1993, inclusively. Provide a copy of the meteorological data used to calculate the X/Q values. Data should be provided in the format specified in Appendix A to Section 2.7, "Meteorology and Air Quality," of draft NUREG-1555, "Environmental Standard Review Plan." A copy of this format is attached. Otherwise, provide the data electronically in the format used to input it into the ARCON96 computer calculations.

6. Provide a list of each of the other inputs to the ARCON96 calculations. Describe the assumptions and bases for selection of the input values so as to result in the limiting dose.

7. Page 21 of 37 notes that the affected steam generator X/Q values are smaller than the values for the unaffected generators because of the higher discharge velocity. Provide a further description of the assumptions, bases, and calculations to determine that the higher

Enclosure

8. discharge velocity from the affected steam generators would result in a lower X/Q and dose than for the unaffected steam generator. While we agree that jet rise can be a factor, please address the impact of a release without loss of offsite power such that releases are from the secondary plant (e.g., air ejector). What degree of assurance is there that the affected steam generator release location will maintain a high vertical velocity over time? What assumptions are made and what are the bases of the assumptions with respect to wind and structural effects on the vertical velocity?

APPENDIX A

STANDARD FORMAT FOR HOURLY METEOROLOGICAL DATA

When hourly meteorological data are submitted to the NRC, the data may be submitted on mutually agreed upon magnetic media. The media may be disks or magnetic tapes. The data should be in files that are of a size that are convenient for use and storage. Annual data files are acceptable.

Use of a standard format for submission of hourly meteorological data will facilitate data evaluation and dispersion analysis. The standard data format is similar to the format described in Appendix A of Standard Review Plan 2.3.3 (NRC 1987). The only differences are in the first two fields of the data records. The second field has been increased to permit specification of the year using four digits rather than two, and the first field has been reduced from six bytes to four bytes and is now specified as a character string rather than an integer. The format for the remainder of the record is identical to the format in SRP 2.3.3.

At the beginning of each file, use the first five (5) records to give a tape description. Include plane name, location (latitude, longitude), dates of data, information explaining data contained in the "other" fields if they are used, height of measurements, and any additional information pertinent to identification of the tape. Make sure all five records are included, even if some are blank. Format for the first five records will be 160A1. Meteorological data format is (A4, I4, I3, I4, 25F5.1, F5.2, 3F5.1). Table 2.7-1 shows the size and content of each field in the meteorological data records in the standard format. In addition, it provides a form for recording supporting information about the meteorological instrumentation.

All data should be given to the tenth of a unit, except solar radiation, which should be given to a hundredth of a unit. This does not necessarily indicate the accuracy of the data (e.g., wind direction is usually given to the nearest degree). All nines in any field indicate a lost record (99999). All sevens in a wind direction field indicate calm (77777). If there are only two levels of data, use the upper and lower levels. If there is only one level, use the upper level.

Table 2.7-1. Hourly Meteorological Data

LOCATION:

DATE OF DATA RECORD:

A4	Identifier (can be anything)	
I4	Year	
I3	Julian Day	
I4	Hour (on 24-hour clock)	
		ACCURACY
F5.1	Upper Measurements: Level = ____ meters	____
F5.1	Wind Direction (degrees)	____
F5.1	Wind Speed (meter/sec)	____
F5.1	Sigma Theta (degrees)	____
F5.1	Ambient Temperature (°C)	____
F5.1	Moisture: ____	____
F5.1	Other: ____	____
F5.1	Intermediate Measurements: Level = ____ meters	____
F5.1	Wind Direction (degrees)	____
F5.1	Wind Speed (meter/sec)	____
F5.1	Sigma Theta (degrees)	____
F5.1	Ambient Temperature (°C)	____
F5.1	Moisture: ____	____
F5.1	Other: ____	____
F5.1	Lower Measurements: Level = ____ meters	____
F5.1	Wind Direction (degrees)	____
F5.1	Wind Speed (meter/sec)	____
F5.1	Sigma Theta (degrees)	____
F5.1	Ambient Temperature (°C)	____
F5.1	Moisture: ____	____
F5.1	Other: ____	____

Table 2.7-1. (contd)

F5.1	Temp. Diff. (Upper-Lower) (°C/100 meters)	____
F5.1	Temp. Diff. (Upper-Intermediate) (°C/100 meters)	____
F5.1	Temp. Diff. (Intermediate-Lower) (°C/100 meters)	____
F5.1	Precipitation (mm)	____
F5.1	Solar Radiation (cal/cm²/min)	____
F5.1	Visibility (km)	____
F5.1	Other: ____	____
F5.1	Other: ____	____