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Richard C. DeYoung, Assistant Director for PWR's, L

**METEOROLOGY SECTION FOR SAFETY EVALUATION REPORT**

**PLANT NAME: Alvin W. Vogtle Nuclear Plant - Units 1, 2, 3 & 4**

**LICENSING STAGE: CP**

**DOCKET NUMBERS: 50-424, 50-425, 50-426 & 50-427**

**RESPONSIBLE BRANCH: PWR Branch #2**

**REQUESTED COMPLETION DATE: December 7, 1973**

**APPLICANT'S RESPONSE DATE NECESSARY FOR**

**NEXT ACTION PLANNED ON PROJECT: As Scheduled**

**DESCRIPTION OF RESPONSE: Amendment to PSAR**

**REVIEW STATUS: Site Analysis Branch (Meteorology) - Awaiting Information**

Enclosed is the meteorology section for inclusion in the Safety Evaluation Report on the subject plant.

Since the applicant has not been able to furnish one full year of onsite meteorological data in time for the staff to complete its review by the scheduled date, the Licensing Project Manager, L. Crocker, has suggested that, to reduce delays, the staff prepare an input to the SER, excluding the X/Q values and other information dependent on the joint frequency data from onsite. The staff has agreed to do this and has indicated, in the SER input, those places where information will be inserted when the evaluation is completed.

This section was prepared by R. A. Kornasiewicz and E. H. Markee, Jr., Site Analysis Branch, L.

Original signed by  
H. R. Denton

**Harold R. Denton, Assistant Director  
for Site Safety  
Directorate of Licensing**

**Enclosure:  
As stated**

**cc: See attached page.**

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PDR FOIA  
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7-2-73

Richard C. DeYoung

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DEC 6 1973

cc: w/o enclosure  
A. Giambusso  
W. McDonald  
J. Panzarella

cc: w/enclosure  
S. Hanauer  
J. Hendrie  
W. Gammill  
K. Kniel  
L. Crocker  
B. Grimes  
W. Nischan  
W. Gammill  
R. Kornasiewicz  
E. Markee

DISTRIBUTION

Docket File 50-424 - 50-427

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OFFICE ▶	L:SAB	L:SAB	L:SAB	L:AD/SS		
SURNAME ▶	RAK RKornasiewicz	EHMarkee	WPGammill	HRDenton		
DATE ▶	12/5/73	12/5/73	12/5/73	12/6/73		

ALVIN W. VOGTLE NUCLEAR PLANT-UNITS 1/2/3 AND 4  
DOCKET NUMBERS 50-424/50-425/50-426 AND 50-427  
SAFETY EVALUATION REPORT INPUT

2.3 METEOROLOGY

2.3.1 Regional Climatology

Eastern Georgia has a humid, continental climate, with mild, winters and relatively long, hot summers, characteristic of continental climates in southern regions. The air mass type dominant over the area during the warmer portions of the year is maritime tropical which originates over the Gulf of Mexico. During the colder months, continental polar air of Canadian origin frequently alternates with the maritime tropical air over the region. Temperature extremes in winter are modified as a result of the long overland trajectory of the cold air from the Canadian source regions and its descent of the eastern slopes of the Appalachians. Precipitation is rather uniformly distributed throughout the year, occurring most frequently as thundershowers in the summer and as rain in the winter and early spring. High air pollution potential (atmospheric stagnation) is expected to exist, on the

average, on five days during the year. Atmospheric dispersion rates are expected to be less than average for all areas in the eastern United States.

### 2.3.2 Local Meteorology

The plant is sited on the southwest side of the Savannah River, about 25 miles southeast of Augusta, Georgia, on a low bluff about 150 feet above the level of the river. There is, topographically, little relief about the plant site. High wind occurrences in the area are associated mainly with severe thunderstorms or tropical storms and hurricanes. During the period 1871 through 1971, 35 tropical storms or hurricanes have passed within 50 miles of the site. Eighteen tornadoes were reported within the one degree latitude-longitude square containing the site during the period 1955-1967, giving a mean annual frequency of 1.4 and a computed recurrence interval of 1000 years. While snowfall is not usually significant, averaging only about one-half of an inch annually at Augusta, freezing rain and the resultant icing conditions may be expected about twice a year. The predominant wind flow over the site is from the (direction to be inserted).

### 2.3.3 Onsite Meteorological Measurements Program

An onsite meteorological measurements program (which follows the recommendations of Regulatory Guide 1.23) was initiated in April 1972. The program consists of the installation of and measurements from a 150-ft tower constructed on the site 5,200 feet south-southwest of the Unit 1 containment building. Temperature instruments are located at the 33-, 95- and 150-foot levels on the tower and wind measuring instruments are located at the 33-, 100- and 150-foot levels. The applicant has submitted a (time period to be inserted) period of data record (dates of data record to be inserted) in joint frequency form, similar to that suggested in Regulatory Guide 1.23, to provide a basis for the staff's evaluation of atmospheric diffusion conditions. For the building and vent releases, the joint frequency distribution of wind direction and speed measured at the (height to be inserted) level, and vertical temperature difference ( $\Delta T$ ) between the (height to be inserted) and (height to be inserted) levels was used. The joint data recovery during the (time period to be inserted) period of record was (value to be inserted) percent.

#### 2.3.4 Short Term (Accident) Diffusion Estimates

In the evaluation of short term (0-2 hours at the site boundary and 0-8 hours at the LPZ) accidental releases from the buildings and vents, a ground level release with a building wake factor,  $cA$ , of 1350 meters<sup>2</sup> was assumed. The relative concentration ( $X/Q$ ) for 0-2 hours which is exceeded 5% of the time was calculated, using the model described in Regulatory Guide 1.4, to be (value to be inserted)  $\text{sec}/\text{m}^3$  at the minimum site boundary distance of 1067 meters. The relative concentration is equivalent to Pasquill type (type to be inserted) with a wind speed of (wind speed to be inserted) meters/second. The relative concentration which is exceeded 5% of the time at the outer boundary of the low population zone (3220m) was calculated to be (value to be inserted)  $\text{sec}/\text{m}^3$ . The estimated relative concentration at the LPZ for the 8-24 hour period is (value to be inserted)  $\text{sec}/\text{m}^3$ , for the 1-4 day period is (value to be inserted)  $\text{sec}/\text{m}^3$  and for 4-30 day period is (value to be inserted)  $\text{sec}/\text{m}^3$ .

(A paragraph will be inserted here comparing the applicant's  $X/Q$  values to those computed by the staff and a discussion of possible reasons for any substantial differences.)



2.3.5 Long Term (Routine) Diffusion Estimates

The highest offsite annual average relative concentration of (to be inserted)  $\text{sec}/\text{m}^3$  for vent releases occurred at the site boundary (direction to be inserted) of the reactor complex. This value is (comparison to be inserted) as the applicant's value. The staff believes that its value is adequately conservative.

2.3.6 Conclusions

(A paragraph will be inserted here stating the meteorological staff's conclusions concerning the data base and dispersion characteristics of the site.)



## Nuclear Information and Resource Service

1346 Connecticut Avenue NW, 4th Floor, Washington, D.C. 20036 (202) 296-7552

August 6, 1984

James M. Felton, Director  
Division of Rules and Records  
Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

### FREEDOM OF INFORMATION ACT REQUEST

Dear Mr. Felton:

Pursuant to the Freedom of Information Act, 5 U.S.C. 522, as amended, the Nuclear Information and Resource Service requests the following documents regarding the Safety Evaluation Report for the Vogtle nuclear power plant for the construction permit stage. Please consider "documents" to include reports, studies, test results, correspondence, memoranda, meeting notes, meeting minutes, working papers, graphs, charts, diagrams, notes and summaries of conversations and interviews, computer records, and any other forms of written communication, including internal NRC Staff memoranda. In your response, please identify which documents correspond to which requests below.

Pursuant to this request, please provide all documents prepared or utilized by, in the possession of, or routed through the NRC related to:

1. Analysis, review and preparation of the Safety Evaluation Report for the construction permit stage for the Vogtle Nuclear power plant, including all memoranda, correspondence and draft inputs.

In our opinion, it is appropriate in this case for you to waive copying and search charges, pursuant to 5 U.S.C. 552(a)(4)(A) "because furnishing the information can be considered as primarily benefiting the general public." The Nuclear Information and Resource Service is a non-profit

FREEDOM OF INFORMATION  
ACT REQUEST

FOIA-84-664  
Rec'd 8-10-84

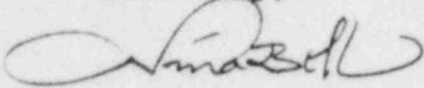
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organization serving local organizations concerned about nuclear power and providing information to the general public. Information required by 10 CFR 9.14a was provided by letter dated August 3, 1984.

Sincerely,

A handwritten signature in cursive script, appearing to read "Nina Bell".

Nina Bell  
Assistant Director

cc: File