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D. O. Foster
Vice President and Project
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File: X8BE03
Log: GN-498

December 21, 1984

Director of Nuclear Reactor Regulation
Attention: Ms. Elinor G. Adensam, Chief
Licensing Branch #4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

NRC DOCKET NUMBERS 50-424 AND 50-425
CONSTRUCTION PERMIT NUMBERS CPPR-108 and CPPR-109
VOGTLE ELECTRIC GENERATING PLANT- UNITS 1 AND 2
D. O. Foster letter to H. R. Denton, September 25, 1984

Dear Mr. Denton:

I have enclosed pages 7, 8 and 17 from the above referenced transmittal's attachment 3, "Evaluation of Drift Deposition Rates at the Vogtle Electric Generating Plant." During copying, these pages were inadvertently left out of some copies. Also pages 9 through 12 and 15 were intentionally left blank and not included in the attachment.

If you have any questions please contact us.

Yours truly,

D. O. Foster

D. O. Foster

DOF/DHW/sro
Enclosures

xc: M. A. Miller
D. Hood
R. A. Thomas
J. A. Bailey
L. T. Gucwa
G. F. Trowbridge, Esquire
J. E. Joiner
G. Bockhold, Jr.
L. Fowler
C. A. Stangler

B001
1/1

This peak would occur at 0.9 miles NE of the cooling towers, which is 0.5 miles beyond the site boundary (Appendix 1).

(c) The peak deposition in the E wind sector of VEGP would be:

Wind frequency in the E wind sector = 8.3%

$$\frac{16.2 \text{ lb/ac/yr}}{x} = \frac{12\%}{8.3\%}$$

$$x = 11.2 \text{ lb/ac/yr}$$

This peak would occur at 0.9 miles E of the cooling towers, which is about 0.3 miles beyond the site boundary (Appendix 1).

In summary, the off site peak deposition at VEGP, which follows Beaver Valley Unit 1 and 2's deposition pattern with the peak deposition at 0.9 miles from the cooling towers, would be approximately 14.7 lb/ac/yr at 1.0 miles SE of the cooling towers, immediately beyond the site boundary.

(3) Similar aproaches can be taken to calculate the other cases and Table 1 summarizes the offsite peak deposition based on the 4 cases described above. It can be noted from the table that the most conservative prediction for offsite peak deposition at VEGP would be provided by Case 3, having a deposition rate of about 14.7 lb/ac/yr at 1.0 mile SE of the cooling towers. However, even with this number the offsite peak deposition concentrations are expected to be below the guideline levels for vegetation damage provided by NUREG-0555 and Reg. Guide 4.11.

Table 1

Summary of Predictions of Offsite Peak Deposition Rates at VEGP

Case Parameter	1	2	3	4
Assumptions				
Location of the peak deposition from cooling towers (miles)	0.6	0.9	0.9	0.6
Deposition Patterns	Susquehanna	Susquehanna	Beaver Valley	Beaver Valley
Offsite Peak Deposition Expected	0.6 miles E of the CT	0.9 miles E of the CT	1.0 miles SE of the CT	0.6 miles E of the CT
Site Boundary in the Corresponding Direction	0.6 miles E of the CT	0.6 miles E of the CT	1.0 miles SE of the CT	0.6 miles E of the CT
Estimated Offsite Peak Deposition Rate (lb/ac/yr)	≤11.2	11.2	≤14.7	≤11.2

Plant/ Type of Cooling Tower		Wapello/ Natural Draft	Susquehanna/ Natural Draft	Beaver Valley/ Natural Draft Unit 1	Beaver Valley/ Natural Draft Unit 2	Shearon Harris/ Natural Draft	Grand Gulf/ Natural Draft
	Drift	75 lb/acre/yr[12]	2 lb/acre/yr[13]	NA	5.3 lb/acre/yr[14]	NA	5.02 lb/acre/yr[15]
Max. off-site drift deposition	Distance from cooling tower	1.20 miles[16]	0.6 miles	NA	0.9 miles	NA	0.6 miles
	Wind sector affected in	SE	SSW	NA	E	NA	E
	Humidity	72%	70%	60%[17]	71.1%[18]	71%	70%
	Temperature	65.0°F	49°F	56.7°F	65.1°F	60°F	63.5°F
Meteorological conditions, average	Wind speed in prevailing direction	0.8 miles/hr[19]	8.7 miles/hr	5.0[20] miles/hr	6.6[20] miles/hr	8.7 miles/hr	6.4 miles/hr[21]
	Frequency of prevailing wind	18%	14.1%	15.4%	14.3%	10.4%	9.4%
	Stability Class (Pasquill classification)	C	D	C	D	C-F	D-E

(1) [illegible] data could not be obtained in data drift modeling.

(2) Average wind speed in the Shearon Harris drift deposition is not available, hence average wind speed is applied. The actual wind speed is required in the program.

(3) Wind speed has been adjusted from 30 ft to 150 ft by the following equation: $W2/W1 = (Z2/Z1)^{.1}$, where W = wind speed at a given level, Z = reference height, and Z = 32.8ft.

(4) Maximum drift deposition is the distance from Unit 1 cooling tower was not provided in the environmental reports, it is expected that the maximum is at least that Unit 2.

(5) Based on non-deep cut-back drift deposition September 1, 1980 to September 1, 1979.

(6) Based on non-deep cut-back drift deposition January 1, 1979 to December 31, 1980.

(7) Maximum from reports the distance from drift.

(8) Two drift rate of drift deposition modeling is consistent in the references.

(9) Two drift deposition drift amount varies 0.2 to 0.25 miles off the cooling tower.

(10) Maximum from reports the distance from drift.