1.0 INTRODUCTION AND GENERAL DESCRIPTION OF PLANT

1.1 INTRODUCTION

This Final Safety Analysis Report (FSAR) was originally submitted to support the application of Georgia Power Company (GPC), Oglethorpe Power Corporation (OPC), the Municipal Electric Authority of Georgia (MEAG), and the City of Dalton, Georgia, for an operating license for a nuclear power plant designated as the Vogtle Electric Generating Plant, herein referred to as the VEGP. Pursuant to an application dated September 18, 1992, the NRC issued an operating license amendment on March 17, 1997, which was effective March 22, 1997, designating Southern Nuclear Operating Company, Inc. (SNC) as the exclusive operating licensee of VEGP. SNC has no ownership interest in VEGP.

1.1.1 PLANT UNITS

The application is for two units, each with a reactor core rated at a power level of 3411 MWt under section 103(b) of the Atomic Energy Act of 1954, as amended, and the regulations of the Nuclear Regulatory Commission (NRC) set forth in Part 50 of Title 10 of the Code of Federal Regulations (10 CFR 50). The VEGP power uprate increased the licensed reactor core power level from 3411 MWt to 3565 MWt. The VEGP Measurement Uncertainty Recapture Power Uprate (MUR-PU) increased the licensed reactor core power level from 3565 MWt to 3625.6 MWt.

The plant was constructed as a two-unit plant with each unit essentially the same. Descriptions of one unit shall be interpreted as applying to both units.

Differences between Units 1 and 2 and, particularly, structures, systems, and components that are shared between the two units are specified in the appropriate location in the FSAR.

Units 3 and 4 will be constructed to the west of Units 1 and 2 as shown on drawing CX2D45V002. The Units 1 and 2 support facilities and systems, which are located in areas affected by Units 3 and 4 preconstruction and limited work authorization (LWA) related activities, are being modified, relocated or demolished. The figures incorporated by reference into the FSAR that show the Unit 3 and 4 construction impact area have been annotated to show the impact area; however, the figures will not be updated until construction is complete.

The FSAR text, tables, and figures that describe Unit 1 and 2 facilities and systems in the construction impact area will be updated as necessary to reflect the modifications to, relocation of, or demolition of the facility and/or system upon completion of the action.

The FSAR will also be updated to reflect the presence of Units 3 and 4, identify the facilities and systems that are shared by all four units, and, prior to Unit 3 fuel load, to address any impacts on Units 1 and 2 due to Units 3 and 4 operations.

1.1.2 PLANT LOCATION

The location of the VEGP is on the southwest side of the Savannah River approximately 23 river miles upstream from the intersection of the Savannah River and U.S. Highway 301, as shown on drawing CX2D45V002. The site is in the eastern sector of Burke County, Georgia, and across the river from Barnwell County, South Carolina. The VEGP site is directly across the Savannah River from the Department of Energy Savannah River Site. Refer to paragraph 1.2.1.1.

1.1.3 CONTAINMENT TYPE

The containment for each of the VEGP units is a steel-lined, prestressed, post-tensioned concrete cylinder with a hemispherical dome. The containment was designed by the Los Angeles Regional Office of the Bechtel Power Corporation.

1.1.4 NUCLEAR STEAM SUPPLY SYSTEM

1.1.4.1 Reactor Type and Supplier

The nuclear steam supply system (NSSS) for each of the VEGP units is a pressurized water reactor. Westinghouse Electric Corporation is the designer and supplier of these units for the VEGP.

1.1.4.2 Power Output

Each NSSS unit has a design net core power output of 3636 MWt plus a maximum of 17 MWt from nonreactor sources, primarily pump heat, for a total of 3653 MWt.

The turbine-generator unit of the steam and power conversion system has the capability of generating with valves wide open a gross electrical output of 1249.7 MWe (at 3.5 in. HgA condenser vacuum). This corresponds to an NSSS output of 3636 MWt.

All safety systems, including the containment and engineered safety features, are designed and evaluated for operation at a power level of 3636 MWt net core power. This power rating is used in the analysis of all postulated accidents bearing significantly on the acceptability of the site.

1.1.5 SCHEDULE FOR COMPLETION AND COMMERCIAL OPERATION

The two VEGP units are scheduled to be completed and begin commercial operation as tabulated below:

Unit	Completion of Construction Fuel Loading	Commercial Power Operation
1	January 1987	June 1987
2	February 1989	June 1989

1.1.6 FORMAT AND CONTENT

1.1.6.1 Regulatory Guide 1.70

This FSAR has used as a guide the format and content recommendations of Regulatory Guide 1.70, Revision 3, Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants - LWR Edition, November 1978.

This FSAR generally uses the same chapter, section, subsection, and paragraph headings used in the standard format. Where appropriate, the FSAR is subdivided beyond the extent of the standard format to isolate all information specifically requested in that document. Information presented that is not specifically requested by the standard format and is identified numerically (chapter, section, subsection, or paragraph), is presented under the appropriate general

heading as a subdivision following all subdivisions containing information specifically requested by the standard format.

1.1.6.2 Standard Review Plan (SRP)

Because the NRC utilizes NUREG-0800, Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants - LWR Edition, July 1981, for guidance in the determination of the acceptability of an application, the SRP is addressed in this FSAR as required in 10 CFR 50.34. In addition, the applicants, with the assistance of their agents and contractors identified in section 1.4, have reviewed the SRP in accordance with 10 CFR 50.34 and have determined that this FSAR contains no unacceptable deviations from the acceptance criteria given in the applicable portions of the SRP. A table of SRP differences appears in section 1.8.

1.1.6.3 Tables and Figures

Tabulations of data are designated "tables." Each is identified by the section or subsection number followed by a number according to its order of mention in the section or subsection. (Table 3.3-5 is the fifth table of section 3.3 and table 3.3.1-5 is the fifth table of subsection 3.3.1.) Tables are located at the end of the section or subsection immediately following the text. Drawings, pictures, sketches, curves, graphs, and engineering diagrams identified as "figures" are numbered according to the order of mention in the section or subsection. (Figure 3.4-2 is the second figure of section 3.4 and figure 3.4.1-2 is the second figure in subsection 3.4.1.) Figures are located at the end of the applicable section or subsection, following tables.

Some drawings and engineering diagrams are included, in conjunction with specific system descriptions, by reference to their drawing identification number in lieu of inclusion as a figure.

1.1.6.4 Numbering of Pages

Text pages are numbered sequentially within each section or subsection. (Page 1.1-4 is the fourth page of section 1.1 and 1.1.1-4 is the fourth page of subsection 1.1.1.) Tables and figures are not paginated. When it becomes necessary during revision of this FSAR to insert additional information, impacted text material will be moved to subsequent pages as required, and these pages will be renumbered.

1.1.6.5 Amending the FSAR

When it becomes necessary to submit additional information or revise information presently contained in the FSAR, the following procedures will be followed:

A. When a change is made to the FSAR text, those pages affected will be marked with the amendment number and date in the lower right corner of the margin. A vertical line in the same margin will indicate the material affected.

B. Figures will be revised by indicating the amendment number and date in the lower right corner. Notation will be made of the revisions made in that amendment

1.2 GENERAL PLANT DESCRIPTION

1.2.1 SITE CHARACTERISTICS

1.2.1.1 Location

The site is located in southeast Georgia on the west side of the Savannah River about 26 miles southeast of Augusta, Georgia, and 15 miles east-northeast of Waynesboro, Georgia. It is in Burke County, Georgia, just across the river from the Savannah River Site as shown in figure 2.1.1-2. The Universal Transverse Mercator Grid Coordinates for the center of the Unit 1 containment are Zone 17S, east 428,900 m, north 3,666,900 m. For the center of the Unit 2 containment, the coordinates are Zone 17S, east 428,800 m, north 3,666,900 m.

1.2.1.2 Site Ownership

The 3169-acre site is owned by Georgia Power Company and the co-owners.

1.2.1.3 Access to the Site

All activities on the site are under the control of Southern Nuclear Operating Company, Inc. (SNC). Access to the plant's protected area is controlled by a security fence and guard force.

1.2.1.4 Site Environs

There are no people living on the site. Due to the remoteness of the VEGP site, there are few human activities within a 5-mile radius. A survey by the Central Savannah River Area Planning and Development Commission shows no public or private schools, hospitals, commercial plants, sports facilities, residential development parks, or recreational areas within 5 miles of the site on the Georgia side of the river. In South Carolina the restricted nature of the adjacent Savannah River Site excludes any such uses of the land. The surrounding terrain is characterized by gently rolling land of which approximately 30 percent is farmland; the remainder is primarily wooded.

The above paragraph was written prior to receipt of an operating license. It is presently considered historical information. However, subsequent to receipt of license, some sports facilities/recreational areas within 5 miles of the site have been constructed. These are a concrete, public, fishing-boat ramp on the Georgia side of the Savannah River near the VEGP site training center, and a VEGP employees' recreational facility (picnic tables, pavilion-type shed, restrooms/showers, tennis courts, fishing area, softball field) across from the site's GPC land/surveying office building. In addition, adjacent to the owner controlled area (OCA) is a Georgia Wildlife Game Preserve where state-controlled, wild-game hunting is permitted.

1.2.1.5 Geology

The topography of the site consists of gently rolling hills carved from a terrace ranging in elevation from approximately 300 ft above sea level to the lowest point, approximately 80 ft above sea level, and lying at the edge of the Savannah River. Shallow solution basins are present where leaching of dispersed calcareous sands and shells has resulted in local near-surface subsidence.

At the site, the upper 80 to 110 ft consists of red to yellow sands and clays of Eocene and Miocene age. The lower portion of the yellow sands is generally calcareous, often locally becoming a coquina, which has leached out to form shallow near-surface depressions. A hard impervious clayey marl approximately 70 ft thick underlies the calcareous sands and shells. Beneath this are increasingly dense sands composed of deposits of the Cretaceous Age.

The local structure in the sediments is primarily homoclinal with a dip towards the sea varying from about 30 ft/mile at the basement contact to 6 ft/mile at the contact between the red and yellow sands. A monoclinal flexure occurs at the northwest boundary of the site and has a maximum slope of approximately 5 percent. This feature is not tectonic in origin but appears related to existing conditions at the time of deposition.

There are no indications of major or active faulting at or near the site, nor is there any record of nearby seismic epicenters. Solution features observed on the site are clearly related to materials overlying the bearing stratum and therefore do not constitute a safety hazard for the proposed plant.

1.2.1.6 Seismology

The region of the United States in which the site lies is one of considerable earthquake activity, but this is of low to moderate intensity. The exception to this was the 1886 Charleston, South Carolina, earthquake whose epicenter was 104 miles from the site. Reports from nearby towns indicate that this strongest historic shock within the region probably would have had an intensity at the site of VI and no greater than VII on the Modified Mercalli Intensity Scale of 1931 (MM). The New Madrid, Missouri, earthquakes of 1811-1812, whose epicenters were approximately 500 miles to the west, would have had an intensity of no greater than VI (MM) at the site.

The Seismic Risk Map of the United States (Algermissen, 1969) shows the site in Zone 2, described as "moderate damage corresponds to intensity VII on the Modified Mercalli Intensity Scale of 1931." No earthquake epicenters have been recorded within 50 miles of the site and none with an intensity greater than VI (MM) within a 100-mile radius. Evaluation of the site indicates that the largest shock intensities felt were from great, distant earthquakes.

Earthquake frequency data for the period in which records have been kept indicate that in the last 300 years the only shocks of intensity V (MM) or greater felt at the site were those of the 1886 Charleston earthquake and the 1811-1812 New Madrid earthquake.

1.2.1.7 Hydrology

The dominant hydrological feature of the site is the Savannah River, which empties into the Atlantic Ocean some 151 miles downstream. This region is not prone to flooding. The area of the drainage basin affecting the Savannah River at the site is about 8015 mi^2. The average flow in the river during 72 years of record at Augusta, Georgia, is 10,300 ft^3/s, and the minimum flow is 5800 ft^3/s. The maximum historical flow was 360,000 ft^3/s during the flood of 1796. This

corresponds to an estimated maximum flood stage at the site of about 116 ft msl. No flooding has been noted in the region since the completion of the Clark Hill Dam in 1954.

The probable maximum flood for the Savannah River at the VEGP site has been calculated to be 708,969 ft^3/s, which corresponds to an estimated maximum flood stage of 165.0 ft msl; the plant site grade is approximately 220 ft msl.

1.2.1.8 Meteorology

The general climate of this region is characterized by long periods of mild sunny weather in the autumn, mild short winters, somewhat more windy but mild weather in the spring, and long hot summers. The site is far enough inland that the strong winds due to the occasional tropical storms and hurricanes that affect this area are greatly reduced, although these storms do cause heavy precipitation at the site in late summer. The site lies in a region of relatively low tornado activity.

In April 1972 an onsite meteorological measurement program began. Data for the program is collected by instrumentation placed on a 150-ft tower located in a cleared area south-southwest of the plant on the site.

1.2.1.9 Environmental Radiation Monitoring

The purpose of the environmental radiation monitoring program is to measure radioactive material in the environment which may be released from the plant. The measurements made will allow evaluation of possible significant modes of human exposure. Background radiation reference measurements to assess radiation sources in the environment not attributable to the plant will be made as well as measurements of radiation in the environment due to plant operation. Background measurements at locations least affected by the plant will be made concurrently with measurements at locations that are more likely to be affected by releases from the plant. These samples will include air, water, and selected biota. The monitoring program will be initiated a few months before startup of Unit 1.

1.2.2 FACILITY ARRANGEMENT

The principal buildings and structures associated with the plant include the containments, the equipment buildings, the turbine building, the auxiliary building, the control building, the diesel generator buildings, the auxiliary feedwater pumphouses, the fuel handling building, portions of the radwaste transfer building, the nuclear service cooling water towers, and the circulating water cooling towers. Ancillary structures include the administration building, warehouse building and receiving facility, service building, maintenance building, plant entry and security building, vehicle maintenance facility, intake and outfall structures, boathouse, chlorination facilities, fire pumphouse, demineralizer building, field support building, the nuclear training facility, alternate radwaste building, radwaste processing facility, alternate plant entry and security building, outage support building, outage storage building, and low-level waste storage facility.

These buildings and structures are founded upon suitable material for their intended application. Structures essential to the safe operation and shutdown of the plant are designed to withstand more extreme loading conditions than normally considered in conventional nonnuclear design practice. The safety-related buildings and their internal structures are designed to provide protection as required from floods, tornadoes, earthquakes, and the failure of equipment

producing flooding, missiles, and pipe breaks. Additional discussion of design considerations is provided in chapter 3.

Location and orientation of the buildings on the site are shown on drawings AX1D45A01, CX2D45V002 and CX2D45V003. The general arrangement of the power block buildings is shown in drawings AX4DD301, AX4DD302, AX4DD303, AX4DD304, AX4DD305, AX4DD306-1, AX4DD306-2, AX4DD307, AX4DD308, AX4DD309, AX4DD310, and AX4DD311.

Equipment locations for Unit 1 are also shown in drawings 1X4DE312, 1X4DE313, 1X4DE314, 1X4DE317, 1X4DE320, 1X4DE322, 1X4DE315, 1X4DE318, 1X4DE321, 1X4DE323, 1X4DE324, 1X4DE325, 1X4DE316, 1X4DE327, 1X4DE330, 1X4DE301, 1X4DE302, 1X4DE303, 1X4DE304, 1X2D05E001, 1X2D48E007, 1X2D48E008, AX1D65A14-1, and AX2D65A400.

The containment, shown schematically in drawings 1X2D48E007 and 1X2D48E008, encloses the reactor coolant system, the steam generators, some of the engineered safety features systems, and supporting systems. The functional design basis of the Seismic Category 1 containment, including its penetrations and isolation valves, is to contain with adequate design margin the energy released from a design basis, high energy line break accident and to provide a leaktight barrier against the uncontrolled release of radioactivity to the environment, even assuming the loss of one of the two trains of engineered safety features. The containment is a prestressed, post-tensioned, reinforced concrete, right circular cylinder with a hemispherical dome.

The equipment building, shown in drawings 1X4DE314 and 1X4DE317, provides protection from the weather for equipment located within the building. The equipment building consists of portions of the control and fuel handling buildings and is designed to Seismic Category 1 requirements.

The turbine building, shown in drawings 1X4DE301, 1X4DE302, 1X4DE303 and 1X4DE304, houses all equipment associated with the main turbine-generator. Other auxiliary equipment, such as air compressors, is also located in this building.

The auxiliary building, shown in drawings 1X4DE315, 1X4DE318, 1X4DE321, 1X4DE323, 1X4DE324 and 1X4DE325, is a multistory, Seismic Category 1, reinforced concrete structure which contains safety systems and necessary auxiliary support systems. Redundant safety trains in the auxiliary building and other areas of the plant are separated and protected so that a loss of function of one train will not prevent the other train from performing its safety function.

The control building, shown in drawings 1X4DE312, 1X4DE313, 1X4DE314, 1X4DE317, 1X4DE320 and 1X4DE322, is a Seismic Category 1, multistory, reinforced concrete structure, in which many of the control and electrical systems, including required support systems directly related to safety or necessary for plant operations, are located.

The auxiliary feedwater pumphouse and condensate storage facility are shown in drawing 1X4DE316. These structures are designed to Seismic Category 1 requirements. The pumphouse contains the train A and B motor-driven pumps as well as the train C turbine-driven pump. The condensate storage facility consists of two concrete condensate storage tanks and associated equipment and structures.

The diesel generator building, shown in drawings 1X4DE327 and 1X4DE330, is a Seismic Category 1 reinforced concrete structure. The building contains two diesel generators, two fuel oil day tanks, four starting air receiver-compressor units, air intake vents and filters, silencers, and controls. Each diesel generator and its associated equipment is in an individual room within the diesel generator building. The building interior and exterior walls which separate the

diesel generators and associated equipment constitute a fire barrier wall having a 3-h fire resistance rating.

The fuel handling building, shown in drawings 1X4DE312, 1X4DE313, 1X4DE314, 1X4DE317, 1X4DE320 and 1X4DE322, is a Seismic Category 1 reinforced concrete structure consisting mainly of spent fuel pools, a fuel receiving and storage area, and a new fuel inspection area. The handling, loading, and shipping of spent fuel casks and the handling, storage, and transfer to the core of new fuel assemblies is provided for in this building.

The radwaste transfer building, adjacent to the auxiliary building (drawing AX4DE350) was formerly intended as a radwaste collection and transfer facility. The structure and its contents have been abandoned with the exception that certain areas associated with HVAC and piping to the alternate radwaste building have been retained. The underground transfer tunnel routes the process piping from the auxiliary building to the radwaste processing facility.

The alternate radwaste building which formerly housed the liquid radwaste systems, shown in drawing AX4DE350, is a metal siding building supported on a base slab with a "lean-to" structure on the north side for storage. The building basemat is designed with curbing to retain radioactive liquid in the event of an operating basis earthquake per Regulatory Guide 1.143. It contains a demineralizer vault, high integrity container (HIC) system storage vault, laydown area, and a truck-trailer loading bay. Areas have been allotted to stage process shields and process skids. The radwaste processing facility, located between the solidification building and the field support building, is designed in accordance with Regulatory Guide 1.143 and applicable codes, standards, calculations, and specifications. It is a concrete building supported on a slab to house process equipment for handling radioactive liquids, resins, and filters. The radwaste processing facility, shown on drawing AX4DE357, contains a subterranean demineralizer vault, subterranean HIC storage vaults, a rollup door for a truck bay, and a 40-ton bridge crane to service equipment. The slab and shield walls inside the building are designed for the operational basis earthquake (OBE) condition and are capable of retaining radioactive liquids during and after an OBE event. A low-level radioactive waste storage facility is provided as shown on drawing AX2D47A469 to provide temporary storage of low-level radioactive waste pending NRC approval of an appropriate disposal facility.

The circulating water cooling tower is a concrete, natural draft, hyperbolic structure. The tower is designed to dissipate all excess heat removed from the main condensers and accomplishes this function by the use of the spray network, the tower basin, and circulating water pumps, piping, and valves. The intake structure houses the circulating water pumps, turbine plant cooling water pumps, and associated auxiliary equipment and piping.

The nuclear service cooling water towers, shown in drawing 1X2D05E001, are Seismic Category 1 concrete mechanical draft structures. The towers house the equipment required to cool the heated nuclear service cooling water, and the basins provide a cooling water storage supply for the ultimate heat sink.

The plant is arranged so that Unit 1 can be placed in commercial operation before the completion of Unit 2. To minimize the exposure of construction personnel to radiation, to prevent unauthorized construction personnel from entering the Unit 1 protected area, and to ensure that no construction condition for Unit 2 affects operation of Unit 1, the following measures are taken:

A. Physical separation (temporary barrier), to the extent practical between Unit 1 and Unit 2, separates Unit 1 from major construction and testing activities on Unit 2.

B. Since Unit 2 is outside the Unit 1 protected area (PA) access to those Unit 2 systems/components inside the PA is through the plant security system.

C. Unit 2 construction personnel access into the PA is minimized.

D. Prior to the start of operation of Unit 1, electrical, ventilation, and process systems within the Protected Area of Unit 1 were segregated to the extent practical from similar systems of Unit 2.

E. A temporary barrier exists in the control room to separate the Unit 1 portion from the under-construction Unit 2 portion.

F. Common systems and interfaces between units are initially isolated from Unit 2. Control of the operating portions of common systems and interfaces, isolation between units, and/or the change of state of these systems and interfaces are governed by Unit 1 procedures.

G. Unit 2 interface activities with Unit 1, including construction work within the protected area, is conducted in accordance with the administrative controls set forth in the Plant Administration Procedures Manual.

  - Construction work within the protected area is handled under the controls of the Unit 1 maintenance program established in the plant administration procedures.
  - The initial test program preoperational test phase activities are controlled by procedures in the Startup Manual based on the requirements set forth in the plant administration procedures.

1.2.2.1 Units 1 and 2 Shared Facilities

The following facilities are shared by Units 1 and 2; the locations are noted in parentheses:

- Plant access control (plant entry and security building and alternate plant entry and security building).
- Power block entry (control building).
- Control room (control building).
- Control building support facilities (locker rooms, showers, health physics office, laundry, first aid station, etc.).
- Radioactive laboratories (control building).
- Communication room (service building).
- Technical support center (control building).
- Hot machine shop (auxiliary building).
- Hot instrument decontamination shop (auxiliary building).
- Drum storage area (auxiliary building).
- New fuel pit (fuel handling building).

- Spent fuel cask handling areas (auxiliary and fuel handling building).
- Portions of radwaste transfer building.
- Alternate radwaste building.
- Radwaste processing facility.
- Water analysis room (turbine building).
- Nitrogen storage area (outdoors).
- Hydrogen storage area (outdoors).
- Sewage treatment plant.
- River intake structure (outdoors).
- Water treatment building (outdoors).
- Waste water effluent facility (outdoors).
- Low-level waste storage facility (outdoors).
- Outage storage building.

1.2.2.2 Units 1 and 2 Shared Systems

The following systems or portions of systems are shared by Units 1 and 2:

- Boron recycle.
- Waste processing - liquid.
- Waste processing - gaseous.
- Radwaste solidification - portable vendor supplied.
- Fire protection.
- Instrument and service air.
- Auxiliary gas.
- Plant makeup water treatment.
- Plant makeup water treatment waste neutralization.
- Plant demineralized water.
- Auxiliary steam.

- Turbine-generator hydrogen gas cooling.
- Potable water.
- Laboratory gas and liquid supply.
- Fuel handling building heating, ventilation, and air-conditioning (HVAC).
- Control building normal HVAC.
- Control room HVAC.
- Control room lighting.
- Spent fuel cask bridge crane.
- Plant communications.
- Process and effluent monitoring system.
- Fuel handling machine.
- Condensate filter demineralizer spent resin dewatering system.
- CVCS chiller.
- 4160-V nonsafety-related electrical distribution system (outage loads only).

1.2.3 NUCLEAR STEAM SUPPLY SYSTEM (NSSS)

Each NSSS consists of a pressurized water reactor and a four-loop reactor coolant system (RCS). The mechanical, thermal-hydraulic, and nuclear design of the reactor core is similar to the design of other Westinghouse units. The maximum expected thermal output rating of each NSSS unit is 3653 MWt. Heat balances for the major parameters of the plant are shown for the turbine valves wide open condition in drawing 1X4DC101, and for the as-built heat balance in drawings 1X4DC103 and 2X4DC103.

1.2.3.1 Reactor Core

The core is cooled and moderated by light water in the RCS. The moderator/coolant contains boron as a neutron poison. The concentration of the boron in the coolant is varied as required to control relatively slow reactivity changes including the effects of fuel burnup. Additional boron, in the form of burnable poison rods, is employed in the first core to establish the desired initial reactivity.

The fuel rods consist of slightly enriched uranium dioxide cylindrical pellets contained in slightly cold-worked, Zircaloy-4 tubing which is plugged and seal welded at the ends to encapsulate the fuel. All fuel rods are pressurized with helium during fabrication to reduce stresses and strains and to increase fatigue life.

Additional reactivity control is provided by control rod assemblies which consist of a group of individual absorber rods fastened at the top end to a common hub or spider assembly. The control rod drive mechanisms for the control rod assemblies are of the magnetic latch type. The latches are controlled by three magnetic coils. They are so designed that upon a loss of power to the coils, the control rod assembly is released and falls by gravity to shut down the reactor.

The components of the reactor internals are divided into three structures consisting of the lower core support structure (including the entire core barrel and neutron shield pad assembly), the upper core support structure, and the incore instrumentation support structure. The reactor internals support the core, maintain fuel alignment, limit fuel assembly movement, maintain alignment between fuel assemblies and control rod drive mechanisms, direct coolant flow past the fuel elements and to the pressure vessel head, provide gamma and neutron shielding, and provide guides for the incore instrumentation.

Instrumentation is provided in and out of the core to monitor the nuclear, thermal-hydraulic, and mechanical performance of the reactor and to provide inputs to automatic control functions.

The reactor core design together with corrective actions of the reactor control, protection, and emergency core cooling systems ensure that attained peak local power densities do not:

- Lead to fuel damage during normal operation or faults of moderate frequency.
- Cause failure of more than a small fraction of fuel rods due to infrequent fault.
- Prevent acceptable heat transfer during transients associated with limiting faults.

1.2.3.2 Reactor Coolant System

The RCS is arranged as four closed loops connected in parallel to the reactor vessel. Each loop consists of one 29-in. inside diameter (ID) outlet pipe (hot leg), one steam generator, and one 27.5-in. ID inlet pipe (cold leg), with one reactor coolant pump in each cold leg. The piping between the steam generator and the reactor coolant pump suction has an inside diameter of 31 in. to reduce pressure drop and improve flow conditions to the pump suction. An electrically heated pressurizer is connected to one of the loops. A safety injection line is connected to each of the four cold legs. The RCS operates at a nominal pressure of 2235 psig.

The reactor coolant enters the reactor vessel through four inlet nozzles, turns and flows downward between the reactor vessel shell and the core support barrel, and enters the lower plenum through the flow skirt. The coolant then turns and flows upward through the core barrel lower support structure, through the core support plate flow holes, and continues parallel to the axis of the fuel assemblies to remove the heat generated within the fuel. The coolant continues its upward flow through the upper guide structure, then turns and leaves the reactor vessel through the four outlet nozzles and the hot leg pipes, which lead to the steam generators. The coolant flows through the tube side of the four steam generators, where heat is transferred to the secondary system. Reactor coolant pumps return the reactor coolant to the reactor vessel.

The pressure in the RCS is controlled by regulating the temperature of the coolant in the pressurizer, where steam and water are held in thermal equilibrium. Steam is formed by the pressurizer heaters or condensed by the pressurizer spray to reduce pressure variations caused by expansion and contraction of the reactor coolant due to system temperature changes. The pressurizer limits pressure variations during plant load transients and keeps system pressure within design limits during abnormal conditions.

1.2.4 STEAM AND POWER CONVERSION SYSTEM

The turbine-generator is furnished by the General Electric Company. The gross generator output at turbine guaranteed rating is 1,156,622 kW output at 1800 rpm, using a tandem compound 6-stage flow machine with 38-in. last-stage buckets. The throttle steam conditions are 940 psia, 1191.4 Btu/lb, with one stage of reheat. The exhaust pressure is 3.5-in. Hg abs; the makeup is 0.0 percent. Extraction steam is used for normal feedwater heating and for steam generator feed pump turbine operation.

General features of the generator include a 1,350,000-kVA output at 1800 rpm, four poles direct connected, 3-phase, 60-Hz, 25,000-V conductor cooled synchronous generator rated at 0.90 power factor, 0.5 short circuit ratio at maximum hydrogen pressure of 75 psig.

The auxiliary feedwater system contains two motor-driven pumps and one turbine-driven pump. This system is designed to provide emergency heat removal capacity.

1.2.5 CONTAINMENT

The containment completely encloses the reactor and reactor coolant system. It is a vertical, right-cylindrical, prestressed, post-tensioned concrete structure with a dome and flat base with a depressed center for a reactor cavity and instrumentation tunnel. The interior is lined with carbon steel plate for leaktightness. Approximate dimensions of the containment are as follows: inside diameter, 140 ft; inside height, 228 ft; vertical wall thickness, 3 ft 9 in.; dome thickness, 3 ft 9 in.; foundation thickness, 10 ft 6 in., with a minimum thickness of the concrete basemat of 8 ft 3 in.; and the minimum thickness of the concrete instrumentation cavity of 8 ft.

Inside the containment, the reactor and other nuclear steam supply system components are shielded with concrete. A vent stack is attached to the outside of the containment and extends a short distance above the top of the containment dome. Access to portions of the containment during power operation is permissible.

The containment, along with the safety features, is designed to withstand the internal pressure and coincident temperature resulting from the energy release of the high energy line break accident. The containment design internal pressure is based upon the design basis loss-of-coolant accident, and the internal temperature is based upon design basis main steam line break.

1.2.6 SAFETY FEATURES

The safety features limit the potential radiation exposure to the public and to plant personnel following an accidental release of radioactive fission products from the reactor system, particularly as the result of a loss-of-coolant accident (LOCA). These safety features function to localize, control, mitigate, and terminate such accidents, ensuring that 10 CFR 100 guidelines are not exceeded. The safety features include the following systems:

- Emergency core cooling system (ECCS).
- Containment spray system.
- Containment cooling system.
- Penetration room filtration systems.

- Hydrogen recombiners.

1.2.6.1 Emergency Core Cooling System

The ECCS injects borated water into the reactor coolant system following a LOCA. This provides cooling to limit core damage, metal-water reactions, and fission product release and ensures adequate shutdown margin regardless of temperature. The ECCS also provides continuous long term, post-accident cooling of the core by recirculating borated water between the containment sump and the reactor core.

1.2.6.2 Containment Spray System

The containment spray system is composed of two redundant, full-capacity trains which are designed to reduce the post-accident containment building iodine concentrations so that offsite doses are less than 10 CFR 100 guidelines.

The containment spray system supplies borated water during injection and borated water mixed with trisodium phosphate during recirculation to the containment atmosphere. The spray system in combination with four of the eight containment air coolers (operating at reduced speed) is sized to provide adequate cooling with either or both of the two containment spray pumps in service. These pumps take suction from the refueling water storage tank. When the RWST empty alarm is received, suction of the containment spray pumps is aligned to pump water from the containment sump directly into the containment during the recirculation mode of operation.

1.2.6.3 Containment Cooling System

The containment cooling system consists of two independent, redundant, full-capacity trains containing the equipment necessary for safe shutdown of the plant following an accident. The system is designed to reduce the post-accident containment pressure to 50 percent or less of the peak containment pressure within 24 h or less following the accident.

1.2.6.4 Penetration Room Filtration Systems

The penetration room filtration systems for each unit collect and process potential airborne contamination due to leakage from process components during the recirculation mode of ECCS operation. This filtration limits the environmental activity levels following an accident.

1.2.6.5 Hydrogen Recombiners

Fully redundant electrical hydrogen recombiners inside the containment reduce the percentage of hydrogen in the post- accident containment atmosphere to below combustible levels.

1.2.7 UNIT CONTROL

The reactor is controlled by control rod movement and regulation of the boric acid concentration in the reactor coolant. During steady-state operation, the reactor control system maintains a programmed average reactor coolant temperature that rises in proportion to the load.

The solid state protection logic system automatically initiates appropriate action whenever the parameters monitored by this system reach preestablished setpoints. This system acts to trip the reactor, actuate emergency core cooling, close containment isolation valves, and initiate the operation of other safety feature systems.

1.2.8 PLANT ELECTRICAL POWER

The two main turbine-generators are each rated at 1350 MVA, 0.90 power factor, 25,000 V; they are 3-phase, 60-Hz, 1800 rpm hydrogen- and water-cooled units. The power from these units is delivered to the Georgia Power Company 230-kV and 500-kV transmission lines. Termination points of these lines are described in section 8.2.

Each unit has three separate sources of power for its auxiliaries. The three sources of power and associated electrical equipment ensure the functioning of both units without undue risk to the health and safety of the public and provide reliable power sources for startup, normal operation, safe shutdown, and emergency situations.

The three sources for each unit are:

A. The main turbine-generator supplies normal auxiliary loads during plant operation.

B. The two reserve auxiliary transformers supply the two safety feature buses from the 230-kV switchyard. The standby auxiliary transformer (SAT) may supply either of the two safety feature buses from Plant Wilson.

C. The two standby diesel generators provide emergency power to two safety feature buses. Upon loss of all offsite power, either diesel generator and its associated bus has the capacity to power the equipment required to safely shutdown the reactor and mitigate the consequences of the design bases accidents.

Plant batteries ensure a constant supply of power to vital instruments and controls.

Plant power is distributed through buses at 13,800 V, 4160 V, and 480 V, and 120 V ac. The safety-related dc loads in each unit are powered from four 125-V dc buses.

1.2.9 PLANT INSTRUMENTATION AND CONTROL SYSTEM

To avoid undue risk to the health and safety of the public, instrumentation and controls monitor and maintain neutron flux, primary coolant pressure, temperature, and control rod positions within prescribed operating ranges.

The regulating, process, and containment instrumentation measure temperatures, pressures, flows, and levels in the reactor coolant system, steam systems, containment, and auxiliary systems. Process variables required on a continuous basis for startup, operation, and shutdown of the unit are indicated, recorded, and controlled from the control room. The quality and types of process instrumentation provided ensure safe and orderly operation of all systems and processes over the full operating range of the plant.

Startup and shutdown of the reactor and adjustment of reactor power in response to turbine load demand are provided by the reactor control system. The reactor is controlled by control rod motion for startup, shutdown, and load-follow transients; it is also controlled by a soluble neutron absorber (boron, injected as boric acid into the primary coolant) which is inserted during cold shutdown and refueling, partially removed during reactor startup, and adjusted in concentration during core lifetime to compensate for such effects as fuel consumption and accumulation of fission products which reduce the levels of desirable nuclear reactions. The control system permits each unit to accept step load increases or decreases of 10 percent and ramp load increases or decreases of 5 percent/min over the load range from 15 percent to, but not exceeding, 100-percent power under normal operating conditions, subject to xenon limitations.

Under normal conditions both the reactor and the turbine-generator are controlled from the control room by Nuclear Regulatory Commission-licensed personnel.

1.2.10 AUXILIARY SYSTEMS

Nuclear auxiliary systems perform the following functions:

- Supply reactor coolant system (RCS) water requirements.
- Purify reactor coolant water.
- Introduce chemicals for corrosion inhibition.
- Introduce and remove chemicals for reactivity control.
- Cool system components.
- Remove residual heat during a portion of the reactor cooling period and when the reactor is shut down.
- Cool the spent fuel pool water.
- Permit sampling of reactor coolant water.
- Provide for safety injection.
- Vent and drain the RCS and the auxiliary systems.
- Provide containment ventilation and cooling.
- Process liquid and gaseous wastes and dispose of solid wastes.

These functions are performed by the systems discussed below.

1.2.10.1 Chemical and Volume Control System (CVCS)

The CVCS performs the following functions:

- Reactivity control.

- Regulation of reactor coolant inventory.
- Reactor coolant purification.
- Chemical additions for corrosion control.
- Seal water injection to reactor coolant pump seals.

The purity level in the RCS is controlled by continuous purification of a bypass stream of reactor coolant. Water removed from the RCS is cooled in the regenerative heat exchanger. From there, the coolant flows to a letdown heat exchanger and through a demineralizer where corrosion and fission products are removed. The coolant then passes through a filter and is sprayed into the volume control tank.

The CVCS automatically adjusts the amount of reactor coolant to compensate for changes in specific volume due to coolant temperature changes and reactor coolant pump shaft seal leakage in order to maintain a constant level in the pressurizer.

1.2.10.2 Residual Heat Removal (RHR) System

The RHR system is used to reduce the temperature of the reactor coolant at a controlled rate from 350°F to 140°F and to maintain the proper reactor coolant temperature during refueling.

The RHR pumps are used to circulate the reactor coolant through two RHR heat exchangers, returning it to the RCS through the low-pressure injection header.

1.2.10.3 Auxiliary Feedwater (AFW) System

The AFW system provides feedwater to the steam generators for removal of reactor core decay heat following a loss of main feedwater. The AFW system is also used to cool down the reactor to the temperature and pressure conditions required for initiation of the RHR system.

1.2.10.4 Component Cooling Water (CCW) System

The CCW system consists of two independent trains of pumps and heat exchangers to remove heat from the various auxiliary systems handling the reactor coolant. Corrosion-inhibited demineralized water is circulated by the system through the spent fuel pool heat exchangers, the residual heat exchangers, and the RHR pump seal coolers.

The CCW system provides an intermediate barrier between the RCS and the nuclear service cooling water (NSCW) system described in paragraph 1.2.10.8.

1.2.10.5 Auxiliary Component Cooling Water (ACCW) System

The ACCW system consists of pumps and heat exchangers to remove heat from various auxiliary systems handling reactor coolant. Corrosion-inhibited demineralized water is circulated by the system through the letdown heat exchanger, the reactor coolant pump coolers, sample heat exchangers, waste gas compressors, and other nonsafety-related heat loads.

The ACCW system provides an intermediate barrier between the RCS and the NSCW system described in paragraph 1.2.10.8.

1.2.10.6 Fuel Handling and Storage System

The reactor is refueled with equipment designed to handle spent fuel underwater from the time it leaves the reactor vessel until it is placed in a cask for temporary storage pending shipment offsite. Transfer of spent fuel underwater enables the use of an optically transparent radiation shield and provides a reliable source of coolant for removal of residual heat.

The fuel handling system also provides for the safe handling of rod cluster control assemblies under all foreseeable conditions and for the required assembly, disassembly, and storage of reactor internals. This system includes a manipulator crane located inside the containment above the refueling pool, fuel transfer carriage, upending devices, fuel transfer tube, spent fuel cask bridge crane in the spent fuel pool area, and various devices used for handling the reactor vessel head and internals.

The new fuel storage area is shared by both units and is sized to accommodate storage of 162 fuel assemblies and control rods. The new fuel assemblies are stored in racks in parallel rows having a center-to-center distance of approximately 21 in. to preclude criticality.

Together, the two stainless steel-lined, reinforced concrete spent fuel pools provide storage capacity for 3574 fuel assemblies. Spent fuel assemblies are stored in vertical racks spaced to preclude criticality with no credit taken for the borated pool water. See drawings 1X6AN10B-66 and AX6AN10A-6 for the layout of the pools. The layout of the pools is also shown in figures 9.1.2-3 and 9.1.2-5.

Purification and redundant cooling equipment is provided for each spent fuel pool. This equipment may also be used for cleanup of refueling water after each fuel change in the reactor.

Additional spent fuel storage capacity is provided by the independent spent fuel storage installation (ISFSI) operated in accordance with the general license provisions of Part 72, Subpart K. The ISFSI consists of dry spent fuel storage casks, three storage pads, and applicable radiological and security provisions. The ISFSI is designed to hold a total of 136 HI-STORM 100 spent fuel cask systems, each containing 32 pressurized water reactor fuel assemblies, for a total storage capacity of 4,352 assemblies as described in subsection 9.1.6.

1.2.10.7 Sampling Systems

Three sampling systems are provided: nuclear sampling system - liquid, nuclear sampling system - gaseous, and turbine plant sampling system. These systems are used for determining both chemical and radiochemical conditions of the various fluids used in the plant.

1.2.10.8 Cooling Water Systems

The turbine-generator condenser is cooled by the circulating water system, which rejects heat to a cooling tower.

The cooling water requirements for various nuclear components, CCW system, ACCW system, and diesel generators are supplied by pumps taking suction from the NSCW tower basins. Water makeup to the storage basins is supplied by the normal plant makeup wells or the Savannah River. In addition, a standby nuclear service makeup well can supply makeup flow to the NSCW system as a backup source of water.

1.2.10.9 Plant Ventilation Systems

Separate ventilation systems are provided for the containment, penetration rooms, auxiliary building, fuel handling building, control room, control building, turbine building, and emergency diesel generator building. In addition, a purge system, mini- purge system, post-loss-of-coolant accident purge system, and containment preaccess filtration system are provided for the containment.

The auxiliary building, fuel handling building, and control building penetration rooms are ventilated by the penetration room filtration systems, which include filters for control of any leakage from process components during the recirculation mode of emergency core cooling system operation.

1.2.10.10 Plant Fire Protection System

The major fire protection system contains both diesel- and electric-driven fire pumps which supply the various hydrants, hose stations, sprinklers, and deluge systems. Hydrants and hose stations are manually operated; the sprinkler and deluge systems are a combination of automatic and manually actuated systems. Supplementary to these facilities, chemical fire-extinguishing equipment is provided to accommodate special requirements for various classes of hazards. Noncombustible and fire-resistant materials are selected for use wherever practical throughout the facility, particularly in critical portions of the plant such as the containment, control room, and components of the safety features system.

1.2.10.11 Compressed Air Systems

Three rotary air compressors, with separate aftercoolers and separators, discharge compressed air to two separate headers. These headers provide a continuous supply of filtered, dried, oil-free, compressed air for pneumatic instrument operation and control of pneumatic actuations. The system also provides service air at outlets throughout the plant. An additional rotary air compressor train can be aligned to either unit.

1.2.10.12 Radioactive Waste Disposal System

The waste disposal system provides controlled handling and disposal of liquid, gaseous, and solid wastes. The waste processing system provides all equipment necessary for controlled treatment and preparation for retention or disposal of all liquid, gaseous, and solid wastes produced as a result of reactor operation.

The liquid waste processing system collects, processes, and recycles reactor grade water; removes or concentrates radioactive constituents; and processes them until suitable for release or shipment offsite. Liquid wastes are sampled and activity levels verified and recorded prior to release. Processed liquid effluent from the RCS will have been subjected to the CVCS purification ion exchanger and the components of the waste processing system and will be within the limits established by the Offsite Dose Calculation Manual.

The gaseous waste processing system functions to remove fission product gases from the reactor coolant and to contain these gases during normal plant operation. Waste gases are collected in the vent header. These gases are withdrawn from the vent header by one of two compressors and discharged to a waste gas decay tank. The tank contents will be released to the environment in accordance with the program requirements of Technical Specifications, and

releases will be within the limits set forth in the Offsite Dose Calculation Manual. Seven waste gas decay tanks and two shared waste gas decay shutdown tanks are provided. Gaseous wastes are discharged through an absolute particle filter to the vent stack.

Solid wastes are stored in suitable containers for eventual disposal. A low-level waste storage facility provides temporary storage of dry radioactive waste pending disposal in an NRC-licensed facility. The low-level waste facility also provides temporary storage for dewatered resins pending collection of a sufficient quantity for processing and/or reduction to a form suitable for disposal.

1.2.11 SHARED FACILITIES AND EQUIPMENT

An integrated, twin-unit station enables certain components, systems, and facilities to be designed and arranged so that they are common to both units without impairing the safety or reliability of either unit.

Separate and similar systems and equipment are provided for each unit except as noted in paragraphs 1.2.2.1 and 1.2.2.2.

1.2.12 PRINCIPAL DESIGN CRITERIA

The VEGP is designed to comply with the intent of the General Design Criteria for Nuclear Power Plants contained in Appendix A to 10 CFR 50. The details of compliance to the general design criteria are provided in section 3.1.

The principal design criteria are presented in two ways--power generation function or safety function--and grouped according to system. Although the distinctions between power generation or safety functions are not always clear and occasionally overlap, the functional classification facilitates safety analyses, while the grouping by system facilitates the understanding of both the system function and design.

1.2.12.1 General Design Criteria

1.2.12.1.1 Power Generation Design Criteria

A. The plant is designed to produce steam for direct use in a turbine-generator unit.

B. Heat removal systems are provided with sufficient capacity and operational adequacy to remove heat generated in the reactor core for the full range of normal operational conditions and abnormal operational transients.

C. Backup heat removal systems are provided to remove decay heat generated in the core under circumstances wherein the normally operational heat removal systems become inoperative. The capacity of such systems is adequate to prevent fuel cladding damage.

D. The fuel cladding, in conjunction with other plant systems, is designed to retain integrity through the range of normal operational conditions and abnormal operational transients.

E. The fuel cladding accommodates, without loss of integrity, the pressures generated by fission gases released from fuel material throughout the design life of the fuel.

F. Control equipment is provided to allow the reactor to respond automatically to minor load changes, major load changes, and abnormal operational transients.

G. Reactor power level is manually controllable.

H. Control of the reactor is possible from a single location.

I. Reactor controls and related indicators and alarms are arranged to allow the operator to rapidly assess the condition of the reactor system and locate system malfunctions.

J. Interlocks, or other automatic equipment, are provided as backup to procedural controls to avoid conditions requiring the functioning of nuclear safety systems or engineered safety features (ESF).

1.2.12.1.2 Safety Design Criteria

A. The plant design conforms to applicable regulations as discussed in sections 1.9 and 3.1.

B. The plant is designed, fabricated, erected, and operated in such a way that the release of radioactive materials to the environment does not exceed the limits and guideline values of applicable government regulations pertaining to the release of radioactive materials for normal operations and for abnormal transients and accidents.

C. The reactor core is designed so its nuclear characteristics do not contribute to a divergent power transient.

D. The reactor is designed so that there is no tendency for divergent oscillation of any operating characteristic, considering the interaction of the reactor with other appropriate plant systems.

E. Gaseous, liquid, and solid waste disposal facilities are designed so that the discharge of radioactive effluents and offsite shipment of radioactive materials can be made in accordance with applicable regulations.

F. The design provides means by which plant operators are alerted when limits on the release of radioactive material are approached.

G. Sufficient indications are provided to allow determination that the reactor is operating within the envelope of conditions considered by plant safety analysis.

H. Radiation shielding is provided and access control patterns are established to allow a properly trained operating staff to control radiation doses within the limits of applicable regulations in any mode of normal plant operations.

I. Those portions of the nuclear steam supply system (NSSS) that form part of the reactor coolant pressure boundary (RCPB) are designed to retain integrity as a radioactive material containing barrier following abnormal operational transients and accidents.

J. Nuclear safety systems and ESF function to ensure that no damage to the RCPB results from internal pressures caused by abnormal operational transients and accidents.

K. Where positive, precise action is immediately required in response to abnormal operational transients and accidents, such action is automatic and requires no decision or manipulation of controls by plant operations personnel.

L. Essential safety actions are provided by equipment of sufficient redundance and independence so that no single failure of active components can prevent the required actions. For systems or components to which Institute of Electrical and Electronics Engineers (IEEE) 279-1971, Criteria for Protection Systems for Nuclear Power Generating Stations, applies, single failures of both active and passive electrical components are considered in recognition of the higher anticipated failure rates of passive electrical components relative to passive mechanical components.

M. Provisions are made for control of active components of nuclear safety systems and ESF from the control room.

N. Nuclear safety systems and ESF are designed to permit demonstration of their functional performance requirements.

O. The design of nuclear safety systems and ESF includes allowances for natural environmental disturbances such as earthquakes, floods, and storms at the station site.

P. Standby electrical power sources have sufficient capacity to power all nuclear safety systems and ESF requiring electrical power.

Q. Standby electrical power sources are provided to allow prompt reactor shutdown and removal of decay heat under circumstances where normal auxiliary power is not available.

R. A containment is provided which completely encloses the reactor system.

S. The containment is designed to allow periodic integrity and leaktightness testing.

T. The containment, in conjunction with other ESF, limits to less than the prescribed acceptable limits the radiological effects of accidents resulting in the release of radioactive material to the containment volume.

U. Provisions are made for removing energy from the containment as necessary to maintain the integrity of the containment system following accidents that release energy to the containment.

V. Piping that penetrates the containment and could serve as a path for the uncontrolled release of radioactive material to the environs is automatically isolated whenever such uncontrolled radioactive material release is threatened. Such isolation is effected in time to limit radiological effects to less than the specified acceptable limits.

W. Emergency core cooling systems (ECCS) are provided to limit fuel cladding temperature to less than the limits established by 10 CFR 50.46 in the event of a loss-of-coolant accident (LOCA).

X. The ECCS provides for continuity of core cooling over the complete range of postulated break sizes in RCPB.

Y. Actuation of the ECCS occurs automatically when required, regardless of the availability of offsite power supplies and the normal generating system of the station.

Z. The control room is shielded against radiation so that continued occupancy under accident conditions is possible.

AA. In the event that the control room becomes uninhabitable, it is possible to bring the reactor from power range operation to cold shutdown conditions by utilizing the shutdown panels and other equipment available outside the control room.

BB. Backup reactor shutdown capability is provided independent of normal reactivity control provisions. This backup system has the capability to shut down the reactor from any normal operating condition and subsequently to maintain the shutdown condition.

CC. The fuel handling and storage facility is designed to prevent inadvertent criticality and to maintain shielding and cooling of spent fuel.

1.2.12.2 System Criteria

The principal design criteria for particular systems are discussed below.

1.2.12.2.1 Nuclear System Criteria

A. The fuel cladding is designed to retain integrity as a radioactive material barrier throughout the design power range. The fuel cladding is designed to accommodate, without loss of integrity, the pressures generated by the fission gases released from the fuel material throughout the design life of the fuel.

B. The fuel cladding, in conjunction with other plant systems, is designed to retain integrity throughout any abnormal operational transient.

C. Those portions of the nuclear system that form part of the RCPB are designed to retain integrity as a radioactive material barrier during normal operation and following abnormal operational transients and accidents.

D. Heat removal systems are provided in sufficient capacity and operational adequacy to remove heat generated in the reactor core for the full range of normal operational transients. The capacity of these systems is adequate to prevent fuel cladding damage.

E. Heat removal systems are provided to remove decay heat generated in the core under circumstances wherein the normal operational heat removal systems become inoperative. The capacity of these systems is adequate to prevent fuel cladding damage. The reactor is capable of being shut down automatically in sufficient time to permit decay heat removal systems to become effective following loss of normal heat removal systems.

F. The reactor core and reactivity control system is designed so that control rod action is capable of bringing the core to subcriticality and maintaining it subcritical even with the rod of highest reactivity worth fully withdrawn and unavailable for insertion into the core.

G. The reactor core is designed so that its nuclear characteristics do not contribute to a divergent power transient.

H. The nuclear system is designed so there is no tendency for divergent oscillation of any operating characteristic, considering the interaction of the nuclear system with other appropriate plant systems.

1.2.12.2.2 Power Conversion Systems Criteria

Components of the power conversion systems are designed to produce electrical power from the steam coming from the steam generator, condense the steam into water, and return the water to the steam generator as heated feedwater.

1.2.12.2.3 Electrical Power System Criteria

Sufficient normal and standby auxiliary sources of electrical power are provided to facilitate prompt shutdown and continued maintenance of the plant in a safe condition under all credible circumstances. The power sources are adequate to accomplish all required essential safety actions under postulated design bases accident conditions.

1.2.12.2.4 Radwaste System Criteria

A. The gaseous and liquid radwaste systems are designed to minimize the release of radioactive effluents from the station to the environs. Such releases as may be necessary during normal operations are limited to values that meet the requirements of applicable regulations.

B. The solid radwaste disposal systems are designed so that in plant processing and offsite shipments are in accordance with applicable regulations.

C. The system design provides means by which station operations personnel are alerted whenever specified limits on the release of radioactive material are approached.

1.2.12.2.5 Auxiliary Systems Criteria

A. Fuel handling and storage facilities are designed to prevent criticality and to maintain adequate shielding and cooling for spent fuel. Provisions are made for maintaining the cleanliness of spent fuel cooling and shielding water.

B. Other auxiliary systems or portions of these systems, such as service water, cooling water, fire protection, heating and ventilating, communications, and lighting, are designed to function during normal and/or accident conditions.

C. Auxiliary systems which are not required to effect safe shutdown of the reactor or maintain it in a safe condition are designed so that a failure of these systems does not prevent the essential auxiliary systems from performing their design functions.

1.2.12.2.6 Shielding and Access Control Criteria

Shielding and access control criteria are as follows:

A. Radiation shielding is provided, and access control patterns are established to allow a properly trained operating staff to control radiation doses within the limits of applicable regulations in any normal mode of plant operation.

B. The control room is shielded against radiation so that occupancy is possible under accident conditions.

1.2.12.2.7 Nuclear Safety Systems and ESF Criteria

Principal design criteria for nuclear safety systems and ESF are as follows:

A. Nuclear safety systems and ESF function to ensure that the safety design criteria J through Q, X, Y, and AB of paragraph 1.2.12.1.2 are satisfied.

B. ECCSs are provided to preclude core damage in excess of limits specified in 10 CFR 50, Appendix K.

C. If the control room is uninhabitable, it is possible to bring the reactor from power range operation to a hot shutdown condition by manipulating the local controls and equipment that are available outside the control room. Furthermore, the plant design includes the capability to bring the reactor to a cold shutdown condition from the hot shutdown condition using controls and indications located outside the control room.

1.2.12.2.8 Process Control Systems Criteria

The principal design criteria for the process control systems are given in the following paragraphs.

1.2.12.2.8.1 NSSS Process Control Criteria.

A. Control equipment is provided to allow the reactor to respond automatically to main load changes within design limits.

B. It is possible to control the reactor power level manually.

C. Control of the NSSS is possible from a central location.

D. The NSSS process controls and alarms are arranged to allow the operator to rapidly assess the condition of the NSSS and to locate process system malfunctions.

E. Interlocks or other automatic equipment are provided as a backup to procedural controls to avoid conditions requiring the actuation of ESF.

1.2.12.2.8.2 Power Conversion Systems Process Control Criteria.

A. Control equipment is provided to control the reactor pressure throughout its operating range.

B. The turbine is capable of responding automatically to minor changes in load.

C. Control of the power conversion equipment is possible from a central location.

D. Interlocks or other pieces of automatic equipment are provided in addition to procedural controls to avoid conditions requiring the actuation of ESF.

1.2.12.2.8.3 Electrical Power System Process Control Criteria.

A. The Class 1E power system is designed as two safety feature buses, with either bus being capable of bringing the unit to a safe shutdown condition.

B. Protective devices are used to detect and isolate faulted equipment from the system with a minimum of disturbance in the event of equipment failure.

C. Voltage detection devices are used to isolate the safety feature buses from the normal electrical system in the event of loss of offsite power and to initiate starting of the standby emergency power system diesel generators.

D. The standby diesel generators are started manually or automatically. The generators are sequentially loaded by a load sequencing system to meet the existing emergency condition.

E. Electrically operated breakers are generally controllable from the control room.

F. Metering for essential generators, transformers, and circuits is provided in the control room.

1.2.13 PARTICULARLY DIFFICULT ENGINEERING PROBLEMS

In general, particularly difficult engineering problems can be defined as those requiring development work or vendor testing to finalize the design. Such areas are discussed in section 1.5.

1.2.14 EXTRAPOLATION OF TECHNOLOGY

There are no significant extrapolations of design technology incorporated in the VEGP.

1.3 COMPARISON TABLES (HISTORICAL)

1.3.1 COMPARISON WITH SIMILAR FACILITY DESIGNS

Table 1.3.1-1 presents a design comparison of the major parameters or features of the VEGP units at the time of initial licensing with the SNUPPS units, Comanche Peak, Units 1 and 2, and the Trojan unit. Changes made to VEGP or other referenced plants following initial licensing are not reflected in table 1.3.1-1.

Table 1.3.1-2 presents a design comparison of the major balance of plant parameters or features of the VEGP design at the time of initial licensing with data for San Onofre, Units 2 and 3; Farley, Units 1 and 2; and Calvert Cliffs, Units 1 and 2. Changes made to VEGP or other referenced plants following initial licensing are not reflected in table 1.3.1-2.

1.3.2 COMPARISON OF FINAL AND PRELIMINARY INFORMATION

Table 1.3.2-1 identifies the significant changes that have been made to the power block since submittal of the VEGP Preliminary Safety Analysis Report (PSAR) at the time of initial licensing. Only items not reported in the PSAR and its subsequent amendments and supplements are listed in table 1.3.2-1. Changes made following initial licensing are not reflected in table 1.3.2-1.

Table 1.3.2-2 provides a listing of the Three Mile Island (TMI) action plan tasks approved for incorporation in NUREG-0737 and indicates the subsections or paragraphs in this Final Safety Analysis Report (FSAR) which describe the implementation of the tasks for VEGP.

TABLE 1.3.1-1 (SHEET 1 OF 5) (HISTORICAL)

DESIGN COMPARISON

Parameter or Feature	*VEGP-FSAR Chapter/Section*	*VEGP[c] (Original Design)*	*SNUPPS*	*Comanche Peak*	*Trojan*
Reactor core heat output (MWt)	*4.0, 5.0, 15.0*	*3411*	*3411*	*3411*	*3411*
Minimum departure from nucleate boiling ratio for design transients	*4.1, 4.4, 15.0*	*1.30*	*1.30*	*1.30*	*1.30*
Total thermal flowrate 10^6 (lb/h)	*4.1, 4.4, 5.1*	*142.1*	*142.1*	*140.3*	*132.7*
Reactor coolant temperatures (°F)	*4.1, 4.4*				
Core outlet		*621.4*	*621.4*	*620.8*	*619.5*
Vessel outlet		*618.2*	*618.2*	*618.2*	*616.8*
Core average		*591.8*	*591.8*	*589.4*	*585.9*
Vessel average		*588.5*	*588.5*	*588.2*	*584.7*
Core inlet		*558.8*	*558.8*	*558.1*	*552.5*
Vessel inlet		*558.8*	*558.8*	*558.1*	*552.5*
Average linear power(kW/ft)	*4.1, 4.4*	*5.44*	*5.44*	*5.44*	*5.44*
Peak linear power for normal operation (kW/ft)	*4.1, 4.4*	*12.6*	*12.6*	*12.6*	*13.6*
Heat flux hot channel factor (F_Q)	*4.1, 4.4, 15.0*	*2.30*	*2.32*	*2.32*	*2.50*
Fuel assembly array	*4.1, 4.3*	*17 x 17*	*17 x 17*	*17 x 17*	*17 x 17*
Number of fuel assemblies	*4.1, 4.3*	*193*	*193*	*193*	*193*
Uranium dioxide rods per assembly	*4.1, 4.3*	*264*	*264*	*264*	*264*
Fuel weight as uranium dioxide (lb)	*4.1, 4.3*	*222,739*	*222,739*	*222,739*	*222,739*
Number of grids per assembly	*4.1, 4.3*	*8, type R*	*8, type R*	*8, type R*	*8, type R*

TABLE 1.3.1-1 (SHEET 2 OF 5) (HISTORICAL)

Parameter or Feature	VEGP-FSAR Chapter/Section	VEGP[c] (Original Design)	SNUPPS		Comanche Peak		Trojan
Rod cluster control assemblies	4.1, 4.3						
Number of full-length rods absorber material		53 hafnium	53 Ag-In-Cd		53 Ag-In-Cd[a] and B_4C		53 Ag-In-Cd
Clad material		SS	SS		SS		SS
Clad thickness		0.0185	0.0185		0.0185		0.0185
Equivalent core diameter (in.)	4.1, 4.3	132.7	132.7		132.7		132.7
Active fuel length (in.)	4.1, 4.3	143.7	143.7		143.7		143.7
Fuel enrichment (wt%)	4.1, 4.3		Core A	Core BB	Unit 1	Unit 2	
Region 1		2.10	2.10	1.40	1.60	1.40	2.10
Region 2		2.60	2.60	2.10	2.40	2.10	2.60
Region 3		3.10	3.10	2.90	3.10	2.90	3.10
Number of coolant loops	5.0	4	4		4		4
Total steam flow, 10^6 (lb/h)	5.1	15.14	15.14		15.14		15.14
Reactor vessel	5.3						
Inside diameter (in.)		173	173		173		173
Inlet nozzle inside diameter(in.)		27 1/2	27 1/2		27 1/2		27 1/2
Outlet nozzle inside diameter (in.)		29	29		29		29
Number of reactor closure head studs		54	54		54		54

TABLE 1.3.1-1 (SHEET 3 OF 5) (HISTORICAL)

Parameter or Feature	VEGP-FSAR Chapter/Section	VEGP[c] (Original Design)	SNUPPS	Comanche Peak	Trojan
Reactor coolant pumps	5.4.1				
Horsepower		7000	7000	7000	6000
Capacity (gal/min)		100,600	100,600	99,000	88,500
Steam generators	5.4.2				
Model		F	F	D	51
Heat transfer area (ft^2)		55,000	55,000	48,000	51,500
Number of U-tubes		5626	5626	4578	3388
Residual heat removal	5.4.7				
Initiation pressure (psig)		≈425	≈425	≈425	≈400
Initiation/completion temperature (°F)		≈350/140	≈350/140	≈350/140	≈350/140
Component cooling water design temperature (°F)		105	105	105	95
Cooldown time after initiation (h)		≈16	≈16	≈16	≈16
Heat exchanger removal capacity, 10^6 (Btu/h)		32.8	39.0	39.1	34.2
Pressurizer	5.4.10				
Heatup rate using heaters (F°h)		55	55	55	55
Internal volume (ft^3)		1800	1800	1800	
Pressurizer safety valves	5.4.13				
Number		3	3	3	
Maximum relieving capacity (lb/h)		420,000	420,000	420,000	

TABLE 1.3.1-1 (SHEET 4 OF 5) (HISTORICAL)

Parameter or Feature	VEGP-FSAR Chapter/Section	VEGP[c] (Original Design)	SNUPPS	Comanche Peak	Trojan
Accumulators	6.3				
Number		4	4	4	4
Operating pressure, minimum (psig)		600	600	600	600
Minimum operating water volume, each(ft^3)		950	950	950	870
Centrifugal charging pumps	6.3				
Number		2	2	2	2
Design flow (gal/min)		150	150	150	150
Design head (ft)		5800	5800	5800	5800
Safety injection pumps	6.3				
Number		2	2	2	2
Design flow (gal/min)		425	440	425	425
Design head (ft)		2680	2780	2680	2500
Residual heat removal pumps	5.4.7, 6.3				
Number		2	2	2	2
Design flow (gal/min)		3700	3800	3800	3000
Design head (ft)		375	350	350	375
Instrumentation and controls	7.0	(b)	(b)	(b)	(b)
New fuel storage racks center-to-center spacing (in.)	9.1.1	21	21	21	21

TABLE 1.3.1-1 (SHEET 5 OF 5) (HISTORICAL)

Parameter or Feature	VEGP-FSAR Chapter/Section	VEGP[c] (Original Design)	SNUPPS	Comanche Peak	Trojan
Chemical and volume control	9.3.4				
Total seal water supply flowrate, nominal (gal/min)		32	32	32	32
Total seal water return flowrate, nominal (gal/min)		12	12	12	12
Letdown flow normal/ maximum (gal/min)		75/120	75/120	75/120	75/120
Charging flow, normal/ maximum (gal/min)		55/100	55/100	55/100	55/100

a. The Comanche Peak FSAR presents the absorber material as Ag-In-Cd or Ag-In-Cd and B_4C. The second entry applies to Ag-In-Cd and B_4C.

b. The instrumentation and control systems discussed in chapter 7 of VEGP are functionally similar to those systems implemented in SNUPPS, Comanche Peak, and Trojan.

c. The VEGP power uprate increases the licensed reactor core power level from 3411 MWt to 3565 Mwt.

TABLE 1.3.1-2 (SHEET 1 OF 5) (HISTORICAL)

DESIGN COMPARISON OF MAJOR BALANCE OF PLANT DESIGN FEATURES

Item	Vogtle Units 1 and 2 (FSAR) (Original Design)	San Onofre Units 2 and 3 (FSAR)	Farley Units 1 and 2 (FSAR)	Calvert Cliffs Units 1 and 2 (FSAR)
Containment System Parameters				
Type	Steel-lined, prestressed, post-tensioned, concrete cylinder, hemispherical dome roof	Steel-lined, prestressed, post-tensioned, concrete cylinder, hemispherical dome roof	Steel-lined, prestressed, post-tensioned, concrete cylinder, curved dome roof	Steel-lined, prestressed, post-tensioned, concrete cylinder, curved dome roof
Design parameters				
Inside diameter (ft)	140	150	130	130
Inside height (ft)	228	172	183	182
Nominal free volume (ft^3)	2,750,000	2,335,000	2,024,900	2,000,000
Design pressure(psig)	52	60	54	50
Concrete thickness (ft)				
Vertical wall	3 3/4	4 1/3	3 3/4	3 3/4
Dome	3 3/4	3 3/4	3 1/4	3 1/4
Containment leak prevention and mitigation systems	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration rooms to vent stack.	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration rooms to vent stack.	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration room to vent stack.	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration room to vent stack.
Gaseous effluent purge stack	Discharge through stack	Discharge through stack	Discharge through stack	Discharge through stack
Engineered Safety Features				
Safety injection system				
High head pumps	2	3	3	3
Low head pumps	2	2	2	2
Accumulator tanks	4	4	3	4

TABLE 1.3.1-2 (SHEET 2 OF 5) (HISTORICAL)

Item	Vogtle Units 1 and 2 (FSAR) (Original Design)	San Onofre Units 2 and 3 (FSAR)	Farley Units 1 and 2 (FSAR)	Calvert Cliffs Units 1 and 2 (FSAR)
Containment fan coolers				
No. of units	8	4	4	4
Airflow capacity, each at emergency conditions (ft^3/min)	43,500	31,000	60,000	60,000
Auxiliary feedwater system				
No. of pumps	2 electric-driven 1 turbine-driven	1 electric-driven 1 turbine-driven	2 electric-driven 1 turbine-driven	2 turbine-driven
Initiation	Automatic	Automatic	Automatic	Manual
Condensate storage tanks	2	2	1	1
Capacity, each (gal)	480,000 500,000 (Cat. 2)	480,000	150,000 (Cat. 1)	500,000; 350,000
Post-accident filters	Piping penetration area, control room, fuel handling bldg.	Fuel handling bldg.	Penetration room	Penetration room
Containment spray				
No. of pumps	2	2	2	2
Spray additive	NaOH	NaOH	NaOH	None
Combustible gas control	Electric H; recombiners inside containment; post-accident manual vent	Electric H; recombiners inside containment; post-accident manual vent	Electric H; recombiners inside containment; post-accident manual vent	Electric H; recombiners inside containment; post-accident manual vent
Electrical Components				
Standby power system	Total of 4 diesels; supply each unit. Diesels are connected to 4160-V buses. No capability for sharing.	Total of 4 diesels; 2 supply each unit. Diesels are connected to 4160-V buses. No capability for sharing.	Total of 5 diesels; 3 are shared between Units 1 and 2. Diesels are connected to 4160-V buses.	3 diesels connected to 4-kV buses and shared between Units 1 and 2.
Engineered safety feature buses	Two 4160-V buses/units divided into 2 separate and redundant systems	Two 4160-V buses/units divided into 2 separate and redundant systems	Six 4160-V buses/units divided into 2 separate and redundant systems	Two 4-kV buses/units divided into separate and redundant systems

TABLE 1.3.1-2 (SHEET 3 OF 5) (HISTORICAL)

Item	*Vogtle Units 1 and 2 (FSAR) (Original Design)*	*San Onofre Units 2 and 3 (FSAR)*	*Farley Units 1 and 2 (FSAR)*	*Calvert Cliffs Units 1 and 2 (FSAR)*
dc systems	*4 separate and independent 125-V dc subsystems for each unit provide reliable power for safety-related dc control, instrumentation, and motor loads. A separate 125-V dc system serves nonsafety-related loads.*	*Separate and redundant 125-V dc systems for ESF loads. Separate 125-V dc and 250-V dc systems for non-ESF loads.*	*Separate and redundant 125-V dc systems for ESF loads. Separate dc systems for loads in auxiliary building, turbine building, cooling tower area, diesel generator building and switchyard.*	*4 batteries between 2 units divided to give 2 separate and redundant 125-V dc systems. Separate dc systems for turbine building and the switchyard.*
Vital instrumentation systems	*6 inverters arranged to give 4 separate and redundant channels; separate systems serve nonsafety-related loads*	*4 inverters arranged to give 4 separate and redundant channels*	*4 inverters arranged to give 4 separate and redundant channels*	*4 inverters between 2 units to give 4 separate and redundant channels per unit*
Offsite power system	*Units 1 and 2 connected to the 230-kV switchyard. Each unit has 2 unit auxiliary and 2 reserve auxiliary transformers. The ESF buses are normally supplied from reserve aux. transformers.*	*One 230-kV switchyard common to Units 2 and 3. Each unit is provided with 2 unit auxiliary and 3 startup transformers supplied from the common switchyard.*	*Unit 1, 230-kV switchyard. Unit 2, 500-kV switchyard. Each unit has 2 startup transformers and 2 unit auxiliary transformers with the ESF buses supplied from startup transformers.*	*500-kV switchyard. 2 startup transformers shared between 2 units*
Radioactive Waste Management System				
Liquid radwaste system				
Miscellaneous liquid waste system	*Shared: disposable waste subsystem Separate: resin handling subsystem recyclable waste subsystem*	*Shared*	*Shared*	*Shared*

TABLE 1.3.1-2 (SHEET 4 OF 5) (HISTORICAL)

Item		*Vogtle Units 1 and 2 (FSAR) (Original Design)*	*San Onofre Units 2 and 3 (FSAR)*	*Farley Units 1 and 2 (FSAR)*	*Calvert Cliffs Units 1 and 2 (FSAR)*
Discharge:	*Evaporator distillate (waste evaporator abandoned in place)*	*Waste evaporator condensate tank*	*Circulating water outfall*	*Circulating water outfall*	*Circulating water outfall*
	Evaporator bottoms (waste evaporator abandoned in place)	*Reactor makeup water storage tank (RMWST) solid radwaste system*	*Solid radwaste system*	*Solid radwaste system*	*Solid radwaste system*
Recycle capability		*Yes*	*Yes*	*Yes*	*Yes*
Total reprocessing storage capacity (holdup tanks)		*41,600 gal (both units)*	*1 at 6000 gal 2 at 25,000 gal*	*40,000 gal*	*8000 gal*
Filter type and backflushable		*Disposable cartridge and backflushable*	*Disposable cartridge*	*Disposable cartridge*	*Disposable cartridge*
Evaporator capacity (waste evaporator abandoned in place)		*15 gal/min*	*50 gal/min*	*35 gal/min 20 gal/min*	
Coolant and boric acid recycle system		*Shared BRS (part of CVCS for each unit)*	*Shared*	*Shared*	*Shared (reactor coolant waste processing system)*
Discharge:	*Concentrator bottoms*	*Recycled to boric acid storage tank*	*No; recycled to boric acid makeup and batching tanks*	*Liquid radwaste system*	*Solid radwaste system*
	Concentrator condensate	*Recycled to RMWST*	*No; recycled to CVCS discharge*	*No; recycled to CVCS*	*Circulating water*
Concentrator capacity		*15 gal/min*	*50 gal/min*	*30 gal/min*	*2 at 20 gal/min*
Concentrated boric acid storage tanks		*2 at 46,000 gal each*	*2 at 25,000 gal each*	*2 at 21,000 gal each*	*2 at 10,000 gal each*
Radwaste receiver tanks		*2 at 112,000 gal each*	*2 primary at 120,000 (recycle holdup tank)*	*3 at 28,000 gal each gal each and 2 secondary at 120,000 gal each*	*2 waste receiver tanks at 90,000 gal each*

TABLE 1.3.1-2 (SHEET 5 OF 5) (HISTORICAL)

Item	Vogtle Units 1 and 2 (FSAR) (Original Design)	San Onofre Units 2 and 3 (FSAR)	Farley Units 1 and 2 (FSAR)	Calvert Cliffs Units 1 and 2 (FSAR)
Waste gas system	Separate system for each unit	Shared	Shared	Shared
Number of decay tanks	7	6, Seismic Cat. 1	8	3
Tank size (each)	600 ft^3	500 ft^3	600 ft^3	610 ft^3
Design pressure	150 psig	350 psig	150 psig	150 psig
Discharge point	Plant vent	Plant vent stack	Plant vent	Plant vent
Holdup time available	30 days	30 days (minimum)	30 days (minimum)	60 days
Surge tank	Yes, 2 shutdown/startup (shared)	Yes, Seismic Cat. 1	No	Yes
Surge tank size	600 ft^3 at 150 psig	500 ft^3 at 150 psig	-	610 ft^3 at 50 psig
Compressor capacity	2 per unit 40 sf^3/min	2 at 5 sf^3/min	2 at 40 sf^3/min	2 at 4.7 sf^3/min
Radwaste solidification system	Portable vendor supplied-shared	Shared	Shared	Shared
Solidification agent	-	(a)	Vermiculite - cement	(a)
Onsite storage:				
Intermediate level	High integrity containers	20 50-ft^3 drums[(a)]	175 55-gal drums	(a)
Low level		25 55-gal drums[(a)]	400 55-gal drums	(a)
Shipping containers used	High integrity containers	55-gal drums and 50-ft^3 drums[(a)]	55-gal drums	(a)

a. System presently not being used.

TABLE 1.3.2-1 (SHEET 1 OF 6)

SIGNIFICANT DESIGN CHANGES FROM THE PSAR

Item	FSAR Chapter/Section	Reason for Change
Deletion of two units from license application	1.1	Lower than expected power demand growth and continued construction of four units monetarily prohibitive
Deletion of reactor loop stop valves	1.2, 5.1	No plans to operate with an isolated loop
In the area north of the turbine building, the backfill is compacted to an average of 95 percent of the maximum dry density	2.5	The tested static and dynamic properties of the 95-percent backfill meet the design static and dynamic properties of the 97-percent backfill
Nonsafety-related chemical or membrane waterproofing utilized on exterior surfaces of Category 1 structures. No waterproofing provided for interior surfaces.	3.4	The thick concrete walls of Category 1 structures obviates the need for safety-related membranes on the exterior building surfaces and any type of waterproofing on interior surfaces, e.g., nuclear service cooling water (NSCW) basins
Revision of tornado missile spectrum to include missiles C and F of Standard Review Plan (SRP) 3.5.1.4 and corresponding velocities	3.5	To comply with the criteria provided in SRP 3.5.1.4 (11/24/75)
Part of the roof and related walls of level 4 of the control building are not designed to resist tornado missiles. The level 4 floor slab is missile resistant and openings in the slab are provided with local missile protection.	3.5.1.4	There is no safety-related equipment located in the affected area of level 4 of the control building
Revision of pipe break location criteria and analysis method	3.6	Overall update of pipe break criteria to meet current requirements
Unaffected Category 2 equipment is used to mitigate consequences of high energy line breaks in seismically supported lines located outside of the containment, when the radiological consequences are insignificant in comparison to 10 CFR 100 dose guidelines.	3.6	This approach is consistent with APCSB 3-1

TABLE 1.3.2-1 (SHEET 2 OF 6)

Item	FSAR Chapter/Section	Reason for Change
The Summer 1979 Addenda to the American Society of Mechanical Engineers (ASME) Code, Section III, Division 1, Subsection NB, subarticles NB-3650 and NB-3680, have been utilized in the Class 1 piping analysis	3.6, 3.9	The addenda makes the piping stress analysis more consistent with the method of vessel analysis
Damping values as high as 15 percent have been used in the design of cable tray supports for both the safe shutdown earthquake (SSE) and operating basis earthquake (OBE) condition	3.7.1	Documented test data supports the use of these damping values
The equipment building dimensions are such that equipment is properly enclosed and height relationships with other buildings are maintained	3.8.4	The equipment building is being constructed as an extension of the fuel handling and control buildings.
Deletion of part length control rods incorporation of T_{avg} 9.5 control D bank changes from nine to five rods	4.0, 7.7	To provide improved power distribution control during load follow operations
Baffle-to-barrel region configuration has been changed from downflow to upflow	5.3, 15.6.5	To reduce baffle plate and baffle slot loading and to minimize the potential for excessive baffle joint jetting
Steam generators changed from model D to model F	5.4	To increase reliability of the steam generators
Added a check valve in series with encapsulated, residual heat removal (RHR) containment sump, motor-operated isolation valve	5.4	Prevents draining of the refueling water storage tank (RWST) to containment sump via RHR sump suction lines
The number of containment building air cooling units has been increased to four units per train	6.2	Increased reliability of air cooling system
Steam generator subcompartment differential pressure analysis performed utilizing restrained breakflow area mass and energy release data	6.2.1.2	Greater than expected reduction in vent area necessitated more realistic calculational assumption

TABLE 1.3.2-1 (SHEET 3 OF 6)

Item	FSAR Chapter/Section	Reason for Change
Through design evolution, the closure times for some containment isolation valves have been changed from those presented in the PSAR	6.2.4	The valve closure times conform to Regulatory Guide 1.141 and American National Standards Institute (ANSI) N271-1976
Incorporation of semiautomatic switch-over from injection to recirculation mode of emergency core cooling system (ECCS) operation	6.3	To reduce number of operator actions required during ECCS operation
Revision of containment emergency sump design	6.3	To meet requirements of Regulatory Guide 1.82
Increased volume of RWST to 715,000 gal	6.3	Consideration of instrument accuracy and single most limiting failure
Alteration of control room heating, ventilation, and air-conditioning (HVAC) systems to provide four 100-percent redundant engineered safety features (ESF) trains and two 100-percent normal units	6.4	To increase system reliability
Deletion of reactor trip following turbine trip below 50-percent power	7.2	To increase plant availability
Elimination of low feedwater flow reactor trip	7.2, 15.0	To increase plant availability
An improved steam line break protection system has been incorporated	7.2, 15.0	To improve plant availability by preventing spurious safety injection actuation
Modification of fluid systems and shutdown panels to allow safety-grade cold shutdown from control room and safe shutdown from outside the control room	7.4	To meet the requirements of General Design Criterion (GDC) 19, Appendix R and Regulatory Guide 1.139
Revision of post-accident monitoring parameters	7.5	To meet new regulatory requirements
Automatic feedwater control at low power has been incorporated	7.7	To provide the capability of automatically monitoring steam generator water level from 0- to 25-percent power
Revised Class 1E dc system to provide four 125-V dc batteries	8.3	Increases system reliability

TABLE 1.3.2-1 (SHEET 4 OF 6)

Item	FSAR Chapter/Section	Reason for Change
Battery sizing revised to provide power at 55°F for 2 3/4 h	8.3	Increases system reliability
Revision to cable, tray, and raceway designs	8.3	Increases system reliability
Increased spent fuel storage capacity from 1 1/3 cores to 4 2/3 cores	9.1	Increases onsite storage capacity of spent fuel
Decrease in spent fuel pool accident temperature from 212°F to 180°F	9.1	Provide margin to boiling of pool
Integrated head, missile, shield, and control rod drive mechanism (CRDM) cooling system have been adopted.	9.1.4	Reduces man-hours of effort required to remove and replace reactor vessel head with subsequent reduction of man-rem radiation exposures
Improved pressure vessel head closure system.	9.1.4	Reduces man-hours of effort required to remove and replace reactor vessel head with subsequent reduction of man-rem radiation exposures
The ultimate heat sink design based upon two-train operation during first 24 h and one-train operation for subsequent 29 days	9.2	Changed mode of operation to ensure 30 days of ultimate heat sink operation without external makeup
The auxiliary component cooling water (ACCW) system is classified as nonsafety related although components are procured in accordance with the ASME code.	9.2.8	The ACCW system cools various nonsafety-related loads, none of which are required for safe shutdown or accident mitigation
The principal design codes and standards for the liquid portions of the boron recycle system have been revised.	9.3.4	This portion of the system serves no safety function
The number of plant vents has been reduced and classified as nonsafety related. Ducting in equipment building associated with safety-related systems is Category 1.	9.4	The functioning of the plant vent and ducting in the equipment building is not required for safe shutdown or accident mitigation
The carbon dioxide fire suppression system has been deleted.	9.5.1	The water fire suppression systems fulfill the suppression system requirements of Appendix A to APCSB 9.5-1

TABLE 1.3.2-1 (SHEET 5 OF 6)

Item	FSAR Chapter/Section	Reason for Change
The principal design codes and standards for the diesel generator fuel oil storage tank flame arrestors have been revised	9.5.4	The flame arrestors serve no safety function
The principal design codes and standards for the diesel generator starting air compressor and air dryers have been revised	9.5.8	The starting system air compressor and air dryers serve no safety function
Sizing of steam generator atmosphere relief valves increased from 10 percent to 15 percent	10.3	Increased load shed capabilities and plant reliability
Incorporated second main steam isolation valve (MSIV) into each main steam line	10.3	Ensures isolation of steam generator in the event of a main steam line break (MSLB) downstream of isolation valves
Deleted phosphate injection system and incorporated all volatile chemical treatment for steam generators	10.3	To decrease corrosion of steam generators
Incorporated low T_{avg}, high-high steam generator level, and reactor trip signals for initiation of feedwater isolation	10.4	Increases responsiveness of feedwater isolation to abnormal conditions
Revision of auxiliary feedwater system to consist of two 100-percent electric-driven pumps and one 200-percent steam pump where control power for steam-driven pump and associated valves is provided from the station batteries	10.4.9	Increases reliability of automatic initiation and subsequent operation of the auxiliary feedwater system
The principal design codes and standards for the liquid radwaste have been revised	11.2	To conform to Regulatory Guide 1.143
Revision of solid radwaste handling system	11.4	Upgraded system to meet regulatory requirements
Revise reactor makeup water system to provide a seismic category and flow driving path from the reactor makeup water storage tank (RMWST) to the spent fuel pool and other miscellaneous safety-related surge tanks	9.2.7	Provide Category 1 backup source of water for spent fuel pool. Gravity provides head from RMWST to spent fuel pool

TABLE 1.3.2-1 (SHEET 6 OF 6)

Item	FSAR Chapter/Section	Reason for Change
Deleted position switches on drain line isolation valves and incorporated locked closed valves	9.3.3	Consideration of locked closed valves and administrative control insures their proper positioning
The applicable piping codes or standards have been used for the hydrostatic testing of embedded piping in lieu of American Concrete Institute (ACI) 318-71	3.8	To consistently test piping in accordance with the piping codes or standards
Revised the auxiliary feedwater lines to feed directly into each steam generator	10.4.9	To reduce or eliminate the potential for cracking problems
Reduced the volume of the diesel fuel oil storage tanks	9.5.4	To provide diesel fuel oil supply consistent with the quantity required for design basis accident safety-related loads
Added an alternate centrifugal charging pump miniflow system	6.3	To prevent pump deadheading should reactor coolant system (RCS) pressure rise following isolation of the normal miniflow lines
Addition of AMSAC	7.7/15.8	The anticipated transient without scram (ATWS) mitigation system actuation circuitry (AMSAC) provides a backup to the reactor trip system (RTS) and ESF actuation system (ESFAS) for initiating turbine trip and auxiliary feedwater, and isolating the steam generator blowdown and sample lines.

TABLE 1.3.2-2 (SHEET 1 OF 3)

TMI ACTION PLAN TASKS AND LOCATION OF FSAR DESCRIPTION

Action Plan Task	Title	FSAR Section
I.A.1.1	Shift Technical Advisor	13.1.2
I.A.1.2	Shift Supervisor Administrative Duties	13.5.1
I.A.1.3	Shift Manning	13.5.1
I.A.2.1	Reactor Operator and Senior Reactor Operator Training and Qualifications	13.2.1/13.1.2 13.1.3/13.2.2
I.A.2.3	Administration of Training Programs	13.2.1/13.1.3 13.2.2
I.A.3.1	Scope and Criteria for License Exams	13.2.1
I.B.1.2	Independent Safety Engineering Group	13.4.3/17.2.1
I.C.1	Evaluation and Development of Procedures for Transients and Accidents	13.5.1/13.5.2 1.9.33
I.C.2	Shift and Relief Turnover Procedures	13.5.1
I.C.3	Shift Supervisor Responsibilities	13.5.1
I.C.4	Control Room Access	13.5.1
I.C.5	Feedback of Operating Experience	13.5.1
I.C.6	Verify Correct Performance of Operating Activities	13.5.1/13.5.2
I.C.7	Nuclear Steam Supply System (NSSS) Vendor Review of Procedures	13.5
I.D.1	Control Room Design Review	18.1.1
I.D.2	Safety Parameter Display System (SPDS)	7.5.4/18.3.5
I.G.1	Training During Low Power Testing	14.2.5
II.B.1	RCS Vents	5.1.1/5.4.15
II.B.2	Plant Shielding	12.2.1/12.3.1
II.B.3	Post-Accident Sampling	9.3.2/7.5.2
II.B.4	Training for Mitigating Core Damage	13.2.2
II.D.1	Relief and Safety Valve Test Requirements	5.4.13
II.D.3	Valve Position Indication	5.4.13
II.E.1.1	Auxiliary Feedwater System Reliability Evalua	10.4.9/10A.1/15.2.6/ 15.2.7
II.E.1.2	Auxiliary Feedwater System Initiation and Flow	10.4.9/7.5.4
II.E.3.1	Emergency Power for Pressurizer Heaters	5.4.10
II.E.4.1	Containment Dedicated Penetrations	NA
II.E.4.2	Containment Isolation Dependability	6.2.4

TABLE 1.3.2-2 (SHEET 2 OF 3)

Action Plan Task	Title	FSAR Section
II.F.1	Additional Accident Monitoring Instrumentation	7.5.4/6.2.5
II.F.2	Inadequate Core Cooling Instruments	7.5.4/7.7.2 Appendix 4A
II.G.1	Emergency Power for Pressurizer Equipment	5.4.11
II.K.1	IE Bulletins	
	5. Review ESF Valves	6.3.1/7.5.4
	10. Operability Status	13.5.1
	17. Trip per Low Level B/S	5.4.10
II.K.2.13	Thermal Mechanical Report	5.3.3
II.K.2.17	Voiding in RCS	15.0.1
II.K.2.19	Benchmark Analysis Seq. AFW Flow	
II.K.3	Final Recommendation of B & O Task Force	
	1. Auto Power-Operated Relief Valves (PORVs) Isolation	5.4.11
	2. Report on PORV Failures	NA
	3. Reporting Relief Valve and Safety Valve Failures and Challenges	5.4.1
	5. Auto Trip of Reactor Coolant Pumps	5.4.1
	9. PID Controller	PLS[a]/5.4.10
	10. Anticipatory Trip at High Power	7.2.1
	12. Confirm Anticipatory Trip	7.2.1
	17. ECCS Outages	13.5.1
	25. Power to Pump Seals	5.4.1
	30. Small Break Loss-of-Coolant Accident (LOCA) Methods	15.0.1
	31. Plant Specific Analysis	15.0.1
III.A.1.1	Upgrade Emergency Preparedness	13.3
III.A.1.2	Upgrade Emergency Support Facilities	9.5.10
III.A.2	Upgrade Emergency Plans, App. E, 10 CFR 50	13.3
	Meteorological Data	2.3.3

TABLE 1.3.2-2 (SHEET 3 OF 3)

Action Plan Task	Title	FSAR Section
III.D.1.1	Primary Coolant Sources Outside Containment	12.1.3/9.3.4
III.D.3.3	Inplant Radiation Monitoring	12.5.2
III.D.3.4	Control Room Habitability	6.4

a. The precautions, limitations, and setpoints document states that derivative control shall be set at zero on the pressure PID controller.

1.4 IDENTIFICATION OF AGENTS AND CONTRACTORS

1.4.1 APPLICANT - CONSTRUCTION MANAGER AND OPERATOR

Georgia Power (GPC), a co-owner of the Vogtle Electric Generating Plant (VEGP), was responsible for the design, construction, and operation of the plant through March 21, 1997. Since March 22, 1997, as the exclusive operating licensee, Southern Nuclear Operating Company, Inc. (SNC) is responsible for the planning, design, licensing, operation, maintenance, repair, modification, addition, renewal, retirement, and decommissioning of VEGP pursuant to a nuclear operating agreement between SNC and GPC. GPC will act as agent for the co-owners identified as follows:

A. Oglethorpe Power Corporation - An electric membership corporation organized and operating under Title 34B of the Georgia Code Annotated.

B. Municipal Electric Authority of Georgia - A public body corporate and politic, being an instrumentality of the State of Georgia.

C. City of Dalton, Georgia - An incorporated municipality in the State of Georgia acting by and through its Board of Water, Light, and Sinking Fund Commissioners.

1.4.1.1 Description of Business

GPC is a public utility engaged in the generation, distribution, and sale of electricity at retail in 646 cities and communities and at wholesale to 50 municipalities and 39 U.S. Rural Electrification Administration cooperatives. GPC's electric generating facilities consist of 11 steam-electric generating plants, 18 hydroelectric generating plants, and 7 generating plants with gas turbines having peak hour capability of approximately 13,000 MW as of January 1, 1982. Approximately 87.5 percent of GPC's total capacity is provided by steam-electric installations. The steam-electric generating plants are listed below:

- Plant Arkwright near Macon.
- Plant Atkinson near Atlanta.
- Plant Bowen near Cartersville.
- Plant Harlee Branch near Milledgeville.
- Plant Hammond near Rome.
- Plant McDonough near Atlanta.
- Plant McManus near Brunswick.
- Plant Mitchell near Albany.
- Plant Yates near Newnan.

- Plant Wansley near Carrolton.
- Plant Hatch near Baxley.

GPC has constructed 38 thermal units (not including combustion turbines) and is presently constructing six additional thermal units which include Plant Scherer Units 1 through 4, near Macon, and VEGP Units 1 and 2.

A brief description of the utility electric grid is given in section 8.1.

1.4.1.2 Description of Corporate Organization

The GPC is a public utility incorporated under the Laws of the State of Georgia with its principal offices located in Atlanta, Georgia. SNC performs nuclear operating services for GPC with respect to the VEGP, and SNC's principal offices are located in Birmingham, Alabama. GPC and SNC are wholly-owned subsidiaries of Southern Company.

1.4.1.3 Technical Qualifications

GPC has participated in the development of the nuclear power industry since 1953. Early activities included financial contributions to the Dow Chemical-Detroit Edison study group. GPC's continuing involvement in industry development has included charter memberships in the Institute of Nuclear Power Operations founded in 1980 and the Electric Power Research Institute founded in 1973. Since March 22, 1997, as the exclusive operating licensee, SNC has replaced GPC in the nuclear related aspects of these organizations.

In September 1969, GPC received a provisional construction permit for its first nuclear unit, the Edwin I. Hatch Nuclear Plant. On August 6, 1974, and June 13, 1978, GPC received operating licenses (Atomic Energy Commission Docket Nos. 50-321 and 50-366) for Edwin I. Hatch Units 1 and 2, respectively. SNC's personnel are presently operating these facilities.

In addition to experience at Plant Hatch, many GPC staff members have undergone training and observation assignments at various nuclear power plants. An aggressive training program, including a 22-week operational technology course, is being pursued to further improve the technical competency of GPC personnel. The operations technology course consists of 16 weeks of classroom lecture and plant walkthroughs followed by a 6-week simulator course. Since March 22, 1997, GPC's nuclear staff has been transferred to SNC as the exclusive operating licensee.

Georgia Power Company has obtained considerable knowledge of, and has contributed to, the development of nuclear power through its participation and ownership of the above projects and activities. This knowledge has now been transferred to SNC. The technical qualifications of SNC are further delineated in section 13.1, Organizational Structure of SNC.

1.4.2 SOUTHERN NUCLEAR OPERATING COMPANY, INC.

SNC, a wholly-owned subsidiary of Southern Company, is the exclusive operating licensee of VEGP and is responsible to GPC for the operation of VEGP pursuant to a nuclear operating agreement.

SNC was initially formed from support organizations of Southern Company Services, Georgia Power Company, and Alabama Power Company, whose individuals have many years of experience in the area of nuclear operations. On March 22, 1997, the remainder of GPC's nuclear personnel were transferred to SNC as the exclusive operating licensee for VEGP and Edwin I. Hatch Nuclear Plant (HNP). SNC is currently responsible for the operation of the six nuclear units within Southern Company located at Joseph M. Farley Nuclear Plant, HNP, and VEGP. Pursuant to the nuclear operating agreement, SNC is responsible for nuclear operating services, including fuel services, new investment services, and operation and maintenance services.

Fuel services include work relating to supplying and managing the nuclear fuel for VEGP including, but not limited to, planning, procurement, contract administration, fuel cycle design, fuel core and assembly design, fuel quality assurance, nuclear materials management, and all activities relating to procurement, conversion, enrichment, fabrication, transportation, installation, monitoring, repairing, storage, reprocessing and disposal of uranium, nuclear fuel, related materials and waste products.

New investment services include work undertaken with respect to the planning, design, licensing, acquisition, construction, completion, renewal, improvement, addition, repair, replacement, enlargement, or modification of VEGP.

Operation and maintenance services include work for the VEGP co-owners relating to the possession, management, control, startup, operation, availability, production of energy, maintenance, modification, shutdown, retirements, and decommissioning, including, but not limited to, any planning, design, engineering, labor, procurement of materials and supplies, materials management, quality assurance, training, security, environmental protection, and handling of any source material, special nuclear material or by-product material together with maintaining or obtaining licenses and regulatory approvals related thereto, governmental affairs or regulatory relationships, and all other activity that is not included in or performed as new investment services or fuel services, but which is required for the operation and maintenance of VEGP or that may be required to comply with legal requirements.

SNC is also responsible for the following coordination of the licensing activity:

A. Assurance, through quality assurance audits, of the proper implementation and compliance of the quality program.

B. Assurance of the proper implementation and execution of the supplier inspection program.

SNC will also participate in engineering and design activities of certain systems and structures.

1.4.3 BECHTEL POWER CORPORATION

The Bechtel Corporation, the parent of Bechtel Power Corporation, has been continuously engaged in construction and engineering activities since 1898. Since the close of World War II, Bechtel has placed strong emphasis on electric power generation projects. During this period, Bechtel has been responsible for the design of over 204 thermal generating units, representing more than 126,860 MW of new generating capacity. Of this number, a nuclear capacity of more than 65,800 MW has been engineered by the company itself.

The ratings of thermal generating plants designed by Bechtel range to 1470 MW per unit and include most types of station designs and arrangements, such as reheat and nonreheat, indoor and outdoor stations, single and multiple units, and wide ranges of steam conditions up to 3500 psig, 1050°F. Also, some of the larger units were fully automated and computer controlled. The majority of contracts for these facilities provide Bechtel with complete responsibility for both engineering and construction, although several contracts have been engineering design assignments only.

The Los Angeles Regional Office of Bechtel Power Corporation (Bechtel) was retained by GPC to provide A/E services during the design and construction phase, including procurement, for the balance of plant portions of the nuclear electric generating facilities and administration of the nuclear steam supply system (NSSS) contract.

The Gaithersburg Regional Office of Bechtel Power Corporation (Bechtel) is under contract to SNC to provide A/E services during the operational phase for structures, systems, and components assigned by SNC.

1.4.3.1 Nuclear Experience

For over 25 years Bechtel Power Corporation has been actively working on nuclear projects involving power plants, as well as such facilities as nuclear accelerators, research laboratories, hot cells, experimental reactors, and nuclear fuel processing plants. Its responsibilities have covered design, construction, site surveys, license applications, feasibility studies, and equipment procurement.

1.4.4 NUCLEAR STEAM SUPPLY SYSTEM MANUFACTURER

Westinghouse Electric Corporation (Westinghouse) was responsible for supplying the NSSS and first fuel load for each VEGP unit.

Westinghouse has designed, developed, and manufactured nuclear facilities since the 1950s, beginning with the world's first large central station nuclear plant (Shippingport), which has produced power since 1957.

More than 100 commercial nuclear power plants with a combined electrical generating capacity in excess of 90,000 MW have been completed, including the two VEGP units.

Westinghouse pioneered new nuclear design concepts, such as chemical shim control of reactivity and the rod cluster control concept, throughout the last two decades. Among the company's own related manufacturing facilities are the commercial nuclear fuel fabrication

facility at Columbia, South Carolina, and nuclear component manufacturing facilities at Tampa, Florida; Pensacola, Florida; Blairsville, Pennsylvania; and Cheswick, Pennsylvania.

1.4.5 DIVISION OF RESPONSIBILITY

1.4.5.1 Design Stage

Westinghouse Electric Corporation and Bechtel Power Corporation have been delegated the responsibility for design of the NSSS and the balance of the plant, respectively. For preparation of the Final Safety Analysis Report, all parties (GPC, SCS, Bechtel, and Westinghouse) have participated in the preparation and review of design bases and philosophies of both systems and structures by a review of the plant design.

1.4.5.2 Utility Company

The ultimate responsibility for the proper design, construction, and operation for the entire spectrum of safety of each unit rests with the applicants. Since March 22, 1997, SNC is the exclusive operating licensee of VEGP.

1.4.5.3 Architect/Engineer

The A/E is responsible for the design, engineering, and procurement of the standard power block, which includes the following:

- Turbine building.
- Containment building.
- Auxiliary building.
- Fuel handling building.
- Radwaste buildings.
- Diesel generator building.
- Control building.
- Auxiliary feedwater pumphouse.
- Nuclear service cooling water towers.
- Tanks.

All systems, equipment, and structures within the standard power block are designed or specified by the A/E. The NSSS portion of the facility was procured by individual contract between GPC and the NSSS supplier. Similarly, the turbine-generator was obtained by direct

contract between the turbine-generator supplier and GPC. However, the A/E (acting as representative) retains responsibility for monitoring the design and integrating the systems into the power block to ensure that the NSSS and turbine-generator components being supplied are consistent with the needs of the facility. Other equipment and material for areas within their scope are procured by the A/E.

1.4.5.4 Procurement of Safety-Related Equipment

1.4.5.4.1 Westinghouse Scope of Supply

Westinghouse is responsible for the manufacture and/or procurement of all items within the Westinghouse scope of supply.

1.4.5.4.2 Bechtel Scope of Supply

For the safety-related equipment under the Bechtel scope of supply, procurement procedures have been established to require participation by both SNC, on behalf of GPC, and Bechtel. Bechtel prepares the inquiries and transmits them to the SNC for review to ascertain that sufficient information is contained therein to inform the bidders of all requirements for the supplied equipment, including, but not limited to, materials, documentation, and shipping requirements. From this point, Bechtel has the responsibility of sending the inquiry out for bids in accordance with an established bidders list. After review of the bids, preparation of the requisition by Bechtel, and approval by SNC, the purchase order is prepared by SNC.

1.4.5.5 Construction

As of March 22, 1997, all construction activities at the site are under the management of SNC with independent testing agencies being contracted as necessary to perform special testing and to provide expertise in the interpretation of results.

1.4.5.6 Operation

During the design, construction, and testing phases, lines of communication were established between the plant site, GPC's general office, Southern Company Services, Inc. (SCS), and various vendors and consultants. These lines are maintained and others were established as necessary during operation to enable the plant staff to receive technical support from the most authoritative source. Since March 22, 1997, lines of communication have been established between the plant site, SNC's general office, SCS, and various vendors and consultants as a result of SNC becoming the exclusive operating licensee. As a result of the consolidation of SCS and SNC nuclear expertise, and in addition to being the licensee, SNC also serves as its own A/E and performs the functions previously performed by SCS.

1.5 REQUIREMENTS FOR FURTHER TECHNICAL INFORMATION

In accordance with 10 CFR 50.34(b)(5), this section describes and provides references to the evaluations of programs, including research and development, if any, to demonstrate that any safety questions identified at the construction permit stage have been resolved. Westinghouse has conducted and completed the research and development programs relating to the requirements of this section. The core stability evaluation program is considered necessary to establish design adequacy. The other programs addressed below are considered as demonstrating the margin of conservatism of the design. The programs that apply to the VEGP are listed below.

1.5.1 CORE STABILITY EVALUATION PROGRAM

The core stability evaluation program is complete. Refer to section 1 of WCAP-8768 for a discussion of this program.

1.5.2 FUEL DEVELOPMENT PROGRAM FOR OPERATION AT HIGH-POWER DENSITIES

The fuel development program for operation at high-power densities is complete. Refer to section 8 of WCAP-8485 for a discussion of this program.

1.5.3 INCORE DETECTOR PROGRAM

The incore detector program is complete. Refer to section 9 of WCAP-8353 for a discussion of this program.

1.5.4 FULL-LENGTH EMERGENCY CORE COOLING HEAT TRANSFER TEST

The full-length emergency core cooling heat transfer test is complete. See section 12 of WCAP-8768, Revision 2, for a discussion of this program.

1.5.5 BLOWDOWN FORCES PROGRAM

The blowdown forces program is complete. See section 15 of WCAP-8004 for a discussion of this program.

1.5.6 REACTOR VESSEL THERMAL SHOCK PROGRAM

The reactor vessel thermal shock program is complete. See section 16 of WCAP-8768, Revision 2, for a discussion of this program. [a]

[a] The operating licenses for both VEGP units have been renewed and the original licensed operating terms have been extended by 20 years. Reactor vessel neutron embrittlement was evaluated as a time-limited aging analysis (TLAA) for license renewal in accordance with 10 CFR Part 54. The results of this analysis are provided in subsection 19.4.1.

1.5.7 ENVIRONMENTAL TESTING OF ENGINEERED SAFETY FEATURES RELATED EQUIPMENT

The environmental testing of engineered safety features related equipment is complete. See WCAP-7856 for a discussion of this program.

1.5.8 GENERIC PROGRAMS OF BECHTEL

GPC has contributed, with other utilities, to tests of prototypical cable trays under seismically induced loads. A primary objective of the tests has been evaluation of damping coefficients under safe shutdown earthquake conditions. Design of cable tray supports in VEGP is verified by the results of this test program.

1.6 MATERIAL INCORPORATED BY REFERENCE

The VEGP Final Safety Analysis Report incorporates, by reference, various topical reports as part of the applications. Bechtel topical reports are listed in table 1.6-1, and Westinghouse topical reports are listed in table 1.6-2. Other topical reports are listed in table 1.6-3. The referenced topical reports have been filed separately in support of this and similar applications.

TABLE 1.6-1 (SHEET 1 OF 2)

BECHTEL TOPICAL REPORTS INCORPORATED BY REFERENCE

Bechtel Topical Report No.	Title	Revision Number	FSAR Section Reference	Report Submitted to the NRC	Review Status[a]
BC-TOP-1	Containment Building Liner Plate Design Report	Rev 1	3.8	12/72	A 2/7/74
BC-TOP-3-A	Tornado and Extreme Wind Design Criteria for Nuclear Power Plants	Rev 3	3.3	8/74	A 10/4/74
BC-TOP-4-A	Seismic Analyses of Structures and Equipment for Nuclear Power Plants	Rev 3	1.9, 3.7.B	11/74	A 10/31/74
BC-TOP-5-A	Prestressed Concrete Nuclear Reactor Containment Structures	Rev 3	3.8	2/75	A 3/28/75
BC-TOP-7	Full Scale Buttress Test for Prestressed Nuclear Containment Structures	Rev 0	3.8	9/72	A 8/24/73
BC-TOP-8	Tendon End Anchor Reinforcement Test	Rev 0	3.8	9/72	A 8/24/73
BN-TOP-1	Test Criteria for Integrated Leak Rate Testing of Primary Containment Structures for Nuclear Power Plants	Rev 1	6.2	11/72	A 2/1/73

TABLE 1.6-1 (SHEET 2 OF 2)

Bechtel Topical Report No.	Title	Revision Number	FSAR Section Reference	Report Submitted to the NRC	Review Status[a]
BN-TOP-2	Design for Pipe Break Effects	Rev 2	3.6, 3F, 3.9.B, 3.8	5/74	A 6/17/74
BN-TOP-4	Subcompartment Pressure and Temperature Transient Analysis	Rev 1	6.2, 3F, 3.6	10/77	A 2/23/79
BP-TOP-1	Seismic Analysis of Piping Systems	Rev 3	1.9, 3.7.B	1/76	A 9/29/76

TABLE 1.6-2 (SHEET 1 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-2048	The Doppler Effect for a Non-Uniform Temperature Distribution in Reactor Fuel Elements	Rev 0	4.3	7/62	O
WCAP-2850-L(P) WCAP-7916	Single-Phase Local Boiling and Bulk Boiling Pressure Drop Correlations	Rev 0	4.4	5/66	O
WCAP-2923	In-Pile Measurement of UO_2 Thermal Conductivity	Rev 0	4.4	3/66	O
WCAP-3269-8	Hydraulic Tests of the San Onofre Reactor Model	Rev 0	4.4	6/64	O
WCAP-3269-26	LEOPARD - A Spectrum Dependent Non-Spatial Depletion Code for the IBM-7094	Rev 0	4.3, 15.0, 15.4	9/63	O
WCAP-3385-56	Saxton Core II Fuel Performance Evaluation WCAP-3385-56, Part II, Evaluation of Mass Spectrometric and Radiochemical Materials Saxton Plutonium Fuel	Rev 0	4.3, 4.4	7/70	O
WCAP-3680-20	Xenon-Induced Spatial Instabilities in Large Pressurized Water Reactors (EURAEC-1974)	Rev 0	4.3	3/68	O
WCAP-3680-21	Control Procedures for Xenon-Induced X-Y Instabilities in Large Pressurized Water Reactors (EURAEC-2111)	Rev 0	4.3	2/69	O

TABLE 1.6-2 (SHEET 2 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-3680-22	Xenon-Induced Spatial Instabilities in Three Dimensions (EURAEC-2116)	Rev 0	4.3	9/69	O
WCAP-3696-8	Pressurized Water Effect Final Report (EURAEC-2074)	Rev 0	4.3	10/68	O
WCAP-3726-1	PUO_2 -UO_2 Fueled Critical Experiments	Rev 0	4.3	7/67	O
WCAP-6065	Melting Point of - Irradiated UO_2	Rev 0	4.4	2/65	O
WCAP-6069	Burnup Physics of Heterogeneous Reactor Lattices	Rev 0	4.4	6/65	O
WCAP-6073	LASER – Depletion Program for Lattice Calculations Based on MUFT and THERMOS	Rev 0	4.3	4/66	O
WCAP-6086	Supplementary Report on Evaluation of Mass Spectrometric and Radiochemical Analyses of Yankee Core I Spent Fuel, Including Isotopes of Elements Thorium through Curium	Rev 0	4.3	8/69	O
WCAP-7015	Subchannel Thermal Analysis of Rod Bundle Cores	Rev 1	4.4	2/14/69	O
WCAP-7048-P-A(P) WCAP-7757-A	PANDA Code	Rev 0	4.3	1/9/75	A
WCAP-7198-L(P) WCAP-7825	Evaluation of Protective Coatings for Use in Reactor Containment	Rev 0	6.1	4/23/69 12/16/71	O

TABLE 1.6-2 (SHEET 3 OF 15)

Westinghouse Topical Report No.[(a)]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[(b)]
WCAP-7213-P-A(P) WCAP-7758-A	TURTLE 24.0 Diffusion Depletion Code	Rev 0	4.3, 15.0, 15.4	1/9/75	A
WCAP-7308-L(P) WCAP-7810	Evaluation of Nuclear Hot Channel Factor Uncertainties	Rev 0	4.3	7/9/70 12/16/71	U
WCAP-7359-L(P) WCAP-7838	Application of THINC Program to PWR Design	Rev 0	4.4	9/8/69 1/17/72	O
WCAP-7397-L(P) WCAP-7817	Seismic Testing of Electrical and Control Equipment	Rev 0	3.10.N	2/6/70 12/16/71	U
WCAP-7397-L(P) WCAP-7817	Seismic Testing of Electrical and Control Equipment (WCID Process Control Equipment)	Supplement 1	3.10.N	1/27/71 12/16/71	U
WCAP-7427	Effective Structural Damping of the KEP L105 CRDM	Rev 0	3.7.N	1/70	0
WCAP-7427	Effective Structural Damping of the KEP L105 CRDM	Addendum 1	3.7.N	12/70	0
WCAP-7477-L(P) WCAP-7735	Sensitized Stainless Steel in Westinghouse PWR Nuclear Steam Supply Systems	Rev 0	5.2	3/26/70 8/12/71	A
WCAP-7488-L(P) WCAP-7672	Solid State Logic Protection System Description	Rev 0	7.2, 7.3	3/24/71 5/27/71	B
WCAP-7536-L(P) WCAP-7821	Seismic Testing of Electrical and Control Equipment (High Seismic Plants)	Rev 0	3.10.N	11/70	U
WCAP-7558	Seismic Vibration Testing with Sine Beats	Rev 0	3.10.N	9/25/72	U

TABLE 1.6-2 (SHEET 4 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-7588	Evaluation of Rod Ejection Accident in Westinghouse Pressurized Water Reactors Using Spatial Kinetics Methods	Rev 1A	15.4	1/7/75	A
WCAP-7667-P-A(P) WCAP-7755-A	Interchannel Thermal Mixing with Mixing Vane Grids	Rev 0	4.4	1/27/75	A
WCAP-7695-P-A(P) WCAP-7958-A	DNB Tests Results for New Mixing Vane Grids (R)	Rev 0	4.4	1/21/75	A
WCAP-7705	Testing of Engineered Safety Features Actuation System	Rev 2	7.3	5/5/76	B
WCAP-7706-L(P) WCAP-7706	An Evaluation of Solid State Logic Reactor Protection in Anticipated Transients	Rev 0	4.6, 7.1, 7.2	9/2/71	U
WCAP-7709-L(P) WCAP-7820	Electrical Hydrogen Recombiner for Water Reactor Containments	Rev 0	6.2	7/14/71 12/16/71	A
WCAP-7709-L(P) WCAP-7820	Electric Hydrogen Recombiner for PWR Containments-Final Development Report	Supplement 1	6.2	5/23/72 5/31/72	A
WCAP-7709-L(P) WCAP-7820	Electric Hydrogen Recombiner for PWR Containments Equipment Qualification Report	Supplement 2	6.2	9/24/73 11/2/73	A
WCAP-7709-L(P) WCAP-7820	Electric Hydrogen Recombiner for PWR Containments Long-Term Tests	Supplement 3	6.2	1/23/74 3/22/74	A
WCAP-7709-L(P) WCAP-7820	Electric Hydrogen Recombiner for PWR Containments	Supplement 4	6.2	4/21/74	A
WCAP-7709-L(P) WCAP-7820	Electric Hydrogen Recombiner Special Tests	Supplement 5	6.2	1/7/76	A

TABLE 1.6-2 (SHEET 5 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-7709-L(P) WCAP-7820	Electric Hydrogen Recombiner IEEE 323-1974 Qualification	Supplement 6	6.2	11/5/76	A
WCAP-7709-L(P) WCAP-7820	Electric Hydrogen Recombiner LWR Containments Supplemental Test No. 2	Supplement 7	6.2	9/21/77	A
WCAP-7769	Overpressure Protection for Westinghouse Pressurized Water Reactors	Rev 1	5.2, 15.2	7/5/72	U
WCAP-7798-L(P) WCAP-7803	Behavior of Austenitic Stainless Steel in Post Hypothetical Loss-of-Coolant Environment	Rev 0	6.1	12/6/71 1/4/72	O
WCAP-7800	Nuclear Fuel Division Quality Assurance Program Plan	Rev 4A	4.2, 17B	4/28/75	A
WCAP-7806	Nuclear Design of Westinghouse Pressurized Water Reactors with Burnable Poison Rods	Rev 0	4.3	12/16/71	B
WCAP-7811	Power Distribution Control of Westinghouse Pressurized Water Reactors	Rev 0	4.3	12/16/71	O
WCAP-7817	Seismic Testing of Electrical and Control Equipment (Low Seismic Plants)	Supplement 2	3.10.N	1/17/72	A
WCAP-7817	Seismic Testing of Electrical and Control Equipment (Westinghouse Solid-State Protection System) (Low Seismic Plants)	Supplement 3	3.10.N	1/17/72	A
WCAP-7817	Seismic Testing of Electrical and Control Equipment (WCID NUCANA 7300 Series) (Low Seismic Plants)	Supplement 4	3.10.N	12/14/72	A

TABLE 1.6-2 (SHEET 6 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-7817	Seismic Testing of Electrical and Control Equipment (Instrument Bus Distribution Panel) (Low Seismic Plants)	Supplement 5	3.10.N	3/19/75	A
WCAP-7817	Seismic Testing of Electrical and Control Equipment - Type DB Reactor Trip Switchgear	Supplement 6	3.10.N	8/74	U
WCAP-7817	Seismic Testing of Electrical and Control Equipment for Low Seismic Plants	Supplement 7	3.10.N	9/76	U
WCAP-7817	Seismic Testing of Electrical and Control Equipment – Low Seismic Plants	Supplement 8	3.10.N	6/75	A
WCAP-7821	Seismic Testing of Electrical and Control Equipment (High Seismic Plants)	Supplement 1, 2	3.10.N	12/71	U
WCAP-7821	Seismic Testing of Electrical and Control Equipment (WICD-NUCANA 7300 Series) (High Seismic Plants)	Supplement 3	3.10.N	9/72	U
WCAP-7821	Seismic Testing of Electrical and Control Equipment (Type DB Reactor Trip switchgear)	Supplement 4	3.10.N	8/74	U
WCAP-7821	Seismic Testing of Electrical and Control Equipment for High Seismic Plants	Supplement 5	3.10.N	9/76	U
WCAP-7821	Seismic Testing of Electrical and Control Equipment (High Seismic Plants)	Supplement 6	3.10.N	6/75	U

TABLE 1.6-2 (SHEET 7 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-7832	Evaluation of Steam Generator Tube, Tube Sheet, and Divider Plate Under Combined LOCA Plus SSE Conditions	Rev 0	5.4	12/26/73	A
WCAP-7836	Inlet Orificing of Open PWR Cores	Rev 0	4.4	1/17/72	B
WCAP-7856	Safety-Related Research and Development for Westinghouse Pressurized Water Reactors Program Summaries, Fall 1971 through Spring 1972	Rev 0	1.5	1/72	B
WCAP-7870	Neutron Shielding Pads	Rev 0	3.9.N	7/17/72	A
WCAP-7907	LOFTRAN Code Description	Rev 0	5.2, 6.2, 15.0, 15.1, 15.2, 15.3, 15.4, 15.5, 15.6	10/11/72	U
WCAP-7908	FACTRAN - A FORTRAN-IV Code for Thermal Transients in a UO_2 Fuel Rod	Rev 0	15.0, 15.2, 15.3, 15.4	9/20/72	U
WCAP-7912-P-A(P) WPAC-7912-A	Power Peaking Factors	Rev 0	4.3, 4.4	1/16/75	A
WCAP-7913	Process Instrumentation for Westinghouse Nuclear Steam Supply Systems (Four-Loop Plant Using WCID-7300 Series Process Instrumentation)	Rev 0	7.2, 7.3	3/9/73	B
WCAP-7921-AR	Damping Values of Nuclear Power Plant Components	Rev 0	3.7.N	7/11/74	A
WCAP-7941-P-A(P) WCAP-7959-A	Effect of Axial Spacing On Interchannel Thermal Mixing with the R Mixing Vane Grid	Rev 0	4.4	1/27/75	A

TABLE 1.6-2 (SHEET 8 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-7956	THINC-IV - An Improved Program for Thermal-Hydraulic Analysis of Rod Bundle Cores	Rev 0	4.4	10/22/73	A
WCAP-7964	Axial Xenon Transient Tests at Rochester Gas and Electric Reactor	Rev 0	4.3	6/15/71	O
WCAP-7979-P-A(P) WCAP-8028-A	TWINKLE - A Multidimensional Neutron Kinetics Computer Code	Rev 0	15.0, 15.4	1/7/75	A
WCAP-7988-P-A(P) WCAP-8030-A	Application of Modified Spacer Factor to L-Grid Typical and Cold Wall Cell DNB	Rev 0	4.4	1/75	A
WCAP-8004	Safety Related Research and Development for Westinghouse Pressurized Water Reactors Program Summaries - Fall 1972	Rev 0	1.5	2/73	B
WCAP-8054(P) WCAP-8195	Application of THINC-IV Program to PWR Design	Rev 0	4.4	12/7/73 1/11/74	A
WCAP-8082-P-A(P) WCAP-8172-A	Pipe Breaks for the LOCA Analysis of Westinghouse Primary Coolant Loop	Rev 0	3.6	1/16/75	A
WCAP-8163	Reactor Coolant Pump Integrity in LOCA	Rev 0	1.9, 5.4	9/20/73	U
WCAP-8170(P) WCAP-8171	Calculational Model for Core Reflooding After a Loss-of-Coolant Accident (WREFLOOD Code)	Rev 0	15.6	7/3/74	AE
WCAP-8174-P-A(P) WCAP-8202-A	Effect of Local Heat Flux on DNB in Nonuniformly Heated Rod Bundles	Rev 0	4.4	2/75	A
WCAP-8183	Operational Experience with Westinghouse Cores (up to December 31, 1977)	Rev 7	4.2	4/20/78	B

TABLE 1.6-2 (SHEET 9 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-8200(P) WCAP-8261	WFLASH - A FORTRAN-IV Computer Program for Simulation of Transients in a Multiloop PWR	Rev 2 Rev 1	15.6	7/3/74	AE
WCAP-8218-P-A(P) WCAP-8219-A	Fuel Densification Experimental Results and Model for Reactor Application	Rev 0	4.1, 4.2, 4.3, 4.4	3/6/75	A
WCAP-8236(P) WCAP-8288	Safety Analysis of 17 x 17 Fuel Assembly for Combined Seismic and Loss-of-Coolant Accident	Rev 0	4.2, 3.7.N	2/28/74 3/1/74	U
WCAP-8236(P) WCAP-8288	Safety Analysis of Eight-Grid 17 x 17 Fuel Assembly for Combined Seismic Loss-of-Coolant Accident	Addendum 1	3.7.N	4/15/74	A
WCAP-8252	Documentation of Selected Westinghouse Structural Analysis Computer Codes	Rev 1	3.6, 3.9.N	7/19/77	U
WCAP-8253	Source Term Data for Westinghouse Pressurized Water Reactors	Amendment 1	11.1	2/13/76	B
WCAP-8255	Nuclear Instrumentation System	Rev 0	7.2, 7.7	4/9/74	B
WCAP-8258	Spraco Model 1713A Nozzle Spray Drop Size Distribution	Rev 1	6.5	5/75	B
WCAP-8278(P) WCAP-8279	Hydraulic Flow Test of 17 x 17 Fuel Assembly	Rev 0	4.2, 4.4	2/28/74 3/1/74	U
WCAP-8296-P-A(P) WCAP-8297-A	Effect of 17 x 17 Fuel Assembly Geometry on DNB	Rev 0	4.4	2/6/75	A
WCAP-8298-P-A(P) WCAP-8299-A	The Effect of 17 x 17 Fuel Assembly Geometry on Interchannel Thermal Mixing	Rev 0	4.4	1/28/75	A
WCAP-8301(P) WCAP-8305	LOCA-IV Program: Loss-of-Coolant Transient Analysis	Rev 0	15.0, 15.6	7/12/74	AE

TABLE 1.6-2 (SHEET 10 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-8302(P) WCAP-8306	SATAN-IV Program: Comprehensive Space-Time-Dependent Analysis of Loss-of-Coolant	Rev 0	15.0, 15.6	7/12/74	AE
WCAP-8303-P-A(P) WCAP-8317-A	Prediction of the Flow-Induced Vibration of Reactor Internals by Scale Model Tests	Rev 0	3.9.N	7/18/75	A
WCAP-8324-A	Control of Delta Ferrite in Austenitic Stainless Steel Weldments	Rev 0	5.2	6/23/75	A
WCAP-8327(P) WCAP-8326	Containment Pressure Analysis Code (COCO)	Rev 0	15.6, 6.2	7/3/74	AE
WCAP-8330	Westinghouse Anticipated Transients Without Trip Analysis	Rev 0	4.3, 4.6, 15.8	9/25/74	U
WCAP-8339	Westinghouse Emergency Core Cooling System Evaluation Model – Summary	Rev 0	15.6	7/3/74	AE
WCAP-8340(P) WCAP-8356	Westinghouse Emergency Core Cooling System - Plant Sensitivity Studies	Rev 0	15.6	8/1/74	AE
WCAP-8341(P) WCAP-8342	Westinghouse Emergency Core Cooling System Evaluation Model-Sensitivity Studies	Rev 0	15.6	7/3/74	AE
WCAP-8353	Safety-Related Research and Development for Westinghouse Pressurized Water Reactor Program Summaries - Spring 1974	Rev 0	1.5	8/74	B
WCAP-8359	Effects of Fuel Densification Power Spikes on Clad Thermal Transients	Rev 0	4.3	7/2/74	AE
WCAP-8370	Westinghouse Water Reactor Divisions Quality Assurance Plan	Rev 9A	1.9, 17B	11/14/77	A

TABLE 1.6-2 (SHEET 11 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-8376	Iodine Removal by Spray in the Joseph M. Farley Station Containment	Rev 0	6.5	7/74	B
WCAP-8377(P) WCAP-8381	Revised Clad Flattening Model	Rev 0	4.2	8/7/74 8/6/74	A
WCAP-8385(P) WCAP-8403	Power Distribution Control and Load Following Procedures	Rev 0	4.3, 4.4	10/9/74	A
WCAP-8424	Evaluation of Loss-of-Flow Accidents Caused by Power System Frequency Transients - in Westinghouse PWRs	Rev 1	15.3	5/30/75	U
WCAP-8446(P) WCAP-8449	17 x 17 Drive Line Components Tests Phase IB, II, III, D-Loop Drop, and Deflection	Rev 0	3.9.N	12/31/74	A
WCAP-8453-A	Analysis of Data from Zion (Unit 1) THINC Verification Test	Rev 0	4.4	5/10/76	A
WCAP-8471(P) WCAP-8472	Westinghouse ECCS - Evaluation Model – Supplementary Information	Rev 0	15.6	2/10/75 2/11/75	AE
WCAP-8485	Safety-Related Research and Development for Westinghouse Pressurized Water Reactors, Program Summaries - Fall 1974	Rev 0	1.5	4/2/75	B
WCAP-8498	Incore Power Distribution Determination in Westinghouse Pressurized Water Reactors, Program - Summaries - Fall 1974	Rev 0	4.3	7/22/75	U
WCAP-8510	Method for Fracture Mechanics Analysis of Nuclear Reactor Vessels Under Severe Thermal Transients	Rev 0	5.3	7/76	U

TABLE 1.6-2 (SHEET 12 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-8516-P(P) WCAP-8517	UHI Plant Internals Vibration Measurement Program and Pre- and Post-Hot Functional Examinations	Rev 0	3.9.N	4/11/75	A
WCAP-8536(P) WCAP-8537	Critical Heat Flux Testing of 17 x 17 Fuel Assembly Geometry with 22-in. Grid Spacing	Rev 0	4.4	5/30/75	A
WCAP-8565-P-A(P) WCAP-8566-A	Westinghouse ECCS-Four-Loop Plant (17 x 17) Sensitivity Studies	Rev 0	15.6	7/17/75	A
WCAP-8577	Application of Preheat Temperatures after Welding Pressure Vessel Steels	Rev 0	1.9	2/3/76	A
WCAP-8584(P) WCAP-8760	Failure Mode and Effects Analysis (FMEA) of Engineered Safeguard Features Actuation System	Rev 0 Rev 1	4.6, 7.3	4/23/76 2/80	U
WCAP-8587	Equipment Qualification Data Packages	Rev 1	3.10.N, 3.11.N	4/17/78 11/78	U
WCAP-8587	Methodology for Qualifying Westinghouse WRD Supplied NSSS Safety-Related Electrical Equipment	Rev 2 Rev 3	1.9, 3.10.N, 3.11.N	3/5/79 5/80	U
WCAP-8622(P) WCAP-8623	Westinghouse ECCS - Evaluation Model - October 1975 Version	Rev 0	15.6	11/20/75	AE
WCAP-8624(P) WCAP-8695	General Method of Developing Multifrequency-Biaxial Test Inputs for Bistables	Rev 0	3.10.N	9/75	U
WCAP-8682(P) WCAP-8683	Experimental Verification of Wet Fuel Storage Criticality Analyses	Rev 0	4.3	3/18/76	B
WCAP-8691(P) WCAP-8692	Fuel Rod Bowing	Rev 0	4.2	1/9/76	U

TABLE 1.6-2 (SHEET 13 OF 15)

Westinghouse Topical Report No.[(a)]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[(b)]
WCAP-8693	Delta Ferrite in Production Austenitic Stainless Steel Weldments	Rev 0	5.2	3/16/76	B
WCAP-8708-P-A(P), Volumes I and II WCAP-8709-A, Volumes I and II	MULTIFLEX - FORTRAN-IV Computer Program for Analyzing Thermal-Hydraulic Structure System Dynamics	Rev 0	3.6, 3.9.N	9/16/77	A
WCAP-8720(P) WCAP-8785	Improved Analytical Models Used in Westinghouse Fuel Rod Design Computations	Rev 0	4.2, 15.6	11/2/76	A
WCAP-8768	Safety-Related Research and Development for Westinghouse Pressurized Water Reactors, Program Summaries - Spring 1976	Rev 0	1.5	6/17/76	B
WCAP-8768	Safety-Related Research and Development for Westinghouse Pressurized Water Reactors, Program Summaries - Winter 1977 through Summer 1978	Rev 2 Rev 1	1.5, 4.2, 4.3, 5.4	9/28/78	B
WCAP-8766(P) WCAP-8780	Verification of Neutron Pad and 17 x 17 Guide Tube Designs by Preoperational Tests on the Trojan 1 Power Plant	Rev 0	3.9.N	5/21/76	A
WCAP-8768	Safety-Related Research and Development for Westinghouse Pressurized Water Reactors Program Summaries - Winter 1977 through Summer 1978	Rev 2	5.4	10/78	B
WCAP-8776	Corrosion Study for Determining Hydrogen Generation from Aluminum and Zinc During Post-Accident Conditions	Rev 0	6.2	10/76	B

TABLE 1.6-2 (SHEET 14 OF 15)

Westinghouse Topical Report No.[a]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[b]
WCAP-8822 (P) WCAP-8860	Mass and Energy Releases Steam Line Rupture	Rev 0	6.2	9/76	U
WCAP-8892-A	Westinghouse 7300 Series Process Control System Noise Tests	Rev 0	7.1	6/15/77	A
WCAP-8929	Benchmark Problem Solution Employed for Verification of WECAN Computer Program	Rev 0	3.9.N	5/26/77	U
WCAP-8963(P) WCAP-8964	Safety Analysis for the Revised Fuel Rod Internal Pressure Design Basis	Rev 0	4.2	3/31/71 8/11/77	A
WCAP-8976	Failure Mode and Effects Analysis (FMEA) of Solid State Full-Length Rod Control System	Rev 0	4.6	10/26/77	U
WCAP-9168(P) WCAP-9150	Westinghouse Emergency Core Cooling System Evaluation Model - Modified October 1975 Version	Rev 0	15.6	9/27/77	U
WCAP-9179(P) WCAP-9224	Properties of Fuel and Core Component Materials	Rev 1	4.2	8/2/78	U
WCAP-9207(P) WCAP-8966	Evaluation of Mispositioned ECCS Valves	Rev 0	6.3	3/21/78	U
WCAP-9220-P-A(P) WCAP-9221-A	Westinghouse ECCS Evaluation Model - February 1978 Version	Rev 0	15.6	2/78	A
WCAP-9226 WCAP-9227	Reactor Core Response to Excessive Secondary Steam Releases	Rev 1	15.1	9/78	U
WCAP-9230(P) WCAP-9231	Report on the Consequences of a Postulated Main Feedline Rupture	Rev 0	15.2	1/27/78	U
WCAP-9283	Integrity of Primary Piping Systems of Westinghouse Nuclear Power Plants during Postulated Seismic Events	Rev 0	4.2	3/21/78	U

TABLE 1.6-2 (SHEET 15 OF 15)

Westinghouse Topical Report No.[(a)]	Title	Revision Number	FSAR Section Reference	Submitted to the NRC	Review Status[(b)]
WCAP-9292	Dynamic Fracture Toughness of ASME SA508 Class 2a, ASME SA533 Grade A Class 2 Base, Heat Affected Zone Material, and Applicable Weld Metals	Rev 0	5.2	3/17/78	U
WCAP-9401-P-A(P) WCAP-9402	Verification Testing and Analyses of the 17 x 17 Optimized Fuel Assembly	Rev 0	4.2	3/79	A
WCAP-9600(P) WCAP-9601	Report on Small Break Accidents for Westinghouse NSSS System	Rev 0	5.4	6/79	A
WCAP-11731(P) WCAP-11731	LOFTTR2 Analysis for a Steam Generator Tube Rupture Event for the Vogtle Electric Generating Plant Units 1 and 2	Rev 0	15.6	3/01/88	U
WCAP-10858P-A	AMSAC Generic Design Package	Rev 1	7.7/15.8	6/85	A

a. (P) - Proprietary

b. Legend for the review status code letters:

- A - NRC review complete; NRC acceptance letter issued.
- AE - NRC accepted as part of the Westinghouse ECCS evaluation model only; does not constitute acceptance for any purpose other than for ECCS analyses.
- B - Submitted to NRC as background information; not undergoing formal NRC review.
- O - On file with NRC; older generation report with current validity; not actively under formal NRC review.
- U - Actively under formal NRC review.

TABLE 1.6-3

OTHER TOPICAL REPORTS INCORPORATED BY REFERENCE

Topical Report No.	Prepared By	Title	Revision No.	FSAR Section Reference	Report Submitted to the NRC	Review Status
AECC-3-P	Aerojet Energy Conversion Company	Topical Report Radioactive Waste Volume Reduction System Combined Incinerator/Dryer	0	11.4	12/81	Submitted to NRC; acceptance review to be concurrent with review of the first FSAR to reference the topical report.
OFC-1	Owens-Corning Fiberglass Co.	Nuclear Containment Insulation System	-	6.1	9/1/77	NRC acceptance 12/8/78.

1.7 DRAWINGS AND OTHER DETAILED INFORMATION

1.7.1 ELECTRICAL, INSTRUMENTATION, AND CONTROL DRAWINGS

This section originally contained lists of electrical, instrumentation, and control drawings that were considered to be necessary to evaluate the safety-related features pertaining to VEGP. Three uncontrolled copies of each drawing were provided to the NRC in 1983 with the original FSAR submittal in conjunction with the application for operating licenses for use in reviewing the design. These lists are not included in this Updated FSAR.

Table 1.7.1-1 is a cross reference between the applicable electrical, instrumentation, and control drawings as well as the piping and instrumentation flow diagrams and the section where they are referenced in the Updated FSAR. This cross reference is an aid in locating engineering drawings, which are included by reference throughout the Updated FSAR in conjunction with specific system descriptions.

Drawings 1X3D-AA-A00E, 1X3D-AA-A00M, 1X5DN002-1, 1X5DN002-2, 1X5DN002-3 and 1X5DV002 are the legends for electrical and control drawings. Drawing AX3DG030 is the legend for communications and lighting drawings.

1.7.2 PIPING AND INSTRUMENTATION DIAGRAMS

This section originally contained a list of each piping and instrumentation diagram (P&ID) and the corresponding Final Safety Analysis Report (FSAR) figure number (if applicable) as it appeared at the end of the respective text section. Two uncontrolled, large-scale copies of each P&ID were provided to the NRC in 1983 with the original FSAR submittal in conjunction with the application for operating licenses. That list is not included in this Updated FSAR.

A cross reference between the Updated FSAR figures and the applicable piping and instrumentation flow diagrams contained in the Updated FSAR is included in table 1.7.1-1. This cross reference is an aid in locating engineering drawings that are included throughout the Updated FSAR in conjunction with specific system descriptions. Those engineering drawings identified as "modified for FSAR" have been either partially used to produce the Updated FSAR figure or enhanced by the addition of notations or information with respect to the specific system description. The appropriate revision number of each engineering drawing is reflected on the Updated FSAR figure. Drawings 1X4DB101 and 1X4DB102 provide an explanation of symbols and characters used in these FSAR figures. Drawing 1X4DB100 is a P&ID flow diagram legend.

1.7.3 OTHER DETAILED INFORMATION

The geologic and geophysical logs obtained during the geology and site foundation investigations and examinations have been submitted under separate cover. The results and conclusions are summarized in section 2.5 and appendix 2B.

TABLE 1.7.1-1 (Sheet 1 of 43)

CROSS REFERENCE OF ENGINEERING DRAWINGS TO UFSAR DISCUSSION SECTION

Drawing Number	Section	Title
1K5-1305-058-01	10.4.7	Feedwater System Isometric Containment and Valve Room
1K5-1305-062-01	10.4.7	Feedwater System Isometric Containment and Valve Room
1P01C016	3.8.1	Containment Basemat Hoop and Dowel Reinforcement (Unit 1)
1P01C017	3.8.1	Containment Basemat Reinforcement Typical E-W Layout (Unit 1)
1P01C018	3.8.1	Containment Basemat Reinforcement Typical N-S Layout (Unit 1)
1P01W058	3.8.1	Shell Wall Reinforcement Containment Building Outside Face at Buttress 1 (Unit 1)
1P01W059	3.8.1	Shell Wall Reinforcement Containment Building Buttress 1 Plan and Sections (Unit 1)
1P01W072	3.8.1	Shell Wall Reinforcement Containment Building Inside Face Vertical and Horizontal at Equipment Hatch (Unit 1)
1P01W077	3.8.1	Shell Wall Reinforcement Containment Building Outside Face Vertical and Horizontal Buttress 1 to 2 (Unit 1)
1P01W081	3.8.1	Shell Wall Reinforcement Containment Building Inside Face Vertical and Horizontal at Equipment Hatch (Unit 1)
1X2D01A001	3.8.1	Containment Section and Plan View (Unit 1)
1X2D01J004	3.8.3	Primary and Secondary Shield Wall Anchorage to Basemat
1X2D01J008	3.8.3	NSSS Support Anchorage to Basemat (Unit 1)
1X2D01J015	3.8.1	Containment Liner Plate Plan, Sections, Details (Unit 1)
1X2D01J017	3.8.1	Containment - Wall Liner Plate Hatch and Lock Details Sh. 1
1X2D01J018	3.8.1	Containment - Wall Liner Plate Hatch and Lock Details Sh. 2

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Drawing Number	Section	Title
1X2D01J019	3.8.2	Containment - Wall Liner Plate Penetrations Details Sh. 1
1X2D01J020	3.8.2	Containment - Wall Liner Plate Penetrations Details Sh. 2
1X2D01J022	3.8.1	Polar Crane Bracket Details
1X2D01K002	3.8.1	Containment Tendon Arrangement (Unit 1)
1X2D01K003	3.8.1	Containment Tendon Arrangement (Unit 1)
1X2D01K005	3.8.1	Containment - Prestressing Requirements - Wall and Dome Cross Section
1X2D01K006	3.8.1	Containment - Prestressing Requirements - Hatch and Lock Details Sh. 1
1X2D01K007	3.8.1	Containment - Prestressing Requirements - Hatch and Lock Details Sh. 2
1X2D01K008	3.8.1	Containment - Prestressing Requirements - Sections and Details Sh. 1
1X2D05E001	1.2.2	NSCW Cooling Towers 1A and 1B General Arrangement Plan, Elevation, and Sections
1X2D28A001	3.8.4	Reactor Make-up Water Storage Tank - Forming Plan - Section and Details
1X2D29A001	3.8.4	Refueling Water Storage Tank - Forming Plan - Sections and Details
1X2D30A001	3.8.4	Condensate Storage Tank - Forming Plan and Sections
1X2D44A005	3.8.4	Outside Area Tunnels - Forming Plan - Bottom Electrical Tunnel 1T4A & 1T4B
1X2D48A018	3.8.3	Primary Shield Wall and Reactor Cavity Plan Views (Unit 1)
1X2D48A019	3.8.3	Primary Shield Wall and Reactor Cavity Sections Views (Unit 1)
1X2D48A050	12.3.2	Fuel Transfer Tube Shielding Details
1X2D48E003	3.8.3	Containment Plan View (Unit 1)
1X2D48E004	3.8.3	Containment Plan View (Unit 1)

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Drawing Number	Section	Title
1X2D48E005	3.8.3	Containment Plan View (Unit 1)
1X2D48E007	3.8.3	Containment Sections (Unit 1)
1X2D48E007	1.2.2	Containment Internals General Arrangement Section Looking North
1X2D48E008	3.8.3	Containment Sections (Unit 1)
1X2D48E008	1.2.2	Containment Internals General Arrangement Section Looking West
1X2D48J006	12.3.2	Fuel Transfer Tube Shielding Details
1X2D48J006	3.8.2	Fuel Transfer Tube Penetration Assembly
1X3AE01-20	18.1	Control Room Panels, QEAB, Section 1A, Part 1 (Unit 1)
1X3AE01-21	18.1	Control Room Panels, QEAB, Section 1A, Part 2 (Unit 1)
1X3AE01-24	18.1	Control Room Panels, QEAB, Section 1B (Unit 1)
1X3D-AA-A00E	1.7.1	Legend for Electrical Drawings
1X3D-AA-A00M	1.7.1	Legend for Electrical Drawings
1X3D-AA-A01A	8.3.1	Main One Line (Unit 1)
1X3D-AA-G01A	7.6.1	Main One-Line Class 1E 125-V dc and 120-V Vital ac Systems
1X3D-AA-G01B	8.3.1	Non-Class 1E Essential ac Power System and dc Power System
1X3D-AA-G02A	8.3.1	120-volt Vital ac Instrument Distribution Panels
1X3D-AA-G02C	8.3.1	120-volt Vital ac Instrument Distribution Panels
1X3D-AA-K02A	8.3.1	Safety Load Sequencing Table (Train A, Unit 1)
1X3D-AA-K02B	8.3.1	Safety Load Sequencing Table (Train A, Unit 1)
1X3D-BD-JO1A	7.3.11	Containment Spray System Elementary Diagram
1X3D-BD-JO1B	7.3.11	Containment Spray System Elementary Diagram
1X3D-BD-JO2A	7.3.11	Containment Spray System Elementary Diagram
1X3D-BD-JO2B	7.3.11	Containment Spray System Elementary Diagram

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Drawing Number	Section	Title
1X3D-BD-JO2C	7.3.11	Containment Spray System Elementary Diagram
1X3D-BD-JO2D	7.3.11	Containment Spray System Elementary Diagram
1X3DG001	9.5.2	Telephone/Page System Riser Diagram
1X3DG002	9.5.2	Sound-Powered Phone System Riser Diagram
1X3DG004	9.5.2	PABX System Riser Diagram
1X3DG020	9.5.3	Lighting Systems Schematic
1X3DG021	9.5.3	Lighting Systems Schematic
1X3DG031	9.5.2	Telephone/Page System Riser Diagram
1X3DG032	9.5.2	Telephone/Page System Riser Diagram
1X3DG033	9.5.2	Telephone/Page System Riser Diagram
1X3DG040	9.5.2	Sound-Powered Phone System Riser Diagram
1X3DG041	9.5.2	Sound-Powered Phone System Riser Diagram
1X3DG042	9.5.2	Sound-Powered Phone System Riser Diagram
1X3DG043	9.5.2	PABX System Riser Diagram
1X3DG045	9.5.2	Sound-Powered Phone System Riser Diagram
1X4AH04-25	3.8.2	Containment Spray Isolation Valve Encapsulation Vessel
1X4AK01-30	8.3.1	Diesel Generator Initiating Circuit Logic Diagrams
1X4AK01-31	8.3.1	Diesel Generator Initiating Circuit Logic Diagrams
1X4DB100	1.7.2	P&ID Flow Diagram Legend
1X4DB101	1.7.2	P&ID Instrumentation Identification and Symbols
1X4DB102	1.7.2	P&ID Instrumentation Identification and Symbols
1X4DB110	9.3.2	Post-Accident Sampling System
1X4DB111	5.1.2	Reactor Coolant System P&ID (Unit 1)
1X4DB112	5.1.2	Reactor Coolant System P&ID (Unit 1)
1X4DB113	5.1.2	Reactor Coolant System P&ID (Unit 1)

TABLE 1.7.1-1 (Sheet 5 of 43)

Drawing Number	Section	Title
1X4DB114	9.3.4	Chemical and Volume Control System
1X4DB115	9.3.4	Chemical and Volume Control System
1X4DB116-1	9.3.4	Chemical and Volume Control System
1X4DB116-2	9.3.4	Chemical and Volume Control System
1X4DB117	9.3.4	Chemical and Volume Control System
1X4DB118	9.3.4	Chemical and Volume Control System
1X4DB119	6.3.2	Safety Injection System (Unit 1)
1X4DB120	6.3.2	Safety Injection System P&ID
1X4DB121	6.3.2	Safety Injection System P&ID
1X4DB122	5.4.7	Residual Heat Removal System P&ID (Unit 1)
1X4DB124	11.2.1	Waste Processing System - Liquid
1X4DB125	11.2.1	Waste Processing System - Liquid
1X4DB126	11.2.1	Waste Processing System - Liquid
1X4DB127	11.2.1	Waste Processing System - Liquid
1X4DB128	11.3.2	Waste Processing System - Gas
1X4DB129	11.3.2	Waste Processing System - Gas
1X4DB130	9.1.3	Spent Fuel Pool Cooling and Purification System P&ID
1X4DB131	6.2.2	Containment Spray System
1X4DB132	6.2.6	Containment ILRT System P&ID
1X4DB133-1	9.2.1	P&ID Nuclear Service Cooling Water System System No. 1202
1X4DB133-2	9.2.1	P&ID Nuclear Service Cooling Water System System No. 1202
1X4DB134	9.2.1	P&ID Nuclear Service Cooling Water System System No. 1202
1X4DB135-1	9.2.1	P&ID Nuclear Service Cooling Water System System No. 1202

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Drawing Number	Section	Title
1X4DB135-2	9.2.1	P&ID Nuclear Service Cooling Water System System No. 1202
1X4DB136	9.2.2	Component Cooling Water System
1X4DB137	9.2.2	Component Cooling Water System
1X4DB138-1	9.2.8	Auxiliary Component Cooling Water System
1X4DB138-2	9.2.8	Auxiliary Component Cooling Water System
1X4DB139	9.2.8	Auxiliary Component Cooling Water System
1X4DB140	9.3.2	Nuclear Sampling System - Liquid (Unit 1)
1X4DB141	9.3.2	Nuclear Sampling System - Gaseous
1X4DB142-1	9.3.3	Control Building Drain System
1X4DB142-2	9.3.3	Control Building Drain System
1X4DB143	9.3.3	Containment and Auxiliary Building Drains - Radioactive
1X4DB144-1	9.3.3	Containment and Auxiliary Building Drains - Radioactive
1X4DB144-2	9.3.3	Containment and Auxiliary Building Drains - Radioactive
1X4DB145-1	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB145-2	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB145-3	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB145-4	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB145-5	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB145-6	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB145-7	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB146-1	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB146-2	9.3.3	Auxiliary Building and Miscellaneous Drains
1X4DB146-3	9.3.3	Auxiliary Building and Miscellaneous Drains

TABLE 1.7.1-1 (Sheet 7 of 43)

Drawing Number	Section	Title
1X4DB147-1	9.3.3	Auxiliary Building Flood Retaining Rooms Alarms and Drains
1X4DB147-2	9.3.3	Auxiliary Building Flood Retaining Rooms Alarms and Drains
1X4DB148	11.4.2	Backflushable Filter System P&ID
1X4DB148-1	11.4.2	RCS Filter System
1X4DB148-2	11.4.2	Seal Water Return Filter System
1X4DB148-3	11.4.2	Seal Injection Filter System
1X4DB148-4	11.4.2	Seal Injection Filter System
AX4DB148-5	11.4.2	Recycle Evaporator Feed Filter System
AX4DB148-6	11.4.2	Recycle Evaporator Feed Filter System
AX4DB148-7	11.4.2	Recycle Evaporator Concentrate Filter System
1X4DB148-8	11.4.2	Waste Evaporator Feed Filter System
1X4DB148-9	11.4.2	Resin Sluice Filter System
1X4DB148-10	11.4.2	Floor Drain Tank Filter System
1X4DB148-11	11.4.2	Waste Monitor Tank Filter System
1X4DB148-12	11.4.2	Spent Fuel Pit Filter System
1X4DB148-13	11.4.2	Steam Generator Blowdown Filter System
1X4DB149-1*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 1)
1X4DB149-2*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 1)
1X4DB149-3*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 1)
1X4DB149-4*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 1)
1X4DB150	10.4.5	Circulating Water System
1X4DB150-1	10.4.5	Circulating Water System
1X4DB151-1	9.2.11	Turbine Plant Cooling Water System

TABLE 1.7.1-1 (Sheet 8 of 43)

Drawing Number	Section	Title
1X4DB151-2	9.2.11	Turbine Plant Cooling Water System
1X4DB151-3	9.2.11	Turbine Plant Cooling Water System
1X4DB154-1	9.2.10	Turbine Plant Closed Cooling Water System
1X4DB154-2	9.2.10	Turbine Plant Closed Cooling Water System
1X4DB157	10.4.10	Condensate Chemical Injection System
1X4DB159-1	10.3.2	Main Steam Supply System (Unit 1)
1X4DB159-2	10.3.2	Main Steam Supply System (Unit 1)
1X4DB159-3	10.3.2	Main Steam Supply System (Unit 1)
1X4DB160-1	10.2.2	General Electric Turbine-Generator (Main Steam System)
1X4DB160-2	10.2.2	General Electric Turbine-Generator (Main Steam System)
1X4DB160-3	10.2.2	General Electric Turbine-Generator (Turbine Steam Seal System)
1X4DB160-3	10.4.3	Turbine Steam Sealing System
1X4DB161-1	9.2.6	Condensate Storage and Degasifier System
1X4DB161-2	10.4.9	Auxiliary Feedwater P&ID
1X4DB161-3	10.4.9	Auxiliary Feedwater P&ID
1X4DB166	10.2.2	General Electric Turbine-Generator (Turbine Drive Steam System)
1X4DB167-1	10.2.2	General Electric Turbine-Generator (Turbine Lube Oil Storage and Filtration System)
1X4DB167-2	10.2.2	General Electric Turbine-Generator (Turbine Lube Oil Storage and Filtration System)
1X4DB168-1	10.4.1	Condensate and Feedwater System
1X4DB168-2	10.4.1	Condensate and Feedwater System
1X4DB168-3	10.4.1	Condensate and Feedwater System
1X4DB170-1	9.5.4	Diesel Generator System

TABLE 1.7.1-1 (Sheet 9 of 43)

Drawing Number	Section	Title
1X4DB170-2	9.5.4	Diesel Generator System
1X4DB171-1	9.3.2	Turbine Plant Sampling System
1X4DB171-2	9.3.2	Turbine Plant Sampling System
1X4DB171-3	9.3.2	Turbine Plant Sampling System
1X4DB171-4	9.3.2	Turbine Plant Sampling System
1X4DB171-5	9.3.2	Turbine Plant Sampling System
1X4DB171-6	9.3.2	Turbine Plant Sampling System
1X4DB171-7	9.3.2	Turbine Plant Sampling System
1X4DB171-8	9.3.2	Turbine Plant Sampling System
1X4DB171-9	9.3.2	Turbine Plant Sampling System
1X4DB173	9.5.1	Fire Protection Water Systems
1X4DB174-1	9.5.1	Fire Protection Halon Systems
1X4DB174-2	9.5.1	Fire Protection Water Systems (Unit 1)
1X4DB174-3	9.5.1	Fire Protection Water Systems
1X4DB174-4	9.5.1	Fire Protection Water Systems (Unit 1)
1X4DB174-5	9.5.1	Fire Protection Water Systems
1X4DB174-6	9.5.1	Fire Protection Water System System No. 2303
1X4DB175-1	9.3.1	Instrument and Service Air System
1X4DB175-2	9.3.1	Instrument and Service Air System
1X4DB175-3	9.3.1	Instrument and Service Air System
1X4DB175-4	9.3.1	Instrument and Service Air System
1X4DB176-3	9.3.5	Auxiliary Gas System P&ID
1X4DB179-1	10.4.8	Steam Generator Blowdown Processing System
1X4DB179-2	10.4.8	Steam Generator Blowdown Processing System
1X4DB180-1	9.3.3	Turbine Building Drain System
1X4DB180-2	9.3.3	Turbine Building Drain System

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Drawing Number	Section	Title
1X4DB180-3	9.3.3	Turbine Building Drain System
1X4DB180-4	9.3.3	Turbine Building Drain System
1X4DB182	10.4.2	Condenser Air Ejection System P&ID
1X4DB183	9.3.3	Fuel Handling Building and Electrical Chase Tunnel Drains
1X4DB184	9.2.7-1	Reactor Makeup Water System
1X4DB185-1	10.4.6	Condensate Filter Demineralizer System
1X4DB185-2	10.4.6	Condensate Filter Demineralizer System
1X4DB185-3	10.4.6	Condensate Filter Demineralizer System
1X4DB185-5	10.4.6	Condensate Filter Demineralizer System
1X4DB185-6	9.3.1	Instrument Air System
1X4DB186-1	9.3.1	Service Air System
1X4DB186-4	9.3.1	Instrument Air System
1X4DB186-5	9.3.1	Instrument Air System
1X4DB186-6	9.3.1	Instrument Air System
1X4DB186-7	9.3.1	Instrument Air System
1X4DB186-8	9.3.1	Instrument Air System
1X4DB186-9	9.3.1	Instrument Air System
1X4DB188	9.3.1	Service Air System
1X4DB191	10.2.2	General Electric Turbine-Generator (Turbine-Generator Hydrogen Seal Oil System)
1X4DB192	9.3.7	NSCW Chemical Injection and Chlorine Analysis System
1X4DB193	10.2.2	General Electric Turbine-Generator (Turbine-Generator Stator Cooling System) (Unit 1)
1X4DB194	10.2.2	EHC System
1X4DB196	10.2.2	General Electric Turbine-Generator (Turbine-Generator Gas System)

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Drawing Number	Section	Title
1X4DB203	9.4.9	P&ID - Equipment Building HVAC System (Unit 1)
1X4DB205-1	9.4.3	Piping Penetration Area Filtration and Exhaust System (Unit 1)
1X4DB205-2	9.4.3	Piping Penetration Area Filtration and Exhaust System
1X4DB207-1	9.4.5	Control Building ESF Safety Feature Equipment Room Level B
1X4DB208-1	9.4.3	Auxiliary Building Normal Ventilation System (Unit 1)
1X4DB208-2	9.4.3	Auxiliary Building Normal Ventilation System
1X4DB208-3	9.4.3	Auxiliary Building Normal Ventilation System
1X4DB210	9.4.1	Control Building Wing Area Levels A and B Normal HVAC System
1X4DB211	9.4.1	Control Building Level B Normal HVAC System
1X4DB212	6.2.2	Containment Cooling System P&ID
1X4DB212	9.4.6	Containment Normal, Auxiliary, and Lower Level Heat Removal Systems
1X4DB213-1	9.4.6	Containment Purge and Preaccess Filter Systems (Unit 1)
1X4DB213-2	9.4.6	Containment Purge and Preaccess Filter Systems
1X4DB214-1	9.4.6	Reactor Cavity, Reactor Support, and CRDM Cooling Systems
1X4DB217	9.4.7	Diesel Generator Building Ventilation System
1X4DB221	9.2.9	Essential Chilled Water System
1X4DB227	9.4.8	Auxiliary Feedwater Pumphouse HVAC System
1X4DB228	9.4.3	ESF Room Coolers System
1X4DB229-1	9.4.4	P&ID Turbine Building HVAC
1X4DB229-2	9.4.4	P&ID Turbine Building HVAC
1X4DB229-3	9.4.4	Turbine Building HVAC P&ID
1X4DB233	9.2.9	Essential Chilled Water System

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Drawing Number	Section	Title
1X4DB234	9.2.9	Essential Chilled Water System
1X4DB238	9.4.9	P&ID Electrical Tunnel Ventilation System
1X4DB245	9.4.9	P&ID - Piping Penetration Ventilation System (Unit 1)
1X4DB250-1	9.4.9	Miscellaneous HVAC Systems Flow Diagrams (Unit 1)
1X4DB251-1	9.4.6	Containment Building HVAC Flow Diagrams
1X4DB252	9.4.6	Containment Building HVAC Flow Diagrams
1X4DB253-1	9.4.6	Containment Building HVAC Flow Diagrams
1X4DB257-1	9.4.1	Control Building Levels A and B Normal HVAC Flow Diagrams
1X4DB258-1	9.4.5	Control Building ESF Safety Feature Electrical Equipment Room
1X4DB259-1	9.4.5	Control Building Electrical and Pipe Penetration Room Filter and Exhaust System (Unit 1)
1X4DB261-1	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-2	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-3	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-4	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-5	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-6	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-7	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-8	9.4.3	Auxiliary Building Flow Diagrams
1X4DB261-9	9.4.3	Auxiliary Building Flow Diagrams
1X4DB267	9.4.7	Diesel Generator Building HVAC Flow Diagram
1X4DB268	9.4.8	Auxiliary Feedwater Pumphouse HVAC Flow Diagram
1X4DB301	9.4.4	Airflow Diagram Turbine Building HVAC Systems
1X4DB301-1	9.4.4	Airflow Diagram Turbine Building 1 HVAC Systems

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Drawing Number	Section	Title
1X4DB301-2	9.4.4	Airflow Diagram Turbine Building HVAC Systems
1X4DC101	10.1	Turbine Cycle Heat Balance VWO 105 Percent of Manufacturer's Guaranteed Rating
1X4DC103	10.1	As Built Heat Balance Diagram (100 Percent Reactor Power)
1X4DE301	1.2.2	Turbine Building Equipment Layout
1X4DE302	1.2.2	Turbine Building Equipment Layout
1X4DE303	1.2.2	Turbine Building Equipment Layout
1X4DE304	1.2.2	Turbine Building Equipment Layout
1X4DE312	1.2.2	Equipment Location Layout Containment, Control, and Fuel Handling Buildings Plan Level 4 el. 280 ft 0 in. (Unit 1)
1X4DE313	1.2.2	Equipment Location Layout Containment, Control, and Fuel Handling Buildings Plan Level 3 el. 260 ft 0 in. (Unit 1)
1X4DE314	1.2.2	Equipment Location Layout Containment, Control, and Fuel Handling Buildings Plan Level 2 el. 240 ft 0 in. (Unit 1)
1X4DE315	1.2.2	Auxiliary Building Equipment Location Layout Level 2 el. 240 ft 0 in. and Above (Unit 1)
1X4DE316	1.2.2	AFW Pumphouse and Condensate Storage Tank Equipment Location Layout
1X4DE317	1.2.2	Fuel Handling Building, Control Building, and Equipment Locations
1X4DE318	1.2.2	Equipment Location Layout Auxiliary Building Plan Level 1 el. 220 ft 0 in. to el. 240 ft 0 in. (Unit 1)
1X4DE320	1.2.2	Equipment Location Layout Containment, Control, and Fuel Handling Buildings Plan Level A el. 200 ft 0 in. (Unit 1)
1X4DE321	1.2.2	Equipment Location Layout Auxiliary Building Plan Level A el. 195 ft 0 in. to el. 220 ft 0 in. (Unit 1)
1X4DE322	1.2.2	Equipment Location Layout Containment, Control,

Drawing Number	Section	Title
		and Fuel Handling Buildings Plan Level B el. 180 ft 0 in. (Unit 1)
1X4DE323	1.2.2	Equipment Location Layout Auxiliary Building Plan Level B el. 170 ft 6 in. to el. 195 ft 0 in. (Unit 1)
1X4DE324	1.2.2	Equipment Location Layout Auxiliary Building Plan Level C el. 143 ft 6 in. to el. 170 ft 6 in. (Unit 1)
1X4DE325	1.2.2	Equipment Location Layout Auxiliary Building Plan Level D el. 119 ft 3 in. to el. 143 ft 6 in. (Unit 1)
1X4DE327	1.2.2	Equipment Location Layout Diesel Generator Building (Unit 1)
1X4DE330	1.2.2	Equipment Location Layout Diesel Generator Building (Unit 1)
1X4DE502	9.1.5	Heavy Load Handling - Auxiliary Building Level B, el. 170 ft 6 in. to 195 ft 0 in. (Unit 1)
1X4DE503	9.1.5	Heavy Load Handling - Auxiliary Building Level A, el. 195 ft 0 in. to 220 ft 0 in. (Unit 1)
1X4DE504	9.1.5	Heavy Load Handling - Auxiliary Building Level 1, el. 220 ft 0 in. to 240 ft 0 in. (Unit 1)
1X4DE505	9.1.5	Heavy Load Handling - Auxiliary Building Level 2, el. 240 ft 0 in. and Above (Unit 1)
1X4DE506	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level A, el. 200 ft 0 in. (Unit 1)
1X4DE507	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level 1, el. 220 ft 0 in. (Unit 1)
1X4DE508	9.1.5	Heavy Load Handling - Containment Internal Section Looking North
1X4DE509	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level 2, el. 240 ft 0 in. (Unit 1)
1X4DE510	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level 3, el. 260 ft 0 in. (Unit 1)
1X4DE511	9.1.5	Heavy Load Handling - Diesel Generator Building (Unit 1)
1X4DE512	9.1.5	Heavy Load Handling - Auxiliary Feedwater Pump House and Condensate Storage Tank

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Drawing Number	Section	Title
1X4DE513	9.1.5	Heavy Load Handling - Control Building Piping Area 2B Level 4, el. 280 ft 0 in. and Above
1X4DE514	9.1.5	Heavy Load Handling - Control Building Piping Area 2B Level 3, el. 260 ft 0 in. to el. 280 ft 0 in.
1X4DE515	9.1.5	Heavy Load Handling - North Main Steam Valve Room Piping Area 2E Level 1, el. 220 ft 0 in. and Above
1X4DE516	9.1.5	Heavy Load Handling - Control Building Piping Area 2F Level 1, el. 220 ft 0 in. and Above
1X4DE517	9.1.5	Heavy Load Handling - North Feedwater Valve Room Piping Area 2E Level A, el. 200 ft 0 in. to el. 220 ft 0 in.
1X4DE518	9.1.5	Heavy Load Handling - Train A Nuclear Service Cooling Water Tower Level 1, el. 220 ft 0 in. (Unit 1)
1X4DE519	9.1.5	Heavy Load Handling - Train B Nuclear Service Cooling Water Tower Level 1, el. 220 ft 0 in. (Unit 1)
1X4DE520	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level B, el. 180 ft 0 in. (Unit 1)
1X4DE521	9.1.5	Heavy Load Handling - Auxiliary Building Level D, el. 119 ft 3 in. to 143 ft 3 in. (Unit 1)
1X4DE522	9.1.5	Heavy Load Handling - Auxiliary Building Level C, el. 143 ft 6 in. to 170 ft 6 in. (Unit 1)
1X4DE600	9.1.5	Safe Load Path for Reactor Upper Internal Containment Building 2101-R4-001 (Unit 1)
1X4DE601	9.1.5	Safe Load Path for Reactor Head Containment Building 2101-R4-001 (Unit 1)
1X4DE602	9.1.5	Safe Load Path for Reactor Coolant Pump and Motor Containment Building 2101-R4-001 (Unit 1)
1X4DE603	9.1.5	Safe Load Path for Movement of New Fuel Containers Utilizing Spent Fuel Cask Bridge Crane A-2109-R4-001
1X4DE604	9.1.5	Safe Load Path for Reactor Internals Lifting Rig Containment Building 2101-R4-001 (Unit 1)

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Drawing Number	Section	Title
1X4DE605	9.1.5	Safe Load Path for Backflushable Filter Monorail Auxiliary Building Level B Monorail 2108-R4-012 (Unit 1)
1X4DE606	9.1.5	Safe Load Path for Cartridge Filter Monorail Auxiliary Building Level D Monorail 2108-R4-064 (Unit 1)
1X4DE607	9.1.5	Safe Load Path for Auxiliary Feedwater Pumphouse Sump Pump Hatches (Unit 1)
1X4DE608	9.1.5	Safe Load Path for Containment Building, Carbon Bed Containers
1X4DJ4103	6.2.2	Containment Cooling System Equipment Location
1X4DJ4113	6.2.2	Containment Cooling System Equipment Location
1X4DJ4123	6.2.2	Containment Cooling System Equipment Location
1X4DJ4133	6.2.2	Containment Cooling System Equipment Location
1X4DL4A01	6.5.2	Spray Nozzle Locations and Orientations
1X4DL4A14	3.8.2	Containment Building - Containment Wall Piping Penetration Design List (Unit 1)
1X4DL4A17	5.1.2	Reactor Coolant Loops Plan and Section (Unit 1)
1X4DL4D01	6.5.2	Spray Nozzle Locations and Orientations
1X4DL4D09	6.5.2	Spray Nozzle Locations and Orientations
1X5AB01-66	18.1	Control Room Panels, QPCP, Section 1 (Unit 1)
1X5AB01-67	18.1	Control Room Panels, QPCP, Section 2 (Unit 1)
1X5AB01-557	18.1	Control Room Panels, QHVC, Section 1 (Unit 1)
1X5AB01-560	18.1	Control Room Panels, QHVC, Sections 2 and 3 (Unit 1)
1X5AB01-563	18.1	Control Room Panels, QPCP, Section 3 (Unit 1)
1X5DN002-1	1.7.1	Legend for Control Logic Drawings
1X5DN002-2	1.7.1	Legend for Control Logic Drawings
1X5DN002-3	1.7.1	Legend for Control Logic Drawings
1X5DN013-1	7.3.11	Containment Coolers

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Drawing Number	Section	Title
1X5DN013-2	7.3.11	Containment Coolers
1X5DN013-4	7.3.3	Containment Combustible Gas Control System
1X5DN013-4	7.3.11	Containment Coolers
1X5DN015-1	7.3.3	Containment Combustible Gas Control System
1X5DN017-2	7.3.3	Containment Combustible Gas Control System
1X5DN019-1	7.3.4	Containment Purge Isolation Logic Diagram
1X5DN019-2	7.3.4	Containment Purge Isolation Logic Diagram
1X5DN030-1	7.3.13	Auxiliary Building ESF HVAC System Actuation Logic Diagram
1X5DN030-3	7.3.13	Auxiliary Building ESF HVAC System Actuation Logic Diagram
1X5DN030-4	7.3.13	Auxiliary Building ESF HVAC System Actuation Logic Diagram
1X5DN030-5	7.3.13	Auxiliary Building ESF HVAC System Actuation Logic Diagram
1X5DN044-1	7.3.12	Control Building ESF HVAC System Actuation Logic Diagram
1X5DN045-1	7.3.12	Control Building ESF HVAC System Actuation Logic Diagram
1X5DN058-1	7.3.15	Diesel Generator Building ESF HVAC System Actuation Logic Diagram
1X5DN058-3	7.3.15	Diesel Generator Building ESF HVAC System Actuation Logic Diagram
1X5DN058-4	7.3.15	Diesel Generator Building ESF HVAC System Actuation Logic Diagram
1X5DN058-5	7.3.15	Diesel Generator Building ESF HVAC System Actuation Logic Diagram
1X5DN065-1	7.3.13	Auxiliary Building ESF HVAC System Actuation Logic Diagram
1X5DN068-1	7.3.14	Auxiliary Feedwater Pumphouse ESF HVAC System Actuation Logic Diagram

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Drawing Number	Section	Title
1X5DN068-3	7.3.14	Auxiliary Feedwater Pumphouse ESF HVAC System Actuation Logic Diagram
1X5DN069-1	7.3.16	Electrical Tunnel ESF HVAC System Actuation Logic Diagram
1X5DN086-1	7.3.9	NSCW System Logic Diagram
1X5DN087-1	7.3.9	NSCW System Logic Diagram
1X5DN087-2	7.3.9	NSCW System Logic Diagram
1X5DN087-3	7.3.9	NSCW System Logic Diagram
1X5DN087-4	7.3.9	NSCW System Logic Diagram
1X5DN087-5	7.3.9	Control Logic Diagram Nuclear Service Cooling Water Pumps
1X5DN089-1	7.3.9	NSCW System Logic Diagram
1X5DN089-2	7.3.9	NSCW System Logic Diagram
1X5DN089-3	7.3.9	NSCW System Logic Diagram
1X5DN090-1	7.3.9	NSCW System Logic Diagram
1X5DN090-2	7.3.9	NSCW System Logic Diagram
1X5DN090-3	7.3.9	NSCW System Logic Diagram
1X5DN090-6	7.3.9	Control Logic Diagram Nuclear Service Cooling Water System Auxiliaries and Alarms
1X5DN091-1	7.3.10	Component Cooling Water System Logic Diagram
1X5DN091-2	7.3.10	Component Cooling Water System Logic Diagram
1X5DN091-3	7.3.10	Component Cooling Water System Logic Diagram
1X5DN092-1	7.3.10	Component Cooling Water System Logic Diagram
1X5DN092-2	7.3.10	Component Cooling Water System Logic Diagram
1X5DN094-3	7.6.6	RCP Thermal Barrier Cooling Water Isolation Logic Diagram
1X5DN107-1	7.3.17	Diesel Generator Fuel Oil System Actuation Logic Diagram

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Drawing Number	Section	Title
1X5DN114-4	7.6.6	Refueling Water Storage Tank Isolation Logic Diagram
1X5DN117-1	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN117-2	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN117-3	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN120-1	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN120-2	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN120-3	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN120-5	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN120-6	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN121-1	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN121-2	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN122-1	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN122-2	7.3.7	Auxiliary Feedwater Actuation Logic Diagram
1X5DN149-1	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN149-2	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN149-3	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN149-4	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN150-1	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN150-2	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN150-3	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN150-4	7.3.8	Main Steam and Feedwater Isolation Logic Diagram
1X5DN151-1	7.6.6	CVCS Letdown Line Isolation Logic Diagram
1X5DN151-2	7.6.6	CVCS Letdown Line Isolation Logic Diagram
1X5DN152-1	7.6.6	Steam Generator Blowdown Line Isolation Logic Diagram

TABLE 1.7.1-1 (Sheet 20 of 43)

Drawing Number	Section	Title
1X5DN152-2	7.6.6	Steam Generator Blowdown Line Isolation Logic Diagram
1X5DN203-1	10.2.2	Control Logic Diagram Main Turbine Tripping System
1X5DV002	1.7.1	Legend for Control Loop Drawings
1X6AA02-225	7.2.1	Index and Symbols
1X6AA02-226	7.2.1	Reactor Trip Signals
1X6AA02-227	7.2.1	Nuclear Instrument and Manual Trip Signals
1X6AA02-228	7.2.1	Nuclear Instrument Permissives and Blocks
1X6AA02-229	7.2.1	Primary Coolant System Trip Signals
1X6AA02-230	7.2.1	Pressurizer Trip Signals
1X6AA02-231	7.2.1	Steam Generator Trip Signals
1X6AA02-232	7.2.1	Safeguard Actuation System
1X6AA02-233	7.2.1	Rod Controls and Rod Stops
1X6AA02-234	7.2.1	Steam Dump Control
1X6AA02-235	7.2.1	Pressurizer Pressure Control
1X6AA02-236	7.2.1	Pressurizer Heater Control
1X6AA02-237	7.2.1	Feedwater Control and Isolation
1X6AA02-238	7.2.1	Feedwater Control and Isolation
1X6AA02-239	7.2.1	Auxiliary Feedwater Pumps Startup
1X6AA02-240	7.2.1	Turbine Trips, Runback, and Other Signals
1X6AA02-494	7.2.1	Pressurizer Pressure Relief System (Train A)
1X6AA02-495	7.2.1	Pressurizer Pressure Relief System (Train B)
1X6AA02-496	7.2.1	Pressurizer Level Control
1X6AA02-519	7.2.1	Safeguard Actuation System
1X6AH02-30000	6.3.2	Charging Pump Orifice Assembly (Unit 1)
1X6AN10B-66	1.2.10	Spent Fuel Pool-Spent Fuel Rack Layout (Unit 1)

TABLE 1.7.1-1 (Sheet 21 of 43)

Drawing Number	Section	Title
1X6AVO2-46	18.1	Control Room Panels, QMCB, Section A1 (Unit 1)
1X6AVO2-47	18.1	Control Room Panels, QMCB, Section A2 (Unit 1)
1X6AVO2-48	18.1	Control Room Panels, QMCB, Section C (Unit 1)
1X6AVO2-49	18.1	Control Room Panels, QMCB, Section B1 (Unit 1)
1X6AVO2-50	18.1	Control Room Panels, QMCB, Section B2 (Unit 1)
1X6AVO2-60	18.1	Control Room Panels QMCB, Section D (Unit 1)
1X6DD001	12.3.1	Radiation Zones - Accessibility During Operations - Containment Building - Floor Plan el. 171 ft 9 in.
1X6DD002	12.3.1	Radiation Zones - Accessibility During Operations - Containment Building - Floor Plan el. 195 ft 0 in.
1X6DD003	12.3.1	Radiation Zones - Accessibility During Operations - Containment Building and Equipment Building - Floor Plan el. 220 ft 0 in.
1X6DD004	12.3.1	Radiation Zones - Accessibility During Operations - Diesel Generator Building - Floor Plan
1X6DD100	12.3.1	Radiation Zone Map Post TMI 24 Hours - Diesel Generator Building Floor Plans
1X6DD101	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Feedwater Pump House - Floor Plan
1X6DD200	12.3.1	Personnel Flow - Containment Building - Floor Plan el. 171 ft 9 in. (Unit 1)
1X6DD201	12.3.1	Personnel Flow - Containment Building - Floor Plan el. 195 ft 0 in. (Unit 1)
1X6DD202	12.3.1	Personnel Flow - Containment Building and Equipment Building-Floor Plan el. 220 ft 0 in. (Unit 1)
1X6DD203	12.3.1	Personnel Flow - Diesel Generator Building - Floor Plan
1X6DD300	3F	Auxiliary Feedwater Pump House Area Nodal Boundary
1X6DD301	3F	Nodal Boundary MSIV/MFIV Area – Control Building
1X6DD302	3F	Nodal Boundary MSIV/MFIV Area – Control Building

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Drawing Number	Section	Title
2X2D01J019	3.8.2	Containment - Wall Liner Plate Penetrations Details Sh. 1
2X3D-AA-A01A	8.3.1	Main One Line (Unit 2)
2X3D-AA-G01A	8.3.1	Class 1E dc and 120-Volt ac Power Supply
2X3D-AA-K02A	8.3.1	Safety Load Sequencer Table (Train A, Unit 2)
2X3D-AA-K02B	8.3.1	Safety Load Sequencing Table (Train A, Unit 2)
2X3DG030	9.5.3	Lighting Systems Schematic
2X4DB111	5.1.2	Reactor Coolant System P&ID (Unit 2)
2X4DB112	5.1.2	Reactor Coolant System P&ID (Unit 2)
2X4DB116-1	6.3.2	Chemical and Volume Control System
2X4DB116-2	9.3.4	Chemical and Volume Control System
2X4DB119	6.3.2	Safety Injection System (Unit 2)
2X4DB120	6.3.2	Safety Injection System P&ID
2X4DB121	6.3.2	Safety Injection System P&ID
2X4DB122	5.4.7	Residual Heat Removal System P&ID (Unit 2)
2X4DB140	9.3.2	Nuclear Sampling System - Liquid (Unit 2)
2X4DB149-1*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 2)
2X4DB149-2*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 2)
2X4DB149-3*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 2)
2X4DB149-4*	9.2.1	Flow Diagram for NSCW, CCW, and ACCW Systems (Unit 2)
2X4DB159-1	10.3.2	Main Steam Supply System (Unit 2)
2X4DB170-1	9.5.4	Diesel Generator System
2X4DB170-2	9.5.4	Diesel Generator System
2X4DB174-2	9.5.1	Fire Protection Water Systems (Unit 2)

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Drawing Number	Section	Title
2X4DB174-4	9.5.1	Fire Protection Water Systems (Unit 2)
2X4DB203	9.4.9	P&ID - Equipment Building HVAC System (Unit 2)
2X4DB205-1	9.4.3	Piping Penetration Area Filtration and Exhaust System (Unit 2)
2X4DB208-1	9.4.3	Auxiliary Building Normal Ventilation System (Unit 2)
2X4DB228	9.4.2	P&ID - ESF Room Coolers System
2X4DB245	9.4.9	P&ID - Piping Penetration Ventilation System (Unit 2)
2X4DB250-1	9.4.9	Miscellaneous HVAC Systems Flow Diagrams (Unit 2)
2X4DB259-1	9.4.5	Control Building Electrical and Pipe Penetration Room Filter and Exhaust System (Unit 2)
2X4DB266-1	9.4.1	Control Building Level B HVAC Flow Diagrams
2X4DC103	1.2.3	As-Built Heat Balance Diagram (100 Percent Reactor Power)
2X4DE327	9.5.8	Equipment Location Layout, Diesel Generator Building (Unit 2)
2X4DE330	9.5.8	Equipment Location Layout, Diesel Generator Building (Unit 2)
2X4DE502	9.1.5	Heavy Load Handling - Auxiliary Building Level B, el. 170 ft 6 in. to 195 ft 0 in. (Unit 2)
2X4DE503	9.1.5	Heavy Load Handling - Auxiliary Building Level A, el. 195 ft 0 in. (Unit 2)
2X4DE504	9.1.5	Heavy Load Handling - Auxiliary Building Level 1, el. 220 ft 0 in. to 240 ft 0 in. (Unit 2)
2X4DE505	9.1.5	Heavy Load Handling - Auxiliary Building Level 2, el. 240 ft 0 in. and Above (Unit 2)
2X4DE506	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level A, el. 200 ft 0 in. (Unit 2)
2X4DE507	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level 1, el. 220 ft 0 in. (Unit 2)
2X4DE508	9.1.5	Heavy Load Handling - Containment Internal Section Looking North

TABLE 1.7.1-1 (Sheet 24 of 43)

Drawing Number	Section	Title
2X4DE509	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level 2, el. 240 ft 0 in. (Unit 2)
2X4DE510	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level 3, el. 260 ft 0 in. (Unit 2)
2X4DE511	9.1.5	Heavy Load Handling - Diesel Generator Building (Unit 2)
2X4DE512	9.1.5	Heavy Load Handling - Auxiliary Feedwater Pump House and Condensate Storage Tank
2X4DE514	9.1.5	Heavy Load Handling - Control Building Piping Area 2B Level 3, el. 260 ft 0 in. to 280 ft 0 in.
2X4DE515	9.1.5	Heavy Load Handling - North Main Steam Valve Room Piping Area 2E Level 1, el. 220 ft 0 in. and Above
2X4DE516	9.1.5	Heavy Load Handling - Control Building Piping Area 2F Level 1, el. 220 ft 0 in. and Above
2X4DE517	9.1.5	Heavy Load Handling - North Feedwater Valve Room Piping Area 2E Level A, el. 200 ft 0 in. to el. 220 ft 0 in.
2X4DE518	9.1.5	Heavy Load Handling - Train A Nuclear Service Cooling Water Tower Level 1, el. 220 ft 0 in. (Unit 2)
2X4DE519	9.1.5	Heavy Load Handling - Train B Nuclear Service Cooling Water Tower Level 1, el. 220 ft 0 in. (Unit 2)
2X4DE520	9.1.5	Heavy Load Handling - Containment, Control, and Fuel Handling Building Level B, el. 180 ft 0 in. (Unit 2)
2X4DE521	9.1.5	Heavy Load Handling - Auxiliary Building Level D, el. 119 ft 3 in. to 143 ft 3 in. (Unit 2)
2X4DE522	9.1.5	Heavy Load Handling - Auxiliary Building Level C, el. 143 ft 6 in. to 170 ft 6 in. (Unit 2)
2X4DE600	9.1.5	Safe Load Path for Buttress No. 3 Cranes Control Building, Level 3 el. 260 ft 0 in. 2-2101-R4-016 and 2-2101-R4-015 (Unit 2)
2X4DE601	9.1.5	Safe Load Path for Cartridge Filter Monorail Auxiliary Building Level D Monorail 2108-R4-064 (Unit 2)

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Drawing Number	Section	Title
2X4DL4A14	3.8.2	Containment Building - Containment Wall Piping Penetration Design List (Unit 2)
2X4DL4A17	5.1.2	Reactor Coolant Loops Plan and Section (Unit 2)
2X6AH02-30000	6.3.2	Charging Pump Orifice Assembly (Unit 2)
2X6DD001	12.3.1	Radiation Zones – Accessibility During Operations – Containment Building – Floor Plan, el. 171 ft 9 in.
2X6DD002	12.3.1	Radiation Zones – Accessibility During Operations – Containment Building – Floor Plan, el. 195 ft 0 in.
2X6DD003	12.3.1	Radiation Zones – Accessibility During Operations – Containment Building and Equipment Building – Floor Plan, el. 220 ft. 0 in.
2X6DD200	12.3.1	Personnel Flow – Containment Building – Floor Plan, el. 171 ft 9 in. (Unit 2)
2X6DD201	12.3.1	Personnel Flow – Containment Building – Floor Plan, el. 195 ft 0 in. (Unit 2)
2X6DD202	12.3.1	Personnel Flow –Containment Building and Equipment Building – Floor Plan, el. 220 ft 0 in. (Unit 2)
AX1D08A02-2	3F	Auxiliary Building Level D (el. 119 ft 3 in.) Hazards Analysis Room Locations
AX1D08A02-3	3F	Auxiliary Building Level D (el. 119 ft 3 in.) Hazards Analysis Room Locations
AX1D08A03-3	3F	Auxiliary Building Level C (el. 143 ft 6 in.) Hazards Analysis Room Locations
AX1D08A03-4	3F	Auxiliary Building Level C (el. 143 ft 6 in.) Hazards Analysis Room Locations
AX1D08A04-4	3F	Auxiliary Building Level B (el. 170 ft 6 in.) Hazards Analysis Room Locations
AX1D08A31	3F	Auxiliary Building Level C (el. 143 ft 6 in.) Hazards Analysis Room Locations
AX1D11A04	6.4.2	Control Room Envelope
AX1D45A01	1.2.2	Location and Orientation of Buildings

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Drawing Number	Section	Title
AX2D09A017	12.3.2	Fuel Transfer Tube Shielding Details
AX2D11A048	3.8.4	Control Building Electrical Tunnel - Forming Plan at el. 200 ft 0 in. (Unit 1)
AX2D46T001	2.5.4	Excavation Plan Power Block
AX2D46T025	2.5.4	Noncategory Backfill Requirements Yard Area
AX2D55V001	2.5.4	Settlement Observation Markers Location and Details
AX2D94V031	3.8.5	Typical Waterstop Installation at Seismic Separation Joint
AX3D-AA-A01A	8.1	Main One Line
AX3D-AA-A03A	8.2.1	Master One Line
AX3D-AA-G02A	8.3.1	125-V dc High Voltage Substation
AX3D-AA-G02B	8.3.1	Common Non-Class 1E Essential ac Power System and dc Power System
AX3D-AA-G02C	8.3.2	Main One Line, CAS and SAS Distribution System
AX3D-AA-L50A	8.2.1	Switchyard Arrangement
AX3D-CA-L5OA	18.1	Control Room Panels QEAB, Section 1B (Unit 1)
AX3DG030	1.7.1	Legend for Communications and Lighting Drawings
AX3DL060	8.2.1	Ultimate Development - Substation
AX4DB105-4	9.3.3	Auxiliary Building and Miscellaneous Drains
AX4DB123-1	9.3.4	Boron Recycle System
AX4DB123-2	9.3.4	Boron Recycle System
AX4DB124-2	11.2.2	Radwaste Processing Facility Demineralizer System
AX4DB124-3	11.2.2	Radwaste Processing Facility Demineralizer System
AX4DB124-4	11.2.2	Radwaste Processing Facility Dewatering System
AX4DB124-5	11.2.2	Radwaste Processing Facility Filtration System
AX4DB152-2	2.4.13	Waste Water Effluent System

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Drawing Number	Section	Title
AX4DB152-3	2.4.13	Waste Water Effluent System
AX4DB158-1	9.3.7	Circulating Water Chemical Injection System
AX4DB158-3	9.3.7	Circulating Water Chemical Injection System
AX4DB175-5	9.3.1	Instrument and Service Air System
AX4DB176-1	9.3.5	Auxiliary Gas System P&ID
AX4DB176-2	9.3.5	Auxiliary Gas System P&ID
AX4DB177	9.2.3	Demineralized Water System
AX4DB178	9.2.3	Demineralized Water Makeup System
AX4DB186-3	9.3.1	Instrument and Service Air System
AX4DB190-1	9.2.3	Demineralized Water System
AX4DB190-2	9.2.3	Plant Demineralized Water System
AX4DB195-2	9.5.9	Auxiliary Steam System
AX4DB195-3	9.5.9	Auxiliary Steam System Distribution (Unit 1)
AX4DB195-4	9.5.9	Auxiliary Steam System Distribution (Unit 2)
AX4DB195-5	9.5.9	Auxiliary Steam System Fuel Oil
AX4DB198-1	9.2.4	Potable Water System
AX4DB198-2	9.2.4	Potable Water System
AX4DB198-3	9.3.7	River Water Intake Structures System-Chlorine
AX4DB204-1	9.4.2	Fuel Handling Building Ventilation System
AX4DB204-2	9.4.2	Fuel Handling Building Ventilation System
AX4DB206-1	9.4.1	Control Room HVAC System Level 1
AX4DB206-2	9.4.1	Control Room HVAC System Level 1
AX4DB206-3	9.4.1	Control Room HVAC System Level 1
AX4DB215	9.4.1	Control Building Level 1 HVAC System
AX4DB216	9.4.1	Control Building Cable Spreading Room HVAC System Levels 2 and 3

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Drawing Number	Section	Title
AX4DB218	9.2.9	Normal Chilled Water System
AX4DB223	9.4.1	Control Building Normal HVAC System Level 2
AX4DB225	9.4.1	Control Building Cable Spreading Room HVAC System Level A
AX4DB231	9.2.9	Normal Chilled Water System
AX4DB232	9.2.9	Normal Chilled Water System
AX4DB235	9.4.1	Onsite Technical Support Center HVAC System
AX4DB237	9.4.1	Control Building Smoke Exhaust System
AX4DB241	9.4.1	Control Building HVAC Equipment Room Levels 3 and 4
AX4DB242-1	9.4.1	Onsite Technical Support Center HVAC System
AX4DB255-1	6.4.3	Control Room HVAC System, Level 1
AX4DB255-3	6.4.3	Control Room HVAC System, Level 1
AX4DB256-1	9.4.1	Control Building Control Room HVAC Flow Diagrams
AX4DB260-1	9.4.2	Fuel Handling Building HVAC Flow Diagram
AX4DB266-2	9.4.1	Control Building Level B HVAC Flow Diagrams
AX4DB269	9.4.1	Control Building Level A HVAC Flow Diagram
AX4DB270	9.4.1	Control Building Cable Spreading Room Levels 2 and 3 HVAC Flow Diagram
AX4DB353(sh. 2)	9.4.3	Radwaste Building Ventilation System
AX4DB376	9.4.1	Onsite Technical Support Center HVAC Flow Diagram
AX4DB378(sh. 2)	9.4.3	Radwaste Building Flow Diagrams
AX4DB400	9.4.3	Radwaste Processing Facillity HVAC System P&ID
AX4DD300	1.2.2	Plot Plan
AX4DD301	1.2.2	General Arrangement Level 3 Plan - el. 260 ft 0 in.
AX4DD302	1.2.2	General Arrangement Level 2 Plan - el. 240 ft 0 in.
AX4DD303	1.2.2	General Arrangement Level 1 Plan - el. 220 ft 0 in.

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Drawing Number	Section	Title
AX4DD304	1.2.2	General Arrangement Level A Plan - el. 200 ft 0 in.
AX4DD305	1.2.2	General Arrangement Level B Plan - el. 180 ft 0 in.
AX4DD306-1	1.2.2	General Arrangement Level C Plan - el. 160 ft 0 in.
AX4DD306-2	1.2.2	General Arrangement Levels C and D Plan 143 ft 6 in. and 119 ft 3 in.
AX4DD307	1.2.2	General Arrangement Section A Looking North
AX4DD308	1.2.2	General Arrangement Section B Looking West
AX4DD309	1.2.2	General Arrangement Section C Looking West
AX4DD310	1.2.2	General Arrangement Section D Looking North
AX4DD311	1.2.2	General Arrangement Level 4 Plan - el 280 ft 0 in.
AX4DE350	1.2.2	Transfer Building Equipment Location Plan
AX4DE357	1.2.2	Radwaste Processing Facility Equipment Location Plan
AX4DE500	9.1.5	Heavy Load Handling - Alternate Radwaste Transfer Plan Level 1, el. 220 ft 0 in.
AX4DE501	9.1.5	Spent Fuel Cask Bridge Crane, Clearance and Hook Travel Envelope Plan View
AX4DE502	9.1.5	Spent Fuel Cask Bridge Crane, Clearance and Hook Travel Envelope Cross Sections
AX4DJ3101	12.3.3	Typical Layout for Air Cleaning Unit
AX4DJ8004	9A	Fire Areas Radwaste Transfer Building and Alternate Radwaste Building Level 1 Floor Plan el. 220 ft 0 in.
AX4DJ8005	9A	Fire Areas Radwaste Transfer Building Partial Level 1 Floor Plan el. 237 ft 0 in.
AX4DJ8006	9A	Fire Areas Radwaste Transfer Building Level 2 Floor Plan el. 247 ft 0 in.
AX4DJ8007	9A	Fire Areas Auxiliary Building Floor Plan el. 119 ft 3 in., Level D
AX4DJ8008	9A	Fire Areas Auxiliary Building Floor Plan el. 119 ft 3 in., Level D

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Drawing Number	Section	Title
AX4DJ8009	9A	Fire Areas Auxiliary Building Partial Plans Utility Chase, Levels C and D
AX4DJ8010	9A	Fire Areas Auxiliary Building Floor Plan el. 143 ft 6 in., Level C
AX4DJ8011	9A	Fire Areas Auxiliary Building Floor Plan el. 143 ft 6 in., Level C
AX4DJ8012	9A	Fire Areas Auxiliary Building Floor Plan el. 170 ft 6 in., Level B
AX4DJ8013	9A	Fire Areas Auxiliary Building Floor Plan el. 170 ft 6 in., Level B
AX4DJ8014	9A	Fire Areas Auxiliary Building Partial Plans Utility Chase Levels A and B
AX4DJ8015	9A	Fire Areas Auxiliary Building Floor Plan el. 195 ft 0 in., Level A
AX4DJ8016	9A	Fire Areas Auxiliary Building Floor Plan el. 195 ft 0 in., Level A
AX4DJ8017	9A	Fire Areas Auxiliary Building Floor Plan el. 220 ft 0 in., Level 1
AX4DJ8018	9A	Fire Areas Auxiliary Building Floor Plan el. 220 ft 0 in., Level 1
AX4DJ8019	9A	Fire Areas Auxiliary Building Floor Plan el. 240 ft 0 in., Level 2
AX4DJ8020	9A	Fire Areas Auxiliary Building Floor Plan el. 240 ft 0 in., Level 2
AX4DJ8021	9A	Fire Areas Control Building Electrical Tunnels el. 160 ft 0 in., Level C
AX4DJ8022	9A	Fire Areas Control Building Floor Plan el. 180 ft 0 in., Level B
AX4DJ8023	9A	Fire Areas Control Building Floor Plan el. 180 ft 0 in., Level B
AX4DJ8024	9A	Fire Areas Control Building Floor Plan el. 200 ft 0 in., Level A
AX4DJ8025	9A	Fire Areas Control Building Floor Plan el. 200 ft 0 in., Level A

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Drawing Number	Section	Title
AX4DJ8026	9A	Fire Areas Control Building Floor Plan el. 220 ft 0 in., Level 1
AX4DJ8027	9A	Fire Areas Control Building Floor Plan el. 240 ft 0 in., Level 2
AX4DJ8028	9A	Fire Areas Control Building Floor Plan el. 260 ft 0 in., Level 3
AX4DJ8029	9A	Fire Areas Control Building Floor Plan el. 280 ft 0 in. Level 4
AX4DJ8030	9A	Fire Areas Fuel Handling Building Floor Plan el. 160 ft 0 in. and el. 179 ft 1/2 in., Levels C and D
AX4DJ8031	9A	Fire Areas Fuel Handling Building Floor Plan el. 200 ft. 0 in., Level A
AX4DJ8032	9A	Fire Areas Fuel Handling Building Floor Plan el. 220 ft. 0 in. and el. 263 ft 8 in., Levels 1 and 3
AX4DJ8033	9A	Fire Areas Containment Building Floor Plan el. 171 ft 9 in., Level B, Platform el. 184 ft and 185 ft
AX4DJ8034	9A	Fire Areas Containment Building Platform el. 195 ft 2 in. and el. 197 ft 6 in., Level A
AX4DJ8035	9A	Fire Areas Containment Building and Equipment Building Floor Plan el. 220 ft 0 in., Level 1
AX4DJ8036	9A	Fire Areas Containment Building Platform el. 238 ft and 261 ft Equipment Building Roof el. 236 ft, Levels 2 and 3
AX4DJ8037	9A	Fire Areas Diesel Fuel Oil Storage, Pump Room, Valve Room, and Diesel Generator Building Floor Plans
AX4DJ8038	9A	Fire Areas Auxiliary Feedwater Pump House Roof and Floor Plan and Details
AX4DJ8039	9A	Fire Areas NSCW Pump House Unit 1 Plans and Sections - Trains A and B
AX4DJ8040	9A	Fire Areas NSCW & Misc. Category 1 Structures Key Plan - Unit 1
AX4DJ8041	9A	Fire Areas NSCW and Miscellaneous Category 1 Structures Key Plan - Unit 2

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Drawing Number	Section	Title
AX4DJ8042	9A	Fire Areas Containment Building Floor Plan el. 171 ft and 9 in., Platform el. 184 ft and 185 ft, Level B
AX4DJ8043	9A	Fire Areas Containment Building Platform el. 195 ft 2 in. and 197 ft 6 in., Level A
AX4DJ8044	9A	Fire Areas Containment Building and Equipment Building Floor Plan el. 220 ft 0 in., Level 1
AX4DJ8045	9A	Fire Areas Containment Building Platform el. 238 ft and 261 ft, Equipment Building Roof el. 236 ft, Levels 2 and 3
AX4DJ8046	9A	Fire Areas Diesel Fuel Oil Storage Pump Room, Valve Room, and Diesel Generator Building Floor Plans
AX4DJ8047	9A	Fire Areas Auxiliary Feedwater Pump House Roof and Floor Plan and Details
AX4DJ8048	9A	Fire Areas NSCW Pump House Unit 2 Plans and Sections - Trains A and B
AX4DJ8051	9A	Fire Areas Outage Storage Building Floor Plan
AX5DN008-1	7.3.12	Control Building ESF HVAC System Actuation Logic Diagram
AX5DN020-1	7.3.5	FHB Ventilation Isolation Logic Diagram
AX5DN020-10	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX4DJ8050	9A	Radwaste Processing Facility Floor Plan el. 217 ft 6 in.
AX5DN020-2	7.3.5	FHB Ventilation Isolation Logic Diagram
AX5DN020-3	7.3.5	FHB Ventilation Isolation Logic Diagram
AX5DN020-4	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN020-5	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN020-6	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN020-8	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN020-10	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN032-1	7.3.6	Control Room Ventilation Isolation Logic Diagram

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Drawing Number	Section	Title
AX5DN027-1	7.3.5	FHB Ventilation Isolation Logic Diagram
AX5DN028-1	7.3.5	FHB Ventilation Isolation Logic Diagram
AX5DN029-1	7.3.5	FHB Ventilation Isolation Logic Diagram
AX5DN029-3	7.3.5	FHB Ventilation Isolation Logic Diagram
AX5DN031-1	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN031-2	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN031-4	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN032-1	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN032-3	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN034-2	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN037-1	7.3.6	Control Room Ventilation Isolation Logic Diagram
AX5DN056-2	7.3.12	Control Building ESF HVAC System Actuation Logic Diagram
AX5DN056-6	7.3.12	Control Building Cable Spreading Room HVAC Logic Diagram
AX6AN10A-6	1.2.10	Pool Layout-Spent Fuel Racks (Unit 2)
AX6DD001	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level D, el. 119 ft 3 in.
AX6DD002	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, el. 119 ft 3 in.
AX6DD003	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level C, el. 143 ft 6 in.
AX6DD004	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level C, el. 143 ft 6 in.
AX6DD005	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level B, el. 170 ft 6 in.
AX6DD006	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level B, el. 170 ft 6 in.
AX6DD007	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level A, el. 195 ft 0 in.

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Drawing Number	Section	Title
AX6DD008	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level A, el. 195 ft 0 in.
AX6DD009	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level 1, el. 220 ft 0 in.
AX6DD010	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level 1, el. 220 ft 0 in.
AX6DD011	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level 2, el. 240 ft 0 in.
AX6DD012	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building Floor Plan, Level 2, el. 240 ft 0 in.
AX6DD013	12.3.1	Radiation Zones - Accessibility During Operations - Partial Plans Utility Chase Levels C & B
AX6DD014	12.3.1	Radiation Zones – Accessibility During Operations – Auxiliary Building – Partial Plans Utility Chase Levels C & D
AX6DD015	12.3.1	Radiation Zones – Accessibility During Operations – Fuel Handling Building – Floor Plan, Levels C & B, el. 160 ft 0 in. and el. 179 ft ½ in.
AX6DD016	12.3.1	Radiation Zones – Accessibility During Operations – Fuel Handling Building – Floor Plan, Level A, el. 200 ft 0 in.
AX6DD017	12.3.1	Radiation Zones - Accessibility During Operations - Fuel Handling Building – Floor Plan Levels 1 & 3, el. 220 ft 0 in. and el. 263 ft 8 in.
AX6DD018	12.3.1	Radiation Zones - Accessibility During Operations - Control Building – Electrical Tunnels Floor Plan Level C, el. 160 ft 0 in.
AX6DD019	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level B, el. 180 ft 0 in.
AX6DD020	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level B, el. 180 ft 0 in.
AX6DD021	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level A, el. 200 ft 0 in.
AX6DD022	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level A, el. 200 ft 0 in.

TABLE 1.7.1-1 (Sheet 35 of 43)

Drawing Number	Section	Title
AX6DD023	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level 1, el. 220 ft 0 in.
AX6DD024	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level 2, el. 240 ft 0 in.
AX6DD025	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level 3, el. 260 ft 0 in.
AX6DD026	12.3.1	Radiation Zones - Accessibility During Operations - Control Building - Floor Plan Level 4, el. 280 ft 0 in.
AX6DD027	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Feedwater Pump House - Floor Plan (Turbine Building Floor Plan)
AX6DD028	12.3.1	Radiation Zones - Accessibility During Operations - Radwaste Transfer Building - Floor Plans Levels 1 & 2, el. 220 ft 0 in., 237 ft 0 in., and 247 ft 0 in.
AX6DD029	12.3.1	Radiation Zones - Accessibility During Operations - Auxiliary Building - Partial Plans Utility Chase Levels A & B
AX6DD030	12.3.1	Radiation Zones - Accessibility During Operations - Alternate Radwaste Building - Floor Plans Level 1, el. 220 ft 0 in.
AX6DD031	12.3.1	Radiation Zones – Accessibility During Operations – Radwaste Processing Facility – el. 217 ft 6 in.
AX6DD100	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level D, el. 119 ft 3 in.
AX6DD101	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level D, el. 119 ft 3 in.
AX6DD102	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level C, el. 143 ft 6 in.
AX6DD103	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level C, el. 143 ft 6 in.
AX6DD104	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level B, el. 170 ft 6 in.
AX6DD105	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level B, el. 170 ft 6 in.
AX6DD106	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level A, el. 195 ft 0 in.

TABLE 1.7.1-1 (Sheet 36 of 43)

Drawing Number	Section	Title
AX6DD107	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level A, el. 195 ft 0 in.
AX6DD108	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level 1, el. 220 ft 0 in.
AX6DD109	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level 1, el. 220 ft 0 in.
AX6DD110	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building - Partial Plans Utility Chase Levels C & B
AX6DD111	12.3.1	Radiation Zone Map Post TMI 24 Hours – Fuel Handling Building - Floor Plan, Levels C & B, el. 160 ft 0 in. and 179 ft 1/2 in.
AX6DD112	12.3.1	Radiation Zone Map Post TMI 24 Hours – Fuel Handling Building - Floor Plan, Level A, el. 200 ft 0 in.
AX6DD113	12.3.1	Radiation Zone Map Post TMI 24 Hours - Control Building - Floor Plan Level A, el. 200 ft 0 in.
AX6DD114	12.3.1	Radiation Zone Map Post TMI 24 Hours - Control Building - Floor Plan Level A, el. 200 ft 0 in.
AX6DD115	12.3.1	Radiation Zone Map Post TMI 24 Hours - Control Building - Floor Plan Level B, el. 180 ft 0 in.
AX6DD116	12.3.1	Radiation Zone Map Post TMI 24 Hours - Control Building - Floor Plan Level B, el. 180 ft 0 in.
AX6DD117	12.3.1	Radiation Zone Map Post TMI 24 Hours - Control Building - Floor Plan Level 1, el. 220 ft 0 in.
AX6DD118	12.3.1	Radiation Zone Map Post TMI 24 Hours - Technical Support Center - Floor Plan Level 1, el. 220 ft 0 in.
AX6DD119	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, Level 2, el. 240 ft 0 in.
AX6DD120	12.3.1	Radiation Zone Map Post TMI 24 Hours - Auxiliary Building Floor Plan, el. 240 ft 0 in. and 260 ft 0 in., Levels 2 and 3.
AX6DD200	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level D, el. 119 ft 3 in.
AX6DD201	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level D, el. 119 ft 3 in.

TABLE 1.7.1-1 (Sheet 37 of 43)

Drawing Number	Section	Title
AX6DD202	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level C, el. 143 ft 6 in.
AX6DD203	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level C, el. 143 ft 6 in.
AX6DD204	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level B, el. 170 ft 6 in.
AX6DD205	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level B, el. 170 ft 6 in.
AX6DD206	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level A, el. 195 ft 0 in.
AX6DD207	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level A, el. 195 ft 0 in.
AX6DD208	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level 1, el. 220 ft 0 in.
AX6DD209	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level 1, el. 220 ft 0 in.
AX6DD210	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level 2, el. 240 ft 0 in.
AX6DD211	12.3.1	Personnel Flow - Auxiliary Building Floor Plan, Level 2, el. 240 ft 0 in.
AX6DD212	12.3.1	Personnel Flow - Auxiliary Building - Partial Plans Utility Chase Levels C & B
AX6DD213	12.3.1	Personnel Flow - Fuel Handling Building - Floor Plan, Levels C & B, el. 160 ft 0 in. and el. 179 ft 1/2 in.
AX6DD214	12.3.1	Personnel Flow - Fuel Handling Building - Floor Plan, Level A, el. 200 ft 0 in.
AX6DD215	12.3.1	Personnel Flow - Fuel Handling Building - Floor Plan, Levels 1 & 3, el. 220 ft 0 in. and el. 263 ft 8 in.
AX6DD216	12.3.1	Personnel Flow - Control Building - Electrical Tunnels Floor Plan, Level C, el. 160 ft 0 in.
AX6DD217	12.3.1	Personnel Flow - Control Building - Floor Plan, Level B, el. 180 ft 0 in.
AX6DD218	12.3.1	Personnel Flow - Control Building - Floor Plan, Level B, el. 180 ft 0 in.

Drawing Number	Section	Title
AX6DD219	12.3.1	Personnel Flow - Control Building - Floor Plan, Level A, el. 200 ft 0 in.
AX6DD220	12.3.1	Personnel Flow - Control Building - Floor Plan, Level A, el. 200 ft 0 in.
AX6DD221	12.3.1	Personnel Flow - Control Building - Floor Plan, Level 1, el. 220 ft 0 in.
AX6DD222	12.3.1	Personnel Flow - Control Building - Floor Plan, Level 2, el. 240 ft 0 in.
AX6DD223	12.3.1	Personnel Flow - Control Building - Floor Plan, Level 3, el. 260 ft 0 in.
AX6DD224	12.3.1	Personnel Flow - Control Building - Floor Plan, Level 4, el. 280 ft 0 in.
AX6DD225	12.3.1	Personnel Flow - Auxiliary Feedwater Pump House - Floor Plan (Turbine Building Floor Plan)
AX6DD226	12.3.1	Personnel Flow – Radwaste Processing Facility – Floor Plan, el. 217 ft 6 in.
AX6DD300	3F	Nodal Boundary - MSIV/MFIV Area – Auxiliary Building
AX6DD301	3F	Nodal Boundary - MSIV/MFIV Area – Auxiliary Building
AX6DD302	3F	Nodal Boundary - MSIV/MFIV Area – Auxiliary Building
AX6DD303	3.5.1	Plan - Turbine Missile Target Identification
AX6DD304	3.5.1	Power Block - Turbine Missile Plan
AX6DD305	3.5.1	Turbine Missile Targets - Section "A"
AX6DD306	3.5.1	Turbine Missile Targets - Section "B"
AX6DD307	3.5.1	Turbine Missile Targets - Section "C"
AX6DD308	3.5.1	Turbine Missile Targets - Section "D"
AX6DD309	3.6.2	Location of Postulated Breaks in the Reactor Coolant Loop
AX6DD310	6.4.2	Control Room Intake Relationship to Radiological and Toxic Chemical Release Points

TABLE 1.7.1-1 (Sheet 39 of 43)

Drawing Number	Section	Title
AX6DD311	2.1.1	Site Effluent Release Points
AX6DD312	3.8.3	Reactor Coolant System Component Supports and Arrangement (Unit 1)
AX6DD313	3.8.1	Containment Tendon End Anchorage Assembly (Unit 1 Shown)
AX6DD314	3.8.3	Primary and Secondary Shield Wall Anchorage to Basemat
AX6DD315	2.4.3	PMP Isohyets Position 1, Hydromet 51 Savannah River Basin Above Site
AX6DD316	2.4.3	PMP Isohyets Position 2, Hydromet 51 Savannah River Basin Above Site
AX6DD317	2.4.3	PMP Isohyets Position 1, Hydromet 52 Savannah River Basin Above Site
AX6DD318	2.4.3	Probable Maximum Flood Hydrograph (Valley Storage Not Considered) at River Mile 151.1
AX6DD319	2.4.3	Probable Maximum Flood Hydrograph (Valley Storage Considered) at River Mile 151.1
AX6DD320	2.4.3	Location of Savannah River Valley Cross-sections Unsteady, Nonuniform Flow
AX6DD321	2.4.3	Wave Study Fetch Diagrams
AX6DD323	2.4.12	Observation Wells 1971 - 1985
AX6DD324	2.4.12	Construction Dewatering Plan
AX6DD325	2.4.12	Outlying Exploration Holes, Wells and Springs
AX6DD326	2.4.12	Hydrographs of Water Wells-Screven 3; CHA 84
AX6DD327	2.4.12	Piezometric Surface of Tertiary Aquifier October 1971
AX6DD328	2.4.12	Piezometric Surface of Tertiary Aquifier December 1984
AX6DD329	2.4.12	Contours of Water Table Aquifer November 1971
AX6DD330	2.4.12	Contours of Water Table Aquifer December 1984

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Drawing Number	Section	Title
AX6DD331	2.4.12	Stratigraphic Column Showing Lithology and Hydrogeologic Units
AX6DD332	2.4.12	Water Supply Wells
AX6DD333	2.4.12	Observation Wells November 1985
AX6DD334	2.4.12	Observation Wells November 1993
AX6DD335	2.4.12	Observation Wells November 1995
AX6DD336	2.4.12	Well Hydrographs Tertiary Aquifer
AX6DD337	2.4.12	Well Hydrographs Water Table Aquifer
AX6DD338	2.5.1	Regional Generalized Physiographical Map
AX6DD339	2.5.1	Stratigraphic Correlation Chart
AX6DD340	2.5.1	Lithologic Chart
AX6DD341	2.5.1	Regional Geological Map
AX6DD342	2.5.1	Generalized Geologic Section
AX6DD343	2.5.1	Site Map
AX6DD344	2.5.1	Location of Test Holes at River Facility
AX6DD345	2.5.1	Local Geologic Map
AX6DD351	2.5.1	Site Geologic Map
AX6DD352	2.5.1	Geologic Section A-A
AX6DD360	2.5.1	Geologic Map Power Block Area
AX6DD361	2.5.1	Geologic Map Power Block Area
AX6DD362	2.5.1	Geologic Map Power Block Area
AX6DD363	2.5.1	Geologic Map - Cavities in Utley Limestone Power Block Cut Slope
AX6DD364	2.5.1	Geologic Sections Auxiliary Bldg. Basement
AX6DD365	2.5.1	Geologic Sections Auxiliary Bldg. Basement
AX6DD366	2.5.1	Geologic Sections Auxiliary Bldg. Basement
AX6DD367	2.5.1	Geologic Sections Auxiliary Bldg. Basement

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Drawing Number	Section	Title
AX6DD368	2.5.1	Geologic Sections Auxiliary Bldg. Basement
AX6DD369	2.5.1	Geologic Sections Auxiliary Bldg. Basement
AX6DD370	2.5.1	Geologic Sections Auxiliary Bldg. Basement
AX6DD371	2.5.1	Isopachs of the Bearing Horizon (Blue Bluff Marl)
AX6DD372	2.5.1	Upper Surface of the Marl (Lisbon Formation) North and East Slopes
AX6DD373	2.5.1	Upper Surface of the Marl (Lisbon Formation) South and West Slopes
AX6DD374	2.5.1	Geologic Reference Stations - Auxiliary Bldg. Basement Excavation
AX6DD375	2.5.1	Geologic Reference Stations - Auxiliary Bldg. Basement Excavation
AX6DD376	2.5.1	Areal Extent and Isopachs of the Shell Zone (Utley Limestone)
AX6DD377	2.5.1	Top of the Bearing Horizon (Blue Bluff Marl)
AX6DD378	2.5.1	Bottom of the Bearing Horizon (Blue Bluff Marl)
AX6DD379	2.5.1	Geophysical Logs Hole No. 501
AX6DD380	2.5.1	Geophysical Logs Hole No. 502
AX6DD381	2.5.1	Geophysical Logs Hole No. 509
AX6DD382	2.5.1	Geophysical Logs Hole No. 513
AX6DD383	2.5.1	Geophysical Logs Hole No. 516
AX6DD384	2.5.1	Geophysical Logs Hole No. 523
AX6DD385	2.5.2	Significant Seismicity 1776 - 1982
AX6DD386	2.5.4	Power Block Cross Section
AX6DD387	2.5.4	Site Map and Location of Seismic Lines
AX6DD388	2.5.4	Seismic Profiles Lines A, B, and C
AX6DD389	2.5.4	Seismic Profiles Lines D and E
AX6DD390	2.5.4	Seismic Profiles Lines F, G, and H

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Drawing Number	Section	Title
AX6DD391	2.5.4	Seismic Profiles Lines J, K, L, M, N, and P
AX6DD392	2.5.4	Seismic Profiles Line Q
AX6DD393	2.5.4	Seismic Profiles Lines R and S
AX6DD394	2.5.4	Boring and Test Pit Locations in Borrow Areas and Stockpiles Plan
AX6DD395	2.5.4	Results of Cyclic Triaxial Tests (93- and 95-Percent Relative Compaction)
AX6DD396	2.5.4	Results of Cyclic Triaxial Tests (95- and 97-Percent Relative Compaction)
AX6DD397	2.5.4	Laboratory Results of Cyclic Triaxial Tests
AX6DD398	2.5.4	Cyclic Triaxial Tests Data Normalized to 50-Percent Relative Density
AX6DD399	2.5.4	Plot of Heave Versus Time
AX6DD400	2.5.4	Plot of Heave Versus Time
AX6DD401	3.9.N.2	Vibration Checkout Functional Inspection Points
AX6DD402	8.1	The Southern Company Grid System
AX6DD403	10.1	Steam and Power Conversion Systems
AX6DD404	12.3.2	Isometric View of Control Room Shielding
AX6DD406	2.4.3	Location of Savannah River Valley Cross-sections, Unsteady, Nonuniform Flow
AX6DD407	2.4.3	Savannah River Valley Cross-section, Steady-flow Condition
AX6DD408	2.4.12	Well 42 Series (Blue Bluff Marl) Hydrographs and Piezometer Profiles
AX6DD409	2.5.1	Regional Geologic Structures
CX2D45V002	1.1	Location and Vicinity Map
CX2D45V003	1.2.2	Site Plan
CX2D46V003	2.4.1	Site Grading and Drainage Plan
CX2D46V004	2.4.1	Site Grading and Drainage Plan (PMP Storm)

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Drawing Number	Section	Title
CX2D46V005	2.4.1	Site Grading and Drainage Plan (100-year, 6-h Storm)
CX2D46V006	2.4.1	Site Grading and Drainage Plan (PMP Storm)
CX4DB153	9.2.4	Plant Makeup Water Well and Potable Water System
CX4DB173-2	9.5.1	Fire Protection Water Systems
CX4DB173-3	9.5.1	Fire Protection Water Systems
CX4DB173-4	9.5.1	Fire Protection Water Systems
CX4DB173-5	9.5.1	Fire Protection Water Systems
CX4DB173-6	9.5.1	Fire Protection Water Systems

* This drawing provides useful information showing system interactions and configuration in subsection 9.2.1 but does not represent actual operation or accident mitigation parameters. For this reason, it is retained here but represents historical information.

1.8 DIFFERENCES FROM STANDARD REVIEW PLAN ACCEPTANCE CRITERIA

Georgia Power Company (GPC) has reviewed the VEGP design and concludes that it meets the applicable acceptance criteria presented in the Standard Review Plan (SRP) (NUREG-0800), except as noted in table 1.8-1. As the exclusive operating licensee, Southern Nuclear Operating Company, Inc. (SNC) adopts that conclusion. Each cited text reference includes sufficient information to sustain the SNC conclusion that the underlying regulatory requirements have been satisfied. Also, in lieu of including figures as required by Standard Review Plan (SRP)(NUREG 0800) throughout this FSAR, applicable drawings and engineering diagrams are included by reference to their drawing identification number in conjunction with specific system descriptions.

TABLE 1.8-1 (SHEET 1 OF 5)

LIST OF DIFFERENCES WITH THE STANDARD REVIEW PLAN

SRP [(a)] Section	Specific SRP Acceptance Criteria	Summary Description of Differences	Where Discussed in FSAR
2.5.4 (Rev 2)	II.5, Subsection 2.5.4.8, Stability of Subsurface Materials and Foundations	Liquefaction potential assessments of subsurface soils using both probabilistic and deterministic approaches are urged; the VEGP analysis is based upon a deterministic approach exclusively.	Paragraph 2.5.4.15
3.5.3 (Rev 2)	II, Missiles Generated by Natural Phenomena	The tornado missile spectrum used for VEGP differs from the SRP.	Paragraph 3.5.1.8
3.7.1 (Rev 1)	II.1.b, Seismic Design Parameters	For seismic analysis of structures, the design motion is applied at the foundation level of Seismic Category 1 structures; for VEGP seismic analysis of structures, the design motion is applied at the grade level for deeply embedded Seismic Category 1 structures.	Paragraph 3.7.B.1.5
3.7.2 (Rev 1)	II.4, Seismic System Analysis	For soil-structures interaction, the half-space and finite element methods of analysis are to be used, and the response is determined by: A. Envelop results of two methods. B. Results of one method with conservative design considerations of effects from use of the other method. C. Combination of A and B with provision of adequate conservatism. VEGP soil-structures interaction analysis uses finite element methods for deeply embedded structures and half-space methods for shallowly embedded structures.	Paragraph 3.7.B.2.16
	II.4.c.iii	A soil excitation system interaction is to be selected such that the free-field response spectra generated at the structural foundation level envelop the design response spectra of earthquake motion. Seismic analysis of VEGP deeply embedded structures does not fully conform with this.	
3.7.2 (Rev 1)	II.7, Seismic System Analysis	Closely spaced modes should be combined in accordance with procedures stated in Regulatory Guide 1.92. The VEGP uses the "pi epsilon" method for closely spaced mode combination.	Paragraph 3.7.N.2.16

TABLE 1.8-1 (SHEET 2 OF 5)

SRP [(a)] Section	Specific SRP Acceptance Criteria	Summary Description of Differences	Where Discussed in FSAR
3.8.1 (Rev 1)	II.2, Concrete Containment	The containment pressure boundary is designed in accordance with American Society of Mechanical Engineers (ASME) Section III, Division 2, Article CC-3000. The extent to which the VEGP design conforms with the regulatory guides is covered in section 1.9 of the FSAR.	Paragraph 3.8.1.8
3.8.2 (Rev 1)	III.5.3, Steel Containment	The defined loads and load combinations in the SRP are not fully consistent with the VEGP design loads and load combinations.	Paragraph 3.8.2.8
3.8.3 (Rev 1)	II.2, Concrete and Steel Internal Structures of Steel or Concrete Containments	The containment internal structure was designed in accordance with American Concrete Institute (ACI) 318-71 whereas the SRP specifies ACI-349 as acceptance criteria for reinforced concrete designs. The VEGP CP was issued using the codes, standards, and guides which require conformance with ACI-318-71. Load combinations in the SRP are not consistent with the VEGP design load combinations. The extent to which the VEGP design conforms with the regulatory guides is covered in section 1.9 of the FSAR.	Paragraph 3.8.3.8
3.8.4 (Rev 1)	II.2, Other Seismic Category 1 Structures	The applicable codes, standards, and guides for these structures include ACI-349. The VEGP CP was issued using the codes, standards, and guides which require conformance with ACI-318-71.	Paragraph 3.8.4.8
3.8.5 (Rev 1)	II.4.b, Foundations	The applicable codes, standards, and guides for these structures include ACI-349. The VEGP CP was issued using the codes, standards, and guides which require conformance with ACI-318-71. The containment base mat is designed per ASME Section III, Division 2, CC-3000.	Paragraph 3.8.5.8
3.9.3 (Rev 1)	II.3.a, ASME Class 1, 2, and 3 Components, Supports, and Core Support Structures	The VEGP FSAR does not fully specify deformation limits of supports where the component supports may affect the operability of the component.	Paragraphs 3.9.B.3.5, 3.9.N.3.5
	II.App.A-1.3.3, Service Limit C	The design basis pipe break is defined by VEGP as a faulted rather than emergency condition.	Paragraph 3.9.B.3.5

TABLE 1.8-1 (SHEET 3 OF 5)

SRP [a] Section	Specific SRP Acceptance Criteria	Summary Description of Differences	Where Discussed in FSAR
3.10 (Rev 2)	II.1.a.(2) Seismic and Dynamic Qualification of Mechanical and Electrical Equipment	The SRP requires that equipment be tested in the operational condition and that loadings simulating normal plant conditions should be superimposed on seismic and dynamic loads. This includes flow-induced loads and degraded flow conditions. VEGP tests for NSSS equipment are made in the operational conditions where practical, simulated as appropriate, or addressed by analysis. Flow loads are not superimposed on seismic loads for valve operability tests.	Paragraphs 3.10.B.4.2, 3.10.N.4.2
	II.1.a.(8)	Evaluation is performed to ensure that test configurations conservatively simulate actual field mountings.	
	II.1.a.(10)	The VEGP does not apply end loadings to active valves during static deflection tests. End loads are evaluated in the active valve analysis.	
	II.1.a.(14).(b).iii	The VEGP does not analyze valve discs for Δp or impact energy resultant from LOCA, except for certain cases where a significant impact from the LOCA is expected.	
	II.1.a.(14).(b).viii	The VEGP does not utilize Regulatory Guide 1.92 guidance for combination of multimodal or multidirectional responses.	
		The VEGP uses a vendor topical report as guidance for combining multinodal response. This report meets the intent of Regulatory Guide 1.92.	
	II.1.C	The VEGP has not performed aging and sequence testing on mechanical safety-related equipment.	
	II.3	The VEGP documentation file conforms to the SRP guidelines with the exception of certain NSSS documentation which remains in an auditable file at the vendor.	
3.11 (Rev 2)	II.1, Environmental Qualification of Mechanical and Electrical Equipment	The VEGP does not provide environmental qualification testing of mechanical equipment to the guidelines of NUREG-0588.	Paragraphs 3.11.N.1.4, 3.11.B.1.1

TABLE 1.8-1 (SHEET 4 OF 5)

SRP [a] Section	Specific SRP Acceptance Criteria	Summary Description of Differences	Where Discussed in FSAR
6.2.1.5 (Rev 2)	II.2, Minimum Containment Pressure Analysis for Emergency Core Cooling System Performance Capability Studies	The VEGP does not employ the heat transfer coefficients supplied in the SRP.	Paragraph 6.2.1.5.9
6.5.1 (Rev 1)	II.E, Engineered Safety Features (ESF) Atmosphere Cleanup Systems	The instrumentation provided for VEGP ESF atmosphere cleanup does not fully conform with the guidance of the SRP.	Paragraph 6.5.1.7
6.5.2 (Rev 1)	II.1.A, Containment Spray as a Fission Product Cleanup System	The VEGP is equipped with a semiautomatic switchover from injection to recirculation modes.	Paragraph 6.5.2.7
8.3.1 (Rev 2)	II.4.F.5, ac Power Systems (Onsite)	The diesel generator controls and monitoring instruments are not mounted on a vibration-free floor area, and vibration isolators have not been provided on the associated control cabinets.	Paragraph 8.3.1.5
9.1.4 (Rev 2)	II.5, Light Load Handling System	Kinetic energy of a dropped fuel handling tool lifted to the maximum height exceeds the kinetic energy of the tool and an assembly lifted to the normal height.	Paragraph 9.1.4.6
9.2.2 (Rev 1)	II.3.e, Reactor Auxiliary Cooling Water System	The VEGP will provide safety-grade instrumentation to detect loss of auxiliary component cooling water to the reactor coolant pump seals, but VEGP does not incorporate an automatic reactor coolant pump trip upon loss of auxiliary component cooling water.	Paragraph 9.2.8.6
9.2.5	II.1, Ultimate Heat Sink	Position C-1 of Regulatory Guide 1.27 requires that the heat sink be capable of providing cooling sufficient for 30 days.	Paragraph 9.2.5.6
9.4.5 (Rev 2)	II.4, ESF Ventilation System	The VEGP is not fully in conformance with Item 2 of Subsection A and Item 1 of Subsection C of NUREG/CR-0660.	Paragraph 9.4.7.6

TABLE 1.8-1 (SHEET 5 OF 5)

SRP [(a)] Section	Specific SRP Acceptance Criteria	Summary Description of Differences	Where Discussed in FSAR
9.5.1 (Rev 2)	II.2.9, Fire Protection Program	The VEGP is not fully in conformance with BTP CMEB 9.5-1.	Paragraph 9.5.1.6
11.5 (Rev 3)	II.1.A, Process and Effluent Radiological Monitoring Instrumentation and Sampling System	Gaseous and liquid process streams or effluent release points are not monitored and sampled in full accordance with tables 1 and 2 of section 11.5 of the SRP.	Paragraph 11.5.5.2
12.3.4 (Rev 2)	II.0.17, Radiation Protection Design Features	The VEGP did not utilize American National Standards Institute/American Nuclear Society HPSSC-6.8.1-1981.	Paragraph 12.3.4.2
	II.4.e	Criticality monitors as defined in the SRP are not included in the VEGP design.	Paragraph 12.3.4.2
	II.8.11	Dose assessments should be made in accordance with the procedures stated in Regulatory Guide 8.19.	Paragraph 12.4.1.3
13.6	11.7, Regulatory Guide 5.12	Security locks will comply with the requirements of 10 CFR 73.2(m) rather than the recommendations of Regulatory Guide 5.12.	Section 13.6 (Security Plan)

a Throughout this FSAR, in conjunction with specific system descriptions, applicable drawings and engineering diagrams are included by reference to their drawing identification number in lieu of inclusion as a figure as required by NUREG 0800.

1.9 CONFORMANCE TO NRC REGULATORY GUIDES

This section discusses the extent to which the VEGP conforms to the Nuclear Regulatory Commission (NRC) Regulatory Guides. Exceptions to the guides are identified, and justification is presented or referenced. In the discussion of the guides, the sections or tables of the Final Safety Analysis Report (FSAR), where more detailed information is presented, are referenced. Where VEGP conformance during design and construction phase differs from the operation phase, both are discussed.

1.9.1 REGULATORY GUIDE 1.1, NOVEMBER 1970, NET POSITIVE SUCTION HEAD FOR EMERGENCY CORE COOLING AND CONTAINMENT HEAT REMOVAL SYSTEM PUMPS

1.9.1.1 Regulatory Guide 1.1 Position

Emergency core cooling and containment heat removal systems should be designed so that adequate net positive suction head (NPSH) is provided to system pumps assuming maximum expected temperatures of pumped fluids and no increase in containment pressure from that is present prior to postulated loss-of-coolant accidents (LOCA).

1.9.1.2 VEGP Position

Conform, except that a saturated sump model is used to calculate available NPSH for containment sump liquid temperatures of equal to or greater than 211°F at a containment pressure of -0.3 psig or greater. Refer to paragraph 6.2.2.2.2.3.2 and section 6.3.

1.9.2 REGULATORY GUIDE 1.2, NOVEMBER 1970, THERMAL SHOCK TO REACTOR PRESSURE VESSELS

1.9.2.1 Regulatory Guide 1.2 Position

This guide describes a suitable program to assure that the reactor pressure vessel will behave in a nonbrittle manner under loss-of-coolant conditions. Regulatory Guide 1.2 was withdrawn June 17, 1991, and was superseded by 10 CFR 50.61. FSAR subsection 5.3.3 provides a description of compliance with the requirements of 10 CFR 50.61. The information contained in this section is retained for historical purposes.

1.9.2.2 VEGP Position

VEGP design conforms with this guide as discussed below:

Regulatory position C.1 is satisfied by the Westinghouse analytical and experimental programs as well as by the heavy section steel technology (HSST) program at Oak Ridge National Laboratory (ORNL).

Analytical techniques have been developed by Westinghouse to perform fracture evaluations of reactor vessels under thermal shock loadings.

Under the HSST program, a number of 6-in.-thick, 39-in. outside diameter steel pressure vessels containing carefully prepared and sharpened surface cracks are being tested. Test conditions include both hydraulic internal pressure loadings and thermal shock loadings. The objective of this program is to validate analytical fracture mechanics techniques and demonstrate quantitatively the margin of safety inherent in reactor pressure vessels.

A number of vessels have been tested under hydraulic pressure loadings, and results have confirmed the validity of fracture analysis techniques. The results and implications of the hydraulic pressure tests are summarized in ORNL report ORNL-TM-T5090.

Four thermal shock experiments have been completed and are now being evaluated. For representative conditions, flaws are shown to initiate and arrest in a predictable manner.

Westinghouse is continuing to obtain fracture toughness data for reactor pressure vessel steels through internally funded programs as well as HSST sponsored work.

Fracture toughness testing of irradiated compact tension fracture toughness specimens has been completed. The complete post-irradiation data on 0.394-, 2-, and 4-in.-thick specimens are now available from the HSST program. Both static and dynamic post-irradiation fracture toughness data have been obtained. Evaluation of the data obtained to date on material irradiated to fluences between 2.2 and 4.5 x 10^{19} n/cm^2 indicates that the reference toughness curve as contained in the American Society of Mechanical Engineers (ASME) Code, Section III remains a conservative lower bound for toughness values for pressure vessel steels.

Details of progress and results obtained in the HSST program are available in the HSST program progress reports issued by ORNL. Refer to section 5.3 for further discussion.

1.9.3 REGULATORY GUIDE 1.3, REVISION 2, JUNE 1974, ASSUMPTIONS USED FOR EVALUATING THE POTENTIAL RADIOLOGICAL CONSEQUENCES OF A LOSS-OF-COOLANT ACCIDENT FOR BOILING WATER REACTORS

Not applicable to VEGP.

1.9.4 REGULATORY GUIDE 1.4, REVISION 2, JUNE 1974, ASSUMPTIONS USED FOR EVALUATING THE POTENTIAL RADIOLOGICAL CONSEQUENCES OF A LOSS-OF-COOLANT ACCIDENT FOR PRESSURIZED WATER REACTORS

1.9.4.1 Regulatory Guide 1.4 Position

This guide gives acceptable assumptions that may be used in evaluating the radiological consequences of this accident for a pressurized water reactor (PWR).

1.9.4.2 VEGP Position

The extent of conformance with this guide is indicated in table 15.6.5-10.

1.9.5 REGULATORY GUIDE 1.5, MARCH 1971, ASSUMPTIONS USED FOR EVALUATING THE POTENTIAL RADIOLOGICAL CONSEQUENCES OF A STEAM LINE BREAK ACCIDENT FOR BOILING WATER REACTORS

Not applicable to VEGP.

1.9.6 REGULATORY GUIDE 1.6, MARCH 1971, INDEPENDENCE BETWEEN REDUNDANT STANDBY (ONSITE) POWER SOURCES AND BETWEEN THEIR DISTRIBUTION SYSTEMS

1.9.6.1 Regulatory Guide 1.6 Position

This guide describes an acceptable degree of independence between redundant standby (onsite) power sources and between their distribution systems.

1.9.6.2 VEGP Position

Conform, with the exception of regulatory position C.4.d. The VEGP design has provisions for manually connecting redundant load groups together. The connection is accomplished under administrative control by performing a manual, hot-bus transfer between the normal and alternate offsite power sources. This transfer may be made as discussed in paragraph 8.3.1.1.2.D.

Independence between redundant standby power sources and between their distribution systems is discussed further in sections 8.1 and 8.3.

1.9.7 REGULATORY GUIDE 1.7, REVISION 2, NOVEMBER 1978, CONTROL OF COMBUSTIBLE GAS CONCENTRATIONS IN CONTAINMENT FOLLOWING A LOSS-OF-COOLANT ACCIDENT

1.9.7.1 Regulatory Guide 1.7 Position

This guide describes an acceptable method for complying with NRC regulations for controlling combustible gas concentrations inside containment following a LOCA.

1.9.7.2 VEGP Position

The extent of conformance with this guide is as indicated in subsection 6.2.5.

1.9.8 REGULATORY GUIDE 1.8, REVISION 2, APRIL 1987, QUALIFICATION AND TRAINING OF PERSONNEL FOR NUCLEAR POWER PLANTS

1.9.8.1 Regulatory Guide 1.8 Position

Personnel will meet the minimum education and experience recommendations of this guide before they are considered qualified to perform all duties independently. Prior to meeting the recommendations of the guide, personnel may be trained to perform specific tasks and will be qualified to perform those tasks independently. As described in Part D of the guide, personnel who complete an accredited program which has been endorsed by the NRC shall meet the requirements of the accredited program in lieu of other guidance given in the guide.

1.9.8.2 VEGP Position

Conformance is discussed in sections 13.1 and 13.2.

1.9.9 REGULATORY GUIDE 1.9, REVISION 2, DECEMBER 1979, SELECTION, DESIGN, AND QUALIFICATION OF DIESEL GENERATOR UNITS USED AS STANDBY (ONSITE) ELECTRIC POWER SYSTEMS AT NUCLEAR POWER PLANTS

1.9.9.1 Regulatory Guide 1.9 Position

Conformance with the requirements of Institute of Electrical and Electronics Engineers (IEEE) Standard (Std.) 387-1977, IEEE Standard Criteria for Diesel Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations, dated June 17, 1977, is acceptable for meeting the requirements of the principal design criteria and qualification testing of diesel generator units as onsite electric power systems for nuclear power plants subject to the following:

1. C.1 When the characteristics of loads are not accurately known, such as during the construction permit stage of design, each diesel generator unit of an onsite power supply system should be selected to have a continuous load rating (as defined in Section 3.7.1 of IEEE Std. 387-1977) equal to or greater than the sum of the conservatively estimated loads needed to be powered by that unit at any one time. In the absence of fully substantiated performance characteristics for mechanical equipment such as pumps, the electric motor drive ratings should be calculated using conservative estimates of these characteristics, e.g., pump runout conditions and motor efficiencies of 90 percent or less and power factors of 85 percent or less.

2. C.2 At the operating license stage of review, the predicted loads should not exceed the short-time rating (as defined in Section 3.7.2 of IEEE Std. 387-1977) of the diesel generator unit.

3. C.3 In Section 5.1.1, General, of IEEE Std. 387-1977, the requirements of IEEE Std. 308-1974 should be used subject to the regulatory position of Regulatory Guide 1.32.

4. C.4 Section 5.1.2, Mechanical and Electrical Capabilities, of IEEE Std. 387-1977 pertains, in part, to the starting and load-accepting capabilities of the diesel generator unit. In conjunction with Section 5.1.2, each diesel generator unit should be capable of starting and accelerating to rated speed, in the required sequence, all the needed engineered safety feature (ESF) emergency shutdown loads. The diesel generator unit design should be such that at no time during the loading sequence should the frequency and voltage decrease to less than 95 percent of nominal and 75 percent of nominal, respectively. (A larger decrease in voltage and frequency may be justified for a diesel generator unit that carries only one large connected load.) Frequency should be restored to within 2 percent of nominal, and voltage should be restored to within 10 percent of nominal within 60 percent of each load-sequence time interval. (A greater percentage of the time interval may be used if it can be justified by analysis. However, the load-sequence time interval should include sufficient margin to account for the accuracy and repeatability of the load-sequencer timer.) During recovery from transients caused by step load increases or resulting from the disconnection of the largest single load, the speed of the diesel generator unit should not exceed the nominal speed plus 75 percent of the difference between nominal speed and the overspeed trip setpoint or 115 percent of nominal, whichever is lower. Further, the transient following the complete loss of load should not cause the speed of the unit to attain the overspeed trip setpoint.

5. C.5 In Section 5.4, Qualification, of IEEE Std. 387-1977, the qualification testing requirements of IEEE Std. 323-1974, IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations, should be used subject to the regulatory position of Regulatory Guide 1.89, Qualification of Class 1E Equipment for Nuclear Power Plants.

6. C.6 Section 5.5, Design and Application Considerations, of IEEE Std. 387-1977 pertains to design features for consideration in diesel generator unit design. In conjunction with Section 5.5, diesel generator units should be designed to be testable during operation of the nuclear power plant as well as while the plant is shut down. The design should include provisions so that the testing of the units will simulate the parameters of operation (outlined in Regulatory Guide 1.108, Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants) that would be expected if actual demand were to be placed on the system.

   Testability should be considered in the selection and location of instrumentation sensors and critical components (e.g., governor, starting system components), and the overall design should include status indication and alarm features. Instrumentation sensors should be readily accessible and, where practicable, designed so that their inspection and calibration can be verified in place.

7. C.7 Section 5.6.2.2, Automatic Control, of IEEE Std. 387-1977 pertains to automatic startup requirements and their relationship to other operating modes. In conjunction with Section 5.6.2.2, engine-overspeed and generator-differential trips

may be implemented by a single-channel trip. All other diesel generator protective trips should be handled in one of two ways:

a. A trip should be implemented with two or more independent measurements for each trip parameter with coincident logic provisions for trip actuation.

b. A trip may be bypassed under accident conditions, provided the operator has sufficient time to react appropriately to an abnormal diesel generator unit condition. The design of the bypass circuitry should satisfy the requirements of IEEE Std. 279-1971 at the diesel generator system level and should include the capability for:

(1) Testing the status and operability of the bypass circuits.

(2) Alarming in the control room abnormal values of all bypass parameters.

(3) Manual resetting of the trip bypass function. (Capability for automatic reset is not acceptable.)

8. C.8 Section 5.6.3.1, Surveillance Systems, of IEEE Std. 387-1977 pertains to status indication of diesel generator unit conditions. In conjunction with Section 5.6.3.1, in order to facilitate trouble diagnosis, the surveillance system should indicate which of the diesel generator protective trips is activated first.

9. C.9 In Section 6.3, Type Qualification Testing Procedures and Methods, of IEEE Std. 387-1977, the requirements of IEEE Std. 344-1975, Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations, for seismic analysis or seismic testing by equipment manufacturers should be used subject to the regulatory position of Regulatory Guide 1.100, Seismic Qualification of Electric Equipment for Nuclear Power Plants.

10. C.10 The option indicated by "may" in Section 6.3.2(5)(c) of IEEE Std. 387-1977 should be treated as a requirement.

11. C.11 Section 6.5, Site Acceptance Testing, and Section 6.6, Periodic Testing, of IEEE Std. 387-1977 should be supplemented by Regulatory Guide 1.108.

12. C.12 Section 4, Reference Standards, of IEEE Std. 387-1977 lists additional applicable IEEE standards. The specific applicability or acceptability of these referenced standards has been or will be covered separately in other regulatory guides, where appropriate.

13. C.13 Section 6.3.2, Start and Load Acceptance Qualification, pertains to test requirements for diesel generator unit qualification. In conjunction with Section 6.3.2, fewer successful start-and-load tests and allowed failures than that specified--300 valid tests with no more than 3 failures--may be justified for a diesel generator unit that carries only one large connected load tested under actual conditions, provided an equivalent reliability/confidence level is demonstrated.

14. C.14 In Section 6.3.1, Load Capability Qualification, of IEEE Std. 387-1977, the order of sequence of load tests described in parts (1) and (2) should be as follows: Load equal to the continuous rating should be applied for the time required to reach

engine temperature equilibrium, at which time, the rated short-time load should be applied for a period of 2 h. Immediately following the 2-h short-time load test, load equal to the continuous rating should be applied for 22 h.

1.9.9.2 VEGP Position

1. C.1 Conform.

2. C.2 Conform.

3. C.3 Conform. See Regulatory Guide 1.32 comparison.

4. C.4 The voltage and frequency requirements are met under all conditions except during energizing of the load center transformers (time 0 s on the sequencer). At this time the voltage and frequency may be outside the specified limits but there are no loads on the bus to be affected. The first load sequence step is at time 0.5 s on the sequencer.

5. C.5 Conform. Refer to Regulatory Guide 1.89 comparison.

6. C.6 Conform. See Regulatory Guide 1.108 comparison.

7. C.7 Conform.

8. C.8 Conform.

9. C.9 VEGP diesels are qualified in accordance with IEEE Std. 387-1977 and IEEE Std. 344-1975.

10. C.10 Conform.

11. C.11 Conform. See Regulatory Guide 1.108 comparison.

12. C.12 Conform. Applicable standards are referenced where appropriate.

13. C.13 Conform.

14. C.14 Conform.

Regulatory Guide 1.9, Revision 3, has been used in specific instances to revise diesel generator testing requirements for VEGP as stated in subsection 1.9.108.

Refer to section 8.3 for further discussion.

1.9.10 REGULATORY GUIDE 1.10, REVISION 1, JANUARY 1973, MECHANICAL (CADWELD) SPLICES IN REINFORCING BARS OF CATEGORY I CONCRETE STRUCTURES

1.9.10.1 Regulatory Guide 1.10 Position

Procedures given for testing cadwelds include:

1. C.1 Crew qualification.

2. C.2 Visual inspection.

3. C.3 Tensile testing.

4. C.4 Tensile test frequency.

5. C.5 Procedure for substandard tensile test results.

1.9.10.2 VEGP Position

Procedures for testing cadwelds conform with the requirements of Regulatory Guide 1.10.

Refer to subsection 3.8.1 for discussion on this subject.

1.9.11 REGULATORY GUIDE 1.11, MARCH 1971, INSTRUMENT LINES PENETRATING PRIMARY REACTOR CONTAINMENT

1.9.11.1 Regulatory Guide 1.11 Position

This guide describes an acceptable method for designing instrument lines which penetrate the primary containment and reactor coolant pressure boundary or are connected directly to the containment atmosphere.

1.9.11.2 VEGP Position

VEGP conforms with this guide with the exception of regulatory position C.1.c. Containment pressure sensing lines and reactor vessel level instrumentation system are not equipped with isolation valves, but are provided with sealed capillaries as described in subsection 6.2.4.1.1, paragraph G. This alternative is consistent with Regulatory Guide 1.141.

Two containment hydrogen monitors are provided. Each monitor has a sample line and return line which penetrate the containment. All sample lines penetrating the containment are equipped with remote manual operated valves inside and outside the containment, in accordance with 10 CFR 50, Appendix A, General Design Criteria 55 and 56.

All other sample lines penetrating the containment are similarly equipped.

Refer to subsection 6.2.4 and table 6.2.4-1.

1.9.12 REGULATORY GUIDE 1.12, REVISION 2, MARCH 1997, INSTRUMENTATION FOR EARTHQUAKES

1.9.12.1 Regulatory Guide 1.12 Position

This guide describes seismic instrumentation acceptable to the NRC for meeting Appendix A of 10 CFR 50.

1.9.12.2 VEGP Position

VEGP conforms to this guide to the extent indicated in table 3.7.4-1 and figure 3.7.4-1.

1.9.13 REGULATORY GUIDE 1.13, REVISION 1, DECEMBER 1975, SPENT-FUEL STORAGE FACILITY DESIGN BASIS

1.9.13.1 Regulatory Guide 1.13 Position

This guide describes a method acceptable to the NRC for designing wet spent fuel storage facilities for light-water reactors.

1.9.13.2 VEGP Position

Conform, with exception to regulatory position C.7, as the spent fuel pool level indicator alarms in the control room only, and not locally. Additional information is provided in section 9.1.

1.9.14 REGULATORY GUIDE 1.14, REVISION 1, AUGUST 1975, REACTOR COOLANT PUMP FLYWHEEL INTEGRITY

1.9.14.1 Regulatory Guide 1.14 Position

This guide describes a method acceptable to the NRC for minimizing the potential for failures of the flywheels of reactor coolant pump motors in light-water-cooled reactors.

1.9.14.2 VEGP Position – Prelicense

VEGP uses the standard Westinghouse reactor coolant pump design and takes the following position on this guide:

Since the issuance of Regulatory Guide 1.14, Revision 1, the NRC has provided to Westinghouse a copy of draft 2, Revision 2, of Regulatory Guide 1.14. This draft was formulated from industry and concerned parties' comments. It is significant that the draft 2 version incorporates several of the Westinghouse comments on Revision 1. Since draft 2 has not been formally published as Revision 2 of Regulatory Guide 1.14, the exceptions and clarifications (from the original Westinghouse comments) are provided below:

Cross rolling ratio of 1 to 3

Westinghouse's position is that specification of a cross rolling ratio is unnecessary since past evaluations have shown that ASME SA-533, Grade B, Class 1 materials produced without this requirement have suitable toughness for typical flywheel applications. Proper material selection and specification of minimum material properties in the transverse direction adequately ensure flywheel integrity. An attempt to gain isotropy in the flywheel materials by means of cross rolling is unnecessary since adequate margins of safety are provided by both flywheel material selection (ASME SA-533, Grade B, Class 1) and by specifying minimum yield and tensile levels and toughness test values taken in the direction perpendicular to the maximum working direction of the material.

1. C.1 The requirements for the vacuum melting and degassing process or the electroslag process are not essential in meeting the balance of the regulatory position or do they, in themselves, ensure conformance with the overall regulatory position. The initial Safety Guide 14 (October 27, 1971) stated that the "flywheel material should be produced by a process that minimized flaws in the material and improved its fracture toughness properties." This is accomplished by using ASME SA-533 material including vacuum treatment.

   Specification of a cross rolling ratio is considered unnecessary since past evaluations have shown that ASME SA-533, Grade B, Class 1 materials produced without this requirement have suitable toughness for typical flywheel applications. Proper material selection and specification of minimum material properties in the transverse direction adequately ensure flywheel integrity. An attempt to gain isotropy in the flywheel material by means of cross rolling is unnecessary since adequate margins of safety are provided by both flywheel material selection (ASME SA-533, Grade B, Class 1) and by specifying minimum yield and tensile levels and toughness test values taken in the direction perpendicular to the maximum working direction of the material.

2. C.2 Because the VEGP design specifies a light interference fit between the flywheel and the shaft, at zero speed the hoop stresses and radial stresses at the flywheel bore are negligible. Centering of the flywheel relative to the shaft is accomplished by means of keys and/or centering devices attached to the shaft, and at normal speed, the flywheel is not in contact with the shaft in the sense intended by Revision 1. Hence, the definition of "excessive deformation," as defined in this guide, is not applicable to the design since the enlargement of the bore and subsequent partial separation of the flywheel from the shaft does not cause unbalance of the flywheel. Extensive experience with reactor coolant pump flywheels installed in this fashion has verified the adequacy of the design.

The combined primary stress levels, as defined in Revision 0 of Regulatory Guide 1.14 (regulatory positions C.2.a and C.2.c) are both conservative and proven and no changes to these stress levels are necessary. Westinghouse designs to these stress limits and thus does not have permanent distortion of the flywheel bore at normal or spin test conditions.

Paragraph 2.b is considered as delineated. The interpretation removes the ambiguous reference to an undefined overspeed transient.

3. C.3 Conform.

4. C.4 WCAP-8163 shows that the flywheel would not fail at 290 percent of normal speed for a flywheel flaw of 1.15 in. or less in length. Results for a double-ended guillotine break at the pump discharge with full separation of pipe ends assumed show the maximum overspeed to be less than 110 percent of normal speed. The maximum overspeed was calculated to be about 280 percent of normal speed for the same postulated break, and an assumed instantaneous loss of power to the reactor coolant pump. In comparison with the overspeed presented above, the flywheel is tested at 125 percent of normal speed at the factory. Thus, the flywheel could withstand a speed up to 2.3 times greater than the flywheel spin test speed of 125 percent provided that no flaws greater than 1.15 in. are present. If the maximum speed were 125 percent of normal speed or less, the critical flaw size for failure would exceed 6 in. in length. Nondestructive tests and critical dimension examinations are all performed before the spin tests. The inspection methods employed provide assurance that flaws significantly smaller than the critical flaw size of 1.15 in. for 290 percent of normal speed would be detected. Flaws in the flywheel will be recorded in the prespin inspection program. Flaw growth attributable to the spin test (i.e., from a single reversal of stress, up to speed and back), under the most adverse conditions, is about three orders of magnitude smaller than that which nondestructive inspection techniques are capable of detecting. For these reasons, no post-spin inspections are performed since the prespin test inspections are considered adequate.

   Refer to paragraph 5.4.1.5 for further discussion.

1.9.14.3 VEGP Position – Post License

The VEGP Position – Prelicense applies, except for the flywheel examination requirements of Regulatory Position C.4.b of Regulatory Guide 1.14. Westinghouse WCAP-14535, “Topical Report on Reactor Coolant Pump Flywheel Inspection Elimination,” developed by the Westinghouse Owners Group (WOG), presents the basis for relief from the flywheel inspections required by Regulatory Position C.4.b of Regulatory Guide 1.14. The report was submitted to the NRC for review on January 24, 1996 by Duquesne Light Company for application to Beaver Valley Power Station Units 1 and 2. On September 12, 1996, the NRC issued a Safety Evaluation Report (SER) documenting its approval of WCAP-14535. The SER states that the evaluation methodology described in WCAP-14535 is appropriate and the criteria are in accordance with the design criteria of Regulatory Guide 1.14. The final NRC-accepted version of WCAP-14535 was issued as revision A which compiles all relevant correspondence for this matter. In related NRC correspondence, the Commission stated that other utilities may reference WCAP-14535 and its revision when pursuing the alternative flywheel inspections.

VEGP Technical Specification 5.5.7, "Reactor Coolant Pump Flywheel Inspection Program," reflects the alternative examination requirements provided by WCAP-14535A.

1.9.15 REGULATORY GUIDE 1.15, REVISION 1, DECEMBER 1972, TESTING OF REINFORCING BARS FOR CATEGORY I CONCRETE STRUCTURES

1.9.15.1 Regulatory Guide 1.15 Position

Yield strength and tensile strength test procedures are required on reinforcing bars, as well as deformation inspections.

1.9.15.2 VEGP Position

The test procedures and deformation inspections conform with Regulatory Guide 1.15, with the clarification that while ASTM A615-72 is referenced in the regulatory guide, later editions of ASTM A615 may be used. Refer to subsection 3.8.1 for discussion on this subject.

1.9.16 REGULATORY GUIDE 1.16, REVISION 4, AUGUST 1975, REPORTING OF OPERATING INFORMATION - APPENDIX A TECHNICAL SPECIFICATIONS

1.9.16.1 Regulatory Guide 1.16 Position

In addition to the applicable reporting requirements of 10 CFR, this guide provides an acceptable basis for meeting the reporting requirements of Appendix A of the Technical Specifications.

1.9.16.2 VEGP Position

VEGP does not conform with this regulatory guide. In addition to the applicable reporting requirements of Title 10 Code of Federal Regulations, the program for reporting of Units 1 and 2, operating information is in accordance with Generic Letter 97-02, "Revised Contents of the Monthly Operating Report," dated May 15, 1997.

1.9.17 REGULATORY GUIDE 1.17, JUNE 1973, PROTECTION OF NUCLEAR POWER PLANTS AGAINST INDUSTRIAL SABOTAGE

1.9.17.1 Regulatory Guide 1.17 Position

The requirements and recommendations contained in the proposed ANSI Standard N18.17, Industrial Security for Nuclear Power Plants, dated March 23, 1973, are generally acceptable

and, with due consideration for the unique characteristics of the plant and its owner organization, provide an adequate basis for a physical security plan for protection of nuclear power plants against industrial sabotage, subject to the qualifications provided in this guide.

1.9.17.2 VEGP Position

VEGP conforms with ANSI/ANS-3.3-1982, as described in the physical security and contingency plan for the plant.

1.9.18 REGULATORY GUIDE 1.18, REVISION 1, DECEMBER 1972, STRUCTURAL ACCEPTANCE TEST FOR CONCRETE PRIMARY REACTOR CONTAINMENTS

1.9.18.1 Regulatory Guide 1.18 Position

This guide describes an acceptable method of implementing the initial structural acceptance test, which demonstrates the capability of a concrete primary reactor containment to withstand postulated pressure loads.

1.9.18.2 VEGP Position

VEGP conforms with this guide, except with regulatory positions C.3 and C.9 as follows:

1. C.3 Measurement of tangential displacements will not be performed for the 12 points on the largest opening (equipment hatch) of the containment. The magnitude of the expected local tangential deformation under the test pressure conditions is so negligibly small that, combined with the difficulty in obtaining fixed reference lines for local measurements, it is impractical to attempt measurement of local tangential deflections.

2. C.9 It is not intended to schedule structural integrity testing for periods when extremely inclement weather is forecast. Should, despite the forecast, snow, heavy rain, or strong winds occur during the test, the test results will be considered valid unless there is evidence to indicate otherwise.

Refer to subsection 3.8.1 for discussion on this subject.

1.9.19 REGULATORY GUIDE 1.19, REVISION 1, AUGUST 1972, NONDESTRUCTIVE EXAMINATION OF PRIMARY CONTAINMENT LINER WELDS

1.9.19.1 Regulatory Guide 1.19 Position

This guide describes acceptable procedures for performing nondestructive examinations (NDEs) of the welds in the liners and penetrations of primary reactor containments of concrete construction.

1. C.1.b Allows magnetic particle or ultrasonic methods for NDE where radiographic examination is not feasible.

2. C.1.c Requires bubble test solution to be checked hourly.

3. C.7 Acceptance standards should be in accordance with ASME Section III NE-5120.

1.9.19.2 VEGP Position

Conform, with the following exceptions:

1. C.1.b Magnetic particle or liquid penetrant testing of seam welds is performed if radiography is not possible due to weld inaccessibility.

2. C.1.c The bubble test solution will be checked every 4 h.

3. C.7 Acceptance standards are in accordance with ASME Section III, NE-5320 and NE-5350.

Refer to subsection 3.8.1 for further discussion.

1.9.20 REGULATORY GUIDE 1.20, REVISION 2, MAY 1976, COMPREHENSIVE VIBRATION ASSESSMENT PROGRAM FOR REACTOR INTERNALS DURING PREOPERATIONAL AND INITIAL STARTUP TESTING

1.9.20.1 Regulatory Guide 1.20 Position

This guide presents a method acceptable for implementing requirements with respect to the internals of light-water-cooled reactors during preoperational and initial startup testing.

1.9.20.2 VEGP Position

The comprehensive vibration assessment program for the VEGP reactor internals during preoperational and initial startup testing conforms with the recommendations of this guide, as discussed in paragraph 3.9.N.2.4.

1.9.21 REGULATORY GUIDE 1.21, REVISION 1, JUNE 1974, MEASURING, EVALUATING, AND REPORTING RADIOACTIVITY IN SOLID WASTES AND RELEASES OF RADIOACTIVE MATERIALS IN LIQUID AND GASEOUS EFFLUENTS FROM LIGHT-WATER-COOLED NUCLEAR POWER PLANTS

1.9.21.1 Regulatory Guide 1.21 Position

This guide describes programs acceptable to the NRC for measuring, reporting, and evaluating releases of radioactive materials in liquid and gaseous effluents and guidelines for classifying and reporting the categories and curie content of solid wastes.

1.9.21.2 VEGP Position

VEGP conforms with this guide to the extent discussed below and in section 11.5.

The requirement for hourly meteorological data for batch releases will be met if the batch releases are made in a non random manner. If the batch releases are made in a random manner, average annual meteorological parameters will be used for these calculations and the hourly meteorological data will not have to be included in the radioactive effluent reports. This methodology is representative for dose calculations and is less susceptible to errors in data management.

This is in accordance with the Technical Specifications, the ODCM, NUREG 0133, and is standard practice in the nuclear industry.

1.9.22 REGULATORY GUIDE 1.22, FEBRUARY 1972, PERIODIC TESTING OF PROTECTION SYSTEM ACTUATION FUNCTIONS

1.9.22.1 Regulatory Guide 1.22 Position

This guide describes an acceptable method for ensuring that the protection system is designed to permit periodic testing of its functioning during reactor operation.

1.9.22.2 VEGP Position

VEGP conforms with this guide to the extent discussed below and in paragraph 7.1.2.5.

1. D.1 The protection system is designed to permit periodic testing to extend to and include actuation devices and actuated equipment. (See position 4.)

   D.1.a. and b. The periodic tests do duplicate, as closely as practicable, the performance that is required of the actuation devices in the event of an accident. The only actuation devices for which the tests do not completely duplicate the performance that is required in the event of an accident are:

- The main steam and feedwater isolation valve actuators - full performance testing of these actuators would result in full closure of the main steam and feedwater isolation valves. The transients that would result under power generating conditions in the plant would include steam generator water level oscillations, or low-low steam generator water level, and would probably result in reactor trip. The actuators will be under power generating conditions to verify proper operation of all components required for fast closure of the valves. Operability of the valves may be checked during operation by performing a partial stroke. This partial stroke closes the valves 10 percent (at a slow speed, but by the same mechanism used for fast closure) and then reopened to verify that the valves are free to close. Positive indications are provided on the main control board to verify that the closure mechanism of the valves has been reset to ensure proper operation after the test. The valve actuators can be fully tested, including full closure at high speed, whenever the plant is not in operation.

- The main turbine trip function - a trip of the main turbine under power generating conditions (unless below approximately 50 percent power) would result in a trip of the reactor. The turbine trip function can be tested whenever the turbine is not in operation.

2. D.2.a. through d. In general, the protection systems can be tested in accordance with method a. The only protection systems that cannot be tested in accordance with method a are the main steam and feedwater isolation system, containment spray system, and the auxiliary feedwater system. The systems not tested in accordance with method a can all be tested in accordance with method b. Methods c and d need not be used.

3. D.3.a. and b. System bypasses are generally not required for testing; in most cases, the actuated equipment actually responds to the test signals. The only exceptions to these criteria are:

   - Bistables - test signals are substituted for the actual plant inputs during bistable tests, and provisions are included for bypassing bistable outputs. The bistables not under test, all digital inputs, and all other portions of the protection system are not affected.

   - Main steam and feedwater isolation valves - the signals to these valves are held in a condition that prevents valve motion during a portion of the test.

   - Each bypass condition is automatically indicated to the reactor operator in the MCR by a separate annunciator for the train in test. Test circuitry does not allow two trains to be tested at the same time so that extension of the bypass condition to the redundant system is prevented.

4. D.4 Where actuated equipment is not tested during reactor operation it has been determined that:

   D.4.a. There is no practicable system design that would permit operation of the equipment without adversely affecting the safety or operability of the plant.

D.4.b. The probability that the protection system will fail to initiate the operation of the equipment is, and can be maintained, acceptably low without testing the equipment during reactor operation.

D.4.c. The equipment can be tested routinely when the reactor is down.

The list of equipment that cannot be tested at power is:

- Manual actuation switches.
- Reactor coolant pump breakers.
- Turbine trip equipment that causes reactor trip.
- Main steam line stop valves (close).
- Main feedwater and feedwater bypass isolation valves (close).
- Feedwater regulating valves (close).
- Main feedwater pump trips.
- Reactor coolant pump seal water isolation valves (close).
- Pressurizer power operated relief valves (PORVs) (open).
- Instrument air containment isolation valves (close).

1.9.23 REGULATORY GUIDE 1.23, FEBRUARY 1972, ONSITE METEOROLOGICAL PROGRAMS

1.9.23.1 Regulatory Guide 1.23 Position

This guide describes a suitable onsite meteorological program to provide meteorological data needed to estimate potential radiation doses to the public as a result of the routine or accidental release of radioactive materials to the atmosphere and to assess other environmental effects.

1.9.23.2 VEGP Position

A description of the onsite meteorological program is provided in subsection 2.3.3. Onsite weather instruments are described in table 2.3.2-2. Short- and long-term diffusion estimates are discussed in subsections 2.3.4 and 2.3.5.

1.9.24 REGULATORY GUIDE 1.24, MARCH 1972, ASSUMPTIONS USED FOR EVALUATING THE POTENTIAL CONSEQUENCES OF A PRESSURIZED WATER REACTOR RADIOACTIVE GAS STORAGE TANK FAILURE

1.9.24.1 Regulatory Guide 1.24 Position

This guide lists acceptable assumptions for use in evaluating the radiological consequences of a radioactive gas storage tank failure.

1.9.24.2 VEGP Position

The extent of conformance with this guide is as indicated in table 15.7.1-2.

1.9.25 REGULATORY GUIDE 1.25, MARCH 1972, ASSUMPTIONS USED FOR EVALUATING THE POTENTIAL RADIOLOGICAL CONSEQUENCES OF A FUEL HANDLING ACCIDENT IN THE FUEL HANDLING AND STORAGE FACILITY FOR BOILING AND PRESSURIZED WATER REACTORS

1.9.25.1 Regulatory Guide 1.25 Position

This guide provides acceptable assumptions that may be used in evaluating the radiological consequences of a fuel handling accident in light-water reactors.

1.9.25.2 VEGP Position

The extent of conformance with this guide is as indicated in table 15.7.4-2.

1.9.26 REGULATORY GUIDE 1.26, REVISION 3, FEBRUARY 1976, QUALITY GROUP CLASSIFICATIONS AND STANDARDS FOR WATER-, STEAM-, AND RADIOACTIVE-WASTE-CONTAINING COMPONENTS OF NUCLEAR POWER PLANTS

1.9.26.1 Regulatory Guide 1.26 Position

Defines classification of systems and components.

1.9.26.2 VEGP Position

The quality group classification and standards for water-, steam-, and radioactive-waste-containing components for VEGP are identified in table 3.2.2-1. Westinghouse classifies

components within its scope of supply using the guidelines of ANSI N18.2-1973 and ANSI N18.2a-1975, which is an acceptable alternative to this regulatory guide.

1.9.27 REGULATORY GUIDE 1.27, REVISION 2, JANUARY 1976, ULTIMATE HEAT SINK FOR NUCLEAR POWER PLANTS

1.9.27.1 Regulatory Guide 1.27 Position

This guide describes a method acceptable to the NRC for designing an ultimate heat sink used for dissipation of residual heat following reactor shutdown or an accident.

1.9.27.2 VEGP Position

Conform. Refer to subsection 9.2.5.

1.9.28 REGULATORY GUIDE 1.28, REVISION 2, FEBRUARY 1979, QUALITY ASSURANCE PROGRAM REQUIREMENTS (DESIGN AND CONSTRUCTION) (HISTORICAL)

1.9.28.1 Regulatory Guide 1.28 Position (HISTORICAL)

The overall quality assurance program (QAP) requirements for the design and construction phases that are included in ANSI N45.2-1977 provide an adequate basis for complying with the QAP requirements of Appendix B to 10 CFR 50, as supplemented or modified by this guide.

1.9.28.2 VEGP Position (HISTORICAL)

The VEGP quality assurance program for design and construction phases is in conformance with Regulatory Guide 1.28, formerly Safety Guide 28, June 7, 1972, Quality Assurance Program Requirements (Design and Construction) which invokes ANSI N45.2-1971 as an acceptable standard for nuclear quality assurance programs. The VEGP QAP for design and construction is discussed in chapter 17.1.

1.9.29 REGULATORY GUIDE 1.29, REVISION 3, SEPTEMBER 1978, SEISMIC DESIGN CLASSIFICATION

1.9.29.1 Regulatory Guide 1.29 Position

Defines systems to withstand the safe shutdown earthquake (SSE).

1.9.29.2 VEGP Position

VEGP conforms with this regulatory guide as shown in table 3.2.2-1.

With regard to regulatory position C.1, each nuclear steam supply system (NSSS) component important to safety is classified as Safety Class 1, 2, or 3; these classes are qualified to remain functional in the event of the SSE, except where exempted by meeting all of the below requirements. Portions of systems required to perform the same safety function as required of a safety class component which is part of that system shall be likewise qualified or granted exemption. Conditions to be met for exemption are:

- Failure would not directly cause a Condition III or IV event (as defined in ANSI N18.2-1973).
- There is no safety function to mitigate, nor could failure prevent mitigation of, the consequence of a Condition III or IV event.
- Failure during or following any Condition IV event would result in consequences no more severe than allowed for a Condition III event.
- Routine post-seismic procedures would disclose loss of the safety function.

1.9.30 REGULATORY GUIDE 1.30, AUGUST 1972, QUALITY ASSURANCE REQUIREMENTS FOR THE INSTALLATION, INSPECTION, AND TESTING OF INSTRUMENTATION AND ELECTRIC EQUIPMENT

1.9.30.1 Regulatory Guide 1.30 Position (HISTORICAL)

[The requirements for the installation, inspection, and testing of nuclear power plant instrumentation and electric equipment which are included in ANSI N45.2.4-1972, Installation, Inspection, and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations (also designated IEEE Std. 336-1971) are generally acceptable and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the qualifications in the regulatory guide.]

1.9.30.2 VEGP Position (HISTORICAL)

[(HISTORICAL) The VEGP QAP during design and construction conforms to ANSI N45.2.4-1972 and IEEE 336-1971, as described in section 17.1.]

Regulatory Guide 1.30 provided NRC endorsement of ANSI N45.2.4 (IEEE 336-1971). The SNC Quality Assurance Topical Report (QATR) is based on ASME NQA-1-1994 which incorporates the requirements of the installation, inspection, and testing of instrumentation and electric equipment formerly contained in IEEE 336-1971 are superseded by those contained IEEE 336-1985 as described in the QATR.

1.9.31 REGULATORY GUIDE 1.31, REVISION 3, APRIL 1978, CONTROL OF FERRITE CONTENT IN STAINLESS STEEL WELD METAL

1.9.31.1 Regulatory Guide 1.31 Position

This guide describes a method acceptable to the NRC for implementing requirements for the control of welding in fabricating and joining safety-related austenitic stainless steel components and systems in light-water-cooled nuclear power plants.

1.9.31.2 VEGP Position

Conforms to the basic concept of controlling delta ferrite content except for magnetic measurement of the delta ferrite in procedure qualification samples and in production welds. To meet the intent of the regulatory guide, the control of ferrite content in weld metal is attained by chemical analysis and/or magnetic measurement of the weld metal, as applicable.

Welding materials for welding austenitic stainless steel to austenitic stainless may contain 8- to 25-percent delta ferrite. For welding austenitic stainless steel to carbon, or low alloy, steel welding materials may contain 5- to 15-percent delta ferrite. The use of welding materials with a delta ferrite exceeding the recommended Ferrite Number 20 is done in accordance with the regulatory guide since austenitic stainless steel items are not postweld heat treated above 350°F (except during welding) unless they are given a full solution anneal at the material manufacturer's recommended temperature and holding period, followed by water quenching or spraying from the solution heat treating temperature rapidly enough to prevent carbide precipitation.

Control of ferrite content in stainless steel weld metal for NSSS equipment is discussed in paragraph 5.2.3.4.6.

1.9.32 REGULATORY GUIDE 1.32, REVISION 2, FEBRUARY 1977, CRITERIA FOR SAFETY-RELATED ELECTRIC POWER SYSTEMS FOR NUCLEAR POWER PLANTS

1.9.32.1 Regulatory Guide 1.32 Position

For the portion of safety-related electric power systems within its scope, the criteria, requirements, and recommendations in IEEE Std.-308-1974 are generally acceptable to the NRC staff and provide an adequate basis for complying with General Design Criteria 17 and 18 of Appendix A to 10 CFR 50 with respect to the design, operation, and testing of electric power systems, subject to the qualifications identified in the guide.

1.9.32.2 <u>VEGP Position</u>

Conform except for the periodic test schedule for batteries. Safety-related batteries will be tested periodically in accordance with the Technical Specifications and the version of IEEE 450 as described in the Bases for the Technical Specifications. Refer to comparisons for Regulatory Guides 1.6, 1.9, 1.75, 1.81, 1.93 and 1.129. Further discussion is provided in sections 8.1 and 8.3.

1.9.33 REGULATORY GUIDE 1.33, REVISION 2, FEBRUARY 1978, QUALITY ASSURANCE PROGRAM REQUIREMENTS (OPERATION)

1.9.33.1 <u>Regulatory Guide 1.33 Position (HISTORICAL)</u>

[The overall QAP requirements for the operation phase that are included in ANSI N18.7-1976/American Nuclear Society (ANS) 3.2 are acceptable to the NRC and provide an adequate basis for complying with the QAP requirements of Appendix B to 10 CFR 50, subject to the qualifications in the guide.]

1.9.33.2 <u>VEGP Position</u>

Regulatory Guide 1.33 provided NRC endorsement of ANSI N18.7 as an acceptable basis for a quality assurance program that meets the requirements of 10 CFR 50, Appendix B. In addition, Regulatory Guide 1.33 includes regulatory positions that qualify NRC endorsement of ANSI N18.7.

The SNC QATR is based on ASME NQA-1-1994 and incorporates the applicable requirements of ANSI N18.7-1976. Accordingly, SNC complies with the applicable requirements of ANSI N18.7-1976 via compliance with the QATR without an explicit (or implied) commitment to either Regulatory Guide 1.33 or ANSI N18.7-1976.

1.9.34 REGULATORY GUIDE 1.34, DECEMBER 1972, CONTROL OF ELECTROSLAG WELD PROPERTIES

1.9.34.1 <u>Regulatory Guide 1.34 Position</u>

This guide describes an acceptable method of implementing requirements with regard to the control of weld properties when fabricating electroslag welds for nuclear components made of ferritic or austenitic materials.

1.9.34.2 <u>VEGP Position</u>

Conform. Refer to paragraph 5.2.3.4.6.

1.9.35 REGULATORY GUIDE 1.35, REVISION 2, JANUARY 1976, INSERVICE INSPECTION OF UNGROUTED TENDONS IN PRESTRESSED CONCRETE CONTAINMENT STRUCTURES

1.9.35.1 Regulatory Guide 1.35 Position

This guide describes an acceptable basis for developing an appropriate inservice inspection and surveillance program for ungrouted tendons in prestressed concrete containment structures.

1.9.35.2 VEGP Position

Conform as discussed in subsection 3.8.1.

1.9.36 REGULATORY GUIDE 1.36, FEBRUARY 1973, NON-METALLIC THERMAL INSULATION FOR AUSTENITIC STAINLESS STEEL

1.9.36.1 Regulatory Guide 1.36 Position

This guide describes an acceptable method for implementing criteria for the selection and use of nonmetallic thermal insulation to minimize contamination that could promote stress-corrosion cracking in stainless steel components.

1.9.36.2 VEGP Position

Conform. Refer to paragraphs 5.2.3.2.3 and 6.1.1.1.3.

1.9.37 REGULATORY GUIDE 1.37, MARCH 1973, QUALITY ASSURANCE REQUIREMENTS FOR CLEANING OF FLUID SYSTEMS AND ASSOCIATED COMPONENTS OF WATER-COOLED NUCLEAR POWER PLANTS

1.9.37.1 Regulatory Guide 1.37 Position (HISTORICAL)

[The requirements and recommendations for onsite cleaning of materials and components, cleanness control, and preoperational cleaning and layup of water-cooled nuclear power plant fluid systems that are included in ANSI N45.2.1-1973, Cleaning of Fluid Systems and Associated Components During Construction Phase of Nuclear Power Plants, are generally acceptable and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the qualifications identified in the guide.]

1.9.37.2 VEGP Position

[(HISTORICAL) The VEGP QAP during design and construction conforms to ANSI N45.2.1-1973 with the following exceptions and clarifications.

Exceptions are as follows:

1. *The VEGP QAP during design and construction conforms to ANSI N45.2.1-1973 except in regard to installation cleaning. Carbon steel piping is stored with the end caps removed and without desiccants. The piping is stored to allow drainage and to prevent entry of rainwater. Prior to installation the piping is inspected and cleaned if necessary.*

Clarifications are as follows:

1. *This guide applies to onsite cleaning of materials and components and, therefore, not in the direct scope of NSSS supply. However, controls for cleaning processes during manufacture of NSSS equipment satisfy the objective of ANSI N45.2.1-1973, which is to assure that components delivered to the plant site require only water flushing or rinsing to render them ready for service.*

2. *The items shall be flushed at the design velocity or other flow velocity as specified in the procedures.]*

Regulatory Guide 1.37 provided NRC endorsement of ANSI N45.2.1. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N 45.2.1. Accordingly, quality assurance requirements for cleaning of fluid systems and associated components are described in the SNC QATR.

1.9.38 REGULATORY GUIDE 1.38, REVISION 2, MAY 1977, QUALITY ASSURANCE REQUIREMENTS FOR PACKAGING, SHIPPING, RECEIVING, STORAGE AND HANDLING OF ITEMS FOR WATER-COOLED NUCLEAR POWER PLANTS

1.9.38.1 Regulatory Guide 1.38 Position (HISTORICAL)

[The requirements for the packaging, shipping, receiving, storage, and handling of items for water-cooled nuclear power plants that are included in ANSI N45.2.2-1972, Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants During the Construction Phase, are acceptable to the NRC staff and, when supplemented by the guidelines identified in regulatory position 2, provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the qualifications identified in this guide.]

1.9.38.2 VEGP Position

[(HISTORICAL) The VEGP QAP during design and construction as described in section 17.1, conforms with Regulatory Guide 1.38 (March 16, 1973) which also endorses ANSI N45.2.2-1972, with the following exceptions and clarifications.

Exceptions are as follows:

1. *Exception is taken to the requirements for use of nonhalogenated wrappings.*

Clarifications are as follows:

1. *Brightly or specially colored tape will not be used due to the rigorous flushing program scheduled prior to preoperation. Tapes and vapor barriers used in packaging processes for NSSS equipment contrast with the material being packaged when such packing materials are commercially available.*

2. *Caps and plugs are used only when required by the specification. See Regulatory Guide 1.37 comparison. Tape near a weld may be removed to clean, setup, and inspect surface.*

3. *The contact preservative used on the main condenser is not water flushable; it will be chemically cleaned.*

4. *Quality assurance for packaging, shipping, receiving, storage, and handling of NSSS equipment is described in WCAP-8370/7800, Table 17-1. Refer to section 17.1 for further discussion.]*

Regulatory Guide 1.38 provided NRC endorsement of ANSI N45.2.2. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.2. Accordingly, quality assurance requirements for packaging, shipping, receiving, storage, and handling are described in the SNC QATR.

1.9.39 REGULATORY GUIDE 1.39, REVISION 2, SEPTEMBER 1977, HOUSEKEEPING REQUIREMENTS FOR WATER-COOLED NUCLEAR POWER PLANTS

1.9.39.1 Regulatory Guide 1.39 Position (HISTORICAL)

[This guide describes an acceptable method of complying with regulations with regard to housekeeping requirements for the control of work activities, conditions, and environments at water-cooled nuclear power plant sites.]

1.9.39.2 VEGP Position

Regulatory Guide 1.39 provided NRC endorsement of ANSI N45.2.3. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.3. Accordingly, housekeeping requirements are described in the SNC QATR.

1.9.40 REGULATORY GUIDE 1.40, MARCH 1973, QUALIFICATION TESTS OF CONTINUOUS-DUTY MOTORS INSTALLED INSIDE THE CONTAINMENT OF WATER-COOLED NUCLEAR POWER PLANTS

1.9.40.1 Regulatory Guide 1.40 Position

The procedures for conducting qualification tests of continuous-duty motors installed inside the containment of water-cooled nuclear power plants which are specified by IEEE Std. 334-1971, IEEE Trial-Use Guide for Type Tests of Continuous-Duty Class I Motors Installed Inside the Containment of Nuclear Power Generating Stations, are generally acceptable and provide an adequate basis for complying with the qualification testing requirements of Criterion III of Appendix B to 10 CFR 50, to verify adequacy of design for service under the most adverse design conditions, subject to the qualifications identified in the guide.

1.9.40.2 VEGP Position

To the extent practicable, the procedures for conducting qualification tests specified by IEEE Std. 334-1974 are used to supplement the requirements of IEEE 323-1974 for Class 1E motors inside the containment. Refer to Regulatory Guide comparison 1.100 and section 3.11.

1.9.41 REGULATORY GUIDE 1.41, MARCH 1973, PREOPERATIONAL TESTING OF REDUNDANT ONSITE ELECTRIC POWER SYSTEMS TO VERIFY PROPER LOAD GROUP ASSIGNMENTS

1.9.41.1 Regulatory Guide 1.41 Position

As part of the initial preoperational testing program, and also after major modifications or repairs to a facility, those onsite electric power systems designed in accordance with Regulatory Guides 1.6 and 1.32 (Safety Guides 6 and 32) should be tested as follows to verify the existence of independence among redundant onsite power sources and their load groups.

1. C.1 The plant electric power distribution system, not necessarily including the switchyard and the startup and auxiliary transformers, should be isolated from the offsite transmission network. Preferably, this isolation should be effected by direct actuation of the undervoltage-sensing relays within the onsite system.

2. C.2 Under the conditions of C.1 above, the onsite electric power system should be functionally tested successively in the various possible combinations of power sources and load groups with all dc and onsite ac power sources for one load group at a time completely disconnected. Each test should include injection of simulated accident signals, startup of the onsite power source(s) and load group(s) under test, sequencing of loads, and the functional performance of the loads. Each test should be of sufficient duration to achieve stable operating conditions and thus permit the onset and detection of adverse conditions which could result from improper assignment of loads; e.g., the lack of forced cooling of a vital device.

3. C.3 During each test, the dc and onsite ac buses and related loads not under test should be monitored to verify absence of voltage at these buses and loads.

1.9.41.2 VEGP Position

VEGP is committed to follow this regulatory guide. Refer to section 14.2 for further discussion.

1.9.42 REGULATORY GUIDE 1.42

Withdrawn.

1.9.43 REGULATORY GUIDE 1.43, MAY 1973, CONTROL OF STAINLESS STEEL WELD CLADDING OF LOW-ALLOY STEEL COMPONENTS

1.9.43.1 Regulatory Guide 1.43 Position

This guide describes acceptable methods for implementing requirements with regard to the selection and control of the welding process used for cladding ferritic steel components with austenitic stainless steel to restrict practices that could result in underclad cracking.

1.9.43.2 VEGP Position

Qualification testing is performed on any high-heat input welding process (such as the submerged-arc wide-strip welding process or the submerged arc 6-wire process) used to clad coarse or fine grained SA-508 Class 2 material. This test follows the recommendations of this guide. Production welding is monitored by the fabricator to ensure that essential variables remain within the limits established by the qualification. If the essential variables exceed the qualification limits, an evaluation is performed to determine if the cladding is acceptable for use. Where Westinghouse permits the use of submerged-arc strip process on SA-508 Class 2 material, a two-layer technique is used to minimize intergranular cracking. Refer to paragraph 5.2.3.3.2.

1.9.44 REGULATORY GUIDE 1.44, MAY 1973, CONTROL OF THE USE OF SENSITIZED STAINLESS STEEL

1.9.44.1 Regulatory Guide 1.44 Position

This guide describes acceptable methods for controlling the application and processing of stainless steel to avoid severe sensitization that could lead to stress corrosion cracking.

1.9.44.2 VEGP Position

Conforms to the basic concept of controlling the use of sensitized stainless steel. Pipe and piping products are solution annealed by heating the material to the manufacturer's recommended solution annealing temperature and holding at this temperature for the required period, followed by water quenching or spraying rapidly enough to prevent carbide precipitation. Verification of nonsensitization of casting material is not specified, however, because sensitization is controlled by requiring the above solution annealing procedure and control of delta ferrite content.

Control of the use of sensitized stainless steel for NSSS equipment is discussed in paragraph 5.2.3.4.

1.9.45 REGULATORY GUIDE 1.45, MAY 1973, REACTOR COOLANT PRESSURE BOUNDARY LEAKAGE DETECTION SYSTEM

1.9.45.1 Regulatory Guide 1.45 Position

This guide describes acceptable methods for implementing requirements with regard to the selection of leakage detection systems for the RCPB.

1.9.45.2 VEGP Position

VEGP conforms as described in subsection 5.2.5.

1.9.46 REGULATORY GUIDE 1.46, MAY 1973, PROTECTION AGAINST PIPE BREAK INSIDE CONTAINMENT

1.9.46.1 Regulatory Guide 1.46 Position

This guide presents guidelines acceptable to the NRC staff for implementing General Design Criterion 4 of Appendix A to 10 CFR 50 in the protection of safety-related structures, systems, and components from the effects of pipe ruptures.

1.9.46.2 VEGP Position

In lieu of Regulatory Guide 1.46, the basis for conformance with General Design Criterion 4 of Appendix A to 10 CFR 50 is the implementation of NRC Branch Technical Position (BTP) MEB 3-1 and NRC BTP ASB 3-1. Refer to table 3.6.1-2.

The criteria originally implemented in the evaluation of the main reactor coolant loop was based on draft ANSI Standard 20.2, Design Basis for Protection Against Pipe Whip, and is documented in WCAP-8172-A, Pipe Breaks for the LOCA Analysis of the Westinghouse

Primary Coolant Loop. WCAP-8172-A has received NRC approval as providing an equivalent degree of protection as would be obtained by applying the criteria of Regulatory Guide 1.46. By specific exemption (50 FR 5454 February 8, 1985), the elimination of eight of these postulated large pipe breaks in the RC loop was authorized. (See section 3.6.) Elimination of the dynamic effects of pipe rupture in the NSSS Class 1 branch lines for Unit 2 is also discussed in section 3.6.

1.9.47 REGULATORY GUIDE 1.47, MAY 1973, BYPASSED AND INOPERABLE STATUS INDICATION FOR NUCLEAR POWER PLANT SAFETY SYSTEMS

1.9.47.1 Regulatory Guide 1.47 Position

Describes an acceptable method for implementing the requirements of Section 4.13 of IEEE Std. 279-1971 and Criterion XIV of Appendix B to 10 CFR 50 with respect to indicating the bypass or inoperable status of portions of the protection system, systems actuated or controlled by the protection system, and auxiliary or supporting systems that must be operable for the protection system and the system it actuates to perform their safety-related functions.

1.9.47.2 VEGP Position

VEGP conforms as described in subsection 7.5.5 and paragraph 10.4.9.5.

1.9.48 REGULATORY GUIDE 1.48, MAY 1973, DESIGN LIMITS AND LOADING COMBINATIONS FOR SEISMIC CATEGORY 1 FLUID SYSTEM COMPONENTS

1.9.48.1 Regulatory Guide 1.48 Position

This guide describes acceptable design limits and appropriate combinations of loadings associated with normal operation, postulated accidents, and specified seismic events for the design of Seismic Category 1 fluid system components.

1.9.48.2 VEGP Position

VEGP conforms as described in subsection 3.9.N.3 and tables 3.9.B.3-3 through -10.

1.9.49 REGULATORY GUIDE 1.49, REVISION 1, DECEMBER 1973, POWER LEVELS OF NUCLEAR POWER PLANTS

1.9.49.1 Regulatory Guide 1.49 Position

This guide describes acceptable maximum power levels for nuclear power plants.

1.9.49.2 VEGP Position

Conform. VEGP has a maximum licensed core thermal power. Refer to chapter 4 for further discussion.

1.9.50 REGULATORY GUIDE 1.50, MAY 1973, CONTROL OF PREHEAT TEMPERATURES FOR WELDING OF LOW-ALLOY STEEL

1.9.50.1 Regulatory Guide 1.50 Position

Weld fabrication for low-alloy steel components should comply with the fabrication requirements specified in Section III and Section IX of the ASME Boiler and Pressure Vessel Code supplemented by the following:

1. C.1 The procedure qualification should require that:

   a. A minimum preheat and a maximum interpass temperature be specified.

   b. The welding procedures be qualified at the minimum preheat temperature.

2. C.2 For production welds, the preheat temperature should be maintained until a post-weld heat treatment has been performed.

1.9.50.2 VEGP Position

1. C.1 Paragraph 1.a is conformed with when impact testing, in accordance with ASME Boiler and Pressure Vessel Code, Section III, Subarticle 2300, is required. When impact testing is not required, specification of a maximum interpass temperature in the welding procedures is not necessary in order to assure that the other required mechanical properties of the weld are met.

   Paragraph 1.b conforms.

2. C.2 Conforms for pressure vessels with nominal thicknesses greater than 1 in. Maintenance of preheat beyond completion of welding until postweld.

The NSSS Class 1 components are in conformance with Regulatory Guide 1.50 except for regulatory positions 1.b and 2. For Class 2 and 3 components, Westinghouse does not apply Regulatory Guide 1.50 recommendations.

In the case of regulatory position 1.b, the welding procedures are qualified within the preheat temperature ranges required by Section IX of the ASME Code. Experience has shown excellent quality of welds using the ASME qualification procedures.

In the case of regulatory position 2, it is felt that this position is both unnecessary and impractical. Code acceptance low-alloy steel welds have been and are being made under present Westinghouse specified procedures. It is not necessary to maintain the preheat

temperature until a post-weld heat treatment has been performed as required by the guide, in the case of large components. In the case of reactor vessel main structural welds, the practice of maintaining preheat until the intermediate or final post-weld heat treatment has been followed by Westinghouse. In either case, the welds have shown high integrity. Westinghouse practices are documented in WCAP-8577, The Application of Preheat Temperature After Welding of Pressure Vessel Steel, which has been accepted by the NRC. Refer to subsection 5.2.3 for further discussion.

1.9.51 REGULATORY GUIDE 1.51

Withdrawn.

1.9.52 REGULATORY GUIDE 1.52, REVISION 2, MARCH 1978, DESIGN, TESTING, AND MAINTENANCE CRITERIA FOR POST-ACCIDENT ENGINEERED SAFETY FEATURE ATMOSPHERE CLEANUP SYSTEM AIR FILTRATION AND ADSORPTION UNITS OF LIGHT-WATER-COOLED NUCLEAR POWER PLANTS

1.9.52.1 Regulatory Guide 1.52 Position

This guide describes an acceptable method for the design, testing, and maintenance of post-accident ESF atmosphere cleanup systems designed to mitigate the consequences of postulated accidents.

1.9.52.2 VEGP Position

Conform, except for the following exceptions and clarifications:

1. C.2.a The atmospheric cleanup systems consist of moisture eliminators (demisters), high-efficiency particulate air (HEPA) filters before the adsorber, iodine adsorbers, HEPA filters after the adsorber, valves, fans, and related instrumentation. The fan systems are integrated with the filter housing. The filtration units and associated instrumentation and valving are redundant; however, the air distribution system is common for the redundant filtration units.

2. C.2.g No recording of filter pressure drops or flowrates is available in the control room.

3. C.2.j The design and installation of the ESF atmosphere cleanup systems do not permit the replacement of a train as an intact unit. The design of the filtration unit consists of an all-welded housing construction to minimize outleakage of potentially radioactive contaminants. Missile protection and shielding are provided for the units. Component servicing and maintenance provisions are provided consistent with Regulatory Guide 8.8.

4. C.3.k Anticipated charcoal bed loading for the design basis accident is not sufficient to raise bed temperature to the desorption and adsorbent automatic ignition range.

However, a water spray system for the adsorber has been included in the design to prevent excessive heating, if required.

5. C.4.d Control room emergency filtration system implemented TSTF-522 Revision 0 which adopted Regulatory Guide 1.52 Revision 3 heater testing guidance only, which allows the system to be operated for at least 15 minutes with the heater control circuit energized.

6. C.5.c Fuel handling post accident filter satisfies 99.0 percent retention of DOP on HEPA filters instead of 99.95 percent.

7. C.5.d Fuel handling post accident filter satisfies 99.0 percent retention of gaseous halogenated hydrocarbon refrigerant on the adsorber instead of 99.95 percent.

8. C.6.b Carbon samples taken for laboratory tests shall meet the following acceptance criteria as specified in the VEGP Technical Specifications.

   a. Control room emergency filtration system criterion is greater than or equal to 99.8 percent when tested with methyl iodide at 30°C and 70-percent relative humidity.

   b. Piping penetration area filtration and exhaust system and fuel handling building post accident ventilation system criteria are greater than or equal to 90.0 percent when tested with methyl iodide at 30°C and 95-percent relative humidity.

Wherever ANSI N509-1976 is referenced in the regulatory guide, conformance is with ANSI N509-1976, ANSI N509-1980, or ASME N509-1989 depending on the date of the applicable purchase order. Conformance may be with a particular revision when specifically called out in the corresponding specification.

Wherever ANSI N510-1975 is referenced in the regulatory guide, conformance is with ANSI N510-1975, ANSI N510-1980, or ASME N510-1989 depending on the date of the applicable purchase order. Conformance may be with a particular revision when specifically called out in the corresponding specification.

1.9.53 REGULATORY GUIDE 1.53, JUNE 1973, APPLICATION OF THE SINGLE-FAILURE CRITERION TO NUCLEAR POWER PLANT PROTECTION SYSTEMS

1.9.53.1 Regulatory Guide 1.53 Position

The guidance in trial-use IEEE Std. 379-1972 for applying the single-failure criterion to the design and analysis of nuclear power plant protection systems is generally acceptable and provides an adequate interim basis for complying with Section 4.2 of IEEE Std. 279-1971, subject to the qualifications identified in the guide.

1.9.53.2 VEGP Position

Conform. Refer to paragraph 7.1.2.6 and subsection 15.0.8.

1.9.54 REGULATORY GUIDE 1.54, JUNE 1973, QUALITY ASSURANCE REQUIREMENTS FOR PROTECTIVE COATINGS APPLIED TO WATER-COOLED NUCLEAR POWER PLANTS

1.9.54.1 Regulatory Guide 1.54 Position

The requirements and guidelines included in ANSI N101.4-1972, Quality Assurance for Protective Coatings Applied to Nuclear Facilities, for protective coatings applied to ferritic steels, aluminum, stainless steel, zinc-coated (galvanized) steel, concrete, or masonry surfaces of water-cooled nuclear power plants are generally acceptable and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50 subject to the qualifications identified in the guide.

1.9.54.2 VEGP Position

The VEGP conformance is discussed in table 6.1.2-1.

1.9.55 REGULATORY GUIDE 1.55, JUNE 1973, CONCRETE PLACEMENT IN CATEGORY 1 STRUCTURES

1.9.55.1 Regulatory Guide 1.55 Position

This guide describes acceptable bases for implementing the quality assurance requirements applicable to the placement of concrete in Category 1 structures.

1.9.55.2 VEGP Position

VEGP conforms to the following standards identified in the regulatory guide:

- ACI 305-72 Recommended Practice for Hot Weather Concreting.
- ACI 306-66 Recommended Practice for Cold Weather Concreting.
- ACI 308-71 Recommended Practice for Curing Concrete.
- ACI 347-68 Recommended Practice for Concrete Formwork.

VEGP also conforms to ACI 318-71 "Building Code Requirements for Reinforced Concrete" with the following exceptions:

- Section 6.2.2 - Forms not supporting the weight of concrete may be removed in less than 24-h to satisfy the curing requirements.

- Section 6.4.1 - Vertical construction joints are not coated with neat cement grout before placing new concrete. The use of neat cement grout in vertical construction joints is impractical and can be detrimental where deep forms and steel congestion prevent proper access.

In addition, the following standards not identified in the regulatory guide are used for concrete placement of Category 1 structures:

- ACI 304-73 Recommended Practice For Measuring, Mixing, Transporting, and Placing Concrete.

- ACI 309-72 Consolidation of Concrete.

Refer to section 3.8 for further discussion.

1.9.56 REGULATORY GUIDE 1.56, REVISION 1, JULY 1978, MAINTENANCE OF WATER PURITY IN BOILING WATER REACTORS

Not applicable to VEGP.

1.9.57 REGULATORY GUIDE 1.57, JUNE 1973, DESIGN LIMITS AND LOADING COMBINATIONS FOR METAL PRIMARY REACTOR CONTAINMENT SYSTEM COMPONENTS

1.9.57.1 Regulatory Guide 1.57 Position

This guide delineates acceptable design limits and appropriate combinations of loadings associated with normal operation, postulated accidents, and specified seismic events for the design of components of metal primary reactor containment systems.

1.9.57.2 VEGP Position

Conformance is discussed in subsection 3.8.2.

1.9.58 REGULATORY GUIDE 1.58, REVISION 1, SEPTEMBER 1980, QUALIFICATION OF NUCLEAR POWER PLANT INSPECTION, EXAMINATION, AND TESTING PERSONNEL

1.9.58.1 Regulatory Guide 1.58 Position (HISTORICAL)

[The requirements and recommendations for qualification of nuclear power inspection, examination, and testing personnel that are included in ANSI N45.2.6-1978 are generally acceptable and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the qualifications identified in the guide.]

1.9.58.2 VEGP Position - Prelicense (HISTORICAL)

[VEGP shall conform with this guide, which endorses ANSI N45.2.6-1978, with the following exceptions and clarifications:

Exceptions are as follows:

1. *Position C.8 of Regulatory Guide 1.58. Exposure during construction is restricted to radiography, and training in radiation protection is supplied in the radiography certification course. Construction personnel entering restricted areas of the operative plant will receive training in radiation protection from power generation prior to being allowed access.*

Clarifications are as follows:

1. *Paragraph 1.2 of ANSI N45.2.6-1978, Applicability. VEGP personnel who approve preoperational, startup, and test results and who direct or supervise the conduct of individual preoperational, startup, and operational tasks shall be qualified in accordance with the VEGP position to Regulatory Guide 1.8 in lieu of being qualified to ANSI N45.2.6 as allowed by regulatory position C.1 of Regulatory Guide 1.58, Rev. 1. For nuclear operations, VEGP elects to apply the requirements of this guide to quality control inspection personnel.*

   Regulatory position C.2 of Regulatory Guide 1.58, Rev. 1, states that the 1975 version of SNT-TC-1A is acceptable for the qualification of personnel performing nondestructive examinations. In lieu of this, VEGP Construction personnel (SNC only) and Nuclear Operations personnel shall use the requirements of the 1980 version of SNT-TC-1A for qualifying personnel performing nondestructive inspection, examination, or testing, and in addition VEGP shall supplement these requirements by replacing the "shoulds" contained in the 1980 version with "shalls" except as follows:

   a. *The "should" in the last sentence of Section 4.3 (3) of SNT-TC-1A - 1980, which refers to a NDE level III being qualified to instruct and examine NDT personnel, is not replaced with "shall." For the VEGP, a NDE level III individual shall be responsible for the training and examination of NDT personnel; while conducting of actual training and examination may be delegated to qualified individuals appointed by the level III individual.*

   b. *The "should" in the second sentence of Section 8.4.3 of SNT-TC-1A - 1980 remains as a "should," as allowed by Section 8.4.2. VEGP elects to use a composite grade based on*

the simple average of the examinations; this shall be prescribed in VEGP's written practice.

Contractors may use the 1975 or later version of SNT-TC-1A, as allowed, for qualifying their personnel.

For personnel performing calibration, installation, checkouts, or routine surveillances the requirements of this guide will not be applied, as allowed by Section 1.2 of ANSI N45.2-6-1978; personnel performing these functions shall either meet the minimum education and experience recommendations of ANSI N18.1-1971 or will complete a qualification program which will demonstrate their ability to perform their job functions.

FSAR table 13.1.3-1 designates the minimum education and experience recommendations for plant personnel, while FSAR subsection 13.2.2 describes the training programs which demonstrate the ability of plant personnel to perform their job functions.

2. *Paragraph 2.5 of ANSI N45.2.6-1978, Physical. VEGP will implement the requirements of this section with the stipulation that, where no special physical characteristics are required, none will be specified. The converse is also true; if no special physical requirements are stipulated by VEGP, none are considered necessary. SNC employees receive an initial physical examination to assure satisfactory physical condition; SNC management shall determine which personnel are required to receive an annual examination.*

3. *Paragraph 3 of ANSI N45.2.6-1978, Qualification. Same clarification as 1.*

4. *Personnel performing visual examinations (VT-2, 3, and 4) per the requirements of ASME Section XI will either meet the experience requirements in sections 3.5.1, 3.5.2, or 3.5.3 of ANSI N45.2.6-1978 or alternately, a program based on experience, comprehensive training, and testing as allowed in section 3.5 of ANSI N45.2.6-1978. Detailed training and testing will be accomplished either through the visual examination training program at the Electric Power Research Institute's NDE Center or an equivalent program.*

5. *The Georgia Power Company (GPC) Construction Department Inspector Certification Program utilizes level III administrators to coordinate training, certify qualified level I & II personnel, and maintain records. Level III administrators must be high school graduates as a minimum. Level III administrators are appointed by the manager of quality control. They must be members of the quality control staff, and must have extensive inspection, technical or engineering construction experience that has been appropriately documented. The primary responsibility of the level III administrator is to evaluate the adequacy of specific programs used to train and test inspection, examination and testing personnel. The level III administrator does not plan, implement, record, evaluate, or report inspections.]*

1.9.58.3 VEGP Position - Post-License

Regulatory Guide 1.58 provided NRC endorsement of ANSI N45.2.6. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.6. Accordingly, the requirements for qualification of inspection, examination, and testing personnel are described in the SNC QATR.

1.9.59 REGULATORY GUIDE 1.59, REVISION 2, AUGUST 1977, DESIGN BASIS FLOODS FOR NUCLEAR POWER PLANTS

1.9.59.1 Regulatory Guide 1.59 Position

This guide describes the conditions resulting from the worst site-related flood probable at a nuclear power plant that safety-related structures, systems, and components must be designed to withstand and retain capability for cold shutdown and maintenance thereof.

1.9.59.2 VEGP Position

Conform. See subsections 2.4.3, 2.4.4, and 3.4.1 for a detailed discussion on flood protection.

1.9.60 REGULATORY GUIDE 1.60, REVISION 1, DECEMBER 1973, DESIGN RESPONSE SPECTRA FOR SEISMIC DESIGN OF NUCLEAR POWER PLANTS

1.9.60.1 Regulatory Guide 1.60 Position

This guide describes an acceptable procedure for defining response spectra for seismic design of nuclear power plants.

The Newmark-Blume-Kapur design spectra curves for free field ground accelerations are endorsed.

1.9.60.2 VEGP Position

Conform. Refer to sections 3.7.B and 3.7.N for discussion on this subject.

1.9.61 REGULATORY GUIDE 1.61, OCTOBER 1973, DAMPING VALUES FOR SEISMIC DESIGN OF NUCLEAR POWER PLANTS

1.9.61.1 Regulatory Guide 1.61 Position

This guide delineates acceptable damping values to be used in the elastic model dynamic seismic analysis of Seismic Category 1 structures, systems, and components.

1.9.61.2 VEGP Position

Conformance is discussed in subsections 3.7.B.1 and 3.7.N.1.

1.9.62 REGULATORY GUIDE 1.62, OCTOBER 1973, MANUAL INITIATION OF PROTECTIVE ACTIONS

1.9.62.1 Regulatory Guide 1.62 Position

This guide describes an acceptable method for complying with the requirements of Section 4.17 of IEEE Std. 279-1971 for including the means for manual initiation of protective actions.

1.9.62.2 VEGP Position

Conform as described in paragraph 7.3.1.2.2.7.

1.9.63 REGULATORY GUIDE 1.63, REVISION 2, JULY 1978, ELECTRIC PENETRATION ASSEMBLIES IN CONTAINMENT STRUCTURES FOR LIGHT-WATER-COOLED NUCLEAR POWER PLANTS

1.9.63.1 Regulatory Guide 1.63 Position

Conformance with the requirements of IEEE Std. 317-1976, IEEE Standard for Electric Penetration Assemblies in Containment Structures for Nuclear Power Generating Stations, provides an acceptable method of complying with General Design Criterion 50 of Appendix A and with Appendix B to 10 CFR 50 with respect to mechanical, electrical, and test requirements for the design, qualification, construction, installation, and testing of electric penetration assemblies in containment structures for light-water-cooled nuclear power plants, subject to the following:

1. C.1 Section 4.2.4 should be supplemented by the following: The electric penetration assembly should be designed to withstand, without loss of mechanical integrity, the maximum short circuit current vs. time conditions that could occur given single random failures of circuit overload protection devices. The circuit overload protection system should conform to the criteria of IEEE Std. 279-1971, Criteria for Protection Systems for Nuclear Power Generating Stations (also designated ANSI N42.7-1972).

2. C.2 The maximum short circuit current assessed at the penetration assembly should be consistent with the criteria used in establishing the interrupting capability of the protective device associated with the penetration assembly conductors. Accordingly, the provisions of Section 4.2.4 pertaining to the rated short circuit current for ac circuits should be modified as follows:

Rated Voltage (V)	Ratio
300 600 1000	>8
5000 8000 15,000	>15

3. C.3 The provisions of Section 4.2.4 pertaining to the duration of the maximum short circuit current are representative of circuits protected by molded-case circuit breakers but are not representative of circuits using other air circuit breakers. The provisions pertaining to the duration of the maximum short-circuit current should be modified as follows:

Service Classification	Duration(s)
Low-voltage power and control	0.033 (for molded-case circuit breakers) 0.066 (for other air circuit breakers)

4. C.4 Section 6.4.4, Dielectric-Strength Test, should be supplemented, for qualification testing only, by the following:

   (3) Each medium-voltage power conductor shall be given an impulse withstand test by applying a 1.2 x 50 μs impulse voltage test series consisting of three positive and three negative impulse voltages. If flashover occurs on only one test during any group of three consecutive tests, three more shall be made. If no flashover occurs in the second group of tests, the flashover in the first group shall be considered as a random flashover and the equipment shall be considered as having passed the test.

   The test voltages for the above shall be based on the voltage rating of the conductor in accordance with the following table:

Conductor-Rated Voltage (V)	Impulse Voltage (V)
300 and 600	......
1000	......
5000	60,000
8000	95,000
15,000	95,000

5. C.5 The 500-h aging time at minimum aging temperature of Section 6.3.3 is a printing error and should be changed to 5000 h.

6. C.6 The definition of "Double Aperture Seal" in Section 2 is a printing error and should be changed as follows: "Two single aperture seals in series."

7. C.7 The specific applicability or acceptability of the codes, standards, and guides referenced in Section 3 will be covered separately in other regulatory guides, where appropriate.

1.9.63.2 VEGP Position

1. C.1 Protection against single random failure of circuit overload protection devices are as follows:

   a. For medium-voltage circuits, the circuit breaker associated with the load is backed up by a second load breaker in series. The second breaker is Class 1E.

   b. For 480-V loads fed from load centers, the circuit breaker associated with the load is backed up by series fuses. Primary protection is provided by the individual load circuit breaker.

   c. For 480-V loads fed from motor control centers, a second breaker or fuse in series with the primary breaker to each load is used. A thermal overload relay may also be used in conjunction with these breakers in some cases.

   d. For control circuits with sufficient capacity to potentially damage a penetration, backup overload protection is provided. The fault current in other low-energy level control circuits and instrument circuits is limited and does not need backup overload protection.

2. C.2 The X/R ratios used in calculating faults at the penetrations are consistent with the X/R ratios used in establishing the interrupting capability of the protective device associated with the penetration assembly conductors. Fault currents are based on: the full interrupting capability of the associated switchgear or X/R ratios as recommended by Regulatory Guide 1.63; X/R ratios as provided by industry standard for motor fault contribution; X/R ratios from actual transformer impedances and conservative cable impedances.

3. C.3 Clearing time of the circuit breakers supplying the penetrations is used to determine the penetration conductor capability.

4. C.4 Conform.

5. C.5 Conform.

6. C.6 Conform.

7. C.7 Not applicable.

Refer to subsection 8.3.1 for further discussion.

1.9.64 REGULATORY GUIDE 1.64, REVISION 2, JUNE 1976, QUALITY ASSURANCE FOR THE DESIGN OF NUCLEAR POWER PLANTS

1.9.64.1 Regulatory Guide 1.64 Position (HISTORICAL)

[The requirements and recommendations for establishing and executing a QAP during the design phase of nuclear power plants that are included in ANSI N45.2.11-1974 are acceptable to the NRC staff and

provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the following:

1. *C.1 Subdivision 1.5 of ANSI N45.2.11-1974 states that other documents that are required to be included as a part of this standard will be identified at the point of reference and described in Section 12 of the standard. The specific acceptability of these listed documents has been or will be covered separately in other regulatory guides or in Commission regulations where appropriate.*

2. *C.2 Instead of the second sentence of the second paragraph of Section 6.1 on design verification, the following should be used: "The duties of a supervisor and the relationship with subordinates vary widely in different organizations. Regardless of their title, individuals performing design verification should not (1) have immediate supervisory responsibility of the individual performing the design, (2) have specified a singular design approach, (3) have ruled out certain design considerations, or (4) have established the design inputs for the particular design aspect being verified. While design verification by the designer's immediate supervisor is encouraged, it should not be construed that such verification constitutes the required independent design verification, nor should the independent design verification be construed to dilute or replace the clear responsibility of supervisors for the quality of work performed under their supervision."*

3. *C.3 In the first sentence of Section 8 of N45.2.11-1974, the word "effecting" should be inserted before "design changes" for clarification. Further, the term "approved design document" should be construed to mean "design output" (Section 1.4) approved by the organization performing the design.*

4. *C.4 Sections 4.3, 4.4, and 4.5 of N45.2.11-1974 concern the establishment of procedures for the preparation and control of drawings, specifications, and other design documents. These sections list typical subjects to be covered by such procedures. One of the subjects to be covered is "nonconformances." The NRC staff considers the "nonconformances" listed in these sections to be nonconformances with procedural requirements. Thus in Section 4.3, item (11), "Nonconformance with drawing requirements," should be construed to mean "Nonconformance with procedures for the preparation and control of drawings;" in Section 4.4, item (7), "Nonconformance with specification requirements," should be construed to mean "Nonconformance with procedures for the preparation and control of specifications;" and in Section 4.5, item (7), "Nonconformance with design document requirements," should be construed to mean "Nonconformance with procedures for the preparation and control of design documents."]*

1.9.64.2 VEGP Position

[(HISTORICAL) The VEGP QAP during design and construction phase conforms to ANSI N45.2.11, Quality Assurance Requirements for the Design of Nuclear Power Plants (Draft 2, Revision 2, May 1973) as discussed in section 17.1 and appendix 17A. With regard to the design of NSSS equipment, alternatives and clarification to the text of ANSI N45.2.11-1974 are contained in WCAP-8370/7800 Table 17-1.]

Regulatory Guide 1.64 provides NRC endorsement of ANSI N45.2.11. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.11.

Accordingly, quality assurance requirements applicable to design activities are described in the SNC QATR.

1.9.65 REGULATORY GUIDE 1.65, OCTOBER 1973, MATERIALS AND INSPECTIONS FOR REACTOR VESSEL CLOSURE STUDS

1.9.65.1 Regulatory Guide 1.65 Position

This guide defines acceptable materials and testing procedures for implementing criteria with regard to reactor vessel closure stud bolting for light-water-cooled reactors.

1.9.65.2 VEGP Position

VEGP conforms with this guide except as noted below:

1. The use of modified SA-540 Grade B24 material as specified in ASME Boiler and Pressure Vessel Code Case 1605 is not specified in the guide but is used by Westinghouse. The use of this Code Case has been approved by the NRC via Regulatory Guide 1.85.

2. The maximum limit of 170 ksi ultimate tensile strength is not explicitly specified by Westinghouse as required by the guide. Westinghouse does specify fracture toughness of 45 ft/lb and 25 mils lateral expansion as required by the ASME Code and 10 CFR 50, Appendix G. These requirements also result in strength levels below the maximum limit, as demonstrated by the actual stud material properties for VEGP which are listed in tables 5.3.1-4 and 5.3.1-5.

3. Inservice inspection of the bolting will be performed using the following guidelines.

    a. All surface examinations will be performed in accordance with ASME Section XI in lieu of paragraph NB-2545 or NB-2546 of ASME Section III.

    b. Washers will be examined using the visual techniques as required by ASME Section XI in lieu of the surface examination in Section C.4.

1.9.66 REGULATORY GUIDE 1.66

Withdrawn.

1.9.67 REGULATORY GUIDE 1.67, OCTOBER 1973, INSTALLATION OF OVERPRESSURE PROTECTION DEVICES

1.9.67.1 Regulatory Guide 1.67 Position

This guide describes an acceptable method for the design of piping for safety valve and relief valve stations which have open discharge systems with limited discharge pipes, and which have inlet piping that neither contains a water seal nor is subject to slug flow of water upon discharge of the valves.

1.9.67.2 VEGP Position

Conform. Refer to paragraph 3.9.B.3.

1.9.68 REGULATORY GUIDE 1.68, REVISION 2, AUGUST 1978, INITIAL TEST PROGRAMS FOR WATER-COOLED NUCLEAR POWER PLANTS

1.9.68.1 Regulatory Guide 1.68 Position

This guide describes the general scope and depth of initial test programs acceptable to the NRC for light-water-cooled nuclear power plants. The guide provides a representative listing of the plant structures, systems, components, and the design features and performance capability tests that should be demonstrated during the initial test program. The guide also provides information on inspections that will be performed by the NRC and provides guidance on the preparation of procedures for the conduct of initial test programs.

1.9.68.2 VEGP Position

Conform as follows, except for Appendix A, Section 5, Subsections F, I, M, U, CC, HH, II, and KK, MM, Section 1, Subsections 0(1) and M(5), and Section 4, Subsections B, C, and T. Reverse flow through idle RCS loops will not be measured as required by paragraph 5(m). VEGP will not be licensed to operate with idle loops; therefore, these measurements are not applicable.

Tests U and MM will not be performed as the results obtained will be similar to the results obtained during a turbine trip from 100-percent power which will be performed. The closure times for the MSIVs will be verified during hot functional and preoperational testing.

The loss of or bypass of feedwater heaters test (test KK) will not be performed as results will be similar, but less severe than those obtained during the load swing test, paragraph 14.2.8.2.27.

The gaseous and liquid radwaste systems (test CC) will be tested as described in the gaseous waste processing system preoperational test abstract (paragraph 14.2.8.1.48) and the liquid waste processing system preoperational test abstract (paragraph 14.2.8.1.49). Performance of

these tests during the power ascension test phase would produce the same results as testing during the preoperational test phase.

The complete loss of flow at full-power test (test II) will not be performed. Results for reactor coolant system (RCS) flowrates obtained in the flow coastdown test, paragraph 14.2.8.2.5, will verify that the RCS flowrates assumed in section 15.3.2 are conservative.

The load swing test (test HH) will be performed at 30 percent, 75 percent, and 100 percent. A load swing at 50-percent power will not be performed. This conforms with the standard Westinghouse startup program. The load swings at 30-percent, 75-percent and 100-percent power and are adequate to demonstrate the dynamic response of the facility.

The dropped control test (test F) will not be performed. The design has been verified and documented by testing at a prototype plant. In addition, difficulties identified in a recent INPO report in performing the test have caused significant transients in the reactor plant resulting in peaking problems.

The pseudo-rod ejection test (test 4.C) will not be performed on Unit 2. The test was successfully performed on Unit 1 and prototype plants, and no significant information would be obtained by performing the test on Unit 2. The pseudo-rod ejection test at greater than 10-percent power will not be performed. Tests have been performed to validate the rod ejection accident analysis at prototype plants.

Testing of the reactor vessel head lifting rig and internal lifting rig (test 0 (1)) shall be in accordance with paragraph 9.1.5.2.3.4 "Special Lifting Devices" as delineated in table 9.1.5-7.

The worth of all control rods, with the greatest worth control rod stuck out (test 4.B), will not be performed. This test was performed on the essentially identical Unit 1 core and no significant additional information would be obtained from a test on Unit 2. Unit 2 will be treated as a restart and low-power testing will determine the total worth of the control rod banks (not including shutdown rod banks).

Demonstration of incore and excore nuclear instrumentation to detect control rod misalignment (test I) will not be performed because the individual rod position indication system is the primary means of determining control rod misalignments.

The natural circulation test (4.T) will not be performed on Unit 2 because the test was successfully performed on Unit 1 and satisfied all requirements. The Unit 1 test was performed during power ascension using decay heat instead of nuclear heat. A decay heat test is preferable because it eliminates the need to determine actual reactor power level and avoids unrelated trips.

All Fuel Transfer System normal operating features will be tested, including interlocks and bypasses (test M (5)). Emergency handwheel and emergency pull-out cable testing will not be performed due to the amount of equipment disassembly required and the destructive impact it would have on the equipment and dummy fuel assembly.

1.9.68.3 Regulatory Guide 1.68.2, Revision 1, July 1978, Initial Startup Test Program to Demonstrate Remote Shutdown Capability for Water-Cooled Nuclear Power Plants

1.9.68.3.1 Regulatory Guide 1.68.2 Position

This guide describes an initial startup test program acceptable to the NRC for demonstrating hot shutdown capability and the potential for cold shutdown from outside the control room.

1.9.68.3.2 VEGP Position

Conform; the initial startup test program is described in chapter 14.

1.9.68.4 Regulatory Guide 1.68.3, April 1982, Preoperational Testing of Instrument and Control Air Systems

1.9.68.4.1 Regulatory Guide 1.68.3 Position

This guide describes a method acceptable to the NRC for verifying that instrument and control air systems and the loads they supply will operate properly at normal system pressures and to assure the operability of functions important to safety in the event that system pressure is lost, reduced below normal operating level, or increased above the design pressure of the air system components to the upstream safety valve accumulation pressure.

1.9.68.4.2 VEGP Position

The instrument air system has no safety design basis as discussed in subsection 9.3.1. The ability of the instrument air system to perform its design function will be demonstrated during the instrument air preoperational test described in chapter 14. VEGP conforms with this guide with the following clarifications:

1. The provisions of position C.8 are satisfied as follows:

   Monitoring of the response of each safety-related pneumatic valve upon loss of air occurs during construction acceptance tests for each valve and is a prerequisite test for the preoperational test of the system. In performing this testing, the air pressure that will be supplied will be equivalent to the air pressure supplied by the instrument air system during normal plant operation, and it will be demonstrated that each valve responds properly (assumes its fail-safe position) for both a simulated sudden loss of air and for a gradual loss of air pressure. Since it is verified, on an individual basis, that each safety-related pneumatically operated valve will assume its fail-safe position, performance of a large-scale loss-of-air test encompassing several branches of the instrument air system is not necessary to verify correct valve response.

2. Position C.6 states that the "....ability of the system to meet the quality requirements of the system design should be verified," and references ANSI/ISA S7.3-1975 as an acceptable standard with respect to oil, water, and particulate matter contained in the product air. It further states that the quality should be verified by analyzing the air at the end of each feeder line. The VEGP instrument air system design is such that instrument air is filtered at the dehumidifier, and at each instrument (by a local filter/regulator) in accordance with individual instrument manufacturer's requirements. This ensures that particulate will be filtered at the individual instrument to prevent possible plugging and/or erosion of the individual air passages. Because of this individual filtration, verification of the particulate size at the end of each feeder is not necessary. The oil and moisture content are verified in conformance with the Regulatory Guide position.

1.9.69 REGULATORY GUIDE 1.69, DECEMBER 1973, CONCRETE RADIATION SHIELDS FOR NUCLEAR POWER PLANTS

1.9.69.1 Regulatory Guide 1.69 Position

This guide endorses ANSI N101.6-1972 which addresses the design and construction of concrete radiation shields.

1.9.69.2 VEGP Position

Not applicable since VEGP uses conventional concrete for shielding, not concrete shields addressed in ANSI N101.6-1972.

1.9.70 REGULATORY GUIDE 1.70, REVISION 3, NOVEMBER 1978, STANDARD FORMAT AND CONTENT OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS

1.9.70.1 Regulatory Guide 1.70 Position

The purpose of the FSAR is to inform the NRC of the nature of the plant, the plans for its use, and the safety evaluations that have been performed to evaluate whether the plant can be operated without undue risk to the health and safety of the public. The FSAR is the principal document for the applicant to provide this information. The purpose of this guide is to indicate the information to be provided in the FSAR and to establish a uniform format acceptable to the NRC for presenting this information.

1.9.70.2 VEGP Position

Conform as discussed in subsection 1.1.6.

1.9.71 REGULATORY GUIDE 1.71, DECEMBER 1973, WELDER QUALIFICATION FOR AREAS OF LIMITED ACCESSIBILITY

1.9.71.1 Regulatory Guide 1.71 Position

This guide describes a method acceptable to the NRC for implementing requirements with regard to the control of welding for nuclear components.

1.9.71.2 VEGP Position

This guide provides guidelines above and beyond requirements of ASME Section IX. All welder qualification at VEGP is in conformance with ASME Section IX. Few welds of limited accessibility are expected to be encountered. For field application, the type of qualification should be considered on a case-by-case basis due to the great variety of circumstances encountered. Reasonable engineering judgment will be used to determine if performance qualification is necessary under simulated access conditions for any specific case.

Westinghouse practice does not require qualification or requalification of welders for areas of limited accessibility as described by the guide. Experience shows that the current shop practice produces high quality welds. Limited accessibility qualification or requalification, which are additional to ASME Section III and IX requirements, is an unduly restrictive requirement for shop fabrication, where the welders' physical position relative to the welds is controlled and does not present any significant problems. In addition, shop welds of limited accessibility are repetitive due to multiple production of similar components, and such welding is closely supervised.

Refer to subsection 5.2.3 for further discussion.

1.9.72 REGULATORY GUIDE 1.72, REVISION 2, NOVEMBER 1978, SPRAY POND PIPING MADE FROM FIBERGLASS-REINFORCED THERMO-SETTING RESIN

1.9.72.1 Regulatory Guide 1.72 Position

This guide describes a method acceptable to the NRC for designing, fabricating, and testing fiberglass-reinforced thermo-setting resin piping for spray pond applications.

1.9.72.2 VEGP Position

Spray pond piping is not used at VEGP; therefore, this guide is not applicable.

1.9.73 REGULATORY GUIDE 1.73, JANUARY 1974, QUALIFICATION TESTS OF ELECTRIC VALVE OPERATORS INSTALLED INSIDE THE CONTAINMENT OF NUCLEAR POWER PLANTS

1.9.73.1 Regulatory Guide 1.73 Position

The procedures specified by IEEE Std. 382-1972, IEEE Trial-Use Guide for Type Test of Class I Electric Valve Operators for Nuclear Power Generating Stations, dated April 10, 1973, for conducting qualification tests of electric valve operators for service inside the containment vessel of water-cooled and gas-cooled nuclear power plants are generally acceptable and provide an adequate basis for complying with the qualification testing requirements of Section III of Appendix B to 10 CFR 50 to verify adequacy of design for service under design basis event conditions, subject to the qualifications in the guide.

1.9.73.2 VEGP Position

Qualification is discussed in paragraph 3.9.B.3.2.2, subsection 3.11.B.2, and WCAP-8587. The NSSS components are qualified to meet IEEE Std. 382-1972 using the qualification program described in WCAP-8587. See Regulatory Guide comparisons 1.40, 1.89, and 1.100 for additional information.

1.9.74 REGULATORY GUIDE 1.74, FEBRUARY 1974, QUALITY ASSURANCE TERMS AND DEFINITIONS

1.9.74.1 Regulatory Guide 1.74 Position (HISTORICAL)

[The quality assurance terms and definitions contained in ANSI N45.2.10-1973 are generally acceptable for use in describing and implementing quality assurance programs for the design, construction, and operation of nuclear power plant structures, systems, and components subject to the following:

The definition of "procurement documents" should be considered to include such documents as contracts, letters of intent, work orders, purchase orders, or proposals and their acceptances which authorize the seller to perform services or supply equipment, material, or facilities on behalf of the purchaser.]

1.9.74.2 VEGP Position

Regulatory Guide 1.74 provided NRC endorsement of ANSI N45.2.10. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.10. Accordingly, terms and definitions used in the quality assurance program are provided in the SNC QATR.

1.9.75 REGULATORY GUIDE 1.75, REVISION 2, SEPTEMBER 1978, PHYSICAL INDEPENDENCE OF ELECTRIC SYSTEMS

1.9.75.1 Regulatory Guide 1.75 Position

The IEEE Std. 384-1974 sets forth criteria for the separation of circuits and equipment that are redundant.

The guidance in IEEE Std. 384-1974, IEEE Trial-Use Standard Criteria for Separation of Class 1E Equipment and Circuits, dated March 15, 1974, is generally acceptable to the NRC staff and provides an adequate basis for complying with IEEE Std. 279-1971 and the Commission's General Design Criteria 3, 17, and 21 of Appendix A to 10 CFR 50 with respect to the physical independence of the circuits and electric equipment comprising or associated with the Class 1E power system, the protection system, systems actuated or controlled by the protection system, and auxiliary or supporting systems that must be operable for the protection system and the systems it actuates to perform their safety-related functions, subject to the qualifications in the guide.

1.9.75.2 VEGP Position

Effective April 1990, VEGP has adopted IEEE 384-1981 as the "Standard Criteria for Independence of Class 1E Equipment and Circuits," effectively replacing IEEE 384-1974. The 1981 version of IEEE 384 is generally consistent with the 1974 version and provides clearer, more concise criteria. IEEE 628-1987, "Standard Criteria for the Design, Installation and Qualification of Raceway Systems for Class 1E circuits for Nuclear Power Generating Station" requires VEGP to meet the criteria of IEEE 384-1981. Independence of Class 1E equipment and circuits has not been adversely affected by the adoption of IEEE 384-1981.

Conform as discussed below and in paragraph 7.1.2.2.

Where isolation devices are used to isolate Class 1E circuits from non-Class 1E circuits, the circuits within or from the Class 1E equipment or devices to the isolation device(s) are identified as Class 1E and are treated as such. Beyond the isolation device(s) these circuits are identified as non-Class 1E and are separated from Class 1E circuits in accordance with paragraph 8.3.1.4.3. Power supply circuits from the transmission network which are connected to the Class 1E switchgear are identified as non-Class 1E.

All Class 1E and non-Class 1E circuits are separated in accordance with paragraph 8.3.1.4.3.

Splicing or repairing cable in raceway is prohibited except:

A. Replacing splices in equipment is permitted where such splices have been included in vendor qualification testing or analysis.

B. Cable manufacturers' splices and repairs are permitted provided they are qualified by the manufacturer to the same requirements and standards as specified in the cable specification.

C. Cable splices in raceway are permitted where specifically justified by analysis or testing. Proposed splices in raceway will be evaluated on a case-by-case basis and documented in engineering calculations. The engineering evaluation and analysis for splicing in raceway must assure that:

   1. The splice would not be overstressed by potential future overpulls or other mechanical tensioning, including cable creep.

   2. Administrative controls include documentation of the location of the splice and constraints on any future activity that could place additional cable in the same raceway.

   3. Normal and fault currents are evaluated to determine the potential for heating effects assuming, under worst case condition, that the splice will introduce some additional circuit resistance.

All cable splices and repairs must utilize qualified materials and methods, and their location shall be specifically described in design documents.

All raceways and circuits are uniquely identified (by permanent numbering markers and color coding) to distinguish between redundant Class 1E and non-Class 1E systems at intervals stipulated in Section 5.1.2 of IEEE Std. 384-1974.

Circuits and raceways of safety-related groups A and C are routed in the lower cable spreading room. Circuits and raceways of safety-related groups B and D are routed in the upper cable spreading room. Group N raceways and circuits are routed in both upper and lower cable spreading rooms.

In general, VEGP complies with the separation requirements of IEEE 384-1974. However, as allowed by Sections 5.1.1.2 and 5.6.2 of IEEE Std. 384-1974 and by Regulatory Guide 1.75, a series of tests has been performed to establish alternate reduced separation distances where the separation distances specified in IEEE 384 are not met. The test results are documented in Wyle Laboratories Test Report No. 48141-02 which has been submitted to the NRC under separate cover.

Refer to paragraph 8.3.1.4.3 and table 8.3.1-4 for additional information.

1.9.76 REGULATORY GUIDE 1.76, APRIL 1974, DESIGN BASIS TORNADO FOR NUCLEAR POWER PLANTS

1.9.76.1 Regulatory Guide 1.76 Position

This guide designates values of the design basis tornado and locations within the United States.

1.9.76.2 VEGP Position

Conform. The tornado design parameters for Region 1 are used for VEGP. Refer to section 3.3 for discussion on this subject.

1.9.77 REGULATORY GUIDE 1.77, MAY 1974, ASSUMPTIONS USED FOR EVALUATING A CONTROL ROD EJECTION ACCIDENT FOR PRESSURIZED WATER REACTORS

1.9.77.1 Regulatory Guide 1.77 Position

1. C.1 Reactivity excursions will not result in a radial average fuel enthalpy greater than 280 cal/g at any axial location in any fuel rod.

2. C.2 Maximum reactor pressure during any portion of the assumed transient will be less than the value that will cause stresses to exceed the emergency condition stress limits as defined in Section III of the ASME Boiler and Pressure Vessel Code.

3. C.3 Offsite dose consequences will be well within the guidelines of 10 CFR 100, Reactor Site Criteria.

1.9.77.2 VEGP Position

1. C.1 Conform.

2. C.2 Exception is taken to this position which implies that the rod ejection accident should be considered as an emergency condition. This is considered a faulted condition as stated in ANSI N18.2. Faulted condition stress limits will be applied for this accident.

3. C.3 Conform.

Refer to section 15.4 for further discussion.

1.9.78 REGULATORY GUIDE 1.78, ASSUMPTIONS FOR EVALUATING THE HABITABILITY OF A NUCLEAR POWER PLANT CONTROL ROOM DURING A POSTULATED HAZARDOUS CHEMICAL RELEASE

1.9.78.1 Regulatory Guide 1.78 Position

This guide describes acceptable assumptions to be used in assessing the habitability of the control room during and after a postulated external release of hazardous chemicals and describes acceptable criteria for the protection of control room operators.

1.9.78.2 VEGP Position

Conform. Refer to sections 2.2.3 and 6.4.

In addition, with respect to positions C-13 and C-15, VEGP will train control room operators annually. Operators will be able to distinguish the smell of toxic chemicals. This will be covered

in the hazardous waste class for operators. Control room personnel will be trained to don breathing apparatus in 2 minutes.

1.9.79 REGULATORY GUIDE 1.79, REVISION 1, SEPTEMBER 1975, PREOPERATIONAL TESTING OF EMERGENCY CORE COOLING SYSTEMS FOR PRESSURIZED WATER REACTORS

1.9.79.1 Regulatory Guide 1.79 Position

This guide describes a preoperational test program acceptable to the NRC specifically for emergency core cooling systems in PWRs.

1.9.79.2 VEGP Position

Conform, with the following exceptions:

Position C.1C (2)

This position requires that the accumulator isolation be opened against maximum differential pressure using both normal and emergency power supplies. Conditions at the valve motor are independent of the power source for this test; therefore, opening the valve using emergency power would provide no additional meaningful data. For this reason, the valves will be cycled using the normal power sources only.

Position C.1B (2)

This position requires RHR system testing "include taking a suction on the RCS containment sump to verify vortex control and acceptable pressure drops across screening and suction lines and valves."

The in-plant testing requirement is unnecessary for the screens installed to satisfy requirements of the NRC Generic Letter, (GL) 2004-02, for the following reasons:

- Head loss (pressure drop) for the screen was developed using the laboratory test results conducted by General Electric Company (GE), and applied to the full-scale plant design conditions.
- Analysis and testing was conducted to provide assurance that vortexing will not result in degraded pump performance.

Preoperational testing conducted during installation of the previous screens already verified pressure drop through the suction lines and valves for the same operating conditions used for the new screen. The suction line is not modified.

1.9.80 REGULATORY GUIDE 1.80, JUNE 1974, PREOPERATIONAL TESTING OF INSTRUMENT AIR SYSTEMS

1.9.80.1 Regulatory Guide 1.80 Position

Withdrawn. Refer to paragraph 1.9.68.3.

1.9.81 REGULATORY GUIDE 1.81, REVISION 1, JANUARY 1975, SHARED EMERGENCY AND SHUTDOWN ELECTRIC SYSTEMS FOR MULTI-UNIT NUCLEAR POWER PLANTS

1.9.81.1 Regulatory Guide 1.81 Position

This guide describes an acceptable method for complying with NRC requirements with respect to the sharing of onsite emergency and shutdown electric systems for multiunit nuclear power plants.

1.9.81.2 VEGP Position

Conform. Refer to paragraph 8.3.1.1.2M for further discussion.

1.9.82 REGULATORY GUIDE 1.82, REVISION 3, WATER SOURCES FOR LONG-TERM RECIRCULATION COOLING FOLLOWING A LOSS-OF-COOLANT ACCIDENT

1.9.82.1 Regulatory Guide 1.82 Position

This guide describes an acceptable method for designing, fabricating, and testing of sump or suction inlet conditions for pumps in the emergency core cooling and containment spray systems.

1.9.82.2 VEGP Position

Conform except for the following exceptions:

1. The subject guide describes requirements for a trash rack to perform the following:

   a) Protect the inner screen from missiles that may be generated by a LOCA or by trash

   b) Prevent large debris from entering the screen.

VEGP is taking exception to the above requirements based on the following reasons:

There are no high-energy line breaks postulated to occur near the screens, and there are no missiles generated in the vicinity of the suction strainers; therefore, there are no jet loads, no pipe whip restraint loads, nor missiles applicable to the screens. The screens are designed to withstand the loading for the largest postulated debris quantity, pieces, and types. The design of the stacked disk screen prevents large debris from reaching the perforated inner area of the screens due to small slots between the strainer disks.

2. The subject guide suggests that a vertically mounted screen be provided:

VEGP takes exception to the vertically mounted screen for the following reasons:

The vertical modular stacked disk screen does not allow gravitationally-influenced settling on the perforated flow area; the top surface is a solid stainless steel plate and protects the perforated plates below it. Therefore, the horizontal screens are functionally equivalent to vertical screens.

See subsections 6.2.2 and 6.3.2 for further discussion. Note that some nuclear fuel used at the VEGP units may contain design features that provide for flow passage dimensions smaller than those of the containment sump screen. This condition could lead to flow blockage downstream of the containment sump. The fuel flow passage dimensions have been evaluated and the conclusion has been reached that excessive flow blockage in the fuel will not occur. Therefore, long-term core cooling requirements and 10 CFR 50.46 emergency core cooling system (ECCS) acceptance criteria will continue to be met.

1.9.83 REGULATORY GUIDE 1.83, REVISION 1, JULY 1975, INSERVICE INSPECTION OF PRESSURIZED WATER REACTOR STEAM GENERATOR TUBES

1.9.83.1 Regulatory Guide 1.83 Position

This guide describes a method acceptable to the NRC for implementing the applicable general design criteria by reducing the probability and consequences of steam generator tube failures through periodic inservice inspection for early detection of defects and deterioration.

1.9.83.2 VEGP Position

The steam generators are designed to permit access to tubes for inspection and/or repair or plugging (if necessary). Plugging will be accomplished by either welded plugs or nonwelded mechanical plugs. The inservice inspection program is discussed in subsection 5.4.2 and the Technical Specifications.

1.9.84 REGULATORY GUIDE 1.84, REVISION 20, NOVEMBER 1982, DESIGN AND FABRICATION CODE CASE ACCEPTABILITY - ASME SECTION III, DIVISION 1

1.9.84.1 Regulatory Guide 1.84 Position

This guide lists those Section III ASME Code Cases oriented to design and fabrication that are generally acceptable to the NRC for implementation in the licensing of light-water-cooled nuclear power plants.

1.9.84.2 VEGP Position

Conform, except as noted in table 1.9-1 for Code Case N-31.

The NSSS Code Cases are discussed in table 1.9-3 and paragraph 5.2.1.2. Other design and fabrication code cases used for VEGP are identified in and table 1.9-1.

1.9.85 REGULATORY GUIDE 1.85, REVISION 20, NOVEMBER 1982, MATERIALS CODE CASE ACCEPTABILITY - ASME SECTION III DIVISION 1

1.9.85.1 Regulatory Guide 1.85 Position

This guide lists those Section III ASME Code cases oriented to materials and testing that are generally acceptable to the NRC for implementation in the licensing of light-water-cooled nuclear power plants.

1.9.85.2 VEGP Position

Conform.

The NSSS Code Cases are discussed in table 1.9-3 and paragraph 5.2.1.2. Other materials code cases used for VEGP are identified in table 1.9-2.

1.9.86 REGULATORY GUIDE 1.86, JUNE 1974, TERMINATION OF OPERATING LICENSES FOR NUCLEAR REACTORS

1.9.86.1 Regulatory Guide 1.86 Position

This guide describes methods and procedures considered acceptable by the NRC for the termination of operating licenses for nuclear reactors.

1.9.86.2 VEGP Position

The termination of the operating license and subsequent decommissioning of VEGP will be performed in accordance with the regulations applicable at that time.

1.9.87 REGULATORY GUIDE 1.87, REVISION 1, JUNE 1975, GUIDANCE FOR CONSTRUCTION OF CLASS 1 COMPONENTS IN ELEVATED TEMPERATURE REACTORS

Not applicable to VEGP.

1.9.88 REGULATORY GUIDE 1.88, REVISION 2, OCTOBER 1976, COLLECTION, STORAGE, AND MAINTENANCE OF NUCLEAR POWER PLANT QUALITY ASSURANCE RECORDS

1.9.88.1 Regulatory Guide 1.88 Position (HISTORICAL)

[The requirements and guidelines for collection, storage, and maintenance of nuclear power plant quality assurance records that are included in ANSI N45.2.9-1974 are acceptable to the NRC staff and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the following:

1. *C.1 Subdivision 1.5 of ANSI N45.2.9-1974 states, "Other documents that are required to be included as part of this standard are either identified at the point of reference or described in Section 8 of this standard." The specific applicability or acceptability of these documents has been or will be covered separately in other regulatory guides or in Commission regulations where appropriate.*

2. *C.2 Two methods for protection of quality assurance records from the hazards of fire are described in Subdivision 5.6 of ANSI N45.2.9-1974. The National Fire Protection Association (NFPA) No. 232-1975, "Standard for the Protection of Records," also contains provisions for records protection equipment and records handling techniques that provide protection from the hazards of fire. This standard, within its scope of coverage, is considered by the NRC staff to provide an acceptable alternative to the fire protection provisions listed in Subdivision 5.6 of N45.2.9-1974. When NFPA No. 232-1975 is used, quality assurance records should be classified as NFPA Class 1 records (NFPA No. 23-1975, Chapter 5, Section 5222).]*

1.9.88.2 VEGP Position

[(HISTORICAL) The VEGP QAP for the design and construction phase is designed to conform with ANSI N45.2.9 (Draft 11, Revision 0, 1/17/73) as described in chapter 17.1. With regard to quality assurance, records for NSSS equipment, alternatives, clarifications, and exceptions to ANSI N45.2.9-1974 are contained in WCAP 8370/7800 table 17-1.

The VEGP QAP conforms for the operations phase with the requirements of ANSI N45.2.9-1974 as endorsed by Regulatory Guide 1.88, Rev. 2.

The VEGP QAP for both the design and construction phase and the operations phase conform with the revision to ANSI N45.2.9 referenced above with the following clarification.

1. *Subdivision 3.2.1 states that quality assurance records "shall be legible, completely filled out, and adequately identifiable to the item involved." Completely filled out is considered to mean "completed as appropriate to the work accomplished," as clarified in the 1979 Revision.]*

Regulatory Guide 1.88 provided NRC endorsement of ANSI N45.2.9. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.9. Accordingly, the requirements for collection, storage, and maintenance of quality assurance records are described in the SNC QATR.

1.9.89 REGULATORY GUIDE 1.89, NOVEMBER 1974, QUALIFICATION OF CLASS 1E EQUIPMENT FOR NUCLEAR POWER PLANTS

1.9.89.1 Regulatory Guide 1.89 Position

The procedures described in IEEE Std. 323-1974, IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations, dated February 28, 1974, for qualifying Class 1E equipment for service in light-water-cooled and gas-cooled nuclear power plants are generally acceptable and provide an adequate basis for complying with design verification requirements of Criterion III of Appendix B to 10 CFR 50 to verify adequacy of design under the most adverse design conditions subject to the following:

1. C.1 Reference is made in IEEE Std. 323-1974, Section 2, 6.3.2(5), and 6.3.5, to IEEE Std. 344-1971, Guide for Seismic Qualification of Class 1 Electric Equipment for Nuclear Power Generating Stations. The specific applicability or acceptability of IEEE Std. 344 will be covered separately in other regulatory guides, where appropriate.

2. C.2 The radiological source term for qualification tests in a nuclear radiation environment should be based on the same source term as that used in Regulatory Guide 1.7 (Safety Guide 7, March 10, 1971) for boiling water reactors (BWRs) and PWRs. An equivalent source term (i.e., 100 percent of the noble gases, 50 percent of the halogens, and 1 percent of the remaining solids developed from maximum full-power operation of the core) should be used for high temperature gas-cooled reactors (HTGRs). The containment size should be taken into account in each case. For exposed organic materials, calculations should take into account both beta and gamma radiation.

1.9.89.2 VEGP Position

Conform. See section 3.11.B for information on environmental conditions and design bases for mechanical, instrumentation, and electrical safety-related equipment. For NSSS equipment,

Westinghouse conforms to IEEE Std. 323-1974 by implementation of the final NRC approved version of WCAP-8587.

1. C.1 See Regulatory Guide 1.100 comparison.

2. C.2 Conform.

1.9.90 REGULATORY GUIDE 1.90, REVISION 1, AUGUST 1977, INSERVICE INSPECTION OF PRESTRESSED CONCRETE CONTAINMENT STRUCTURES WITH GROUTED TENDONS

1.9.90.1 Regulatory Guide 1.90 Position

This guide describes bases acceptable to the NRC for developing an appropriate surveillance program for prestressed concrete containment structures with grouted tendons.

1.9.90.2 VEGP Position

This guide is not applicable since VEGP does not use grouted tendons.

1.9.91 REGULATORY GUIDE 1.91, REVISION 1, FEBRUARY 1978, EVALUATIONS OF EXPLOSIONS POSTULATED TO OCCUR ON TRANSPORTATION ROUTES NEAR NUCLEAR POWER PLANTS

1.9.91.1 Regulatory Guide 1.91 Position

This guide describes methods acceptable to the NRC for determining whether the risk of damage due to an explosion on a nearby transportation route is sufficiently high to warrant a detailed investigation.

1.9.91.2 VEGP Position

Conform. Refer to subsection 2.2.3 for discussion on this subject.

1.9.92 REGULATORY GUIDE 1.92, REVISION 1, FEBRUARY 1976, COMBINING MODAL RESPONSES AND SPATIAL COMPONENTS IN SEISMIC RESPONSE ANALYSIS

1.9.92.1 Regulatory Guide 1.92 Position

This guide describes the procedures to be used for combining modal responses of individual modes and the combination of effects due to the three independent spatial components of an earthquake in seismic analyses of nuclear power plant structures, systems, and components.

1.9.92.2 VEGP Position

Conform with the exception that Westinghouse uses an alternative method of combining modal responses to satisfy Regulatory Guide 1.92, Revision 1, as described in paragraph 3.7.N.2.7.

Refer to sections 3.7.B and 3.7.N for discussion on this subject.

1.9.93 REGULATORY GUIDE 1.93, DECEMBER 1974, AVAILABILITY OF ELECTRIC POWER SUPPLIES

1.9.93.1 Regulatory Guide 1.93 Position

This guide describes operating procedures and restrictions acceptable to the NRC which should be implemented if the available electric power sources are less than the limiting conditions for operation (LCO).

1.9.93.2 VEGP Position

VEGP will conform with this guide by implementing the appropriate NRC approved Technical Specifications.

Refer to the Technical Specifications for further discussion.

1.9.94 REGULATORY GUIDE 1.94, REVISION 1, APRIL 1976, QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION, AND TESTING OF STRUCTURAL CONCRETE AND STRUCTURAL STEEL DURING THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS

1.9.94.1 Regulatory Guide 1.94 Position (HISTORICAL)

[This guide describes a method acceptable to the NRC for complying with the quality assurance requirements for installation, inspection, and testing of structural concrete and structural steel during the

construction phase of nuclear power plants. This guide endorses ANSI N45.2.5-1974 as generally acceptable to the NRC as a basis for complying with Appendix B to 10 CFR 50.]

1.9.94.2 VEGP Position

[(HISTORICAL) The VEGP QAP is described in section 17.1 for the design and construction phase and in section 17.2 for the operations phase. The VEGP QAP does not conform to Regulatory Guide 1.94, Revision 1, which endorses ANSI N45.2.5-1974. Instead, VEGP QAP for both the design and construction and the operations phases conforms to the requirements of ANSI/ASME N45.2.5-1978, Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete, Structural Steel, Soils, and Foundations during the Construction Phase of Nuclear Power Plants with the following clarifications:

1. *Paragraph 3.2, Materials Suitability (3.2.1)*

   This paragraph, Table A, states reinforcement shall be tested for physical properties per (ASTM A615) ASTM A370. VEGP conforms to this guidance in that the certification of compliance provided by the vendor ensures materials have been tested for physical properties (ASTM A615) per ASTM A370. In such a case, the vendor is subject to QA/QC provisions in accordance with 10 CFR 50, Appendix B.

2. *Paragraph 4.6, In-Process Tests on Compacted Fill*

   This paragraph, Table B, requires one grain-size test in accordance with ASTM D-422 (hydrometer or sieve as appropriate) for each compaction test. VEGP specifications require one grain-size test per ASTM D-422 without hydrometer test for every 26,250 yd^3 (i.e., one for every 5 compaction tests).

3. *Paragraph 4.6, In-Process Tests on Compacted Fill*

   This paragraph, Table B, requires borrow moisture test per ASTM D-1556, 2167, 3017, or 2937 for each soil type, each work shift, and when moisture content changes or is questionable. VEGP specifications require fill to be within an acceptable range of optimum moisture at the time of placement. Testing per ASTM D-2216, or rapid method correlation, is performed each time soil is compacted.

4. *Paragraph 4.6, In-Process Tests on Compacted Fill*

   This paragraph, Table B, requires field density test per ASTM D-1556, 2167, 2922, or 2937 as specified at a minimum of every 10,000 ft^2. VEGP specifications require one test per ASTM D-1556 for every 20,000 ft^2 per ft of depth.

5. *Paragraph 6.11, Inprocess Tests on Concrete and Reinforcing Steel*

   This paragraph, Table B, requires in-process compressive strength tests shall be performed daily on grout in accordance with ASTM C109. VEGP tests batch plant grout daily in accordance with ASTM C109, while nonshrink grout is tested in accordance with CRD621-82A prior to its initial use on the jobsite.

6. *Paragraph 6.11, Inprocess Tests on Concrete and Reinforcing Steel*

This paragraph, Table B, requires that fly ash and pozzolans be checked for physical properties (ASTM C618) in accordance with ASTM C311 every 400 tons. VEGP specifications requires this testing to be performed every 1000 tons except for loss of ignition and sieve no. 325 which are performed every 200 tons.

7. *Paragraph 6.12, Mechanical (Cadweld) Splice Testing (6.12.2)*

   This paragraph requires visual inspection on completed splices shall be performed only after the splices have cooled to ambient temperatures. The VEGP specification does not require splices to be cooled to ambient temperature prior to inspection. Cadwelds are inspected after they have cooled such that it will allow the inspection to be performed without any danger of burns.

8. *Paragraph 6.12, Mechanical (Cadweld) Splice Testing (6.12.4)*

   This paragraph, Item 2.C, requires that one splice, either production or sister splice, be tested for the next and subsequent units of 33 splices. VEGP specifications require three test splices for the next and subsequent units of 100 splices.

9. *Paragraph 7.5, Welding*

   This paragraph requires inspection of structural steel welding to be performed in accordance with the provisions of Section 6 of the AWS D1.1. Visual welding inspection performed on or after December 2, 1985, is in accordance with the Visual Weld Acceptance Criteria (VWAC) for Structural Welding at Nuclear Power Plants, NCIG-01, Revision 2, prepared by the Nuclear Construction Issues Group (NCIG) and accepted by the NRC in their letter to the NCIG dated June 26, 1985.

   For inspection performed prior to December 2, 1985, the visual acceptance criteria is in accordance with AWS D1.1-75 with the clarifications and modifications described below and in NRC Inspection Report Nos. 50-424/86-03 and 50-425/86-02.

10. *Paragraph 8.2 Evaluation of Aggregate Test Results (8.2.3)*

    This paragraph states that, when aggregate tests specified fail to meet specified requirements, two additional tests shall be made from samples of the same lot of aggregate. If one or both of the two additional tests fail to meet the specified requirements, the data shall be submitted to the responsible engineering organization for evaluation and corrective action. The VEGP specifications require that, when a running average of five gradation tests fails to meet the specified requirements, the data shall be submitted to the responsible engineering organization for evaluation and corrective action. In addition, the VEGP construction procedures require that all failing aggregate production tests be reported to construction engineering for evaluation.

    In order to designate the specific set of visual acceptance criteria applicable for a weld, structural steel weld joints within the jurisdiction of AWS D1.1 are classified into the following categories:

    - *Category A - Structural steel joints which are a part of the main building frame and those joints which connect miscellaneous structural steel with the main building frame.*

- *Category B - Miscellaneous structural steel joints, not covered in Category A, but provide auxiliary support or framing for systems, components, and equipment (e.g., supports for cable tray and heating, ventilation, and air-conditioning (HVAC) ductwork, miscellaneous stiffeners and bracing, etc.).*

The base metal adjacent to a weld joint of dissimilar categories shall meet the visual inspection acceptance criteria of the category under which that base metal falls.

A. AWS D1.1, paragraph 3.1.4, is clarified as follows:

For Category A and B joints, the fillet leg dimension may underrun the nominal fillet size by 1/16 in. provided the undersize length does not exceed 10 percent of the weld length. For flange to web joints, the undersize may not be within two flange thicknesses of the weld end.

For Category A and B joints, where an intermittent weld is specified, a continuous weld of the same size is acceptable.

B. AWS D1.1, paragraph 3.6.1, is modified as follows:

For Category A and B joints, the faces of fillet welds may be slightly convex, flat, or slightly concave as shown in figure 3.6A, B, and C, with none of the unacceptable profiles shown in Figure 3.6.D. Convexity height may not exceed 1/8 in.

C. AWS D1.1, paragraph 3.6.4, is modified as follows:

For Category A joints, undercut not exceeding 1/32 in. for the full length of the weld is acceptable. For members welded from both sides, the cumulative undercut depth includes the sum of both sides if the undercuts on both sides are directly opposite to each other.

For Category B joints, undercut not exceeding 1/32 in. for the full length of the weld is acceptable.

Undercut greater than 1/32 in. but not exceeding 1/16 in. is acceptable provided the width is greater than the depth, and the undercut does not exhibit an acute intersection at its root. The cumulative length of 1/16 in. undercut shall not exceed 50 percent of the total weld length. For members welded from sides, the cumulative undercut depth or length includes the sum of both sides if the undercuts on both sides are directly opposite to each other.

D. AWS D1.1, paragraph 3.6.6, is modified as follows:

For Category A and B joints, overlap/rollover may not exceed 1/8 in.

E. AWS D1.1, paragraph 3.10.1, is clarified as follows:

For Category A and B joints, "trap" slag on the root and/or end of fillet and partial penetration welds is acceptable.

For Category A joints, loose spatter is not acceptable. Tightly adhering spatter is acceptable, if it will not interfere with subsequent NDE (when required).

For Category B joints, spatter is not a cause for rejection.

F. AWS D1.1, paragraph 4.4, is modified as follows:

For Category A joints, arc strikes shall be blended with the surface.

For Category B joints, arc strikes are acceptable provided the craters do not contain cracks and the material specification minimum gauge thickness is not violated.

G. AWS D1.1, paragraph 8.15.1.3, is modified as follows:

Underfill of a weld is not acceptable. A crater is not considered as an underfill.

For Category A joints, underfilled groove weld craters are acceptable provided the depth of underfill is 1/32 in. or less. Underfilled single-pass fillet weld craters are acceptable provided the crater length is less than 10 percent of the weld length. On multipass fillet weld, crater depth of 1/32 in. or less is acceptable.

For Category B joints, underfilled groove weld craters are acceptable provided the depth of underfill is 1/16 in. or less. Underfilled single-pass fillet weld craters are acceptable provided the crater length is less than 10 percent of the weld length. On multipass fillet welds, crater depth of 1/16 in. or less are acceptable.

H. AWS D1.1 paragraph 8.15.1.5, is clarified as follows:

For Category A joints, the sum diameters of porosity shall not exceed 3/8 in. in one linear in. of weld and 3/4 in. in 12 linear in. of weld.

For Category B joints, piping porosity is not a cause for rejection if the major axis is equal to or less than 1/16 in. For porosity greater than 1/16 in., the sum of the diameters shall not exceed 3/8 in. in any linear in. of weld nor 3/4 in. in any 12 in. of weld.

Refer to Regulatory Guide 1.55 comparison for a discussion of the standards being used in the placement of concrete in Category 1 structures.]

Regulatory Guide 1.94 provided NRC endorsement of ANSI N45.2.5. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.5. Accordingly, the quality assurance requirements for installation, inspection, and testing of structural concrete and structural steel applicable during the operation phase of nuclear power plants are described in the SNC QATR.

1.9.95 REGULATORY GUIDE 1.95, REVISION 1, JANUARY 1977, PROTECTION OF NUCLEAR POWER PLANT CONTROL ROOM OPERATORS AGAINST AN ACCIDENTAL CHLORINE RELEASE

1.9.95.1 Regulatory Guide 1.95 Position

This guide describes design features and procedures that are acceptable to the NRC for the protection of nuclear plant control room operators against an accidental chlorine release.

1.9.95.2 VEGP Position

VEGP does not store liquefied gaseous chlorine in excess of 20 lbs onsite.

1.9.96 REGULATORY GUIDE 1.96, REVISION 1, JUNE 1976, DESIGN OF MAIN STEAM ISOLATION VALVE LEAKAGE CONTROL SYSTEMS FOR BOILING WATER REACTOR NUCLEAR POWER PLANTS

Not applicable to VEGP.

1.9.97 REGULATORY GUIDE 1.97, REVISION 2, DECEMBER 1980, INSTRUMENTATION FOR LIGHT-WATER-COOLED NUCLEAR POWER PLANTS TO ASSESS PLANT CONDITIONS DURING AND FOLLOWING AN ACCIDENT

1.9.97.1 Regulatory Guide 1.97 Position

This guide describes an acceptable method for complying with NRC regulations to provide instrumentation to monitor plant variables and systems during and following an accident in a light-water-cooled nuclear power plant. Refer to section 7.5.

1.9.97.2 VEGP Position

VEGP conformance is as described in section 7.5.

1.9.98 REGULATORY GUIDE 1.98, MARCH 1976, ASSUMPTIONS USED FOR EVALUATING THE POTENTIAL RADIOLOGICAL CONSEQUENCES OF A RADIOACTIVE OFFGAS SYSTEM FAILURE IN A BOILING WATER REACTOR

Not applicable to VEGP.

1.9.99 REGULATORY GUIDE 1.99, REVISION 2, MAY 1988, RADIATION EMBRITTLEMENT OF REACTOR VESSEL MATERIALS

1.9.99.1 Regulatory Guide 1.99 Position

This guide describes general procedures acceptable to the NRC for predicting the effects of neutron radiation damage to the low-alloy steels currently used for light-water-cooled reactor vessels.

1.9.99.2 VEGP Position

There are two primary issues with the guide:

1. The guide provides a procedure and curves for predicting radiation damage (as relating to the shift of the reference temperature, RT_{NDT}), in terms of chemistry (Cu and Ni) and fluence.

   Since the adjustments in reference temperature obtained from the radiation damage curves are used in developing heatup and cooldown limits for plant operation, the use of the curves in the guide could result in conservative heatup and cooldown limits during plant life.

2. The guide restricts the end of life transition temperature to 200°F maximum at the 1/4 T position in the vessel wall. Control of residual elements such as copper, nickel, sulfur, and vanadium in the reactor vessel beltline materials of new plants to levels that result in a predicted adjusted reference temperature of less than 200°F at end of life is considered technically unnecessary and could lead to unnecessary changes in chemistry (Cu and Ni) requirements with corresponding adverse impact on cost and materials availability.

One additional feature of the guide constitutes a lesser but nevertheless important issue:

1. Figure 2 of the guide presents a curve which gives the decrease of upper shelf impact energy with fluence as a function of Cu content. Although it appears that the prescribed relationship does not predict unacceptable drops in upper shelf toughness for vessels with controlled chemistry, the curves are nevertheless overly conservative.

The VEGP position, with respect to each of the guide positions, is as follows:

1. The basis, as well as the scope of the guide for predicting adjustment of reference temperature as given in regulatory position C.1, are inappropriate since use of the Westinghouse trend curves yield more conservative heatup and cooldown curves for VEGP than those that would have been obtained using the Regulatory Guide 1.99, Revision 2 trend curves.

2. The VEGP is in agreement with the guide position C.2a. However, with respect to guide position C.2b, Westinghouse believes that figure 2 of the guide is incorrect since the upper shelf energy for 6-in.-thick American Society of Testing Materials

(ASTM) A302B reference correlation monitor material reported by Hawthorne indicates essentially a constant upper shelf at fluences above ~1 x 10^{19} n/cm^2.[a]

3. The VEGP position with reference to the guide position C.3, controlling residual elements to levels that result in a predicted adjusted reference temperature of less than 200°F at end of life, is that the stresses in the vessel can be limited during operation in order to comply with the requirements of Appendix G to 10 CFR 50 even though the end of life adjusted reference temperature may exceed 200°F. By applying the procedures of Appendix G to ASME Section III, the stress limits including appropriate Code safety margin can be met.

4. Recent surveillance capsule data indicate a steady-state condition of radiation damage well below that predicted by current trend curves.[b] This effect is believed to be due to the annealing of the vessels at the operating temperature. As an alternative to Regulatory Guide1.99 Rev 2, operating limits will be determined using the current radiation damage curves developed by Westinghouse.[c] It is expected that as future surveillance specimens are evaluated, it will become increasingly evident that both the Regulatory Guide 1.99 Rev 2 and Westinghouse trend curves are very conservative.

Refer to section 5.3 for further discussion.

1.9.100 REGULATORY GUIDE 1.100, REVISION 1, AUGUST 1977, SEISMIC QUALIFICATION OF ELECTRIC EQUIPMENT FOR NUCLEAR POWER PLANTS

1.9.100.1 Regulatory Guide 1.100 Position

Conformance with the requirements and recommendations specified by IEEE Std. 344-1975 for conducting seismic qualification of Class 1E equipment, when such qualification is performed in conjunction with Regulatory Guide 1.89, provides an adequate basis for complying with design verification requirements of Criterion III of Appendix B to 10 CFR 50 with respect to verifying the seismic adequacy of electric equipment, subject to the qualifications identified in the guide.

1.9.100.2 VEGP Position

Conform for Seismic Category 1 electrical equipment. Conformance for instrumentation and electrical equipment is discussed in subsection 3.10.B.2. Conformance for pumps and valves to assure operability is discussed in paragraph 3.9.B.3.2 and section 3.10.

The Westinghouse program for seismic qualification of safety-related electrical equipment is delineated in the latest revision of WCAP-8587. The procedures utilized in performing seismic qualification will be in accordance with IEEE Std. 344-1975.

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[a] Hawthorne, J. R., "Radiation Effects Information Generated on the ASTM Reference. Correlation-Monitor Steels," ASTM, Philadelphia, 1974.
[b] Letter NS-TMA-1843 to the Secretary of the Commission, T. M. Anderson, June 23, 1978
[c] Westinghouse RESAR-3S, chapter 16, figure B/3/4.2, page B3/4 4-8

1.9.101 REGULATORY GUIDE 1.101, REVISION 3, AUGUST 1992, EMERGENCY PLANNING FOR NUCLEAR POWER PLANTS

1.9.101.1 Regulatory Guide 1.101 Position

This guide describes a method acceptable to the NRC for complying with regulations for emergency response plans and preparedness at nuclear power plants.

1.9.101.2 VEGP Position

Conform. The VEGP emergency plan, which has been submitted to the NRC, describes how SNC implements NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants. Refer to section 13.3 for further discussion.

1.9.102 REGULATORY GUIDE 1.102, SEPTEMBER 1976, FLOOD PROTECTION FOR NUCLEAR POWER PLANTS

1.9.102.1 Regulatory Guide 1.102 Position

This guide defines acceptable methods of flood protection for nuclear power plants.

1.9.102.2 VEGP Position

The roofs of all safety-related structures are designed to pass probable maximum precipitation (PMP) generated runoff through the use of overflow scuppers as described below. Reservoir routing using the modified Puls technique develops the discharge hydrograph from each roof taking into account inflows from other roofs. Roof drains and 100-year scuppers with downdrains are designed to drain the 100-year storm. For the local intense precipitation analysis, roof drains and 100-year scuppers are considered plugged. Overflow scuppers are considered half plugged to account for possible blockage by ice or debris.

Various combinations of fully opened or half-plugged scuppers are used to develop the maximum ponded depth on each roof and the maximum flow to the yard.

The VEGP is a dry site and conforms with this regulatory guide. Refer to section 3.4 and subsection 2.4.3 for further discussion.

1.9.103 REGULATORY GUIDE 1.103, REVISION 1, OCTOBER 1976, POST-TENSIONED PRESTRESSING SYSTEMS FOR CONCRETE REACTOR VESSELS AND CONTAINMENTS

1.9.103.1 Regulatory Guide 1.103 Position

Defines post-tensioning schemes for containments. The 55-strand VSL tendon system is approved by the NRC.

1.9.103.2 VEGP Position

VEGP utilizes the VSL system and is in conformance with this regulatory guide. Refer to subsection 3.8.1 for discussion on this subject.

1.9.104 REGULATORY GUIDE 1.104, OVERHEAD CRANE HANDLING FOR NUCLEAR POWER PLANTS

Withdrawn.

1.9.105 REGULATORY GUIDE 1.105, REVISION 1, NOVEMBER 1976, INSTRUMENT SETPOINTS

1.9.105.1 Regulatory Guide 1.105 Position

This guide describes a method acceptable to the NRC for complying with regulations with regard to ensuring that the instrumentation setpoints in systems important to safety initially are within and remain within the specified limits.

1.9.105.2 VEGP Position

Conformance is discussed in section 7.1.

1.9.106 REGULATORY GUIDE 1.106, REVISION 1, MARCH 1977, THERMAL OVERLOAD PROTECTION FOR ELECTRIC MOTORS ON MOTOR-OPERATED VALVES

1.9.106.1 Regulatory Guide 1.106 Position

To ensure that safety-related, motor-operated valves, whose motors are equipped with thermal overload protection devices integral with the motor starter, will perform their function, one of the

two alternatives described in regulatory position 1 or the one described in regulatory position 2 should be implemented:

1. C.1 Provided that the completion of the safety function is not jeopardized or that other safety systems are not degraded, (a) the thermal overload protection devices should be continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing, or (b) those thermal overload protection devices that are normally in force during plant operation should be bypassed under accident conditions.

   The bypass initiation system circuitry should conform to the criteria of Sections 4.1, 4.2, 4.3, 4.4, 4.5, 4.10, and 4.13 of IEEE Std. 279-1971, Criteria for Protection Systems for Nuclear Power Generating Stations, and should be periodically tested.

2. C.2 The trip setpoint of the thermal overload protection devices should be established with all uncertainties resolved in favor of completing the safety-related action. With respect to those uncertainties, consideration should be given to (a) variations in the ambient temperature at the installed location of the overload protection devices and the valve motors, (b) inaccuracies in motor heating data, overload protection device trip characteristics, and the matching of these two items, and (c) setpoint drift. In order to ensure continued functional reliability and the accuracy of the trip point, the thermal overload protection device should be periodically tested.

1.9.106.2 VEGP Position

1. C.1 Conform. Refer to paragraph 8.3.1.1.2, item K.5.

2. C.2 Not applicable to VEGP.

1.9.107 REGULATORY GUIDE 1.107, REVISION 1, FEBRUARY 1977, QUALIFICATIONS FOR CEMENT GROUTING FOR PRESTRESSING TENDONS IN CONTAINMENT STRUCTURES

1.9.107.1 Regulatory Guide 1.107 Position

This guide describes quality standards acceptable to the NRC for the use of portland cement grout as the corrosion inhibitor for prestressing tendons in prestressed concrete containment structures.

1.9.107.2 VEGP Position

As described in Regulatory Guide 1.90 comparison, VEGP does not use grouted tendons; therefore, this guide is not applicable.

1.9.108 REGULATORY GUIDE 1.108, REVISION 1, AUGUST 1977, PERIODIC TESTING OF DIESEL GENERATOR UNITS USED AS ONSITE ELECTRIC POWER SYSTEMS AT NUCLEAR POWER PLANTS

1.9.108.1 Regulatory Guide 1.108 Position

This guide describes a method acceptable to the NRC for complying with regulations with regard to periodic testing of diesel electric power units to ensure that the diesel electric power systems will meet their availability requirements.

1.9.108.2 VEGP Position

This guide has been withdrawn and superseded by Regulatory Guide 1.9, Revision 3, Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electrical Power Systems at Nuclear Power Plants. Regulatory Guide 1.108 was the original licensing basis for diesel generator testing; however, since the time that Regulatory Guide 1.108 was withdrawn, Regulatory Guide 1.9, Revision 3, has been used in specific instances to revise diesel generator testing requirements for VEGP. Therefore, diesel generator testing requirements at VEGP represent a combination of Regulatory Guide 1.108 and Regulatory Guide 1.9, Revision 3. Diesel generator testing requirements are discussed in paragraph 8.3.1.1.3 and are specified in the Technical Specifications.

1.9.109 REGULATORY GUIDE 1.109, REVISION 1, OCTOBER 1977, CALCULATION OF ANNUAL DOSES TO MAN FROM ROUTINE RELEASES OF REACTOR EFFLUENTS FOR THE PURPOSE OF EVALUATING COMPLIANCE WITH 10 CFR 50, APPENDIX I

1.9.109.1 Regulatory Guide 1.109 Position

This guide describes basic features of calculational models and parameters acceptable to the NRC for the estimation of radiation doses to man from effluent releases.

1.9.109.2 VEGP Position

The VEGP ODCM contains equations and constants for estimation of radiation doses to man from effluent releases. These equations and constants are in conformance with this guide. Refer to subsections 11.2.3 and 11.3.3 for discussion of preoperational calculations.

1.9.110 REGULATORY GUIDE 1.110, MARCH 1976, COST-BENEFIT ANALYSIS FOR RADWASTE SYSTEMS FOR LIGHT-WATER-COOLED NUCLEAR POWER REACTORS

1.9.110.1 Regulatory Guide 1.110 Position

This guide describes a method acceptable to the NRC for performing a cost-benefit analysis for liquid and gaseous radwaste system components.

1.9.110.2 VEGP Position

Cost-benefit evaluations were not used in the design of VEGP. Therefore, this guide is not applicable in the design of the radwaste system.

1.9.111 REGULATORY GUIDE 1.111, REVISION 1, JULY 1977, METHODS FOR ESTIMATING ATMOSPHERIC TRANSPORT AND DISPERSION OF GASEOUS EFFLUENTS IN ROUTINE RELEASES FROM LIGHT-WATER-COOLED REACTORS

1.9.111.1 Regulatory Guide 1.111 Position

This guide identifies types of atmospheric transport and diffusion models, source configuration and removal mechanism modifications, and input data that are acceptable to the NRC for use in providing assessments of potential annual radiation doses to the public resulting from routine releases of radioactive materials in gaseous effluents.

1.9.111.2 VEGP Position

The dispersion models used for VEGP follow those described in this guide as discussed in subsection 2.3.5.

1.9.112 REGULATORY GUIDE 1.112, REVISION O-R, APRIL 1976, CALCULATION OF RELEASES OF RADIOACTIVE MATERIALS IN GASEOUS AND LIQUID EFFLUENTS FROM LIGHT-WATER-COOLED POWER REACTORS

1.9.112.1 Regulatory Guide 1.112 Position

This guide references two NUREG reports (NUREG-0016 and -0017) that provide methods acceptable to the NRC for calculating annual average expected releases of radioactive material in liquid and gaseous effluents from light-water-cooled nuclear power reactors.

1.9.112.2 <u>VEGP Position</u>

The calculation of radioactive releases in gaseous and liquid effluents are made using the GALE computer code which is in accordance with this guide and NUREG-0017. Refer to sections 11.2 and 11.3 for further discussion.

1.9.113 REGULATORY GUIDE 1.113, REVISION 1, APRIL 1977, ESTIMATING AQUATIC DISPERSION OF EFFLUENTS FROM ACCIDENTAL AND ROUTINE REACTOR RELEASES FOR THE PURPOSE OF IMPLEMENTING APPENDIX I

1.9.113.1 <u>Regulatory Guide 1.113 Position</u>

This guide describes basic features of calculational models and suggests methods of determining values of model parameters acceptable to the NRC for the estimation of aquatic dispersion of both routine and accidental releases of liquid effluents.

1.9.113.2 <u>VEGP Position</u>

Analysis of aquatic dispersion of radioactive releases is performed using the LADTAP computer code which is in accordance with the provisions of this guide. Refer to subsections 2.4.13, 11.2.3, and 15.7.3 for further discussion.

1.9.114 REGULATORY GUIDE 1.114, REVISION 1, NOVEMBER 1976, GUIDANCE ON BEING OPERATOR AT THE CONTROLS OF A NUCLEAR POWER PLANT

1.9.114.1 <u>Regulatory Guide 1.114 Position</u>

This guide describes a method acceptable to the NRC for complying with regulations that require an operator to be present at the controls of a nuclear power plant.

1.9.114.2 <u>VEGP Position</u>

Conform. Refer to chapter 18 and section 13.5.

1.9.115 REGULATORY GUIDE 1.115, REVISION 1, JULY 1977, PROTECTION AGAINST LOW TRAJECTORY TURBINE MISSILES

1.9.115.1 Regulatory Guide 1.115 Position

This guide describes methods acceptable to the NRC for protecting safety-related structures, systems, and components against low-trajectory missiles resulting from turbine failure.

1.9.115.2 VEGP Position

Conformance is discussed in paragraph 3.5.1.3.

1.9.116 REGULATORY GUIDE 1.116, REVISION O-R, JUNE 1976, QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION, AND TESTING OF MECHANICAL EQUIPMENT AND SYSTEMS

1.9.116.1 Regulatory Guide 1.116 Position (HISTORICAL)

[This guide endorses ANSI N45.2.8-1975 which describes a method acceptable to the NRC for complying with regulations with regard to quality assurance requirements for installation, inspection, and testing of mechanical equipment and systems for water-cooled nuclear power plants.]

1.9.116.2 VEGP Position

[(HISTORICAL) The VEGP QAP for design and construction as described in section 17.1 does not address this Regulatory Guide nor ANSI N45.2.8. The VEGP operations QAP is described in section 17.2.]

Regulatory Guide 1.116 provided NRC endorsement of ANSI N45.2.8. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.8. Accordingly, the quality assurance requirements for installation, inspection, and testing of mechanical equipment and systems applicable to operation phase activities are described in the SNC QATR.

1.9.117 REGULATORY GUIDE 1.117, REVISION 1, APRIL 1978, TORNADO DESIGN CLASSIFICATION

1.9.117.1 Regulatory Guide 1.117 Position

This guide describes a method acceptable to the NRC for identifying those structures, systems, and components of light-water-cooled reactors that should be protected from the effects of the design basis tornado (including tornado missiles) and remain functional.

1.9.117.2 VEGP Position

Conform, with exception of the nuclear service cooling water tower fans, main steam safety valve exhausts, atmospheric relief valve (loop 2), atmospheric relief valve exhaust stacks, turbine-driven auxiliary feedwater pump exhaust, and condensate storage tank vents which are not missile protected. Refer to section 3.5 for discussion on this subject.

1.9.118 REGULATORY GUIDE 1.118, REVISION 2, JUNE 1978, PERIODIC TESTING OF ELECTRIC POWER AND PROTECTION SYSTEMS

1.9.118.1 Regulatory Guide 1.118 Position

The requirements and recommendations contained in IEEE Std. 338-1977 are considered acceptable methods for the periodic testing of electric power and protection systems, subject to the qualifications identified in the guide.

1.9.118.2 VEGP Position

Conform, with the following clarifications.

The definition of auxiliary or supporting system is interpreted to mean the first auxiliary or supporting system to prevent expanding the safety system to encompass all plant systems.

Overlap testing is considered to have occurred if a relay coil is included in one test and the contacts are included in another test, or if a pressure switch is included in one test and its contacts included in a different test. If contacts are shown to function with one test, they may be replaced with jumper wires for other tests. Complete systems tests is interpreted to mean completion of all overlapping tests where overlapping tests are used. Each overlapping test will normally be completed on its own interval.

Test equipment, portable or installed, that must be connected to the safety system by cable and/or wire to perform the test, is not considered part of the safety system.

Regulatory position C.8 is not considered at this time since the NRC has not formally endorsed the referenced sections.

Westinghouse defines "protective action systems" to mean the electric, instrumentation, and control portions of those protection systems and equipment actuated and controlled by the protection system. Equipment performing control functions but actuated from protection system sensors is not part of the safety system and will not be tested for time response. Status, annunciating, display, and monitoring functions, except those related to the post-accident monitoring system (PAMS) are considered by Westinghouse to be control functions. Reasonability checks; i.e., comparison between or among similar such display functions, will be made.

Response time testing for control functions operated from system sensors will not be performed. Moreover, nuclear instrumentation system detectors will not be tested for time response. Also,

nuclear instrumentation sensors are exempt from testing since "their worst-case response time is not a significant fraction of the total overall system response (i.e., less than 5 percent)." This exemption is permitted by IEEE-338.

Verification of trip set points that are continuously calculated over a range of input variables is not required during functional testing if the setpoints are displayed and subject to routine instrument checks. The functional test should verify the trip setpoints for at least one value of each input variable.

1.9.119 REGULATORY GUIDE 1.119

Withdrawn.

1.9.120 REGULATORY GUIDE 1.120, REVISION 1, NOVEMBER 1977, FIRE PROTECTION GUIDELINES FOR NUCLEAR POWER PLANTS

1.9.120.1 <u>Regulatory Guide 1.120 Position</u>

This guide presents guidelines acceptable to the NRC staff for implementing General Design Criterion 3 of Appendix A to 10 CFR 50 in the development of a fire protection program for nuclear power plants.

1.9.120.2 <u>VEGP Position</u>

Conformance with BTP CMEB 9.5-1 is addressed in appendix 9B.

1.9.121 REGULATORY GUIDE 1.121, AUGUST 1976, BASES FOR PLUGGING DEGRADED PWR STEAM GENERATOR TUBES

1.9.121.1 <u>Regulatory Guide 1.121 Position</u>

This guide describes an acceptable method for establishing the limiting safe conditions of tube degradation of steam generator tubing, beyond which defective tubes as established by inservice inspection should be removed from service by plugging at each end of the tube. Plugging will be accomplished by either welded plugs or nonwelded mechanical plugs.

1.9.121.2 <u>VEGP Position</u>

Conform, with the following exceptions:

1. C.1 Westinghouse interprets the term "unacceptable defects" to apply to those imperfections resulting from service induced mechanical or chemical degradation of the tube walls which have penetrated to a depth in excess of the plugging limit.

2. C.2a(2) and C.2.a(4) Westinghouse will use a 200-percent margin of safety based on the following definition of tube failure. Westinghouse defines tube failure as plastic deformation of a crack to the extent that the sides of the crack open to a nonparallel, elliptical configuration. This 200-percent margin of safety compares favorably with the 300 percent margin requested by the NRC against gross failure.

3. C.2.b In cases where sufficient inspection data exist to establish degradation allowance, the rate used will be an average time-rate determined from the mean of the test data.

   Where requirements for minimum wall are markedly different for different areas of the tube bundle; e.g., U-bend area versus straight length in Westinghouse designs, two plugging limits may be established to address the varying requirements in a manner which will not require unnecessary plugging of tubes.

4. C.3.d(1) and C.3.d(3) The combined effect of these requirements would be to establish a maximum permissible primary-to-secondary leak rate which may be below the threshold of detection with current methods of measurement. Westinghouse has determined the maximum acceptable length of a through-wall crack based on secondary pipe break accident loadings which are typically twice the magnitude of normal operating pressure loads. Westinghouse will use a leak rate associated with the crack size determined on the basis of accident loadings.

5. C.3.e(6) Westinghouse will supply computer code names and references rather than the actual codes.

6. C.3.f(1) Westinghouse will establish a minimum acceptable tube wall thickness (plugging limit) based on structural requirements and consideration of loadings, measurement accuracy and, where applicable, a degradation allowance as discussed in this position and in accordance with the general intent of this guide. Analyses to determine the maximum acceptable number of tube failures during a postulated condition are normally done to entirely different bases and criteria are not within the scope of this guide.

Refer to subsection 5.4.2 for further discussion.

1.9.122 REGULATORY GUIDE 1.122, REVISION 1, FEBRUARY 1978, DEVELOPMENT OF FLOOR DESIGN RESPONSE SPECTRA FOR SEISMIC DESIGN OF FLOOR-SUPPORTED EQUIPMENT OR COMPONENTS

1.9.122.1 Regulatory Guide 1.122 Position

This guide describes the procedures acceptable to the NRC for combining and smoothing the floor response spectra, with peaks broadened, to obtain the floor design response spectra.

1.9.122.2 VEGP Position

Conform. Refer to subsection 3.7.B.2 for discussion on this subject.

1.9.123 REGULATORY GUIDE 1.123, REVISION 1, JULY 1977, QUALITY ASSURANCE REQUIREMENTS FOR CONTROL OF PROCUREMENT OF ITEMS AND SERVICES FOR NUCLEAR POWER PLANTS

1.9.123.1 Regulatory Guide 1.123 Position (HISTORICAL)

The requirements that are included in ANSI N45.2.13-1976 for control of procurement of items and services for nuclear power plants are acceptable to the NRC staff and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the qualifications identified in the guide.

1.9.123.2 VEGP Position

[(HISTORICAL) The VEGP QAP during the design and construction phase (except for NSSS components) conforms to the AEC Extracts from ANSI N45.2.13, Supplementary Quality Assurance Requirements for Control of Procurement of Equipment, Materials, and Services for Nuclear Power Plants (draft dated 5/31/73), as discussed in section 17.1.

VEGP QAP during the design and construction and the operation phases for components purchased from the NSSS vendor conform with ANSI N45.2.13-1976, except for regulatory position C.6b. The NSSS vendor routinely identifies notification points in procurement documents when applicable. Such points are not always identified in pre- and post-award meetings. However, the required notification/hold points are specified by changes to the procurement documents in a reasonable time prior to their being accomplished to allow the purchaser the opportunity to witness the event.

Alternatives and clarifications to the text of ANSI N45.2.13-1976 are contained in the text of WCAP-8370/7800, table 17-1. The VEGP QAP for NSSS components is described in chapter 17, appendix 17B.]

Regulatory Guide 1.123 provided NRC endorsement of ANSI N45.4.13. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.13. Accordingly, quality assurance requirements for control of procurement of items and services during the operation phase are described in the SNC QATR.

1.9.124 REGULATORY GUIDE 1.124, REVISION 1, JANUARY 1978, SERVICE LIMITS AND LOADING COMBINATIONS FOR CLASS 1 LINEAR-TYPE COMPONENT SUPPORTS

1.9.124.1 Regulatory Guide 1.124 Position

This guide delineates acceptable levels of service limits and appropriate combinations of loadings associated with normal operation, postulated accidents, and specified seismic events for the design of Class 1 linear-type component supports as defined in Subsection NF of Section III of the ASME Code.

1.9.124.2 VEGP Position

In general, VEGP conforms. Additional information is provided in subsection 3.8.3. For the NSSS scope, the following exceptions are taken.

Paragraph C.2 of the regulatory guide presents two methods of estimating the ultimate tensile strength S, at temperature. It is believed that method No. 2 is not conservative at elevated metal temperature (in excess of 800°F). In Westinghouse's judgment, values of S at these elevated temperatures should be determined by test rather than via the method given in C.2(b).

Paragraph C.4 of the regulatory guide states: "However, all increases; i.e., those allowed by NF-3231.1(a), XVII-2110(a), and F-1370(a), should always be limited by XVII-2110(b) of Section III." Paragraph XVII-2110(b) specifies that member compressive axial loads shall be limited to two-thirds of critical buckling. Satisfaction of this criteria for the faulted condition is unnecessarily restrictive.

The most significant faulted condition loads on equipment supports result from seismic disturbances and postulated LOCAs, both of which are dynamic events. The allowable faulted condition compressive load should not be limited to two-thirds of critical buckling because these faulted dynamic loads are of extremely short duration, and support members can take impulsive loads that exceed static critical buckling load. Westinghouse will use a compressive axial load of 0.9 of critical buckling since the dynamic buckling capacity of the member is greater than the static buckling capacity.

Paragraph C.6(a) of the regulatory guide appears to erroneously allow the use of faulted stress limits for the emergency condition. Westinghouse will interpret this paragraph as follows: "The stress limits of XVII-2000 of Section III and regulatory position 3, increased according to the provisions of XVII-2100(a) of Section III, should not be exceeded for component supports designed by the linear elastic analysis method."

Westinghouse will use the provisions of F-1370(d) to determine faulted condition allowable loads for supports designed by the load rating method. The method described in paragraph C.7(b) of the regulatory guide is very conservative and inconsistent with the remainder of the faulted stress limits.

In paragraphs B.5 and C.8 of the regulatory guide, Westinghouse takes exception to the requirement that systems whose safety- related function occurs during emergency or faulted plant conditions must meet upset limits. The reduction of allowable stress to no greater than upset limits (which in reality are only design limits since design, normal, and upset limits are the same for linear supports) for support structures in those systems with normal safety-related functions occurring during emergency or faulted plant conditions is overly conservative for components which are not required to mechanically function (inactive components). In addition, Westinghouse believes that emergency and faulted condition criteria are acceptable for active components. However, when these criteria are invoked for active components, any significant deformation that might occur is considered in the evaluation of equipment operability.

1.9.125 REGULATORY GUIDE 1.125, REVISION 1, OCTOBER 1978, PHYSICAL MODELS FOR DESIGN AND OPERATION OF HYDRAULIC STRUCTURES AND SYSTEMS FOR NUCLEAR POWER PLANTS

1.9.125.1 Regulatory Guide 1.125 Position

This guide describes coordination between VEGP and NRC relating to the use of physical hydraulic model testing for predicting performance of safety-related hydraulic structures.

1.9.125.2 VEGP Position

Since there are no safety-related hydraulic structures at VEGP, this regulatory guide is considered not applicable.

1.9.126 REGULATORY GUIDE 1.126, REVISION 1, MARCH 1978, AN ACCEPTABLE MODEL AND RELATED STATISTICAL METHODS FOR THE ANALYSIS OF FUEL DENSIFICATION

1.9.126.1 Regulatory Guide 1.126 Position

This guide provides an analytical model and related assumptions and procedures acceptable to the NRC for predicting the effects of fuel densification in light-water-cooled nuclear power reactors.

1.9.126.2 VEGP Position

This guide states that the model presented in this guide is not intended to supersede NRC approved vendor models. VEGP uses the Westinghouse model which has been approved by the NRC. Refer to paragraph 4.2.3.2 for further discussion.

1.9.127 REGULATORY GUIDE 1.127, REVISION 1, MARCH 1978, INSPECTION OF WATER-CONTROL STRUCTURES ASSOCIATED WITH NUCLEAR POWER PLANTS

1.9.127.1 Regulatory Guide 1.127 Position

This guide describes a basis acceptable to the NRC for developing an appropriate inservice inspection and surveillance program for dams, slopes, canals, and other water-control structures associated with emergency cooling water systems or flood protection of nuclear power plants.

1.9.127.2 VEGP Position

This guide applies only to water-control structures specifically built for use in conjunction with a nuclear power plant and whose failure could cause radiological consequences adversely affecting the public health and safety. There are no such structures in the VEGP design.

1.9.128 REGULATORY GUIDE 1.128, REVISION 1, OCTOBER 1978, INSTALLATION DESIGN AND INSTALLATION OF LARGE LEAD STORAGE BATTERIES FOR NUCLEAR POWER PLANTS

1.9.128.1 Regulatory Guide 1.128 Position

This guide describes a method acceptable to the NRC for performing the installation design and installation of large lead storage batteries for nuclear power plants.

1.9.128.2 VEGP Position

Conform-except as noted below.

Paragraph C.6(i) of the Regulatory Guide states that upon completion of a freshening charge (after battery installation), ". . . a hydrogen survey should be performed to verify that the design criteria required by Position 1 are met." A hydrogen survey of the battery rooms was performed during preoperational testing to verify that the ventilation system limits hydrogen concentration to this level in accordance with Regulatory Guide 1.128. The monitoring equipment locations were judged to be boundary locations for determination of hydrogen concentrations at any location within the battery area. As stated in paragraph 8.3.2.2, for future battery replacements, hydrogen evolution for the new battery will be calculated and compared to the battery being replaced, at which time an engineering evaluation will be performed to determine if a new hydrogen survey is necessary. Additionally, a new survey may be required if the battery room configuration or battery room ventilation system is modified in a manner that reduces air flow or creates a new dead air space in the battery room.

Refer to sections 8.1 and 8.3 for further discussion.

1.9.129 REGULATORY GUIDE 1.129, REVISION 1, FEBRUARY 1978, MAINTENANCE, TESTING, AND REPLACEMENT OF LARGE LEAD STORAGE BATTERIES FOR NUCLEAR POWER PLANTS

1.9.129.1 Regulatory Guide 1.129 Position

This guide endorses IEEE Std. 450-1975, which describes a method acceptable to the NRC for performing the maintenance, testing, and replacement of large lead storage batteries for all types of nuclear power plants subject to the qualifications identified in the guide.

1.9.129.2 VEGP Position

Conform, as discussed in Technical Specifications and subsection 8.3.2, with the following clarification:

> The requirement for an equalizing charge other than for voltage or specific gravity criteria is based upon an analysis of the records of operation and maintenance inspections and is not based upon a specific time interval.
>
> The safety-related batteries will be tested periodically in accordance with the Technical Specifications and the version of IEEE 450 as described in the Bases for the Technical Specifications. A temperature correction methodology approved by the battery manufacturer may be utilized in lieu of the electrolyte temperature correction methodology of IEEE-450.

1.9.130 REGULATORY GUIDE 1.130, REVISION 1, OCTOBER 1978, SERVICE LIMITS AND LOADING COMBINATIONS FOR CLASS 1 PLATE- AND SHELL-TYPE COMPONENT SUPPORTS

1.9.130.1 Regulatory Guide 1.130 Position

This guide delineates acceptable levels of service limits and appropriate combinations of loadings associated with normal operation, postulated accidents, and specified seismic events for the design of Class 1 plate- and shell-type component supports as defined in subsection NF of Section III of the ASME Code.

1.9.130.2 VEGP Position

Conform, except as indicated below. Refer to subsection 3.9.B.3.

Paragraphs C.3, C.4(a), and C.6(a) of the regulatory guide state that the allowable buckling strength should be calculated using a design margin of 2 for flat plates and 3 for shells for normal, upset, and emergency conditions.

In the design of plate- and shell-type supports, member compressive axial loads shall be limited per the requirements of paragraph C.3 for normal, upset, and emergency conditions.

In paragraph C.6 of the regulatory guide, inclusion of the upset plant condition is inappropriate in the load combination under discussion. Westinghouse does not include the upset plant condition in this combination.

In paragraphs C.6(a) and B.1 of the regulatory guide, the stress limits of F-1370(c) are discussed. The criterion states in F-1370(c), "...loads should not exceed 0.67 times the critical buckling strength of the support...." In the design of plate- and shell-type component supports, member compressive axial loads shall be limited to 0.67 times the critical buckling strength. If, as a result of a more detailed evaluation of the supports the member compressive axial loads can be shown to safely exceed 0.67 times the critical buckling for the faulted condition,

verification of the support function adequacy will be documented and submitted to the NRC for review. The member compressive axial loads will not exceed 0.67 times the critical buckling strength without NRC acceptance.

In paragraph C.6(b) of the regulatory guide, the limit based on the test load given in the regulatory guide T.L. x 0.7 S'/S , is overly conservative and is inconsistent with ASME Code requirements presented in Appendix F.

The provisions of F-1370(c) to determine service level D allowable loads are used for supports designed by the load rating method.

1.9.131 REGULATORY GUIDE 1.131, AUGUST 1977, QUALIFICATION TESTS OF ELECTRICAL CABLES, FIELD SPLICES, AND CONNECTIONS FOR LIGHT-WATER-COOLED NUCLEAR POWER PLANTS

1.9.131.1 Regulatory Guide 1.131 Position

Conformance with the requirements of IEEE Std. 383-1974, IEEE Standard for Type Test of Class 1E Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations, is acceptable for qualifying electric cables, field splices, and connections as components (fire test provisions do not apply to qualification for an installed configuration) for service in light-water-cooled nuclear power plants to ensure that the cables, field splices, and connections can perform their safety-related function subject to the qualifications identified in the guide.

1.9.131.2 VEGP Position

Conform for Class 1E cables except as noted below. Design criteria, regulatory guides, and IEEE standards for electrical equipment are discussed in paragraph 8.1.4.3.

The burner location for flame tests is in accordance with IEEE 383-1974 in lieu of this guide.

The flame source is developed per IEEE 383-1974 in lieu of this guide.

1.9.132 REGULATORY GUIDE 1.132, REVISION 1, MARCH 1979, SITE INVESTIGATIONS FOR FOUNDATIONS OF NUCLEAR POWER PLANTS

1.9.132.1 Regulatory Guide 1.132 Position

Paragraph C of the guide addresses site investigations for foundations.

1.9.132.2 VEGP Position

VEGP site investigation conforms with the requirements of this regulatory guide. Refer to section 2.5 for discussion on this subject.

1.9.133 REGULATORY GUIDE 1.133, REVISION 1, MAY 1981, LOOSE PART DETECTION PROGRAM FOR THE PRIMARY SYSTEM OF LIGHT-WATER-COOLED REACTORS

1.9.133.1 Regulatory Guide 1.133 Position

This guide describes a method acceptable to the NRC for implementing requirements with respect to detecting a potentially safety-related loose part in light-water-cooled reactors during normal operation.

1.9.133.2 VEGP Position

Conforms except as noted below. Refer to paragraph 4.4.6.4 for a discussion of the digital metal impact monitoring system (DMIMS) which is the VEGP loose part monitoring system.

Position C.5.a. states that the sensor location should be noted in the Technical Specifications. The VEGP Technical Specifications do not note sensor locations. This is in conformance with the improved Standard Technical Specifications, NUREG-1431.

Positions C.3.a.(3) and C.5.c. recommend a channel calibration be performed at least once per 18 months. In lieu of this recommendation, the DMIMS will be calibrated at the frequency stated in subsection 16.3, requirement 3.

Positions C.3.a.(2) (a) and (e) state that the alert levels for startup and power operation be submitted to the Commission within 90 days (60 days for subsection (e)) following the completion of the startup test program or when there is a change to the preexisting alert levels for power operation. VEGP will report changes in the alert level alarm to the Commission when they exceed the setpoint determination criteria described in paragraph 4.4.6.4

1.9.134 REGULATORY GUIDE 1.134, APRIL 1987, MEDICAL CERTIFICATION AND MONITORING OF PERSONNEL REQUIRING OPERATOR LICENSES

1.9.134.1 Regulatory Guide 1.134 Position

The requirements contained in ANSI/ANS-3.4-1983, Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants, provide a method acceptable to the NRC staff for determining the medical qualifications of applicants for initial or renewal operator or senior operator licenses, subject to the following:

Section 3.2 of ANSI/ANS-3.4-1983 requires that the facility operator forward to the designated medical examiner a report on each employee referred for a reactor operator medical examination prior to the examination and that the report include information specified by the designated medical examiner.

ANSI/ANS-3.4-1983 further presents recommendations as to what type of information is to be addressed. To preclude the possibility that the facility operator report information that potentially could be biased and not pertinent to an individual's medical qualifications, the facility operator should forward only the information that has been specified or requested by the designated medical examiner for each employee referred for a reactor operator medical examination for the purpose of completing Form NRC-396, Certificate of Medical Examination.

1.9.134.2 VEGP Position

Conform. Medical certification and monitoring of personnel requiring operator licenses is in accordance with Regulatory Guide 1.134.

1.9.135 REGULATORY GUIDE 1.135, SEPTEMBER 1977, NORMAL WATER LEVEL AND DISCHARGE AT NUCLEAR POWER PLANTS

1.9.135.1 Regulatory Guide 1.135 Position

Safety-related structures resisting combinations of loading conditions require identification of normal water levels or discharges. The normal water level is generally defined as that water level either equal to or exceeded, 50 percent of the time.

1.9.135.2 VEGP Position

The level of the Savannah River does not affect the safety-related structures. The groundwater level has been firmly established at the site by an over-200 well canvas.

Groundwater levels at the site have been monitored for a period of greater than 10 years. Historic groundwater levels in the surrounding region have been monitored by others for a much longer period. The requirements of the guide are therefore satisfied for VEGP. Refer to section 2.4 for further discussion.

1.9.136 REGULATORY GUIDE 1.136, REVISION 2, JUNE 1981, MATERIALS, CONSTRUCTION, AND TESTING OF CONCRETE CONTAINMENTS

1.9.136.1 Regulatory Guide 1.136 Position

This guide describes bases acceptable to the NRC for implementing requirements with regard to the materials, construction, and testing of concrete containments. This guide endorses the

requirements specified in Articles CC-1000, CC-2000 and CC-4000 through CC-6000 of the Code for Concrete Reactor Vessels and Containments, ASME Section III, Division 2, 1980 Edition (also known as ACI Standard 359-80), subject to the qualifications provided in this guide.

1.9.136.2 VEGP Position

The VEGP containment design generally conforms to Article CC-3000 of the ASME Code, Section III, Division 2, 1974 through Winter 1975 addenda. Refer to subsection 3.8.1 for further discussion on this subject.

1.9.137 REGULATORY GUIDE 1.137, REVISION 1, OCTOBER 1979, FUEL-OIL SYSTEMS FOR STANDBY DIESEL GENERATORS

1.9.137.1 Regulatory Guide 1.137 Position

The requirements for the design of fuel-oil systems for diesel generators that provide standby electrical power for a nuclear power plant that are included in ANSI N195-1976, Fuel Oil Systems for Standby Diesel Generators, provide a method acceptable to the NRC staff for complying with the pertinent requirements of General Design Criterion 17 of Appendix A to 10 CFR 50, subject to the qualifications identified in the guide.

1.9.137.2 VEGP Position

Conform to Regulatory Guide 1.137 which endorses ANSI N195-1976 with the following clarifications and exceptions.

Clarification to regulatory position C.1.e is as follows:

1. “Section 7.3 of ANSI N195-1976 states that the arrangement of the fuel-oil system “shall provide for inservice inspection and testing in accordance with ASME Boiler and Pressure Vessel Code, Section XI, *Rules for Inservice of Nuclear Power Plant Components*.” For those portions of the fuel-oil system for standby diesel generators that are designed to Section III, Subsection ND of the Code, an acceptable method of meeting the requirements of Section 7.3 is to ensure that the system arrangement would allow:

    (1) Pressure testing of the fuel-oil system to a pressure 1.10 times the system design pressure at 10-year intervals...

    (2) A visual examination to be conducted during the pressure test for evidence of component leakages, structural distress, or corrosion....”

The diesel fuel oil transfer system is designed, fabricated, erected, and tested to quality standards commensurate with the safety function to be performed. VEGP will perform inservice inspection and testing commensurate with the safety function of the system in accordance with the above defined acceptable methods (1) and (2), not per ASME Section XI. Specifically, the

operational readiness of the pumps and valves to meet their intended safety function is maintained in accordance with the VEGP Technical Specifications.

VEGP utilizes Regulatory Guide 1.26 (reference UFSAR paragraph 1.9.26.1) to determine the safety classification of systems and components, and then applies ASME Section XI inspection and testing requirements. ASME Section XI requires that Subsection IWD rules for inservice inspection and testing requirements be applied to those components classified as Class 3, except where the system has been optionally upgraded.

Regulatory Guide 1.26 provides a method for determining acceptable quality standards for safety-related components containing radioactive material, water, or steam but does not require that fuel oil transfer system components be classified as Class 3. Although the fuel oil transfer system was constructed to ASME Section III, Subsection ND (Class 3) per ANSI N195-1976, the original classifications of this system as Class 3 is considered to be an optional upgrade for Section XI purposes, since it is not required to be Class 3 per Regulatory Guide 1.26. Therefore, the diesel fuel oil transfer system is not included in the scope of ASME Section XI.

Exception to regulatory position C.2 is as follows:

1. Regarding Appendix B to ANSI N195-1976, *Recommended Fuel Oil Practices*. Testing of the diesel generator fuel oil will be addressed in the Technical Specifications.

1.9.138 REGULATORY GUIDE 1.138, APRIL 1978, LABORATORY INVESTIGATIONS OF SOILS FOR ENGINEERING ANALYSIS AND DESIGN OF NUCLEAR POWER PLANTS

1.9.138.1 Regulatory Guide 1.138 Position

This guide describes laboratory investigations and testing practices acceptable to the NRC for determining soil and rock properties and characteristics needed for engineering analysis and design for foundations and earthworks for nuclear power plants.

1.9.138.2 VEGP Position

The soil investigations for VEGP were performed prior to the issuance of this guide. Soils testing is described in section 2.5.

1.9.139 REGULATORY GUIDE 1.139, MAY 1978, GUIDANCE FOR RESIDUAL HEAT REMOVAL

1.9.139.1 Regulatory Guide 1.139 Position

This guide describes a method acceptable to the NRC for complying with regulations with regard to the removal of decay heat and sensible heat after a reactor shutdown.

1.9.139.2 VEGP Position

VEGP design was reviewed and modified to provide safety-grade cold shutdown in accordance with this guide, as described in subsection 5.4.7.

RHR outlet Instrument Society of America (ISA) check valves are in conformance with regulatory position C.2 except that they will be tested once every refueling.

1.9.140 REGULATORY GUIDE 1.140, REVISION 1, OCTOBER 1979, DESIGN, TESTING, AND MAINTENANCE CRITERIA FOR NORMAL VENTILATION EXHAUST SYSTEM AIR FILTRATION AND ADSORPTION UNITS OF LIGHT-WATER-COOLED NUCLEAR POWER PLANTS

1.9.140.1 Regulatory Guide 1.140 Position

This guide describes acceptable methods of implementing regulations with regard to the design, testing, and maintenance criteria for air filtration and adsorption units designed to collect airborne radioactive materials during normal operation, including anticipated operational occurrences.

1.9.140.2 VEGP Position

Conform, except as discussed below.

C.3.f Duct stiffener angles are attached to the duct by mechanical fasteners (huck bolts) or by welding.

C.4.b The steam packing exhauster filtration system does not meet Regulatory Guide 1.140 spacing criteria between filter components. Since the system is operated only when high radiation is present, maintenance will only be required on a minimal basis. The physical location in which the filtration unit is installed has limited, but adequate, space availability.

The in-place testing of the HEPA filter and charcoal adsorber for the containment preaccess filter system is performed initially at acceptance testing and after subsequent filter or charcoal replacement. As discussed in paragraph 9.4.6.2.3, the preaccess filter system is a recirculating, nonducted system inside containment that reduces airborne contamination inside containment prior to personnel entry. Leakage through the HEPA or charcoal adsorber would not contribute to any increased radiological release to the environment.

C.5.d The activated carbon adsorber section of the post-LOCA containment hydrogen purge filter is leak-tested with a gaseous halogenated hydrocarbon refrigerant in accordance with Section 12 of ANSI N510-1975 to ensure that bypass leakage through the adsorber section is less than 1 percent as shown in table 6.2.5-3.

C.6.a New, activated, impregnated carbon is tested per Table 5-1 of ANSI N509-1980, except that the performance requirements shall be 0.5-percent penetration maximum when tested with molecular iodine per ASTM D3803 at 30°C and 95-percent relative humidity, and 50-percent penetration maximum when tested with methyl iodide per ASTM 3803 at 30°C and 95-percent relative humidity.

C.6.b Used carbon samples taken for laboratory testing shall meet the acceptance criteria of greater than or equal to 90 percent when tested with methyl iodide at 30°C and 70-percent relative humidity.

C.6.c Condenser vacuum exhaust and steam packing exhaust filtration systems carbon samples taken for laboratory testing shall meet the acceptance criteria of greater than or equal to 90 percent when tested with methyl iodide at 30°C and 95-percent relative humidity.

Wherever ANSI N509-1976 is referenced in the regulatory guide, conformance is with ANSI N509-1976, ANSI N509-1980, or ASME N509-1989 depending on the date of the applicable purchase order. Conformance may be with a particular revision when specifically called out in the corresponding specification. In addition, the fan peak pressure test delineated in paragraph 5.10.8.2 of ANSI N509-1980 will not be performed since two separate interlocks are provided to preclude overpressurization of the ducting.

Wherever ANSI N510-1975 is referenced in the regulatory guide, conformance is with ANSI N510-1975, ANSI N510-1980, or ASME N510-1989 depending on the date of the applicable purchase order.

Conformance may be with a particular revision when specifically called out in the corresponding specification.

The radwaste processing facility HEPA filtration unit was designed in accordance with ASME AG-1 (1997) and subject to testing described in paragraph 9.4.3.4.

1.9.141 REGULATORY GUIDE 1.141, APRIL 1978, CONTAINMENT ISOLATION PROVISIONS FOR FLUID SYSTEMS

1.9.141.1 Regulatory Guide 1.141 Position

The requirements and recommendations for containment isolation of fluid systems that penetrate the primary containment of light-water-cooled reactors as specified in ANSI N271-1976, Containment Isolation Provisions for Fluid Systems, are generally acceptable and provide an adequate basis for complying with the pertinent containment isolation requirements of Appendix A to 10 CFR 50, subject to the qualifications identified in the guide.

1.9.141.2 VEGP Position

VEGP conforms as discussed in subsection 6.2.4.

1.9.142 REGULATORY GUIDE 1.142, OCTOBER 1981, REVISION 1, SAFETY-RELATED CONCRETE STRUCTURES FOR NUCLEAR POWER PLANTS (OTHER THAN REACTOR VESSELS AND CONTAINMENTS)

1.9.142.1 Regulatory Guide 1.142 Position

This guide endorses the procedures and requirements described in American Concrete Institute (ACI) 349-76 subject to the qualifications provided in this guide.

1.9.142.2 VEGP Position

ACI 318-71 is used in lieu of ACI 349-76; but ACI 349-76, including Appendix B, may be utilized subject to the qualifications provided in Regulatory Guide 1.142.

Refer to subsections 3.8.3, 3.8.4, and 3.8.5 for discussion on this subject.

1.9.143 REGULATORY GUIDE 1.143, REVISION 1, OCTOBER 1979, DESIGN GUIDANCE FOR RADIOACTIVE WASTE MANAGEMENT SYSTEMS, STRUCTURES, AND COMPONENTS INSTALLED IN LIGHT-WATER-COOLED NUCLEAR POWER PLANTS

1.9.143.1 Regulatory Guide 1.143 Position

This guide furnishes design guidance acceptable to the NRC regarding seismic and quality group classification and quality assurance provisions for radioactive waste management systems, structures, and components.

1.9.143.2 VEGP Position

Conform, with the following clarifications:

- Radioactive waste management systems, structures, and components are classified in table 3.2.2-1.
- ACI 318-71 is used for design of concrete structures in lieu of ACI 318-77.
- Flexible, nonmetallic hoses with couplings are utilized in the radwaste processing facility for connecting various portable processing equipment.
- Portable washer/dryer and associated connections utilized in health physics laundry room.
- Regulatory Guide 1.143 stipulates that radwaste piping is to be hydro tested to 1.5 times the design pressure. Some butt weld connections on the radwaste process

piping in the north end of the radwaste transfer tunnel are not hydro tested as stipulated. In lieu of the hydro test, a full volumetric radiographic or ultrasonic NDE is performed on these welds in conjunction with an inservice leak test at nominal operating pressure and temperature. This ensures VEGP radwaste process piping continues to meet or exceed the inspection requirements of Regulatory Guide 1.143.

- Regulatory Guide 1.143 stipulates that radwaste piping is to be hydro tested to 1.5 times design pressure and held for 30 minutes. In lieu of hydrostatic testing following repair replacement activities (by welding) of ASME Class 1, 2, and 3 components, the NRC has endorsed the use of Code Case N-416-2 with a stipulation that hold time for use of this Code Case is conditionally acceptable provided the provisions of IWA-5213, "Test Condition Holding Times," 1989 Edition, are to be used (Ref. RG 1.147, Rev 13, January 2004, Inservice Inspection Code Case Acceptability). IWA 5213 requires a 10 minute hold time unless the system has been in operation for at least 10 minutes for an uninsulated system; 4 hours for an insulated system. Additionally, this Code Case stipulates that NDE shall be performed on welded repairs and fabrication and installation joints in accordance with the methods and acceptance criteria of the applicable subsection of the 1992 Edition of Section III. This requirement applies to piping and safety systems (ASME Section III, Class 1, 2, and 3). Apply the Code Case requirements for Class 3 piping to radwaste system piping. For applications related to radwaste systems, the requirements in the Code Case to complete an NIS-2 form are not applicable. Also, there are no size exemptions that can be utilized when applying this Code Case to radwaste systems. Additionally, as stated above, the surface examination requirements of Class 3 will also apply, i.e., welds 2-1/2 in. and greater will require a magnetic particle or liquid penetrant examination. All welds 2 in. and under will require a visual examination.

See section 11.4 for further discussion.

1.9.144 REGULATORY GUIDE 1.144, REVISION 1, SEPTEMBER 1980, AUDITING OF QUALITY ASSURANCE PROGRAMS FOR NUCLEAR POWER PLANTS

1.9.144.1 <u>Regulatory Guide 1.144 Position (HISTORICAL)</u>

[The requirements that are included in ANSI/ASME N45.2.12-1977 for auditing QAPs for nuclear power plants are acceptable to the NRC staff and provide an adequate basis for complying with the pertinent quality assurance requirements of Appendix B to 10 CFR 50, subject to the qualifications identified in the guide.]

1.9.144.2 <u>VEGP Position</u>

[(HISTORICAL) The VEGP QAP for the design and construction phase conforms with Regulatory Guide 1.144, January 1979, which also endorses ANSI/ASME N45.2.12-1977, subject to qualification identified in the guide, with the following clarifications. VEGP does not conform to the latest revision of the following ANSI standards: ANSI N45.2, ANSI N45.2.9, and ANSI N45.2.10. VEGP conforms to ANSI N45.2-1971, ANSI N45.2.9 (Draft 11, Revision 0, January 17, 1973), and ANSI N45.2.10-1973. The VEGP quality assurance program is described in section 17.1, appendix 17A, and appendix 17C.]

Regulatory Guide 1.144 provided NRC endorsement of ANSI N45.2.12. The SNC QATR is based on ASME NQA-1-1994 which incorporates the requirements of ANSI N45.2.12. Accordingly, requirements for auditing quality assurance programs applicable to operations phase activities are described in the QATR.

1.9.145 REGULATORY GUIDE 1.145, AUGUST 1979, ATMOSPHERIC DISPERSION MODELS FOR POTENTIAL ACCIDENT CONSEQUENCE ASSESSMENTS AT NUCLEAR POWER PLANTS

1.9.145.1 Regulatory Guide 1.145 Position

This guide identifies acceptable methods for:

- Calculating atmospheric relative concentration (χ/Q) values.
- Determining χ/Q values on an overall site basis.
- Determining χ/Q values on a directional basis.
- Choosing χ/Q values to be used in evaluations of the types of events described in Regulatory Guides 1.3 and 1.4.

1.9.145.2 VEGP Position

Conform. Refer to subsection 2.3.4.

1.9.146 REGULATORY GUIDE 1.146, AUGUST 1980, QUALIFICATION OF QUALITY ASSURANCE PROGRAM AUDIT PERSONNEL FOR NUCLEAR POWER PLANTS

1.9.146.1 Regulatory Guide 1.146 Position (HISTORICAL)

[This guide describes a method acceptable to the NRC for complying with regulations with regard to qualification of QAP audit personnel for nuclear power plants.]

1.9.146.2 VEGP Position

[(HISTORICAL) Conform except as discussed below.

ANSI N45.2.23-1978, Section 2.3.4 states that the prospective lead auditor shall have participated in a minimum of five quality assurance audits within a period of time not to exceed 3 years prior to the date of qualification, one audit of which shall be a nuclear QA audit within the year prior to his or her qualification.

In lieu of the requirements of Section 2.3.4 of ANSI N45.2.23-1978, the prospective lead auditor shall demonstrate their ability to effectively implement the audit process and effectively lead an audit team. The demonstration process will be described in written procedures and shall evaluate and document the results of the demonstration. Regardless of the methods used for the demonstration, the prospective lead auditor shall have participated in at least one nuclear QA audit within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively implement the audit process and lead audits, and having met the other provisions of Section 2.3 of ANSI N45.2.23-1978, the individual may be certified as being qualified to lead audits.

The QAP is discussed in Chapter 17.]

Regulatory Guide 1.146 provided NRC endorsement of ANSI N45.2.23. The SNC QATR is based on ASME NQA-1-1994 which contains qualification requirements applicable to quality assurance audit personnel in NQA-1 Basic Requirement 2 and Supplement 2S-3. Accordingly, requirements for qualification of quality assurance program audit personnel applicable to operation phase activities are described in the SNC QATR.

1.9.147 REGULATORY GUIDE 1.147, INSERVICE INSPECTION CODE CASE ACCEPTABILITY, ASME SECTION XI, DIVISION 1

1.9.147.1 Regulatory Guide 1.147 Position

This regulatory guide lists those Section XI ASME code cases that are generally acceptable to the NRC for implementation in the ISI of light-water-cooled nuclear power plants.

1.9.147.2 VEGP Position

Conform. Refer to section 6.6 for further discussion.

1.9.148 REGULATORY GUIDE 1.148, MARCH 1981, FUNCTIONAL SPECIFICATION FOR ACTIVE VALVE ASSEMBLIES IN SYSTEMS IMPORTANT TO SAFETY IN NUCLEAR POWER PLANTS

1.9.148.1 Regulatory Guide 1.148 Position

This guide delineates a procedure acceptable to the NRC for implementing regulations with respect to the detailed specification of information pertinent to defining operating requirements for active valve assemblies in light-water-cooled nuclear power plants.

1.9.148.2 VEGP Position

Conformance is addressed in table 3.9.B.3-10.

1.9.149 REGULATORY GUIDE 1.149, APRIL 2011, NUCLEAR POWER PLANT SIMULATION FACILITIES FOR USE IN OPERATOR TRAINING, LICENSE EXAMINATIONS, AND APPLICANT EXPERIENCE REQUIREMENTS

1.9.149.1 Regulatory Guide 1.149 Position

This regulatory guide describes a method acceptable to the NRC for specifying the functional requirements of a nuclear power plant simulator to be used for operator training.

1.9.149.2 VEGP Position

Conform with exceptions as described by subsection 13.2.1.

1.9.150 REGULATORY GUIDE 1.150, FEBRUARY 1983, ULTRASONIC TESTING OF REACTOR VESSEL WELDS DURING PRESERVICE AND INSERVICE EXAMINATIONS

1.9.150.1 Regulatory Guide 1.150 Position

This guide describes a method for volumetric examination of reactor vessel welds.

1.9.150.2 VEGP Position

Conform to the extent practicable. See subsection 5.2.4.

1.9.155 REGULATORY GUIDE 1.155, AUGUST 1988, STATION BLACKOUT

1.9.155.1 Regulatory Guide 1.155 Position

This regulatory guide describes a means acceptable to the NRC staff for meeting the requirements of 50.63 of 10 CFR Part 50 for station blackout coping. NUMARC 87-00 also provides guidance acceptable to the staff for meeting these requirements.

1.9.155.2 VEGP Position

Conform. See section 8.4.

1.9.160 REGULATORY GUIDE 1.160, MAY 2012, MONITORING THE EFFECTIVENESS OF MAINTENANCE AT NUCLEAR POWER PLANTS

1.9.160.1 Regulatory Guide 1.160 Position

This guide endorses the guidance in Section 11 of NUMARC 93-01, Revision 4a, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants."

1.9.160.2 VEGP Position

As a result of adding LCO 3.0.10 per TSTF-427, "Allowance for Non-Technical Specification Barrier Degradation on Supported System Operability," VEGP will conform to NUMARC 93-01, Section 11, Revision 4a, which provides guidance and details on the assessment and management of risk during maintenance (i.e., using NEI 04-08 guidance) to control work on these barriers.

1.9.163 REGULATORY GUIDE 1.163, SEPTEMBER 1995, PERFORMANCE-BASED CONTAINMENT LEAK-TESTING PROGRAM

1.9.163.1 Regulatory Guide 1.163 Position

This regulatory guide provides guidance on an acceptable performance-based leak-test program, leakage-rate test methods, procedures, and analysis that may be used to comply with the performance-based Option B in 10 CFR Part 50, Appendix J.

1.9.163.2 VEGP Position

Conform with the following exceptions:

1. Leakage rate testing for the containment purge valves with resilient seals is performed once per 18 months in accordance with the Limiting Condition of Operation of Technical Specification 3.6.3, Surveillance Requirements 3.6.3.6 and 3.0.2.

2. Containment personnel air lock door seals will be tested prior to reestablishing containment integrity when the air lock has been used for containment entry. When containment integrity is required and the air lock has been used for containment entry, door seals will be tested at least once per 30 days during the period that containment entry(ies) is (are) being made.

3. The visual examination of containment concrete surfaces intended to fulfill the requirements of 10 CFR 50, Appendix J, Option B testing, will be performed in accordance with the requirements of and frequency specified by ASME Section XI Code, Subsection IWL, except where relief has been authorized by the NRC. At the

discretion of the licensee, the containment concrete visual examinations may be performed during either power operation, e.g., performed concurrently with other containment inspection-related activities such as tendon testing, or during a maintenance/refueling outage.

1.9.166 REGULATORY GUIDE 1.166, REVISION 0, MARCH 1997 PRE-EARTHQUAKE PLANNING AND IMMEDIATE NUCLEAR POWER PLANT OPERATOR POST-EARTHQUAKE ACTIONS

1.9.166.1 Regulatory Guide 1.166 Position

This guide provides guidance acceptable to the NRC for a timely evaluation of the recorded instrumentation data after an earthquake and for determining whether plant shutdown is required by 10 CFR 50.

1.9.166.2 VEGP Position

VEGP conforms to this guide.

1.9.167 REGULATORY GUIDE 1.167, REVISION 0, MARCH 1997, RESTART OF A NUCLEAR POWER PLANT SHUTDOWN BY A SEISMIC EVENT

1.9.167.1.1 Regulatory Guide 1.167 Position

This guide provides guidance acceptable to the NRC for performing inspections and tests of nuclear power plant equipment and structures prior to restart of a plant that has been shutdown by a seismic event.

1.9.167.2 VEGP Position

VEGP conforms to this guide.

TABLE 1.9-1 (SHEET 1 OF 8)

DESIGN AND FABRICATION CODE CASES

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-101 (1712)	Reg. Guide 1.84	None
N-31[(a)(b)] (1540-2)	Reg. Guide 1.84	Elastomer Diaphragm Valves, Section III, Class 2 and 3 Code Case 1540-2 is acceptable subject to the following conditions in addition to those conditions specified in the code case: (1) Each applicant who applies the code case should indicate in the referencing Safety Analysis Report that the service life of the elastomer diaphragm should not exceed the manufacturer's recommended service life. This recommended service life should not exceed one-third of the minimum cycle life as established by the requirements of paragraph 3 of the code case. (2) The service life of the elastomer diaphragm should not exceed 5 years. (3) The combined service and storage life of the elastomer diaphragm should not exceed 10 years.
N-142 (1774)	Reg. Guide 1.84	None
N-100 (1711)	Reg. Guide 1.84	Pressure Relief Valve Design Rules, Section III, Division 1, Class 1, 2, and 3.

TABLE 1.9-1 (SHEET 2 OF 8)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
		Code Case 1711 is acceptable subject to the following conditions in addition to those conditions specified in the code case. The following information should be provided in the Safety Analysis Report: (1) If stress limits are used in excess of those for the upset operating condition, it should be demonstrated how the pressure relief function is assured. Refer to paragraph 3.1, Section I, of the case for Class 1 and paragraph 3.2, Section II, of the case for Class 2 and 3 pressure relief valves. (2) If Case 1660 is to be used in conjunction with this case, it should be stated that the stress limits of Case 1660 supersede those of paragraph 3.2(6), Section I, of Case 1711. Functional assurance of(1) above is required in all situations.
N-154	Reg. Guide 1.84	None
N-32-3 (1541-3)	Reg. Guide 1.84	None
N-237	Reg. Guide 1.84	None
N-86 (1686)	Reg. Guide 1.84	None
N-30	Reg. Guide 1.84	None

TABLE 1.9-1 (SHEET 3 OF 8)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
1606 1606-1	Reg. Guide 1.84 Reg. Guide 1.84R.24	Stress Criteria Section III, Classes 2 and 3, Piping Subject to Upset, Emergency, and Faulted Operating Conditions Code Cases 1606 and 1606-1 are acceptable subject to the interpretation that the stress limit designations of "upset," "emergency," and "faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.
N-40 (1569)	Reg. Guide 1.84	Design of Piping for Pressure Relief Valve Station, Section III Code Case 1569 (N-40) was acceptable subject to compliance with the recommendations contained in Regulatory Guide 1.67, Installation of Overpressure Protection Devices.
N-275	Reg. Guide 1.84	Repair of Welds, Section III, Division 1 Code Case N-275 is acceptable subject to the following condition in addition to those conditions specified in the code case. Use of the code case is applicable only when the removal of an indication requires that the full weld thickness be removed and, in addition, the backside of the weld assembly joint is not accessible for the removal of examination material. If an indication is removed and weld-metal layers still remain, it is not acceptable to gouge through the wall in order to qualify for use of the code case. Instead, examination of the cavity is required when such an indication has been removed.

TABLE 1.9-1 (SHEET 4 OF 8)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-111	Reg. Guide 1.84	None
N-55	Reg. Guide 1.84	None
N-82	Reg. Guide 1.84	None
N-175 (1818)	Reg. Guide 1.84	Welded Joints in Component Standard Supports, Section III, Division 1 Code Case 1818 is acceptable subject to the following condition in addition to those conditions specified in the code case: That portion of the unwelded housing that is limited to 90° maximum should include a minimum of two sectors that are uniform in length.
N-24 (1516-2)	Reg. Guide 1.84	None
N-69 (1635-1)		Stress Criteria for Section III, Class 2 and 3 Valves Subjected to Upset, Emergency, and Faulted Operating Conditions Code Case 1635-1 is acceptable subject to the interpretation that the stress limit designations of "upset," "emergency," and "faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.

TABLE 1.9-1 (SHEET 5 OF 8)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-240	Reg. Guide 1.84	None
N-174 (1812)	Reg. Guide 1.84	None
N-302	Reg. Guide 1.84	None
N-316	Reg. Guide 1.84	None
N-318-2	Reg. Guide 1.84	Code Case N-318 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case. Applicants should identify in their SAR: (1) method of lug attachment, (2) piping system involved; and (3) location in the system where the case is to be applied.
N-411	NRC letter, Novak to D. O. Foster March 3, 1985.	To apply to piping systems analyzed by the response spectra method. Increased pipe deflections due to greater piping flexibility will not violate project separation criteria.

TABLE 1.9-1 (SHEET 6 OF 8)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
		Criteria outlined in Regulatory Guide 1.61 will not mix with the criteria of Code Case N-411 for a given piping analysis. As part of the integrated piping analysis/as-built reconciliation program, increased piping displacements and clearances will be reviewed for acceptance. With the exception of certain stress calculations described in GPC Letter GN-1257, J. A. Bailey to B. J. Youngblood, dated December 22, 1986, Code Case N-411 damping values are not used in conjunction with multiple response spectrum methodology piping analysis.
N-62-2 (1621-2)	Reg. Guide 1.84	Code Case 1621-2 is acceptable subject to the following condition: In addition to those conditions specified in the code case, the Code requires that Class 1 and Class 2 valve manufacturers meet the provisions of NCA-4000, "Quality Assurance," and in addition, Class 3 valve manufacturers should also meet the provisions of NCA-4000.
N-272	Reg. Guide 1.84	None
N-412	NRC letter, Denton to D. O. Foster, dated, November 18, 1985	None

TABLE 1.9-1 (SHEET 7 OF 8)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-397	Reg. Guide 1.84 and NRC letter, Youngblood to D. O. Foster, dated December 26, 1985	Code Case N-397 is acceptable subject to the following condition in addition to those conditions specified in the Code Case. The Code Case is acceptable for specific plant applications on a case by case basis pending revision of Regulatory Guide 1.122, "Development of Floor Design Response Spectra for Seismic Design of Floor-Supported Equipment or Components."
N-316	Reg. Guide 1.84	None
N-411	NRC letter, Novak to D. O. Foster dated, March 18, 1985	
N-392	Reg. Guide 1.84	None
N-315	Reg. Guide 1.84	Code Case N-315 to ASME III Division 1 is acceptable subject to the following conditions specified in the Code Case: Prior to implementation of the Code Case, the applicant should present a description of the repair and a justification why the bellows should be repaired rather than replaced. Following receipt of approval for the repair, the applicant should present the results of the qualification of the full-scale facsimile bellows, including the design requirements, to ensure that the repair meets the design specification.

TABLE 1.9-1 (SHEET 8 OF 8)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-82 (1677)	Reg. Guide 1.84	None
N-368	Reg. Guide 1.84	Pressure Testing of Pump Discharge, Section III, Division 1, Class 2 and 3. Code case is acceptable subject to the following conditions in addition to those specified in the code case: Applicants using this code case should provide information to demonstrate that the length of discharge piping is reasonably short.
N-192-1 N-192-2	Reg. Guide 1.84 Reg. Guide 1.84	Use of Flexible Hose for Section III, Division 1. Class 1, 2, and 3 Construction. Code cases N-192-1 and N-192-2 are acceptable subject to the following conditions in addition to those specified in the code case: The applicant should indicate system application, design and operating pressure, and pressure temperature rating of the flexible hose. Data to demonstrate compliance of the flexible hose with NC/ND-3649, particularly NC/ND-3649.4(e) are required to be furnished with the application.
N-247	Reg. Guide 1.84	None

a. The service life of elastomer diaphragm material used for zero leakage valves does not exceed the manufacturer's recommended service life. The recommended service life does not exceed one-third of the minimum cycle life established in paragraph 3 of the code case.

b. The combined storage and service life on elastomer diaphragms may be greater than 10 years, and the service life may exceed 5 years, but neither is the environmental qualified life exceeded nor does the service life exceed one-third of the minimum established cycle life of paragraph 3 of the code case. Evaluation of the environmental qualified life considers process fluid and location, including temperature and radiation environments encountered by the valves.

TABLE 1.9-2 (SHEET 1 OF 7)

MATERIALS CODE CASES

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
1713	Reg. Guide 1.85	None
N-71-8	Reg. Guide 1.85	Additional Materials for Component Supports and Alternate Design Requirements for Bolted Joints, Section III, Division 1,Subsection NF, Class 1, 2, 3 and MC Construction Code Case 1644-8 is acceptable subject to the following conditions in addition to those specified in the code case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 ksi could be considered acceptable for a material and, under this condition, the design specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that: (1) The impact test results for the material meet code requirements. (2) The material is not subject to stress corrosion cracking by virtue of the fact that: (a) A corrosive environment is not present. (b) The component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

TABLE 1.9-2 (SHEET 2 OF 7)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-71-7	Reg. Guide 1.85	Additional Materials for Component Supports, Section III, Division 1, Subsection NF, Class 1, 2, 3 and MC Component Supports Code Case 1644-7 was acceptable subject to the following conditions in addition to those specified in the code case: The maximum measured UTS of the component support material should not exceed 170 ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 ksi could be considered acceptable for a material and, under this condition, the design specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that: (1) The impact test results for the material meet code requirements. (2) The material is not subject to stress corrosion cracking by virtue of the fact that: (a) A corrosive environment is not present. (b) The component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads of service.

TABLE 1.9-2 (SHEET 3 OF 7)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-225	Reg. Guide 1.85	None
N-71-5	Reg. Guide 1.85	Additional Materials for Component Supports and Alternate Design Requirements for Bolted Joints, Section III, Division 1, 2, 3 and MC Construction Code Case 1644-5 was acceptable subject to the following conditions in addition to those specified in the code case: The maximum measured UTS of the component support material should not exceed 170 ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 ksi could be considered acceptable for a material and, under this condition, the design specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that: (1) The impact test results for the material meet code requirements. (2) The material is not subject to stress corrosion cracking by virtue of the fact that: (a) Corrosive environment is not present. (b) The component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

TABLE 1.9-2 (SHEET 4 OF 7)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-38	Reg. Guide 1.85	None
1649	Reg. Guide 1.85	None
N-188-1	Reg. Guide 1.85	None
N-147 (1781)	Reg. Guide 1.85	None
N-294	Reg. Guide 1.85	None
N-3-10	Reg. Guide 1.85	None
N-249	Reg. Guide 1.85	Additional Materials for Component Supports Fabricated Without Welding, Section III, Division 1, Subsection NF, Class 1, 2, and 3 MC Component Supports Code Case N-249 is acceptable subject to the following conditions in addition to those conditions specified in the code case. Footnote 2 of the code case should apply to all materials listed in tables 1 through 5 of the code case and should be so indicated in line 5 of the "Reply."
N-249-1	Reg. Guide 1.85	Code Case N-249-1 is acceptable subject to the following condition in addition to those conditions specified in the code case. Paragraph 7 of the "Reply" should reference the requirements of NF-2600 instead of NF-2800. This is a typographical error in that NF-2800 does not exist.
N-249-2	Reg. Guide 1.85	None

TABLE 1.9-2 (SHEET 5 OF 7)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-249-4 through N-249-5	Reg. Guide 1.85	Code Cases N-249-4 and N-249-5 are acceptable subject to the following: The fracture toughness requirements as listed in Code Cases N-249-4 and N-249-5 apply only to piping supports and not to Classes 1, 2, and 3 component supports. The fracture toughness of Classes 1, 2, and 3 should be characterized in accordance with paragraph 5.3.4 of the USNRC Standard Review Plan (NUREG-0800) or on a case-by-case basis.
N-249-6 through N-249-12	Reg. Guide 1.85	Code Cases N-249-6 through N-249-12 are acceptable subject to the following conditions in addition to those conditions specified in the Code Case: the fracture toughness requirements apply only to piping supports and not to Classes 1, 2, and 3 component supports. The fracture toughness of Classes 1, 2, and 3 component supports should be characterized in accordance with paragraph 5.3.4 of the USNRC Standard Review Plan (NUREG – 0800) or on a case-by-case basis. The following is to be added to paragraph (e) of the Case: For these cases, it should be demonstrated by the owner that: (1) The impact test results for the material meet Code Requirements and (2) The material is not subject to stress corrosion cracking by virtue of the fact that: (a) A corrosive environment is not present and (b) The component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

TABLE 1.9-2 (SHEET 6 OF 7)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
N-71-10	Reg. Guide 1.85	Code Case N-71-10 is acceptable subject to the following condition in addition to those conditions specified in the code case. In the last sentence of paragraph 5-3, reference should be made to paragraph 4.5.2.2, Alternate Atmosphere Exposure Time Periods Established by Test, of the American Welding Society D.1.1 Code for the evidence presented to and accepted by the authorized inspector concerning exposure of electrodes for longer periods of time.
N-242-1	Reg. Guide 1.85	Code Case N-242-1 is acceptable subject to the following condition in addition to those conditions specified in the code case: applicants should identify in their safety analysis reports the components and supports for which the code case is being applied and should specify the respective paragraphs of the code case. For VEGP, this code case is being used for the reactor coolant pumps, control rod drive mechanism housing, and safety injection system valves. The applicable code case paragraphs are 1.0 through 4.0.
N-274	Reg. Guide 1.85	Code Case N-274 is acceptable subject to the following: In addition to those conditions specified in the Code Case, paragraph 6 should be expanded as follows: The ultrasonic examination procedure shall be proven by actual demonstration, to the satisfaction of the authorized nuclear inspector, that the procedures are capable of detecting cracks according to Section XI requirements.

TABLE 1.9-2 (SHEET 7 OF 7)

Code Case No.	NRC Acceptance of Code Case	NRC Contingency for Use of Code Case
		The reason for the conditional acceptance of paragraph 6 is to make sure that there is a qualified procedure capable of detecting small flaws and differentiating the small flaws from geometric reflectors. This paragraph does not in any way alter the acceptance as specified in paragraph 3.
N-71-15	Reg. Guide 1.85	Additional Materials for Subsection NF, Classes 1, 2, and 3 and MC Component Supports Fabricated by Welding, Section III, Division 1 Code Case N-71-15 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the material meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

TABLE 1.9-3 (SHEET 1 OF 4)

NSSS ASME CODE CASES

Code Case No.	Council Approval	Title (NRC Comments)	Regulatory Guide
1335-10 or N-3-10	8/28/78	Requirements for Bolting Materials, Section III	1.85-15
1423-2[(a)]	3/9/72	Wrought Type 304 and 316 with Nitrogen Added, Section I, III, VIII, Divisions 1 and 2	1.85-0
1484-3 (N-20)[(b)]	08/13/76	SB-163 Nickel-Chromium-Iron Tubing (Alloy 600 and 690) and Nickel-Iron-Chromium Alloy 800 at a Specified Minimum Yield Strength of 40.0 ksi, Section III, Division 1, Class 1	1.85-19
1528-3[(c)]	11/3/75	High Strength Steel SA-508, Class 2, and SA-541, Class 2 Forgings, Section III, Class 1 Components	1.85-7
1540-1	3/3/73	Elastomer Diaphragm Valves Section III, Classes 2 and 3	1.84-0
1553-1	3/3/75	Upset Heading and Roll Threading of SA-453 for Bolting in Section III	1.84-2
1567	3/3/73	Testing Lots of Carbon and Low-Alloy Steel-Covered Electrodes, Section III	1.85-0
1607	11/5/73	Stress Criteria for Section III Classes 2 and 3 Vessels Subjected to Upset, Emergency, and Faulted Operating Conditions	1.84-0
1612	12/17/73	Use of Type 308 Stainless Steel Rod and Bar for Section III, Class 1, 2, 3, and CS Construction	1.85-1

TABLE 1.9-3 (SHEET 2 OF 4)

Code Case No.	Council Approval	Title (NRC Comments)	Regulatory Guide
1644 (1644-4)[(d)]	8/12/74	Additional Materials for Component Supports Section III, Subsection NF, Class 1, 2, 3, and MC Construction	1.85-1
1649	8/12/74	Modified SA 453-GR 660 for Class 1, 2, 3 and CS Construction	1.85-1
N-242-1[(e)]	04/10/80	Materials Certification Section III, Division 1, Classes 1, 2, 3, MC, and CS Construction	1.85-18
N-71-9[(f)]	12/80	Additional Materials for Component Supports Fabricated by Welding	1.85-17
N-249-1[(g)]	04/82	Additional Materials for Component Supports Fabricated Without Welding	1.85-19
N-249-2	6/17/82	Additional Materials for subsection NF Class 1, 2, 3, and MC Component Supports Fabricated Without Welding Section III, Division I	1.85-23
N-62-2 (1621-2)	05/15/80	Internal and External Valve Items Section III, Division 1, Class 1, 2, and 3	1.84-12
N-272	05/15/80	Compiling Data Report Records Section III, Division I	1.84-23
N-274	03/17/80	Alternative Rules for Examination of Weld Repairs for Section III, Division 1 Construction	1.85-17
N-316	12/11/81	Alternative Rules for Fillet Weld Dimensions for Socket Welded Fittings Section III, Division 1, Class 1, 2, and 3	1.84-20

TABLE 1.9-3 (SHEET 3 OF 4)

Code Case No.	Council Approval	Title (NRC Comments)	Regulatory Guide
N-397	02/20/84	Alternative Rules to the Spectral Broadening Procedures of N-1226.3 for Classes 1, 2, and 3 Piping Section III, Division 1	1.84-23
N-411[h]	09/17/84	Alternative Damping Values for Seismic Analysis of Classes 1, 2, and 3 Piping Sections Section III, Division 1	-
N-412	04/15/85	Alternative Rules for Witnessing Piping System Pressure Tests of Classes 1, 2, and 3 Piping Systems Section III, Division 1	-
1948	11/28/83	Alternative Rules for Selection of Penetrameters and Shims for Welds with Reinforcement Section V	-
N-237	07/09/79	Hydrostatic Testing of Internal Piping Section III, Division 1	1.84-16
N-240	03/19/79	Hydrostatic Testing of Open Ended Piping Section III, Division 1	1.84-16
N-174	03/23/77	Size of Fillet Welds for Socket Welding of Piping Section III, Division 1	1.84-11
N-275	03/07/80	Repair of Welds Section III, Division 1	1.84-14
N-388	07/25/83	Component Support Bolting, Section III, Division 1, Classes 2, 3, and MC	1.85-22
N-392	11/28/83	Procedure for Evaluation of the Design of Hollow Circular Cross-Section Welded Attachments on Classes 2 and 3 Piping, Section III, Division 1	1.84-23

TABLE 1.9-3 (SHEET 4 OF 4)

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a. Code Case 1423-2 is acceptable subject to the conditions established in Regulatory Guides 1.31, Control of Stainless Steel Welding, and 1.44, Control of the Use of Sensitized Stainless Steel.

b. Code Case 1484-3 is acceptable subject to the following condition in addition to those conditions specified in the code case: Alloy 690 is not acceptable on a generic basis.

c. Code Case 1528-3 is acceptable subject to the following condition in addition to those conditions specified in the code case: The information required to be developed by note 1 in the code case should be provided in each referencing Safety Analysis Report.

d. Code Case 1644 is acceptable subject to the following condition, in addition to those conditions specified in the code case: The maximum measured UTS of the component support material should not exceed 170 ksi.

e. Code Case N-242-1 is acceptable subject to the following condition in addition to those conditions specified in the code case: Applicants should identify in their Safety Analysis Reports the components and supports for which the code case is being applied and should specify the respective paragraphs of the code case. For VEGP, this code case is being used for the reactor coolant pumps, CRDM housing, and safety injection system valves. The applicable code case paragraphs are 1.0 through 4.0.

f. Code Case N-71-9 is acceptable subject to the contingency delineated in Regulatory Guide 1.85, Revision 17, dated December 1980.

g. Code Case N-249-1 is acceptable subject to the contingency delineated in Regulatory Guide 1.85, Revision 19, dated April 1982.

h. With the exception of certain stress calculations described in GPC letter GN-1257, J. A. Bailey to B. J. Youngblood dated December 22, 1986, Code Case N-411 damping values are not used in conjunction with multiple response spectrum methodology piping analysis.

2.0 SITE CHARACTERISTICS

2.1 GEOGRAPHY AND DEMOGRAPHY

2.1.1 SITE LOCATION AND DESCRIPTION

Figures 2.1.1-1 through 2.1.1-3 show the location of the 3169-acre site within Burke County, Georgia, on the Savannah River at river mile 151.1. Figure 2.1.1-1 indicates the basis for estimated population figures prior to receipt of an operating license. It is considered historical information and will not be updated.

2.1.1.1 Reactor Coordinates

The coordinates of the center of the containment for each of the two units are given below in both latitude and longitude and Universal Transverse Mercator (UTM) coordinates. Latitude and longitude are given to the nearest second and UTM coordinates are given to the nearest 100 m.

Unit	Latitude and Longitude	UTM Coordinates in Zone 17S MG (m)
1	33°08'30" N	N 3,666,900
	81°45'44" W	E 428,900
2	33°08'30" N	N 3,666,900
	81°45'48" W	E 428,800

2.1.1.2 Site Area Map

Drawing CX2D45V002 shows property lines and exclusion boundary lines for the site. Location and orientation of principal plant structures within the site area are shown on drawing CX2D45V003. With the exception of the Georgia Power Company combustion turbine plant, Plant Wilson, there are no commercial, industrial, institutional, recreational, or residential structures within the site area. The nearest point to the exclusion area boundary is the near bank of the Savannah River. Reactor 1 is approximately 3600 ft from the exclusion area boundary, and Reactor 2 is approximately 3900 ft from the exclusion area boundary. A scale that will permit the measurement of distances with reasonable accuracy is shown on drawing CX2D45V002. The Savannah River is adjacent to the site, as shown in figure 2.1.1-2.

2.1.1.3 Boundaries for Establishing Effluent Release Limits

The property lines as shown on drawing CX2D45V002 are the boundaries for determining effluent release limits. Effluent releases will not exceed the limits of 10 CFR 20.106 (a) at the boundary. Information regarding radioactive gaseous and liquid effluents, which will allow identification of structures and release points as well as definition of unrestricted areas within the site boundary that are accessible to members of the public, shall be as shown on drawings CX2D45V002 and AX6DD311. An unrestricted area means an area, to which access is neither limited nor controlled by the licensee, or any area within the site boundary used for residential quarters or for industrial, commercial, institutional, and/or recreational purposes. The site boundary shall be the exclusion boundary line as shown on drawing CX2D45V002. A member of the public means an individual in a controlled area or unrestricted area. However, an individual is not a member of the public during any period in which the individual receives an occupational dose. This category may include persons who use portions of the site for recreational, occupational, or other purposes not associated with the plant.

The definition of unrestricted area used in implementing the Technical Specifications has been expanded over that in 10 CFR 20.1003. The unrestricted area boundary may coincide with the exclusion (fenced) area boundary, as defined in 10 CFR 100.3 (a), but the unrestricted area does not include areas over bodies of water. The concept of unrestricted areas, established at or beyond the site boundary, is utilized in the limiting conditions for operation to keep levels of radioactive materials in liquid and gaseous effluents as low as is reasonably achievable, pursuant to 10 CFR 50.36 (a). The site boundary lines, plant property lines, and the exclusion area lines are shown on drawings CX2D45V002 and CX2D45V003. The property lines are the boundaries for determining effluent release limits.

Access within the property boundary is controlled as discussed in subsection 2.1.2. Detailed discussion of effluent release points is provided in subsection 2.3.5.

2.1.2 EXCLUSION AREA AUTHORITY AND CONTROL

2.1.2.1 Authority

Georgia Power Company (GPC) and the co-owners own the entire plant exclusion area in fee simple including mineral rights. Pursuant to the nuclear operating agreement, Georgia Power Company (GPC), for itself and as agent for the co-owners, has delegated to Southern Nuclear Operating Company, Inc. (SNC) complete authority to regulate any and all access and activity within the entire plant exclusion area. The minimum distance to the exclusion area boundary is discussed in paragraph 2.1.1.2.

2.1.2.2 Control of Activities Unrelated to Plant Operation

There are no areas within the exclusion area in which activities unrelated to plant operation will occur except at the visitors center and at the GPC combustion turbine plant, Plant Wilson.

The exclusion area outside the controlled area fence will be posted and, with the exception of the visitors center, will be closed to persons who have not received permission to enter the property.

The access route to the visitor's center is from River Road along the main plant access road to the road leading to the visitors center. Normally, only a few administrative personnel are located at the visitors center. Because of the remote location of the site, the number of visitors at the center will be minimal. However, persons visiting the center will occupy the center and the area and parking lot immediately adjacent to the center. In the event of emergency conditions at the plant, the emergency plan provides for notification of visitors to the center concerning the proper actions to be taken and evacuation instructions.

The access route to Plant Wilson is along River Road. The emergency plan also provides for notification and evacuation of VEGP personnel at Plant Wilson.

SNC normally will not control passage or use of the Savannah River along the exclusion area boundary. Signs are posted near the river indicating the actions to be taken in the event of emergency conditions at the plant.

2.1.2.3 **Arrangements for Traffic Control**

SNC has made arrangements with the Burke County Sheriff for control of traffic nearby in the event of an emergency.

The State of Georgia has made arrangements with the U.S. Coast Guard to control traffic on the Savannah River.

2.1.2.4 **Abandonment or Relocation of Roads**

An improved county road by the name of River Road has been relocated. The relocation of River Road was approved by the Board of County Commissioners of Burke County. Therefore, no further hearings or adjudicatory actions will be necessary.

2.1.3 POPULATION DISTRIBUTION (HISTORICAL)

2.1.3.1 Population Within 10 Miles (HISTORICAL)

Figure 2.1.3-1 shows major population centers within 10 miles of the VEGP. Tables 2.1.3-1 through 2.1.3-16 show population distribution and numbers by 16 compass sectors at 1-mile intervals for the 0- to 10-mile radius. Population projections for the years 1987, 1990, 2000, 2007, 2010, 2020, and 2028 are included in these tables.

Tables 2.1.3-17 and 2.1.3-18 provide population totals for each sector and annular ring, respectively. A total for the 0- to 10-mile enclosed population is also included.

Data sources and methods used to arrive at population distribution and projections are *described below.*

2.1.3.2 <u>Population Between 10 and 50 Miles</u> (HISTORICAL)

Figure 2.1.3-2 and tables 2.1.3-1 through 2.1.3-16 show population distribution and numbers at 10-mile intervals between the 10- and 50-mile radii from the plant reactor. The population projections for 1987, 1990, 2000, 2007, 2010, 2020, and 2028 were derived from 1980 base year data, the census statistic.

Tables 2.1.3-19 and 2.1.3-20 provide population totals for each sector and annular ring, respectively. A total for the 10- to 50-mile enclosed population is also included.

The methodology utilized in the projections is outlined below.

2.1.3.3 <u>Transient Population</u> (HISTORICAL)

Data on transient population are provided in tables 2.1.3-22 through 2.1.3-38. Land uses which draw nonresidents to within 10 miles of the operating units include the VEGP itself (industrial use), Plant Wilson which is adjacent to the VEGP site (industrial use), the Savannah River Plant in South Carolina (industrial use), the Savannah River and adjacent areas (public recreational use), a Georgia Power Company (GPC) recreational facility (private recreational use), and State Highway 125 in South Carolina (transportation). Some variance on a daily basis between weekday and weekend day totals is anticipated, as well as between daytime and nighttime numbers. These variations are detailed in breakdowns of the totals for each sector. Peak totals for weekday and weekday nighttime periods are also shown. The only activity expected to show seasonal variation on a consistent basis is the use of the recreational facility available to GPC and SNC employees. Expected usage in summer versus winter is shown in table 2.1.3-32 and in the summary table 2.1.3-38.

Activity relating to VEGP will consist of employment for VEGP operation, training center functions, visitors center functions, and employment for construction of Unit 2 (1987 only). Most VEGP permanent employees, including SNC and contractor nuclear operations personnel, engineering support personnel, and security personnel, will work on a Monday through Friday 8 am to 5 pm or 7 am to 4 pm schedule. The training center will also operate primarily on a Monday though Friday daytime schedule. However, some nuclear operations and security personnel will be assigned to night or weekend shifts. Most permanent plant workers are expected to live outside the 10-mile radius in the Waynesboro and South Augusta areas.

The visitors center will be open on weekdays and during the day on weekends. Most visitors are expected to come on a prescheduled basis with a school group or as part of a special interest group. Due to the remote location, few individuals or family groups are expected.

The construction work force which will be completing Unit 2 in 1987 is expected to be divided between weekday and weekend shifts. The majority of construction workers will be on a weekday 7 am to 5:30 pm shift (Monday through Thursday). The smaller weekday night shift will operate from 5 pm to 3:30 am (Monday through Thursday). The very small weekend day shift will operate from 7 am to 6:30 pm on Friday, Saturday, and Sunday. The weekend night shift will function from 7 pm to 6:30 am on Friday, Saturday, and Sunday. Some construction workers will live within the 10-mile radius during the week, but most will return to their permanent residences outside the 50-mile radius on weekends. By 2007, only operational, engineering support, and security personnel will be employed.

Plant Wilson is an oil-powered electric generating plant owned by GPC and operated by VEGP personnel.

Savannah River Plant operations in South Carolina have facilities within the VEGP 10-mile radius. These include: 100-C reactor, 100-K reactor, 400-D facility, 100-L reactor, and central shop. Most personnel at these facilities will work on a Monday through Friday weekday schedule. Projected employment at Savannah River Plant facilities for 2007 and 2028 is best represented by the 1987 data according to plant officials. A system is in place to warn and account for transient population in their emergency planning zone. The majority of Savannah River Plant employees live in the Aiken-Augusta corridor.

Additional activities within the area under Savannah River Plant jurisdiction may occur in the following VEGP sectors: N (mile rings 2 through 10), NNE (mile rings 2 through 10), NE (mile rings 1 through 10), ENE (mile rings 2 through 10), E (mile rings 2 through 10), ESE (mile rings 3 through 10), and NNW (mile rings 5 through 8). These activities occur infrequently and at currently unpredictable locations on the Savannah River Plant reservation. No numbers reflecting the people involved are included in tables 2.1.3-22 through 2.1.3-38 but are included here for reference. The U.S. Forest Service monitors timber growth in the area and has approximately 20 employees who work onsite. Contractors are occasionally allowed to conduct logging operations. Approximately 25 to 50 contractor personnel would be involved at any one time. Ecology research teams from the University of Georgia operating out of the Savannah River Ecology Laboratory undertake projects at various locations on the Savannah River Plant site. A maximum of 25 team members may be onsite at any one time. Inspection teams from the South Carolina Department of Health and Environmental Control may have as many as five persons onsite. Savannah River Plant officials also allow deer hunting in limited sectors of the property from October to December on Wednesdays and Saturdays. Hunters may be onsite as early as 4 am but must be offsite by nightfall. The sectors to be hunted are identified at the beginning of each year. A maximum of 150 hunters is allowed on any day.

Recreational activities available to the public at all times within the VEGP 10-mile radius include fishing on the Savannah River and hunting. Fishing activities were surveyed in 1980 by the Georgia Department of Natural Resources at access points above and below the VEGP site. The access points within 10 radial miles of the plant, all of which are on private property, are: Shell Bluff, river mile 162; Hancock Landing, river mile 150; Griffin Landing, river mile 146; Brighams Landing, river mile 143; and Department of Energy Landing, river mile 141.

Fishing activities on sample days for the year were observed only at Hancock and Department of Energy Landings. A total of 21 persons were observed fishing on 6 separate days at these two points, about equally distributed between weekend and weekday. Extrapolation from the sample yields an estimate of 231 fisherman per year within 10 miles of the plant. Since the fishing pressure is approximately evenly distributed over the weekday, this translates into a somewhat greater than 50 percent probability that one or more fisherman would be found on a given day within 10 miles of the plant. Normal plant operations do not affect existing or projected fishing patterns.

Hunting activity on the Georgia side of the river is similarly low. There are no direct data on hunting activity within 10 miles of the site, but surveys conducted by the Georgia Department of Natural Resources indicate that hunting yields in Burke County are among the lowest in the state. There are high hunting license sales in nearby Richmond County (primarily for deer hunting), but the primary hunting areas are reported to be the counties to the northwest of Richmond. The probability of a hunter receiving a license in Richmond County and hunting in one of the counties to the northwest is three to four times greater than the probability of hunting in Burke County. Furthermore, there are no permanent hunting lodges or camps within the 10-mile radius of the plant site.

The Crackerneck Unit of the Sumter National Forest, NNW (mile rings 6, 7, and 8), has a small recreational facility on the South Carolina side of the river. The unit has a primitive campground and trails but no water supply, toilets, or permanent facilities. Usage is primarily as a base for hunting and

fishing, with 1025 user days estimated per year. It is managed by two employees. Discussions are under way to bring the area under Savannah River Plant jurisdiction.

Private recreational facilities are available to GPC and SNC employees at a site in the SW sector (mile ring 3). The facility will not be open to the general public. Year-round usage is expected, but lower attendance is anticipated during winter operating hours (October 16 through April 14) than during summer hours (April 15 through October 15). Since some campsites are available, a small number of persons may be onsite at night. Peak attendance is expected during organized company activities such as baseball tournaments or picnics.

Transient highway traffic within the 10-mile radius is limited to State Highway 125 in South Carolina which passes through the Savannah River Plant. Through-traffic is primarily related to Augusta and the Port of Charleston during the week and recreational usage of South Carolina coastal areas and Savannah on weekends. Access to the Savannah River Plant reservation is by time-stamped travel pass, so that records of the average number of vehicles on weekdays and weekend days are available. Employees also use this route. Estimates were made to eliminate employees with work destinations within the 10-mile radius, since they have been counted in the Savannah River Plant employee figures. Georgia State Highway 23 is within the 10-mile radius. It is used almost exclusively by area residents and may be used by some plant employees. Virtually no transient traffic is expected.

Attendance at churches within the VEGP 10-mile radius is not expected to generate any transient population traffic. Although there are 24 churches within the 10-mile radius, they are small in size and serve residents of the immediate area only.

The only school within the 10-mile radius, Girard Elementary, is scheduled to be closed in 1986.

There are no beaches, federal highways, amusement parks, National Register historic districts or sites, regional shopping malls, or colleges and universities within the 10-mile radius.

The annular ring from 10 to 20 miles of the unit site contains some industrial facilities. Most employees of these facilities live in different sectors and rings from their work location. The NNW-20 segment has several heavy industrial manufacturing plants in the south Augusta area employing approximately 5700 workers. Many of these workers live in the NW-20 and NW-30 sectors. Several segments in this ring in South Carolina contain additional facilities of the Savannah River Plant. The majority of these workers also live in different rings from their work location. Estimated workers in 1987 by segment are: N-20, 2400 employees; NNE-20, 1000 employees; NE-20, 6200 employees; and ENE-20, 500 employees. Socioeconomic base studies completed for the Savannah River Plant show that the majority of plant workers live in the Aiken-Augusta corridor which is comprised of segments N-30 and NNW-30. An additional concentration of industrial employment in this ring is centered in Waynesboro (WSW-20). Most of these workers are estimated to also reside in this segment. Although slight growth in industrial employment at existing and new facilities in the above mentioned segments is anticipated in future years of 2007 and 2028, no significant changes in employment numbers or distribution of facilities is anticipated.

There are no recreational land uses of significance or other sources of daily or seasonal population shifts in the 10- to 20-mile annular ring.

Industrial employment centers in the 20- to 30-mile ring are concentrated in the Augusta area segments NW-30 (3600 employees) and NNW-30 (5368 employees). The majority of these workers live in the same segments, but some live in the adjoining segments of Aiken (N-30) and Columbia County (NW-40).

Additional transient population concentrations are also found in 20- to 30-mile annular rings due to recreational activities on weekends and holidays at several state parks. In Georgia, Magnolia Springs Park near Millen (SSW-30) experiences an estimated daily peak summer (May, June, July, and August) holiday weekend visitor population of 4200. During nonsummer months, the number of daily peak weekend visitors is estimated at 950. On weekdays, visitors are estimated to average approximately 200 during the summer and 75 in the nonsummer months. In South Carolina, two smaller parks also draw some transient visitors. Aiken Park near Windsor (NNE-30) is estimated to draw a maximum of 2000 visitors on a peak summer holiday. In nonsummer months, daily visitors on a peak weekend are estimated to be only 700. Average weekday visitors are estimated to be 100 during the summer and 50 during nonsummer months. Barnwell State Park near Blackville (ENE-30) is smaller, more distant from residential population concentrations, and less subject to seasonal fluctuations. Visitors are estimated to average 700 on a peak holiday and 50 on an average weekday. In future years, some increase in visitors at these parks may occur, although weekend usage is currently near capacity for overnight facilities.

The 30- to 40-mile annular ring contains no significant sources of industrial activity which would result in large transient worker concentrations. The relatively small Rivers Bridge State Park near Ehrhardt, South Carolina (ESE-40), is estimated to attract as many as 700 visitors on a peak holiday and as few as 50 on an average weekday. There is little seasonal fluctuation.

The 40- to 50-mile annular ring has some industrial facilities associated with the cities of Thomson (WNW-50) and Swainsboro (SW-50). The majority of workers live within these segments. Two state parks are located in Georgia within this ring. George L. Smith Park near Twin City (SSW-50) has little seasonal fluctuation in visitors. Peak holiday visitors are estimated to be 500, with 50 visitors on an average weekday. Mistletoe State Park (NW-50) does show seasonal variance in visitors due to its proximity to water at Clarks Hill Reservoir. Visitors are estimated to range from 2200 on a peak summer holiday to 100 on an average summer weekday. In nonsummer months on a peak holiday as many as 800 visitors are estimated to be present. Weekday visitors in nonsummer months are estimated to average 60 persons. This facility is judged to be moderately used at present by the Corps of Engineers. Some increase in usage is expected in the future.

No other activities or attractions produce significant changes in population distribution between segments or in transient population totals on a daily or seasonal basis.

2.1.3.4 Low Population Zone (LPZ) (HISTORICAL)

The LPZ (as defined by 10 CFR 100) for the VEGP is that area falling within a 2-mile radius (figure 2.1.1-3) from the midpoint between the containment buildings. Tables 2.1.3-1 through 2.1.3-16 and table 2.1.3-18 show that the area is expected to remain sparsely populated during the anticipated life of the plant. There is only one road, River Road, within the LPZ, as shown on drawing CX2D45V002. There are no towns, recreational facilities, hospitals, schools, prisons, or beaches within the LPZ or from the LPZ to a radius of 5 miles.

2.1.3.5 Population Center (HISTORICAL)

Augusta is the nearest population center of more than 25,000 people, with a 1980 population of 47,532 people (U.S. census count). The Augusta corporate limit lies approximately 25 miles from the VEGP reactors. The Augusta corporate city limit was selected as the population center boundary because the Savannah River flood plain occupies the immediate area southeast of the corporate limits and creates a sharply defined low population density area from the southeast corporate limits to VEGP.

A list of all communities within 30 miles of the plant with populations greater than 1000 persons are identified in table 2.1.3-21 and figure 2.1.3-5. These also identify the largest city within 50 miles of the plant.

The 1980 population of Richmond County outside Augusta was approximately 134,097 people; the projected 1990 total population of Richmond County, including Augusta, is approximately 203,000. The only defined significant transient population into and out of the Augusta area to the plant site is that portion of the VEGP construction force expected to live in the Augusta vicinity until 1987. The current population distribution indicates high density within the Augusta city limits and the northern portions of Richmond County and much lower density in the rural southern and eastern portions of Richmond County. Projections through 2028 indicate that these distribution and density patterns will remain essentially the same.

2.1.3.6 Population Density (HISTORICAL)

The cumulative resident population for a distance of 50 miles projected for the expected first year of operation (1987) compared to 500 people/mi^2 is shown in figure 2.1.3-3. Projected to the year 2028, this comparison to 1000 people/mi^2 is shown in figure 2.1.3-4.

2.1.3.7 Methodology (HISTORICAL)

The methodology used to determine population distribution is described in appendix 2A.

2.1.3.8 Bibliography (HISTORICAL)

Georgia Office of Planning and Budget, Georgia Population Projections, Atlanta, Georgia.

Georgia State Census Bureau, Georgia Population Statistics, Atlanta, Georgia.

South Carolina State Data Center, Division of Research and Statistical Service, South Carolina Population Projections, Columbia, South Carolina.

U.S. Department of Commerce, Bureau of Census, Advance Reports: 1980 Census of Population and Housing, South Carolina Population Statistics.

U.S. Department of Commerce, Bureau of Census, Illustrative Projections of State Populations by Age, Race, and Sex 1975 to 2000.

U.S. Geological Survey, Branch Division, USGS Quadrangle Maps, Arlington, Virginia.

TABLE 2.1.3-1 (HISTORICAL)

POPULATION BY SEGMENT FOR NORTH SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	5914	6185	6815	7459	7733	8779	9292
30	9462	9896	10,904	11,934	12,376	14,047	15,507
40	12,402	12,944	14,257	15,385	16,153	18,304	20,183
50	10,944	11,196	12,278	13,223	13,627	15,130	16,419

TABLE 2.1.3-2 (HISTORICAL)

POPULATION BY SEGMENT FOR NORTH-NORTHEAST SECTOR (0 TO 50 MILES)

Mile (Ring)	*1987*	*1990*	*2000*	*2007*	*2010*	*2020*	*2028*
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	5914	6185	6815	7459	7735	8779	9692
30	9462	9896	10,904	11,934	12,376	14,047	15,507
40	14,193	14,844	16,356	17,902	18,564	21,070	23,261
50	20,134	21,222	24,196	27,216	28,511	33,765	38,818

TABLE 2.1.3-3 (HISTORICAL)

POPULATION BY SEGMENT FOR NORTHEAST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	3698	3866	4256	4653	4823	5466	6034
30	5768	6031	6639	7257	7523	8524	9410
40	9289	9717	10,717	11,731	12,167	13,811	15,273
50	22,327	23,417	26,060	28,626	29,824	34,134	38,032

TABLE 2.1.3-4 (HISTORICAL)

POPULATION BY SEGMENT FOR EAST-NORTHEAST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	2442	2552	2805	3060	3170	3582	3954
30	3663	3828	4208	4590	4754	5373	5931
40	4774	4984	5455	5936	6142	6915	7612
50	12,383	12,978	14,394	15,811	16,418	18,729	20,843

TABLE 2.1.3-5 (HISTORICAL)

POPULATION BY SEGMENT FOR EAST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	2035	2108	2260	2417	2485	2732	2949
30	2701	2804	3025	3251	3349	3709	4027
40	3963	4202	4510	4831	4970	5480	5924
50	4788	4954	5353	5751	5922	6551	7099

TABLE 2.1.3-6 (HISTORICAL)

POPULATION BY SEGMENT FOR EAST-SOUTHEAST SECTOR (0 TO 50 MILES)

Mile (Ring)	*1987*	*1990*	*2000*	*2007*	*2010*	*2020*	*2028*
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	3	3	3	3	3	3	3
7	0	0	0	0	0	0	0
8	3	3	3	3	3	3	3
9	0	0	0	0	0	0	0
10	5	5	5	5	5	5	5
20	1255	1289	1346	1414	1442	1547	1636
30	2480	2550	2669	2801	2858	3062	3228
40	4712	4880	5216	5575	5728	6293	6783
50	7253	7558	8204	8888	9182	10,275	11,251

TABLE 2.1.3-7 (HISTORICAL)

POPULATION BY SEGMENT FOR SOUTHEAST SECTOR (0 TO 50 MILES)

Mile (Ring)	*1987*	*1990*	*2000*	*2007*	*2010*	*2020*	*2028*
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	2	2	3	3	4	4
4	3	4	5	6	7	9	11
5	28	35	43	50	63	77	95
6	31	32	34	36	37	39	41
7	35	36	38	40	41	43	45
8	6	6	6	6	7	9	11
9	18	18	19	20	20	21	22
10	27	28	30	32	33	35	37
20	1318	1333	1301	1307	1309	1322	1336
30	2144	2170	2042	2024	2017	1999	1987
40	4304	4429	4554	4774	4869	5224	5542
50	7303	7609	8240	8918	9209	10,294	11,267

TABLE 2.1.3-8 (HISTORICAL)

POPULATION BY SEGMENT FOR SOUTH-SOUTHEAST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	2	2	3	3	4	4
4	0	2	2	3	3	4	4
5	6	7	8	10	12	15	18
6	64	65	69	72	73	77	81
7	88	90	95	100	102	108	114
8	119	121	128	134	137	145	153
9	88	90	95	100	102	108	114
10	74	75	79	83	85	90	95
20	1176	1190	1171	1182	1186	1206	1224
30	1998	2011	1810	1747	1720	1634	1568
40	2711	2730	2457	2371	2334	2217	2128
50	5619	5801	6064	6357	6529	7087	7617

TABLE 2.1.3-9 (HISTORICAL)

POPULATION BY SEGMENT FOR SOUTH SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	2	2	3	3	4	4
4	0	2	2	3	3	4	4
5	6	7	8	10	12	15	18
6	35	36	38	40	41	43	45
7	59	60	64	67	68	72	76
8	29	30	32	34	35	37	39
9	24	24	25	26	27	29	31
10	35	36	38	40	41	43	45
20	1473	1491	1500	1515	1521	1545	1566
30	2514	2535	2369	2309	2283	2200	2137
40	4117	4212	4386	4574	4639	5109	5493
50	10,080	10,465	12,123	13,336	14,144	16,509	18,722

TABLE 2.1.3-10 (HISTORICAL)

POPULATION BY SEGMENT FOR SOUTH-SOUTHWEST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	3	4	5	6	7	9	11
3	3	4	5	6	7	9	11
4	3	4	5	6	7	9	11
5	3	4	5	6	7	9	11
6	15	15	16	17	17	18	19
7	6	6	6	7	7	7	8
8	24	24	25	26	27	29	31
9	29	30	32	34	35	37	39
10	56	57	60	63	64	68	72
20	1349	1369	1410	1442	1454	1502	1543
30	2355	2379	2331	2299	2285	2239	2203
40	3626	3685	3744	3796	3824	3919	4011
50	6432	6634	7264	7748	7991	8801	9523

TABLE 2.1.3-11 (HISTORICAL)

POPULATION BY SEGMENT FOR SOUTHWEST SECTOR (0 TO 50 MILES)

Mile (Ring)	*1987*	*1990*	*2000*	*2007*	*2010*	*2020*	*2028*
1	0	0	0	0	0	0	0
2	300	3	4	5	6	7	9
3	8	8	9	10	10	11	12
4	6	7	6	6	6	6	6
5	25	26	28	29	30	32	34
6	11	11	12	13	14	14	15
7	15	15	16	17	18	19	20
8	18	18	19	20	20	21	22
9	26	27	29	30	31	33	35
10	88	90	95	100	102	108	114
20	1411	1436	1526	1593	1622	1725	1811
30	2317	2351	2423	2477	2501	2586	2658
40	3592	3677	3934	4142	4230	4550	4828
50	5386	5537	5983	6351	6510	7083	7582

TABLE 2.1.3-12 (HISTORICAL)

POPULATION BY SEGMENT FOR WEST-SOUTHWEST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	3	3	4	4	5	5
3	3	4	5	6	7	9	11
4	0	3	3	4	4	5	5
5	14	14	15	16	16	17	18
6	45	46	49	51	52	55	58
7	42	43	46	48	49	52	55
8	50	51	54	57	58	61	64
9	11	11	12	13	14	14	15
10	0	0	0	0	0	0	0
20	1411	1436	1526	1593	1622	1725	1811
30	2314	2354	2501	2613	2660	2829	2974
40	4804	4887	5180	5451	5567	5981	6338
50	5868	5960	6206	6461	6569	6956	7287

TABLE 2.1.3-13 (HISTORICAL)

POPULATION BY SEGMENT FOR WEST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	8	8	9	10	10	11	12
3	11	11	12	13	13	14	15
4	48	8	9	10	10	11	12
5	22	22	23	24	25	27	28
6	9	9	10	11	11	12	13
7	18	18	19	20	20	21	22
8	35	36	38	40	41	43	45
9	50	51	54	57	58	61	64
10	29	30	32	34	35	37	39
20	1411	1436	1526	1593	1622	1725	1811
30	2370	2411	2560	2681	2733	2920	3077
40	4410	4487	4756	5005	5112	5496	5826
50	4641	4698	4869	5059	5141	5433	5684

TABLE 2.1.3-14 (HISTORICAL)

POPULATION BY SEGMENT FOR WEST-NORTHWEST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	70	3	4	5	6	7	9
3	258	8	9	10	10	11	12
4	14	14	15	16	16	17	18
5	20	20	21	22	22	23	24
6	3	3	3	3	3	3	3
7	9	9	10	11	11	12	13
8	37	38	42	45	46	51	55
9	37	38	42	45	46	51	55
10	34	35	39	42	43	47	51
20	16,518	17,039	18,794	20,213	20,820	23,067	25,059
30	36,341	37,497	41,392	44,546	45,899	50,900	55,338
40	18,533	19,510	22,043	24,114	25,007	28,418	31,547
50	10,331	10,766	11,892	12,778	13,137	14,564	15,769

TABLE 2.1.3-15 (HISTORICAL)

POPULATION BY SEGMENT FOR NORTHWEST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	136	3	4	5	6	7	9
3	6	6	7	8	9	10	12
4	43	3	4	5	6	7	9
5	86	6	6	7	8	9	10
6	0	0	0	0	0	0	0
7	56	58	64	69	71	78	84
8	7	7	7	8	8	9	9
9	20	21	23	25	26	29	31
10	7	7	7	8	8	9	9
20	33,388	34,465	38,083	41,016	42,273	46,922	51,052
30	53,029	54,738	60,485	65,143	67,139	74,524	81,082
40	22,581	25,013	30,215	34,658	36,563	44,179	51,546
50	26,143	28,868	34,401	39,673	41,805	50,311	58,522

TABLE 2.1.3-16 (HISTORICAL)

POPULATION BY SEGMENT FOR NORTH-NORTHWEST SECTOR (0 TO 50 MILES)

Mile (Ring)	1987	1990	2000	2007	2010	2020	2028
1	0	0	0	0	0	0	0
2	0	3	4	5	6	7	9
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	3	3	3	3	3	3	3
8	3	3	3	3	3	3	3
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	19,260	19,930	22,011	23,777	24,534	27,349	29,839
30	32,227	33,331	36,815	39,745	41,001	45,665	49,796
40	9776	9339	10,505	11,601	12,069	13,896	15,596
50	5821	5986	6247	6557	6690	7184	7617

TABLE 2.1.3-17 (HISTORICAL)

POPULATION BY SECTORS
0- TO 10-MILE RADIUS TOTAL

Sector	1987	1990	2000	2007	2010	2020	2028
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	11	11	11	11	11	11	11
SE	148	161	177	193	211	237	266
SSE	439	452	478	505	517	551	583
S	188	197	209	223	230	247	262
SSW	142	148	159	171	178	195	213
SW	497	205	218	230	237	251	267
WSW	165	175	187	199	204	218	231
W	230	193	206	219	223	237	250
WNW	482	168	185	199	203	222	240
NW	361	111	122	135	142	158	173
NNW	6	9	10	11	12	13	15
Total	2669	1830	1962	2096	2168	2340	2511

TABLE 2.1.3-18 (HISTORICAL)

POPULATION BY ANNULAR RINGS
0- TO 10-MILE RADIUS TOTAL

Year	1 Mile	2 Mile	3 Mile	4 Mile	5 Mile	6 Mile	7 Mile	8 Mile	9 Mile	10 Mile	Total
1987	0	517	289	117	210	216	331	331	303	355	2669
1990	0	27	47	47	141	220	338	337	310	363	1830
2000	0	33	53	51	157	234	361	357	331	385	1962
2007	0	40	62	59	174	246	382	376	350	407	2096
2010	0	45	65	62	195	251	390	385	359	416	2168
2020	0	53	76	72	224	264	415	411	383	442	2340
2028	0	64	85	80	256	278	440	435	406	467	2511

TABLE 2.1.3-19 (HISTORICAL)

POPULATION BY SECTORS
20- TO 50-MILE RADIUS TOTALS

Sector	1987	1990	2000	2007	2010	2020	2028
N	38,722	40,221	44,254	48,001	49,889	56,260	61,401
NNE	49,703	52,147	58,271	64,511	67,186	77,661	87,278
NE	41,082	43,031	47,672	52,267	54,337	61,935	68,749
ENE	23,262	24,342	26,862	29,397	30,484	34,599	38,340
E	13,487	14,068	15,148	16,250	16,726	18,472	19,999
ESE	15,700	16,277	17,435	18,678	19,210	21,177	22,898
SE	15,069	15,541	16,137	17,023	17,404	18,839	20,132
SSE	11,504	11,732	11,502	11,657	11,769	12,144	12,537
S	18,184	18,703	20,378	21,734	22,587	25,363	27,918
SSW	13,762	14,067	14,749	15,285	15,554	16,461	17,280
SW	12,706	13,001	13,866	14,563	14,863	15,944	16,879
WSW	14,397	14,637	15,413	16,118	16,418	17,491	18,410
W	12,832	13,032	13,711	14,338	14,608	15,574	16,398
WNW	81,723	84,812	94,121	101,651	104,863	116,949	127,713
NW	135,141	143,084	163,184	180,490	187,780	215,936	242,202
NNW	67,084	68,586	75,578	81,680	84,294	94,094	102,848
Total	564,358	587,281	648,281	703,643	727,972	818,899	900,982

TABLE 2.1.3-20 (SHEET 1 OF 2) (HISTORICAL)

POPULATION BY ANNULAR RINGS
20- TO 50-MILE RADIUS TOTALS

Year	Ring	Population
1987	20-mile	99,973
	30-mile	171,145
	40-mile	127,787
	50-mile	165,453
	Total	564,358
1990	20-mile	103,310
	30-mile	176,782
	40-mile	133,540
	50-mile	173,649
	Total	587,281
2000	20-mile	113,145
	30-mile	193,077
	40-mile	148,285
	50-mile	193,774
	Total	648,281
2007	20-mile	121,693
	30-mile	207,351
	40-mile	161,846
	50-mile	212,753
	Total	703,643
2010	20-mile	125,351
	30-mile	213,474
	40-mile	167,938
	50-mile	221,209
	Total	727,972

TABLE 2.1.3-20 (SHEET 2 OF 2) (HISTORICAL)

Year	*Ring*	*Population*
2020	*20-mile*	*138,973*
	30-mile	*236,258*
	40-mile	*190,862*
	50-mile	*252,806*
	Total	*818,899*
2028	*20-mile*	*150,609*
	30-mile	*256,430*
	40-mile	*211,891*
	50-mile	*282,052*
	Total	*900,982*

TABLE 2.1.3-21 (SHEET 1 OF 2) (HISTORICAL)

COMMUNITIES OF GREATER THAN 1000 PERSONS
WITHIN 30 MILES OF VEGP

Community in State of Georgia	1980 Population
Augusta	47,532
East Boundary	4,699
Fort Gordon	14,069
Grovetown	3,384
Hephzibah	1,452
Martinez	16,472
Millen	3,988
Sardis	1,180
South Augusta	51,072
Sylvania	3,352
Waynesboro	5,760
West Augusta	24,242
Total	177,202

Source: 1980 Census of Population, Characteristics of the Population, Number of Inhabitants, Georgia.

TABLE 2.1.3-21 (SHEET 2 OF 2) (HISTORICAL)

Community in State of South Carolina	*1980 Population*
Aiken	*14,978*
Aiken West	*3,083*
Allendale	*4,400*
Appleton	*2,007*
Bath	*2,242*
Barnwell	*5,572*
Belvedere	*6,859*
Blackville	*2,840*
Clearwater	*3,967*
Denmark	*4,434*
Fairfax	*2,154*
Gloverville	*2,619*
Graniteville	*1,158*
Jackson	*1,771*
Langley	*1,714*
Madison	*1,150*
New Ellenton	*2,628*
North Augusta	*13,593*
Springfield	*2,012*
Warrenville	*1,029*
Williston	*3,173*
Total	*83,383*

Source: 1980 Census of Population, Characteristics of the Population, General Population Characteristics, South Carolina.

TABLE 2.1.3-22 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(NORTH SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	1	3	0	0	3	0
7	4	6	1	3	4	3
8	5	8	1	3	5	4
9	5	8	1	3	5	4
10	5	8	1	3	5	4
Sector total	112	142	28	41	28	18

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	1	3	0	0	3	0
7	4	6	1	3	4	3
8	5	8	1	3	5	4
9	5	8	1	3	5	4
10	5	8	1	3	5	4
Sector total	25	38	4	12	22	15

TABLE 2.1.3-22 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	1	3	0	0	3	0
7	4	6	1	3	4	3
8	5	8	1	3	5	4
9	5	8	1	3	5	4
10	5	8	1	3	5	4
Sector total	25	38	4	12	22	15

TABLE 2.1.3-23 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(NORTH-NORTHEAST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	335	462	27	54	32	27
6	10	15	2	4	8	6
7	4	6	1	3	4	3
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	441	592	54	90	50	39

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	335	462	27	54	32	27
6	10	15	2	4	8	6
7	4	6	1	3	4	3
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	354	488	30	61	44	36

TABLE 2.1.3-23 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	335	462	27	54	32	27
6	10	15	2	4	8	6
7	4	6	1	3	4	3
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	354	488	30	61	44	36

TABLE 2.1.3-24 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(NORTHEAST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	27	32	6	4
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	12	16	3	5	11	7
7	0	0	0	0	0	0
8	121	147	26	52	26	26
9	443	473	30	60	30	30
10	800	800	50	50	50	50
Sector total	1468	1545	136	199	123	117

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	3	3	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	12	16	3	5	11	7
7	0	0	0	0	0	0
8	121	147	26	52	26	26
9	443	473	30	60	30	30
10	800	800	50	50	50	50
Sector total	1381	1441	112	170	117	113

TABLE 2.1.3-24 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	3	3	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	12	16	3	5	11	7
7	0	0	0	0	0	0
8	121	147	26	52	26	26
9	443	473	30	60	30	30
10	800	800	50	50	50	50
Sector total	1381	1441	112	170	117	113

TABLE 2.1.3-25 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(EAST-NORTHEAST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	103	127	34	41	13	13
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	15	20	4	6	13	9
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	121	147	26	52	26	26
Sector total	239	294	64	99	52	48

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	14	17	7	10	5	5
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	15	20	4	6	13	9
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	121	147	26	52	26	26
Sector total	150	184	37	68	44	40

TABLE 2.1.3-25 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
			Weekday	*Weekday*		
1	*14*	*17*	*7*	*10*	*5*	*5*
2	*0*	*0*	*0*	*0*	*0*	*0*
3	*0*	*0*	*0*	*0*	*0*	*0*
4	*0*	*0*	*0*	*0*	*0*	*0*
5	*0*	*0*	*0*	*0*	*0*	*0*
6	*0*	*0*	*0*	*0*	*0*	*0*
7	*15*	*20*	*4*	*6*	*13*	*9*
8	*0*	*0*	*0*	*0*	*0*	*0*
9	*0*	*0*	*0*	*0*	*0*	*0*
10	*121*	*147*	*26*	*52*	*26*	*26*
Sector total	*150*	*184*	*37*	*68*	*44*	*40*

TABLE 2.1.3-26 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(EAST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	1010	1089	176	217	132	161
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	10	15	2	3	8	6
9	7	9	2	3	6	3
10	7	9	2	3	6	3
Sector total	1034	1122	182	226	152	173

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	672	730	110	145	105	135
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	10	15	2	3	8	6
9	7	9	2	3	6	3
10	7	9	2	3	6	3
Sector total	696	763	116	154	125	147

TABLE 2.1.3-26 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	672	730	110	145	105	135
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	10	15	2	3	8	6
9	7	9	2	3	6	3
10	7	9	2	3	6	3
Sector total	696	763	116	154	125	147

TABLE 2.1.3-27 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(EAST-SOUTHEAST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	118	141	33	39	11	10
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	118	141	33	39	11	10

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	23	30	7	9	4	4
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	23	30	7	9	4	4

TABLE 2.1.3-27 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	23	30	7	9	4	4
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	23	30	7	9	4	4

TABLE 2.1.3-28 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(SOUTHEAST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	122	259	26	31	26	4
2	41	48	6	11	6	6
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	163	307	32	42	32	10

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	35	155	2	2	20	0
2	52	60	7	14	7	7
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	87	215	9	16	27	7

TABLE 2.1.3-28 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	35	155	2	2	20	0
2	52	60	7	14	7	7
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	87	215	9	16	27	7

TABLE 2.1.3-29 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(SOUTH-SOUTHEAST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	92	109	24	29	6	3

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-29 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-30 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(SOUTH SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	92	109	24	29	6	3

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-30 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-31 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(SOUTH-SOUTHWEST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	92	109	24	29	6	3

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-31 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-32 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(SOUTHWEST SECTOR - 0 TO 10 MILES)[(a)]

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	75	400	50	100	50	20
	(10)	(400)	(5)	(20)	(15)	(2)
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	167 (102)	509 (509)	74 (29)	129 (49)	56 (21)	23 (5)

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	75	400	50	100	50	20
	(10)	(400)	(5)	(20)	(15)	(2)
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	80 (15)	405 (405)	50 (5)	100 (20)	50 (15)	20 (2)

TABLE 2.1.3-32 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	75 (10)	400 (400)	50 (5)	100 (20)	50 (15)	20 (2)
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	80 (15)	405 (405)	50 (5)	100 (20)	50 (15)	20 (2)

a. Numbers in parentheses indicate the transient population expected during winter operating hours at GPC recreational facility (October 16 to April 14).

TABLE 2.1.3-33 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(WEST-SOUTHWEST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	92	109	24	29	6	3

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-33 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-34 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(WEST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	92	109	24	29	6	3

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-34 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-35 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(WEST-NORTHWEST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	92	109	24	29	6	3

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-35 (SHEET 2 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(WEST-NORTHWEST SECTOR - 0 TO 10 MILES)

Year 2028

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-36 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(NORTHWEST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	92	109	24	29	6	3

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	5	5	0	0	0	0

TABLE 2.1.3-36 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
1	*5*	*5*	*0*	*0*	*0*	*0*
2	*0*	*0*	*0*	*0*	*0*	*0*
3	*0*	*0*	*0*	*0*	*0*	*0*
4	*0*	*0*	*0*	*0*	*0*	*0*
5	*0*	*0*	*0*	*0*	*0*	*0*
6	*0*	*0*	*0*	*0*	*0*	*0*
7	*0*	*0*	*0*	*0*	*0*	*0*
8	*0*	*0*	*0*	*0*	*0*	*0*
9	*0*	*0*	*0*	*0*	*0*	*0*
10	*0*	*0*	*0*	*0*	*0*	*0*
Sector total	*5*	*5*	*0*	*0*	*0*	*0*

TABLE 2.1.3-37 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
(NORTH-NORTHWEST SECTOR - 0 TO 10 MILES)

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	92	109	24	29	6	3
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	2	5	0	5	6	4
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	94	114	24	34	12	7

Year 2007

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	2	5	0	5	6	4
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	7	10	0	5	6	4

TABLE 2.1.3-37 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

Mile (Ring)	*Weekday Average*	*Weekday Peak*	*Weekday Night Average*	*Weekday Night Peak*	*Weekend Day*	*Weekend Night*
1	5	5	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	2	5	0	5	6	4
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
Sector total	7	10	0	5	6	4

TABLE 2.1.3-38 (SHEET 1 OF 2) (HISTORICAL)

TRANSIENT POPULATION
ANNULAR RINGS AND ENCLOSED POPULATION
(0 TO 10 MILES)[(a)]

Year 1987

Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	2457	2924	560	679	254	225
2	41	48	6	11	6	6
3	75	400	50	100	50	20
	(10)	(400)	(5)	(20)	(15)	(2)
4	0	0	0	0	0	0
5	335	462	27	54	32	27
6	23	34	5	9	22	13
7	25	37	6	17	27	19
8	136	170	29	58	39	36
9	455	490	33	66	41	37
10	933	964	79	108	87	83
Total	4480	5529	795	1102	558	466
enclosed	(4415)	(5529)	(750)	(1022)	(523)	(448)

Year 2007

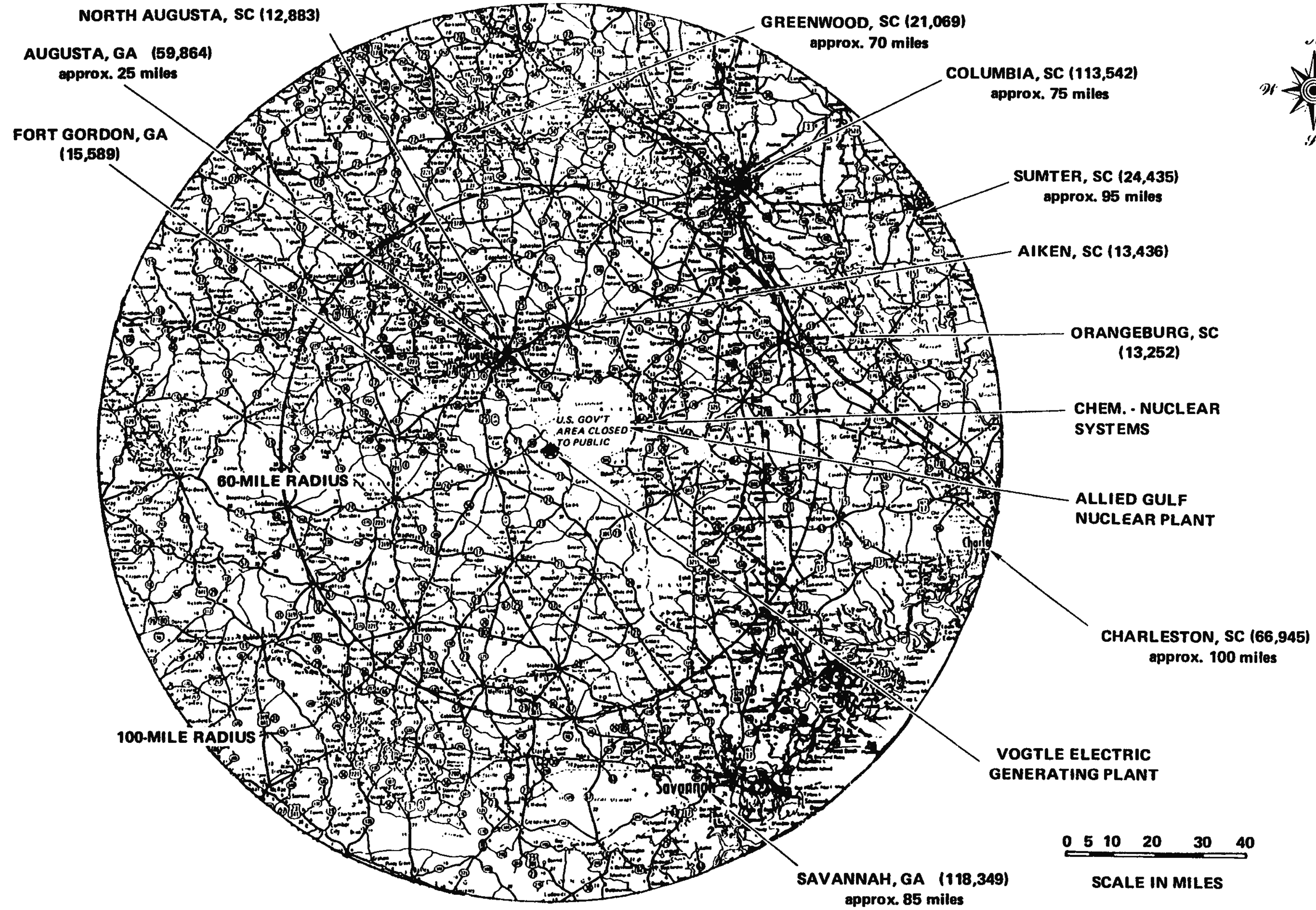
Mile (Ring)	Weekday Average	Weekday Peak	Weekday Night Average	Weekday Night Peak	Weekend Day	Weekend Night
1	804	992	129	169	134	144
2	52	60	7	14	7	7
3	75	400	50	100	50	20
	(10)	(400)	(5)	(20)	(15)	(2)
4	0	0	0	0	0	0
5	335	462	27	54	32	27
6	23	34	5	9	22	13
7	25	37	6	17	27	19
8	136	170	29	58	39	36
9	455	490	33	66	41	37
10	933	964	79	108	87	83
Total	2838	3609	365	595	439	386
enclosed	(2773)	(3609)	(320)	(515)	(404)	(368)

TABLE 2.1.3-38 (SHEET 2 OF 2) (HISTORICAL)

Year 2028

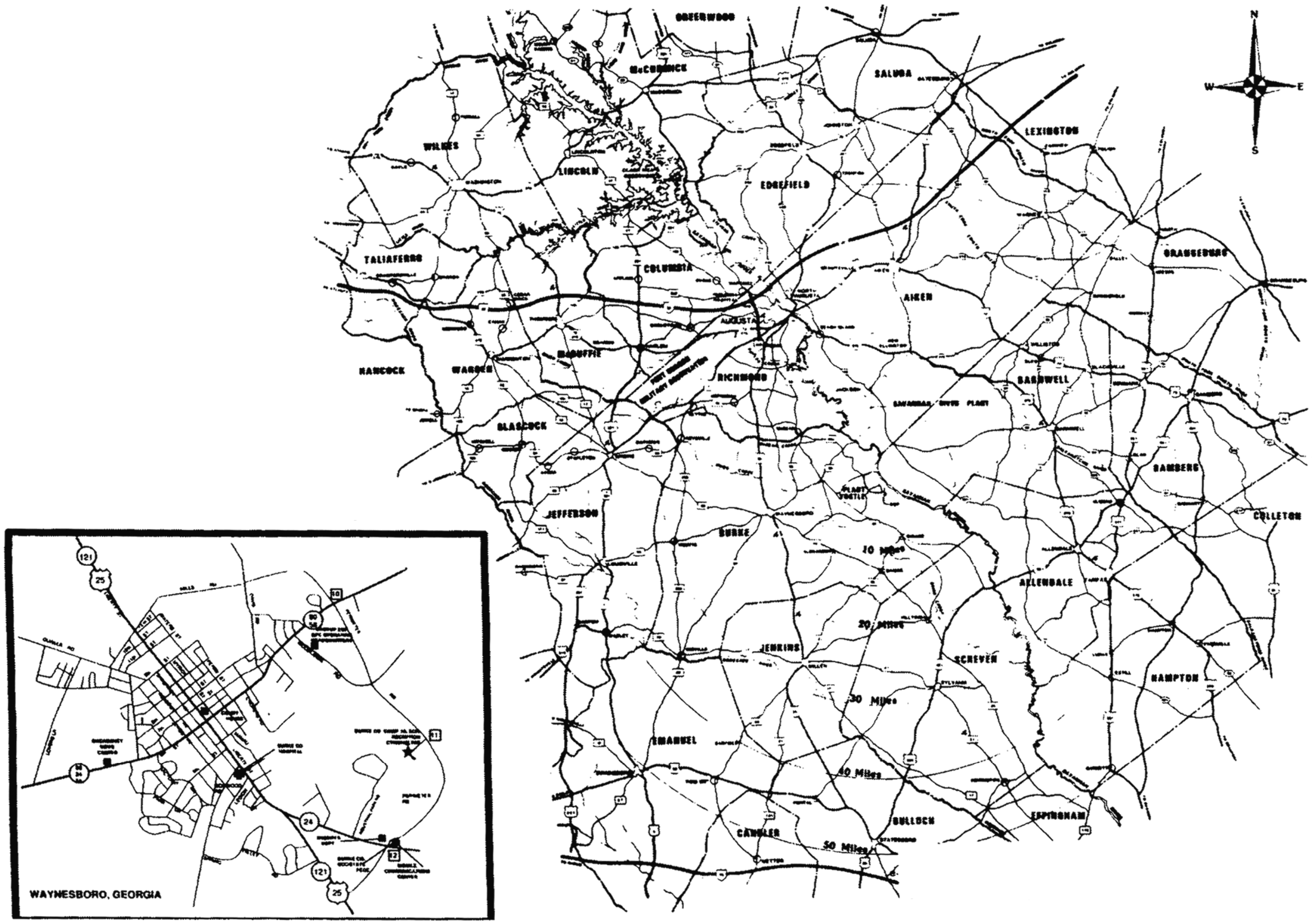
Mile (Ring)	Weekday Average	Weekday Peak	Night Average	Weekday Night Peak	Weekday Weekend Day	Weekend Night
1	804	992	129	169	134	144
2	52	60	7	14	7	7
3	75	400	50	100	50	20
	(10)	(400)	(5)	(20)	(15)	(2)
4	0	0	0	0	0	0
5	335	462	27	54	32	27
6	23	34	5	9	22	13
7	25	37	6	17	27	19
8	136	170	29	58	39	36
9	455	490	33	66	41	37
10	933	964	79	108	87	83
Total enclosed	2838 (2773)	3609 (3609)	365 (320)	595 (515)	439 (404)	386 (368)

a. Numbers in parentheses indicate the transient population expected during winter operating hours of GPC recreational facility (October 16 to April 14).



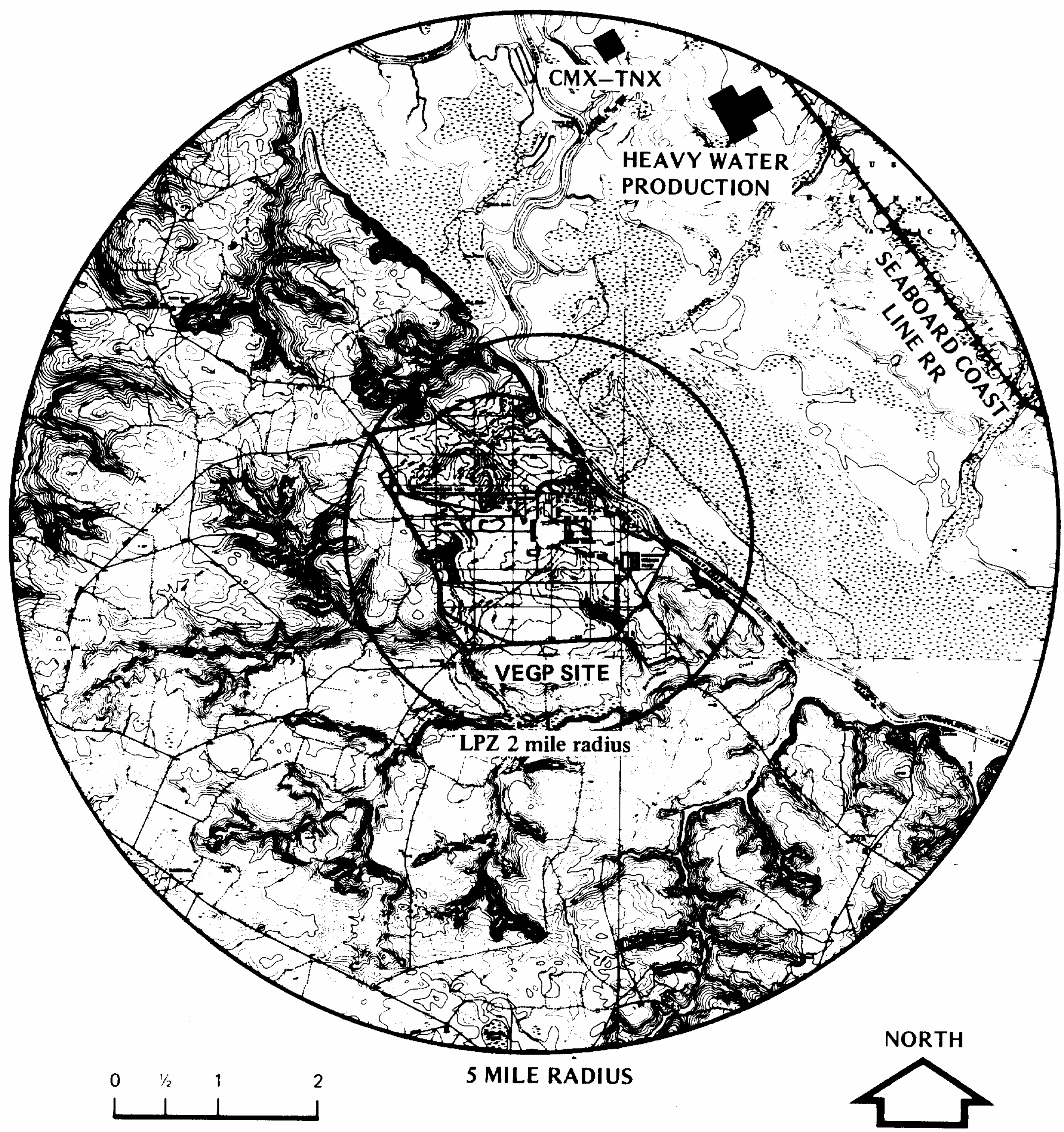
REV 15 4/09

SOUTHERN COMPANY *Energy to Serve Your World®* VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	*POPULATION CENTERS (HISTORICAL)*
	FIGURE 2.1.1–1



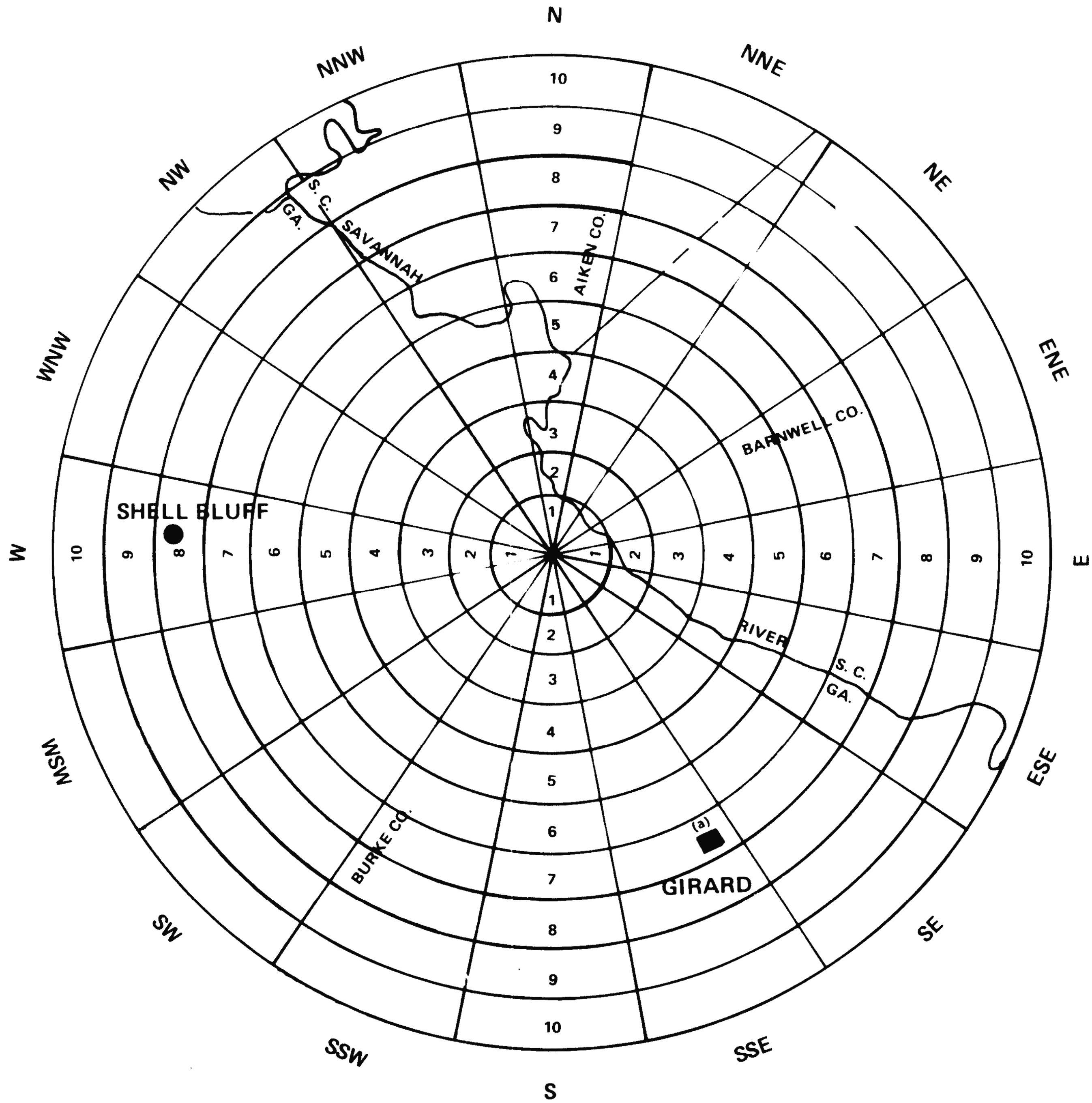
REV 14 10/07

SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	AREA MAP FIGURE 2.1.1–2



REV 14 10/07

SOUTHERN COMPANY Energy to Serve Your World®	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	AREA MAP
		FIGURE 2.1.1–3



a. GIRARD-SEVEN MILES SSE; POPULATION 1980-206, 1985-188

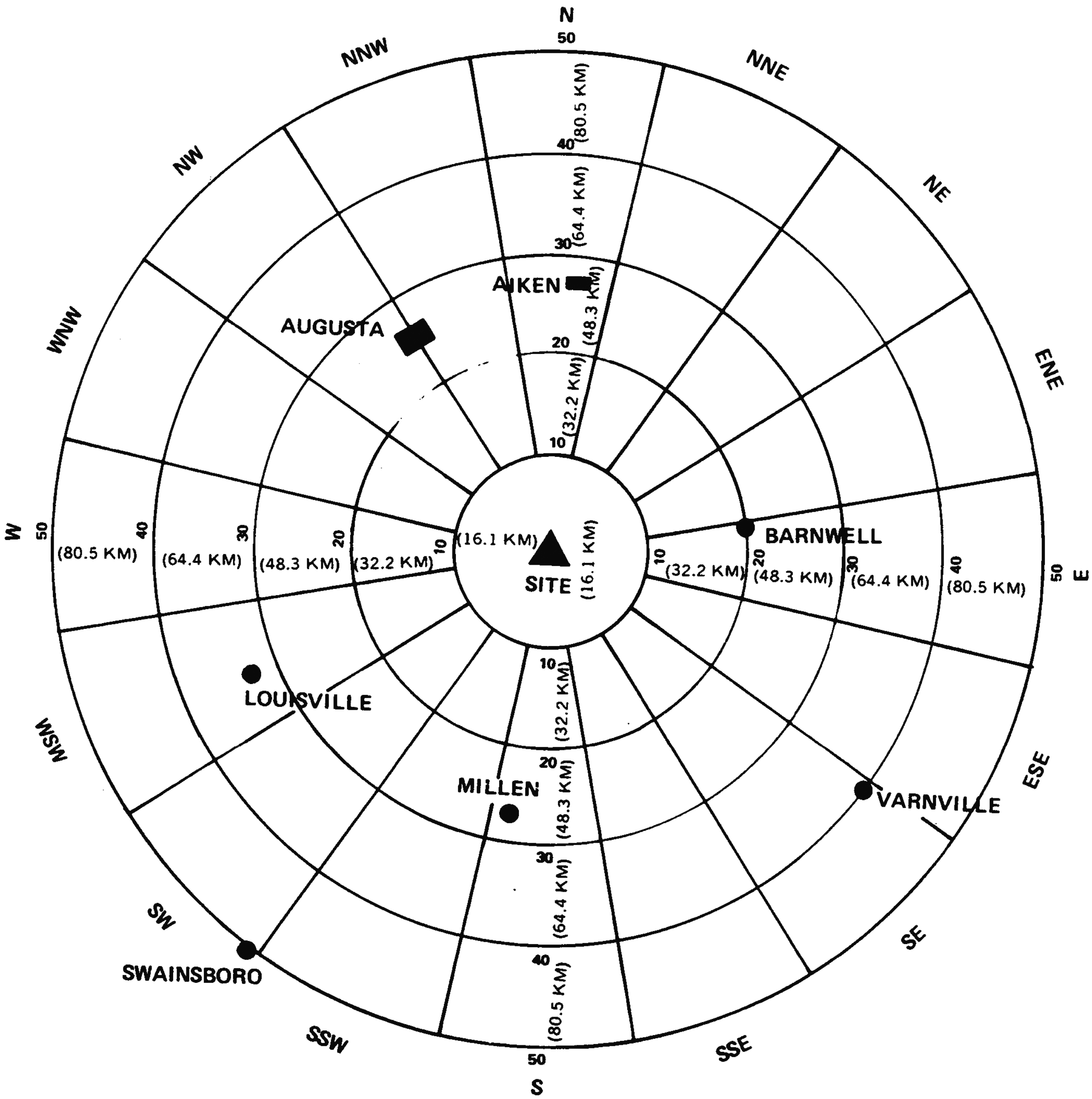
REV 15 4/09

SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

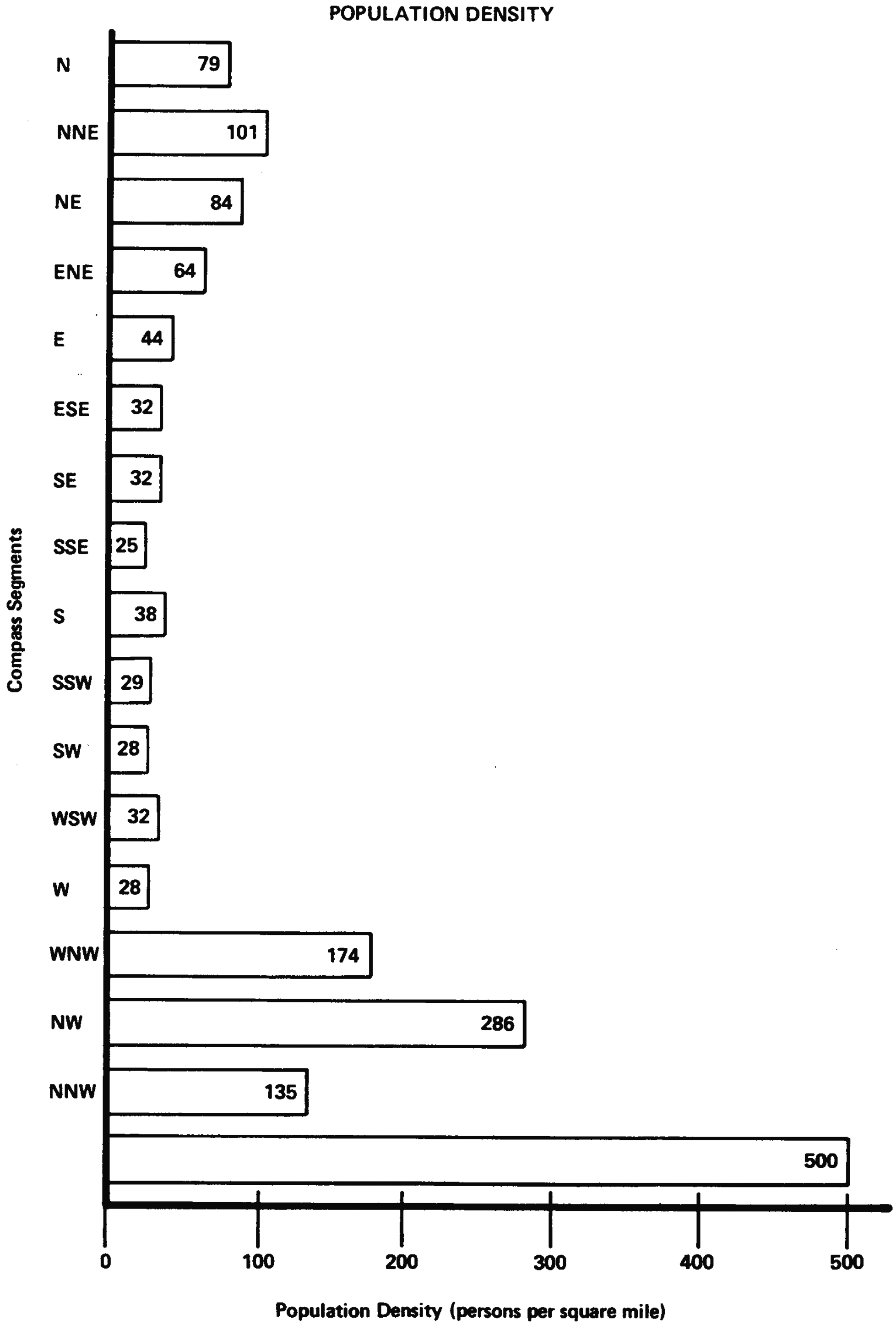
POPULATION DISTRIBUTION WITHIN 10 MILES (HISTORICAL)

FIGURE 2.1.3–1



REV 15 4/09

SOUTHERN COMPANY *Energy to Serve Your World®* **VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2**	*POPULATION BETWEEN 16.1 AND 80.5 KILOMETERS (10 AND 50 MILES) (HISTORICAL)*
	FIGURE 2.1.3–2



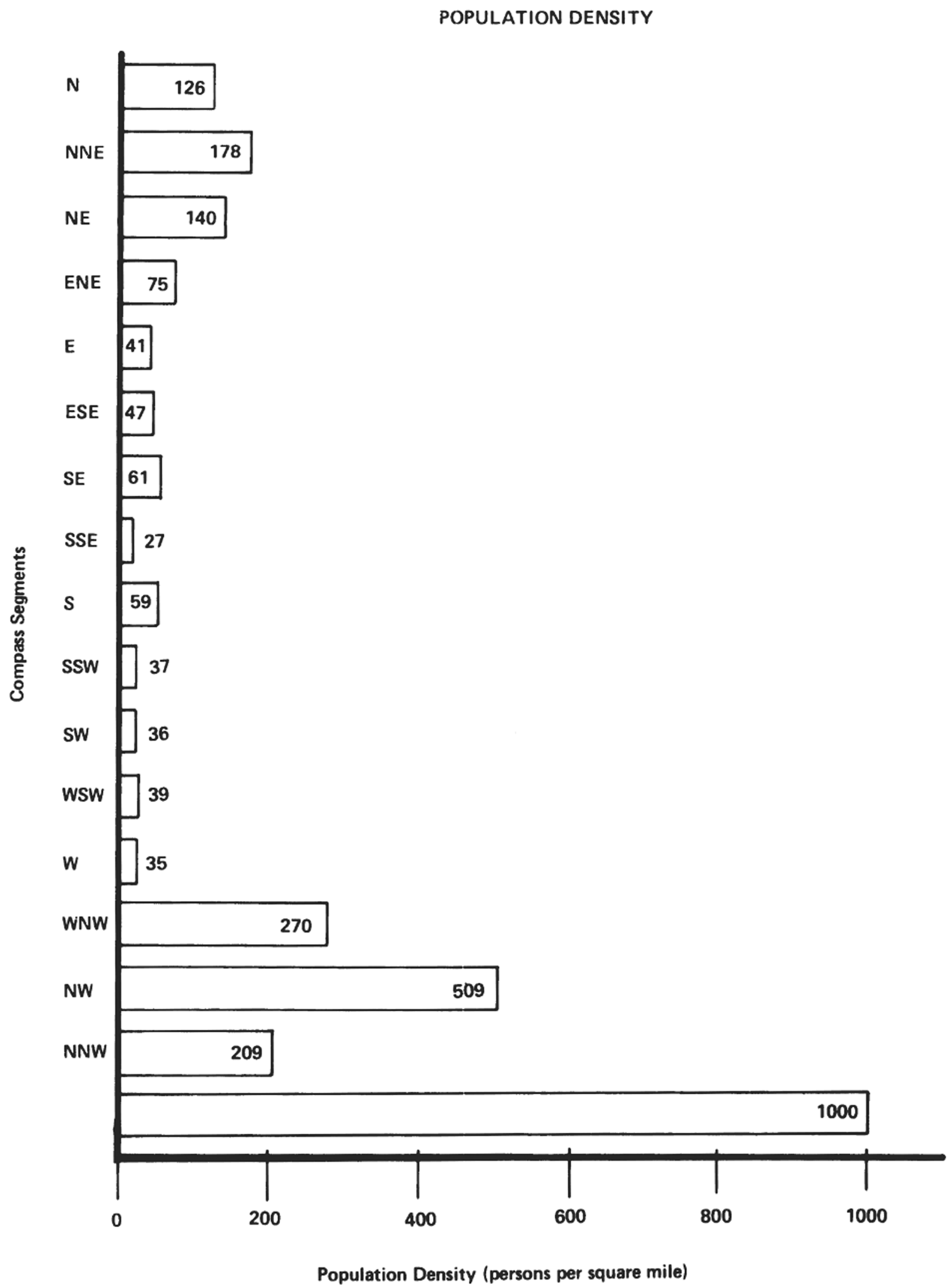
REV 15 4/09

SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

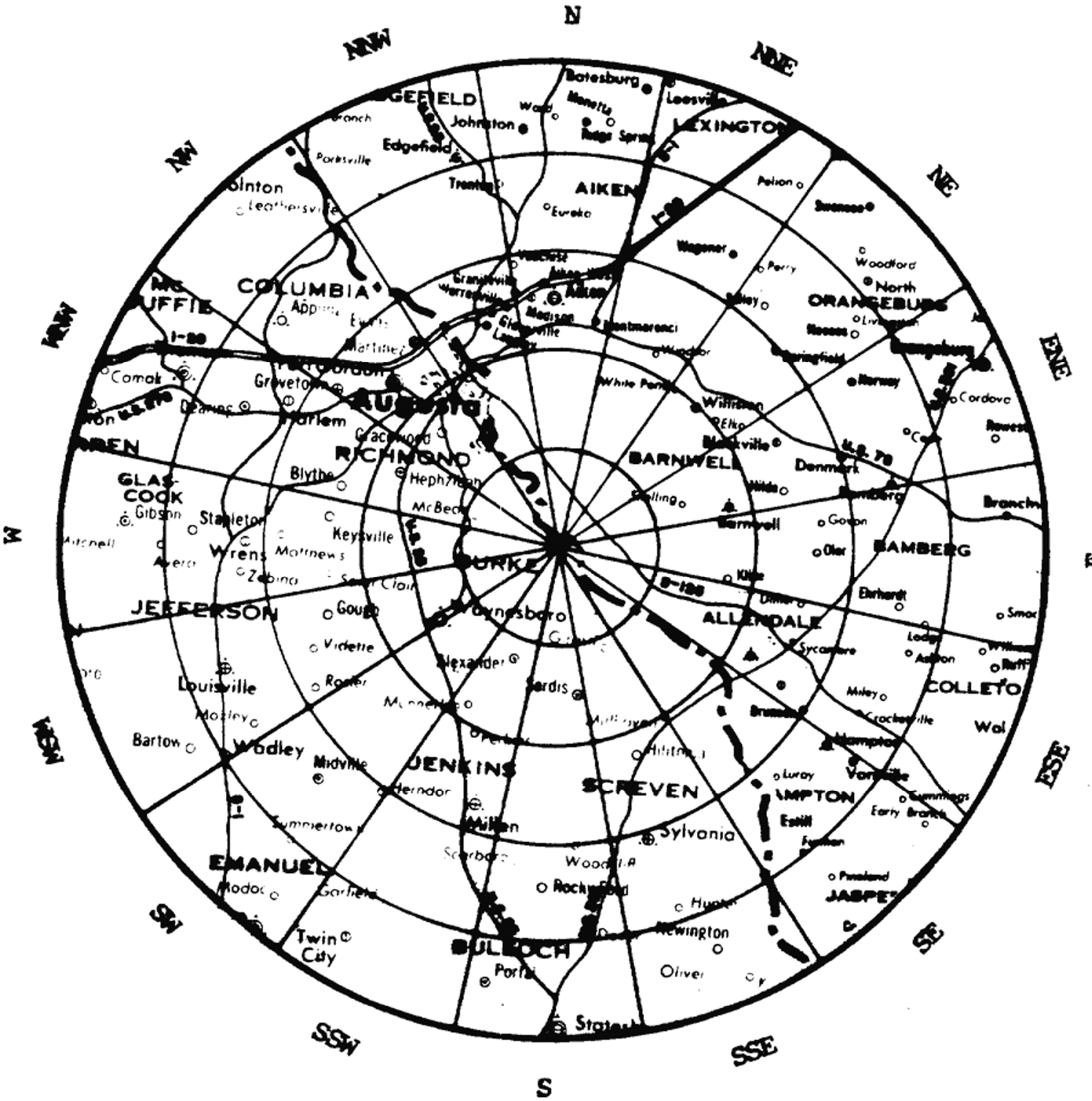
1987 POPULATION PROJECTIONS (50–MILE RADIUS) (HISTORICAL)

FIGURE 2.1.3–3



REV 15 4/09

SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	*2028 POPULATION PROJECTIONS (50–MILE RADIUS) (HISTORICAL)*
		FIGURE 2.1.3–4



REV 15 4/09

SOUTHERN COMPANY *Energy to Serve Your World®*	**VOGTLE** **ELECTRIC GENERATING PLANT** **UNIT 1 AND UNIT 2**	*POPULATION BETWEEN 10 AND 50 MILES (HISTORICAL)* *FIGURE 2.1.3–5*

2.2 IDENTIFICATION OF POTENTIAL HAZARDS IN SITE VICINITY

2.2.1 LOCATION OF NEARBY INDUSTRIAL, MILITARY, AND TRANSPORTATION FACILITIES

There are two Savannah River Plant facilities, Georgia Power Company's Plant Wilson, a construction site for Units 3&4, one railroad, and one highway with commercial traffic within a 5-mile vicinity of the plant.

Figure 2.2.1-1 shows the location of the major industrial facilities within a 5-mile radius of the VEGP site, including:

- The heavy water production and recovery facility of the Savannah River Plant.
- The TNX-CMX semiworks facilities of the Savannah River Plant.
- Plant Wilson.
- Georgia State Highway 23.
- The Seaboard Coast Line Railroad.
- Construction site for Vogtle Units 3 & 4

Figure 2.2.1-2 shows the location of major industrial facilities, military bases, and pipelines in relation to a 25-mile radius of the site. Highway transportation routes, airports, dock facilities, and railroad facilities are shown in figure 2.2.1-3.

Items illustrated on the maps are described in subsection 2.2.2. There are no military bases within a 25-mile radius of the site. The only major storage facilities within 25 miles of VEGP, other than those at the Savannah River Plant, Allied General Nuclear Services, and Chem-Nuclear Systems, are oil storage tanks associated with the existing combustion turbine-generators for Plant Wilson adjacent to the VEGP site.

2.2.2 DESCRIPTION

2.2.2.1 Facilities

2.2.2.1.1 Savannah River Plant[1]

The Savannah River Plant site (figure 2.2.2-1) borders the Savannah River for approximately 17 miles opposite the VEGP site and is the only industrial facility even partially within a 5-mile radius of the site. The Savannah River Plant occupies an approximately circular area of 300 mi^2 (192,000 acres) in South Carolina, 25 miles southeast of Augusta, Georgia. The Savannah River Plant was built and is operated for the U.S. Department of Energy by E. I. DuPont de Nemours and Company. The site is a closed government reservation, except for through traffic on South Carolina Highway 125 (Savannah River Plant road A) and the Seaboard Coast Line Railroad, and has controlled access for environmental study.

The Savannah River Plant produces nuclear materials, primarily plutonium and tritium, to meet nuclear materials requirements for the Department of Defense. The nuclear products are formed by irradiation of materials in nuclear reactors and recovered by chemical separations

processes. The Savannah River Plant employed a total of 6675 persons as of December 31, 1982.

The Savannah River Plant facilities (figure 2.2.2-1) consist of:

- Four operating nuclear production reactors (P, K, C, and L).
- One nuclear production reactor in standby condition (R).
- A small test reactor in standby condition (U).
- Two separations areas for processing irradiated materials (F and H).
- A heavy water extraction and recovery plant (D).
- A fuel target fabrication facility containing two test reactors (M).
- The Savannah River Laboratory (a process development laboratory to support production operations and containing two test reactors) and administrative facilities (A).
- A variety of nonnuclear facilities necessary for plant operations, including the TNX-CMX semiworks area located near the heavy water production and recovery plant.

The major waste storage areas for radioactive liquids, sludges, and crystallized salts are adjacent to the separations areas and consist of two tank farms linked to the separations areas and to each other by pipelines with secondary containment. In addition, a 195-acre burial ground area located between the F and H separations areas is used for controlled storage of solid radioactive wastes. The reactors, separations areas, and waste storage areas are at least 4 miles from the nearest plant boundary.

2.2.2.1.1.1 Nuclear Production Reactors (100 Area). Four production reactors (P, K, C, and L) of the five originally constructed are currently operating at the Savannah River Plant. The R reactor was shut down and placed in standby condition in 1964. The primary products of the Savannah River Plant reactors are plutonium (Pu^{239}) and tritium (T or H^3). These are produced by absorption of neutrons in uranium (U^{238}) and lithium (Li^6), respectively. The versatility of the reactors has also led to the production of other nuclear materials.

Each production reactor and its auxiliaries are housed in a reactor building that incorporates heavy concrete shielding to protect personnel from radiation. The reactor uses heavy water (D_20) as a neutron moderator and as a recirculating primary coolant to remove heat from the nuclear fission process. Water pumped from the Savannah River or Par Pond, a cooling water impoundment, serves as a secondary coolant.

2.2.2.1.1.2 Chemical Separations Facilities (200 Area). The chemical separations facilities consist of two main operating areas, 200-F and 200-H. Each main area has a large shielded "canyon" building for processing irradiated materials (fuel and/or targets), a waste concentration and storage system, seepage basins, powerhouses, and service facilities. In addition, F area contains the main analytical laboratory, the plutonium metallurgical building, and the plutonium fuel form facility. The H area contains the tritium process buildings, the receiving basin for offsite fuels, and the resin regeneration facility. These areas are the major sources of radioactive liquid and solid wastes that are stored onsite.

In the chemical processing plants the first step is to dissolve the irradiated components which liberate volatile fission products and to generate solutions with high concentrations of radioactivity. The initial separation yields solutions of plutonium, uranium, or neptunium product, and also a high-heat liquid waste, containing the nonvolatile fission products. After the fission products are removed sufficiently from the product solutions, further processing can be done in unshielded areas where the product elements may be converted from solution form to solid. The final steps involve handling powders of both Pu^{238} and Pu^{239} that require additional precautions to avoid airborne releases.

2.2.2.1.1.3 Fuel and Target Fabrication (300 Area). The facilities for fabricating fuel and target elements to be irradiated in Savannah River Plant reactors are located in the 300-M area. Major products are extruded enriched uranium-aluminum alloy fuel and canned depleted uranium metal targets. The only significant radioactive release from these facilities is uranium in aqueous effluents from the canning process. The total amount released since 1955 is about 85,000 lb or 24 Ci of uranium. About 50 percent of the material has settled in plant stream and pond beds adjacent to the area, and none has reached the main stream leading to the river.

2.2.2.1.1.4 Heavy Water Production and Recovery (400 Area). In the 400-D area, heavy water (D_2O) is separated from Savannah River water by a hydrogen sulfide extraction process with final purification by distillation. The most significant release of radioactivity from the 400-D area is tritium from the reprocessing of degraded reactor D_2O coolant that is reprocessed in a separate distillation facility. In 1975, 3000 Ci of tritium were released to the atmosphere and 1600 Ci to Beaver Dam Creek. The major nonradioactive releases from the area in 1975 were about 180,000 lb/year of SO_2 and about 180,000 lb/year of H_2S to the atmosphere from the heavy water extraction plant.

The largest steam power plant (484-D) on the plant site is located in the 400-D area, along with:

- A rework unit (removes H O from D O coolant).
- A drum cleaning facility (where 50-gal drums used for heavy water storage and transport are cleaned).
- An analytical laboratory (for analyses of aqueous and atmospheric releases).
- An extraction plant.
- A distillation plant.

2.2.2.1.1.5 Savannah River Laboratory. The Savannah River Laboratory has primary responsibility for research and development activities at the Savannah River Plant and also has been responsible for small-scale manufacturing activities. Laboratory operations are conducted in the technical area, TNX-CMX semiworks near the river, the thermal effects laboratory on Upper Three Runs, in the Par Pond area, and in the U area.

2.2.2.1.1.6 TNX-CMX Semiworks Area. The TNX-CMX semiworks area is located near the Savannah River adjacent to the heavy water production and recovery plant (400-D area). The purpose of the TNX facilities is to study chemical processing problems and test production-scale equipment. Analyses are conducted with nonradioactive standins or natural uranium. The test equipment includes dissolvers for uranium metal and other nuclear materials,

evaporators, mixer-settlers for solvent extraction, centrifuges, tanks, pumps, large furnaces, vacuum equipment, and distillation equipment. The CMX has nine flow loops and associated equipment for nonnuclear tests of portions of hydraulic systems of Savannah River reactors; only one flow loop is currently in operation.

A concise description of major Savannah River Plant facilities is provided in table 2.2.2-1.

2.2.2.1.2 Transportation Routes

The nearest highway with commercial traffic is Georgia State Highway 23, 5 air miles southwest of the site. The nearest railroad with commercial traffic is approximately 4.5 miles northeast of VEGP. A second railroad lies approximately 12 miles west of VEGP.

2.2.2.1.3 Barnwell Nuclear Fuel Plant

Although not located within 5 miles of the VEGP site, the Barnwell Nuclear Fuel Plant, located in the Barnwell County Industrial Park, is described due to its relative proximity (figure 2.2.2-1) and association with Savannah River Plant. The Barnwell Nuclear Fuel Plant was constructed by Allied-General Nuclear Services for the purpose of reprocessing spent light-water reactor fuel. Such commercial reprocessing has been indefinitely deferred as a matter of U.S. policy. If commercial reprocessing is ever permitted, it is unlikely to occur before the late 1980s. Moreover, the nature of such possible future reprocessing is currently indeterminate, being dependent upon federal decisions related to weapons proliferation concerns. At present the Barnwell Nuclear Fuel Plant is engaged in carrying out only resource and development activities pursuant to a contract with the Department of Energy. However, the federal government has expressed interest in acquiring the Barnwell Nuclear Fuel Plant for use as an away-from-reactor interim storage site for spent fuel.(2)

Table 2.2.2-2 provides a tabular description of Barnwell Nuclear Fuel Plant facilities.

2.2.2.1.4 Chem-Nuclear Systems, Inc.

Chem-Nuclear Systems, Inc., developed, constructed, and operates the largest radioactive waste disposal site in the country near Barnwell, South Carolina. The Chem-Nuclear Systems, Inc., has two licensing agencies and two current licenses to operate the Barnwell Low-Level Waste Disposal Facility, i.e., Radioactive Material License No. 097, issued by the South Carolina Department of Health and Environmental Control, and Radioactive Materials License No. 46-13536-01, issued by the United States Nuclear Regulatory Commission (NRC). The NRC license specifically addresses the possession of special nuclear material. In addition to the two licenses, Chem-Nuclear Systems, Inc., adheres to the established Department of Transportation guidelines of packaging and transportation of hazardous material as stated in Title 49 of the Code of Federal Regulations.

The Chem-Nuclear Systems, Inc., site (figure 2.2.2-2) comprises some 308 acres of which 235 have been deeded to the State of South Carolina as a designated exclusion area. Background radiation averages 0.29 mrem/day. Waste receipts are in the form of solids; no liquids are accepted. The site, now in its 11th year of operation, has disposed of more than 9.5 million ft^3 of waste, having an activity of 2.5 million Ci. Receipts for 1979 exceeded 2.2 million ft^3, having an activity of 314,000 Ci. Isotopes of cobalt and cesium head the list of those received.(3)

Table 2.2.2-3 provides a tabular description of Chem-Nuclear Systems, Inc., facilities.

2.2.2.1.5 Georgia Power Company's Plant Wilson

Plant Wilson is located east-southeast of the power block, approximately 5000 ft along River Road. The existing combustion turbine plant is an electrical peaking power station of Georgia Power Company. The plant consists of six combustion turbines with a total rated capacity of 351.6 MW. The storage capacity of the fuel storage tanks is 9,000,000 gal.

2.2.2.1.6 Major Industries Within 25 Miles

Table 2.2.2-4 describes major industrial facilities of 25 or more employees within a 25-mile radius of the site but greater than 5 miles from the site, with the exception of the previously discussed Barnwell Nuclear Fuel Plant (19 miles away), the Chem-Nuclear Systems, Inc., radioactive waste disposal site (18 miles away), and the facilities of the Savannah River Plant.

2.2.2.1.7 VEGP 3&4 Construction Site

The VEGP 3&4 construction site will be treated as a nearby industrial facility for the purposes of conformance to RG 1.70 and in response to GL 2003-01 and NEI 99-03 on control room habitability and emergency diesel operability. Though part of a shared property, VEGP 3&4 construction site is outside the protected area of VEGP 1&2 and is under control of the construction organization.

Proposed bulk chemicals and gases introduced on the VEGP Units 3&4 construction site are evaluated in accordance with applicable RG 1.70, RG 1.78, RG 1.91, and NUREG/CR-1748 guidance for determination of potential toxic hazards and design basis events for Units 1&2. Bulk chemicals or gases intended to be stored permanently are listed in table 2.2.3-14, Nearby Industrial Facility Chemical Storage or Table 2.2.3-15, Toxic Gas Release Information, as applicable. Temporary bulk chemicals and gases (those used to support construction of Units 3&4 such as anhydrous ammonia, argon, carbon dioxide, nitrogen, etc.) are evaluated for potential hazards with similar rigor as permanent chemicals; however, these are not included in table 2.2.3-14 or 2.2.3-15.

Evaluation of temporary bulk chemicals and gases is necessary to ensure introduction on site does not create a design basis event of VEGP Units 1&2 which may lead to exceeding the criteria established in 10 CFR 100. The impacts of chemical storage on control room habitability and nearest safety-related structures (NSRS) for VEGP 1&2 are considered and, if necessary, a detailed analysis evaluates toxic vapor clouds, tank explosions, flammable/explosive vapor clouds, and/or missiles generated by explosions in accordance with methodology and acceptance criteria consistent with the Units 1&2 licensing bases. Potential overspeed and/or starvation conditions for the Emergency Diesel Generators are also considered for releases, as applicable.

2.2.2.2 <u>Products and Materials</u>

2.2.2.2.1 Savannah River Plant

A description of the products and materials regularly manufactured, stored, used, or transported in relation to those Savannah River Plant facilities within 5 miles of the VEGP site are provided in table 2.2.2-5. The applicable toxicity limits for each hazardous material are provided in table 2.2.2-6.

It should be noted that the amounts of nuclear materials produced by the Savannah River Plant are classified information and that this document represents a best effort at obtaining detailed information for facilities of Savannah River Plant.

2.2.2.2.2 Transportation Routes

2.2.2.2.2.1 Georgia State Highway 23. Segments of Georgia State Highways 23, 80, and 56C are located within a 5-mile radius of the site. The Georgia Department of Transportation does not keep figures on the products and materials carried over these roads.(4) However, major commercial traffic occurs only on State Highway 23, which serves as a major link between Augusta and Savannah. The heaviest truck traffic along State Highway 23 near the site consists primarily of timber and wood products and materials. State Highways 80 and 56C serve primarily as minor transportation routes for local traffic, much of which is associated with development of the VEGP site.

Available statistical data on accidents on these roads (table 2.2.2-7) indicate that the majority of accidents in the vicinity are automobile accidents.

Several access roads to various Savannah River Plant facilities exist within 5 miles of the VEGP site. However, by December 1980 the Savannah River Plant reported that: "Within the past 5 years there have been no transportation accidents on the portion of the SRP that is within the 5-mile radius of the VEGP site."(5)

2.2.2.2.2.2 Seaboard Coast Line Railroad. The only railroad within a 5-mile radius of the site is the Seaboard Coast Line Railroad, which runs through and services the Savannah River Plant approximately 4.5 miles northeast of the site. Data on products and materials carried by the Seaboard Coast Line Railroad are presented in table 2.2.2-8. Hazardous cargo accident data for the Seaboard Coast Line Railroad are provided in table 2.2.2-9.

2.2.2.2.3 Barnwell Nuclear Fuel Plant

A description of the products and materials associated with Barnwell Nuclear Fuel Plant is presented in table 2.2.2-10. Refer to table 2.2.2-6 for applicable toxicity limits.

2.2.2.2.4 Chem-Nuclear Systems, Inc.

A description of the products and materials associated with Chem-Nuclear Systems, Inc., is presented in table 2.2.2-11. Refer to table 2.2.2-6 for applicable toxicity limits.

2.2.2.3 Pipelines

There are three pipelines (figure 2.2.1-2) within 25 miles of VEGP. Pipeline 1, located approximately 21 miles northeast of VEGP, is an 8-in.-diameter line constructed in 1959. It operates at a maximum pressure of 750 psi, is buried 3 ft deep, has 8-in. Rockwell isolation valves at 25-mile intervals, and carries natural gas. It is not used for storage. There are no plans for carrying a different product.(6)

Pipeline 2, located approximately 19 miles southwest of VEGP, has a 14-in.-diameter line constructed in 1954 and a 20-in.-diameter line constructed in 1977. Both lines are buried 3-ft deep, operate at a maximum pressure of 1250 psi, have buried Rockwell isolation valves every 8 to 9 miles, and carry natural gas. They are not used for storage. There are no plans for carrying a different product.(7)

Pipeline 3, located approximately 20 miles northwest of VEGP, has two 16-in.-diameter lines constructed in 1953 and 1957. Both operate at a maximum pressure of 1250 psi, are buried 3 ft deep, have buried Rockwell isolation valves every 8 to 9 miles, and carry natural gas. There are no plans for carrying a different product.(7) Because all of the pipelines identified are well over 5 miles from the VEGP site, the locations at individual pipeline valves are not specified.

2.2.2.4 Waterways

The VEGP is located on the Savannah River. Commercial river traffic is composed of barge-tug tows moving up and down the river channel between Augusta and Savannah. The navigational channel is maintained at a depth of 9 ft by the Corps of Engineers. There are no locks or dams in the vicinity of the plant site. The intake structure is located off the navigational channel at the end of a 400-ft canal.

For the year 1978, a total of 115 tows carried a total freight of 113,900 tons on the Savannah River past the plant site. The freight itself consisted of 102,517 tons of residual fuel oil, 8244 tons of nitrogenous chemical fertilizer, 3099 tons of gasoline, and 40 tons of iron steel and tube.(8)

2.2.2.5 Airports

There are no airports within 15 miles of VEGP. The nearest, the Burke County Airport, approximately 16 air miles WSW (figure 2.2.1-3), has a 3200-ft runway oriented 250° WSW - 70° ENE. The airport uses a nondirectional radio beacon for runway approach. It is used by single-engine private aircraft and by crop-dusting operations. Aircraft operations from May 1979 to May 1980 total 14,401, with about 1600 flights during a peak month.(9) Approach and departure paths extend ENE and WSW approximately 5 miles from the runway. Future plans(10) for the Burke County Airport call for the construction of two hangars 30 x 40 ft each and a 30- x 40-ft terminal building. No runway construction is planned. No increase in aircraft traffic is expected.

Bush Field,(11) located approximately 17 air miles NNW of VEGP, has an 8000-ft runway oriented 170° SSE - 350° NNW and a 6000-ft runway oriented 080° ENE - 260° WSW. It is served by Delta and Atlantis Airlines, with a fiscal year 1980 total of 7781 flights, and air taxi services, with a fiscal year 1980 total of 2026 flights. General aviation of other types flew a total of 56,998 flights during fiscal year 1980. Military planes flew 4921 flights during fiscal year 1980. Total flights into and out of Bush Field during fiscal year 1980 were 71,726.(12) Projections for air traffic at Bush Field up to fiscal year 1990 are given in table 2.2.2-12.(13)

Approach and departure paths at Bush Field are not aligned with VEGP; no regular air traffic patterns for Bush Field extend into air space over VEGP.

Future plans(14) for Bush Field call for lengthening the 8000-ft runway by 500 ft and adding hangar and parking facilities. A new 10,000-ft runway is proposed after 1990. There is an airway, V 185, V 18S, adjacent to VEGP (figure 2.2.1-3). There are no low altitude military training routes, pilot training areas, or approach and departure paths to airports or military facilities in the vicinity of VEGP.(15)

2.2.2.6 Projections of Industrial Growth

Population projections for the three South Carolina counties that lie partially within the 25-mile radius of VEGP indicate an average annual population growth rate for 1980 to 1990 of 1.7 percent.(16) It should be noted that Aiken is a primary growth center, which heavily influences the current (1970 to 1980) percent population increase for Aiken County, the 15.2-

percent increase for Barnwell County, and the 8.6-percent increase for Allendale County. There are no projected major increases to industrial, military, or transportation facilities in South Carolina within a 25-mile radius of VEGP.

Population data for the four Georgia counties that lie partially within a 25-mile radius of VEGP show an average annual growth rate of 0.08 percent for the past census decade. Augusta is the primary growth center and has heavily influenced the decade's 8.8-percent population increase for Richmond County, the 5.5-percent growth for Jenkins County, the 5-percent growth for Burke County, and the 9-percent population increase for Screven County. The only major increase to industry anticipated for the immediate future will be VEGP. The only increase to transportation facilities is the proposed improvement to Bush Field, Augusta Municipal Airport.

2.2.2.7 References

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11. Bessom and Pope, consulting engineers, Airport Layout Plan, Bush Field, Augusta, Georgia.
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14. Georgia Department of Transportation, Georgia Aeronautical Chart, 1978-1979.
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16. Lower Savannah Council of Governments, Lower Savannah Overall Economic Development Plan 1981-1985, Aiken, South Carolina.

2.2.3 EVALUATION OF POTENTIAL ACCIDENTS

The accidents considered in this subsection include explosions, delayed ignition of flammable vapor clouds, release of toxic vapors, fires, collisions with the intake structure, and liquid spills.

2.2.3.1 Determination of Design Basis Events

The Standard Review Plan defines design basis events external to the plant as those accidents for which a realistic estimate of the annual probability of exceeding 10 CFR 100 exposure guidelines is in excess of approximately 10^{-7} or for which a conservative estimate of this probability is in excess of approximately 10^{-6}. In lieu of developing specific probabilistic estimates, the accidents considered in this subsection are evaluated deterministically using standardized techniques developed by the NRC and industry. Chemical substances stored at nearby industrial facilities or transported within a 5 mile radius of the plant are identified and evaluated for potential impact on the safe operation of the plant in accordance with established NRC guidelines. Accidents evaluated include explosions, delayed ignition of flammable vapor clouds, release of toxic vapors (from onsite and offsite sources), and fires (including forest fires and fires due to oil or gas pipeline ruptures). Collisions with the intake structure and liquid spills are also evaluated.

A description of data sources, assumptions, and computational methods is presented in the following paragraphs.

2.2.3.1.1 Chemical Substances Stored or Transported Within a 5-Mile Radius of the Plant

As described in subsection 2.2.2, the VEGP site is located along the Savannah River. Commercial traffic on the Savannah River is composed of barge-tug tows moving up and down the river channel between Augusta and Savannah, Georgia. Segments of Georgia State Highways 23, 80, and 56C are located within a 5-mile radius of the VEGP site. However, major commercial traffic occurs only on State Highway 23, which serves as a major link between Augusta and Savannah, Georgia. The only railroad within a 5-mile radius of the VEGP site is the Seaboard Coast Line Railroad, which runs through and services the Savannah River Plant, approximately 4.5 miles northwest of the VEGP site. Chemical substances transported along these major routes within a 5-mile radius of the VEGP site are identified in table 2.2.3-6. Only bulk chemicals or gases transported for use at the permanent Units 3&4 plant are listed on the appropriate tables, as applicable.

As described in subsections 2.2.1 and 2.2.2, the major industrial facilities within a 5-mile radius of the VEGP site include the Savannah River Plant (SRP), Georgia Power Company's combustion turbine plant (Plant Wilson), and the construction site for Units 3 and 4. Chemical substances stored at SRP and Plant Wilson are identified in tables 2.2.3-14 and 2.2.3-17. Only bulk chemicals or gases intended to be stored permanently for use at Units 3&4 are listed on the appropriate tables, as applicable.

2.2.3.1.2 Explosions

Of the chemical substances stored or transported within a 5-mile radius of the VEGP site (tables 2.2.3-6, 2.2.3-14, and 2.2.3-17), only anhydrous ammonia, diesel fuel oil, gasoline, and miscellaneous oils are flammable.(10) The upper and lower limits of flammability for these

substances are depicted in table 2.2.3-12. Accordingly, potential explosions of these substances are evaluated. The remaining chemicals (chlorine, phosphoric acid, sulfuric acid, nitrogen, nitric acid, carbon dioxide, and helium) are nonflammable and are, therefore, excluded from further consideration.(10)

2.2.3.1.2.1 Allowable Distance and Actual Distance. Regulatory Guide 1.91 describes a method for determining the distance between transportation routes and structures beyond which any explosion that might occur on these transportation routes is not likely to have an adverse effect on plant operation or to prevent a safe shutdown. The distance is based on a level of peak positive incident overpressure below which no significant damage would be expected. This pressure is conservatively chosen at 1 psi. A safe distance can be defined by the relationship:

$$R \geq KW^{(1/3)}$$

where

R = distance in feet from an exploding charge of W pounds of TNT.

K = 45, when R is in feet and W is in pounds.

Table 2.2.3-12 shows this allowable distance and compares it with actual transported distance. The method described in Regulatory Guide 1.91 is also used to evaluate stationary flammable sources located within a 5-mile radius of the site. Table 2.2.3-12 shows the allowable distance and compares it with the actual stored distance.

As shown in table 2.2.3-12, the allowable distances for ammonia and miscellaneous oils are much shorter than the actual transported and stored distances. Therefore, according to Regulatory Guide 1.91, an explosion of these substances will not adversely affect safe operation of the plant and can be eliminated from further consideration.

Gasoline and diesel fuel oil were reviewed to determine if these substances are subject to an explosion given the conditions under which they are normally stored or transported. The propensity for an explosion is dependent upon the concentration of the material in the tank vapor space; i.e., the fuel-air mixture. The concentration of the flammable vapor present in the fuel-air mixture was calculated using the following liquid-vapor equilibrium equation:(56)

$$C = [V_{vapor} / (V_{vapor} + V_{air}) \times 100\%$$

where

V_{vapor} = Fuel vapor volume in one mole of vapor

V_{air} = Air volume in one mole of vapor mixture

C = Concentration of fuel in the vapor mixture, percent of volume

For diesel fuel oils, the concentration of flammable material in the vapor space is approximately 0.17 percent, which is below the lower limit of flammability. Similarly, for gasoline the concentration of flammable material in the vapor space is approximately 47 percent which is well above the upper limit of flammability. Accordingly, an explosion of the diesel fuel oil and gasoline stored or transported in the vicinity of the site is not considered a credible event. This conclusion is consistent with that of the National Fire Protection Association,(57) which states that the concentration in the vapor space of tanks storing low vapor pressure liquids, such as kerosene (which is similar to diesel fuel), is normally too lean to burn, while the vapor space concentration in tanks storing high vapor pressure liquids, such as gasoline, is normally too rich to burn.

2.2.3.1.2.2 Deleted.

2.2.3.1.2.3 Missiles Generated in Explosions. A potential hazard to the plant operation is the generation of self-propelled (or rocketing) missiles resulting from an explosion. In a report on rupture of tank cars,[18] a fragment from a liquid propane gas tank car explosion was reported to have been hurled 2,640 ft. The great majority of the fragments generated by exploding tank cars have a range of less than 1,000 ft.[19]

The largest range of a fragment from a flammable gas tank car rupture reported in reference 19 is 4,900 ft (for ethylene oxide tank car rupture). The analytical model shows that, for the worst combination of variables used, the maximum distance traveled by the rocketing fragments is in the range of 4,000 to 11,000 ft (1,220 to 3,350 m).[19]

The distances from the plant site to State Highway 23, to the Seaboard Coast Line Railroad, and to the Savannah River are approximately 7,600 m, 7,250 m, and 1,050 m, respectively. The distances from the plant to SRP and Plant Wilson are approximately 5,000 m and 1,350 m, respectively. Due to the long distances from the highway, railroad, and SRP, it is not credible for missiles generated in explosions to affect any VEGP safety-related structures. As shown in table 2.2.3-12 and discussed in paragraph 2.2.3.1.2.1, explosions of gasoline and diesel fuel oil transported on the Savannah River or stored at Plant Wilson are not credible. As such, explosion generated missiles from these sources are not credible.

There is a total of 2,150 gal of miscellaneous oils stored at Plant Wilson; however, as shown in table 2.2.3-17, no single miscellaneous oil is stored in a quantity larger than 700 gal. This volume represents approximately 3 percent of the 22,675-gal volume associated with the worst case explosion documented in reference 19, which is reported to have hurled fragments 4,900 ft (1,493 m). It is, therefore, reasonable to conclude that an explosion of 700 gal of oil at Plant Wilson would not produce a missile capable of traveling the 1,350 m to the VEGP site.

2.2.3.1.3 Flammable Vapor Clouds (Delayed Ignition)

The necessary condition of ignition requires that volume concentration of a fuel-air mixture be within the limits of flammability[10] as defined below:

$$C_{low} \leq C \leq C_{up}$$

where

C_{low} = the lower limit of volume concentration below which ignition cannot occur.

C_{up} = the upper limit of volume concentration above which ignition cannot occur.

The initial volume concentration of any fuel due to vaporization near the pool area is:

$$C = \frac{Q\, R_o\, T_o}{m\, P_a\, U\, A}$$

where

Q = evaporation rate
R_o = gas constant
T_o = ambient air temperature
m = molecular weight
P_a = ambient air pressure
u = wind speed
A = unit area of pool

Due to entrainment, this concentration will be less for distant parts of the plume.

As discussed in paragraph 2.2.3.1.2.1, of the chemical substances stored or transported within a 5-mile radius of the VEGP site, only anhydrous ammonia, diesel fuel oil, gasoline, and miscellaneous oils are flammable. Table 2.2.3-11 gives the fuel-air volume concentrations following a release of these substances and their flammability limits. At windspeeds of 0.25, 5.0, and 10.0 m/sec, the fuel-air concentrations are below the lower limit of flammability, except for ammonia stored at SRP or transported by rail or highway.

For ammonia transported by rail, the ammonia-air concentration is within the flammability range at distances between 6,431 m and 6,758 m from the nearest safety-related structure. The critical distance (given by $kW^{1/3}$ in Regulatory Guide 1.91), which could cause overpressures to safety-related structures, is 686 m.

Therefore, even though an explosion due to an ammonia release from a railroad tank car could occur, it would occur at a distance great enough not to pose an overpressure hazard to VEGP safety-related structures.

The ammonia release on the highway is bounded by the ammonia release on the railway due to the larger quantity transported by rail and the shorter distance between the railway and the plant site.

For ammonia stored at SRP, the ammonia-air concentration is within the flammability range at distances between 4,652 m and 4,791 m from the nearest safety-related structure. The critical distance is 292 m. Therefore, even though an explosion due to an ammonia release from SRP could occur, it would occur at a distance great enough not to pose an overpressure hazard to VEGP safety-related structures.

The zone of combustion for ammonia releases occurs at distances from the VEGP site that are well beyond those traveled by rocketing fragments following tank car explosions (refer to paragraph 2.2.3.1.2.3). Missiles generated from delayed detonations are, therefore, incapable of striking safety-related structures at VEGP.

2.2.3.1.4 Toxic Chemicals

2.2.3.1.4.1 Release of Toxic Chemicals Due to Transportation Accident. There are two classifications of toxic chemical materials that can pose as hazardous chemicals (toxic compressed gases and toxic liquids) being shipped on routes past the VEGP. These chemicals are listed in table 2.2.3-6. Additional chemicals transported to and from the Savannah River Plant are listed in table 2.2.2-5.

Three types of releases are defined for the toxic hazard evaluation methodology:

A. For high vapor pressure liquids such as ammonia and liquid Co_2 the amount of material flashed is estimated. This flash release comprises the "puff" portion of the release for such liquids.

B. The rate of evaporation of high pressure liquids after flashing is also estimated. This release is used as the continuous component of the high vapor pressure liquid source.

C. For normal boiling point liquids, the rate of vaporization is estimated. This evaporative release comprises the entire source for such substances.

Toxic chemicals transported near the VEGP site are analyzed using the same methodology as for onsite toxic hazards. This methodology is described in paragraph 2.2.3.1.4.3. The analysis assumptions of paragraph 2.2.3.1.4.3.1 also apply. For all postulated releases except gasoline,

ammonia, and nitric acid, the average concentration over an 8-h period does not exceed the long-term toxicity limit value. For gasoline and ammonia, it is demonstrated that there is more than 2 min between detection and reaching the short-term toxicity limit value as defined in Regulatory Guide 1.78. Thus, operators have sufficient time to don protective breathing apparatus prior to exposure to incapacitating concentrations of these toxic gases. Nitric acid slightly exceeds the long-term toxicity limit; however, footnote i of table 2.2.3-13 provides justification for acceptability based on the incapacitation criteria.

The results of this analysis are presented in table 2.2.3-13. It shows that the control room will remain habitable for all release scenarios and that only for ammonia and gasoline is operator action required.

2.2.3.1.4.2 Potential Hazard from Major Depots or Storage Areas. The only major depots or storage areas within 5 miles of VEGP are those at the Savannah River Plant and the combustion turbine plant. The chemicals stored at the Savannah River Plant are provided in table 2.2.2-5, and the oils and solvents stored at the combustion turbine plant are provided in table 2.2.3-17. The Savannah River Plant borders the Savannah River for approximately 17 miles opposite the VEGP site. (See subsection 2.2.2.) The combustion turbine plant is located approximately 5000 ft from the VEGP power block.

The chemicals stored at the combustion turbine plant with the exception of the fuel oil No. 2 are stored in small quantities. Due to the fact that these oils and solvents have low volatility and toxicity there is no potential hazard to the control room habitability from these substances.

Fuel oil No. 2 tanks for the combustion turbine plant are located east southeast of the power block, approximately 1350 meters distant. There are three tanks with a capacity of 3,000,000 gal each. These tanks are surrounded by a dike which would prevent the fuel oil from spreading into a large spill area.

The toxic chemical sources at the Savannah River Plant and the combustion turbine plant (table 2.2.3-14) are analyzed using the same methodology as for onsite toxic hazards. This methodology and the assumptions used are described in paragraphs 2.2.3.1.4.3 and 2.2.3.1.4.3.1. The average concentration over an 8-h period does not exceed the long-term toxicity limit except for ammonia. For ammonia, it is calculated that there is more than 2 min from detection to the time that the short-term toxicity limit value is reached. Operators, therefore, have sufficient time to don protective breathing apparatus prior to being exposed to incapacitating concentrations of ammonia.

The results of this analysis are presented in table 2.2.3-15. The control room will remain habitable for all chemicals and only for ammonia is the operator required to take emergency action.

2.2.3.1.4.3 Potential Hazard from Onsite Storage Tanks. The permanent storage facilities on the VEGP site are listed in table 2.2.3-18. The table lists the chemicals, quantities, and their distances from storage to the air intake of the control room.

Several of the chemicals listed in table 2.2.3-18 are excluded from further consideration due to their properties. Those chemicals excluded are:

A. Lube oil because of its relatively low toxicity and nonvolatility in the absence of aerosolization.[38]

B. Oxygen because it does not present a potential hazard for control room habitability.

C. Catalyst (benzoyl peroxide) because the melting point is 108°C; so under ambient conditions it is in the solid state. Also because it is stored in quantities less than 100 pounds.(12)(13)

D. Sodium nitrite because vapor of this liquid is nontoxic.

E. Electrohydraulic control fluid (phosphate esters) because no harmful vapors evolve from this chemical under normal operating temperatures.(39)

F. Liquids stored below ground level because significant spills cannot occur.

G. Seal oil because of its relatively low volatility and nontoxic characteristics.(38)

H. Promotor (dimethyl-p-toluene) because of its low volatility and emission of only NOx vapors when heated to decomposition.(41)

I. Hydrogen as a compressed gas because it is stored in quantities less than 100 lb.

J. Sodium hydroxide since it only poses a threat if it is inhaled in the form of dust or mist in the immediate vicinity of the spill. The control room is sufficiently distant to preclude the inhalation of dust or mist.[(45)(46)]

K. Sodium hypochlorite because vapor of this liquid is nontoxic.[(10)]

L. Sodium polyacrylate, sodium tolyltriazole, and zinc salt because these chemicals are nonvolatile.

M. Hydrogen peroxide because vapor of this liquid is nontoxic.[(10)]

N. Trisodium phosphate because it is a nonvolatile solid and is isolated from the control room by the containment.

O. Hypobromous acid (bromine salt/sodium hypochlorite) because vapor of this liquid is nonvolatile.[(58)]

The chemicals that are analyzed are divided into three categories: (1) compressed gases; (2) liquified compressed gases and liquids with boiling points below the ambient temperature (low boiling point liquids); and (3) liquids with boiling points above the ambient temperature (normal boiling point liquids). These chemicals can either emit toxic vapors or can be asphyxiates. Liquids can be both pure substances or aqueous solutions. Compressed gases include nitrogen. Liquified compressed gases and low boiling point liquids include Halon 1301, carbon dioxide, hydrogen, propane, and nitrogen. Normal boiling point liquids include methoxypropylamine (30-percent solution), fuel oil no. 2, hydrazine (35-percent solution), sodium hydroxide (50-percent solution), sulfuric acid, unleaded gasoline, and diesel fuel.

The rate at which a chemical is released to the atmosphere depends on the physical properties of the chemical, the geometry of the pool formed by the spilled liquid, meteorological conditions, and the governing equations for the transfer of mass into the vapor phase. Liquids having boiling points above the ambient temperature are governed by mass transfer relationships and constitute continuous releases. Liquids with boiling points below the ambient temperature are governed by heat transfer relationships and have both instantaneous puff releases and continuous releases. Compressed gas spills are entirely puff releases.

The guidelines and methodologies of NUREG-0570[(36)] are used in the determination of the release rates and the concentration of toxic gases at the control room air intake. This includes the use of heat and mass transfer relationships as well as the relationships for vapor dispersion for both instantaneous puff and continuous releases.

Having the toxic gas concentrations at the control room air intake, and using the parameters of the control room (table 2.2.3-19), the control room toxic gas concentrations are found by solving the following differential equation:

$$\frac{dC_{CR}(t)}{dt} = \lambda_I \, \chi(t) - \lambda_o \, C_{CR}(t)$$

where

$C_{CR}(t)$ = control room concentration (gm/m^3).

g_I = control room air inflow rate (s^{-1}).

g_o = control room air outflow rate (s^{-1}).

$\chi(t)$ = control room air intake concentration (gm/m^3).

This inleakage equation is applied to the toxic gas releases. No credit is taken for control room isolation for any chemicals.

2.2.3.1.4.3.1 Analysis Assumptions. Spills are postulated to occur at the site average annual temperature of 17°C and a G Pasquill Stability Category. The centerline of the vapor cloud is assumed to flow directly towards the control room air intake. A range of windspeeds from 0.25 m/s to 10.0 m/s are used in the analysis to determine which windspeeds would result in the maximum control room toxic vapor concentration.

Building wake effects are considered in this analysis as described in NUREG-0570[(36)] and Slade.[(37)] The spills are assumed to form circular pools with a uniform initial depth of 1 cm, unless otherwise bounded by dikes or other restrictions. The control room parameters used in this analysis are presented in table 2.2.3-19.

Analysis Results. The results of this analysis, along with toxicity limits and spill parameters, are shown in table 2.2.3-20. For all releases except ammonia and hydrazine, the average concentration over an 8-h period never exceeds the long-term toxicity limit. For the cases where the long-term limit is exceeded, it is shown that there are at least 2 min available between detection and the time that the short-term toxicity limit (as defined in Regulatory Guide 1.78) is reached. This provides control room operators adequate time to don protective breathing apparatus without being exposed to incapacitating concentrations of toxic gases.

This analysis shows that the control room will remain habitable for most release scenarios without any operator action, and that there is sufficient time for control room operators to take emergency action for the remaining release scenarios.

2.2.3.1.5 Fires

In the vicinity of VEGP, the following potential fire hazards exist:

A. Fire due to a transportation accident.

B. Fire due to an oil or gas pipeline rupture accident.

C. Forest fire.

D. Fire due to an accident at industrial storage facilities.

E. Fire due to onsite storage tank spill.

2.2.3.1.5.1 Fire Due to a Transportation Accident. Gasoline, diesel fuel oil, and ammonia are the only flammable substances transported within a 5-mile radius of the VEGP site (table 2.2.3-12). Ammonia is transported along the Seaboard Coast Line Railroad and State Highway 23, which are approximately 7,250 m and 7,600 m from the plant, respectively. The flammability limit of ammonia is in the range of 15.5 to 27 percent by volume.(10) These limits cannot be attained in open spills. Therefore, there is no potential hazard to control room habitability from an ammonia accident with a fire along these transportation routes.

Gasoline and diesel fuel oil are transported in quantities of approximately 5.6×10^6 lb on the Savannah River, which is approximately 1,050 m from the VEGP site. Fuel oil is also transported on State Highway 23; however, due to the longer distance from the plant site to the highway and the relatively small quantities of fuel oil transported along this route (4.21×10^4 lb), a fuel oil accident on the Savannah River is more limiting.

The primary products of combustion emitted from fuel oil and gasoline fires on the Savannah River are CO, CO_2, CH_4, NO_2, SO_2, and SO_3.(30) The toxicity limits in ppm for these constituents are 50 (CO), 5,000 (CO_2), 1.43×10^5 (CH_4), 2 (SO_2 and SO_3), and 3 (NO_2).(10) Using the same methodology as described in paragraph 2.2.3.1.4 for toxic chemical releases, the maximum burning rate, the maximum emission rate, and a wide range of meteorological conditions, it was determined that the resulting concentrations in the unisolated control room will not approach the toxicity limits.

Using the methodology described in NUREG/CR-1748,(28) the heat flux and resultant temperature rise on the VEGP structures due to a barge fire on the Savannah River were also evaluated. The calculated temperature rise is less than the maximum allowable temperature rise. Since the barge fire is limiting (the largest source at the closest approach to the plant site), it is concluded that source fires and vapor cloud fires resulting from delayed ignition (refer to paragraph 2.2.3.1.3) along transportation routes will not cause thermal damage to safety-related structures at VEGP.

2.2.3.1.5.2 Fire Due to Oil or Gas Pipeline Rupture Accident. There are no pipelines within 5 miles of the plant. The nearest pipeline is located approximately 19 miles southwest of the plant. (See paragraph 2.2.2.3.) Thus, a fire from a pipeline is not considered a credible hazard to control room personnel.

2.2.3.1.5.3 Forest Fires. The surrounding plant terrain is characterized by gently rolling hills and is approximately 30-percent farmland, with the remainder primarily wooded areas. The nearest forest has a total area of 3,169 acres and is approximately 1,850 ft from the control room.

The average size of a forest fire in the state of Georgia is approximately 11.4 acres.(53) The rate of spread is conservatively assumed to be 8 ft per minute with a duration of 4 hours.(53)

The toxic chemicals emitted from a forest fire are CO, NO_2, and CH_4.(30) The emission concentrations in the control room air intake were calculated using the infinite line source diffusion equation(54) with the wind direction perpendicular to the line source and blowing directly toward the control room intake, and the Brigg's plume rise equation,(56) which accounts for the buoyancy effect from the heat of the fire. The calculation demonstrated that the pollutant concentrations outside the control room air intake for a variety of windspeeds (from 0.25 to 10 m/sec) and Pasquill stability category G are effectively zero. Therefore, the release of toxic combustion products from an onsite forest fire does not pose a hazard to control room personnel.

Using the methodology described in NUREG/CR-1748,[28] the heat flux and resultant temperature rise on plant structures due to a forest fire were also evaluated. The calculated temperature rise is less than the allowable temperature rise.[28] Therefore, a forest fire will not cause thermal damage to the VEGP safety-related structures.

2.2.3.1.5.4 Fire Due to an Accident at Industrial Storage Facilities. There are three major industrial storage facilities in the vicinity of the plant: The Savannah River Plant (SRP) located at a distance greater than 5,000 m from the VEGP site; Georgia Power Company's combustion turbine plant (Plant Wilson) located approximately 1,350 m from the VEGP site; and the construction site for Units 3&4 located approximately 700 m centerline to centerline. Chemical substances stored at SRP and Plant Wilson are identified in tables 2.2.3-14 and 2.2.3-17.

Of the substances stored at these locations, only ammonia, diesel fuel oil, and miscellaneous oils are flammable. The flammability limit of ammonia is in the range of 15.5 to 27 percent by volume.[10] These limits cannot be attained in open spills. Therefore, there is no potential hazard to the control room habitability from an ammonia accident at SRP.

Approximately 9 million gal of diesel fuel oil is stored at Plant Wilson in three storage tanks (approximately 3 million gal each). Fuel oil is also stored at SRP; however, due to the longer distance from the plant site to SRP and the relatively small quantity of fuel oil stored at SRP (22,500 gal), a fuel oil fire at Plant Wilson is more limiting. Similarly, a diesel fuel oil fire at Plant Wilson will bound fires of miscellaneous oils stored at Plant Wilson (approximately 2,150 gal total).

The primary products of combustion emitted from a diesel fuel oil fire at Plant Wilson are CO, CO_2, CH_4, NO_2, SO_2, and SO_3.[30] The toxicity limits in ppm for these constituents are 50 (CO), 5,000 (CO_2), 1.43×10^5 (CH_4), 2 (SO_2 and SO_3), and 3 (NO_2).[10] Using the same methodology as described in paragraph 2.2.3.1.4 for toxic chemical releases, the maximum burning rate, the maximum emission rate, and a wide range of meteorological conditions, it was determined that the resulting concentrations in the unisolated control room will not approach the toxicity limits.

Using the methodology described in NUREG/CR-1748,[28] the heat flux and resultant temperature rise on the VEGP structures due to a diesel fuel oil fire at Plant Wilson were also evaluated. The calculated temperature rise is less than the maximum allowable temperature rise. Since a fire at Plant Wilson is limiting (the largest source at the closest approach to the plant site), it is concluded that source fires and vapor cloud fires resulting from a delayed ignition (refer to paragraph 2.2.3.1.3) at nearby industrial facilities will not cause thermal damage to safety-related structures at VEGP.

2.2.3.1.5.5 Fire Due to Onsite Storage Tank Spill. There are six gasoline storage tanks located on the Vogtle site. Of these six, four are located underground and no significant spills can occur. The two remaining above-ground tanks are:

A. A 6000-gal gasoline storage tank.

B. A 3000-gal diesel fuel storage tank (evaluated as a gasoline storage tank).

These two tanks are located just outside the primary security fence, near the plant warehouse. The distance from these tanks to the control building is approximately 1200 ft.

The potential hazards involved with these two above-ground tanks are:

A. The shockwave resulting from the ignition and explosion of the tanks' contents.

B. A dangerous thermal environment resulting from a tank fire.

C. A potentially lethal concentration of toxic gases in the control room resulting from a tank fire.

Evaluation of the tank spill, the meteorological conditions, and historical data for outdoor tank spills indicate that an explosion is not probable and is, therefore, not considered a credible hazard to the plant.

The calculated thermal load resulting from a tank fire will produce an insignificant temperature rise at the nearest safety-related structure (NSCW cooling tower). Therefore a tank fire does not create a thermal environment adversely affecting plant safety-related structures.

The primary constituents resulting from either a gasoline or diesel fuel fire are C0, CO_2, CH_4, NO_2, SO_2, and SO_3.(30) The toxicity limits in ppm for these constituents are 50 (CO), 5,000 (CO_2), 1.43 x 10^5 (CH_4), 2 (SO_2 and SO_3), and 3 (NO_2).(10) Using the maximum burning rate, maximum emission rate, and a wide range of meteorological conditions, it was determined that the resulting concentrations of gases, in the unisolated control room will not approach the toxicity limit.

Based on these analyses, the above ground gasoline and diesel fuel storage tanks are not considered to be a credible hazard to the control room.

Three 2000-gal capacity above ground liquid propane tanks are installed at the fire training facility. These tanks provide fuel to fire training aids installed at the facility. The distance from the tanks to the nearest safety-related structure (the NSCW cooling towers) is approximately 3200 ft and the distance to the control room air intake is approximately 3500 ft. The tanks are designed and installed in accordance with ASME Section VIII and the relevant NFPA and insurance standards. The potential hazards associated with these tanks are:

A. The shockwave resulting from an explosion of the tanks' contents or a flammable vapor cloud emanating from a tank rupture.

B. A dangerous thermal environment resulting from a tank or flammable vapor cloud fire.

C. A potentially lethal concentration of toxic gases in the control room resulting from a tank fire.

D. Diesel generator overspeed, starvation, or prevention of a diesel generator start due to a propane tank rupture.

The tanks have been evaluated consistent with the methods described in Regulatory Guide 1.91. Based upon the evaluation the fire training facility propane tanks are located beyond the distance where an exploding tank or an exploding flammable vapor cloud would yield an overpressure of 1 psi on any safety-related structure. As noted in Regulatory Guide 1.91, the effects of blast-generated missiles will be less than those associated with blast overpressure.

The fire training facility propane tanks have also been evaluated for thermal effects of a fire using the methodology described in NUREG/CR-1748. The calculated temperature rise is less than the maximum allowable temperature rise.

Control room habitability following a propane fire at the fire training facility is bounded by the analysis of Plant Wilson discussed in paragraph 2.2.3.1.5.4.

The fire training facility propane tank evaluation also determined that the tanks are located beyond the distance where a propane gas cloud could starve or prevent the start of a diesel generator.

Based upon these evaluations, the propane tanks at the fire training facilicy are located a safe distance from the control room air intake and any safety-related structures. Therefore, the propane tanks are not considered to be a credible hazard.

2.2.3.1.6 Collisions with Intake Structure

The river water intake structure and the river water makeup pumps located inside the structure serve no safety design basis. The pumps provide makeup water to the nonsafety-related circulating water system as described in subsection 10.4.5. A barge or ship colliding with the intake structure would not affect the capability to safely shut down the plant.

2.2.3.1.7 Liquid Spills

Liquid spills during transportation accidents could cause corrosive, cryogenic, or coagulant effects. However, due to the large distances from Georgia State Highway 23 and Seaboard Coast Line Railroad, it is not credible for such spills to affect the safety of the plant. Liquid spills on the Savannah River that could be drawn into the river water intake structure and the circulating water system would not affect the safety of the plant because the circulating water system is nonsafety related. Loss of the circulating water system would not affect the capability to safely shut down the plant.

2.2.3.1.8 Effects of Design Basis Events

As discussed in the previous paragraphs, accidents involving hazardous chemicals transported or stored within a 5-mile radius of the plant site and rupture of onsite storage tanks constitute no hazard to the safe operation of VEGP.

2.2.3.2 <u>References</u>

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TABLE 2.2.2-1

DESCRIPTION OF SAVANNAH RIVER PLANT FACILITIES[a]

Facilities	Major Product(s)/ Primary Function
Savannah River Plant, Aiken, South Carolina, operated by DuPont	Nuclear material production and storage, waste processing, and research and development activities
Production reactors (four active, one in standby)	Production of nuclear materials, primarily plutonium (Pu^{239}) and tritium (T or H^3)
Chemical separation facilities (two)	Chemical processing and high level radioactive waste storage
Fuel and target fabrication facility	Fabrication of elements
Heavy water production and recovery facility[b]	Production of heavy water (D_2O)
Savannah River Laboratory	Research and development
TNX-CMX semiworks area[b]	Production-scale testing

a. Total number of employees as of December 31, 1982, is 6675.

b. Located within a 5-mile radius of VEGP.

TABLE 2.2.2-2

DESCRIPTION OF BARNWELL NUCLEAR FUEL PLANT FACILITY

Facility	Major Product(s)/ Primary Function	Number of Employees
Barnwell Nuclear Fuel Plant	Active only in R and D for DOE	350
	Reprocessing of spent light-water reactor fuel (presently and for likely future in abeyance)	
	Possible away-from-reactor interim storage for spent fuel	

TABLE 2.2.2-3

DESCRIPTION OF CHEM-NUCLEAR SYSTEMS, INC., FACILITY

Facility	Major Product(s)/ Primary Function	Number of Employees
Chem-Nuclear Systems, Inc.	Low level radioactive waste disposal site	185

TABLE 2.2.2-4 (SHEET 1 OF 2)

MAJOR INDUSTRIES (25 OR MORE EMPLOYEES)
WITHIN 25-MILE RADIUS OF VEGP

Location	Facility	Function	Major Product	Number of Employees
Waynesboro, Ga.	Burke Manufacturing Co.	Manufacturer	Men's and boys' jackets	230
	Roy F. Chalker Pub. Co.	Publishers	Books	33
	Keller Aluminum Furniture of Ga.	Manufacture	Aluminum furniture	413
	Kimberly-Clark Corp.	Manufacture	Pine lumber	120
	McKinney Concrete Sers.	Manufacturer	Concrete	45
	Perfection Products Co.	Manufacturer	Room heaters	265
	Samson Manufacturing Co.	Manufacturer	Curtains and draperies	225
	Talley Corbett Box Co.	Manufacturer	Veneer wood chips	30
	Waynesboro Industries	Manufacturer	Food service equipment	117
Millen, Ga.	Brigadier Industries	Manufacturer	Mobile homes	88
	Jockey International	Manufacturer	Aluminum windows and doors	268
	Thompson Co.	Manufacturer	Men's dress slacks	180
Sardis, Ga.	Sardis Manufacturing Co.	Manufacturer	Draperies	150
Barnwell, S.C.	Allied Nuclear Sers.	Manufacturer	Nuclear fuel reprocessing	348
	Chem-Nuclear Systems, Inc.	Waste Disposal	Nuclear waste storage	200
Beach Island, S.C.	Kimberly-Clark Corp.	Manufacturer	Tissue products	842
Aiken, S.C.	E. I. DuPont DeNemours Co., Inc.	Manufacturer	Nuclear materials	5568

TABLE 2.2.2-4 (SHEET 2 OF 2)

Location	Facility	Function	Major Product	Number of Employees
Augusta, Ga.	Abitibi Southern Corp.	Manufacturer	Newsprint	183
	Babcock and Wilcox Co.	Manufacturer	Clay refractories	1171
	Columbia Nitrogen Corp.	Manufacturer	Nitrogen solutions	340
	Con Agra, Inc.	Manufacturer	Animal feed	37
	Continental Forest Industries	Manufacturer	Bleached paperboard	758
	Deerfield Specialty Papers, Inc.	Manufacturer	Specialty papers	94
	Esselte Pendaflex-Dymo	Manufacturer	Office systems and books	204
	Georgia-Carolina Brick and Tile Co.	Manufacturer	Clay products	166
	Graniteville Co.	Manufacturer	Cotton textiles	532
	Homestead Manufacturing Co.	Manufacturer	Draperies	340
	Hydreco Div. General Signal Co.	Manufacturer	Valves and pumps	125
	Ireland Electric Corp.	Manufacturer	Control panels	41
	Kendall Co.	Manufacturer	Surgical dressing	585
	Lily Division	Manufacturer	Paper cups and containers	350
	Mid-South Container Corp.	Manufacturer	Corrugated containers	166
	Modern Roofing and Metal Works, Inc.	Manufacturer	Sheet metal fabrication	65
	Monsanto Co.	Manufacturer	Phosphate compounds	41
	Murray Biscuit Co.	Manufacturer	Cookies	600
	Olin Corp.	Manufacturer	Chemicals	126
	Procter and Gamble Mfg. Co.	Manufacturer	Synthetic detergents	245
	Servomation of Georgia, Inc.	Manufacturer	Vending machinery	78
	Southeastern Newspapers, Inc.	Printer	Newspaper printing	358
	Standard Bag and Synthetics, Inc.	Manufacturer	Bonded synthetics	35
	Sturm Dixie, Inc.	Manufacturer	Pump sleeves	39
	Transco Textile Industries, Ltd.	Manufacturer	Cotton textiles	343

Source: Georgia Manufacturer's Directory: 1980-81, Georgia Department of Industry and Trade, Atlanta, Georgia, 1980.

TABLE 2.2.2-5 (SHEET 1 OF 2)

DESCRIPTION OF PRODUCT AND MATERIALS:
SAVANNAH RIVER PLANT
(FACILITIES WITHIN 5 MILES OF VEGP)

Products or Materials	Status	Annual Amounts	Maximum Quantity At Any Time	Mode of Transport	Frequency of Shipment
400 Area					
Heavy Water Production and Recovery (includes rework, unit, drum cleaning facility, analytical laboratory, extraction plant, and distillation plant)					
Heavy water (D_2O)	Produced	76 tons	330 tons	Truck	3/week
Tritium	Released	3900 Ci	220,000 Ci	NA	NA
Sulfur dioxide (SO_2)	Released	85 tons	NA	NA	NA
Phosphoric acid	Used	1380 lb	460 lb	Truck	3/year
Ammonia	Used present	1.5 tons	2.0 tons	Truck	2/year
Silicone	Not used at present	-	-	-	-
Trisodium phosphate	Used	5000 lb	1000 lb	Truck	5/year
Potassium permangate	Used	220 lb	220 lb	Truck	1/year
Steam and Electric Generating Plant (includes water treatment plant)					
Bituminous coal	Burned	240,000 tons	75,000 tons	Rail	Daily
Sulfur dioxide	Released (continuous boiler emissions)	9600 tons	-	-	-
Chlorine	Used	15 tons	Ten 1-ton cylinders	Truck	Monthly
Trisodium phosphate	Used	10 tons	2 1/2 tons	Truck	6/year
Sulfuric acid	Used	175 tons	270 tons	Rail	3/year
Caustic (NaOH)	Used	290 tons	340 tons	Rail	6/year
Alum	Used	280 tons	100 tons	Truck	8/year

TABLE 2.2.2-5 (SHEET 2 OF 2)

Products or Materials	Status	Annual Amounts	Maximum Quantity At Any Time	Mode of Transport	Frequency of Shipment
TNX-CMX Semiworks Area					
Process waste (kaolin)	Stored (held in retention basin)	-	-	-	-
Steam Boiler					
No. 2 fuel oil	Used	27,000 gal	22,500 gal	Tank truck	1/week

a. About 1550 Ci released to liquid streams, 2350 Ci released to atmosphere.

b. Approximation of quantity resulting from burning of H_2S to SO_2 at top of 400-foot flare stack.

c. Based on sulfur content specification of coal. Actual sulfur content of coal in 1980 was equivalent to 6000 tons of sulfur dioxide.

TABLE 2.2.2-6 (SHEET 1 OF 8)

APPLICABLE TOXICITY LIMITS

Hazardous Substance/ Applicable Facility	Toxicological Data
1. Ammonia, NH^3 RTECS No. B00875000 CAS No. 7664-41-7 Applicable facility: SRP, SRP (HWP)	Colorless gas (or liquid); sharp, intensely irritating odor; lighter than air; easily liquified by pressure; boiling point = -28°F; very soluble in water. Auto-ignition temperature = 1204°F. Combustible. (10-47) At room temperature and atmospheric pressure, a colorless, alkaline gas having a pungent odor. First perceptible odor = 20 ppm. Slight eye irritation at 40 ppm. Fatal almost immediately at 5000 ppm. (11-17) A powerful irritant. Irritant to eyes and mucous membranes of respiratory tract. (3-364) Lowest lethal concentration for humans by inhalation = 3000 ppm for 5 min. Lowest toxic concentration for humans by inhalation = 20 ppm. Aquatic toxicity rating: TLm 96:10-1 ppm. ACGIH threshold limit value = 25 ppm in air. OSHA standard = 50 ppm TWA in air. (1-94)
2. Chlorine, Cl_2 RTECS No. F02100000 CAS No. 7782-50-5 Applicable facility: SRP (HWP)	Green-yellow gas, liquid, or rhombic crystals. Boiling point = -30°F. Extremely irritating to the mucous membranes of the eyes and the respiratory tract. (3-485) Lowest lethal concentration for humans by inhalation = 430 ppm for 30 min. ACGIH TLV = 1 ppm in air. OSHA standard = 1 ppm TWA in air. NIOSH criteria document recommended standard = 0.5 ppm in air for 15 min. (1-403) Odor threshold = 0.3 ppm. (9-21) Level of odor perception = 3.5 ppm. (4-113)

TABLE 2.2.2-6 (SHEET 2 OF 8)

Hazardous Substance/ Applicable Facility	Toxicological Data
3. Coal, bituminous (coal facings, sea coal) RTECS No. GF8300000 Applicable facility: SRP (HWP)	Chiefly amorphous elemental carbon with low percentages of hydrocarbons, complex organic compounds, and inorganic materials. (10-214) Toxic hazard depends upon content of crystalline silicon dioxide. (3-508) Coal dust—an amorphous carbon but sometimes contains hyrocarbons, organic complex salts, and inorganic compounds. Slightly toxic by inhalation. (4-133) ACGIH threshold limit value = 2 mg/m^3 exposure in air (1-441) OSHA exposure limit for respirable coal dust containing less than 5% crystalline silica dioxide = 2.4 mg/m^3; limit for dust containing more than 5% crystalline silica = 10 mg/m^3 (% crystalline silica dioxide + 2). (12-545)
4. Fuel oil (distillate, gas oil, home heating oil No. 2) RTECS No. LS8950000 Applicable facility: BNFP, SRP (TNX-CMX)	A complex mixture of liquid petroleum hydrocarbon products with flash points above 100°F. (1-700) Several grades available. For example: Kerosene--moderate fire hazard. (3-760) Moderately toxic by inhalation and swallowing. (4-263) Toxic oral dose level for rabbit and rat is 20 g/kg. (2-3) Criteria document recommended standard for airborne exposure to refined petroleum solvents to be 100 mg/m^3 time weighted average. (2-3) May contain suspected carcinogens. (3-760)
5. Material Deleted	
6. Manganese dioxide, MnO_2 (manganese oxide, manganese binoxide, manganese black, battery manganese, manganese perioxide) RTECS No. OPO35000 CAS No. 1313-13-9 Applicable facility: SRP, SRP (HWP)	Black crystals or powder; soluble in hydrochloric acid; insoluble in water. Oxidizing agent; may ignite organic materials; moderately toxic. (10-535) Moderate fire hazard by chemical reaction; a powerful oxidizer. Must not be rubbed in contact with easily oxidizable matter. Keep away from heat and flammable materials. (3-787) Lowest lethal dose by intravenous route to rabbits = 45 mg/kg. No OSHA, ACGIH, or NIOSH limits listed. Reported in EPA TSCA inventory (July 1979). (2-28) MnO_2 injected intratracheally into rats, in an attempt to stimulate manganese pneumonitis seen in man, produced characteristic histological changes in the lungs. Inhalation exposures of rabbits to MnO_2 dust 4 h daily for from 3 to 6 months at levels of 10 to 20 mg/m^3 resulted in decreased hemoglobin and erthrocytes in the blood; Mn pneumonitis did not occur, but fibrotic

TABLE 2.2.2-6 (SHEET 3 OF 8)

Hazardous Substance/ Applicable Facility	Toxicological Data
	changes in the lungs resembling those in silicosis were observed. A ceiling exposure limit of 5 mg/m^3 is listed for Mn dust and compounds as Mn. (8-250) OSHA standard for manganese = 5 mg/m^3 as a ceiling for exposure. (12-542)
7. Mercury, Hg (quicksilver) RTECS No. OV4550000 CAS No. 7439-97-6 Applicable facility: SRP	Silvery, extremely heavy liquid. Extremely high surface tension. Insoluble in hydrochloric acid, water, alcohol, and ether; soluble in nitric acid and lipids. High electrical conductivity, noncombustible. Metallic Hg is highly toxic by skin absorption and inhalation of fume or vapor. Tolerance = 0.05 mg/m^3 of air. Absorbed by respiratory and intestinal tract; accidental intake of small amounts is stated to be harmless (Merk Index). FDA permits zero addition to be 20 micrograms of Hg contained in average daily diet. All inorganic compounds of Hg are highly toxic by ingestion, inhalation, and skin absorption. Tolerance = 0.05 mg/m^3 of air. Most organic compounds of Hg are highly toxic. Inorganic Hg can be converted to methyl-mercury (organic) by bacteria in water. Tolerance (alkyl compounds) = 0.01 mg/m^3 of air; all others = 0.05 mg. (10-549) Methylated mercury compounds are especially toxic, because they are readily absorbed into animal tissues, for example, by fish. (13-206) Lowest toxic dose to woman by inhalation = 150 µg/m^3/46D. Lowest lethal concentration to rabbit by inhalation = 29 mg/m^3/30 H. OSHA standard for metallic mercury in air = 1 mg/10 m^3. NIOSH recommends a standard of 0.05 mg(Hg)/m^3 in air for an 8-h time weighted average. Reported in EPA TSCA inventory (July 1979) (2-36) OSHA standard for organic (alkyl) mercury = 0.01 mg/m^3 8-h time weighted average and 0.04 mg/m^3 ceiling. (12-544) Lowest lethal dose to humans by oral route = 1429 mg/kg. Lowest toxic concentration to humans by inhalation = 0.17 mg/m^3 for 40 years for CSNI problems. When heated, Hg emits highly toxic fumes. (3-797)
8. Nitric acid, NHO_3 RTECS No. QU5775000	Lowest published oral human lethal dose = 430 mg/kg. Aquatic toxicity rating: TLm 96: 100-10 ppm. Threshold limit value: air = 2 ppm; OSHA standard air: time weighted average =

TABLE 2.2.2-6 (SHEET 4 OF 8)

Hazardous Substance/ Applicable Facility	Toxicological Data
CAS No. 7697-37-2 Applicable facility: BNFP, SRP	2 ppm. Strong oxidizing agent. (8-301) Corrosive to skin and eyes. (7-Nitric acid)
9. Liquid nitrogen, N_2 RTECS No. QW9720000 CAS No. 7727-37-9 Applicable facility: BNFP	Nontoxic (3-860) Melting point = -209.9°C and boiling point = -195.8°C, can cause severe frostbite on contact. Gaseous nitrogen is simple asphyxiant. Can make confined spaces unsafe due to displacement of oxygen. Colorless, odorless, tasteless gas. (4-369)
10. Nitrogen dioxide, NO_2 (nitrogen peroxide) RTECS NO. QW9800000 CAS No. 10102-44-0 Applicable facility: SRP	A red-brown gas or yellow liquid, melting point = -9.3°C and boiling point = 21°C. Noncombustible. Highly toxic; inhalation may be fatal. Can react with reducing materials. Tolerance = 5 ppm in air. (10-616) Upon inhalation NO_2 affects the essential pulmonary tissues; hemorrhaging in the lungs is common. The only external sign of poisoning is shortness of breath. Pneumonia can develop as a secondary hazard (13-203). Noncombustible but extreme oxidizing agent. May cause fire in contact with clothing and other combustible materials. Lowest toxic concentration to humans by inhalation route = 64 ppm. Lethal concentration or 50% kill to rats = 67 ppm/4 H. (4-370) Lowest lethal concentration to humans by inhalation = 200 ppm/1 M. Lowest toxic concentration to man by inhalation = 90 ppm/40 M. OSHA standard for air = 5 ppm time weighted average. NIOSH recommends 1 ppm ceiling. Reported in EPA TSCA Inventory (July 1979). (2-149) ACGIH lists a threshold limit value of 3 ppm for 8 h average exposure and 5 ppm for a short-term exposure limit (15 min). (8-305) Emergency exposure limits (ppm as NO_2): 5 min = 35 ppm; 15 min = 25 ppm; 30 min = 20 ppm; 60 min = 10 ppm. Exposure for 60 min to 100 ppm, or briefly to 250 ppm, could cause death hours later. (7-Nitrogen dioxide)
11. Perchloroethylene, ClC_3:CCl_2 (tetrachloroethylene, ethylene tetrachloride, carbon dichloride, perk) RTECS NO. KX3850000	Colorless liquid with ether-like odor. Miscible with alcohol, ether, and oils in all proportion. Insoluble in water. Nonflammable. Moderately toxic. Irritant to eyes and skin. Tolerance = 100 ppm in air. (10-660) Vapor may decompose at high temperature such as open flame, red-heated

TABLE 2.2.2-6 (SHEET 5 OF 8)

Hazardous Substance/ Applicable Facility	Toxicological Data
CAS No. 127-18-4 Applicable facility: SRP	materials, with evolution of poisonous gases such as chlorine, carbon monoxide, and phosgene. (4-507) Chloroform-like odor. Moderately toxic via inhalation, oral, subcutaneous, intraperitongal, and dermal routes. Highly toxic via intravenous route. Not corrosive or dangerously reactive but toxic by inhalation, by prolonged or repeated contact with the skin or mucous membranes, or when ingested by mouth. The liquid can cause injuries to the eyes; however, with proper precautions it can be handled safely. The symptoms of acute intoxication from this material are the result of its effects upon the nervous system. (2-892) Lowest toxic concentration for man/human via inhalation route = 96 ppm/7 H, 280 ppm/2 H, 500 ppm/10 M. Lowest lethal concentration for rat by inhalation = 4000 ppm/4 H. Lowest lethal dose for cat and dog by oral route = 4000 mg/kg. Aquatic toxicity rating: TLm 96: 100-10 ppm OSHA standard for air = 100 ppm 8-h time weighted standard of 50 ppm in air and a ceiling of 100 ppm for 15 min. The NCI carcinogenesis bioessay completed with positive results in mouse. Reported in EPA TSCA Inventory (July 1979). (1-669) Odor threshold as low as 5 ppm for some individuals. Potential to produce carcinogenic, mutagenic, or teratogenic effects has not been determined conclusively. NCI is currently conducting a study of the carcinogenic potential. (8-325)
12. Phosphoric acid, H_3PO_4 RTECS NO. TB6300000 CAS No. 7664-38-2 Applicable facility: SRP (HWP)	Colorless, odorless, sparkling liquid or transparent crystalline solid, depending on concentration and temperature. Toxic by ingestion and inhalation. Irritant to skin and eyes. (10-679) Moderately toxic via oral and dermal routes. Used as a general purpose food additive. (3-910) Lethal toxic concentration to humans by inhalation route = 100 mg/m^3. ACGIH TLV for air = 1 mg/m^3 time weighted average. Reported in EPA TSCA Inventory (July 1979). (2-274)
13. Potassium permangate, $KMNO_4$ (permanganic acid, potassium salt) RTECS NO. SD6475000	Dark purple crystal; blue metallic sheen; sweetish, astringent taste; odorless, soluble in water, acetone and methanol; decomposed by alcohol. Oxidizing material. Toxic by ingestion and inhalation; strong irritant to tissue. Dangerous fire

TABLE 2.2.2-6 (SHEET 6 OF 8)

Hazardous Substance/ Applicable Facility	Toxicological Data
CAS No. 7722-64-7 Applicable facility: SRP (HWP)	risk in contact with organic materials. Powerful oxidizing agent. (10-716) May explode in contact with organic materials, especially alcohol, ether glycerin, and combustible gases or with sulfuric acid. Especially dangerous in contact with reducing agents. (4-436) Lowest toxic dose for women by oral route = 2400 µ/kg/D. No published OSHA, NIOSH, or ACGIH limits. Reported in EPA TSCA Inventory (July 1979). Aquatic toxicity rating TLm 96:100-1 ppm. (2-212)
14. Silicone Applicable facility: SRP (HWP)	Silicone is any one of a large group of siloxane polymers based on a structure consisting of alternate silicon and oxygen atoms with various organic radicals attached to the silicon. Silicons are liquids, semisolids, or solids depending on molecular weight and degree of polymerization. Unhalogenated types are combustible and nontoxic. (10-774)
15. Silver nitrate, $AgNO_3$ (lunar caustic, silver nitrate) RTECS NO. VW4725000 CAS No. 7761-88-8 Applicable facility: SRP	Colorless, odorless, sheet-like crystals with a metallic taste. Soluble in water. Has strong oxidizing nature. Its dust irritates skin and respiratory organs and acutely attacks. Orally causes stomachache, diarrhea, dizziness, and convulsion. (4-465) Highly toxic and strong irritant to skin and tissue. (10-777) Lowest lethal dose to man (route unknown) = 29 mg/kg. Lowest lethal dose to dogs by oral route = 20 mg/kg. OSHA standard in air = 10 $\mu g(Ag)/m^3$ time weighted average. Reported in EPA TSCA inventory (July 1979). (2-526)
16. Sodium hydroxide, NaOH (caustic soda, soda lye, lye and sodium hydrate) RTECS NO. WB4900000 CAS No. 1310-73-2 Applicable facility: BNFP, SRP	White sodium deliquescent flakes, lumps, or sticks. Absorbs water and carbon dioxide from air. Soluble in water and alcohol. Very corrosive to animal and vegetable tissue. Contact with moisture may generate sufficient heat to ignite combustible materials. Contact with some metals can generate hydrogen gas. Lowest lethal dose to rabbit by oral route = 500 mg/kg. (4-481) Threshold limit value--air = 2 mg/m^3 (ceiling). OSHA standard--air time rated average = 2 mg/m^3. (2-531) Severe irritant to eyes, mucous membranes, and skin. (5-445)

TABLE 2.2.2-6 (SHEET 7 OF 8)

Hazardous Substance/ Applicable Facility	Toxicological Data
17. Sodium nitrate, $NaNO_3$ (sodium niter, cubic niter, natratine chile, salt-peter) RTECS NO. WC5600000 CAS No. 7631-99-4 Applicable facility: SRP	Colorless, transparent, odorless crystals; saline, slightly bitter taste; explodes at 1000°F. Soluble in water and slightly soluble in alcohol. Fire risk near organic materials. Ignites on friction and explodes when shocked. Added to meats, fish, and other food products in concentrations up to 500 ppm. USDA has proposed its elimination. (10-796) Preclude from exposure those individuals with kidney or lung diseases. (4-484) Ignition of mixture of nitrate salt and organic matter is likely to explode. (13-235) Lowest lethal dose for rats by oral route = 200 mg/kg. No OSHA standard for ACGIH TLV listed. Reported in EPA TSCA inventory (July 1979). (2-533)
18. Sulfur dioxide, So_2 RTECS NO. WS4550000 CAS No. 7446-09-5 Applicable facility: SRP (HWP)	Colorless gas or liquid with a pungent odor. Highly irritating via inhalation route to skin, eyes, and mucous membranes. (3-1001) Toxic dose: inhale human, lowest published toxic conclusion = 3 ppm/5 days. ACGIH Threshold limit value--air = 5 ppm. OSHA standard for air: TWA = 5 ppm. NIOSH criteria document recommended standard--air: 0:5 ppm. (2-569) Odor threshold = 0.5 ppm. (9-22)
19. Trisodium phosphate, $NaPO_4$:$12H_2O$ (tribasic trisodium phosphate; TSP) RTECS TC9490000 CAS No. 7601-54-9 Applicable facility: SRP (HWP)	Colorless, water soluble crystals. Nonflammable. Moderately toxic by ingestion; irritant to tissue. (10-798) Lowest lethal dose to rabbits by intravenous route = 1580 mg/kg. (2-274)

TOXICOLOGICAL DATA SOURCES

1. National Institute of Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances, Vol I, U.S. Department of Health and Human Services, 1979.

2. National Institute of Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances, Vol II, U.S. Department of Health and Human Services, 1979.

3. Sax, Irving N., Dangerous Properties of Industrial Materials, 5th edition, 1979.

TABLE 2.2.2-6 (SHEET 8 OF 8)

4. International Technical Information Institute, Toxic and Hazardous Industrial Chemicals Safety Manual, 1980.

5. Proctor, Nick, and Hughes, James, Chemical Hazards of the Workplace, 1978.

6. American Industrial Hygiene Association, Hygienic Guide Series, Vol I.

7. American Industrial Hygiene Association, Hygienic Guide Series, Vol II.

8. American Conference of Governmental Industrial Hygienists, Inc., Documentation of the Threshold Limit Values, 4th edition, 1980.

9. Arthur D. Little, Inc., Odor Thresholds for 53 Commercial Chemicals, part I, research report for the Manufacturing Chemists Association.

10. Hawley, Gessing, revision of The Condensed Chemical Dictionary, 9th edition, Van Nostrand Reinhold Company, 1977.

11. Baker, William, and Mossman, Allen, Matheson Gas Data Book, 5th edition, 1971.

12. U.S. Department of Labor, "General Industry-OSHA Safety and Health Standards (29 CFR 1910)," Publication No. OSHA 2206.

13. Meyer, Eugene, Chemistry of Hazardous Materials, Prentice-Hall, 1977.

TABLE 2.2.2-7 (SHEET 1 OF 2)

BURKE COUNTY, GEORGIA
TRANSPORTATION ACCIDENT DATA,
WITHIN 5 MILES OF THE SITE[a]

	1979	1978	1977	1976	1975
SR 80, ML 25.00 - 32.27					
Accidents	2	1	0	0	0
Disabling injuries	1	0	0	0	0
Fatalities	0	0	0	0	0
Property damage	$1300	$100	0	0	0
Vehicle					
Auto	1	1	0	0	0
Truck	0	0	0	0	0
Other	3	0	0	0	0
SR 23, ML 11.08 - 24.13					
Accidents	8	7	9	6	3
Disabling injuries	7	6	2	1	2
Fatalities	0	1	0	0	1
Property damage	$13,000	$13,100	$7100	$6700	$11,200
Vehicle					
Auto	12	9	13	9	4
Truck	0	0	0	0	0
Other	4	3	0	0	0
SR 56C, ML 5.69 - 6.69					
Accidents	0	0	0	1	0
Disabling injuries	0	0	0	0	0
Fatalities	0	0	0	0	0
Property damage	0	0	0	$300	0

TABLE 2.2.2-7 (SHEET 2 OF 2)

	1979	1978	1977	1976	1975
Vehicle					
Auto	0	0	0	1	0
Truck	0	0	0	0	0
Other	0	0	0	0	0

a. No accident data pertaining specifically to hazardous materials is available.

Source: Georgia Department of Transportation.

TABLE 2.2.2-8

HAZARDOUS RAIL CARGO TRAFFIC ESTIMATES

Cargo Type	Annual Shipments (10^3 tons)	Average Shipment Size (10^3 tons)	Maximum Shipment Size (10^3 tons)
Compressed Gases			
Anhydrous ammonia	90-108	0.72	1.08
Argon	0.0	0.0	0.0
Carbon dioxide	18	0.08	0.16
Chlorine	0.0	0.0	0.0
Helium	0.15	0.03	0.03
Nitrogen	144-162	1.35	2.70
Flammable Liquids			
Gasoline	0.0	0.0	0.0
Diesel oil	0.0	0.0	0.0
Jet fuel	0.0	0.0	0.0
Hydrogen	0.0	0.0	0.0
Flammable Gases			
Propane (liquid) and butane	0.0	0.0	0.0
Liquid nitrogen	0.0	0.0	0.0
Hydrogen	0.0	0.0	0.0
Acetylene	0.0	0.0	0.0
Explosives and Ammunition			
Class A	0.0	0.0	0.0
Class B	0.0	0.0	0.0
Cleaning Products	2.1-2.8	0.07	0.21
Corrosives	0.0	0.0	0.0
Poisons and Pesticides	0.0	0.0	0.0
Solvents	0.0	0.0	0.0
Other Toxic Chemicals	0.0	0.0	0.0

TABLE 2.2.2-9

HAZARDOUS CARGO RAIL ACCIDENT DATA

	1980	1979	1978	1977	1976	1975
Accidents	0.0	0.0	0.0	0.0	0.0	0.0
Hazardous chemical(s) involved	None					Not Applicable
Accident Category						
Collision						
Explosion						
Fire	None					Not Applicable
Flammable vapor cloud release						
Toxic chemical release (gaseous)						
Liquid spill						
Severity						
Disabling injuries						
Fatalities	None					Not Applicable
Property damage						

TABLE 2.2.2-10

DESCRIPTION OF PRODUCTS AND MATERIALS:
BARNWELL NUCLEAR FUEL PLANT
ALLIED-GENERAL NUCLEAR SERVICES

Products or Materials	Status	Annual Amounts	Maximum Quantity at Any Time	Mode of Transport	Frequency of Shipment
Fuel oil	Used	50,000 gal	-	Highway	45/year
Liquid N	Used	50,000 ft^3	-	Highway	1/year
HNO_3	Stored Used	- 35,000 gal	4000/gal -	- Highway	- 1/year
NaOH	Stored Used	- 4000 gal	4000/gal -	- Highway	- 1/year
Natural U	Stored	-	150 MTU	-	-
60CO	Stored	-	200 Ci	-	-
Low level radwaste	Transported offsite	6500 ft^3	-	Highway	30/year
Transported U waste	Transported offsite	100/ft^3	-	Highway	1/year

Source: George T. Stribling, vice president, Marketing and Regulatory Affairs, Allied-General Nuclear Services, Barnwell, South Carolina.

TABLE 2.2.2-11

DESCRIPTION OF PRODUCTS AND MATERIALS:
CHEM-NUCLEAR SYSTEMS, INC.

Products or Materials	Status	Annual Amounts	Maximum Quantity at Any Time	Mode of Transport	Frequency of Shipment
Isotopes	Stored	1-2 million ft^3	1000 ft^3	Truck, tractor, trailers	5500-6000 shipments/ year; average loads 600 - 1000 ft^3
Cobalt-60 (by far largest quantity)					
Cesium-137					
Chromium-51					
Cobalt-58					
Cesium-134					
Zinc-65					
Zirconium-95					
Cerium-141					
Praseodymium-143					
Strontium-89					
Barium-140					
Manganese-54					
Ruthenium-103					
Rhodium-103m					
Iodine-131					
Iron-59					
Iron-55					
Cerium-144					
Hydrogen-3					

Source: David Ebenhack, manager, Chem-Nuclear Systems, Barnwell Nuclear Systems.

TABLE 2.2.2-12

TERMINAL AREA FORECAST
FISCAL YEARS 1980-1990 TOTAL FLIGHTS

Year	Flights
1981	97,000
1982	100,000
1983	103,000
1984	106,000
1985	107,000
1986	109,000
1987	111,000
1988	113,000
1989	114,000
1990	115,000

Source: Federal Aviation Administration, Terminal Area Forecast Fiscal Year 1980-Fiscal Year 1990, Department of Transportation.

Table 2.2.3-1 through Table 2.2.3-5

DELETED

TABLE 2.2.3-6 (SHEET 1 OF 2)

CHEMICALS TRANSPORTED ALONG MAJOR TRANSPORTATION ROUTES WITHIN 5 MILES OF VEGP - QUANTITIES AND DISTANCES

Chemical	Mode of Transport	Physical Conditions	Maximum Shipment Size	Minimum Distance from Control Room Air Intake
Chlorine	Truck	Liquefied, compressed gas; ambient conditions	1 ton cylinders	7600 m
Anhydrous ammonia	Truck	Liquefied, compressed gas; 28°F and 250 psi	6 tons	7600 m
Nitrogen (liquid)	Truck	Liquefied compressed gas	6500 gal	7600 m
Phosphoric acid	Truck	Liquid, pure state, ambient conditions	200 lb stainless steel drums	7600 m
Nitric acid	Truck	Liquid, pure state, ambient conditions	5000 gal	7600 m
No. 2 diesel fuel oil	Truck	Liquid, ambient conditions	6000 gal	7600 m
Anhydrous ammonia	Rail	Liquefied compressed gas; 28°F and 80 psi	26 tons	7250 m
Sulfuric Acid	Rail	Liquid, pure state at ambient conditions	13,400 gal	7250 m
Carbon dioxide	Rail	Liquefied compressed gas; 0°C and 300 psi	20 tons	7250 m

TABLE 2.2.3-6 (SHEET 2 OF 2)

Chemical	Mode of Transport	Physical Conditions	Maximum Shipment Size	Minimum Distance from Control Room Air Intake
Helium	Rail	Liquefied compressed gas; ambient temp, 2200 psi	200,000 ft^3	7250 m
Nitrogen (liquid)	Rail	Liquefied compressed gas	14,000 gal	7250 m
No. 2 diesel fuel oil	Barge	Liquid, ambient conditions	5,620,000 lb	1050 m
Gasoline	Barge	Liquid, ambient conditions	5,620,000 lb	1050 m

Table 2.2.3-7 through Table 2.2.3-10

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TABLE 2.2.3-11 (Sheet 1 of 2)

VOLUME CONCENTRATIONS OF FUEL-AIR MIXTURES
VERSUS FLAMMABILITY LIMIT
(TRANSPORTATION SOURCES)

Substance	Mode of Transport	Fuel-Air Concentration percent[a] Lower	Median	Upper	Lower Flammability Limit Percent[b]
Gasoline	River	0.24	0.13	0.12	1.4
Fuel oil	River	4.08×10^{-4}	2.23×10^{-4}	1.94×10^{-4}	1.3
Ammonia	Rail		[c]		15.5
Ammonia	Highway		[d]		15.5
Fuel oil	Highway	4.64×10^{-4}	2.57×10^{-4}	2.22×10^{-4}	1.3

a. Lower, median, and upper correspond to windspeeds of 0.25, 5.0, and 10.0 m/sec, respectively.

b. All values are from reference 10.

c. The ammonia-air concentration is within the flammability range at distances between 6431 and 6758 meters from the nearest safety-related structure. The critical distance (given by $kW^{1/3}$ in Regulatory Guide 1.91), which could cause overpressures to safety-related structures, is 686 meters. Therefore, even though an explosion due to an ammonia release from a railroad tank car could occur, it would occur at a distance great enough not to pose an overpressure hazard to VEGP safety-related structures.

d. The ammonia release on the highway is bounded by the ammonia release on the railway due to the larger quantity transported by rail and the shorter distance between the railway and the plant site.

TABLE 2.2.3-11 (SHEET 2 OF 2)

(SOURCES STORED OFFSITE)

Substance	Mode of Transport	Fuel-Air Concentration percent[(a)] Lower	Median	Upper	Lower Flammability Limit Percent[(b)]
Ammonia	SRP		[(c)]		15.5
Fuel oil	SRP	4.07×10^{-4}	2.24×10^{-4}	1.94×10^{-4}	1.3
Fuel oil	Plant Wilson	4.16×10^{-4}	2.29×10^{-4}	1.99×10^{-4}	1.3
Misc oils	Plant Wilson	1.83×10^{-4}	2.83×10^{-4}	2.46×10^{-4}	1.3[(d)]

a. Lower, median, and upper correspond to windspeeds of 0.25, 5.0, and 10.0 m/sec, respectively.

b. All values are from reference 10.

c. The ammonia-air concentration is within the flammability range at distances between 4652 and 4791 meters from the nearest safety-related structure. The critical distance (given by $kW^{1/3}$ in Regulatory Guide 1.91), which could cause overpressures to safety-related structures, is 292 meters. Therefore, even though an explosion due to an ammonia release from SRP could occur, it would occur at a distance great enough not to pose an overpressure hazard to VEGP safety-related structures.

d. Lower limit of flammability is assumed to be the same as that for fuel oil.

TABLE 2.2.3-12 (SHEET 1 OF 2)

REGULATORY GUIDE 1.91 ALLOWABLE DISTANCE AND ACTUAL
DISTANCE OF HAZARDOUS CHEMICALS (TRANSPORTED)

Substance	Mode of Transport	Actual Distance (m)	Allowable Distance (m)	Total Mass (lb)	Lower and Upper Flammable Limit (Percent)[a]	Comments
Gasoline	River	1050	N/A	5.62×10^6	1.4 - 7.4	No more consideration[b]
Fuel oil	River	1050	N/A	5.62×10^6	1.3 - 6.0	No more consideration[c]
Ammonia consideration	Rail	7250	686	5.2×10^4	15.5 - 27.0	No more consideration
Ammonia consideration	Highway	7600	420	1.2×10^4	15.5 - 27.0	No more consideration
Fuel oil consideration	Highway	7600	N/A	4.21×10^4	1.3 - 6.0	No more consideration[c]

a. All values are from reference 10.

b. The concentration of flammable material in the tank vapor space is approximately 47 percent, which is well above the upper limit of flammability. Accordingly, an explosion of the gasoline barge on the Savannah River is not considered a credible event. This conclusion is consistent with the National Fire Protection Association,[57] which states that the concentration of vapor in the vapor space of tanks storing high vapor pressure liquids, such as gasoline, is normally too rich to burn.

c. The concentration of flammable material in the tank vapor space is approximately 0.17 percent, which is below the lower limit of flammability. Accordingly, an explosion of these diesel fuel oil tanks is not considered a credible event. This conclusion is consistent with the National Fire Protection Association,[57] which states that the concentration of vapor in the vapor space of tanks storing low vapor pressure liquids, such as kerosene (which is similar to diesel fuel oil), is normally too lean to burn.

TABLE 2.2.3-12 (SHEET 2 OF 2)

REGULATORY GUIDE 1.91 ALLOWABLE DISTANCE AND ACTUAL DISTANCE OF HAZARDOUS CHEMICALS (STORED)

Substance	Mode of Transport	Actual Distance (m)	Allowable Distance (m)	Total Mass (lb)	Lower and Upper Flammable Limit (Percent)[a]	Comments
Ammonia	SRP	>5000	292	4000	15.5 - 27.0	No more consideration
Fuel oil	SRP	>5000	N/A	1.58×10^5	1.3 - 6.0	No more consideration[b]
Fuel oil	Plant Wilson	1350	N/A	2.11×10^7	1.3 - 6.0	No more consideration[b]
Misc oils	Plant Wilson	1350	454	1.51×10^4	1.3 - 6.0	No more consideration

a. All values are from reference 10.

b. The concentration of flammable material in the tank vapor space is approximately 0.17 percent, which is below the lower limit of flammability. Accordingly, an explosion of these diesel fuel oil tanks is not considered a credible event. This conclusion is consistent with the National Fire Protection Association,[57] which states that the concentration of vapor in the vapor space of tanks storing low vapor pressure liquids, such as kerosene (which is similar to diesel fuel oil), is normally too lean to burn.

c. Flammability limits are assumed to be the same as those for fuel oil.

TABLE 2.2.3-13 (SHEET 1 OF 2)

TRANSPORTATION SOURCES - TOXIC GAS RELEASE INFORMATION

Chemical	Toxicity[a] Limit (ppm)	8-h Average[b] Concentration (ppm)	Release[c] Type	Maximum[b,d] Release Rate (gm/s)	Fraction Flashed to Vapor	Vapor[e] Pressure (mm Hg))	Odor[f] Detection (ppm)	Control Room Concentration 2-min After Detection (ppm)[b]
Truck								
Anhydrous ammonia	500	N/A	L	4.996×10^{3}	0.18	N/A	50	69
Nitrogen (liquid)	143,000	0.0	L	N/A	1.0	N/A	N/A	N/A
Phosphoric acid	0.25	3.8×10^{-5}	N	5.0×10^{-3}	N/A	0.0285	N/A	N/A
Nitric acid	2.0	2.85[i]	N	1.601×10^{2}	N/A	10	N/A	N/A
No. 2 fuel oil	300	0.026	N	1.41×10^{1}	N/A	0.408	N/A	N/A
Chlorine	15[g]	N/A	L	N/A[j]	N/A[j]	N/A	N/A[j]	N/A[j]
Rail								
Anhydrous ammonia	500	N/A	L	1.592×10^{4}	0.18	N/A	50	112
Carbon dioxide	5000	41	L	1.187×10^{5}	0.17	N/A	N/A	N/A
Helium	143,000	35	G	N/A	1.0	N/A	N/A	N/A
Nitrogen (liquid)	143,000	0.0	L	N/A	1.0	N/A	N/A	N/A
Sulfuric acid	0.25	0.0037	N	2.6×10^{1}	N/A	0.005	N/A	N/A
Barge								
No. 2 fuel oil	300	44.6	N	3.76×10^{2}	N/A	0.408	N/A	N/A
Gasoline	500[h]	N/A	N	5.22×10^{4}	N/A	403	10	196

TABLE 2.2.3-13 (SHEET 2 OF 2)

a. The 2-min toxicity limit is presented for chlorine, ammonia and gasoline only. The long term (8-h average continuous exposure) toxicity limit is presented for all other materials. All values are from reference 43.

b. At worst case windspeed.

c. N = normal boiling point liquid (boiling point > ambient temperature). Continuous release scenario. L = low boiling point liquid or liquefied compressed gas (boiling point < ambient temperature). Puff release plus continuous release scenario. G = compressed gas release. Puff release scenario.

d. Continuous release rate for normal boiling point liquids. Boiloff rate for low boiling point.

e. Vapor pressure not used in analysis of low boiling point liquids or compressed gases.

f. The odor detection limit is only presented for ammonia and gasoline since the analysis considers control room concentrations 2 min after odor detection.

g. From U.S. NRC Regulatory Guide 1.78, June 1974.

h. The value for fuel oil is used since toxicity limits for gasoline have not been established.

i. The long term toxicity limit is based on continuous exposure for a 40-h work week and results in eye irritation and teeth erosion. An 8-h exposure at levels slightly above this limit will not incapacitate control room operators. Additionally, the 2-min toxicity limit value is never exceeded for nitric acid releases. Furthermore, nitric acid decomposes to nitric oxide and nitrogen dioxide in the presence of air.[44] If all the nitric acid is assumed to be converted to (the more toxic) nitrogen dioxide, the long term 8-h toxicity limit value is never exceeded. Therefore, even though nitric acid exceeds the long term toxicity limit, it will not incapacitate control room operators.

j. The transportation source of chlorine is located greater than 7600 m from the control room air intake. Based on the screening criteria contained in NRC Regulatory Guide 1.78, June 1974, a 1-ton cylinder (largest single container transported) at this distance need not be considered in evaluating control room habitability.

TABLE 2.2.3-14

CHEMICALS ANALYZED THAT ARE AT OFFSITE
STORAGE FACILITIES - QUANTITIES AND DISTANCES

Chemical	Physical Conditions	Maximum Quantity Stored	Distance from Control Room Air Intake
Chlorine at Savannah River Plant (SRP)	Liquefied, compressed gas; ambient conditions	10 1-ton cylinders	>5000 m
Anhydrous ammonia at SRP	Liquefied, compressed gas; ambient conditions	2 tons	>5000 m
Phosphoric acid at SRP	Liquid, pure state; ambient conditions	460 lb	>5000 m
Sulfuric acid at SRP	Liquid, pure state; ambient conditions	270 tons	>5000 m
No. 2 diesel fuel oil at SRP	Liquid, ambient conditions	22,500 gal	>5000 m
No. 2 diesel fuel oil at combustion turbine plant	Liquid, ambient conditions	3,000,000 gal	1350 m

TABLE 2.2.3-15

OFFSITE SOURCES - TOXIC GAS RELEASE INFORMATION

Chemical	Toxicity[a] Limit (ppm)	8-h Average[b] Concentration (ppm)	Release[c] Type	Maximum[b,d] Release Rate (gm/s)	Fraction Flashed to Vapor	Vapor[e] Pressure (mm Hg)	Odor[f] Detection (ppm)	Control Room Concentration 2-min After Detection (ppm)[b]
At Savannah River Plant								
Chlorine	15[g]	N/A	L	N/A[i]	N/A[i]	N/A	N/A[i]	N/A[i]
Anhydrous ammonia	500	N/A	L	2.154×10^{3}	0.18	N/A	50	70
Phosphoric acid	0.25	6.9×10^{-5}	N	3.5×10^{-3}	N/A	0.0285	N/A	N/A
Sulfuric acid	0.25	0.015	N	3.6×10^{-1}	N/A	0.005	N/A	N/A
Diesel fuel oil	300[h]	0.8	N	4.75×10^{1}	N/A	0.408	N/A	N/A
At combustion turbine plant								
Diesel fuel oil	300[h]	4.1	N	1.56×10^{1}	N/A	0.408	N/A	N/A

a. The two-min toxicity limit is presented for chlorine and ammonia only. The long term (8-h average continuous exposure) toxicity limit is presented for all other materials. All values are from reference 43.

b. At worst case windspeed.

c. N = normal boiling point liquid (boiling point > ambient temperature). Continuous release scenario. L = low boiling point liquid or liquefied compressed gas (boiling point < ambient temperature). Puff release plus continuous release scenario. G = compressed gas release. Puff release scenario.

d. Continuous release rate for normal boiling point liquids. Boiloff rate for low boiling point.

e. Vapor pressure not used in analysis of low boiling point liquids or compressed gases.

f. The odor detection limit is only presented for ammonia since the analysis considers control room concentrations 2 min after odor detection.

g. From U.S. NRC Regulatory Guide 1.78, June 1974.

h. The value for gasoline is used since toxicity limits for fuel oil have not been established.

i. The chlorine source at SRP is located greater than 5000 m from the control room air intake. Based on the screening criteria contained in NRC Regulatory Guide 1.78, June 1974, a 1-ton cylinder (largest single container at SRP) at this distance need not be considered in evaluating control room habitability.

TABLE 2.2.3-16

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TABLE 2.2.3-17

OILS AND SOLVENTS STORED AT THE COMBUSTION TURBINE PLANT

Substance[a]	Quantity (gal)
Fuel oil No. 2	9,000,000 (three 3,000,000-gal tanks)
Gulfcrest 32	700
Gulf diesel Motive 485	700
Gulf Harmony 115	200
Gulf HD SAE 10W	100
Gulf Senate 110	100
Shell 20W Oil	100
Gulf Senate 3200	50
Momar Electraclean	200

a. Brand name or equivalent.

TABLE 2.2.3-18 (SHEET 1 OF 6)

ONSITE CHEMICAL STORAGE

Chemical	State	Quantity	Distance (ft)	Notes
Benzoyl peroxide (catalyst)	40% aqueous solution, ambient conditions	One 6-gal tank	660	(e)
		One 55-gal drum	660	(e)
Carbon dioxide	Liquefied gas, 300 psi, 0°F	One 10-ton tank	310	(a)
	Liquefied gas, 100 psi, ambient temperature	Twelve 150-lb cylinders	160	(b)
Dimethyl-p-toludine (promoter)	Liquid, ambient conditions	One 5-gal tank	660	(c)
		One 55-gal drum	660	(c)
Fuel Oil No. 2	Liquid, ambient conditions	Four 80,000-gal tanks	350	(f)
		Four 1250-gal tanks	310	(b)
		Two 560-gal tanks	720	(b)
		One 100,000-gal tanks	375	(a)
		One 1500-gal tank	1020	(f)
		One 550-gal tank	2818	(b)

TABLE 2.2.3-18 (SHEET 2 OF 6)

Chemical	State	Quantity	Distance (ft)	Notes
Gasoline	Liquid, ambient conditions	Two 12,000-gal tanks	2675	Unleaded gas(f)
		Two 12,000-gal tanks	2675	Diesel(f)
		One 6000-gal tank	1200	Unleaded gasoline(a)
		One 3000-gal tank	1200	Diesel fuel(b)
Kerosene	Liquid, ambient conditions	One 5000-gal tank	2675	(f)
Halon 1301	Liquefied compressed gas	Two 550-lb capacity cylinders with 376 lb of Halon 1301	Inside control room	These are the largest of the various halon tanks inside the control bldg.(a)
Hydraulic fluid (phosphate esters)	Liquid, ambient conditions	Four 800-gal tanks	240	(c)
		Twelve 20-gal accumulators	240	(c)
Hydrazine	35% aqueous solution ambient conditions	One 6644-gal tank	400	(a)
		Four 250-gal tanks	195	(b)
		Four 800-in.^{3} cylinders	195	(b)
		Four 50-gal tank	>490	(b)

TABLE 2.2.3-18 (SHEET 3 OF 6)

Chemical	State	Quantity	Distance (ft)	Notes
Hydrogen	Compressed gas	130,000-ft^3	930	(a)
	Compressed gas	Twelve 50-lb cylinders	160	(e)
	Compressed gas	8400 ft^3 (Two racks of 16 cylinders each)	850 ft	
Lube oil	Liquid, ambient conditions	Two 30,000-gal tanks	335	(c)
		Two 6400-gal reservoirs	280	(c)
		Twenty-four 55-gal drums	320	(c)
		Four 700-gal reservoirs	120	(c)
		One 300-gal tank	660	(c)
		One 4000-gal tank	2675	(c),(f)
Hydrogen peroxide	Liquid, ambient conditions	One 100-gal tank	200	(d)
Nitrogen	Compressed gas, 2200 psi, 70°F liquefied gas, 200 psi, -320°F	Three 8200-ft^3 vessels	900	(b)
		One 6000-gal tank	900	(a)
		One 2000-gal tank	700	(a)
Oxygen	Compressed gas, 2200 psi, 70°F	Four 8960-ft^3 vessels	890	(d)
Polymer (styrene)	Liquid, ambient conditions	One 6000-gal tank	680	(f)

TABLE 2.2.3-18 (SHEET 4 OF 6)

Chemical	State	Quantity	Distance (ft)	Notes
Seal oil	Liquid, ambient conditions	Two 1360-gal tanks	160	(c)
Sodium hydroxide	50% aqueous solution, ambient conditions	One 20,990-gal tank	580	(a)
		One 175-gal tank	560	(b)
		One 120-gal tank	540	(b)
		One 1130-gal tank	660	(b)
Sulfuric acid	Liquid, ambient conditions	Four 55-gal tanks	530	(b)
		Two 6600-gal tanks	570	(b)
		One 12,850-gal tank	575	(a)
		One 50-gal tank	560	(b)
		Two 200-gal tanks	1490	(b)
		One 15,175-gal tank	1560	(b)
		One 55-gal tank	540	(b)
		One 6000-gal tank	1450	(b)
Sodium polyacrylate	Liquid, ambient conditions	One 5000-gal tank	1380	(c)
		Six 55-gal drums	615	
Sodium tolyltriazole	Liquid, ambient conditions	One 2500-gal tank	1380	(c)
		Six 55-gal drums	615	

TABLE 2.2.3-18 (SHEET 5 OF 6)

Chemical	State	Quantity	Distance (ft)	Notes
Zinc Salt	Liquid, ambient conditions	One 5000-gal tank (g)	1380	(c)
Methoxypropylamine	Liquid, ambient conditions	One 12,789-gal tank Two 250-gal tanks	385 195	(a) (b)
Sodium nitrite	Liquid, ambient conditions	One to ten 55-gal drums (at each of five locations) (h)	75 400	(d)
Sodium hypochlorite	Liquid, ambient conditions	One 500-gal transport tank (i)	>3000 615	(d)
		One 250-gal tank	720	
		Three 6500-gal tanks	1380	
		One 10,000-gal tank	1450	
Trisodium phosphate	Solid, ambient conditions	Three baskets with a total of 220 ft^3 to 260 ft^3	N/A	(j)
Bromine salt (hypobromous acid is a combination of bromine salt and sodium hypochlorite)	Liquid, ambient conditions	One 6800-gal tank (maximum)	1380	(c)
Sodium or ammonium bisulfite	Liquid, ambient conditions	Two 400-gal tanks (one in use)	2025	(a)
Coagulate (polymer, RoQuest 3000)	Liquid, ambient conditions	65 gallons	850 ft	
Anti-scalent (Vitec 3000)	Liquid, ambient conditions	130 gallons	850 ft	
Hydrochloric (muriatic) acid	Liquid, ambient conditions	5 gallons	850 ft	
Propane	Liquified compressed gas			
		Three 2000-gal tanks (fire training facility)	3800 ft	

TABLE 2.2.3-18 (SHEET 6 OF 6)

Chemical	State	Quantity	Distance (ft)	Notes
NALCO 3D TRASAR® 3DT177 (10-30% w/w Phosphoric Acid)	Liquid, ambient conditions	One 6,000-gal tank	1450	(a)
NALCO 3D TRASAR® 3DT190	Liquid, ambient conditions	One 6,000-gal tank	1450	(d)
NALCO PURATE® (40% w/w Sodium Chlorate/5-10% w/w Hydrogen Peroxide)	Liquid, ambient conditions	One 10,000-gal tank	1450	(b, c, d)
NALCO 3D TRASAR® 3DT199 (30-60% w/w Sodium Benzotriazole: <1% Sodium Hydroxide)	Liquid, ambient conditions	One 6,000-gal tank	1450	(b,c)

a. Limiting case which results in maximum control room concentration and is analyzed as described in paragraph 2.2.3.1.4.3. Results of analysis are presented in table 2.2.3-20.

b. This case is not limiting. It results in lower control room concentrations.

c. Not analyzed since this material is nonvolatile.

d. Not analyzed since this material is nontoxic.

e. Not analyzed since this material is stored in quantities less than 100 lb.

f. Not analyzed since this material is stored in underground tanks and no significant spill can occur.

g. A small number of 55-gal drums may be stored near the circulating water chemical injection building for emergency use.

h. The 55-gal drums are located at ACCW, CCW, essential chilled water, normal chilled water (all located 75 feet away from the control room) and diesel generator building (400 feet away from the control room).

i. One 500-gal transport tank services the river intake and NSCW systems. The control room is approximately 3000 feet away from the river intake and approximately 615 feet away from the NSCW system.

j. The three trisodium phosphate baskets are located inside containment and isolated from the control room.

k. Deleted.

TABLE 2.2.3-19

PARAMETERS USED IN TOXIC GAS ANALYSIS

Control Room

- Net volume = 168,540 ft^3
- Normal outside air inflow rate = 3000 ft^3

TABLE 2.2.3-20 (SHEET 1 OF 2)

TOXIC GAS RELEASE INFORMATION

Chemical	Toxicity[(a)] Limit (ppm)	8-h Average[(b)] Concentration (ppm)	Release[(c)] Type	Maximum[(b,d)] Release Rate (gm/s)	Fraction Flashed to Vapor	Vapor[(e)] Pressure (mm Hg)	Odor[(f)] Detection (ppm)	Control Room Concentration 2-min After Detection (ppm)[(b)]
Ammonia (29%)	500[(10)]	N/A	N	11.627×10^{3}	N/A	474	50	275
Carbon dioxide	5000	4039	L	7.193×10^{4}	0.13	(e)	N/A	N/A
Fuel oil no. 2	300	1.3	N	4.749×10^{-1}	N/A	0.408	N/A	N/A
Halon 1301	70,000[(29)]	999	L	N/A	1.0	(e)	N/A	N/A
Hydrazine (35%)	30[(42)]	N/A	N	3.692×10^{1}	N/A	9.2	4	12.9
Hydrogen - liquid[(i)]	143,000	3201	L	1.18×10^{5}	0.0	(e)	N/A	N/A
Nitrogen - liquid	143,000	5034[(h)]	L	4.466×10^{5}	0.002	(e)	N/A	N/A
Nitrogen - gas	143,000	2772	G	N/A	1.0	(e)	N/A	N/A
Sulfuric acid	0.25	0.16	N	8.270×10^{-2}	N/A	0.005	N/A	N/A
Gasoline	500[(g)]	37.91	N	2.1×10^{1}	N/A	620	N/A	N/A
Methoxypropylamine (30%)	5[(59)]	1.5	N	10.9	N/A	20	<1	N/A
Sodium/ammonium bisulfite	5[(j)]	0.8	N	6.1	N/A	18	N/A	N/A
Hydrochloric acid (40%)	5 ppm	1.0	N	0.41	N/A	190	N/A	N/A
Propane (fire training facility)[(n)]	1000	237.6	L	N/A	N/A	(e)	N/A	N/A
NALCO 3D TRASAR® 3DT177 (10-30% w/w Phosphoric Acid)	245	157	N	250	N/A	52	N/A	N/A

a. The 2-min toxicity limit is presented for ammonia and hydrazine only. The long term (8-h average continuous exposure) toxicity limit is presented for all other materials. All values are from reference 43 unless otherwise noted.

b. At worst case windspeed.

c. N = normal boiling point liquid (boiling point > ambient temperature). Continuous release scenario. L = low boiling point liquid or liquefied compressed gas (boiling point < ambient temperature). Puff release plus continuous release scenario. G = compressed gas release. Puff release scenario.

d. Continuous release rate for normal boiling point liquids. Boiloff rate for low boiling point.

e. Vapor pressure not used in analysis of low boiling point liquids or compressed gases.

TABLE 2.2.3-20 (SHEET 2 OF 2)

f. The odor detection limit is only presented for ammonia, gasoline, hydrazine, and methoxypropylamine since the analysis considers control room concentrations 2 min after odor detection.

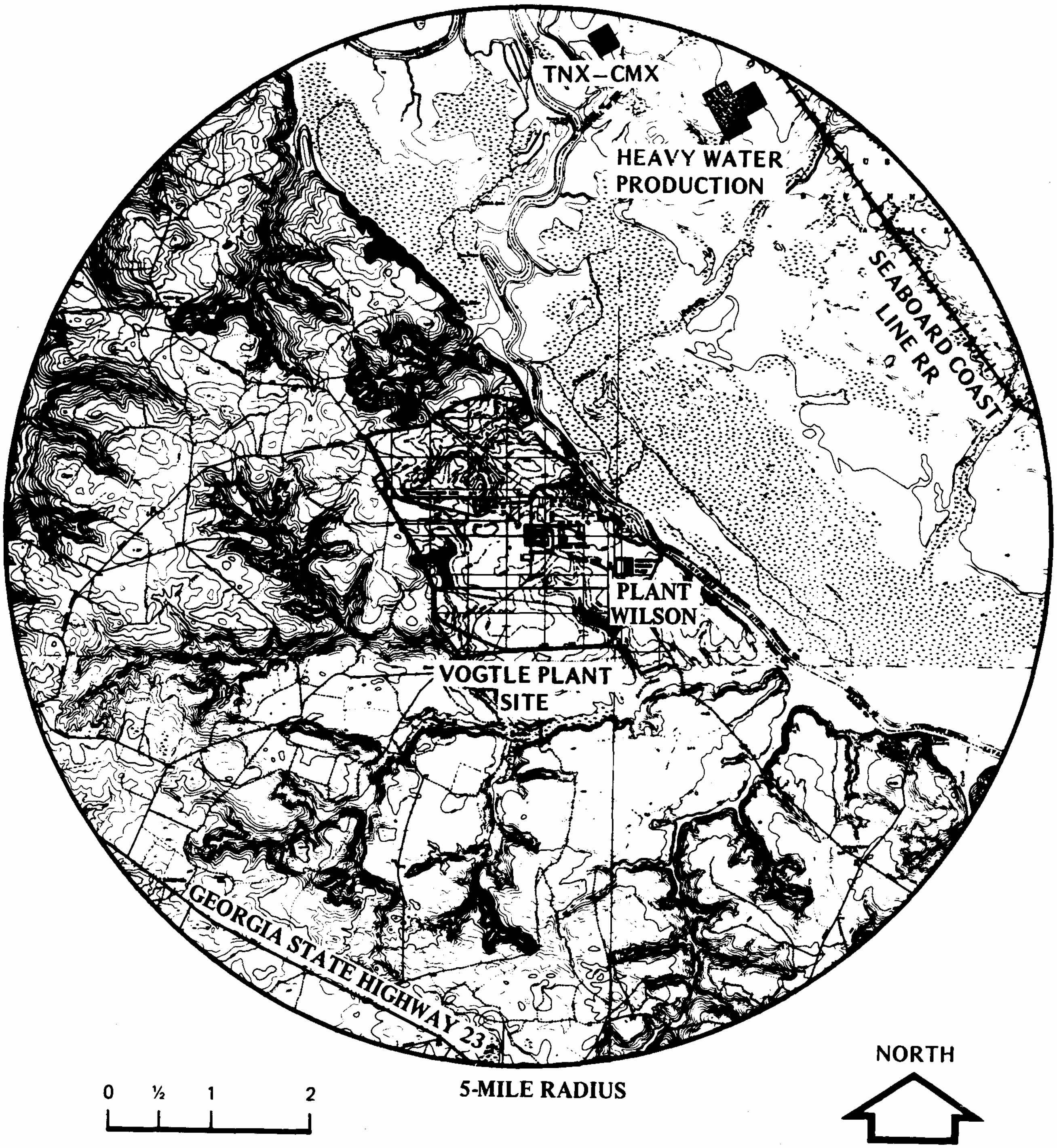
g. The value for fuel oil is used since toxicity limits for gasoline have not been established.

h. Assumes a 9000 gallon liquid tank at 274 meters.

i. The liquid hydrogen tank has been removed and the hydrogen requirements are supplied by a tube trailer. The quantity of hydrogen in the tube trailer is less than the quantity the original installed tank held; therefore, the concentration envelopes the tube trailer quantity.

j. See toxic chemicals calculation X6CHH10 for basis used to evaluate toxicity limits.

k. Values evaluated are for a single 8000-gal propane tank located 3500 ft from the control room air intake. This evaluation bounds the installed configuration of three 2000-gal propane tanks located at the fire training facility, 3800 ft from the control room air intake.



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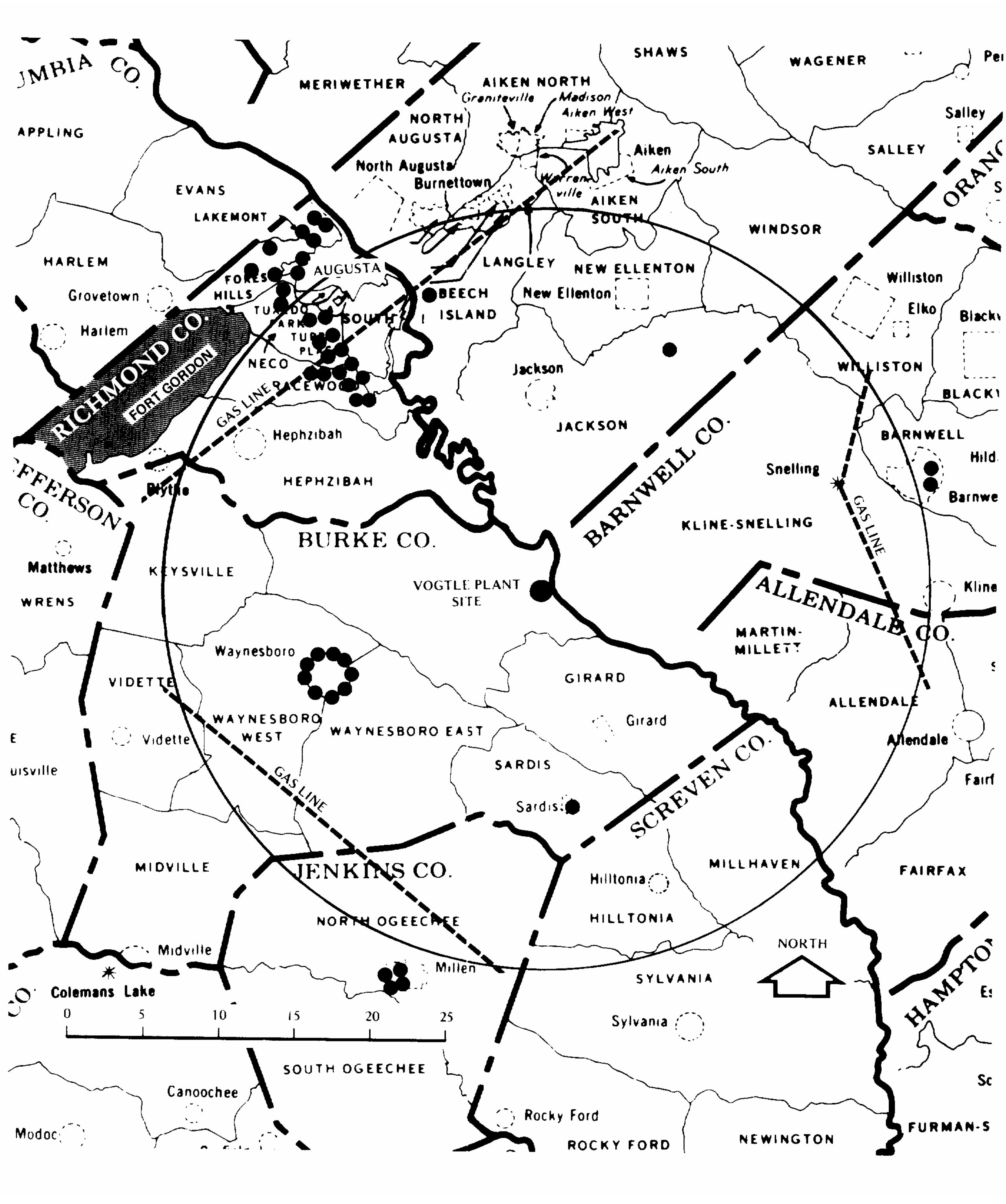
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

LOCATION OF MAJOR INDUSTRIAL FACILITIES

FIGURE 2.2.1–1



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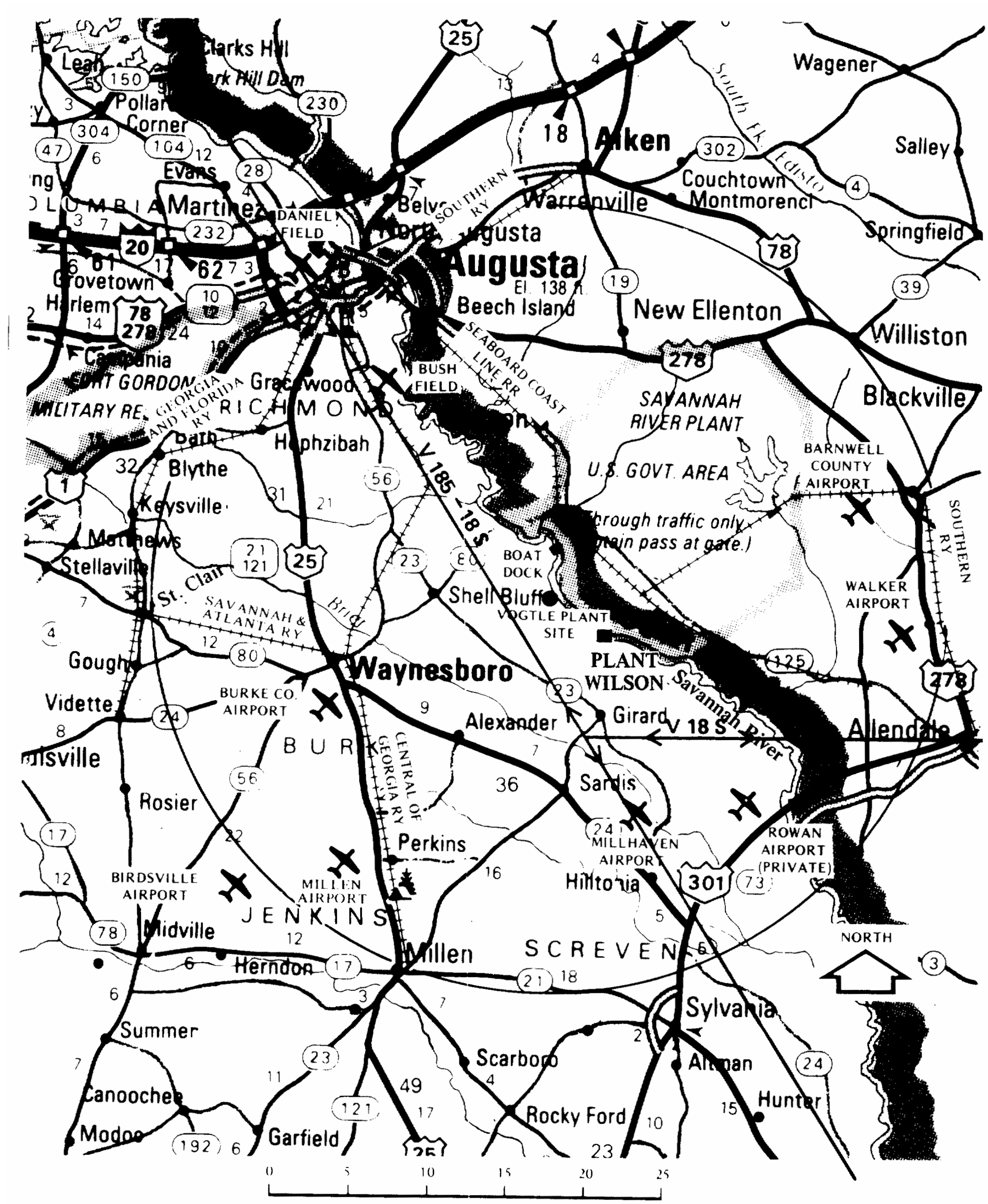
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MAJOR INDUSTRIAL FACILITIES, MILITARY BASES, AND PIPELINES WITHIN 25 MILES

FIGURE 2.2.1–2



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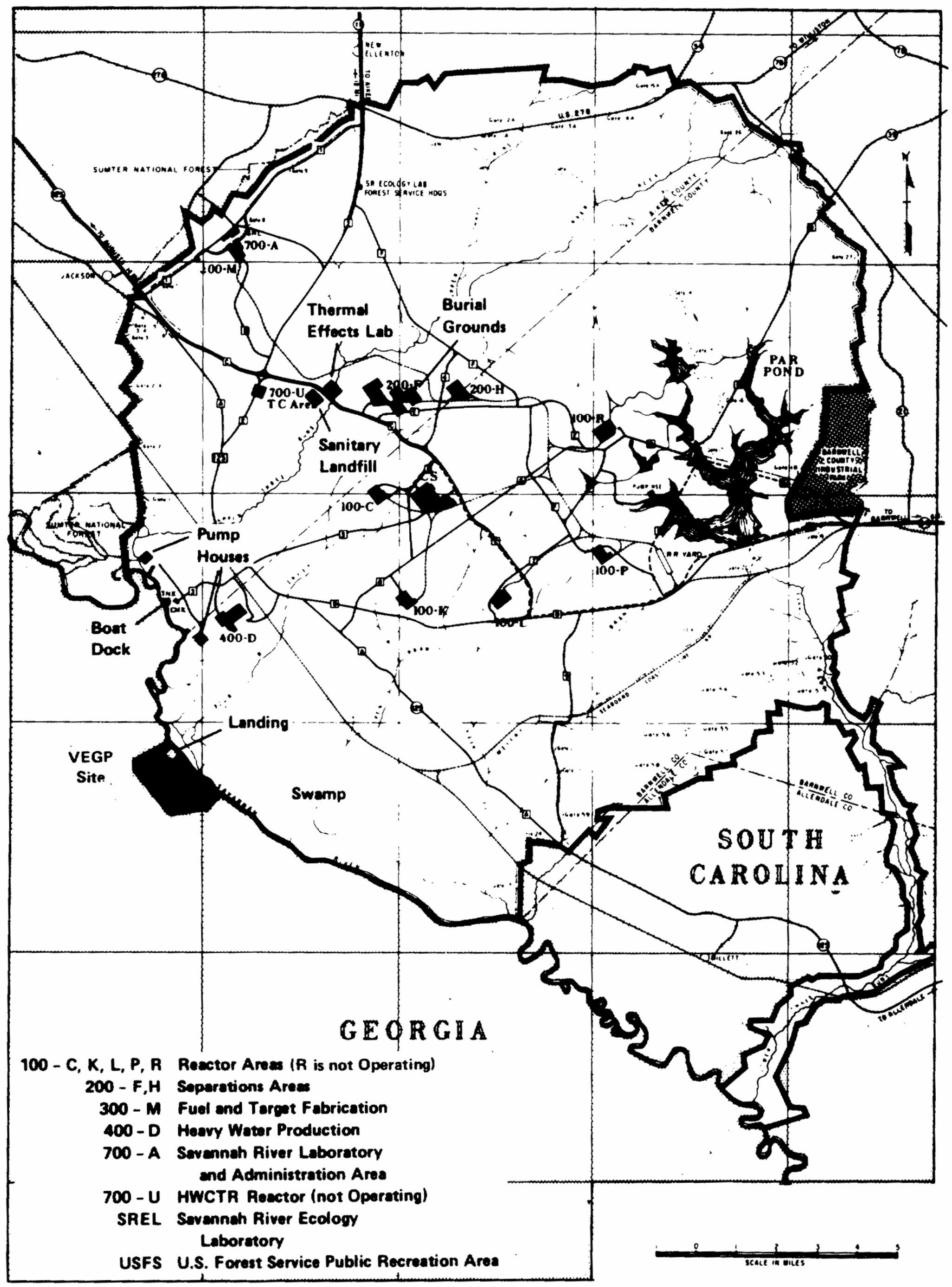
UNIT 1 AND UNIT 2

HIGHWAY TRANSPORTATION ROUTES, AIRPORTS, DOCK, AND RAILROAD FACILITIES WITHIN 25 MILES

FIGURE 2.2.1–3



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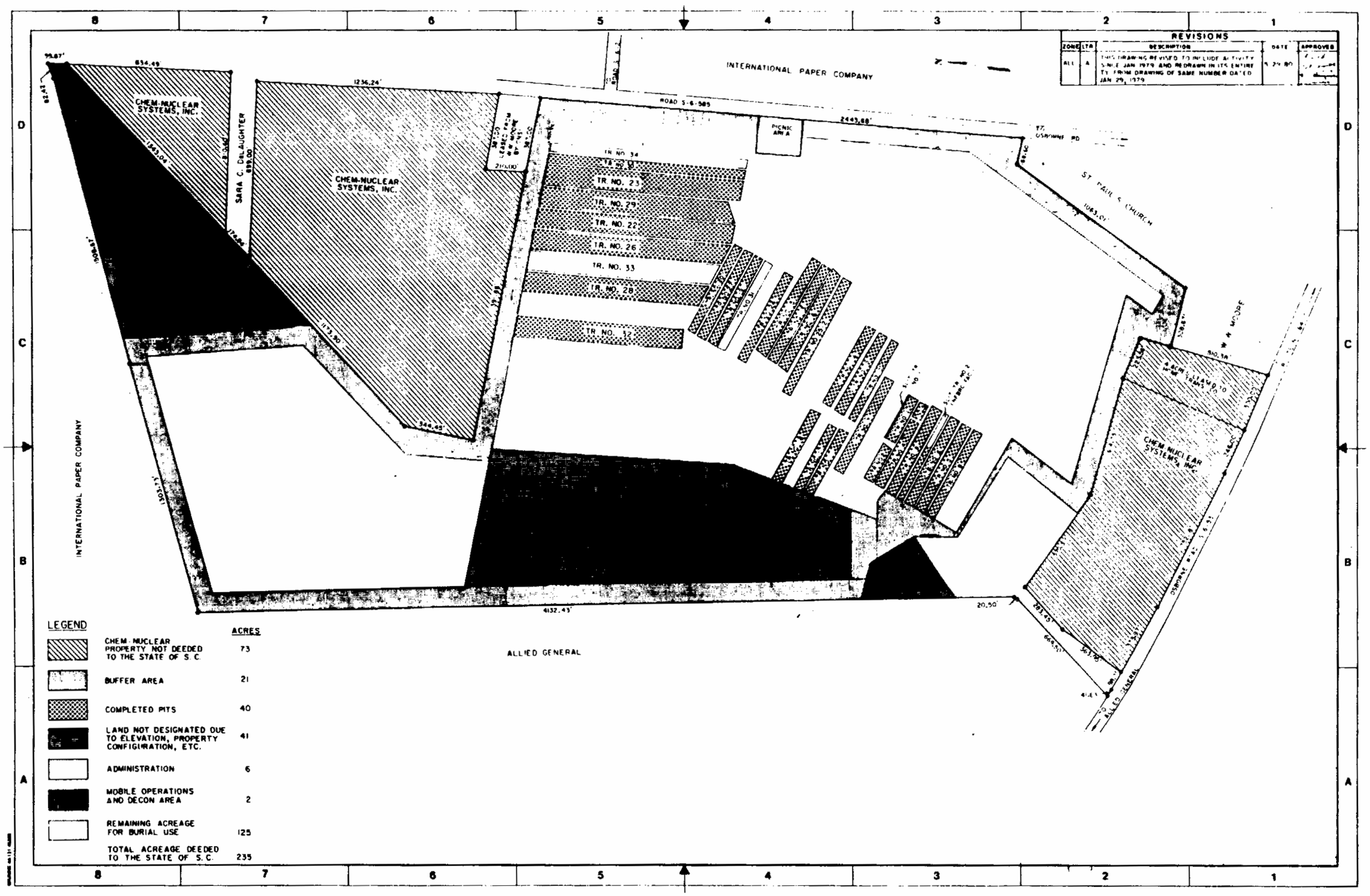
VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	SAVANNAH RIVER PLANT SITE MAP
	FIGURE 2.2.2–1



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UNIT 1 AND UNIT 2

CHEM–NUCLEAR SYSTEMS, INC.
LAND UTILIZATION PLAN

FIGURE 2.2.2–2

2.3 METEOROLOGY

2.3.1 REGIONAL CLIMATOLOGY

2.3.1.1 General Climate

The general climate in this region [NOAA, 1980(a)[1]] is characterized by mild, short winters, long periods of mild sunny weather in the autumn, somewhat more windy but mild weather in spring, and long, hot summers. Heaviest precipitation in the winter and early spring is associated with low pressure systems moving eastward and northward through the Gulf States and up the Atlantic coast, drawing in moist air from the Gulf of Mexico and the Atlantic Ocean. In summer, heaviest precipitation is due to thunderstorms.

The site is in the area known as the upper Coastal Plain, between the Appalachian Mountains and the Atlantic Ocean, generally 150 to 250 ft above sea level in this region, cut by the valley of the Savannah River, 2 to 5 miles wide near the site.

The Appalachian Mountains to the northwest shelter the region in winter from the cold air masses sweeping down through the continental interior. The cold air that does reach the area is considerably warmed by the descent to the relatively low elevations of the region, as well as by modification due to heating as it passes over the continent. Morning frost conditions are frequent in winter, but daily mean temperatures below freezing are uncommon. Warm, moist air masses from the Gulf of Mexico or the Atlantic Ocean receive little modification; therefore, the area experiences relatively high precipitation in winter and summer.

The site is far enough inland that the strong winds due to occasional tropical storms and hurricanes that affect the area are much reduced. The frequency of strong winds is discussed in paragraph 2.3.1.2.8. Heavy precipitation associated with tropical storms is fairly common in late summer, as discussed in paragraphs 2.3.1.2.1 and 2.3.1.2.5.

The site lies in a region of the United States which experiences relatively low tornado activity; however, the frequency is greater at the site than in the neighboring regions. It is not certain to what extent the relatively greater number of reports in this region (compared to the mountainous areas to the northwest) is due to topographical causes or to the variation of population density and the greater visibility of tornadoes in flatter country.

The area is subject to a relatively high incidence of stagnating anticyclones associated with high air pollution potential, especially in autumn. (See paragraph 2.3.1.2.10.)

2.3.1.2 Regional Meteorological Conditions for Design and Operating Bases (Severe Weather)

2.3.1.2.1 Heavy Precipitation

Unusually heavy precipitation in this area sustained over several hours is associated with the remnants of occasional tropical hurricanes. Although hurricane winds are much reduced in this inland area, they can cause heavy precipitation. For shorter periods, heaviest rates of precipitation are due to thunderstorms.

Maximum rainfall for return periods of 1 to 100 years for duration of 30 min to 10 days is shown in table 2.3.1-1 for the VEGP site region. Estimates for the site region were interpolated from maps [Hershfield (1973),(2) Miller (1964),(3) Frederick (1977)(4)]. For return periods greater than 20 years, frequencies shown in table 2.3.1-1 are estimated by extrapolation using the Gumbel procedure (Gumbel, 1958(5)) which is based on the Fisher-Tippet Type II distribution. Table 2.3.1-2 shows the mean monthly rainfall for Augusta Airport and the annual number of days with 0.01, 0.1, and 0.5 in. of precipitation [NOAA, 1981 (b)(6)].

2.3.1.2.2 Hail

The number of occurrences of heavy hail greater than 3/4 in. in the area is approximately 7 in 13 years, or once in 2 years, for a 1° (latitude and longitude) "square" (Pautz, 1969(7)). (See figure 2.3.1-1.) Isopleths from squares are shown in figure 2.3.1-2. Using cross-checking procedures to eliminate duplication, this figure is considered a reasonably reliable estimate of frequency of occurrence of heavy hail.

2.3.1.2.3 Snow

Snow is infrequent in the site region, and heavy snow is very rare. Loads resulting from snow and rain are discussed in paragraph 2.4.2.3. The greatest 24-h total snowfall on record was 13.7 in. in February 1973. The average annual snowfall at the Augusta Airport is about 1 in. [NOAA, 1981(b)(6)]. Figure 2.3.1-3 shows that the maximum snow load for a 100-year mean recurrence period is about 8 lb/ft^2 (ANSI, 1972(8)). The probable maximum 48-h winter precipitation is 19 in. (U.S. Weather Bureau, 1956(9)).

2.3.1.2.4 Ice Storms

Freezing rain resulting in heavy ice loading is rare in the VEGP site region. Based on a 10-year period (Bennett, 1959(10)) there were 19 days (December, 6 days; January, 10 days; February, 2 days; March, 1 day) with freezing rain in Augusta, Georgia. (See figure 2.3.1-4.) Freezing rain has been reported to last as long as 17 h (National Weather Service, 1960). The extreme radial thickness of ice on utility wires as shown in figure 2.3.1-5 is between 0.50 and 0.74 in.

2.3.1.2.5 Hurricanes

The VEGP is located approximately 100 miles inland from the Atlantic coast; so the effects from hurricanes or tropical depressions are considerably diminished. During the 84-year period from 1886 to 1969, 11 hurricanes and 26 tropical storms passed through a 2.5° (longitude and latitude) box containing the site area (Hope, NOAA SR55, 1971[(11)]). Figure 2.3.1-6 shows that in the VEGP site region the probability of at least one tropical storm or hurricane per season entering the 2.5°box is about 0.36.

2.3.1.2.6 Thunderstorms

As reported by the observers at the Augusta Airport [NOAA, 1981(b)[(6)]], the average number of days per year with thunderstorms is 56, with a maximum frequency of 13 days in the month of July and a minimum of 1 day during the months of October through January [NOAA, 1981(b)[(6)]].

2.3.1.2.7 Lightning

Seasonal and annual frequencies of lightning strikes to the reactor containment building have been estimated based on the frequency of thunderstorms in the VEGP site area and the structure's "attractive area." Since the attractive area of a structure is proportional to the magnitude of the lightning bolt's current, an estimate of the frequency of lightning strikes was determined for lightning bolts having currents of 20, 40, 60, 90, and 135 kA. Table 2.3.1-5 provides a seasonal and annual summary of thunderstorm frequency and frequency of lightning strikes, as well as the various attractive areas.

The reactor containment building is the largest safety-related structure, system, or component on the VEGP site. Strike frequency estimates are provided in table 2.3.1-5 to reflect lightning strikes to the containment building. All other safety-related structures would be subjected to lightning strikes on a less frequent basis than that reported for the containment building.

The lightning strike frequency calculation is based on the technique described by Marshall (1973). The average number of cloud-to-ground lightning strikes is calculated using the following formula:

$$NE = (0.1 + 0.35 \sin \lambda)(0.40 \pm 0.20)$$

where:

NE = number of flashes to earth/km^2/thunderstorm day.

λ = geographical latitude (for the VEGP site, λ =33° 8'30").

To ensure conservatism in the calculation, the term (0.40 ± 0.20) is assumed to be (0.40 + 0.20), or 0.6. Therefore, for the VEGP site, NE = 0.175 flashes/km^2 thunderstorm day. Multiplying this value by the seasonal and annual number of thunderstorm days at Augusta as taken from NUREG/CR-2252,[(19)] the number of seasonal and annual cloud-to-ground lightning flashes is determined as shown in table 2.3.1-5.

The attractive area of the containment building is determined following the technique of Marshall:

$$K = \pi R_T^2 = \pi (R_A + R_B)^2$$

where:

K	=	total attractive area (m^2).
R_T	=	total radial distance (m).
R_A	=	radius of containment building (m).
R_B	=	radial distance to the edge of the attractive zone (m).

The parameter R_B is an increasing multiple of the building height (H) with increasing bolt current. According to Marshall, R_B = 2H, 4H, 6H, 8H, and 10H for bolt currents of 20, 40, 60, 90, and 135 kA, respectively. Given a building height of 55.25 m and a radius of 22.5 m, the attractive area of the containment building is calculated for each of the five bolt currents and presented in table 2.3.1-5.

The number of lightning strikes to the containment building is then calculated by multiplying the number of cloud-to-ground lightning flashes/km^2 by the attractive area of the containment building for each bolt current and then multiplying that product by the frequency of occurrence of each bolt current:

$$NA = A \times K \times F$$

where:

NS	=	number of lightning strikes to the containment building.
A	=	average number of cloud-to-ground strikes/km^2.
F	=	frequency of each bolt current (dimensionless).

Marshall assigns frequencies of 50, 22, 10, 2, and 0.5 percent to bolt currents of 20, 40, 60, 90, and 135 kA, respectively. The results of these calculations are given in table 2.3.1-5.

2.3.1.2.8 Tornado Probability

The probability of a particular point being affected by a tornado is a function of the number of tornadoes occurring on the average in a given area and the average area covered by a tornado.

Based on a 40-year record, the number of tornadoes for the 2° square in which the site is located is between one and two per year (Wolford, 1960[13]). During the period 1955 to 1967, the average number of tornadoes (Pautz, 1969[7]) for the 1° square including the site was about one and one-half per year, corresponding to approximately six per year for the 2° square. (See figures 2.3.1-7 and 2.3.1-8.) This apparent increase is typical for this kind of data and arises in part from increased public awareness of tornadoes and more complete reporting. As even the latter frequency is likely to be an underestimate of the true frequency, a reasonable,

conservative estimate is that the true frequency is twice that reported for the latter period, that is, about three per year for the 1° square.

A typical tornado (Thom, 1963[14]) is about ¼ mile wide, is in contact with the ground for about 10 miles, and covers an area of about 2 ½ mi^2. The 1° square at this latitude has an area of approximately 4000 mi^2. A conservative estimate of the probability of a given point being affected by a tornado in a given year is approximately:

$$\frac{2\ \frac{1}{2}\ \times\ 3}{4000}, \text{i.e.}, \frac{1}{500}$$

That is, a given point can be expected to be affected by a tornado once in 500 years, on the average.

Because no large body of water capable of sustaining waterspouts is located near the site, these need not be considered.

2.3.1.2.9 Strong Winds

The frequency of strong winds, 50 knots or greater, has been analyzed for a 2° square (Pautz, 1969[7]) for a 13-year period, 1955 to 1967. (See figure 2.3.1-9.) The total number of windstorms by 1° squares is shown in figure 2.3.1-10. For this area, the frequency is estimated at approximately seven per year per 2° square. Since a considerable proportion of occurrences is likely to be overlooked or unreported, a reasonable, conservative estimate may be twice that number or two occurrences for a 1° square or 4000 mi^2. Extreme winds have been fitted to a statistical distribution, allowing extrapolation to higher windspeeds. At the site, it is estimated that speeds of approximately 105 mph occur once in 100 years (Thom, 1968[15]). The gust factor and vertical wind loading are based on use of a 110-mph windspeed at the 30-ft level (ANSI, 1972[8]). Further discussion of structural loadings is given in section 3.3.

2.3.1.2.10 Probability of High Windspeeds Caused by Tornadoes

The probability of strong winds of a tornado striking a specific site is a function of two factors, the frequency of tornadoes in the site region and the intensity probability (Markee, 1974[16]). The frequency has been estimated in paragraph 2.3.1.2.7; however, there are few actual observations of wind intensity associated with tornadoes.

Data concerning tornado intensity have been compiled during 1971 and 1972. For the contiguous United States, 1612 tornadoes were graded on intensity according to the scale shown in table 2.3.1-3. These tornadoes were categorized by wind groups in table 2.3.1-4, which includes cumulative probability vs intensity. The probabilities in table 2.3.1-4 have been plotted on log probability paper in figure 2.3.1-11 to show the probability of a tornado with a given windspeed.

The design basis tornado (Markee, 1974[16]) has a probability of occurrence of about 10^{-7} per year. For the VEGP site, the tornado wind with a 10^{-7} probability of occurrence has been estimated using the procedure noted below.

The intensity probability, P_s, can be calculated using this relationship:

P_s = tornado strike probability

$P_s P_i \leq 10^{-7}$

$0.002\ P_i \leq 10^{-7}$

$P_i \leq 0.00005$

$P_i \leq$ 0.005 percent

From figure 2.3.1-11, the 0.005-percent probable windspeed in a tornado is about 360 mph. Thus, in the site region, the 10^{-7} probable tornado would have a maximum windspeed of about 360 mph, which is considered 290 mph rotational and 70 mph translational (U.S. Nuclear Regulatory Commission, Regulatory Guide 1.76, 1974[(17)]).

2.3.1.2.11 High Air Pollution Potential

The region is one of high incidence of slow moving anticyclones resulting in high air pollution potential, especially in autumn. This is supported by Korshover (1971)[(18)] who has reported on the climatology of stagnating anticyclones east of the Rocky Mountains during the period 1936 to 1970. He reports that in the site region there will be, on the average, 13 "stagnation days" per year. A useful indication of the incidence of high air pollution in the site area is given by a recent analysis of high air pollution potential forecasts by the National Environmental Research Center, Environmental Protection Agency, which showed approximately 50 days of forecast high air pollution potential in the VEGP site region in the period August 1, 1960, to April 3, 1970.

2.3.1.2.12 Wet Bulb Temperature (for Ultimate Heat Sink Calculations)

The ultimate heat sink for the VEGP is the nuclear service cooling water tower basins. Heat is transferred to the atmosphere by the cooling tower. A water use analysis has been made to ensure adequate cooling capability. (See subsection 9.2.5 for further information concerning this analysis.)

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2.3.2 LOCAL METEOROLOGY

2.3.2.1 Normal and Extreme Values of Meteorological Parameters

Augusta Airport is approximately 17 air miles NNW of the plant site, and climatological observations made there can be considered representative of conditions at the site. Ground elevation of Augusta Airport (Bush Field) is 136 ft above sea level; ground elevation at the site is approximately 220 ft. The differences in elevation and in location are of minor significance. Normals, means, and extremes of meteorological data published by the Environmental Data Service of National Oceanic and Atmospheric Administration (NOAA) for the Augusta Airport are given in table 2.3.2-1.

Using 5 years (1959 through 1963) of meteorological data from Augusta Airport, climatological means of temperature, humidity, atmospheric stability, precipitation, and wind have been compiled. Evaluations of atmospheric diffusion conditions are based on records of atmospheric stability, windspeed, and wind direction from a data collection program conducted by Georgia Power Company at the VEGP site in accordance with Regulatory Guide 1.23. In this program, records were taken on an instrumented tower utilizing sensitive instruments at multiple elevations on the tower during a 4-year period from December 1972 through December 1973, from April 1977 through April 1979, and from April 1980 through March 1981. A detailed description of the VEGP program appears in subsection 2.3.3.

2.3.2.1.1 Wind

The mean windspeeds for each month in mph and the most frequent wind direction ("prevailing wind direction") are listed in table 2.3.2-1 (NOAA, 1981(b)). Fastest monthly average winds, 7 to 8 mph, occur in winter; and the slowest, in summer at 5 to 6 mph. Monthly, seasonal, and

annual wind roses are shown in figures 2.3.2-1, 2.3.2-2, and 2.3.2-3, respectively, based on 5 years of Augusta Airport records. Figures 2.3.2-4 through 2.3.2-27 show monthly, seasonal, and annual wind roses for each of 4 years of data for the 33-ft and 150-ft levels from the VEGP site.

The speed of the fastest mile of wind during a 28-year period is 62 mph. Strong winds are associated with thunderstorms, and lower maximum speeds (about 35 mph) are observed in the autumn. This is consistent with the observation that hurricane winds do not extend inland to this distance from the ocean.

The wind roses from the VEGP site agree quite well between levels and for each of the 4 years. Monthly and seasonal data, while comparing well, do show some of the normal year-to-year variation in climatic conditions, particularly during the transitional seasons of spring and fall. The wind roses from the Augusta Airport and the VEGP site also agree closely. There is a little more northerly wind and less westerly wind at Augusta as compared to the VEGP site. This can be attributed to differences in terrain and location of the wind instruments. Also, there are significantly more calms at Augusta, primarily due to the windspeed instrumentation at this station (a National Weather Service Station) having a threshold of about 3 mph, while the VEGP site windspeed instrumentation during the period these data were taken had a threshold speed of about 0.6 mph.

The persistence of windspeed and direction in sectors of 22.5° and 67.5° for periods of 1 to 48 h is given in tables 2.3.2-3 through 2.3.2-10 for each of 4 years from the 33-ft and 150-ft levels, respectively, on the VEGP meteorological tower. Table 2.3.2-11 shows wind persistence based on 5 years of Augusta Airport data.

2.3.2.1.2 Temperature

Monthly averages for the 30-year climatological period 1941 through 1970 (NOAA, 1981(b)) of the daily maximum, daily minimum, and daily mean are listed in table 2.3.2-1. Figure 2.3.2-28 gives the monthly averages and the average of the daily maximum and minimum dry bulb temperature for the 5-year period of Augusta data. Figure 2.3.2-29 provides the dry bulb temperature curves for 3 years of VEGP site data. The normal daily maximum ranges from 58°F in January to 91°F in July. The minimum ranges from 34°F in December and January to 70°F in July. An extreme maximum of 106°F was recorded in July 1952, and a minimum temperature of 3°F was recorded in February 1899.

Based on a 14-year record, the average number of days in a year on which temperatures of 90°F and above occur is 62, as shown in table 2.3.2-1, ranging to approximately two-thirds of the days in July. The temperature remains below freezing all day on the average of 1 day each January. About one-half of the days in December, January, and February have minimum temperatures below freezing.

Figures 2.3.2-30 and 2.3.2-31 show the monthly averages and average of the daily maximum and minimum wet bulb temperatures and dew point temperatures, respectively, from Augusta Airport. Figures 2.3.2-32 and 2.3.2-33 show like data from the VEGP site meteorology for 3 years. Figures 2.3.2-34 through 2.3.2-36 show the monthly averages and average of the daily maximum and minimum dry bulb temperatures, wet bulb temperatures, and dew point temperatures, respectively, from the VEGP site meteorology data for 1980-1981.

The wet bulb, dry bulb, and dew point temperatures from the VEGP site and Augusta Airport show close agreement. The temperatures at the VEGP site are generally a few degrees cooler than at the Augusta Airport. This is probably caused by the influence of the Augusta urban area and local terrain.

2.3.2.1.3 Water Vapor

Normal relative humidities measured four times during the day and based on 14 years of data are given in table 2.3.2-1 (NOAA, 1981(b)). They illustrate the relatively humid climate, with normal afternoon humidities around 45 percent in winter and 50 to 60 percent in summer. Autumn is the least humid period. Figure 2.3.2-37 shows the average monthly relative humidity and the average of daily maxima and minima during the month based on 5 years of Augusta data. Figures 2.3.2-38 and 2.3.2-39 show similar information on relative humidity data average over the 3 years of VEGP site data and a fourth recent year, respectively.

Absolute humidities have been computed based on dry bulb temperature and relative humidity data from 5 years of Augusta data. As shown in figure 2.3.2-40, the average ranges from a maximum of 1.9×10^{-5} g/cm^3 in July to a minimum of 4.6×10^{-6} g/cm^3 in December. Absolute humidity data based on 3 years of VEGP site data shown in figure 2.3.2-41 show a maximum of 1.85×10^{-5} g/cm^3 in September and a minimum of 4.6×10^{-6} g/cm^3 in January. The fourth year of VEGP site data is shown in figure 2.3.2-42, with a maximum of 1.9×10^{-5} g/cm^3 in August and a minimum of 2.7×10^{-6} g/cm^3 in January.

The absolute and relative humidity at Augusta Airport and the VEGP site agree fairly well. The apparent differences in absolute and relative humidity readings between the two sites have not been explained; however, they are probably due to annual variations because measurements are not from the same time period.

2.3.2.1.4 Precipitation

Maximum precipitation amounts recorded at Augusta during intervals of 1 to 24 h, for the period 1902 to 1950 and for the period 1940 to 1950, are listed in tables 2.3.2-12 and 2.3.2-13, respectively. Although only one period of 10 years and one of 50 years are available, averaging the monthly values allows useful rough estimates of the maximum amounts of precipitation to be expected for given time intervals, as shown in the following (Weather Bureau, 1954):

Maximum Expected Precipitation (in.)

Duration (h)	From 10-Year Record (in.)	From 50-Year Record (in.)
1	2	2 ½
2	3	3 ½
3	4	4
6	4	4 ½
12	4 1/2	7

Maximum Expected Precipitation (in.)		
Duration (h)	From 10-Year Record (in.)	From 50-Year Record (in.)
24	4 1/2	10

The last two figures for 50 years are based on one case of sustained heavy rain.

The normal total monthly precipitation, the maximum and minimum observed in a month, and the maximum in 24 h, all for a 28-year period, are listed in table 2.3.2-1 (NOAA, 1981(b)). The maximum precipitation in 24 h recorded in the 28-year period, 6 in., is consistent with the expected maximum for 10- and 50-year periods discussed in paragraph 2.3.1.2.1. Figure 2.3.2-43 gives monthly average and 24-h maximum precipitation. Seasonal and annual precipitation wind roses based on 5 years of Augusta Airport data are shown in figures 2.3.2-44 and 2.3.2-45. Figures 2.3.2-46 through 2.3.2-53 show seasonal and annual precipitation wind roses for each of the 4 years of VEGP site data. During the 1980-81 site year, the precipitation data were considered questionable for extended periods of time, causing the precipitation wind roses to have data in only two of four seasons.

The precipitation wind roses from Augusta Airport and the VEGP site do not show much agreement between sites or from year to year. However, considering the large percentage of data from the northeast and southeast, it is evident that rain patterns are tracking across the Gulf states and/or up the Atlantic coast as generally expected. The differences result from the great variability of rain patterns and storm movements from year to year.

2.3.2.1.5 Fog

Heavy fog, with visibility less than 1/4 mile occurs on roughly 10 percent of days throughout the year, with minimum frequency of about 1 day a month in spring (NOAA, 1981(b)). How representative this figure is for the site depends especially on what proportion of the occurrences of heavy fog at Augusta are due to ground fog, which is largely restricted to valleys. Figure 2.3.2-54 summarizes the visibility data from 5 years of data at the Augusta Airport. The frequency of various visibility conditions taken from the Augusta data is as follows:

Visibility (miles)	Percent Occurrence
< ½	1.21
< 1	2.32
< 2	4.62
< 3	7.87
< 4	12.00

As shown, visibility of less than 1 mile occurs less than 3 percent of the time.

2.3.2.1.6 Atmospheric Stability

Atmospheric stability in the form of joint frequency tables of windspeed and direction from the 33-ft level on the VEGP meteorological tower 33- to 150-ft delta temperature are shown for 3 years of monthly and annual site data in tables 2.3.2-14 and 2.3.2-15. Tables 2.3.2-16 and 2.3.2-17 show monthly and annual joint frequency tables for 3 years of site data using 150-ft windspeed and direction and 33- to 150-ft delta temperature. Results obtained using the STAR computer routine to determine stability are shown in table 2.3.2-18 for data from Augusta, Georgia. Tables 2.3.2-19 and 2.3.2-20 show annual joint frequency tables for the fourth year of VEGP site data from the 33-ft and 150-ft levels.

2.3.2.1.7 Mixing Height

Seasonal and annual mixing heights for the VEGP site region are shown in table 2.3.2-21 (Holzworth, 1972). The maximum morning and afternoon mixing heights are 395 m during the winter and 1800 m during the summer, respectively. A minimum mixing height of 290 m occurs during the fall and a minimum afternoon height of 950 m during the winter.

2.3.2.2 Potential Influence of the Plant and Its Facilities on Local Meteorology

Natural draft cooling towers will be utilized at the VEGP. The elevated release point will result in minimal impact on local meteorology or the plant. The plume rise from the natural draft towers is expected to range from 500 to 1000 ft above the 500-ft towers. Studies of plume effects are described in subsection 5.1.4 of the Operating License Stage Environmental Report (OLSER) where it is determined that visible plumes will extend offsite; however, no increase in ground fog, reduced visibility, or icing due to the operation of these towers is expected. The effect of the plumes generated by the mechanical draft nuclear service cooling water towers is expected to be less than that of the natural draft cooling towers and is discussed further in the OLSER. The topographical features of the plant site are shown on figures 2.3.2-55, 2.3.2-56, and 2.3.2-57, sheets 1 through 4. In general, the terrain is flat with the wide Savannah River valley representing a depression running northwest to southeast approximately 3000 ft from the plant location.

2.3.2.3 Local Meteorological Conditions for Design and Operating Bases

With the exception of short and long term diffusion estimates, discussed in subsections 2.3.4 an 2.3.5, respectively, regional rather than local meteorological and air quality conditions were used for the design and operating bases of the VEGP.

2.3.3 ONSITE METEOROLOGICAL MEASUREMENTS PROGRAMS

The onsite meteorological measurement program commenced operation in April 1972. Instruments for measuring pertinent meteorological parameters were installed on a 45-m tower located in a cleared area SSW at site coordinates N 3260 and E 8040. The tower is not affected by large plant structures since it is more than 1000 ft from the nearest large structure. The base of the tower is at approximately plant grade. The monthly, seasonal, and annual

summaries in this report were taken from hourly values collected using this tower. These data were compiled in accordance with Regulatory Guide 1.23 and were used to determine the joint frequency distributions given in subsection 2.3.2. Four years of onsite data collected at the VEGP site have been prepared for inclusion in this report. These periods are as follows: December 4, 1972, through December 4, 1973; April 4, 1977, through April 4, 1979; and April 1, 1980, through March 31, 1981. A summary of the data recovery percentage from each of the 4 years of data is shown in table 2.3.3-1. A composite data recovery rate of 90 percent or greater was achieved in each of those last 3 years for the pertinent parameters of windspeed (WS) and direction (WD) from the 10-m level and delta temperature (DT) between the 45-m and 10-m level.

The onsite meteorological measurements program and equipment were updated in the first quarter of 1984 in order to meet the intent of NUREG-0654. The updated meteorological data collection center (MDCC) included a 60-m tower located at site coordinates N 3100 and E 7940 with permanent instrumentation at the 10-m and 60-m elevations and a 2-kVA UPS consisting of lead acid batteries, battery charger, and inverter to prevent the loss of meteorological data collection in the event offsite power is interrupted. Temporary instrumentation installed at the 30-m and 45-m levels provided a means to compare data between the 45-m and 60-m towers. This data comparison showed a positive correlation between corresponding parameters allowing the 60-m tower to be used as the primary source of site meteorological data. The 45-m tower was used as a backup for periods of equipment failure on the 60-m tower and consisted of windspeed, wind direction, and ambient temperature instruments at the 10-m elevation. Instrument descriptions are given in table 2.3.2-2. Instrument accuracies given are in conformance with Regulatory Guide 1.23 with the exception of dewpoint and differential temperature.

The onsite meteorological measurements program and equipment were updated in the second quarter of 2015 to replace obsolete equipment and to improve data recovery values. The update replaced the 60-m tower's existing 10-m and 60-m instruments with redundant instruments providing primary and secondary (backup) data. The use of the backup 45-m tower and its instruments was discontinued. Instrument descriptions are given in table 2.3.2-2.

The loop tolerances of the new MET tower windspeed and direction, ambient temperature, vertical temperature difference, relative humidity, and precipitation instrumentation were evaluated and compared to RG 1.23 Rev. 1 requirements to assess the acceptability of the tolerances. Based on review of actual data over a 3-year period, there were less than 2 h per year over this period when the required accuracy for the vertical temperature difference was not met. The remaining loop tolerances all meet or exceed the acceptance criteria of the time averaged accuracies required by RG 1.23 Rev. 1. It is concluded that since the vertical temperature difference inaccuracy over the specified time frame is < 0.02% per yearly period, the accuracy is considered to meet the intent of RG 1.23 Rev. 1.

Data collection for the MDCC consists of redundant data loggers and workstations located in the meteorological tower equipment building. Primary data are transmitted to the Unit 1 IPC and secondary data are transmitted to the Unit 2 IPC at least every 5 s via separate data communication links. The data communication links also transmit MDCC trouble alarms. Unit 1 primary data are transferred to the Unit 2 IPC and the Unit 2 secondary data are transferred to the Unit 1 IPC via Gateways. Each unit's IPC provides primary and secondary data to its respective control room, the TSC, and EOF. The data collected are summarized and edited to provide averages representative of each hour of data.

Major structures nearest to the 60-m tower will be the VEGP Units 3 and 4 reactors and the natural-draft cooling towers, which will be located, respectively, about 4,525 ft (mid-point between the two units) and about 3,025 ft (closest point on the Unit 3 cooling tower) to the north of the 60-m meteorological tower. Regulatory Guide 1.23 indicates that a meteorological tower located at greater than 10-times building-heights horizontal distance downwind will not have adverse building wake effects exerted by the structure. Since the height of the AP1000 units will be about 234 ft above grade, the zone of turbulent flow created by the reactor buildings will be limited to about 2,340 ft (or 10 building heights) downwind. Thus, the reactors will not be expected to adversely affect the measurements taken at the primary tower.

The natural-draft cooling towers for VEGP Units 3 and 4 will be built to a height of 600 ft above plant grade, the tallest structure at the VEGP site. The natural-draft cooling towers are hyperbolically shaped and have a maximum width at the base of the tower, which has an outer diameter of 550 ft. The downwind wake zone for hyperbolically shaped and sloping structures is expected to be smaller than for structures that are square or rectangular and have sharp edges. 40 CFR 51.100(ii)(3) defines good engineering practices (GEP) stack height as that which ensures that emissions from a stack do not result in excessive concentrations of any air pollutant as a result of atmospheric downwash, wakes, or eddy effects created by the source itself, nearby structures, or nearby terrain features. “Nearby structures” is defined in 40 CFR 51.100(ii)(1) as that distance up to five times the lesser of the height or width dimension of a structure. Furthermore, the wake zone area becomes increasingly smaller as the height to width ratio of a structure increases (reference 20). For the natural-draft cooling towers the lesser dimension is the width, which is the base width. Therefore, a conservative method to calculate the outermost boundary of influence exerted by the natural-draft cooling towers is to multiply the maximum width by five. Using this method, with a maximum width of 550 ft at the base of the tower, the downwind wake effect is estimated to extend 2750 ft from the base of the natural-draft cooling towers. The VEGP Unit 3 natural-draft cooling tower is located approximately 3,025 ft north of the meteorological tower. Thus, the meteorological tower is at a distance that will not be affected by the wake zone of the natural-draft cooling towers.

Regulatory Guide 1.23 indicates that ambient temperature and atmospheric moisture measurements should be made to avoid air modification by heat and moisture sources (e.g., ventilation sources, cooling towers, water bodies, large parking lots). An evaluation determined that the 110.000 ft^2 Vogtle Support Center asphalt parking lot, located approximately 800 ft (closest point) northwest of the 60-m tower, and the 1,435,000 ft^2 VEGP Unit 3 and 4 gravel laydown lot, located approximately 650 ft (closest point) east-northeast of the 60-m tower, could slightly increase 10-m ambient temperature sensor measurements in summer months during daytime hours. The system accuracy calculation for the 10-m ambient temperature sensors algebraically added (as a bias) the maximum potential temperature increase calculated for the two lots. Calculated total system accuracy for 10-m ambient temperature is less than the maximum Regulatory Guide 1.23 system accuracy value for ambient temperature (Calculation X5CP02001 Version 1.0).

An assessment was performed to determine the effects of the VEGP Units 3 and 4 natural-draft cooling towers on temperature and moisture measurements at the meteorological tower. A cooling tower plume prediction program was used in the assessment to identify the different categories of plumes which may be expected based on local meteorological data and then examines the potential impact for each of these categories. Only plumes greater than 1000 meters were considered as possibly impacting the meteorological tower instruments. The assessment concluded that, given the very low frequency of winds form the northwest, north-

northwest, and north, the cooling towers will have little to no impact on the measruements collected at the meteorological tower.

The instruments are monitored at least once a week by company personnel. Preventive maintenance is performed by SNC personnel in accordance with the instrument manuals and is intended to maintain 90-percent data recovery.

As discussed in subsection 2.3.2, comparisons of site data with that measured at the Augusta Airport show reasonable agreement. Therefore, it is expected that the site data are representative of longer term conditions.

2.3.4 SHORT TERM DIFFUSION ESTIMATES

Atmospheric diffusion conditions (expressed as values of X/Q) developed for use in evaluating accidents hypothesized in chapter 15 are shown in table 2.3.4-1 for various periods after the accident. This table includes X/Q estimates based on the methods described in Regulatory Guide 1.145. All estimates use vertical temperature difference to determine stability classification. Values in table 2.3.4-1 are based on evaluation of a 3-year period of onsite meteorological data and the most recent year of onsite meteorological data. A description of the site meteorological program is given in subsection 2.3.3.

Methods used to estimate diffusion conditions for evaluating short term accident releases are discussed in paragraph 2.3.4.1, and methods for assessing the consequences of longer term accident releases (up to 30 days) are discussed in paragraph 2.3.4.2.

2.3.4.1 <u>Short Term Releases</u>

The methodology for determining the atmospheric dispersion that exists for short term releases (an hour or so) involves two different calculations as described in Regulatory Guide 1.145. Both methods were used as discussed below.

2.3.4.1.1 Direction-Independent Calculations

The direction-independent approach involves computing X/Q values for each hour of the period of VEGP records used and then counting all of the hours that had X/Q values equal to or greater than a selected value regardless of direction. The number of hours so obtained was then divided by the number of hours in the total period of record to obtain the probability that the selected X/Q value would be equaled or exceeded. The resulting probabilities are independent of wind direction. A plot of cumulative centerline X/Q values as a function of probability of occurrence was constructed using the VEGP hourly data for all 3 years, combined as shown in figure 2.3.4-1. The fourth year of site data is plotted next to the 3 combined years in figure 2.3.4-1, showing a good comparison. Equations 1, 2, and 3 in paragraph 2.3.4.4 were used to compute values of X/Q. The actual distance to the site boundary was used for each 22.5° direction sector. Distances for each sector (given in table 2.3.4-2) represent the minimum distance to the site boundary in a 45° arc centered on the given direction.

2.3.4.1.2 Direction-Dependent Calculations

The direction-dependent calculations outlined in Regulatory Guide 1.145 require the X/Q values to be calculated using the equations given in paragraph 2.3.4.4; however, the results are treated separately for each direction. Figures 2.3.4-2 through 2.3.4-4 show probability distributions for each direction for runs made using each of the 3 years of meteorological data. A single 3-year composite direction-dependent probability distribution was plotted by combining the frequency of occurrence of selected X/Q values for the directions with the highest probabilities (envelopes) at the given X/Q level. The resulting plot is shown in figure 2.3.4-1. The fourth year of data is plotted next to the 3-year composite in figure 2.3.4-1.

2.3.4.1.3 Determining Appropriate Short Term Dispersion

The two cumulative probability distributions shown in figure 2.3.4-1 are then used to determine the appropriate X/Q for the short term accident following the procedure of Regulatory Guide 1.145. The 5 percent probable direction-independent X/Q value read from the distribution in figure 2.3.4-1 is 1.5E-4 s/m^3. For the direction-dependent case, the 0.5 percent probable X/Q is determined to be 1.8 x 10^{-4} s/m^3 in accordance with Regulatory Guide 1.145. The highest of the two (X/Q = 1.8 x 10^{-4} s/m^3) is to be used in accident dose calculations and is shown in table 2.3.4-1 for the 1-h case.

A similar procedure was used to determine the short term X/Q value at the low population zone (radius of 2 miles), which is also shown in table 2.3.4-1.

2.3.4.2 Long Term Releases

For releases that occur over a longer period, it is appropriate to incorporate wind direction changes in the model used to estimate concentration at any given point. Using the same 3-year period of data from VEGP, the probability that any particular average diffusion condition (or poorer one) would exist during a selected interval of time (greater than 1 h) was determined. These values are used for 30-day dose calculations at the low population zone (LPZ) as shown in table 2.3.4-1. The values for the fourth year are shown in table 2.3.4-1 and agree closely with the 3-year cumulative values.

The procedure for determining longer term X/Q values is also taken from Regulatory Guide 1.145. The approach involves selection of the highest 0.5 percent direction-dependent and 5 percent direction-independent short term (1 h) X/Q values at the LPZ along with the highest annual average values. These values are plotted on log-log graph paper with X/Q on the ordinate and time on the abscissa. The short term values are plotted at 2 h, and the annual averages (determined as described in subsection 2.3.5) are plotted at 8760 h. The X/Q values for different averaging times are then read from the appropriate locations on the curves. The log-log plots for each direction for each of the 3 years of data are shown in figures 2.3.4-5 through 2.3.4-7. The curve shown in figure 2.3.4-8 is the composite of the highest curves for each of the 4 separate years that were used to determine X/Q values for longer averaging times at the LPZ. No adjustments were made to the annual average X/Q values, since releases are made at ground level and the terrain is relatively uniform.

The diffusion models and assumptions used for determining these values are described in paragraphs 2.3.4.3 and 2.3.4.4.

2.3.4.3 Determination of Stability Classifications

Table 2.3.4-3 gives the temperature difference categories used to classify the VEGP data into Pasquill groups for use in computing σ_y and σ_z in the diffusion equations.

2.3.4.4 Analytical Methods for Dispersion Computations

Plume centerline values of X/Q were estimated using the following relationships described in Regulatory Guide 1.145.

$$\frac{X}{Q} \quad \frac{1}{\bar{u}\left(\pi\,\sigma_y\sigma_z + \frac{A}{2}\right)} \qquad (1)$$

$$\frac{X}{Q} \quad \frac{1}{\bar{u}\,(3\pi\,\sigma_y\sigma_z)} \qquad (2)$$

$$\frac{X}{Q} \quad \frac{1}{\bar{u}\,\pi\,\Sigma_y\sigma_z} \qquad (3)$$

where :

X/Q = relative concentration (s/m^3).

π = 3.14159.

$\bar{u}$ = windspeed at 33 ft (m/s).

σ_y = lateral plume spread coefficient (m).

σ_z = vertical plume spread coefficient (m).

A = smallest vertical plume cross-section area of containment (2368 m^2).

x = distance.

Values of Σ_y were computed as follows:

Σ_y = $M\sigma_y$ $(X \leq 800\text{ m})$ (4)

y = $(M-1)\sigma_y + \sigma_y$ $(X > 800\text{ m})$ (5)

Values of M as a function of speed and stability are determined from figure 3 of Regulatory Guide 1.145.

The following procedure is used to determine the appropriate X/Q for each hour of meteorological data. First, the maximum value obtained using equations 1 and 2 is determined. Then the minimum of that value and equation 3 is determined, if the windspeed is less than 6 m/s and the stability is not unstable. This value is then used for all statistical evaluations involving X/Q.

2.3.5 LONG TERM DIFFUSION ESTIMATES

2.3.5.1 Objective

This subsection includes realistic estimates of atmospheric dilution and deposition out to a distance of 50 miles from the plant, based on annual average meteorological conditions. These estimates are used for estimating offsite doses resulting from routine releases of gaseous effluent from the VEGP.

2.3.5.2 Calculations

2.3.5.2.1 General

Calculations are made using 3 years of meteorological data collected from the site meteorological tower. The tower configuration and these data are discussed and summarized in subsection 2.3.3. The 3-year period of data provides a good representation of long term conditions at the site. Comparisons of VEGP site data with meteorological data from the Savannah River Laboratory nearby and with Augusta Airport data show that similar dispersion conditions exist at all sites.

Topography is gently rolling in the site area and should have little effect on wind trajectory. During periods of light winds, local terrain may affect wind trajectory. The most pronounced terrain feature is the river depression. This, however, is a relatively small, wide depression which has little influence. Since the release is at ground level and there are no significant topographic features, no correction factors for recirculation are used.

Atmospheric dispersion models described in this subsection follow those described in Regulatory Guide 1.111. The paragraphs below describe the models used in these evaluations with frequent references to Regulatory Guide 1.111, since most assumptions are identical to those in the guide. These models are used to determine routine (average) X/Q and D/Q values applicable to the site.

2.3.5.2.2 Atmospheric Diffusion Model

$$\overline{(X/Q')}_D = 2.032 \sum_{ij} n_{ij} [NX\overline{u}_i\Sigma_{zj}(x)]^{-1} \exp[-h^2 e/2\sigma^2 zj^{(x)}] \qquad (1)$$

Average atmospheric dispersion evaluations are made using the straight line airflow model from Regulatory Guide 1.111, as shown below:

where:

h_e = effective release height.

n_{ij} = length of time (hours of valid data) weather conditions are observed to be at a given wind direction, windspeed class, i, and atmospheric stability class, j.

N = total hours of valid data.

$\bar{u}_i$ = geometrical mean of all speeds in the windspeed class, i, at a height representative of release; calms are one-half the threshold anemometer speed or less; extrapolation to higher levels, if necessary, is done by raising the ratio of the two heights to the n power, where n = 0.25, 0.33, and 0.5 for unstable, neutral, and stable conditions, respectively.

$\sigma_{zj}(x)$ = vertical plume spread without volumetric correction at distance, x, for stability class, j (see figure 1 of Regulatory Guide 1.111) based on vertical temperature difference (ΔT) and Regulatory Guide 1.23 categorization of Pasquill groups by ΔT.

$\Sigma_{zj}(x)$ = vertical plume spread with a volumetric correction for a release within the building wake cavity, at a distance, x, for stability class, j; otherwise $\Sigma_{zj}(x) = \sigma_{zj}(x)$.

$\overline{(X/Q')}_D$ = average effluent concentration, X, normalized by source strength, Q', at distance, x, in a given downwind direction, D.

2.032 = $(2/\pi)^{1/2}$ divided by the width in radians of a 22.5° sector.

In some cases, hourly data are used and the summation over i and j in the above equation is deleted, and the summation is accomplished for all hours at all distances for each direction.

2.3.5.2.3 Source Configuration Considerations

Since the plant vent release point is elevated and there are no buildings which would obstruct the plume in its normal trajectory, equation 1 is used with the height of release defined as follows (from equation 4 of Regulatory Guide 1.111):

$$h_e = h_s + h_{pr} \div h_t - c$$

where:

c = correction for low relative exit velocity (equation 5 of Regulatory Guide 1.111).

h_e = effective release height.

h_{pr} = rise of the plume above the release point based on Briggs. (See below.)

h_s = physical height of the release point. (The elevation of the stack base should be assumed to be zero.)

h_t = maximum terrain height between the release point and the point for which the calculation is made.

Values of h_{pr} are computed as follows for a "jet," since nuclear plant vents have an insignificant amount of buoyancy due to heated discharges:

$$h_{pr} = 1.44D \left(\frac{W_o}{\bar{u}}\right)^{2/3} \left(\frac{x}{D}\right)^{1/3}$$

up to the point where h_{pr} is the minimum of the following two equations:

$$h_{pr_{max}} = 3\left(\frac{W_o}{\bar{u}}\right)D \text{ or } h_{pr_{max}} = 1.5\left(\frac{F_m}{\bar{u}}\right)^{1/3} s^{-1/6}$$

where symbols are as before, and:

D	=	stack or vent effective inside diameter (m).
W_O	=	stack or vent exit velocity (m/s).
u	=	windspeed at discharge level (m/s).
F	=	momentum flux (m^4/s^2).
s	=	stability parameter (s^{-2}).

If the plume trajectory from a release point; e.g., turbine building vent, does not remain outside of building wake influences near large structures, all or portions of the plume are considered to be entrapped and brought to ground level in the turbulent wake of the building. The criteria for determining the portion of the plume treated as an elevated or ground release follows from equations 6, 7, and 8 of Regulatory Guide 1.111 and are repeated here for completeness:

If $W_o/u > 5.0$	h_e as calculated above
If $W_o/u \leq 1.0$	$h_e = 0$
If $1 < W_o/u \leq 1.5$	$E_t = 2.58 - 1.58 \left(\frac{W_o}{\bar{u}}\right)$
If $1.5 < W_o/u \leq 5.0$	$E_t = 0.3 - 0.06 \left(\frac{W_o}{\bar{u}}\right)$

The appropriate diffusion estimate is then computed by assuming an elevated release 100 (1 - E_t) percent of the time and by assuming ground release 100 E_t percent of the time. Calculations utilizing this mixed model are referred to as "wake-split" calculations in this report.

A building wake correction is computed for all ground releases near structures in accordance with the following general equation from Regulatory Guide 1.111:

$$\Sigma = \sqrt{\sigma_z^{\ 2} + \frac{cH^2}{\pi}} \leq 1.73\,\sigma_z$$

where:

Σ = effective dispersion coefficient for use in equation 1 (m).

c = building wake coefficient (c = 0.5).

H = height of tallest structure in the nuclear plant power block (m).

As radioactive effluent in a plume travels downwind, it is subject to several removal mechanisms, including radioactive decay, dry deposition, and wet deposition (during rain). Corrections for radioactive decay are not made in the dispersion estimates reported in this subsection.

Dry deposition which results in depletion of halogen and particulate isotopes from the plume is calculated using figures 2 through 5 in Regulatory Guide 1.111. Depletion factors in these curves are a function of height and distance. Therefore, for sites where elevated releases occur, the terrain must be subtracted from the plume height before entering the curves at the appropriate distance. Each elevated or ground level X/Q is multiplied by the depletion correction factor to estimate the depleted X/Q value.

To determine relative deposition rate as a function of distance and stability, the curves given in figures 6 through 9 of Regulatory Guide 1.111 are used in a computerized table look-up routine. Terrain heights are subtracted before the table look-up is made. Values from the curves are divided by the sector cross-width (arc) at the point of calculation to give units of m^{-2}.

Table 2.3.5-1 lists computer runs made using the diffusion models described above. Since the grazing season is assumed to exist all year, separate runs for the grazing season are not necessary.

A summary of plant vent information for each discharge point is given in tables 2.3.5-2 and 2.3.5-3. Only vents used during routine operation are considered in this evaluation. Inspection of these tables shows that a separate calculation is required to determine diffusion conditions applicable for each vent.

Table 2.3.5-4 summarizes key assumptions utilized in making the model calculations. Table 2.3.5-5 gives terrain elevations for all distances out to 10 miles. Terrain height is conservatively not allowed to decrease with increasing distance nor to decrease below plant grade in accordance with Regulatory Guide 1.111.

A series of four runs is made using different meteorological data bases and vent locations. Resulting X/Q, depleted X/Q, and D/Q values are listed in tables 2.3.5-6 through 2.3.5-9 for each direction sector for 10 distances. Comparisons of the results, using the most recent hourly data with the 3-year joint frequency data, show little difference. Therefore, the 3-year results are used for determining the appropriate dispersion factor for each receptor location in tables 2.3.5-10 and 2.3.5-11. Each table represents model results for one vent location. Table 2.3.5-10 shows the results of calculations made for the plant (wake-split model), and table 2.3.5-11 provides results from the second set of calculations made for all other release points that discharge into the building wake cavity, resulting in a ground level release. Tables 2.3.5-12 and 2.3.5-13 show X/Q, depleted X/Q, and D/Q values for 10 distances out to 50 miles for the fourth year of site meteorological data. These 1-year (1980-1981) tables agree very well with tables 2.3.5-6 through 2.3.5-9 for the 3 composite years. Therefore, the 3-year results shown in tables

2.3.5-10 and 2.3.5-11 for all receptor locations are confirmed by the fourth year of data and should be used for all routine release dose assessments. Isopleths of X/Q, depleted X/Q, and D/Q values based on plant vent releases for the 3-year period of record are shown in figures 2.3.5-1 through 2.3.5-3, respectively, to illustrate annual average dispersion patterns near the site. Figures 2.3.5-4 through 2.3.5-6 show similar information for the fourth recent year.

TABLE 2.3.1-1

RECURRENCE INTERVALS OF RAINFALL FALLING IN PERIODS OF 30 MIN TO 10 DAYS (in.)

Years	30 Min	1 Hour	2 Hours	3 Hours	6 Hours	12 Hours	24 Hours	48 Hours	4 Days	7 Days	10 Days
1	1.3	1.6	1.9	2.1	2.3	2.8	3.2	-	-	-	-
2	1.5	2.0	2.2	2.4	2.8	3.4	3.9	4.4	4.8	5.9	6.3
5	1.7	2.3	2.8	3.0	3.7	4.4	5.0	5.8	6.9	7.7	8.0
10	2.1	2.6	3.2	3.5	4.4	5.0	5.8	6.8	7.8	8.7	9.5
25	2.4	3.0	3.7	4.0	5.0	6.0	6.8	7.9	8.9	10.0	11.6
50	2.6	3.3	4.0	4.4	5.8	6.5	7.5	8.6	9.8	11.5	12.0
100	2.9	4.0	4.5	4.9	6.0	7.0	8.2	9.4	11.5	12.5	13.5

TABLE 2.3.1-2

MEAN NUMBER OF DAYS WITH PRECIPITATION
≥0.01, ≥0.1, ≥0.5 IN.
IN AUGUSTA, GEORGIA

Month	≥0.01 No. of Days	≥0.1 No. of Days	≥0.5 No. of Days
January	10	7	3
February	9	7	3
March	11	8	3
April	8	6	2
May	9	6	3
June	9	6	2
July	12	8	3
August	10	5	2
September	8	7	3
October	6	5	1
November	7	4	1
December	9	5	2
Yearly total	108	74	28

TABLE 2.3.1-3 (SHEET 1 OF 2)

TABLE OF FUJITA-PEARSON TORNADO SCALE[(a)]

F-Scale Maximum Windspeed				P-Scale Path Length			P-Scale Path Width			
Scale	mph	kt	m/s	Scale	mi	km	Scale	ft	yd	m
0.0	40	35	18	0.0	0.3	0.5	0.0	17	6	5
0.1	43	37	19	0.1	0.4	0.6	0.1	19	6	6
0.2	46	40	21	0.2	0.4	0.6	0.2	21	7	6
0.3	49	43	22	0.3	0.5	0.7	0.3	24	8	7
0.4	52	46	23	0.4	0.5	0.8	0.4	26	9	8
0.5	56	48	25	0.5	0.6	0.9	0.5	30	10	9
0.6	59	51	26	0.6	0.6	1.0	0.6	33	11	10
0.7	63	54	28	0.7	0.7	1.1	0.7	37	13	11
0.8	66	57	30	0.8	0.8	1.3	0.8	42	14	13
0.9	70	60	31	0.9	0.9	1.4	0.9	47	16	14
1.0	73	64	33	1.0	1.0	1.6	1.0	53	18	16
1.1	77	67	34	1.1	1.1	1.8	1.1	59	20	18
1.2	81	70	36	1.2	1.3	2.0	1.2	66	22	20
1.3	84	73	38	1.3	1.4	2.3	1.3	74	25	23
1.4	88	77	40	1.4	1.6	2.6	1.4	84	28	26
1.5	92	80	41	1.5	1.8	2.9	1.5	94	31	29
1.6	96	84	43	1.6	2.0	3.2	1.6	105	35	32
1.7	100	87	45	1.7	2.2	3.6	1.7	118	39	36
1.8	104	91	47	1.8	2.5	4.0	1.8	133	44	40
1.9	109	94	49	1.9	2.8	4.5	1.9	149	50	45
2.0	113	98	50	2.0	3.2	5.1	2.0	167	56	51
2.1	117	102	52	2.1	3.5	5.7	2.1	187	62	57
2.2	121	105	54	2.2	4.0	6.4	2.2	210	70	64
2.3	126	109	56	2.3	4.5	7.2	2.3	235	78	72
2.4	130	113	58	2.4	5.0	8.1	2.4	265	88	81
2.5	135	117	60	2.5	5.6	9.0	2.5	297	99	90
2.6	139	121	62	2.6	6.3	10.2	2.6	333	111	102
2.7	144	125	64	2.7	7.1	11.4	2.7	374	125	114
2.8	148	129	66	2.8	7.9	12.8	2.8	419	140	128
2.9	153	132	68	2.9	8.9	14.3	2.9	470	157	143
3.0	158	137	70	3.0	10.0	16.1	3.0	528	176	161
3.1	162	141	73	3.1	11.2	18.0	3.1	591	197	180
3.2	167	145	75	3.2	12.6	20.3	3.2	665	222	203
3.3	172	149	77	3.3	14.1	22.7	3.3	744	248	227
3.4	177	154	79	3.4	15.9	25.6	3.4	837	279	256
3.5	182	158	81	3.5	17.8	28.6	3.5	940	313	286
3.6	187	162	83	3.6	20.0	32.2	3.6	1054	351	322
3.7	192	167	86	3.7	22.4	36.0	3.7	1183	394	360
3.8	197	171	88	3.8	25.1	40.4	3.8	1326	442	404
3.9	202	175	90	3.9	28.2	45.4	3.9	1489	496	454

TABLE 2.3.1-3 (SHEET 2 OF 2)

F-Scale Maximum Windspeed				P-Scale Path Length			P-Scale Path Width			
Scale	mph	kt	m/s	Scale	mi	km	Scale	ft	yd	m
4.0	207	180	93	4.0	31.6	50.9	4.0	1670	557	509
4.1	212	184	95	4.1	35.5	57.1	4.1	1874	625	571
4.2	218	189	97	4.2	39.8	64.1	4.2	2102	701	641
4.3	223	194	100	4.3	44.7	71.8	4.3	2354	785	718
4.4	228	198	102	4.4	50.1	80.6	4.4	2646	882	806
4.5	233	203	104	4.5	56.2	90.4	4.5	2967	989	904
4.6	238	207	107	4.6	63.1	102.0	4.6	3332	1111	1.0 km
4.7	244	212	109	4.7	70.8	114.0	4.7	3738	1246	1.1
4.8	250	217	112	4.8	79.4	128.0	4.8	4194	1398	1.3
4.9	255	222	114	4.9	89.1	143.0	4.9	4704	1568	1.4
5.0	261	227	117	5.0	100.0	161.0	5.0	1.0 mi	1760	1.6
5.1	267	232	119	5.1	112.0	181.0	5.1	1.1	1971	1.8
5.2	272	236	122	5.2	126.0	203.0	5.2	1.3	2218	2.0
5.3	278	241	124	5.3	141.0	227.0	5.3	1.4	2482	2.3
5.4	284	246	127	5.4	159.0	255.0	5.4	1.6	2798	2.6
5.5	289	251	129	5.5	178.0	286.0	5.5	1.8	3133	2.9
5.6	295	256	132	5.6	200.0	321.0	5.6	2.0	3520	3.2
5.7	301	261	135	5.7	224.0	360.0	5.7	2.2	3912	3.6
5.8	307	267	137	5.8	251.0	404.0	5.8	2.5	4418	4.0
5.9	313	272	140	5.9	282.0	454.0	5.9	2.8	4963	4.5

a. Characteristics of a tornado can be expressed as a combination of Fujita-scale windspeed and Pearson-scale path length and width. This scale permits us to classify tornadoes between two extreme FPP scales, 0.0.0 and 5.5.5.

TABLE 2.3.1-4

TORNADO WIND GROUPS

Windspeed Distribution

Windspeed Classification	No. of Tornadoes	Percent of Total
F5 (<260 mph)	2	0.12
F4 (207 to 260 mph)	34	2.1
F3 (158 to 206 mph)	115	7.2
F2 (113 to 157 mph)	430	26.6
F1 (73 to 112 mph)	710	44.0
F0 (40 to 72 mph)	321	19.9

Cumulative Windspeed Distribution

Windspeed Classification	No. of Tornadoes	Percent of Total
F5 and above (<260 mph)	2	0.12
F4 and above (<206 mph)	36	2.2
F3 and above (<157 mph)	151	9.3
F2 and above (<112 mph)	581	36.0
F1 and above (<74 mph)	1291	80.0
F0 and above (<40 mph)	1612	100.0

TABLE 2.3.1-5

SEASONAL AND ANNUAL FREQUENCY OF LIGHTNING STRIKES
TO THE REACTOR CONTAINMENT BUILDING FOR BOLTS
OF VARIOUS CURRENT MAGNITUDE

			20 kA		40 kA		60 kA		90 kA		135 kA	
Season	Average No. of Thunder-Storm Days (Augusta)[a]	Average No. of Cloud-to-Ground Strikes/km^2	Attractive Area (km^2)	Strikes	Attractive Area (km^2)	Strikes	Attractive Area (km^2)	Strikes	Attractive Area (km^2)	Strikes	Attractive Area (km^2)	Strikes
Winter (Dec-Feb)	4	1	0.056	0.028	0.186	0.041	0.394	0.039	0.679	0.014	1.039	0.005
Spring (Mar-May)	20	4	0.056	0.112	0.186	0.164	0.394	0.158	0.679	0.054	1.039	0.021
Summer (June-Aug)	45	8	0.056	0.224	0.186	0.327	0.394	0.315	0.679	0.109	1.039	0.042
Fall (Sep-Nov)	7	1	0.056	0.028	0.186	0.041	0.394	0.039	0.679	0.014	1.039	0.005
Annual	76	13	0.056	0.364	0.186	0.532	0.394	0.512	0.679	0.177	1.039	0.068

a. From NUREG/CR-2252.

TABLE 2.3.2-1 (SHEET 1 OF 6)

NORMALS, MEANS, AND EXTREMES FOR AUGUSTA, GEORGIA

	Temperatures(°F)							Normal Degree Days Base 65°F	
	Normal			Extremes					
Month	Daily Max.	Daily Min.	Monthly	Record Highest	Year	Record Lowest	Year	Heating	Cooling
(a)				31		31			
Jan	57.6	34.0	45.8	80	1975	5	1970	601	6
Feb	60.5	36.1	48.3	86	1962	9	1973	475	8
Mar	67.1	42.0	54.6	88	1974	12	1980	346	23
Apr	90.7	76.9	63.8	93	1980	30	1972	90	54
May	89.1	74.2	71.7	99	1964	35	1971	10	218
Jun	87.0	66.7	78.2	105	1952	47	1972	0	396
Jul	90.9	69.9	80.4	107	1980	59	1951	0	477
Aug	90.2	69.8	79.0	104	1968	54	1968	0	453
Sep	89.2	63.2	74.2	101	1957	36	1967	0	279
Oct	77.0	51.2	64.1	97	1954	22	1952	104	76
Nov	67.1	40.2	53.7	90	1961	15	1970	344	5
Dec	68.7	34.1	46.4	82	1967	5	1981	577	0
Year	75.4	51.4	63.4	107	Jul 1980	5	Dec 1981	2547	1995

TABLE 2.3.2-1 (SHEET 2 OF 6)

Precipitation (in.)

	Water Equivalent								Snow, Ice Pellets		
Month	Normal	Max. Monthly	Year	Min. Monthly	Year	Max. (24 h)	Year	Max. Monthly	Year	Max. (24 h)	Year
(a)	--	31	--	31	--	31	--	31	--	31	--
Jan	3.44	8.48	1960	0.75	1981	3.61	1960	1.5	1970	1.5	1970
Feb	3.75	7.67	1961	0.69	1968	3.59	1962	14.0	1973	13.7	1973
Mar	4.67	11.92	1980	0.88	1968	5.31	1967	1.1	1980	1.1	1980
Apr	3.37	8.43	1961	0.60	1970	3.96	1955	0.0	--	0.0	--
May	3.39	9.61	1972	0.48	1951	4.44	1981	0.0	--	0.0	--
Jun	3.66	7.28	1973	1.56	1979	5.08	1981	0.0	--	0.0	--
Jul	5.09	11.43	1967	1.46	1953	3.71	1979	0.0	--	0.0	--
Aug	4.21	9.91	1964	0.65	1980	5.98	1964	0.0	--	0.0	--
Sep	3.26	9.51	1975	0.61	1967	4.93	1969	0.0	--	0.0	--
Oct	2.17	6.90	1959	T	1953	2.67	1964	0.0	--	0.0	--
Nov	2.21	6.18	1957	0.09	1960	2.63	1955	T	1968	T	1968
Dec	3.42	8.65	1981	0.32	1955	3.12	1970	0.9	1958	0.9	1958
Year	42.63	11.92	Mar 1980	T	Oct 1953	5.98	Aug 1964	--	Feb 1973	--	Feb 1973

TABLE 2.3.2-1 (SHEET 3 OF 6)

	Relative Humidity percent)				Wind					
							Fastest Mile			
Month	Hour 01	Hour 07	Hour 13	Hour 19	Mean Speed (mph)	Prevailing Direction	Speed (mph)	Direction	Year	Percentage of Possible Sunshine
(Local Time)										
(a)	17	17	17	17	31	13	31	31	--	--
Jan	79	83	54	67	7.1	W	36	23	1978	--
Feb	75	81	48	59	7.7	WNW	40	29	1955	--
Mar	76	83	48	56	8.0	WNW	52	23	1972	--
Apr	79	84	45	55	7.6	SE	39	32	1962	--
May	80	87	50	62	6.5	SE	48	28	1967	--
Jun	87	86	52	63	6.2	SE	62	08	1965	--
Jul	88	88	56	68	5.9	SE	48	33	1970	--
Aug	90	91	57	73	5.5	SE	45	18	1953	--
Sep	91	92	56	77	5.6	NE	35	32	1959	--
Oct	88	90	49	76	5.8	NW	40	18	1977	--
Nov	84	88	49	71	6.2	NW	40	27	1954	--
Dec	81	85	53	70	6.7	NW	34	25	1954	--
Year	84	87	51	66	6.6	SE	62	08	Jun 1965	--

TABLE 2.3.2-1 (SHEET 4 OF 6)

Mean Number of Days

Month	Mean Sky Cover (tenths) Sunrise to Sunset	Sunrise to Sunset: Clear	Sunrise to Sunset: Partly Cloudy	Sunrise to Sunset: Cloudy	Precipitation (0.1 in. or more)	Snow, Ice Pellets (1.0 in.or more)	Thunderstorms	Heavy Fog Visibility (1/4 mile or less)
(a)	31	31	31	31	31	31	31	31
Jan	6.3	9	6	16	10	*	1	3
Feb	5.8	9	6	13	9	*	2	2
Mar	6.1	9	8	14	11	*	3	2
Apr	5.4	10	9	11	8	0	4	1
May	5.9	5	11	12	9	0	7	1
Jun	5.9	7	12	11	9	0	10	1
Jul	6.3	5	14	12	11	0	13	2
Aug	5.8	7	14	10	10	0	10	3
Sep	5.9	9	9	12	8	0	4	3
Oct	4.6	14	7	10	6	0	1	3
Nov	5.1	12	6	12	7	0	1	3
Dec	5.9	10	6	15	9	*	1	3
Year	5.8	109	108	148	107	*	54	27

TABLE 2.3.2-1 (SHEET 5 OF 6)

Month	Temperature (°F) Maximum 90° and Above(b)	Temperature (°F) Maximum 32° and Below	Temperature (°F) Minimum 32° and Below	Temperature (°F) Minimum 0° and Below	Average Station Pressure (mb) (el 148 ft msl)
(a)	17	17	17	17	9
Jan	0	*	17	0	1014.6
Feb	0	*	14	0	1014.2
Mar	0	*	6	0	1011.5
Apr	1	0	1	0	1012.0
May	5	0	0	0	1009.5
Jun	13	0	0	0	1010.9
Jul	20	0	0	0	1011.3
Aug	17	0	0	0	1012.5
Sept	8	0	0	0	1011.4
Oct	*	0	1	0	1013.5
Nov	0	0	9	0	1014.6

TABLE 2.3.2-1 (SHEET 6 OF 6)

	Temperature (°F)				
	Maximum		Minimum		
Month	90° and Above[b]	32° and Below	32° and Below	0° and Below	Average Station Pressure (mb) (el 148 ft msl)
Dec	0	0	15	0	1014.6
Year	64	1	60	0	1012.6

a. Length of record, years, through the current year unless otherwise noted, based on January data.

b. 70° and above at Alaskan stations.

* = Less than one half.

T = Trace.

NORMALS - Based on record for the 1941 - 1970 period.

DATE OF AN EXTREME - The most recent in cases of multiple occurrence.

PREVAILING WIND DIRECTION - Record through 1963.

WIND DIRECTION - Numerals indicate tens of degrees clockwise from true north. 00 indicates calm.

FASTEST MILE WIND - Speed is fastest observed 1-min value when the direction is in tens of degrees.

Means and extremes above are from existing and comparable exposures. Annual extremes have been exceeded at other sites in the locality as follows: lowest temperature, 3, in February 1899; maximum monthly precipitation, 14.00, in July 1906; maximum precipitation in 24 h, 7.92, in October 1929.

TABLE 2.3.2-2

VEGP ONSITE WEATHER INSTRUMENTS

Sensed Parameter	Range	System Accuracy	Starting Threshold	Distance Constant	Damping Ratio	Elevation (m)
			60-m Tower Instruments[a]			
Windspeed	0-67 mph (0-30 mps)	+/- 0.5 mph +/- 0.22 mps	1.0 mph (0.45 mps)	- *N/A	- *N/A	10 60
Wind direction	0°-360°	+/- 5 degrees with deflection of 15 degrees	1.0 mph (0.45 mps)			10 60
Ambient temperature	-58°F to +122°F (-50°C to +50°C)	≤ ±0.9°F (±0.5°C)	-	-	-	10
Differential temperature	-10°F to ±20°F (-23.3°C to -6.6°C)	≤ ±0.18°F (±0.1°C) per 50 m height	-	-	-	10-60
Relative humidity	0-100%	≤ ±4%	- -	- -	- -	10
Dewpoint	-40°F to 120°F (-40°C to 49°C)	+/- 0.9 degrees F +/- 0.5 degrees C	-	-	-	10
Precipitation	0-100 in. reset daily	±10% of the total accumulated catch	Resolution of 0.01 in. (0.25 mm)	-	-	Tower base
Sigma theta	0°-100°	-	-	-	Sec wind direction	10 60

a. Redundant primary and secondary instruments are installed for each sensed parameter.

*The instrument used to measure wind direction uses sonic sound waves to measure wind speed and direction and does not have a distance constant or a damping ratio.

TABLE 2.3.2-3 (SHEET 1 OF 4)

1972 TO 1973 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 33-FT LEVEL
22.5° SECTOR WIDTH

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	84	107	148	147	150	135	118	118	116	126	159	154	157	141	108	80
2	38	39	74	79	75	66	54	42	64	63	86	87	82	77	54	23
4	16	17	31	36	34	25	28	21	28	17	29	35	48	41	23	0
8	2	0	13	8	8	2	3	6	5	2	3	9	11	13	6	0
12	1	0	6	3	0	0	2	1	2	0	1	3	3	5	3	0
18	0	0	2	0	0	0	0	0	0	0	0	0	1	1	1	0
24	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	9	17	25	21	19	20	25	28	31	30	34	38	54	52	43	10
2	4	4	13	10	9	10	17	12	20	13	15	18	30	39	25	3
4	0	1	7	2	1	2	7	5	8	5	4	9	19	23	12	0
8	0	0	3	0	0	1	1	1	0	0	0	0	4	7	3	0
12	0	0	1	0	0	0	0	0	0	0	0	0	2	3	1	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	1	1	1	0	4	5	5	9	6	11	13	23	14	1
2	0	0	0	1	0	0	2	4	3	3	2	3	10	9	7	0
4	0	0	0	0	0	0	0	1	1	2	0	0	5	5	4	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-3 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	1	0	0	2	4	0	0
2	0	0	0	0	0	0	0	0	0	1	0	0	2	2	0	0
4	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	163	186	194	198	207	211	202	192	197	215	225	225	209	168	177	174
2	88	114	128	137	140	138	127	123	123	139	151	163	151	114	110	104
4	41	64	83	95	99	93	72	75	73	82	93	116	104	84	61	49
8	13	29	39	49	51	41	32	35	32	39	51	53	57	46	31	19
12	7	15	22	31	20	13	16	18	14	19	22	20	27	29	22	10
18	2	7	14	16	9	5	4	4	6	5	4	11	12	15	11	5
24	1	3	7	9	5	3	2	1	1	2	2	4	8	11	4	2
30	1	3	3	4	0	2	1	1	0	1	1	1	7	8	4	1
36	1	0	1	2	0	2	0	0	0	1	0	1	2	5	1	0
48	1	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0

TABLE 2.3.2-3 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	30	33	40	48	45	48	48	51	54	60	73	88	80	67	61	57
2	11	17	20	26	25	29	27	36	33	39	36	50	60	50	46	30
4	3	8	8	9	6	12	12	20	22	22	20	30	41	39	29	13
8	0	3	3	4	1	2	7	7	7	5	6	11	19	18	14	3
12	0	2	1	1	1	1	4	3	3	1	2	3	5	11	9	1
18	0	1	1	1	1	1	0	0	0	1	0	0	3	6	8	0
24	0	0	1	1	0	0	0	0	0	0	0	0	2	4	0	0
30	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	1	2	2	1	5	6	10	12	12	22	21	31	30	29	15
2	0	1	2	1	1	2	5	8	7	5	7	14	17	20	16	7
4	0	0	0	1	1	0	1	2	3	3	4	7	10	13	8	4
8	0	0	0	0	0	0	0	1	2	1	1	1	3	4	2	0
12	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	1	1	1	2	2	2	4	0
2	0	0	0	0	0	0	0	0	1	1	1	2	1	1	2	0
4	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0
8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-3 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 DEGREES)
Speed 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-4 (SHEET 1 OF 4)

1972 TO 1973 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 150-FT LEVEL
22.5° SECTOR WIDTH

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	121	120	136	176	202	180	173	179	188	171	198	188	191	191	132	81
2	58	56	71	91	104	84	90	84	80	90	113	100	114	103	65	32
4	18	18	35	40	57	38	43	37	32	30	51	41	58	49	24	14
8	2	4	13	9	13	9	7	8	2	7	6	8	19	17	8	1
12	1	0	5	3	3	2	1	2	1	1	0	0	4	3	5	0
18	0	0	2	1	0	0	0	0	0	0	0	0	1	2	2	0
24	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	40	41	57	68	88	75	71	77	72	81	102	101	127	123	73	37
2	19	23	34	39	56	39	32	39	37	48	59	60	79	73	42	16
4	5	8	19	18	26	17	18	19	12	17	30	23	40	34	18	4
8	2	2	10	3	6	4	2	2	1	3	2	5	12	14	7	0
12	1	0	4	2	0	1	0	0	0	1	0	0	3	3	4	0
18	0	0	1	0	0	0	0	0	0	0	0	0	1	2	2	0
24	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	8	13	12	8	7	11	12	16	15	14	22	24	50	57	32	2
2	5	3	7	5	1	2	5	9	5	7	10	10	33	36	20	0
4	1	0	5	1	0	1	2	4	2	1	4	5	17	17	7	0
8	0	0	2	0	0	0	0	0	0	1	0	0	4	8	2	0
12	0	0	1	0	0	0	0	0	0	1	0	0	2	2	1	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-4 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 22.5 (DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	1	2	1	1	1	1	1	3	3	5	9	18	31	17	0
2	0	0	2	1	0	0	0	1	2	1	2	2	12	16	11	0
4	0	0	0	0	0	0	0	1	1	1	0	0	6	7	4	0
8	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0
12	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 to 73120416 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	1	0	2	0	0	4	8	2	0
2	0	0	0	0	0	0	0	0	0	1	0	0	2	3	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 (DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	169	182	212	215	215	243	242	234	249	249	231	232	234	189	213	212
2	102	129	141	149	155	166	168	170	168	184	158	177	171	128	133	137
4	58	79	92	98	108	115	104	115	109	107	107	128	119	92	86	63
8	20	31	44	52	59	61	55	49	48	47	59	66	78	54	41	20
12	11	17	25	33	35	29	31	22	25	27	36	39	40	36	25	14
18	3	10	10	18	20	17	11	6	6	12	18	21	21	27	12	6
24	3	6	7	15	9	8	4	5	2	5	8	12	14	15	5	2
30	2	2	5	7	6	5	3	2	0	3	4	5	5	9	3	1
36	1	2	3	4	3	4	2	0	0	3	2	4	3	8	1	0
48	1	1	1	3	2	2	0	0	0	0	0	0	2	4	0	0

TABLE 2.3.2-4 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	72	76	97	124	121	142	143	135	137	141	144	176	161	122	134	111
2	41	51	62	85	84	91	84	87	92	101	101	129	115	86	84	69
4	22	28	40	51	67	56	47	50	58	61	61	80	74	60	46	28
8	8	16	20	25	30	28	15	16	21	19	28	39	45	35	29	15
12	4	10	13	14	13	8	9	6	7	8	13	17	26	28	17	8
18	1	7	6	8	3	3	3	2	1	4	8	10	14	18	8	2
24	1	3	2	2	2	2	2	1	1	2	3	6	10	10	5	0
30	1	1	1	2	1	1	0	1	0	2	2	1	4	9	3	0
36	1	1	1	2	1	0	0	0	0	1	2	1	2	7	1	0
48	0	0	0	1	1	0	0	0	0	0	0	0	2	3	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	20	24	20	18	23	27	28	29	31	36	46	69	62	58	58	40
2	5	12	11	8	7	7	12	15	20	19	21	43	46	43	37	25
4	3	6	5	6	4	2	6	7	10	11	11	27	30	30	22	8
8	0	3	3	2	0	1	2	1	3	2	3	9	16	17	14	2
12	0	2	1	1	0	0	0	1	1	1	1	2	10	13	7	1
18	0	1	1	1	0	0	0	0	0	1	1	0	7	8	3	0
24	0	0	1	1	0	0	0	0	0	0	0	0	2	4	0	0
30	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 (DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	3	3	2	2	2	1	4	6	8	13	25	36	35	34	17
2	0	2	2	2	1	1	1	3	4	4	3	15	21	22	18	11
4	0	0	1	1	1	0	1	2	3	2	3	8	12	16	12	4
8	0	0	0	0	0	0	0	0	1	1	1	1	7	9	5	0
12	0	0	0	0	0	0	0	0	1	1	1	0	2	2	1	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-4 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 72120417 TO 73120416 (SECTOR WIDTH = 67.5 (DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	1	1	3	2	2	4	9	10	9	2
2	0	0	0	0	0	0	0	0	1	1	1	2	3	3	3	1
4	0	0	0	0	0	0	0	0	0	0	0	2	3	2	1	0
8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-5 (SHEET 1 OF 4)

1977 TO 1978 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 33-FT LEVEL
22.5° SECTOR WIDTH

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	107	136	203	164	143	137	129	124	160	191	213	224	242	196	190	127
2	40	57	84	82	64	67	59	52	75	89	109	109	134	101	85	45
4	13	15	41	33	24	21	16	18	36	32	45	44	55	57	34	6
8	1	7	8	8	5	1	1	3	7	3	7	3	10	12	9	0
12	1	0	4	2	1	0	0	0	0	0	1	1	1	7	4	0
18	0	0	1	1	1	0	0	0	0	0	0	0	0	1	2	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 77040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	13	26	38	29	26	12	14	19	22	26	45	46	54	67	50	26
2	4	14	16	18	7	4	2	7	12	13	21	25	30	40	25	7
4	0	5	6	8	2	0	1	1	4	5	4	11	15	20	11	0
8	0	2	1	1	0	0	0	0	0	0	0	0	3	4	3	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 77040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	3	5	4	2	1	0	2	3	3	5	11	6	8	4	4
2	0	1	1	3	0	0	0	0	1	1	1	2	4	3	3	0
4	0	0	0	1	0	0	0	0	0	1	0	1	2	2	1	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-5 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	1	0	1	3	3	1	0	0
2	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	236	250	217	246	235	208	220	230	264	298	313	316	305	274	263	262
2	129	148	147	164	149	129	141	155	170	201	198	227	220	198	165	145
4	58	79	86	100	93	73	77	91	95	119	124	146	149	125	99	76
8	23	34	39	46	42	36	29	32	43	53	60	67	69	57	42	31
12	6	18	26	24	25	20	12	14	16	24	24	33	37	34	26	14
18	1	11	12	13	5	2	3	6	3	9	12	12	13	20	15	3
24	0	3	8	7	3	2	0	0	0	4	5	4	7	11	7	2
30	0	2	4	3	1	2	0	0	0	1	3	3	4	8	1	1
36	0	0	4	2	1	2	0	0	0	1	1	0	3	4	0	0
48	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-5 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	54	48	50	53	44	38	37	47	54	65	77	97	97	89	97	72
2	27	25	28	32	28	16	12	23	28	37	43	59	70	58	53	30
4	8	14	19	15	13	6	3	8	11	16	26	35	49	45	33	15
8	2	5	5	7	3	1	0	1	3	4	8	12	19	20	12	4
12	0	3	5	3	0	0	0	0	0	1	0	3	5	8	7	2
18	0	1	2	1	0	0	0	0	0	0	0	0	3	5	2	0
24	0	0	1	0	0	0	0	0	0	0	0	0	1	2	0	0
30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	8	8	9	8	6	3	3	6	7	7	15	16	18	12	11	7
2	1	4	4	4	3	1	1	1	2	3	3	6	8	9	5	2
4	0	0	3	3	1	0	0	0	1	2	2	3	5	6	3	1
8	0	0	0	1	0	0	0	0	0	1	2	1	2	2	2	1
12	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	1	1	1	2	4	5	3	1	0
2	0	0	0	0	0	0	0	0	0	1	1	2	3	2	0	0
4	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0
8	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-5 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0
2	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-6 (SHEET 1 OF 4)

1977 TO 1978 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 150-FT LEVEL
22.5° SECTOR WIDTH

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	152	170	218	223	207	213	174	184	219	259	280	271	309	268	188	134
2	71	75	114	103	99	102	83	77	107	142	153	125	170	145	95	65
4	19	30	57	49	53	40	42	35	40	62	71	52	79	80	37	21
8	6	5	16	10	11	2	8	5	10	8	15	12	20	24	7	2
12	0	1	6	4	2	1	2	3	3	3	4	3	6	11	1	0
18	0	0	3	0	0	1	1	0	0	0	0	1	1	5	0	0
24	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	62	83	107	100	101	98	79	96	132	162	183	159	193	187	115	63
2	27	39	59	51	52	51	41	46	65	95	106	84	117	112	56	32
4	5	18	29	29	24	14	16	19	27	45	45	37	55	66	26	11
8	2	5	11	4	6	1	4	5	3	5	7	6	15	21	6	0
12	0	1	5	2	1	1	1	1	0	2	4	2	5	11	1	0
18	0	0	3	0	0	0	1	0	0	0	0	0	1	3	0	0
24	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	12	16	28	23	14	19	18	16	25	37	49	44	69	92	46	19
2	5	11	12	9	8	6	5	4	9	16	29	21	43	46	20	8
4	1	4	6	4	1	1	1	3	4	3	11	6	21	24	12	0
8	1	0	2	1	1	0	0	1	0	0	0	0	6	8	1	0
12	0	0	2	0	0	0	0	0	0	0	0	0	2	5	0	0
18	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-6 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	4	4	0	1	1	1	3	6	4	10	8	20	24	22	5
2	0	3	1	0	1	0	0	1	3	0	4	3	10	18	5	0
4	0	0	0	0	0	0	0	0	2	0	1	1	3	10	1	0
8	0	0	0	0	0	0	0	0	0	0	0	0	1	4	1	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	1	1	0	0	0	0	0	2	0	5	3	4	9	5	2
2	0	0	0	0	0	0	0	0	0	0	1	1	3	6	1	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	253	278	289	265	284	273	286	287	305	306	323	355	305	284	300	270
2	142	175	189	192	188	180	189	187	216	232	231	249	233	205	188	170
4	81	101	122	131	126	121	113	121	135	158	168	169	162	147	128	93
8	39	46	66	73	57	62	53	50	70	83	92	93	95	75	57	40
12	19	25	31	40	31	39	27	30	40	44	52	54	66	49	34	12
18	6	12	17	19	17	15	10	16	12	23	23	27	30	28	19	5
24	1	5	10	10	12	3	3	6	3	15	9	13	18	19	8	1
30	1	2	7	5	9	2	2	3	2	6	8	9	10	16	5	1
36	0	1	3	4	6	2	1	1	0	5	6	8	6	11	4	1
48	0	1	2	4	1	0	1	0	0	1	2	2	3	4	1	0

TABLE 2.3.2-6 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	122	132	152	178	176	166	179	187	221	240	245	276	221	180	204	167
2	68	86	97	106	120	113	107	117	156	172	177	192	167	127	132	91
4	45	54	67	88	68	61	58	68	95	118	116	125	120	93	86	54
8	15	21	26	38	21	22	24	27	36	52	61	55	68	56	40	18
12	7	11	13	17	12	10	10	13	18	23	29	35	49	35	27	6
18	3	8	8	9	5	4	2	7	5	10	14	16	21	21	13	1
24	1	3	5	3	3	2	1	0	1	6	6	8	12	17	6	0
30	1	1	5	2	1	2	1	0	1	3	3	6	7	14	5	0
36	0	1	2	2	1	1	1	0	0	1	0	5	4	10	3	0
48	0	1	2	2	0	0	0	0	0	0	0	1	1	2	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	35	40	45	44	46	46	45	46	65	87	86	110	110	107	111	59
2	19	24	21	20	18	17	17	19	28	41	50	71	61	64	63	33
4	8	12	13	11	8	3	6	10	9	20	27	46	44	43	33	19
8	2	5	6	5	2	1	1	1	3	5	9	14	21	21	14	4
12	1	3	3	4	0	0	0	0	0	1	1	7	15	16	9	0
18	0	1	2	2	0	0	0	0	0	0	0	1	7	7	2	0
24	0	0	0	0	0	0	0	0	0	0	0	1	4	6	1	0
30	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	9	8	8	5	1	2	5	9	11	15	18	32	33	39	37	27
2	3	4	4	3	1	1	2	4	4	7	6	14	21	20	19	7
4	0	1	0	0	0	0	0	2	2	4	3	7	14	12	9	1
8	0	0	0	0	0	0	0	0	0	1	1	1	8	7	6	1
12	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-6 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 77040314 TO 78040313 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	3	2	2	1	0	0	0	2	2	6	6	10	13	10	11	7
2	1	1	0	0	0	0	0	0	0	1	1	5	9	7	5	1
4	0	0	0	0	0	0	0	0	0	1	1	1	3	4	3	0
8	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-7 (SHEET 1 OF 4)

1978 TO 1979 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 33-FT LEVEL
22.5º SECTOR WIDTH

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	140	139	161	158	145	122	125	131	167	157	160	136	148	138	105	100
2	57	69	67	68	78	54	57	59	64	79	74	74	80	66	45	45
4	19	18	37	33	39	19	22	23	30	37	27	35	30	27	22	15
8	2	3	9	8	7	2	2	3	5	5	7	7	8	6	9	0
12	0	0	3	3	1	1	0	1	0	1	0	1	2	2	5	0
18	0	0	1	3	0	0	0	0	0	0	0	0	0	1	3	0
24	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	21	18	31	28	24	10	14	14	22	27	39	34	39	40	32	14
2	7	7	17	10	9	1	5	6	9	15	21	21	18	18	18	5
4	3	3	7	4	4	0	2	3	5	7	10	9	7	8	11	0
8	0	1	0	2	1	0	0	0	0	1	3	2	4	2	6	0
12	0	0	0	2	0	0	0	0	0	0	0	0	0	1	2	0
18	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0
24	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	3	3	2	0	0	0	1	1	3	6	9	7	8	9	8	0
2	0	2	0	0	0	0	1	0	2	3	5	4	3	3	6	0
4	0	0	0	0	0	0	0	0	1	2	3	3	2	1	4	0
8	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-7 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 78040313 to 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	1	0	2	1	2	0	0
2	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 to 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 to 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	214	238	235	230	210	217	215	237	252	248	228	231	205	201	202	208
2	143	138	129	151	135	129	143	143	167	159	155	161	148	127	114	121
4	70	73	72	92	79	72	76	80	94	89	102	97	94	73	60	66
8	27	32	38	49	40	34	28	35	37	42	46	48	45	38	26	27
12	8	13	15	24	20	17	13	12	16	24	27	22	26	23	13	11
18	2	9	12	13	12	7	3	3	4	9	8	6	9	12	8	5
24	1	6	9	7	5	3	2	2	2	4	2	1	1	7	4	3
30	0	4	7	2	3	2	0	1	1	2	0	1	1	4	4	2
36	0	3	4	1	2	1	0	0	0	0	0	0	1	3	3	1
48	0	0	2	1	1	0	0	0	0	0	0	0	0	1	2	0

TABLE 2.3.2-7 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 78040313 to 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	38	55	51	49	39	39	29	38	46	55	62	69	70	65	55	50
2	21	27	33	35	24	18	10	16	23	31	40	43	45	34	28	30
4	9	15	18	20	12	9	2	9	14	18	25	32	30	26	20	16
8	4	3	4	4	4	2	2	3	3	11	12	13	10	15	11	8
12	0	2	3	3	3	0	1	1	3	4	2	1	4	8	7	2
18	0	0	1	2	2	0	1	0	0	1	1	0	1	4	3	1
24	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1	0
30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
36	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 to 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	6	7	4	2	0	1	1	4	9	16	18	16	15	14	13	11
2	1	1	3	0	0	1	1	3	4	9	9	9	7	8	7	6
4	0	0	0	0	0	0	0	1	3	6	7	6	5	7	5	4
8	0	0	0	0	0	0	0	0	1	1	3	4	3	3	2	1
12	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 to 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	1	1	3	3	4	2	2	0
2	0	0	0	0	0	0	0	0	0	0	1	2	3	2	1	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-7 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 78040313 to 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-8 (SHEET 1 OF 4)

1978 TO 1979 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 150-FT LEVEL
22.5° SECTOR WIDTH

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	189	167	179	212	217	207	219	195	238	231	239	229	230	208	193	181
2	86	79	84	94	108	96	91	105	116	120	128	108	108	97	99	90
4	29	21	32	46	48	44	32	54	51	50	52	50	51	40	52	39
8	5	1	4	6	14	6	4	11	9	11	14	6	12	6	18	8
12	1	0	3	2	5	0	2	4	2	3	3	1	1	2	7	4
18	0	0	0	0	2	0	1	0	0	0	1	0	0	0	3	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	77	65	82	101	108	104	78	94	120	130	128	121	111	103	104	96
2	39	32	39	52	58	44	33	46	60	65	73	65	63	52	62	47
4	12	6	15	26	22	14	9	22	21	29	34	30	31	21	34	24
8	3	1	3	3	7	2	2	3	3	6	7	4	10	4	15	6
12	1	0	3	2	4	0	1	1	1	1	3	1	1	2	5	3
18	0	0	0	0	2	0	1	0	0	0	1	0	0	0	2	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	29	9	8	26	20	11	7	9	21	30	38	42	39	30	44	31
2	13	5	4	11	10	2	3	4	10	11	20	21	19	17	27	22
4	2	0	1	3	4	1	1	2	4	6	8	10	11	4	13	11
8	0	0	0	1	2	0	0	0	1	1	3	3	5	1	6	3
12	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4	0
18	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-8 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	7	1	3	2	2	1	1	0	4	6	10	10	9	11	19	8
2	3	0	1	1	1	0	1	0	2	2	4	7	4	5	10	3
4	0	0	0	0	1	0	0	0	1	1	2	1	2	1	7	0
8	0	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	1	0	0	0	0	1	5	6	4	1	5	2
2	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	1
4	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	276	285	260	251	276	297	291	313	314	311	314	305	292	286	268	259
2	179	188	175	168	176	204	194	205	225	202	207	205	203	202	177	176
4	93	104	103	104	113	125	133	141	144	138	140	139	135	138	110	106
8	38	42	44	65	68	63	59	64	75	72	70	75	58	73	57	51
12	26	24	27	33	38	34	37	34	41	47	45	41	37	35	26	33
18	11	4	11	14	19	15	14	10	10	18	15	16	14	15	18	19
24	3	2	4	7	6	7	4	8	6	9	7	6	6	5	9	9
30	3	1	3	6	4	3	0	2	3	6	4	4	2	4	7	3
36	3	0	1	5	2	2	0	1	1	3	2	2	1	3	5	3
48	1	0	1	3	1	0	0	0	0	0	0	0	0	1	3	3

TABLE 2.3.2-8 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	136	141	145	145	169	187	190	200	214	202	199	175	169	163	147	144
2	79	84	87	90	107	113	100	119	133	128	128	129	114	112	99	96
4	32	43	46	47	64	51	53	70	81	75	85	84	69	75	63	56
8	19	18	20	21	23	20	16	19	27	37	44	40	35	47	38	31
12	13	10	10	12	11	12	7	9	11	24	24	25	24	23	18	20
18	5	2	5	6	7	5	3	2	4	8	6	11	11	9	13	12
24	3	1	3	6	3	0	1	1	3	4	2	4	3	4	5	4
30	3	1	1	6	3	0	0	0	1	3	1	3	1	3	3	3
36	3	0	1	5	1	0	0	0	0	0	1	0	1	2	3	3
48	1	0	1	2	1	0	0	0	0	0	0	0	0	0	1	2

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	46	40	34	29	34	33	25	34	45	59	72	69	62	72	59	63
2	29	19	17	16	15	14	8	18	23	35	33	40	44	43	43	41
4	15	6	7	8	7	8	4	6	13	19	25	29	24	26	29	25
8	7	1	2	3	3	2	1	2	4	9	13	15	12	16	16	16
12	3	0	1	2	3	1	0	0	2	4	5	3	6	7	9	9
18	1	0	0	2	2	1	0	0	0	0	0	1	2	2	3	3
24	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2	1
30	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0
36	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	13	11	5	5	3	3	2	5	9	17	17	18	19	27	27	28
2	7	5	3	3	1	2	0	2	4	9	11	12	16	16	14	15
4	1	0	0	1	1	1	0	1	2	5	5	8	8	14	12	9
8	0	0	0	1	1	1	0	0	1	2	3	2	3	4	4	2
12	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-8 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 78040313 TO 79040312 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	2	0	0	1	1	1	0	0	1	6	8	9	8	9	7	6
2	0	0	0	0	0	0	0	0	0	0	4	6	4	2	2	1
4	0	0	0	0	0	0	0	0	0	0	2	3	2	2	2	0
8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-9 (SHEET 1 OF 4)

1980 TO 1981 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 33-FT LEVEL
22.5° SECTOR WIDTH

START AND END OF PERIOD A0040101 81033124 START AND END OF DATA TO BE ANALYZED
VOGTLE WIND PERSE 33 FT 80-81 2009-A
PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	137	160	180	162	149	146	158	140	178	183	192	240	259	245	176	139
2	71	79	70	79	55	63	70	55	81	75	95	123	153	128	90	58
4	36	34	40	40	22	28	30	24	29	35	39	61	70	48	40	18
8	10	12	14	11	6	6	8	3	6	4	4	24	24	12	14	1
12	1	3	4	2	3	2	1	0	3	1	2	5	6	2	2	0
18	0	1	1	0	0	0	1	0	0	0	0	1	2	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	42	49	58	67	45	42	34	26	29	31	22	50	87	74	62	42
2	24	29	27	30	28	18	16	6	14	14	12	19	55	43	39	18
4	14	14	16	18	8	6	5	2	7	4	2	12	22	15	17	7
8	3	7	6	6	1	0	1	0	2	2	0	2	8	9	6	1
12	1	2	2	1	0	0	0	0	2	0	0	0	2	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	7	10	11	8	5	3	2	2	8	7	2	3	13	7	13	7
2	2	5	5	5	0	1	0	0	3	2	1	0	5	3	7	2
4	0	2	1	1	0	0	0	0	2	1	0	0	2	2	2	0
8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-9 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	1	0	1	0	0	0	0	1	1	0	0	2	2	1	2
2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	240	248	238	234	238	220	221	260	243	288	313	246	289	286	298	260
2	149	152	147	147	153	126	148	155	151	186	192	205	201	199	193	148
4	88	96	94	92	95	80	88	96	98	112	119	140	146	137	117	100
8	41	51	46	44	47	43	39	42	38	44	59	75	89	81	56	47
12	21	29	26	23	23	24	23	22	19	22	29	51	53	51	28	23
18	9	10	19	13	9	9	9	5	5	12	14	25	25	20	11	10
24	5	5	11	9	2	4	1	1	4	4	10	13	13	14	4	4
30	2	2	7	7	0	2	1	0	1	1	5	7	7	4	2	1
36	1	1	5	3	0	1	0	0	1	0	2	5	5	4	0	0
48	0	1	2	0	0	1	0	0	0	0	2	1	3	1	0	0

TABLE 2.3.2-9 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	87	95	101	97	104	78	76	67	56	54	78	110	123	119	106	97
2	46	55	61	64	63	43	35	38	31	35	41	76	78	80	68	61
4	29	38	37	31	34	24	17	16	18	18	18	39	53	53	41	36
8	11	17	21	11	10	6	2	5	6	6	6	12	19	28	19	13
12	6	8	13	8	6	1	1	2	2	2	2	5		12	6	5
18	3	3	6	5	1	1	1	0	1	1	0	0		2	1	2
24	2	2	2	4	0	0	0	0	0	0	0	0		1	1	1
30	1	1	2	1	0	0	0	0	0	0	0	0		1	0	0
36	0	1	0	1	0	0	0	0	0	0	0	0		0	0	0
48	0	1	0	0	0	0	0	0	0	0	0	0		0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	22	23	20	18	16	9	5	10	14	16	11	15	20	23	18	23
2	7	8	12	9	6	2	2	3	5	7	4	6	8	12	12	12
4	2	4	6	3	1	0	0	2	3	3	1	2	4	8	4	2
8	1	2	3	1	0	0	0	2	2	1	0	1	2	2	1	1
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	4	2	2	1	1	0	0	1	2	2	1	2	4	3	2	3
2	1	1	1	0	0	0	0	1	1	1	0	0	0	1	1	1
4	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-9 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-10 (SHEET 1 OF 4)

1980 TO 1981 WIND PERSISTENCE
VEGP METEOROLOGICAL TOWER - 150-FT LEVEL
22.5° SECTOR WIDTH

START AND END OF PERIOD 80040101 81033124 START AND END OF DATA TO BE ANALYZED
VOGTLE WIND PERSE 150 FT 80-81 2009-A
PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	168	152	155	153	167	196	194	199	216	199	196	223	263	258	282	224
2	84	72	65	77	93	90	104	91	94	106	107	107	132	148	180	124
4	39	26	31	25	50	40	45	38	36	43	50	47	62	74	96	57
8	6	6	10	6	12	13	8	5	1	9	3	10	11	22	31	11
12	0	0	4	1	5	3	3	1	0	2	0	3	4	6	11	5
18	0	0	1	0	1	0	1	0	0	0	0	0	1	0	3	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	97	79	69	80	85	91	89	91	92	92	102	106	147	166	196	146
2	56	39	38	47	58	53	51	41	35	53	57	65	79	102	132	85
4	27	17	18	16	26	26	26	14	13	23	22	29	35	56	61	44
8	4	3	6	4	9	6	5	2	0	3	1	6	9	18	20	8
12	0	0	3	1	4	2	2	0	0	0	0	2	4	3	8	4
18	0	0	1	0	1	0	0	0	0	0	0	0	1	0	2	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	25	19	13	19	26	22	14	6	9	19	14	18	25	44	69	51
2	9	6	7	8	10	8	3	3	4	7	7	8	10	24	43	29
4	3	3	4	5	6	5	0	1	2	3	3	2	1	5	18	14
8	0	0	2	1	2	1	0	0	0	2	1	0	1	1	6	5
12	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-10 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	2	2	3	4	1	4	2	0	1	4	4	4	3	6	19	14
2	1	0	2	0	1	0	0	0	1	3	1	1	0	3	9	7
4	1	0	2	0	1	0	0	0	1	2	0	0	0	2	3	3
8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	2	0	1	0	0	0	1	0	1	2	1	1	0	2	2	4
2	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	278	242	242	220	235	256	264	259	286	282	275	324	320	306	286	288
2	174	146	153	145	148	172	171	182	196	198	196	220	212	214	210	204
4	112	94	90	89	91	115	117	114	118	127	137	144	141	158	145	140
8	62	47	39	43	49	63	68	52	62	60	66	69	79	103	98	79
12	27	19	21	28	27	37	39	32	36	30	32	34	51	65	64	54
18	12	10	7	16	14	16	13	13	10	9	14	15	25	35	34	29
24	5	5	3	10	8	8	6	5	4	4	5	6	9	23	22	22
30	2	3	2	7	6	4	4	3	1	2	3	5	8	13	15	8
36	1	2	1	5	6	3	2	3	0	1	1	4	5	8	9	4
48	0	0	1	0	2	2	0	2	0	0	0	0	3	6	6	2

TABLE 2.3.2-10 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	177	142	132	120	130	140	150	159	178	169	179	214	262	226	219	204
2	113	95	86	82	84	103	96	94	117	116	129	140	142	159	163	150
4	74	59	50	54	50	59	59	52	69	72	80	86	97	118	105	94
8	36	23	20	25	26	36	29	20	16	18	25	36	54	68	65	50
12	15	7	10	18	14	20	18	8	4	5	11	15	31	40	46	34
18	7	6	4	8	7	8	5	2	0	2	4	6	16	25	28	20
24	5	2	1	5	6	4	2	1	0	1	1	3	5	16	17	14
30	2	2	1	4	5	2	1	1	0	0	0	2	4	8	7	5
36	0	1	1	2	5	2	0	1	0	0	0	2	3	4	4	3
48	0	0	1	0	1	0	0	0	0	0	0	0	1	1	2	1

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	74	47	41	40	45	47	37	26	31	33	36	49	69	46	99	96
2	40	21	17	20	21	19	13	9	12	13	16	22	36	56	63	63
4	19	11	11	15	18	10	6	4	5	9	10	10	11	28	35	31
8	10	3	4	6	6	4	1	0	3	4	4	3	4	16	22	18
12	3	1	2	3	2	2	0	0	0	2	2	0	1	4	7	6
18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	16	6	7	7	8	5	5	3	4	7	10	10	11	19	26	28
2	9	3	2	3	1	2	1	1	3	3	4	2	6	10	13	14
4	3	3	2	3	1	1	0	1	2	2	2	0	2	4	9	8
8	1	0	0	0	0	0	0	0	2	2	1	0	0	2	3	1
12	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-10 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 80040101 TO 81033124 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	5	3	1	1	0	1	1	2	2	3	4	2	3	4	6	5
2	1	1	0	0	0	0	1	1	1	1	1	0	0	0	3	2
4	1	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1
8	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-11 (SHEET 1 OF 4)

1959 TO 1963 WIND PERSISTENCE
AUGUSTA, GEORGIA
22.5° SECTOR WIDTH

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1151	1073	949	1067	1167	1168	1175	1112	1051	1068	1193	1274	1184	1275	1351	1380
2	659	629	686	669	742	722	726	674	602	654	772	832	802	796	840	795
4	319	352	367	405	446	417	392	355	290	379	479	545	537	496	507	412
8	108	151	192	195	172	143	151	126	98	131	190	261	290	255	246	138
12	42	66	114	109	67	47	60	47	38	53	84	111	159	145	118	48
18	15	29	57	47	26	14	18	16	10	9	24	47	92	82	51	11
24	6	13	30	28	12	8	2	5	3	3	5	17	44	47	21	3
30	3	10	21	17	5	3	1	2	0	1	5	7	31	30	9	0
36	2	8	12	8	4	2	1	0	0	1	3	1	23	14	2	0
48	1	4	5	1	0	0	0	0	0	0	1	0	2	5	0	0

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	388	415	439	501	540	540	525	422	369	371	621	774	755	703	690	515
2	207	237	276	301	307	277	280	226	202	246	369	483	506	483	449	271
4	87	119	170	178	169	138	124	98	82	124	204	304	352	304	278	124
8	27	41	83	77	61	32	21	24	19	26	54	112	185	166	120	24
12	7	19	31	31	20	9	5	7	7	8	16	35	92	89	52	7
18	3	9	13	9	4	1	0	0	0	2	1	8	42	42	23	2
24	2	4	5	4	1	0	0	0	0	0	0	3	20	26	7	0
30	1	3	4	2	1	0	0	0	0	0	0	2	14	16	4	0
36	1	3	2	0	0	0	0	0	0	0	0	0	8	8	2	0
48	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	70	80	103	116	100	95	81	69	67	87	159	277	320	301	270	121
2	22	28	47	52	45	31	24	24	23	38	74	134	209	195	163	53
4	6	11	26	25	15	9	4	8	10	15	39	73	146	137	102	13
8	2	2	4	4	3	0	0	2	3	2	4	20	68	66	38	4
12	1	2	2	2	1	0	0	0	1	2	1	4	23	23	9	0
18	0	0	0	1	1	0	0	0	0	0	0	0	5	6	3	0
24	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	0
30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-11 (SHEET 2 OF 4)

22.5° SECTOR WIDTH

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	6	8	6	10	5	7	7	11	12	15	32	79	117	128	100	29
2	4	1	0	1	2	4	4	4	1	2	11	41	69	76	54	9
4	1	0	0	0	0	1	1	1	1	1	5	23	49	46	28	2
8	1	0	0	0	0	0	0	0	0	0	0	7	22	16	10	1
12	0	0	0	0	0	0	0	0	0	0	0	2	6	6	2	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 67.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	2	1	1	0	0	1	1	1	0	2	6	18	31	34	22	6
2	1	0	0	0	0	0	0	0	0	0	3	9	17	17	10	1
4	1	0	0	0	0	0	0	0	0	0	1	6	9	10	6	1
8	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed GE 5.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	661	525	746	737	644	655	721	590	473	601	703	874	908	836	831	711
2	265	211	360	351	254	290	315	254	198	217	355	440	416	473	365	285
4	79	77	175	170	75	107	110	82	61	70	156	195	176	250	127	83
8	8	12	37	48	12	16	21	18	10	3	23	34	32	84	27	5
12	0	6	11	19	4	4	6	8	1	0	4	9	11	36	6	0
18	0	3	0	8	2	0	1	1	0	0	0	1	3	12	0	0
24	0	1	0	2	0	0	0	0	0	0	0	0	0	5	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-11 (SHEET 3 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 10.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	158	176	301	285	238	255	239	187	132	198	329	418	538	532	324	204
2	60	85	158	151	99	118	100	79	68	77	145	208	275	324	139	84
4	18	31	62	80	31	38	32	21	17	14	56	92	118	185	47	18
8	0	5	11	25	4	5	5	3	3	0	3	14	20	66	10	0
12	0	4	3	5	1	0	0	1	1	0	0	1	8	30	1	0
18	0	1	0	0	0	0	0	0	0	0	0	0	2	10	0	0
24	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 15.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	21	24	46	54	45	25	34	30	17	35	55	105	192	229	86	33
2	7	8	19	25	16	4	5	13	7	7	21	56	94	138	37	14
4	1	2	7	12	5	0	2	1	1	3	6	23	41	81	8	2
8	0	0	1	2	0	0	0	0	1	0	0	1	10	32	2	0
12	0	0	1	1	0	0	0	0	0	0	0	0	2	9	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 20.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	2	1	5	0	5	0	2	5	4	4	10	21	66	83	26	4
2	1	0	0	0	2	0	1	3	1	0	2	10	36	46	8	3
4	0	0	0	0	0	0	1	0	0	0	0	4	18	28	0	1
8	0	0	0	0	0	0	0	0	0	0	0	0	4	10	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-11 (SHEET 4 OF 4)

67.5° SECTOR WIDTH

PERSISTENCIES FROM 59010101 TO 63123423 (SECTOR WIDTH = 22.5 DEGREES)
Speed GE 25.0 (MPH)

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	0	1	0	0	0	0	1	0	0	0	2	4	15	18	6	1
2	0	0	0	0	0	0	0	0	0	0	0	2	7	10	1	1
4	0	0	0	0	0	0	0	0	0	0	0	1	4	4	0	1
8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2.3.2-12

PRECIPITATION DATA FOR AUGUSTA AREA
1902 TO 1950

Month		1 Hour	2 Hours	3 Hours	6 Hours	12 Hours	24 Hours
Jan	Amt	1.10	1.54	1.73	2.61	2.89	2.94
	Date	8/1935	3/1947	3/1947	16/1925	16/1925	16-17/ 1925
Feb	Amt	1.21	1.66	1.80	2.06	2.96	3.17
	Date	28/1916	22/1909	22/1909	22-23/ 1909	25-26/ 1939	7-8/1903
Mar	Amt	1.56	1.60	1.97	2.75	3.67	3.79
	Date	28/1920	28/1920	8/1942	22-23/ 1944	22-23/ 1944	22-23/ 1944
Apr	Amt	1.17	1.41	1.48	2.56	2.96	3.60
	Date	2/1920	25/1946	25/1946	29/1937	29/1937	1-2/1936
May	Amt	2.08	3.05	3.62	3.66	3.66	3.90
	Date	23/1915	23-24/ 1915	23-24/ 1915	23-24/ 1915	23-24/ 1915	23-24/ 1915
Jun	Amt	2.90	3.08	3.09	3.09	4.01	4.17
	Date	18/1911	26/1926	26-27/ 1926	26-27/ 1926	15-16/ 1906	15-16/ 1906
Jul	Amt	2.36	3.36	3.46	3.66	3.68	3.81
	Date	18/1911	6/1950	6/1950	14/1906	14/1906	6-7/1950
Aug	Amt	3.07	3.28	3.46	3.52	3.63	3.93
	Date	14/1903	1/1906	4/1915	4/1915	29/1936	3-4/1915
Sep	Amt	2.47	3.98	4.46	4.72	6.46	9.82
	Date	6/1948	6/1948	6/1948	6/1948	26-27/ 1929	30-1/ 1929
Oct	Amt	2.36	2.78	3.30	5.83	7.79	9.82
	Date	1/1929	1/1929	1/1929	1/1929	1/1929	30-1 1929
Nov	Amt	2.25	2.34	2.34	3.07	4.32	4.33
	Date	2/1903	2/1903	2/1903	23/1942	23/1942	23/1942
Dec	Amt	0.96	1.20	1.56	1.96	2.64	3.99
	Date	15/1941	15/1941	30/1924	2-3/1905	25-26/ 1943	25-26/ 1943
Annual	Amt	3.07	3.98	4.46	5.83	7.79	9.82
	Date	8/14/03	9/6/48	9/6/48	10/1/79	10/1/79	9/30/ 10/1/29

TABLE 2.3.2-13

PRECIPITATION DATA FOR AUGUSTA AREA
1940 TO 1950

Month		1 Hour	2 Hours	3 Hours	6 Hours	12 Hours	24 Hours
Jan	Amt	0.82	1.54	1.73	2.03	2.09	2.36
	Date	3/1947	3/1947	3/1947	3/1947	3/1947	14-15/ 1944
Feb	Amt	0.84	1.23	1.34	1.71	1.86	2.06
	Date	9/1949	9/1949	9/1949	8-9/1949	8-9/1949	8-9/1949
Mar	Amt	1.16	1.44	1.97	2.73	3.67	3.79
	Date	17/1942	8/1942	8/1942	22-23/ 1944	22-23/ 1944	22-23/ 1944
Apr	Amt	0.97	1.41	1.48	1.63	1.99	2.49
	Date	25/1946	25/1946	25/1946	25/1946	16-17/ 1946	25-26/ 1946
May	Amt	1.57	1.67	1.73	2.14	2.14	2.14
	Date	28/1950	25/1948	25/1948	28/1950	28/1950	28/1950
Jun	Amt	1.36	1.45	1.50	2.14	2.32	2.36
	Date	8/1949	8/1949	8/1949	8/1949	12/1947	11-12/ 1947
Jul	Amt	2.14	3.36	3.46	3.67	3.64	3.81
	Date	6/1950	6/1950	6/1950	6-7/1950	6-7/1950	6-7/1950
Aug	Amt	1.83	1.89	1.89	2.17	2.86	3.81
	Date	31/1948	31/1948	31/1948	28/1949	12-13/ 1940	12-13/ 1940
Sep	Amt	2.47	3.98	4.46	4.72	4.80	4.85
	Date	6/1948	6/1948	6/1948	6/1948	6/1948	5-6/1948
Oct	Amt	0.96	1.68	2.12	2.91	3.58	4.12
	Date	25/1946	8/1946	8/1946	8/1946	8/1946	7-8/1946
Nov	Amt	1.39	1.40	1.71	3.07	4.32	4.33
	Date	3/1950	3/1950	23/1942	23/1942	23/1942	23/1942
Dec	Amt	0.96	1.20	1.43	1.68	2.64	3.99
	Date	15/1941	15/1941	25-26/ 1943	25-26/ 1943	25-26/ 1943	25-26/ 1943
Annual	Amt	2.47	3.98	4.46	4.72	4.80	4.85
	Date	9/6/48	9/6/84	9/6/48	9/6/48	9/6/48	9/5-6/48

TABLE 2.3.2-14 (SHEET 1 OF 48)

MONTH OF JANUARY
JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION

REQUEST NUMBER 909-7

FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM 12/73-12/74, 4/77-4/79
SPEED AND DIRECTION 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	3	0	1	1	0	1	0	0	0	0	0	0	0	1	1	2	10	3.5	2.91
3.6 - 7.5	8	0	10	3	3	3	4	5	1	1	0	8	12	11	10	9	98	34.6	5.46
7.6 - 12.5	2	4	5	4	5	4	3	2	0	0	2	7	14	28	22	14	115	41.0	9.71
12.6 - 18.5	0	0	0	4	3	2	0	0	0	0	0	1	5	23	18	0	56	19.8	14.66
18.6 - 24.5	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	3	1.1	19.72
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	14	16	13	11	10	7	7	1	1	2	16	33	63	51	25	283	0.0	7.58
PERCENT	4.6	4.9	5.7	4.6	3.9	3.5	2.5	2.5	.4	.4	.7	5.7	11.7	22.3	18.8	8.8	100.0		
AV SPD	5.1	6.1	6.2	10.8	10.1	8.2	7.5	6.2	6.9	4.5	9.9	8.3	9.7	11.0	11.0	8.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TBLES OF WIND SPEED AND DIRECTION

REQUEST NUMBER 909-7

FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 1.0 BUT LESS THAN OR EQUAL TO .9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 100 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	1	1	0	0	0	0	1	0	0	1	0	1	1	2	4	6.8	3.08
3.6 - 7.5	2	3	2	2	0	1	2	2	1	1	2	4	1	4	3	0	30	50.8	5.91
7.6 - 12.5	1	0	1	0	1	0	1	1	0	0	4	0	2	4	1	0	15	27.1	9.15
12.6 - 18.5	0	0	0	0	0	1	0	0	1	0	0	1	3	1	2	0	9	15.3	13.64
18.6 - 24.5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	3	3	4	3	1	2	3	3	3	1	6	6	6	9	6	0	59	0.0	6.71
PERCENT	5.1	5.1	6.8	5.1	1.7	3.4	5.1	5.1	5.1	1.7	10.2	15.3	10.2	15.3	10.2	0.0	100.0		
AV SPD	6.2	5.5	6.2	5.1	7.9	9.7	6.6	7.3	7.9	6.6	7.6	6.4	12.3	9.0	9.3	0.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 2 OF 48)

MONTH OF JANUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 - 7.5	1	2	0	0	1	0	3	1	1	0	0	1	1	1	2	3	17	47.2	5.15
7.6 - 12.5	0	1	1	0	2	0	0	1	1	0	1	3	1	3	0	0	14	38.9	10.10
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	6.3	16.06
18.6 - 24.5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	5.6	20.18
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	3	1	0	3	0	3	2	2	0	1	4	3	8	2	3	36	0.0	7.24
PERCENT	2.8	8.3	2.8	0.0	8.3	0.0	8.3	5.6	5.6	0.0	2.8	11.1	8.3	22.2	5.6	8.3	100.0		
AV SPD	4.3	7.3	10.9	0.0	10.1	0.0	5.9	7.7	7.9	0.0	7.9	9.0	12.2	13.0	4.1	5.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	5	5	4	1	1	3	2	0	3	0	1	3	3	4	3	5	43	8.5	2.73
3.6 - 7.5	7	12	10	11	15	15	13	12	5	7	6	12	16	14	9	15	179	35.2	5.37
7.6 - 12.5	3	13	13	31	10	9	4	4	8	8	8	16	23	28	14	7	199	39.5	9.43
12.6 - 18.5	0	2	1	2	1	2	0	1	4	13	9	4	11	20	3	0	73	14.5	14.45
18.6 - 24.5	0	0	0	0	0	0	0	0	3	1	0	0	0	5	0	0	9	1.8	20.09
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.2	25.70
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	15	32	28	45	27	29	19	17	23	29	25	35	53	71	29	27	504	0.0	0.00
PERCENT	3.0	6.3	5.6	6.9	5.4	5.8	3.8	3.4	4.6	5.8	5.0	6.9	10.5	14.1	5.8	5.4	100.0		
AV SPD	5.1	7.3	7.3	9.0	6.9	6.9	6.6	7.0	9.9	11.5	10.8	8.0	9.0	11.1	8.4	5.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 3 OF 48)

MONTH OF JANUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	.7	.50
CALM + - 3.5	5	0	6	5	3	0	2	5	5	4	6	3	8	7	8	5	72	11.8	2.47
3.6 - 7.5	8	6	24	24	9	8	14	9	12	21	15	19	34	51	30	7	291	47.8	5.46
7.6 - 12.5	1	6	6	11	14	8	11	7	8	7	7	8	25	41	22	0	182	29.9	9.54
12.6 - 18.5	0	2	0	0	2	0	0	0	5	4	3	7	2	9	12	0	46	7.6	14.57
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	6	5	0	0	0	11	1.8	20.99
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	.5	28.85
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	15	15	36	40	28	16	27	21	30	36	32	45	75	108	73	12	609	0.0	5.38
PERCENT	2.5	2.5	5.9	6.6	4.6	2.6	4.4	3.4	4.9	5.9	5.3	7.4	2.3	17.7	12.0	2.0	100.0		
AV SPD	4.2	7.8	5.5	6.8	8.0	8.3	7.0	6.6	7.5	7.1	7.1	11.1	7.8	7.9	8.3	4.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3	1.1	.50
CALM + - 3.5	1	2	1	2	1	0	4	2	6	2	3	3	8	4	9	5	53	20.2	2.49
3.6 - 7.5	5	8	10	10	6	3	6	8	8	3	7	24	21	32	24	11	186	71.0	4.98
7.6 - 12.5	2	1	1	2	0	0	0	0	0	0	0	1	0	4	2	5	18	6.9	9.04
12.6 - 18.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	.8	14.60
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	11	12	14	7	3	10	10	14	6	11	28	30	40	36	21	252	0.0	3.92
PERCENT	3.4	4.2	4.6	5.3	2.7	1.1	3.8	3.8	5.3	2.3	4.2	10.7	11.5	15.3	13.7	8.0	100.0		
AV SPD	6.2	5.5	5.3	5.6	5.0	6.1	3.8	4.5	3.9	5.5	4.2	4.9	4.2	5.2	4.7	6.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 4 OF 48)

MONTH OF JANUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	2	2	0	0	3	1	0	0	0	0	0	1	1	3	1	14	5.8	.50
CALM + - 3.5	7	7	12	4	10	5	2	6	7	1	2	5	5	3	5	3	84	40.6	2.40
3.6 - 7.5	6	11	16	7	7	4	4	1	7	8	9	11	4	6	5	3	109	52.7	4.68
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	20	30	11	17	12	7	7	14	9	11	16	10	10	13	7	207	0.0	2.40
PERCENT	6.3	9.7	14.5	5.3	8.2	5.8	3.4	3.4	6.8	4.3	5.3	7.7	4.8	4.8	6.3	3.4	100.0		
AV SPD	3.7	3.5	3.8	4.0	3.2	3.4	3.8	2.9	3.9	4.1	4.5	4.4	3.1	3.5	2.7	3.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF JANUARY

SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	1	3	2	0	0	3	1	0	0	0	1	0	3	1	5	1	21	1.1
CALM + - 3.5	21	14	25	14	15	9	10	13	22	7	12	15	24	19	26	20	266	13.6
3.6 - 7.5	37	52	72	57	41	34	46	38	25	41	39	79	89	119	83	48	910	46.4
7.6 - 12.5	9	251	27	48	32	21	19	15	17	15	22	35	65	108	61	26	545	27.9
12.6 - 18.5	1	4	1	6	6	5	0	1	10	18	12	13	21	56	35	0	189	9.6
18.6 - 24.5	0	0	0	0	0	0	0	0	3	1	0	6	8	6	0	0	25	1.3
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	4	.2
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	69	98	127	126	94	72	76	67	87	82	88	150	210	309	210	95	1960	100.0
PERCENT	3.5	5.0	6.5	6.4	4.8	3.7	3.9	3.4	4.4	4.2	4.5	7.7	10.7	15.8	10.7	4.8	100.0	

TABLE 2.3.2-14 (SHEET 5 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00	0.00
CALM + - 3.5	1	3	1	2	0	0	0	0	0	0	0	0	0	0	1	3	16	5.4	2.91
3.6 - 7.5	10	9	15	8	8	4	5	1	0	4	3	3	12	5	9	6	101	34.2	5.54
7.6 - 12.5	5	10	11	9	8	6	8	2	1	1	3	12	21	15	18	4	134	45.4	9.53
12.6 - 18.5	1	2	4	4	0	0	0	0	0	1	2	1	4	8	16	1	44	14.9	14.60
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	17	24	31	23	16	10	13	3	1	6	8	19	38	28	44	14	295	0.0	0.00
PERCENT	5.8	8.1	10.5	7.8	5.4	3.4	4.4	1.0	.3	2.0	2.7	6.4	12.9	9.5	14.9	4.7	100.0		
AV SPD	6.8	7.8	7.9	9.2	7.9	8.3	7.8	7.0	11.1	7.5	9.7	8.1	9.0	10.8	10.7	6.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 4

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4.5	3.40
3.6 - 7.5	4	3	1	2	2	2	1	1	1	0	1	0	4	0	1	0	23	52.3	5.48
7.6 - 12.5	3	1	1	1	0	0	0	0	0	2	1	0	3	0	0	0	12	27.3	9.08
12.6 - 18.5	0	0	1	1	0	0	0	0	0	1	2	0	0	0	2	0	7	15.9	14.03
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	5	3	4	2	2	1	1	1	3	4	0	7	0	3	0	44	0.0	6.66
PERCENT	18.2	11.4	6.8	9.1	4.5	4.5	2.3	2.3	2.3	6.8	9.1	0.0	15.9	0.0	6.8	0.0	100.0		
AV SPD	6.6	6.0	8.8	9.3	6.8	6.2	4.4	7.1	6.2	10.8	10.5	0.0	7.5	0.0	10.2	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 6 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	4.2	2.60
3.6 - 7.5	0	1	0	1	1	0	1	0	2	0	1	0	1	0	1	1	11	45.4	5.39
7.6 - 12.5	0	3	1	2	0	0	0	1	0	0	0	0	1	1	0	0	9	37.5	9.34
12.6 - 18.5	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	12.5	15.38
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	5	1	3	1	0	1	1	2	0	2	1	2	2	1	1	24	0.0	0.00
PERCENT	4.2	20.8	4.2	12.5	4.2	0.0	4.2	4.2	8.3	0.0	8.3	4.2	8.3	8.3	4.2	4.2	100.0		
AV SPD	2.6	10.2	9.4	8.0	6.9	0.0	5.8	10.4	4.3	0.0	4.3	14.1	8.6	12.4	6.4	6.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	5	3	0	2	2	4	1	1	1	0	2	2	6	3	1	33	9.7	2.60
3.6 - 7.5	16	13	21	9	7	6	8	8	3	2	3	3	7	3	5	5	119	35.0	5.57
7.6 - 12.5	16	9	27	7	6	1	3	2	3	5	2	9	9	16	20	0	135	39.7	9.47
12.6 - 18.5	0	2	8	1	0	0	0	5	2	2	5	5	4	10	7	1	52	15.3	14.27
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.3	18.70
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	32	29	59	17	15	9	15	16	9	10	10	20	22	35	35	7	340	0.0	6.54
PERCENT	9.4	8.5	17.4	5.0	4.4	2.6	4.4	4.7	2.6	2.9	2.9	5.9	6.5	10.3	10.3	2.1	100.0		
AV SPD	7.3	7.0	8.6	7.2	6.9	5.4	6.1	8.7	9.2	8.0	11.2	10.2	9.2	9.5	9.6	5.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 7 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	3	2	5	4	0	2	4	2	0	1	2	1	4	6	5	3	44	9.8	2.59
3.6 -7.5	15	9	22	16	24	16	13	17	8	10	11	13	14	18	31	13	250	55.4	5.28
7.6 - 12.5	3	4	9	12	4	5	5	2	6	0	9	0	7	19	32	3	120	25.6	9.10
12.6 - 18.5	0	4	6	1	1	0	0	4	2	1	0	1	4	10	3	0	37	8.2	14.39
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	21	19	42	33	29	23	22	25	16	12	22	15	29	53	71	19	451	0.0	5.63
PERCENT	4.7	4.2	9.3	7.3	6.4	5.1	4.9	5.5	3.5	2.7	4.9	3.3	6.4	11.4	15.7	4.2	100.0		
AV SPD	5.6	7.7	7.4	7.1	6.4	5.7	5.7	7.2	7.7	6.3	7.0	5.5	7.5	8.1	7.4	5.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	8	5	2	2	1	0	4	4	1	2	3	3	1	3	9	6	54	26.6	2.49
3.6 - 7.5	5	8	13	8	4	8	2	2	3	6	15	24	11	12	9	9	139	68.5	5.00
7.6 - 12.5	0	0	2	3	1	1	0	0	0	0	2	0	0	0	0	0	9	4.4	9.85
12.6 - 18.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.5	13.20
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	14	17	13	6	9	6	6	4	8	20	27	12	15	18	15	203	0.0	4.02
PERCENT	6.4	6.9	8.4	6.4	3.0	4.4	3.0	3.0	2.0	3.9	9.9	13.3	5.9	7.4	8.9	7.4	100		
AV SPD	3.4	5.0	5.6	5.8	6.3	5.6	3.6	3.6	4.8	4.3	5.2	5.1	5.1	4.5	3.6	4.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 8 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.8	.50
CALM + - 3.5	2	0	0	3	2	3	1	5	3	0	3	1	2	4	1	1	31	26.1	2.53
3.6-7.5	2	2	7	10	2	7	4	2	2	12	10	10	9	5	0	1	85	71.4	4.80
7.6-12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1.7	9.03
12.6-18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6-24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6-32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	4	4	7	13	4	10	5	7	5	12	14	11	11	9	1	2	119	0.0	0.00
PERCENT	3.4	3.4	5.9	10.9	3.4	8.4	4.2	5.9	4.2	10.1	11.8	9.2	9.2	7.6	.8	1.7	100.0		
AVSPD	3.9	7.3	5.1	4.5	4.2	4.3	4.6	3.0	3.3	4.9	3.9	4.7	4.7	3.8	3.1	4.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF FEBRUARY
SUMMARY TABLE

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
CALM + - 3.5	16	16	11	11	5	7	13	12	5	4	9	10	10	19	19	14	181	12.3
3.6-7.5	52	45	79	54	48	43	34	31	19	34	44	53	58	43	66	35	728	49.3
7.6-12.5	27	29	51	34	19	13	16	7	10	8	17	21	41	51	70	7	421	28.5
12.6-18.5	1	10	19	7	1	0	0	9	4	5	9	8	12	29	28	2	144	9.8
18.6-24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.1
24.6-32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	96	100	160	106	73	63	63	59	38	51	80	93	121	142	173	58	1476	100.0
PERCENT	6.5	6.8	10.8	7.2	4.9	4.3	4.3	4.0	2.6	3.5	5.4	6.3	8.2	9.6	11.7	3.9	100.0	

TABLE 2.3.2-14 (SHEET 9 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
CALM + - 3.5	0	0	1	1	0	0	0	2	0	0	0	1	1	2	2	0	10	2.2	2.78
3.6 - 7.5	13	12	11	6	7	4	9	5	4	8	12	7	17	23	11	19	169	36.7	5.67
7.6 - 12.5	4	8	11	4	12	12	6	6	10	7	18	23	33	21	11	7	193	42.0	9.59
12.6 - 18.5	0	1	1	0	0	0	5	2	2	4	4	6	21	18	11	1	76	16.5	14.50
18.6 - 24.5	0	0	0	0	0	0	0	0	0	1	0	0	3	7	1	0	12	2.6	19.85
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	17	21	24	11	19	16	20	16	16	20	34	37	75	71	36	27	460	0.0	7.75
PERCENT	3.7	4.6	5.2	2.4	4.1	3.5	4.3	3.5	3.5	4.3	7.4	8.0	16.3	15.4	7.8	5.9	100.0		
AV SPD	6.4	7.6	7.7	6.6	8.5	8.6	9.1	8.2	9.4	10.0	9.1	10.0	10.5	10.7	9.7	7.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 11

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	3.8	2.65
3.6 - 7.5	4	5	3	3	0	1	2	2	2	2	1	3	9	3	3	3	46	43.4	5.41
7.6 - 12.5	3	6	10	2	2	3	3	1	0	1	8	4	5	3	0	2	53	50.0	9.10
12.6 - 18.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	2.8	15.01
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	11	13	5	2	4	5	3	2	3	9	7	16	5	5	5	106	0.0	6.61
PERCENT	8.5	10.4	12.3	4.7	1.9	3.8	4.7	2.8	1.9	2.8	8.5	6.6	15.1	5.7	5.7	4.7	100.0		
AV SPD	7.0	7.5	8.4	6.6	9.4	8.6	6.4	6.4	4.7	6.7	9.9	8.2	7.6	7.2	6.6	7.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 10 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM __________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.3	3.50
3.6 -7.5	3	1	1	1	1	0	2	2	0	1	1	0	1	2	1	2	19	43.2	5.83
7.6 - 12.5	0	1	0	0	4	1	0	1	5	2	1	1	2	1	1	0	20	45.5	9.37
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6.8	14.21
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.3	21.40
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	2	2	1	5	1	2	4	5	4	2	1	3	4	3	2	44	0.0	7.41
PERCENT	6.8	4.5	4.5	2.3	11.4	2.3	4.5	.9.1	11.4	9.1	4.5	2.3	6.8	9.1	6.8	4.5	100.0		
AV SPD	5.7	7.3	4.0	7.2	8.8	7.9	6.6	8.9	9.5	10.8	8.7	8.9	8.5	10.4	10.0	6.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALM + - 3.5	1	1	2	1	2	4	2	3	3	2	0	1	1	3	1	2	29	5.4	0.00
3.6 -7.5	14	10	13	16	30	23	26	13	17	14	10	13	12	15	8	12	246	46.0	5.65
7.6 - 12.5	7	6	9	12	23	18	14	20	17	8	12	16	20	11	6	5	204	38.1	9.32
12.6 - 18.5	2	1	1	0	1	0	7	7	4	9	2	0	2	5	3	0	44	8.2	14.51
18.6 - 24.5	0	1	0	0	0	0	0	0	2	5	0	0	3	1	0	0	11	2.1	19.93
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.2	25.10
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL		24	18	25	29	56	45	49	43	43	39	24	30	38	35	18	19	535	0.0
PERCENT	4.5	3.4	4.7	5.4	10.5	8.4	9.2	8.0	8.0	7.3	4.5	5.6	7.1	6.5	3.4	3.6	100.0		
AV SPD	7.4	7.0	7.2	7.1	6.7	8.1	8.6	9.0	11.1	8.8	7.9	9.6	8.4	8.8	5.9				

AVERAGE SPEED FOR THIS TABLE EQUALS 8.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 11 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
CALM + -3.5	3	2	1	3	1	4	2	6	4	7	3	4	2	4	3	4	54	19.7	2.45
3.6 -7.5	6	7	10	17	16	23	21	27	39	55	46	16	18	25	36	7	369	57.5	5.38
7.6 - 12.5	0	0	1	5	11	16	13	16	19	35	23	5	5	18	20	3	190	29.6	9.05
12.6 - 18.5	1	0	0	0	0	0	0	1	6	3	5	0	1	3	2	0	22	3.4	13.94
18.6 - 24.5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	.2	19.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	10	9	12	25	30	43	35	54	72	97	77	24	29	50	62	13	642	0.0	5.63
PERCENT	1.6	1.4	1.9	3.9	4.7	6.7	5.5	8.4	11.2	15.1	12.0	3.7	4.5	7.8	9.7	2.0	100.0		
AV SPD	5.3	5.1	5.8	5.9	6.3	6.9	70	6.6	7.2	7.1	7.0	5.8	6.0	7.3	6.7	5.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	.7	.50
CALM + -3.5	4	1	2	3	1	4	2	6	4	7	3	4	2	4	3	4	54	19.7	2.45
3.6 -7.5	4	3	7	2	10	10	16	15	11	22	15	23	18	14	6	1	178	65.0	4.85
7.6 - 12.5	0	0	1	0	1	7	9	6	6	4	0	0	0	0	3	0	37	13.5	8.81
12.6 - 18.5	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	3	1.1	14.05
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	4	11	5	12	21	27	28	21	234	18	27	20	20	13	5	274	0.0	0.00
PERCENT	2.9	1.5	4.0	1.8	4.4	7.7	9.9	10.2	7.7	12.4	6.6	9.9	7.3	7.3	4.7	1.8	100.0		
AV SPD	3.2	4.5	4.9	3.3	5.1	6.0	6.1	5.5	6.1	5.3	4.9	4.6	4.6	4.6	5.9	2.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 5.2
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 12 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2.0	.50
CALM + -3.5	1	1	4	1	1	4	3	1	3	2	1	4	4	2	1	2	35	23.3	2.65
3.6 -7.5	1	6	5	4	8	5	3	1	5	13	14	6	9	13	7	0	100	66.7	4.87
7.6 - 12.5	0	0	2	0	0	0	0	2	1	0	1	2	0	0	0	0	8	5.3	8.54
12.6 - 18.5	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	4	2.7	14.49
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	7	12	5	9	10	7	4	9	17	12	12	13	15	8	3	150	0.0	3.66
PERCENT	2.0	4.7	8.0	3.3	6.0	6.7	4.7	2.7	6.0	11.3	10.7	8.0	8.7	10.0	5.3	2.0	100.0		
AV SPD	2.3	5.2	4.8	4.2	4.9	5.3	5.4	5.6	4.9	5.6	5.2	5.0	4.1	4.7	4.9	2.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF MARCH
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	5	.2
CALM + -3.5	10	5	11	9	7	16	8	21	18	15	7	13	14	15	13	11	193	8.7
3.6 -7.5	45	44	50	49	72	66	79	67	78	115	99	68	84	95	72	44	1127	51.0
7.6 - 12.5	14	21	34	23	53	57	45	52	58	57	63	51	65	54	41	17	705	31.9
12.6 - 18.5	4	2	2	0	1	1	13	11	12	20	11	6	25	27	19	1	155	7.0
18.6 - 24.5	0	0	0	0	0	0	0	1	2	6	0	0	6	9	1	0	25	1.1
24.6 - 32.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	74	72	99	81	133	140	145	152	168	214	180	138	194					
PERCENT	3.3	3.3	4.5	3.7	6.0	6.3	6.6	6.9	7.6	9.7	8.1	6.2	8.8	9.1	6.6	3.3	100.0	

TABLE 2.3.2-14 (SHEET 13 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	0	2	0	1	0	2	0	1	0	1	1	3	1	3	2	18	3.6	2.77
3.6 -7.5	8	6	7	13	3	5	12	5	3	4	13	13	22	26	16	13	169	33.4	5.85
7.6 - 12.5	6	2	13	9	7	11	27	10	10	6	13	13	32	26	17	5	207	40.9	9.55
12.6 - 18.5	3	0	0	0	0	0	3	2	3	0	8	16	24	33	11	1	104	20.6	14.63
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	1	1	3	2	1	0	8	1.6	19.78
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	18	8	22	22	11	16	44	17	17	10	36	44	84	88	48	21	506	0.0	
PERCENT	3.6	1.6	4.3	4.3	2.2	3.2	8.7	3.4	3.4	2.0	7.1	8.7	16.6	17.4	9.5	4.2	100.0		
AV SPD	5.3	5.1	5.8	5.9															

AVERAGE SPEED FOR THIS TABLE EQUALS 9.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 7

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	2	5	6.2	2.60
3.6 -7.5	0	0	1	4	2	0	3	1	9	5	2	1	1	0	1	0	30	37.0	5.68
7.6 - 12.5	0	2	0	0	1	3	2	3	2	3	2	3	3	6	1	1	32	39.5	9.71
12.6 - 18.5	0	0	0	0	0	0	2	0	0	3	1	4	4	0	0	0	14	17.3	13.93
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	2	1	4	3	4	7	4	11	11	5	8	8	7	3	3	81	0.0	0.00
PERCENT	0.0	2.5	1.2	4.9	3.7	4.9	8.6	5.6	4.9	13.6	6.2	9.9	9.9	8.6	3.7	3.7	100.0		
AV SPD	0.0	9.1	6.3	5.3	6.3	7.4	9.1	6.3	7.0	8.9	9.9	11.4	12.5	8.7	7.0	5.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.7
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 14 OF 48)

MONTH OF APRIL

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN .-9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.7	3.20
3.6 -7.5	0	1	1	0	0	1	2	3	1	0	4	3	1	0	0	1	18	48.6	5.57
7.6 - 12.5	1	0	0	0	0	0	2	0	2	1	1	0	2	1	1	4	15	40.5	9.68
12.6 - 18.5	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3	8.1	13.91
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	1	1	0	0	2	4	3	3	2	6	3	3	2	1	5	37	0.0	6.97
PERCENT	2.7	2.7	2.7	0.0	0.0	5.4	10.8	8.1	8.1	5.4	16	8.1	8.1	5.4	2.7	13.5	100.0		
AV SPD	7.7	6.7	5.7	0.0	0.0	4.5	8.0	5.5	8.0	11.4	7.7	6.3	8.4	12.8	10.2	10.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	.3	.50
CALM + -3.5	2	1	1	2	0	1	2	0	2	4	4	2	0	2	2	0	25	6.7	2.67
3.6 -7.5	2	6	9	6	12	17	8	14	14	22	15	10	9	4	9	3	160	42.7	5.45
7.6 - 12.5	8	2	1	1	5	6	13	9	17	15	14	13	16	22	8	2	152	40.5	9.42
12.6 - 18.5	1	1	0	0	1	0	4	1	2	3	3	3	6	5	6	0	36	9.6	13.89
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.3	19.40
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	10	11	9	18	24	27	14	35	45	37	28	31	33	25	5	375	0.0	6.31
PERCENT	3.5	2.7	2.9	1.4	4.8	6.4	7.2	6.4	9.3	12.0	9.9	7.5	8.3	8.8	6.7	3.3	100.0		
AV SPD	8.4	6.8	5.2	5.3	6.9	6.5	8.3	7.9	7.4	7.2	8.5	8.3	9.4	9.8	8.7	6.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.9
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 3

TABLE 2.3.2-14 (SHEET 15 OF 48)

MONTH OF APRIL

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .-3 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.2	.50
CALM + -3.5	3	0	0	3	4	8	11	7	7	4	6	3	1	5	5	3	70	14.5	2.73
3.6 -7.5	6	5	2	5	22	21	32	35	39	30	17	24	23	13	20	5	299	62.0	5.33
7.6 - 12.5	0	2	1	0	3	1	10	7	11	14	7	6	9	7	14	3	95	19.7	8.85
12.6 - 18.5	0	0	0	0	0	0	0	0	0	6	1	3	1	2	3	0	16	3.3	14.91
18.6 - 24.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	.2	18.60
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	7	4	8	29	30	53	49	57	55	31	36	34	27	42	11	482	0.0	5.04
PERCENT	1.9	1.5	.8	1.7	6.0	6.2	11.0	10.2	11.8	11.4	6.4	7.5	7.1	5.6	8.7	2.3	100.0		
AV SPD	4.8	6.3	5.9	4.5	5.0	4.5	5.6	5.7	5.8	7.5	6.2	7.0	6.8	6.7	7.3	5.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	3	0	2	1	3	3	5	4	6	6	2	5	4	6	6	8	64	21.4	2.34
3.6 -7.5	9	9	13	13	6	123	8	3	15	20	19	31	26	17	14	3	218	72.9	5.15
7.6 - 12.5	0	0	0	0	0	1	2	1	1	0	0	3	3	3	0	1	15	5.0	9.03
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	.7	14.19
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	12	9	15	14	9	16	15	8	22	26	21	39	33	26	22	12	299	0.0	4.18
PERCENT	4.0	3.0	5.0	4.7	3.0	5.4	5.0	2.7	7.4	8.7	7.0	13.0	11.0	8.7	7.4	4.0	100.0		
AV SPD	4.8	5.7	5.2	4.8	4.0	4.8	5.2	4.6	5.4	4.7	5.0	5.3	5.5	5.0	5.1	3.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 5.0
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 16 OF 48)

MONTH OF APRIL

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
CALM + -3.5	4	2	3	3	6	7	4	5	6	2	9	6	6	7	4	3	77	41.6	2.25
3.6 -7.5	4	1	5	3	5	2	2	4	4	6	15	23	12	6	11	3	106	57.3	4.62
7.6 - 12.5	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	1.1	9.61
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	3	8	6	11	10	6	9	11	8	24	29	18	13	15	6	185	0.0	3.22
PERCENT	4.3	1.6	4.3	3.2	5.9	5.4	3.2	4.9	5.9	4.3	13.0	15.7	9.7	7.0	8.1	3.2	100.0		
AV SPD	3.6	3.5	3.7	3.7	3.2	3.3	3.2	3.5	4.3	4.5	4.3	4.5	3.7	3.7	3.9	3.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF APRIL
SUMMARY OF TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	.1
CALM + -3.5	13	3	8	9	14	21	24	15	22	16	22	17	14	22	21	18	260	13.2
3.6 -7.5	29	28	38	44	50	58	67	65	85	87	85	105	94	66	71	28	1000	50.9
7.6 - 12.5	15	8	15	10	16	23	56	30	44	39	37	38	65	65	41	16	518	26.4
12.6 - 18.5	4	1	0	0	1	0	9	3	5	13	14	26	35	41	22	1	175	8.9
18.6 - 24.5	0	0	0	0	0	0	0	0	0	1	2	1	3	2	1	0	10	.5
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	61	40	62	63	81	102	156	114	156	157	160	187	211	196	156	63	1965	100.0
PERCENT	3.1	2.0	3.2	3.2	4.1	5.2	7.9	5.8	7.9	8.0	8.1	9.5	10.7	10.0	7.9	3.2	100.0	

TABLE 2.3.2-14 (SHEET 17 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	5	2	1	2	1	1	0	0	0	1	0	2	2	2	2	4	25	5.3	2.89
3.6 -7.5	18	16	13	13	11	8	2	2	2	7	6	25	26	21	14	20	204	43.6	5.55
7.6 - 12.5	1	5	7	3	4	2	3	6	8	1	8	21	52	40	20	13	200	42.7	9.28
12.6 - 18.5	0	2	0	0	0	1	2	2	0	1	6	9	11	2	0	1	37	7.9	14.39
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	.4	19.74
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	30	25	21	18	16	12	7	10	10	10	21	58	91	65	36	38	468	0.0	6.72
PERCENT	6.4	5.3	4.5	3.8	3.4	2.6	1.5	2.1	2.1	2.1	4.5	12.4	19.4	13.9	7.7	8.1	100.0		
AV SPD	6.1	6.3	6.6	5.8	6.4	6.7	10.6	9.8	8.3	7.2	10.6	8.8	9.0	8.4	7.6	6.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	1	2	0	1	0	0	0	0	1	0	2	1	0	0	8	9.9	2.90
3.6 -7.5	2	3	4	3	3	0	1	3	4	3	7	1	2	3	1	0	40	49.4	5.40
7.6 - 12.5	1	1	1	1	0	1	0	3	3	4	0	4	3	2	1	0	25	30.9	9.45
12.6 - 18.5	0	0	0	1	0	0	1	0	1	0	0	4	1	0	0	0	8	9.9	14.73
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	4	6	7	3	2	2	6	8	7	8	9	8	6	2	0	81	0.0	6.07
PERCENT	3.7	4.9	7.4	8.6	3.7	2.5	2.5	7.4	9.9	8.6	9.9	11.1	9.9	7.4	2.5	0.0	100.0		
AV SPD	7.5	7.1	5.6	5.6	6.2	5.9	6.9	5.9	9.2	8.5	5.9	11.7	8.2	6.5	7.8	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.6
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 18 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	1	1	0	0	1	0	0	1	0	2	1	1	0	5	12.5	2.68
3.6 -7.5	1	1	1	4	1	4	1	1	0	3	0	1	0	1	2	0	21	52.5	5.35
7.6 - 12.5	0	1	2	2	0	0	0	0	2	1	0	0	3	0	1	0	12	30.0	9.61
12.6 - 18.5	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	5.0	14.20
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	2	3	7	2	4	1	2	3	4	1	2	3	21	4	0	40	0.0	0.00
PERCENT	2.5	5.0	7.5	17.5	5.0	10.0	2.5	5.0	7.5	10.0	2.5	5.0	7.5	2.5	10.0	0.0	100		
AV SPD	4.9	8.7	8.6	5.9	4.2	6.0	7.5	3.9	10.7	6.5	2.7	11.5	10.1	6.2	5.0	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	1	1	4	6	3	4	3	4	0	4	0	0	2	1	2	35	9.4	2.72
3.6 -7.5	9	13	12	19	13	12	13	19	16	10	19	8	4	6	8	6	187	50.4	5.50
7.6 - 12.5	10	8	9	4	3	1	7	16	18	9	8	10	13	3	3	5	127	34.1	9.41
12.6 - 18.5	0	0	0	0	2	0	1	3	7	3	2	0	2	0	2	1	23	6.2	14.23
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	19	22	22	27	24	16	25	41	45	22	33	18	19	11	14	14	372	0.0	6.00
PERCENT	5.1	5.9	5.9	7.3	6.5	4.3	6.7	11.0	12.1	5.9	8.9	4.8	5.1	3.0	3.8	3.8	100.0		
AV SPD	7.4	6.7	7.7	5.6	5.9	5.6	6.8	7.6	8.7	8.2	7.0	8.2	9.2	6.6	7.8	6.8			

AVERAGE SPEED FOR THIS TABLE EQUALS7.3
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 4

TABLE 2.3.2-14 (SHEET 19 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	.2	.50
CALM + -3.5	8	6	2	8	11	17	13	21	12	4	7	8	4	5	1	8	135	25.5	2.55
3.6 -7.5	11	10	18	10	17	19	22	38	37	21	31	31	21	15	15	11	327	61.8	5.06
7.6 - 12.5	2	1	6	2	2	5	2	7	14	2	4	3	0	3	7	0	60	11.3	9.03
12.6 - 18.5	0	0	0	1	0	0	0	0	0	0	1	1	0	0	2	0	5	.9	13.22
18.6 - 24.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.2	19.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	17	26	21	30	41	37	66	63	28	43	43	25	23	25	19	529	0.0	4.18
PERCENT	4.2	3.2	4.9	4.0	5.7	7.8	7.0	12.5	11.9	5.3	8.1	8.1	4.7	4.3	4.7	3.6	100.0		
AV SPD	5.4	4.5	5.8	5.1	4.6	4.3	4.4	4.9	5.6	4.9	5.2	5.4	5.1	5.4	7.6	4.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 5.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	.3	.50
CALM + -3.5	12	6	7	8	7	8	11	7	5	5	8	7	11	8	4	5	119	37.8	2.35
3.6 -7.5	5	6	5	8	4	12	13	1	8	11	16	31	18	26	15	9	188	59.7	4.84
7.6 - 12.5	0	2	0	0	1	0	0	0	1	0	1	0	0	0	1	1	7	2.2	7.98
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	17	14	12	17	12	20	24	8	14	16	25	38	29	34	20	15	315	0.0	3.41
PERCENT	5.4	4.4	3.8	5.4	3.8	6.3	7.6	2.5	4.4	5.1	7.9	12.1	9.2	10.8	6.3	4.8	100.0		
AV SPD	3.5	4.1	3.2	3.6	3.7	4.2	3.6	2.9	4.7	4.3	4.5	4.8	4.1	4.2	4.5	4.5			

AVERAGE SPEED FOR THIS TABLE EQUALS4.1
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 20 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.6	.50
CALM + -3.5	1	4	6	2	7	3	1	6	5	7	10	7	2	3	9	9	52	48.5	2.40
3.6 -7.5	3	1	4	6	5	4	2	1	4	7	13	14	5	9	3	5	86	50.9	4.72
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	4	5	10	8	12	7	3	7	9	14	23	21	7	13	12	14	169	0.0	0.00
PERCENT	2.4	3.0	5.9	4.7	7.1	4.1	1.8	4.1	5.3	8.3	13.6	12.4	4.1	7.7	7.1	8.3	100.0		
AV SPD	4.0	2.6	3.7	3.9	3.5	4.1	4.2	2.4	3.3	4.0	4.1	3.9	4.6	4.3	2.8	3.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

MONTH OF MAY
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	3	.2
CALM + -3.5	26	19	18	27	33	33	29	38	26	17	31	24	21	21	18	28	409	20.7
3.6 -7.5	49	50	57	63	54	59	54	65	71	62	92	111	76	81	58	51	1053	53.3
7.6 - 12.5	20	18	25	12	10	9	12	32	46	17	21	38	71	48	33	19	431	21.8
12.6 - 18.5	0	2	0	2	2	1	4	5	9	4	9	15	14	2	4	2	75	3.8
18.6 - 24.5	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3	.2
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	96	89	100	105	99	102	99	140	152	101	154	189	182	153	113	100	1974	100.0
PERCENT	4.9	4.5	5.1	5.3	5.0	5.2	5.0	7.1	7.7	5.1	7.8	9.6	9.2	7.8	5.7	5.1	100.0	

TABLE 2.3.2-14 (SHEET 21 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	3	5	4	2	0	1	2	0	0	3	2	1	2	3	0	29	7.1	2.58
3.6 -7.5	19	15	19	13	25	14	9	4	3	3	8	10	25	15	6	5	193	47.3	5.56
7.6 - 12.5	5	3	10	11	9	15	5	5	10	3	7	11	43	23	12	3	175	42.9	9.16
12.6 - 18.5	1	1	0	0	0	0	0	1	0	0	0	3	3	1	0	1	11	2.7	13.72
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	26	22	34	28	36	29	15	12	13	6	18	26	72	41	21	9	408	0.0	6.19
PERCENT	6.4	5.4	8.3	6.9	8.8	7.1	3.7	2.9	3.2	1.5	4.4	6.4	17.6	10.0	5.1	2.2	100.0		
AV SPD	6.3	6.0	6.1	7.0	6.5	7.2	6.6	7.4	9.2	7.0	6.4	7.9	8.4	8.1	7.6	7.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 11

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	5	6.2	2.68
3.6 -7.5	4	3	2	3	3	2	3	3	4	4	4	2	5	2	2	1	47	58.0	5.42
7.6 - 12.5	0	2	1	1	2	4	3	2	3	2	3	2	1	0	2	2	29	35.8	8.74
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	5	5	4	4	5	8	7	7	6	6	7	4	6	2	4	3	81	0.0	5.84
PERCENT	6.2	6.2	4.9	4.9	6.2	7.4	8.6	7.4	7.4	8.6	4.9	7.4	7.4	2.5	4.9	3.7	100.0		
AV SPD	4.1	7.2	5.5	6.5	6.5	6.9	5.4	7.0	6.8	6.3	8.6	8.0	5.8	7.1	7.6	8.8			

AVERAGE SPEED FOR THIS TABLE EQUALS6.7
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 22 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	2	9.5	2.71
3.6 -7.5	1	1	2	0	0	0	2	2	0	2	0	0	1	0	0	0	11	52.4	5.98
7.6 - 12.5	0	1	0	0	0	0	0	0	3	0	1	1	1	0	1	0	8	38.1	9.51
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	2	2	0	0	0	2	2	4	2	2	1	2	0	1	0	21	0.0	6.14
PERCENT	4.8	9.5	9.5	0.0	0.0	0.0	9.5	9.5	19.0	9.5	4.8	6.4	9.5	0.0	4.8	0.0	100.0		
AV SPD	6.3	7.7	5.8	0.0	0.0	0.0	6.0	5.6	8.3	6.1	6.2	9.7	8.3	0.0	9.4	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	4	5	2	3	5	3	5	3	2	3	5	3	1	1	2	48	15.1	2.72
3.6 -7.5	3	9	7	9	17	11	14	21	15	15	16	18	11	1	4	5	176	55.5	5.41
7.6 - 12.5	3	2	3	3	10	8	6	9	3	7	10	7	1	3	7	5	87	27.4	8.81
12.6 - 18.5	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	1	6	1.9	14.37
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	7	15	15	16	30	24	23	35	21	25	19	31	16	5	12	13	317	0.0	5.24
PERCENT	2.2	4.7	4.7	5.0	9.5	7.6	7.3	11.0	6.6	7.9	9.1	9.8	5.0	1.6	3.8	4.1	100.0		
AV SPD	6.7	5.1	5.5	6.6	6.5	6.5	5.8	6.0	5.6	6.9	6.5	6.5	5.8	7.1	7.8	7.1			

AVERAGE SPEED FOR THIS TABLE EQUALS6.3
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 23 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	.7	.50
CALM + -3.5	4	6	11	5	18	6	22	18	12	11	9	6	4	4	6	2	144	26.7	2.27
3.6 -7.5	7	3	6	12	23	18	27	44	45	28	34	32	31	11	2	8	331	61.4	5.12
7.6 - 12.5	1	1	4	0	1	4	2	7	9	9	9	4	5	1	0	1	58	10.8	8.92
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	.4	16.81
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	12	10	22	17	42	28	51	70	66	48	53	43	40	16	8	13	539	0.0	3.78
PERCENT	2.2	1.9	4.1	3.2	7.8	5.2	9.5	13.0	12.2	8.9	9.8	8.0	7.4	3.0	1.5	2.4	100.0		
AV SPD	5.0	3.7	4.5	4.5	4.3	5.4	4.	4.7	5.5	5.5	5.7	5.7	5.5	4.6	2.9	4.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 5.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	.7	.50
CALM + -3.5	8	7	14	5	6	9	13	16	6	6	10	2	7	9	4	4	126	46.2	2.12
3.6 -7.5	5	10	7	9	1	8	13	5	12	13	20	23	11	4	0	0	141	51.6	4.88
7.6 - 12.5	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	1.1	9.03
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.4	14.27
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	17	24	14	7	17	28	21	18	19	30	25	18	14	4	4	273	0.0	2.94
PERCENT	4.8	6.2	8.8	5.1	2.6	6.2	10.3	7.7	6.6	7.0	11.0	9.2	6.6	5.1	1.5	1.5	100.0		
AV SPD	3.6	3.9	3.2	3.8	2.7	3.3	4.0	2.7	4.2	4.5	4.4	5.1	4.3	3.9	1.8	2.0			

AVERAGE SPEED FOR THIS TABLE EQUALS3.9
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 24 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0	0.00
CALM + -3.5	2	3	4	4	3	4	3	3	3	1	1	1	5	4	5	6	52	56.5	2.15
3.6 -7.5	0	1	1	1	1	1	2	3	1	4	5	4	3	3	5	3	38	41.3	4.47
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2.2	9.47
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	4	5	5	4	5	5	6	4	5	8	5	8	7	10	9	92	0.0	2.80
PERCENT	2.2	4.3	5.4	5.4	4.3	5.4	5.4	6.5	4.3	5.4	8.7	5.4	8.7	7.6	10.9	9.8	100.0		
AV SPD	3.3	2.6	3.1	3.0	2.7	2.5	3.3	3.3	3.0	4.3	5.7	4.4	3.5	3.3	3.2	3.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF JUNE
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	2	6	.3
CALM + -3.5	17	23	40	20	32	24	44	45	25	20	27	16	20	20	19	14	406	23.5
3.6 -7.5	39	42	44	47	70	54	70	82	80	69	87	89	87	36	19	22	937	54.1
7.6 - 12.5	9	9	19	15	22	31	17	24	27	21	32	25	51	27	22	11	362	20.9
12.6 - 18.5	1	1	0	2	0	0	0	1	0	1	1	5	4	0	2	20	20	1.2
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	66	75	106	84	124	109	131	153	132	111	147	135	162	85	60	51	1731	100.0
PERCENT	3.8	4.3	6.1	4.9	7.2	6.3	7.6	8.8	7.6	6.4	8.5	7.8	9.4	4.9	3.5	2.9	100.0	

TABLE 2.3.2-14 (SHEET 25 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	1	2	2	0	0	0	0	0	0	1	0	3	1	0	1	12	4.0	2.98
3.6 -7.5	2	8	5	14	7	9	4	0	1	3	13	26	50	21	9	4	176	58.9	5.64
7.6 - 12.5	2	0	2	7	23	9	2	0	0	3	10	19	22	8	2	0	109	2.2	9.47
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	.7	13.05
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	5	9	9	23	30	18	6	0	1	6	24	46	75	31	11	5	229	0.0	6.26
PERCENT	1.7	3.0	3.0	7.7	10.0	6.0	2.0	0.0	.3	2.0	8.0	15.4	25.1	10.4	3.7	1.7	100.0		
AV SPD	6.5	5.2	6.0	6.6	8.9	7.6	7.4	0.0	5.8	7.0	7.0	7.2	6.4	6.6	6.2	4.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 5

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3.6	2.35
3.6 -7.5	1	2	2	0	2	2	0	0	3	2	2	4	4	3	0	3	30	53.5	5.29
7.6 - 12.5	0	1	0	0	3	2	2	0	0	2	3	4	3	0	0	0	20	36.4	8.90
12.6 - 18.5	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1.8	13.10
18.6 - 24.5	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	3.6	20.73
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	3	3	0	5	4	2	0	3	6	5	5	8	4	0	3	55	0.0	6.15
PERCENT	1.8	5.5	5.5	0.0	9.1	7.3	3.6	0.0	5.5	10.9	9.1	14.5	14.5	7.3	0.0	5.5	100.00		
AV SPD	4.9	6.9	9.8	0.0	7.0	8.0	10.0	0.0	4.6	1.6	7.3	7.7	6.0	4.4	0.0	5.5			

AVERAGE SPEED FOR THIS TABLE EQUALS7.4
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 26 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	0	4	4.0	2.98
3.6 -7.5	0	0	2	3	3	3	0	1	2	0	0	3	5	0	1	1	24	58.9	5.64
7.6 - 12.5	0	0	0	2	1	1	0	0	1	0	1	2	0	0	1	0	9	2.2	9.47
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.7	13.05
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	0	3	5	4	4	0	1	3	0	1	6	7	0	2	1	37	0.0	6.26
PERCENT	0.0	0.0	8.1	10.5	10.8	10.8	0.0	2.7	8.1	0.0	2.7	16.2	18.9	0.0	5.4	2.7	100.0		
AV SPD	0.0	0.0	3.7	6.6	6.8	6.7	0.0	5.7	6.4	0.0	9.3	6.3	4.6	0.0	8.5	4.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	0	2	0	2	4	1	4	2	3	3	0	3	1	0	0	26	9.7	2.60
3.6 -7.5	2	2	14	12	12	17	11	10	12	14	15	16	16	8	3	2	166	62.2	5.35
7.6 - 12.5	1	1	3	5	6	5	7	5	10	10	12	5	0	1	0	1	72	27.0	8.84
12.6 - 18.5	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3	1.1	16.13
18.6 - 24.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.0	20.73
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	5	3	19	17	20	26	19	19	25	28	30	21	19	10	3	3	267	0.0	5.41
PERCENT	1.9	1.1	7.1	6.4	7.5	9.7	7.1	7.1	9.4	10.5	11.2	7.9	7.1	3.7	1.1	1.1	100.00		
AV SPD	7.2	5.7	6.0	6.8	6.5	5.7	6.7	5.6	7.3	7.1	6.9	6.2	5.1	5.2	4.5	6.3			

AVERAGE SPEED FOR THIS TABLE EQUALS6.4
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 27 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO - .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	.0	.50
CALM + -3.5	5	3	6	5	5	11	13	18	11	8	11	17	17	15	5	2	152	3.3	2.49
3.6 -7.5	6	4	11	15	17	20	32	37	62	61	74	39	17	3	6	4	408	23.3	5.14
7.6 - 12.5	3	0	2	5	3	2	6	12	25	17	9	3	3	0	0	0	90	62.5	8.59
12.6 - 18.5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	13.8	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.3	14.02
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	14	8	20	25	25	33	51	67	98	86	95	59	37	0	11	6	653	0.0	4.27
PERCENT	2.1	1.2	3.1	3.8	3.8	5.1	7.8	10.3	15.0	13.2	4.5	9.0	5.7	2.8	1.7	.9	100.0		
AV SPD	5.1	5.0	5.1	5.5	5.0	4.7	4.9	5.3	6.1	5.8	5.4	4.8	3.9	3.0	4.2	4.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 5.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	2	2	3	6	3	15	9	7	10	11	11	4	1	2	1	87	38.2	2.69
3.6 -7.5	0	3	5	8	8	10	11	17	11	14	15	18	8	5	2	1	138	60.5	4.60
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	.9	9.03
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	.4	12.70
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	5	5	7	11	15	13	26	26	18	24	26	30	12	6	5	2	228	0.0	3.64
PERCENT	.9	2.2	3.1	4.8	6.6	5.7	11.4	11.4	7.9	10.5	11.4	13.2	5.3	2.6	2.2	.9	100.0		
AV SPD	3.4	4.0	3.9	4.4	5.1	4.4	3.6	3.9	4.1	4.2	3.9	4.1	4.5	4.5	5.0	7.0			

AVERAGE SPEED FOR THIS TABLE EQUALS4.1
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 28 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	3	1	1	1	0	3	2	2	1	3	2	0	0	0	0	0	12	27.3	2.66
3.6 -7.5	0	1	4	0	2	0	0	0	4	4	2	3	1	1	0	1	30	68.2	4.36
7.6 - 12.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4.5	8.38
12.6 - 18.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	2	6	1	2	3	2	4	5	7	4	3	1	1	0	2	44	0.0	3.78
PERCENT	6.8	4.5	13.6	2.3	4.5	6.8	4.5	4.5	11.4	15.9	9.1	6.8	2.3	2.3	0.0	4.5	100.0		
AV SPD	2.8	4.1	4.6	2.9	4.8	4.3	4.7	4.0	3.8	3.5	3.6	4.7	4.6	7.2	0.0	6.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF JULY
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.0
CALM + -3.5	11	7	14	11	13	18	29	31	21	24	28	29	30	19	7	3	295	38.2
3.6 -7.5	12	20	43	52	52	64	60	67	95	98	121	109	101	41	21	16	972	60.5
7.6 - 12.5	6	2	8	19	36	19	17	17	36	32	35	34	28	9	3	1	304	.9
12.6 - 18.5	1	1	1	0	0	0	0	0	1	0	0	1	0	1	1	3	9	.4
18.6 - 24.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	30	30	67	82	101	101	106	115	153	157	185	173	159	70	32	22	1583	0.0
PERCENT	1.9	1.9	4.2	5.2	6.4	6.4	6.7	7.3	9.7	9.9	11.7	10.9	10.0	4.4	2.0	1.4	100.0	

TABLE 2.3.2-14 (SHEET 29 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO - 1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	0.00
CALM + -3.5	3	4	2	2	0	2	0	2	3	0	2	1	1	2	4	4	32	10.7	2.39
3.6 -7.5	20	16	13	10	13	10	1	0	2	0	11	30	31	12	6	7	182	1.1	5.46
7.6 - 12.5	0	3	10	5	11	11	4	2	0	0	10	21	6	0	0	0	84	8.2	0.00
12.6 - 18.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.0	0.00
TOTAL	23	23	25	17	24	23	5	4	5	0	23	52	38	14	10	12	218	0.0	5.32
PERCENT	7.7	7.7	8.4	5.7	8.1	7.7	1.7	1.3	1.7	0.0	7.7	17.4	12.8	4.7	3.4	4.0	100.0		
AV SPD	5.0	5.5	7.1	6.3	7.5	7.3	8.8	6.1	3.6	0.0	7.4	7.0	5.9	5.2	3.8	4.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	4	1	1	0	3	0	0	1	0	0	0	0	0	0	0	87	7.0	2.37
3.6 -7.5	1	2	7	2	5	10	1	1	0	2	7	5	1	0	0	0	138	64.9	5.41
7.6 - 12.5	0	0	2	1	0	0	3	0	0	0	4	1	0	0	0	0	2	28.1	9.05
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	6	10	4	5	13	4	1	1	2	11	6	1	2	0	0	57	0.0	5.54
PERCENT	3.5	10.5	17.5	7.0	8.8	3.5	7.0	1.8	1.8	3.5	19.3	10.5	1.8	3.5	0.0	0.0	100.0		
AV SPD	4.2	6.6	5.2	6.1	6.7	7.6	7.2	6.1	3.3	7.0	7.1	6.6	4.4	10.3	0.0	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS6.4
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 30 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION — REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	0.00
CALM + -3.5	1	0	0	2	1	1	0	0	1	0	0	1	0	0	0	2	5	10.9	2.80
3.6 -7.5	0	2	0	1	1	4	0	0	2	3	3	6	4	4	1	0	31	67.4	5.35
7.6 - 12.5	0	0	0	0	1	3	0	0	1	0	1	1	0	0	0	0	9	19.6	8.88
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2.2	14.70
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	2	3	3	2	8	0	0	4	3	4	7	4	1	4	1	45	0.0	5.31
PERCENT	2.2	4.3	0.0	6.5	4.3	17.4	4.3	0.0	8.7	6.5	8.7	15.2	8.7	2.2	8.7	2.2	100.0		
AV SPD	2.9	4.6	0.0	6.9	6.1	6.8	8.5	0.0	5.2	5.5	6.9	6.9	5.6	5.3	3.9	14.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION — REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	.3	.50
CALM + -3.5	2	2	5	3	7	3	4	5	6	8	10	3	7	3	3	3	74	19.8	2.39
3.6 -7.5	6	7	18	17	18	19	19	19	13	24	29	17	3	5	2	2	218	58.4	5.33
7.6 - 12.5	3	2	4	5	7	12	12	7	6	6	10	2	0	1	0	1	78	20.9	8.91
12.6 - 18.5	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	.5	14.40
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	11	11	27	25	32	34	36	31	25	39	49	23	10	9	5	5	373	0.0	4.50
PERCENT	2.9	2.9	7.2	6.7	8.6	9.1	9.7	8.3	6.7	10.5	13.1	6.2	2.7	2.4	1.3	1.6	100.0		
AV SPD	6.0	6.1	5.4	6.0	6.0	6.5	6.8	5.7	5.7	5.7	5.6	4.7	3.2	5.3	3.7	4.7			

AVERAGE SPEED FOR THIS TABLE EQUALS5.7
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 31 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	4	.5	.50
CALM + -3.5	7	16	11	11	24	14	33	27	16	21	14	15	13	2	6	3	233	30.1	2.21
3.6 -7.5	14	9	23	29	49	45	46	52	58	75	42	7	4	7	6	4	470	60.6	4.89
7.6 - 12.5	2	0	0	1	1	1	8	10	20	10	6	3	0	0	0	0	65	8.4	8.71
12.6 - 18.5	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3	.4	14.56
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	23	26	34	41	77	60	88	90	94	107	62	26	18	9	13	7	775	0.0	3.57
PERCENT	3.0	3.4	4.4	5.3	9.9	7.7	11.4	11.6	12.1	13.8	8.0	3.4	2.3	1.2	1.7	.9	100.0		
AV SPD	4.4	3.8	4.1	4.5	4.4	4.7	4.6	4.5	5.7	5.0	4.9	3.8	3.1	3.7	4.5	3.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 4

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	3	.8	.50
CALM + -3.5	12	13	15	9	15	15	20	9	11	17	16	10	9	11	6	8	196	54.7	2.17
3.6 -7.5	4	5	12	9	11	17	15	14	22	21	14	3	1	2	4	1	155	43.3	4.35
7.6 - 12.5	0	0	0	0	0	0	0	1	0	0	10	0	1	0	0	0	3	.8	8.33
12.6 - 18.5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	.3	12.60
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	16	18	28	18	27	32	35	25	33	39	31	13	11	13	10	9	358	0.0	2.71
PERCENT	4.5	5.0	7.8	5.0	7.5	8.9	9.8	7.0	9.2	10.9	8.7	3.6	3.1	3.6	2.8	2.5	100.0		
AV SPD	2.5	2.7	3.1	3.6	3.6	3.5	3.3	4.3	3.9	3.7	3.4	3.0	3.4	2.6	3.1	2.7			

AVERAGE SPEED FOR THIS TABLE EQUALS3.4
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 32 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2.5	.50
CALM + -3.5	5	3	1	3	3	0	2	1	2	4	3	0	2	4	0	3	36	45.1	2.39
3.6 -7.5	4	3	6	1	0	1	0	1	4	8	8	2	0	1	2	1	42	52.5	4.48
7.6 - 12.5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	8	7	4	3	1	2	2	6	12	11	2	2	5	2	4	80	0.0	2.81
PERCENT	11.3	10.0	8.8	5.0	3.8	1.3	2.5	2.5	7.5	15.0	13.8	2.5	2.5	6.3	2.5	5.0	100.0		
AV SPD	4.0	2.9	4.1	3.4	2.2	4.2	2.1	3.0	4.3	3.8	4.0	4.4	2.8	3.3	4.3	3.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF AUGUST
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	2	1	0	0	0	0	1	0	2	1	2	0	0	0	0	0	10	.5
CALM + -3.5	31	38	35	29	49	35	59	44	40	50	45	29	32	22	21	21	21	580	29.2
3.6 -7.5	49	46	79	70	97	97	83	87	101	133	114	70	44	28	22	15	15	1135	57.1
7.6 - 12.5	5	7	16	13	24	28	28	20	27	16	31	28	7	3	0	2	2	255	12.8
12.6 - 18.5	0	1	0	0	0	0	2	1	0	1	0	0	0	0	1	1	7	7	.4
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
TOTAL	85	94	131	112	170	160	172	153	168	202	191	129	84	53	44	39	39	1987	100.00
PERCENT	4.3	4.7	6.6	5.6	8.6	8.1	8.7	7.7	8.5	10.2	9.6	6.5	4.2	2.7	2.2	2.0	2.0	100.0	

TABLE 2.3.2-14 (SHEET 33 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	0.00
CALM + -3.5	2	3	1	0	0	1	0	2	0	0	1	2	3	3	3	4	25	6.8	2.73
3.6 -7.5	18	15	23	19	20	9	7	5	2	7	11	11	19	15	11	12	204	55.4	5.53
7.6 - 12.5	3	3	18	17	24	6	1	3	5	2	3	19	21	1	3	3	132	35.9	8.99
12.6 - 18.5	0	2	1	2	0	0	0	0	0	0	0	2	0	0	0	0	7	1.9	13.10
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	23	23	43	38	44	16	8	10	7	9	15	34	43	19	17	19	368	0.0	6.01
PERCENT	6.3	6.3	11.7	15.3	12.0	4.3	2.2	2.7	1.9	2.4	4.1	9.2	11.7	5.2	4.6	5.2	100.0		
AV SPD	6.0	6.2	7.5	7.6	8.0	6.7	6.7	6.2	8.3	6.4	5.7	7.9	7.2	5.1	5.7	5.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 7

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
CALM + -3.5	1	0	2	0	0	1	0	0	1	0	0	1	0	1	0	1	8	11.8	2.69
3.6 -7.5	1	6	4	3	1	1	1	2	2	0	3	2	0	2	4	2	34	50.0	5.35
7.6 - 12.5	0	2	2	6	4	0	0	1	1	2	1	1	0	0	0	2	23	33.8	9.21
12.6 - 18.5	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	4.4	13.80
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	8	9	10	5	2	1	3	4	3	4	4	0	3	4	5	68	0.0	5.64
PERCENT	4.4	11.8	13.2	14.7	7.4	2.9	1.5	4.4	5.9	4.4	5.9	5.9	0.0	4.4	5.9	7.4	100.0		
AV SPD	5.2	5.9	6.9	8.9	8.5	4.6	7.3	6.0	6.6	11.2	6.6	6.2	0.0	4.7	4.9	6.8			

AVERAGE SPEED FOR THIS TABLE EQUALS6.9
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 5

TABLE 2.3.2-14 (SHEET 34 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4	12.5	2.70
3.6 -7.5	1	1	2	0	1	1	0	2	1	0	11	0	2	1	1	3	16	50.0	5.22
7.6 - 12.5	0	0	1	2	1	1	1	0	0	1	0	0	0	0	0	2	2	31.3	9.03
12.6 - 18.5	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6.3	13.22
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	1	3	4	2	2	2	2	1	1	2	0	2	1	1	5	32	0.0	5.51
PERCENT	9.4	3.1	9.4	12.5	6.3	6.3	6.3	6.3	3.1	3.1	6.3	0.0	6.3	3.1	3.1	15.6	100.0		
AV SPD	3.6	6.6	7.0	11.3	6.2	5.9	4.9	6.1	5.6	11.4	7.6	0.0	5.9	5.9	6.9	6.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
CALM + -3.5	4	2	5	6	3	3	1	3	1	0	3	1	3	1	3	7	49	13.4	2.63
3.6 -7.5	16	15	27	21	15	23	9	12	7	16	10	2	4	6	7	10	201	54.8	5.36
7.6 - 12.5	5	4	38	18	9	7	0	2	6	10	5	1	1	0	0	0	106	28.9	9.11
12.6 - 18.5	0	0	4	4	2	0	0	0	0	0	0	0	0	0	0	0	10	2.7	14.34
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.3	21.70
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	25	21	74	49	29	33	11	17	14	26	18	4	8	7	10	17	367	0.0	5.36
PERCENT	6.8	5.7	20.2	13.4	7.9	9.0	3.0	4.5	3.8	7.1	4.9	5.9	2.2	1.9	2.7	4.6	100.0		
AV SPD	5.8	5.8	8.0	7.5	7.1	6.1	5.9	5.2	6.7	6.9	6.2	6.2	4.8	4.3	4.4	4.4			

AVERAGE SPEED FOR THIS TABLE EQUALS6.6
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 35 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	4	.6	.50
CALM + -3.5	10	13	11	19	11	15	15	12	8	14	12	11	8	7	9	8	183	27.2	2.29
3.6 -7.5	23	27	68	46	34	30	25	21	42	27	25	24	5	8	14	13	432	64.2	4.89
7.6 - 12.5	0	5	11	9	6	3	5	5	4	2	0	0	0	1	0	1	53	7.9	8.81
12.6 - 18.5	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	.1	17.30
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	35	45	90	74	53	48	45	38	54	43	37	37	13	16	23	22	673	0.0	3.69
PERCENT	5.2	6.7	13.4	11.0	7.9	7.1	6.7	5.6	8.0	6.4	5.5	5.5	1.9	2.4	3.4	3.3	100.0		
AV SPD	4.3	4.8	5.6	5.0	4.8	4.3	4.8	5.1	5.2	4.4	4.3	4.1	3.3	3.9	3.9	4.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	2	2	0	0	0	0	0	0	1	0	0	0	0	0	0	5	1.5	.50
CALM + -3.5	6	12	4	12	16	11	11	8	4	6	9	10	4	7	9	10	139	41.5	2.32
3.6 -7.5	6	13	36	28	23	19	6	7	9	8	7	5	7	3	6	7	190	56.7	4.50
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	.3	8.40
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	12	27	42	40	39	30	17	15	13	15	16	16	11	10	15	17	335	0.0	2.98
PERCENT	3.6	8.1	12.5	11.9	11.6	9.0	5.1	4.5	3.9	4.5	4.8	4.8	3.3	3.0	4.5	5.1	100.0		
AV SPD	3.2	3.6	4.5	4.2	3.8	4.0	3.1	3.3	4.1	3.4	3.3	3.3	3.5	3.0	3.3	3.4			

AVERAGE SPEED FOR THIS TABLE EQUALS3.7
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 36 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	3	0	1	1	0	0	2	0	1	0	0	0	0	0	0	0	9	6.7	.50
CALM + -3.5	6	6	3	0	8	1	3	4	1	1	3	10	2	3	7	11	69	51.0	2.20
3.6 -7.5	3	2	1	2	2	4	3	2	4	3	6	9	4	1	5	4	55	41.0	4.26
7.6 - 12.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	7.9	8.60
12.6 - 18.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.7	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	12	9	5	3	10	5	8	6	6	4	9	19	6	4	12	16	134	0.0	2.15
PERCENT	9.0	6.7	3.7	2.2	7.5	3.7	6.0	4.5	4.5	3.0	6.7	14.2	4.5	3.0	9.0	11.9	100.0		
AV SPD	2.4	3.7	2.1	2.6	2.9	4.3	2.4	3.2	3.3	4.8	4.0	3.4	3.5	2.9	2.9	3.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF SEPTEMBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	4	2	3	1	2	0	2	0	1	1	0	1	0	0	0	1	18	.9
CALM + -3.5	31	36	26	37	38	32	31	29	15	21	29	38	20	22	31	41	477	24.1
3.6 -7.5	68	79	161	119	96	87	51	51	67	61	62	54	41	36	48	51	1320	57.3
7.6 - 12.5	9	15	70	52	44	17	8	11	16	17	10	22	22	2	3	8	326	18.5
12.6 - 18.5	1	2	6	9	2	0	0	0	0	1	0	0	0	0	0	0	23	1.2
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.1
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	113	134	266	218	182	136	92	91	99	101	101	118	83	60	82	101	1977	100.0
PERCENT	5.7	6.8	13.5	11.0	9.2	6.9	4.7	4.6	5.0	5.1	5.1	6.0	4.2	3.0	4.1	5.1	100.0	

TABLE 2.3.2-14 (SHEET 37 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	0	5	0	0	0	1	0	0	0	0	0	1	1	2	2	13	3.1	2.87
3.6 -7.5	14	19	25	14	21	10	2	1	2	3	6	9	11	15	15	15	173	40.6	5.56
7.6 - 12.5	22	26	40	22	20	5	1	0	0	3	4	13	15	10	15	15	210	49.3	9.39
12.6 - 18.5	1	5	1	0	1	0	0	0	0	0	1	1	11	3	4	0	30	7.0	13.81
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	38	50	71	38	42	15	4	1	2	6	11	23	38	29	36	36	426	0.0	7.08
PERCENT	6.9	11.7	16.7	8.5	9.9	3.8	.9	.2	.5	1.4	2.6	5.4	8.0	6.8	8.5	8.5	100.0		
AV SPD	7.9	8.3	8.1	8.5	7.5	7.2	5.4	4.2	4.0	7.4	8.1	8.4	9.5	8.2	8.2	8.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 8

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	5.9	2.88
3.6 -7.5	3	3	3	2	4	1	1	0	0	0	2	1	1	0	1	2	24	47.1	5.32
7.6 - 12.5	0	5	8	2	1	0	2	0	0	0	0	1	1	0	0	2	22	43.1	8.98
12.6 - 18.5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3.9	13.09
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	8	12	5	7	1	3	0	0	0	2	2	3	10	1	4	51	0.0	6.25
PERCENT	5.9	15.7	23.5	9.8	13.7	2.0	5.9	0.0	0.0	0.0	3.9	3.9	5.9	0.0	2.0	7.8	100.0		
AV SPD	7.1	7.6	8.3	8.2	4.7	6.3	7.2	0.0	0.0	0.0	5.0	8.6	7.2	0.0	5.0	8.2			

AVERAGE SPEED FOR THIS TABLE EQUALS7.3
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 38 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	3	11.1	2.26
3.6 -7.5	5	0	3	1	0	1	2	1	2	0	0	0	0	0	1	2	16	59.3	5.39
7.6 - 12.5	0	2	3	0	0	0	0	0	0	1	0	0	1	0	1	0	8	29.3	9.09
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	5	2	6	1	0	1	2	1	0	2	0	0	2	0	3	2	27	0.0	5.21
PERCENT	18.5	7.4	22.2	3.7	0.0	3.7	7.4	3.7	0.0	7.4	0.0	0.0	7.4	0.0	11.1	7.4	100.0		
AV SPD	6.5	9.6	7.0	6.8	0.0	3.7	3.8	4.7	0.0	5.9	0.0	0.0	6.0	0.0	6.3	7.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	4	0	3	0	3	1	1	2	1	1	0	1	3	1	0	2	23	7.9	2.77
3.6 -7.5	14	8	15	20	12	11	5	6	4	5	5	4	5	5	11	9	139	47.6	5.40
7.6 - 12.5	4	21	25	7	13	4	3	1	8	8	6	6	4	5	3	7	125	42.8	9.23
12.6 - 18.5	0	1	2	0	0	0	0	0	1	0	0	0	0	1	0	0	5	1.7	14.20
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	22	30	45	27	28	16	9	9	14	14	11	11	12	12	14	18	292	0.0	6.09
PERCENT	7.5	10.3	15.4	9.2	9.6	5.5	3.1	3.1	4.8	4.8	3.8	3.5	4.1	4.1	4.8	6.2	100.0		
AV SPD	5.7	8.9	8.0	6.9	7.0	6.1	5.9	6.0	8.4	8.0	7.6	7.2	6.3	4.1	5.7	6.3			

AVERAGE SPEED FOR THIS TABLE EQUALS7.2
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 4

TABLE 2.3.2-14 (SHEET 39 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	7	9	5	6	8	0	8	4	2	1	7	5	2	2	4	5	79	16.5	2.50
3.6 -7.5	19	22	32	27	22	10	11	16	8	9	17	22	12	14	9	15	265	55.4	5.36
7.6 - 12.5	10	21	15	10	6	3	2	1	1	5	7	8	15	10	8	5	127	26.6	8.97
12.6 - 18.5	1	2	0	0	0	0	0	0	0	0	0	0	1	0	2	0	7	0.0	13.88
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	37	54	52	43	36	17	21	22	11	15	31	35	30	26	23	25	478	0.0	5.00
PERCENT	7.7	11.4	10.9	9.0	7.5	3.6	4.4	4.8	2.3	3.1	6.5	7.3	6.3	5.4	4.8	5.2	100.0		
AV SPD	6.3	6.9	6.4	6.0	5.1	5.3	4.7	5.5	5.3	6.5	5.7	6.1	7.8	6.8	6.8	5.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	.5	.50
CALM + -3.5	5	0	9	4	8	2	4	7	5	5	6	7	13	7	5	7	103	26.5	2.55
3.6 -7.5	20	8	42	28	23	12	8	5	9	5	12	11	12	25	16	14	273	70.2	4.83
7.6 - 12.5	1	31	2	7	0	4	0	1	8	1	2	6	4	5	1	3	11	2.8	8.23
12.6 - 18.5	0	1	2	0	0	0	0	0	1	0	0	0	0	1	0	0	5	0.0	14.20
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	26	41	54	32	31	15	12	12	14	11	20	18	25	32	22	24	389	0.0	3.81
PERCENT	6.7	10.5	13.9	8.2	8.0	3.9	3.1	3.1	3.6	2.8	5.1	4.6	6.4	8.2	5.7	6.2	100.0		
AV SPD	4.7	4.6	4.8	4.8	4.5	4.2	4.2	3.5	4.1	4.8	5.1	4.1	3.6	4.4	4.6	4.6			

AVERAGE SPEED FOR THIS TABLE EQUALS4.5
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-14 (SHEET 40 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	3	1	1	2	2	0	0	0	1	0	2	1	1	1	2	0	17	4.0	.50
CALM + -3.5	33	20	15	6	7	3	5	4	6	6	14	10	5	10	11	17	168	39.1	2.17
3.6 -7.5	50	28	21	11	23	7	4	1	4	5	22	25	12	6	7	18	244	56.7	4.57
7.6 - 12.5	0	0	0	10	6	0	0	1	0	0	0	8	0	0	0	1	1	.2	7.60
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	86	49	37	19	32	10	9	5	11	11	38	36	18	17	20	32	478	0.0	2.61
PERCENT	20.0	11.4	8.6	4.4	7.4	2.3	2.1	1.2	2.6	2.6	8.8	8.4	4.2	4.0	4.7	7.4	100.0		
AV SPD	3.6	3.6	3.7	3.7	3.9	4.2	3.3	2.5	2.9	3.7	3.6	4.0	3.6	2.9	3.2	3.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

MONTH OF OCTOBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	3	1	2	2	2	1	0	0	0	0	2	1	1	1	2	0	19	.9
CALM + -3.5	50	38	37	16	28	10	19	17	14	45	27	23	26	21	23	29	392	18.7
3.6 -7.5	125	111	141	103	105	52	33	30	27	27	64	72	53	65	60	66	1134	54.2
7.6 - 12.5	37	76	93	41	40	12	8	2	9	18	19	28	36	25	28	32	504	24.1
12.6 - 18.5	2	8	4	1	0	0	0	1	1	0	1	0	12	4	0	2	44	2.1
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	217	234	277	163	176	75	60	50	52	59	113	125	128	116	119	129	2093	100.0
PERCENT	10.4	11.2	13.2	7.8	8.4	3.8	2.9	2.4	2.5	2.8	5.4	6.0	6.1	5.5	5.7	7.2	100.0	

TABLE 2.3.2-14 (SHEET 41 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	2	1	1	1	1	0	2	2	0	0	0	3	3	2	0	0	17	5.6	2.83
3.6 -7.5	10	16	15	4	5	3	4	1	3	2	7	8	18	18	4	4	126	41.6	5.63
7.6 - 12.5	8	9	16	9	5	8	5	3	2	6	14	8	8	13	19	4	141	46.5	9.42
12.6 - 18.5	1	1	2	0	0	0	0	0	0	0	0	0	0	3	4	0	18	5.9	13.58
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	.3	19.70
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	21	27	34	14	11	11	11	6	5	8	22	19	36	36	27	13	313	0.0	6.77
PERCENT	6.9	8.9	11.2	4.6	3.6	3.6	3.6	2.0	1.7	2.6	7.3	6.3	11.9	11.9	8.9	4.3	100.0		
AV SPD	7.1	7.3	8.1	7.7	7.6	8.5	7.0	6.8	6.4	8.8	8.6	6.5	7.9	7.9	9.9	7.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	1	4	3	0	1	0	1	0	0	1	0	2	1	0	1	0	15	42.9	5.30
7.6 - 12.5	1	2	4	0	0	0	2	1	0	0	3	0	2	1	3	0	19	54.3	8.99
12.6 - 18.5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.9	13.50
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	6	7	0	1	0	3	1	0	1	3	2	3	1	4	0	35	0.0	6.97
PERCENT	8.6	17.1	20.9	0.0	2.9	0.0	8.6	2.9	0.0	2.9	8.6	5.7	8.6	2.9	11.4	0.0	100.0		
AV SPD	9.4	6.9	7.9	0.0	6.8	0.0	8.4	7.7	0.0	6.1	9.8	4.3	7.8	8.6	7.9	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS7.8
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 42 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1.1	3.30
3.6 -7.5	0	0	1	0	0	2	1	0	1	2	1	0	0	1	0	1	10	45.5	5.09
7.6 - 12.5	1	1	2	0	0	0	0	0	1	1	0	0	0	3	0	0	10	45.5	8.81
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0.0	13.58
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	9.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.0	0.00
TOTAL	1	1	4	0	0	2	3	0	2	3	1	0	0	4	0	1	21	0.0	5.94
PERCENT	4.5	4.5	18.2	0.0	0.0	9.1	13.6	0.0	9.1	13.6	4.5	0.0	0.0	18.2	0.0	4.5	100.0		
AV SPD	7.9	7.9	6.3	0.0	0.0	6.1	5.5	0.0	7.5	7.7	7.3	0.0	0.0	7.7	0.0	3.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	5	4	1	0	5	7	3	2	1	4	3	2	5	3	2	2	0	0.0	2.60
3.6 -7.5	8	21	22	21	15	14	8	10	10	15	9	5	19	6	6	4	52	42.2	5.19
7.6 - 12.5	4	3	18	19	3	3	8	8	9	17	6	8	3	3	5	3	184	50.3	9.10
12.6 - 18.5	1	0	0	0	0	0	0	0	0	0	1	0	0	2	2	1	130	32.6	13.57
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2.7	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	18	29	41	44	23	24	19	20	21	36	19	15	18	14	15	10	366	7.0	5.28
PERCENT	4.9	7.9	11.2	12.0	6.3	6.6	5.2	5.5	5.7	9.8	5.2	4.1	4.9	3.8	4.1	2.7	100.0		
AV SPD	5.8	6.9	7.2	7.3	5.0	5.1	6.2	6.5	7.5	7.2	6.8	7.6	5.1	6.1	7.9	6.4			

AVERAGE SPEED FOR THIS TABLE EQUALS6.5
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 4

TABLE 2.3.2-14 (SHEET 43 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	0	2	0	0	2	0	1	0	1	1	0	0	1	1	0	10	1.3	.50
CALM + -3.5	9	11	8	13	12	18	9	21	10	4	3	6	6	7	5	12	154	19.6	2.45
3.6 -7.5	20	27	42	60	43	34	27	21	42	45	22	18	17	26	22	11	477	18.7	5.34
7.6 - 12.5	5	6	16	11	8	11	6	7	2	8	14	2	5	14	11	7	141	???	8.93
12.6 - 18.5	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	3	0.0	13.76
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	35	44	68	84	63	65	42	50	64	59	40	26	28	48	39	30	785	0.0	4.17
PERCENT	4.5	5.6	8.7	10.7	8.0	8.3	5.4	6.4	8.2	7.5	5.1	3.3	3.6	6.1	5.0	3.8	100.0		
AV SPD	5.1	5.6	6.0	5.4	5.2	5.2	5.3	4.6	6.1	6.2	6.7	4.7	5.5	6.5	6.2	499			

AVERAGE SPEED FOR THIS TABLE EQUALS 5.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-7
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	3	1.1	.50
CALM + -3.5	5	1	4	2	3	8	9	11	1	2	9	1	5	7	3	1	70	26.6	2.37
3.6 -7.5	17	15	15	8	12	11	7	8	11	10	10	3	15	15	18	7	182	69.2	4.75
7.6 - 12.5	0	0	18	0	3	3	8	3	2	1	2	0	0	0	0	0	8	3.0	9.54
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	13.57
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	22	16	19	11	15	17	17	22	14	13	21	4	20	22	21	9	263	0.0	3.52
PERCENT	8.4	6.1	7.2	4.2	5.7	6.5	6.5	8.4	5.3	4.9	8.0	1.5	7.6	8.4	8.0	3.4	100.0		
AV SPD	4.8	4.9	4.7	4.3	4.3	4.2	3.3	4.3	5.1	4.8	4.5	4.2	4.2	4.2	4.6	3.8			

AVERAGE SPEED FOR THIS TABLE EQUALS4.4
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-14 (SHEET 44 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	3	2	1	1	3	2	0	0	0	0	0	1	1	0	2	0	17	5.7	.50
CALM + -3.5	16	11	8	7	7	6	13	11	10	10	10	9	3	3	6	9	139	46.3	2.19
3.6 -7.5	19	9	6	8	6	4	6	8	12	6	24	11	5	0	7	7	144	48.0	4.56
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	38	22	15	16	16	12	20	19	22	18	34	21	9	9	15	16	300	0.0	3.32
PERCENT	12.7	7.3	5.0	5.3	5.3	4.0	6.7	6.3	7.3	5.3	11.3	7.0	3.0	3.0	5.0	5.3	100.0		
AV SPD	3.5	3.0	3.2	3.4	2.9	3.0	3.1	3.6	3.8	3.4	4.0	3.4	3.1	3.9	3.1	3.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF NOVEMBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	4	2	3	2	3	4	2	1	0	1	1	1	1	1	3	1	10	1.4
CALM + -3.5	37	28	23	26	28	37	37	47	22	20	25	21	21	22	16	24	434	20.9
3.6 -7.5	75	92	104	101	82	68	54	48	79	81	73	45	66	72	58	38	1131	54.9
7.6 - 12.5	19	21	56	39	16	22	22	22	24	33	39	18	23	33	38	14	439	21.2
12.6 - 18.5	3	2	2	1	0	0	0	0	3	1	0	0	3	0	6	1	32	1.5
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.0
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	138	145	188	169	129	131	115	118	128	136	140	87	114	136	121	79	2074	100.0
PERCENT	6.7	7.0	9.1	8.1	6.2	6.3	5.5	5.7	6.2	6.6	6.8	4.2	5.5	6.6	5.8	3.8	100.0	

TABLE 2.3.2-14 (SHEET 45 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO 1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0.0	0.00
CALM + -3.5	1	1	6	0	1	1	0	1	0	2	1	1	1	1	1	2	22	8.2	2.70
3.6 -7.5	10	9	13	5	3	6	9	3	2	3	5	9	3	7	10	3	108	40.4	5.55
7.6 - 12.5	3	9	7	15	8	4	0	1	1	0	1	8	11	26	12	3	110	41.2	9.35
12.6 - 18.5	0	1	1	0	0	0	0	0	3	1	0	3	12	6	8	0	23	8.6	14.90
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	4	1.5	18.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	14	20	27	20	12	11	9	5	6	6	7	21	26	42	32	9	267	0.0	4.49
PERCENT	5.2	7.5	10.1	7.5	4.5	4.1	3.4	1.9	2.2	2.2	2.6	7.9	9.7	15.7	12.0	3.4	100.0		
AV SPD	6.2	7.5	6.1	8.9	7.9	6.7	6.0	5.8	10.7	6.3	6.1	8.5	7.3	10.0	10.1	7.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 4

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	5.2	2.94
3.6 -7.5	3	1	1	9	1	1	2	1	0	0	3	1	5	0	1	2	31	57.4	5.74
7.6 - 12.5	0	0	1	1	4	1	8	3	0	0	3	2	5	0	1	1	19	32.8	9.09
12.6 - 18.5	0	0	0	0	1	0	0	0	0	0	1	2	0	0	1	0	5	8.6	15.35
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	4	1	2	10	6	2	2	1	0	1	7	5	10	1	3	3	58	0.0	6.56
PERCENT	6.9	1.7	3.4	17.2	10.3	3.4	3.4	1.7	0.0	1.7	12.1	8.6	17.2	1.7	5.2	5.2	100.0		
AV SPD	5.6	6.9	8.0	6.4	9.0	7.2	5.0	5.8	0.0	2.8	9.3	12.2	7.3	2.7	9.6	7.6			

AVERAGE SPEED FOR THIS TABLE EQUALS7.7
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 46 OF 48)

MONTH OF DECEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + -3.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3.0	1.10
3.6 -7.5	1	1	0	1	2	1	0	4	2	3	0	1	2	2	0	1	21	63.6	5.51
7.6 - 12.5	0	0	1	1	1	0	1	0	0	2	3	1	1	0	0	0	11	33.3	9.27
12.6 - 18.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8.6	14.90
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	18.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	1	1	2	3	1	1	4	2	5	3	2	3	2	0	1	37	0.0	5.58
PERCENT	6.1	3.0	3.0	6.1	9.1	3.0	3.0	12.1	6.1	15.2	9.1	6.1	9.1	6.1	0.0	3.0	100.0		
AV SPD	3.3	6.3	7.9	7.5	7.2	4.6	10.7	4.9	6.2	7.1	9.4	8.7	7.1	5.0	0.0	5.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	.4	.50
CALM + -3.5	4	6	7	2	2	3	5	10	2	4	5	6	4	4	0	7	71	12.9	2.27
3.6 -7.5	19	16	20	26	17	6	11	15	11	13	16	14	26	13	8	16	247	44.7	5.34
7.6 - 12.5	3	0	17	37	12	6	5	5	7	9	14	25	16	10	13	4	183	33.8	9.24
12.6 - 18.5	0	0	0	3	1	0	0	1	2	2	13	2	0	8	14	2	48	8.7	14.23
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.0	19.20
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	27	22	44	68	32	2	21	31	22	28	48	48	46	35	35	29	552	0.0	5.27
PERCENT	4.9	4.0	8.0	12.3	5.8	3.4	3.8	5.6	4.0	5.1	8.7	8.7	8.3	6.3	6.3	5.3	100.0		
AV SPD	5.0	4.2	6.6	8.2	7.1	7.2	5.5	5.1	7.5	6.9	9.1	12.2	6.7	8.7	10.6	5.7			

AVERAGE SPEED FOR THIS TABLE EQUALS7.2
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 6

TABLE 2.3.2-14 (SHEET 47 OF 48)

MONTH OF DECEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	0	4	0.0	0.00
CALM + -3.5	3	8	7	6	3	2	10	10	4	4	4	10	11	5	0	7	94	3.0	1.10
3.6 -7.5	14	13	20	39	33	27	23	28	27	21	33	20	28	32	44	22	424	63.6	5.51
7.6 - 12.5	3	2	2	13	0	0	3	3	2	17	22	21	12	37	26	6	174	33.3	9.27
12.6 - 18.5	0	0	0	2	0	0	0	0	0	2	2	4	0	5	9	1	27	8.6	14.90
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	18.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	20	23	29	60	38	29	36	42	41	44	61	55	51	79	79	36	723	0.0	5.58
PERCENT	2.8	3.2	4.0	8.3	5.3	4.0	5.0	5.8	5.7	6.1	8.4	7.6	7.1	10.9	10.9	5.0	100.0		
AV SPD	5.1	4.3	5.0	6.3	4.7	5.2	5.0	5.0	6.1	7.2	7.1	7.2	5.7	7.8	7.9	5.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2	.9	.50
CALM + -3.5	4	2	3	2	6	2	7	2	2	7	3	7	6	4	6	5	70	29.8	2.46
3.6 -7.5	6	7	14	26	11	3	11	7	11	10	17	8	11	13	17	3	157	67.2	4.46
7.6 - 12.5	0	0	0	37	0	0	0	0	7	1	1	0	0	1	1	0	5	2.1	8.56
12.6 - 18.5	0	0	0	3	0	0	0	0	2	2	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	10	9	17	68	17	5	18	10	22	18	21	16	17	18	24	8	200	0.0	3.54
PERCENT	4.3	3.8	7.2	12.3	7.2	2.1	7.7	4.3	4.0	7.7	8.9	6.8	7.2	7.7	10.2	3.4	100.0		
AV SPD	3.3	4.0	4.5	8.2	4.3	4.8	3.9	3.4	7.5	4.5	4.8	3.3	4.0	4.9	4.5	3.4			

AVERAGE SPEED FOR THIS TABLE EQUALS4.3
HOURS ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-14 (SHEET 48 OF 48)

MONTH OF DECEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-7

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	3	1	4	3	4	1	1	1	1	0	1	0	2	3	1	1	26	10.3	0.00
CALM + -3.5	4	11	12	8	11	5	9	10	4	3	1	3	9	14	4	3	108	42.7	1.10
3.6 -7.5	0	5	13	9	5	2	4	28	6	9	33	16	22	5	8	4	118	46.6	5.51
7.6 - 12.5	3	0	0	1	0	0	0	3	0	0	22	0	0	0	0	0	1	.4	9.27
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.0	14.90
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.0	18.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	17	29	21	20	8	14	42	11	11	61	19	33	22	13	8	253	0.0	5.58
PERCENT	3.6	6.7	11.5	8.3	7.9	3.2	5.5	5.8	4.3	4.3	8.4	7.5	13.0	8.7	5.1	3.2	100.0		
AV SPD	2.2	3.0	3.1	3.2	2.7	2.7	2.9	5.0	3.6	4.0	7.1	4.5	3.9	2.6	3.4	2.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF DECEMBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	4	1	4	3	6	2	1	2	2	0	1	1	0	3	1	1	74	1.6
CALM + -3.5	18	28	35	19	23	13	31	30	13	21	14	27	6	29	11	24	367	17.4
3.6 -7.5	55	52	81	98	72	46	60	60	59	56	83	69	11	72	88	51	1107	52.2
7.6 - 12.5	9	11	28	68	25	11	9	9	16	29	44	57	0	74	53	14	503	23.7
12.6 - 18.5	0	1	1	5	2	0	0	1	7	5	16	11	0	19	32	3	103	4.9
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	1	5	.2
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
32.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	86	93	149	193	128	72	101	102	97	111	158	166	17	199	186	94	2121	100.0
PERCENT	4.1	4.4	7.0	9.1	6.0	3.4	4.8	4.8	4.6	5.2	7.4	7.8	7.2	9.4	8.8	4.4	100.0	

TABLE 2.3.2-15 (SHEET 1 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM 12/73-12/74, 4/77-4/79
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-17

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	21	18	28	15	6	6	6	11	4	3	10	16	21	18	22	24	229	5.2	2.72
3.6 - 7.5	150	151	169	122	126	85	68	33	25	45	94	159	254	189	121	112	1903	43.4	5.58
7.6 - 12.5	67	82	150	115	136	93	65	40	47	32	93	175	284	210	151	71	1811	41.3	9.33
12.6 - 18.5	7	15	10	10	4	3	10	7	8	7	22	43	82	101	72	7	408	9.3	14.43
18.6 - 24.5	0	0	0	1	0	0	0	0	0	1	2	2	8	11	3	2	30	.7	19.66
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	245	266	357	263	272	187	149	91	84	88	221	395	649	529	369	216	4381	0.0	6.75
PERCENT	5.6	6.1	8.1	6.0	6.2	4.3	3.4	2.1	1.9	2.0	5.0	9.0	14.8	12.1	8.4	4.9	100.0		
AV SPD	6.5	7.0	7.3	7.7	7.8	7.6	7.9	7.7	8.6	7.9	8.3	8.3	8.7	9.3	9.1	7.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 76

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-17

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	6	1	6	4	2	3	2	1	3	1	1	2	5	5	3	3	48	6.2	2.74
3.6 - 7.5	26	37	33	33	24	12	18	16	26	20	34	26	34	17	18	13	387	49.9	5.47
7.6 - 12.5	10	24	31	15	18	15	17	13	8	16	32	22	28	18	9	10	286	36.9	9.13
12.6 - 18.5	2	0	3	4	1	1	3	0	2	6	4	11	9	1	6	0	53	6.8	14.12
18.6 - 24.5	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	.3	20.73
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	44	62	74	56	45	31	40	30	39	44	71	61	76	41	36	26	776	0.0	6.29
PERCENT	5.7	8.0	9.5	7.2	5.8	4.0	5.2	3.9	5.0	5.7	9.1	7.9	9.8	5.3	4.6	3.4	100.0		
AV SPD	6.3	6.9	7.2	6.9	7.0	7.3	7.2	6.8	7.0	8.6	8.2	8.8	8.2	7.4	7.7	7.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 16

TABLE 2.3.2-15 (SHEET 2 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM ________________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-17

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	5	0	3	1	1	2	2	1	2	1	3	1	3	0	4	0	29	7.3	2.61
3.6 - 7.5	13	11	13	13	11	17	15	17	12	14	11	15	18	9	11	15	215	53.9	5.39
7.6 - 12.5	2	10	11	10	10	6	6	3	16	9	10	9	12	9	6	6	135	33.8	9.36
12.6 - 18.5	0	1	0	2	0	0	0	1	1	2	1	2	0	5	1	1	17	4.3	14.54
18.6 - 24.5	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	3	.8	20.57
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	20	22	27	26	22	25	23	22	31	26	25	27	34	25	22	22	399	0.0	5.98
PERCENT	5.0	5.5	6.8	6.5	5.5	6.3	5.8	5.5	7.8	6.5	6.3	6.8	8.5	6.3	5.5	5.5	100.0		
AV SPD	5.2	8.0	6.6	7.4	7.4	6.2	6.5	6.3	7.5	7.8	7.3	7.6	7.4	10.2	6.5	7.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 6

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-17

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	4	.1	0.50
CALM + - 3.5	29	31	39	24	36	39	32	38	29	29	36	29	34	31	19	33	508	10.9	2.56
3.6 - 7.5	116	132	188	187	183	174	145	159	127	157	153	123	123	86	80	89	2227	47.7	5.41
7.6 - 12.5	67	71	167	149	107	80	83	88	112	112	107	117	106	103	79	40	1588	34.1	9.24
12.6 - 18.5	5	8	16	13	8	2	13	18	24	35	35	15	26	51	37	6	312	6.7	14.28
18.6 - 24.5	0	0	0	0	0	0	0	0	5	6	1	3	3	6	0	0	24	.5	19.95
24.6 - 32.5	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	.0	25.40
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	218	242	410	373	334	296	273	303	297	341	333	288	292	277	215	168	4660	0.0	5.73
PERCENT	4.7	5.2	8.8	8.0	7.2	6.4	5.9	6.5	6.4	7.3	7.1	6.2	6.3	5.9	4.6	3.6	100.0		
AV SPD	6.4	6.5	7.3	7.3	6.6	6.2	6.8	6.8	7.8	7.9	7.7	7.5	7.7	8.9	8.4	5.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 32

TABLE 2.3.2-15 (SHEET 3 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM ________________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-17

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	3	1	4	0	4	2	0	4	1	3	2	2	2	1	2	2	33	.4	.50
CALM + - 3.5	67	76	73	88	102	101	141	154	95	80	84	88	83	69	58	61	1420	19.3	2.42
3.6 - 7.5	149	142	278	300	309	271	293	345	419	403	367	265	224	223	235	120	4343	59.2	5.18
7.6 - 12.5	30	48	73	79	62	59	73	84	134	126	117	64	86	151	140	29	1355	18.5	9.03
12.6 - 18.5	3	10	7	4	3	0	1	6	17	17	13	17	9	29	34	1	171	2.3	14.31
18.6 - 24.5	1	0	0	0	0	0	0	1	0	1	0	6	5	0	0	0	14	.2	20.63
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	.0	28.65
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	253	277	435	471	480	433	508	594	666	630	584	444	409	473	469	213	7339	0.0	4.44
PERCENT	3.4	3.8	5.9	6.4	6.5	5.9	6.9	8.1	9.1	8.6	8.0	6.0	5.6	6.4	6.4	2.9	100.0		
AV SPD	5.1	5.5	5.7	5.7	5.2	5.2	5.1	5.3	6.0	6.1	6.0	6.1	6.1	6.9	7.0	5.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 5.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 11

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-17

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	2	7	2	0	1	1	1	0	2	2	1	1	1	1	1	23	.7	.50
CALM + - 3.5	69	60	65	54	73	63	105	85	59	75	83	70	74	71	66	63	1135	33.1	2.35
3.6 - 7.5	87	118	179	140	120	125	116	93	130	143	167	204	159	168	131	66	2146	62.5	4.79
7.6 - 12.5	3	4	7	5	4	9	13	11	11	7	8	6	4	8	8	11	119	3.5	8.86
12.6 - 18.5	1	1	0	0	0	0	0	1	0	2	0	0	0	2	4	0	11	.3	13.83
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	160	185	258	201	197	198	235	191	200	229	260	281	238	250	210	141	3434	0.0	3.46
PERCENT	4.7	5.4	7.5	5.9	5.7	5.8	6.8	5.6	5.8	6.7	7.6	8.2	6.9	7.3	6.1	4.1	100.0		
AV SPD	4.0	4.3	4.4	4.4	4.2	4.3	4.0	4.0	4.6	4.4	4.4	4.5	4.3	4.4	4.4	4.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 4.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 7

TABLE 2.3.2-15 (SHEET 4 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM ________________
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 909-17

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	13	8	10	7	9	6	0	4	1	3	2	2	2	1	2	2	33	.4	.50
CALM + - 3.5	84	69	69	42	65	41	141	154	95	80	84	88	83	69	58	61	1420	19.3	2.26
3.6 - 7.5	94	70	89	62	66	44	36	28	57	82	137	134	86	62	60	50	1157	53.5	4.61
7.6 - 12.5	0	3	3	1	0	1	0	2	2	0	3	2	0	0	0	2	19	.9	8.67
12.6 - 18.5	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	4	.2	14.49
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	191	150	171	112	140	93	88	83	113	124	203	194	136	125	121	119	2163	0.0	2.61
PERCENT	8.8	6.9	7.9	5.2	6.5	4.3	4.1	3.8	5.2	5.7	9.4	9.0	6.3	5.8	5.6	5.5	100.0		
AV SPD	3.5	3.5	3.7	3.6	3.4	3.7	3.4	3.3	3.7	4.3	4.2	4.1	3.8	3.5	3.3	3.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 3.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	17	11	21	9	13	10	6	5	4	6	8	6	8	8	11	7	150	.6
CALM + - 3.5	281	255	283	228	285	255	334	343	243	229	276	262	265	251	225	247	4262	18.4
3.6 - 7.5	635	661	949	857	839	728	691	691	796	864	963	926	898	754	656	465	12373	53.4
7.6 - 12.5	179	242	442	374	337	263	257	241	330	302	370	395	520	499	393	169	5313	22.9
12.6 - 18.5	18	35	36	33	16	7	28	33	52	71	75	88	126	189	154	15	976	4.2
18.6 - 24.5	1	0	1	1	0	0	0	1	5	9	3	11	17	19	3	2	73	.3
24.6 - 32.5	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0	5	.0
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	1131	1204	1732	1502	1490	1263	1316	1314	1430	1482	1697	1690	1834	1720	1442	905	23152	100.0
PERCENT	4.9	5.2	7.5	6.5	6.4	5.5	5.7	5.7	6.2	6.4	7.3	7.3	7.9	7.4	6.2	3.9	100.0	

TABLE 2.3.2-16 (SHEET 1 OF 48)

MONTH OF JANUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM 12/73-12/74, 4/77-4/79
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	4	2	0	0	0	1	0	0	0	0	0	0	0	0	1	10	3.6	2.53
3.6 -7.5	10	4	7	2	3	3	4	4	1	1	0	2	6	8	4	4	67	24.3	5.55
7.6 - 12.5	1	5	1	3	8	4	1	1	0	0	2	13	10	17	16	14	96	34.8	9.68
12.6 - 18.5	0	2	2	1	0	2	0	0	0	0	0	1	12	14	14	3	51	18.5	15.14
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	1	7	15	19	0	42	15.2	21.22
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	2	4	4	0	10	3.6	26.84
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	15	12	6	11	9	6	5	1	1	2	17	37	58	57	26	276	0.0	8.71
PERCENT	4.7	5.4	4.3	2.2	4.0	3.3	2.2	1.8	.4	.4	.7	6.2	13.4	21.0	20.7	9.4	100.0		
AV SPD	5.6	7.5	8.5	9.3	9.1	9.2	5.4	6.2	6.3	5.4	10.4	10.1	14.3	14.9	16.0	8.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 12.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	1	1	0	0	0	1	0	0	2	0	0	0	0	0	5	8.5	2.69
3.6 -7.5	2	0	2	1	0	0	1	2	1	1	4	0	1	0	0	0	15	25.4	5.62
7.6 - 12.5	2	0	2	1	1	1	1	2	0	2	2	1	1	7	0	0	23	39.0	9.20
12.6 - 18.5	0	0	1	0	0	1	0	0	1	0	0	0	3	5	1	0	12	20.3	5.30
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	6.8	19.99
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	4	0	6	3	1	2	2	5	2	3	8	1	7	14	1	0	59	0.0	7.36
PERCENT	6.8	0.0	10.2	5.1	1.7	3.4	3.4	8.5	3.4	5.1	13.6	1.7	11.9	23.7	1.7	0.0	100.0		
AV SPD	8.3	0.0	7.2	5.9	10.2	12.4	8.7	5.8	9.7	7.7	5.8	9.4	14.0	14.0	15.5	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-16 (SHEET 2 OF 48)

MONTH OF JANUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	3	0	0	0	1	0	1	1	1	0	0	1	1	3	0	1	13	36.1	5.62
7.6 - 12.5	0	2	0	0	1	0	2	1	0	0	1	0	0	2	0	1	10	27.8	9.27
12.6 - 18.5	0	1	0	0	2	0	0	0	0	0	0	3	1	1	0	0	8	22.2	14.10
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	8.3	20.61
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	5.6	28.34
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	3	0	0	4	0	3	2	1	0	1	4	2	10	1	2	36	0.0	8.61
PERCENT	8.3	8.3	0.0	0.0	11.1	0.0	8.3	5.6	2.8	0.0	2.8	11.1	5.6	27.8	2.8	5.6	100.0		
AV SPD	5.6	12.4	0.0	0.0	10.0	0.0	8.4	7.4	5.9	0.0	7.9	11.6	11.6	14.5	20.9	7.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	1	1	3	0	3	2	0	1	0	0	2	2	2	4	0	23	4.6	2.44
3.6 -7.5	7	6	6	7	5	11	9	7	8	8	2	8	9	5	7	13	118	23.6	5.52
7.6 - 12.5	10	9	16	7	10	16	14	3	4	5	5	9	17	13	5	6	149	29.7	10.00
12.6 - 18.5	2	9	8	19	8	7	1	0	2	12	9	12	19	17	14	2	141	28.1	15.04
18.6 - 24.5	0	1	0	0	1	0	0	2	3	8	5	2	15	13	5	0	53	11.0	20.65
24.6 - 32.5	0	0	0	0	0	0	0	0	3	0	0	0	1	8	1	0	13	2.6	27.47
32.6+	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	.4	34.85
TOTAL	21	26	31	36	24	37	26	12	21	33	22	33	63	59	36	21	501	100.0	8.60
PERCENT	4.2	5.2	6.2	7.2	4.8	7.4	5.2	2.4	4.2	6.6	4.4	6.6	12.6	11.8	7.2	4.2	100.0		
AV SPD	8.2	10.6	10.2	11.4	11.3	9.3	8.4	9.6	12.8	13.7	15.7	11.2	13.7	16.1	12.4	7.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =2

TABLE 2.3.2-16 (SHEET 3 OF 48)

MONTH OF JANUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	.3	.50
CALM + - 3.5	0	1	2	0	1	0	3	1	1	1	1	3	0	3	2	1	20	3.3	2.87
3.6 -7.5	5	0	10	6	6	8	4	3	6	7	7	4	6	7	8	2	87	14.5	5.84
7.6 - 12.5	8	7	17	17	15	10	13	7	9	7	15	15	37	39	34	8	258	43.1	10.04
12.6 - 18.5	0	2	2	14	15	9	8	6	5	9	14	9	30	30	23	4	180	30.1	15.00
18.6 - 24.5	0	2	0	0	0	0	0	1	4	3	1	2	7	6	10	4	40	6.7	20.56
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	1	3	1	0	0	8	1.0	26.59
32.6+	0	0	0	0	0	0	0	0	0	0	2	3	0	1	0	0	6	1.0	37.49
TOTAL	13	13	31	38	37	25	28	18	25	27	41	37	83	87	77	19	599	100.0	9.09
PERCENT	2.2	2.2	5.2	6.3	6.2	4.2	4.7	3.0	4.2	4.5	6.8	6.2	13.9	14.5	12.9	3.2	100.0		
AV SPD	8.5	11.0	8.6	11.1	11.0	10.6	10.2	11.2	11.0	11.4	12.9	13.9	13.4	12.6	12.8	13.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 12.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	.4	.50
CALM + - 3.5	1	0	0	0	0	1	0	0	1	0	0	1	0	0	2	0	0	2.4	2.08
3.6 -7.5	4	1	3	2	1	2	2	4	1	2	2	3	6	3	2	2	40	15 7	5.20
7.6 - 12.5	2	7	4	13	5	4	2	8	14	4	3	10	18	19	22	18	153	60.2	10.11
12.6 - 18.5	0	0	0	5	3	1	0	0	0	0	5	4	5	12	6	11	52	20.5	13.64
18.6 - 24.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	.8	21.12
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	7	8	7	20	9	8	4	13	16	7	10	18	29	34	33	31	254	0.0	8.02
PERCENT	2.8	3.1	2.8	7.9	3.5	3.1	1.6	3.1	6.3	2.8	3.9	7.1	11.4	13.4	13.0	12.2	100.0		
AV SPD	5.8	9.9	8.4	11.0	10.0	8.4	7.0	7.9	9.2	10.1	11.3	10.0	9.7	11.7	10.9	10.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-16 (SHEET 4 OF 48)

MONTH OF JANUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	1.0	.50
CALM + - 3.5	4	0	1	1	2	4	0	0	3	2	0	2	4	1	3	0	27	13.0	2.13
3.6 -7.5	6	9	5	5	7	8	6	4	5	1	1	2	2	5	4	5	75	36.2	5.56
7.6 - 12.5	4	3	2	9	4	11	3	3	7	12	7	7	4	7	4	0	87	42.0	9.70
12.6 - 18.5	0	0	0	0	1	3	0	0	1	2	3	2	1	1	1	1	16	7.7	13.66
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	14	12	8	16	14	26	9	7	16	17	11	13	11	14	12	7	207	0.0	5.14
PERCENT	6.8	5.8	3.9	7.7	6.8	12.6	4.3	3.4	7.7	8.2	5.3	6.3	5.3	5.8	5.8	3.4	100.0		
AV SPD	5.7	6.6	6.4	7.6	7.2	7.9	7.0	8.8	7.7	9.4	11.2	8.8	6.8	8.1	6.6	5.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF JANUARY
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	1	0	2	0	0	0	1	0	0	0	0	0	0	0	1	5	.3
CALM + - 3.5	9	6	7	5	3	8	6	2	6	3	3	8	6	6	11	2	91	4.7
3.6 -7.5	37	20	33	23	23	30	27	25	23	20	16	20	31	31	25	31	415	21.5
7.6 - 12.5	27	33	42	50	44	46	36	25	34	30	35	55	37	104	81	47	776	40.2
12.6 - 18.5	2	14	13	39	29	23	9	6	9	23	31	31	71	80	59	21	460	23.8
18.6 - 24.5	0	3	0	0	1	0	0	3	7	12	6	5	31	38	36	4	146	7.6
24.6 - 32.5	0	0	0	0	0	0	0	0	3	0	1	1	6	15	5	0	31	1.6
32.6+	0	0	0	0	0	0	0	0	0	0	3	3	0	2	0	0	8	.4
TOTAL	75	77	95	119	100	107	78	62	82	88	95	123	232	276	217	106	1932	100.0
PERCENT	3.9	4.0	4.9	8.2	5.2	5.5	4.0	3.2	4.2	4.6	4.9	6.4	12.0	14.3	11.2	5.5	100.0	

TABLE 2.3.2-16 (SHEET 5 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	1	2	0	0	0	0	0	0	0	0	0	1	0	0	2	8	2.4	3.18
3.6 -7.5	11	5	10	11	5	3	2	3	2	3	4	2	6	7	5	9	88	26.3	5.69
7.6 - 12.5	12	7	9	8	7	3	9	0	1	0	3	7	9	18	10	6	109	32.6	9.74
12.6 - 18.5	0	11	9	5	2	3	3	0	0	1	4	6	22	14	14	4	98	29.3	14.91
18.6 - 24.5	1	0	0	1	1	0	0	0	0	0	2	1	3	9	9	2	29	8.7	20.52
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	.6	25.29
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	26	24	30	25	15	9	14	3	3	4	13	16	41	48	40	23	334	0.0	8.97
PERCENT	7.8	7.2	9.0	7.5	4.5	2.7	4.2	.9	.9	1.2	3.9	4.8	12.3	14.4	12.0	6.9	100.0		
AV SPD	7.6	11.1	9.6	9.5	10.6	9.8	9.6	5.2	7.8	7.4	12.5	12.0	12.7	13.1	15.0	9.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1.9	2.10
3.6 -7.5	4	3	1	0	2	1	0	1	0	0	0	0	0	1	0	1	14	26.4	5.81
7.6 - 12.5	2	4	1	1	3	0	1	0	1	0	3	1	2	1	0	0	20	37.7	8.96
12.6 - 18.5	0	1	0	0	2	0	0	0	1	0	2	1	5	0	0	1	13	24.5	15.83
18.6 - 24.5	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	4	7.5	20.14
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1.9	26.20
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	6	8	2	1	8	1	1	1	2	0	6	2	7	2	3	3	53	0.0	8.58
PERCENT	11.3	15.1	3.8	1.9	15.1	1.9	1.9	1.9	3.8	0.0	11.3	3.8	13.2	3.8	5.7	5.7	100.0		
AV SPD	7.3	8.7	6.7	9.3	11.7	6.6	7.9	4.8	11.5	0.0	14.4	10.8	13.8	8.7	14.5	15.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-16 (SHEET 6 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	0	0	0	1	0	0	0	0	1	0	2	1	0	0	0	0	5	18.5	4.92
7.6 - 12.5	1	1	2	2	0	0	1	0	0	0	0	0	0	1	1	1	10	37.0	9.60
12.6 - 18.5	0	2	1	1	1	0	0	0	0	0	0	0	3	0	1	0	9	33.3	14.74
18.6 - 24.5	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	7.4	18.95
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3.7	25.40
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	3	3	4	1	0	1	0	1	0	2	2	3	2	2	1	27	0.0	9.59
PERCENT	7.4	11.1	11.1	14.8	3.7	0.0	3.7	0.0	3.7	0.0	7.4	7.4	11.1	7.4	7.4	3.7	100.0		
AV SPD	14.3	12.9	11.8	9.5	15.8	0.0	9.4	0.0	4.5	0.0	4.5	12.0	15.2	19.0	12.2	9.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	1	2	0	0	0	3	0	1	0	0	0	2	2	2	2	10	3.8	2.06
3.6 -7.5	8	8	7	3	2	3	3	3	2	1	5	0	4	7	5	5	64	15.3	5.86
7.6 - 12.5	19	21	23	7	11	9	8	5	7	4	11	6	9	10	6	4	161	38.6	9.85
12.6 - 18.5	6	12	30	10	4	3	0	3	1	1	4	5	8	20	18	2	127	30.5	15.03
18.6 - 24.5	1	1	2	0	3	1	0	1	1	2	5	3	5	11	9	1	46	11.0	20.57
24.6 - 32.5	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	.7	25.89
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	35	41	64	20	22	16	14	13	12	8	25	14	29	50	40	14	417	0.0	9.10
PERCENT	8.4	9.8	15.3	4.8	5.3	3.8	3.4	3.1	2.9	1.9	6.0	3.4	7.0	12.0	9.6	3.4	100.0		
AV SPD	10.0	10.6	11.9	11.5	14.0	10.8	7.5	11.2	10.1	12.5	12.4	14.8	12.8	14.1	13.7	9.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 12.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 7 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909-15
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	2	2	0	2	3	1	1	1	0	1	0	1	0	1	15	2.6	2.42
3.6 -7.5	8	4	6	7	8	2	9	9	5	4	3	4	4	4	4	0	81	14.0	5.62
7.6 - 12.5	10	12	14	23	24	19	17	18	25	11	10	10	14	27	25	15	280	48.5	9.95
12.6 - 18.5	12	5	10	9	7	3	5	3	2	1	5	8	31	26	27	7	161	27.9	14.76
18.6 - 24.5	0	0	0	1	4	1	0	3	2	0	3	3	6	9	1	1	34	5.9	20.63
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	0	1	3	1	0	8	1.0	25.65
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	30	21	32	42	43	27	34	34	35	17	28	26	56	70	56	24	577	0.0	9.38
PERCENT	5.2	3.0	5.5	7.3	7.5	4.7	5.9	5.9	6.1	2.9	4.9	4.5	9.7	12.1	10.1	4.2	100.0		
AV SPD	10.6	9.9	10.3	10.0	11.3	10.1	8.8	10.1	10.2	8.6	12.2	11.9	14.3	13.8	12.5	11.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909.15
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	0	0	0	1	0	0	0	1	2	0	1	0	0	1	0	8	3.5	1.91
3.6 -7.5	6	5	2	3	5	2	1	1	1	0	0	2	2	1	2	3	36	15.6	5.96
7.6 - 12.5	4	7	9	14	5	9	7	6	1	3	6	13	15	10	23	6	140	60.6	10.03
12.6 - 18.5	0	0	2	1	2	1	2	1	0	1	13	10	7	3	3	1	47	20.3	14.09
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	12	12	13	18	13	12	10	8	3	8	12	26	24	14	29	10	231	0.0	3.39
PERCENT	5.2	5.2	5.6	7.8	5.6	5.2	4.3	3.5	1.3	3.5	8.2	11.3	10.4	6.1	12.5	4.3	100.0		
AV SPD	6.7	8.6	10.2	9.5	8.8	9.3	10.5	9.5	5.2	6.4	13.1	11.5	11.0	11.1	10.1	9.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 8 OF 48)

MONTH OF FEBRUARY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.7	2.20
3.6 -7.5	0	0	1	0	1	2	2	1	2	4	1	3	4	0	1	2	24	16.4	5.84
7.6 - 12.5	2	0	5	2	7	1	9	9	2	6	10	12	5	6	9	5	90	61.6	10.02
12.6 - 18.5	0	0	0	0	0	3	2	0	0	5	7	6	7	1	0	0	31	21.2	14.18
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	0	7	2	8	6	13	10	4	15	18	21	16	7	10	7	146	0.0	9.28
PERCENT	1.4	0.0	4.8	1.4	5.5	4.1	8.9	6.8	2.7	10.3	12.3	14.0	11.0	4.6	6.8	4.8	100.0		
AV SPD	10.3	0.0	7.8	10.0	9.4	10.3	10.2	10.0	8.5	10.1	12.2	10.8	11.3	11.0	9.8	8.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF FEBRUARY
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
CALM + - 3.5	5	2	7	2	1	2	6	1	3	3	0	2	3	3	4	5	49	2.7
3.6 -7.5	37	23	27	25	23	13	17	18	13	12	15	12	20	20	17	20	312	17.5
7.6 - 12.5	50	52	63	57	57	41	52	39	37	25	49	49	34	73	74	37	810	45.4
12.6 - 18.5	18	31	52	26	18	13	12	7	4	9	35	36	83	64	63	15	486	27.2
18.6 - 24.5	3	1	2	2	9	2	0	4	3	2	11	6	14	29	21	4	115	6.4
24.6 - 32.5	0	0	0	0	2	0	0	0	0	0	1	0	2	4	3	1	13	.7
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	113	109	151	112	110	71	87	69	60	52	111	107	176	193	182	82	1785	100.0
PERCENT	6.3	6.1	8.5	6.3	6.2	4.0	4.9	3.9	3.4	2.9	6.2	6.0	9.9	10.8	10.2	4.6	100.0	

TABLE 2.3.2-16 (SHEET 9 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	0	0	1	0	1	1	0	0	0	0	1	0	0	1	6	1.3	1.96
3.6 -7.5	12	9	11	4	5	6	6	4	3	5	7	6	7	8	10	5	108	23.5	5.55
7.6 - 12.5	16	10	5	3	9	12	10	3	9	11	11	14	17	29	14	9	182	39.7	9.74
12.6 - 18.5	1	5	4	1	5	3	3	7	2	4	9	18	18	8	12	2	102	22.2	14.99
18.6 - 24.5	0	0	0	0	0	0	0	1	0	1	3	1	10	10	15	3	44	9.6	20.73
24.6 - 32.5	0	1	0	0	0	0	0	0	0	0	0	0	9	7	0	0	17	3.7	26.98
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	30	25	20	8	20	21	20	16	14	21	30	39	62	62	51	20	459	0.0	9.04
PERCENT	6.5	5.4	4.4	1.7	4.4	4.6	4.4	3.5	3.1	4.5	6.5	8.5	13.5	13.5	11.1	4.4	100.0		
AV SPD	7.9	9.8	8.6	8.2	9.8	9.1	9.4	11.4	10.4	10.7	11.7	12.4	15.1	13.9	13.3	10.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 5

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION REQUEST NUMBER 909.15
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.9	2.30
3.6 -7.5	3	1	2	1	1	3	1	2	0	2	0	2	2	1	1	2	24	22.4	5.11
7.6 - 12.5	4	3	8	2	1	3	3	2	0	4	4	4	4	3	5	4	54	30.5	9.95
12.6 - 18.5	4	3	4	0	1	0	0	0	0	0	5	0	5	1	1	0	24	22.4	14.25
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	4	3.7	20.26
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	11	7	14	3	3	6	4	4	0	6	9	6	11	5	8	7	107	0.0	8.60
PERCENT	10.3	6.5	13.1	2.8	2.8	5.6	3.7	3.7	0.0	5.5	8.4	5.6	10.3	7.5	7.5	6.5	100.0		
AV SPD	10.7	11.1	10.7	8.5	9.2	8.2	8.3	6.4	0.0	8.2	12.9	8.6	11.4	14.0	8.8	10.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-16 (SHEET 10 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	0	0	1	1	1	1	1	0	1	0	0	0	1	1	1	2	11	26.2	5.71
7.6 - 12.5	2	0	0	1	1	1	0	3	1	3	0	1	1	2	1	1	18	42.9	10.12
12.6 - 18.5	0	1	0	1	1	1	0	1	0	1	3	0	1	0	0	0	10	23.8	14.25
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4.8	19.74
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.4	29.50
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	1	1	3	3	3	1	4	2	4	3	1	3	4	3	4	42	0.0	9.25
PERCENT	4.8	2.4	2.4	7.1	7.1	7.1	2.4	9.5	4.8	9.5	7.1	2.4	7.1	9.5	7.1	9.5	100.0		
AV SPD	10.8	16.2	4.7	9.8	9.7	10.1	8.1	11.0	7.5	12.7	13.0	11.2	10.4	14.7	12.1	10.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	2	0	1	0	1	3	0	1	1	1	0	0	1	0	0	13	2.4	2.92
3.6 -7.5	6	5	3	8	11	13	17	8	7	7	4	1	4	4	5	4	107	20.1	5.75
7.6 - 12.5	10	10	17	19	31	23	19	11	13	8	13	14	13	9	14	9	233	43.8	9.69
12.6 - 18.5	4	4	3	6	6	7	10	13	16	6	8	9	19	5	5	5	131	24.6	14.82
18.6 - 24.5	0	0	0	0	0	1	2	5	5	12	2	0	0	7	3	2	39	7.3	20.61
24.6 - 32.5	0	0	0	0	0	0	0	0	0	4	0	0	4	1	0	0	9	1.7	26.73
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	22	21	23	34	48	45	51	42	42	38	28	24	40	27	27	20	532	0.0	9.15
PERCENT	4.1	3.9	4.3	6.4	9.0	8.5	9.6	7.9	7.9	7.1	5.3	4.5	7.5	5.1	5.1	3.8	100.0		
AV SPD	9.2	9.2	10.5	9.7	9.6	9.5	9.4	12.9	12.3	15.3	11.5	11.3	13.8	13.2	11.0	11.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-16 (SHEET 11 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	1	0	1	1	0	0	2	0	2	0	1	0	0	1	10	1.6	1.91
3.6 -7.5	3	5	0	4	3	10	11	14	9	10	12	6	4	4	3	5	103	16.2	5.75
7.6 - 12.5	5	1	7	14	19	16	30	21	37	53	40	13	13	17	33	14	333	52.3	10.05
12.6 - 18.5	1	1	3	1	3	11	7	13	24	29	14	9	3	21	22	6	168	26.4	14.16
18.6 - 24.5	0	0	0	0	0	0	2	0	4	1	2	1	1	1	5	1	16	2.8	19.91
24.6 - 32.5	0	0	0	0	0	0	0	1	0	0	0	0	0	3	1	0	5	.8	27.02
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	8	11	19	26	38	50	49	76	93	70	29	22	46	64	27	637	0.0	9.20
PERCENT	1.4	1.3	1.7	3.0	4.1	6.0	7.8	7.7	11.9	14.6	11.0	4.6	3.5	7.2	10.0	4.2	100.0		
AV SPD	8.8	6.9	10.7	9.3	9.4	9.9	10.1	10.7	11.3	11.5	10.4	10.4	10.6	13.3	12.4	10.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	0	0	0	0	0	0	0	2	0	0	0	1	2	1	0	8	8.9	1.69
3.6 -7.5	0	0	2	2	1	3	3	3	3	0	3	4	3	8	3	1	39	14.1	5.81
7.6 - 12.5	2	1	3	5	8	9	12	10	19	24	20	13	14	13	11	5	181	65.6	9.87
12.6 - 18.5	2	0	2	0	2	2	6	3	5	8	5	3	2	4	0	3	45	16.3	14.13
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	.7	22.79
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.4	26.60
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	6	1	7	7	11	14	28	21	29	30	28	20	20	28	17	9	276	0.0	8.34
PERCENT	2.2	.4	2.5	2.5	4.0	5.1	10.1	7.6	10.5	10.9	10.1	7.2	7.2	10.1	6.3	3.3	100.0		
AV SPD	8.9	12.1	10.5	8.8	10.1	9.7	10.3	9.8	9.9	11.1	10.0	10.1	9.8	9.3	10.2	11.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 12 OF 48)

MONTH OF MARCH

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.7	0.50
CALM + - 3.5	0	0	0	0	0	1	0	2	2	0	0	0	1	0	1	1	8	5.3	2.33
3.6 -7.5	1	0	0	1	0	3	8	1	6	5	2	1	2	5	4	1	40	26.7	5.51
7.6 - 12.5	0	2	2	2	7	3	2	1	3	4	20	5	7	6	7	4	75	50.0	10.03
12.6 - 18.5	0	0	1	1	1	1	1	1	0	5	5	1	2	7	0	0	26	17.3	13.87
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	2	3	4	8	8	11	5	11	14	28	7	12	18	12	6	150	0.0	6.81
PERCENT	.7	1.3	2.0	2.7	5.3	5.3	7.3	3.3	7.3	9.3	18.7	4.7	8.0	12.0	8.0	4.0	100.0		
AV SPD	3.9	9.1	11.5	9.9	10.7	8.7	7.6	6.0	6.6	9.9	10.4	9.6	9.9	10.6	7.8	7.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF MARCH
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.0
CALM + - 3.5	5	3	1	1	2	3	4	3	7	1	3	0	4	3	3	3	46	2.1
3.6 -7.5	25	20	19	21	22	39	47	32	29	29	28	20	23	31	27	20	432	19.6
7.6 - 12.5	39	27	42	46	76	67	83	56	32	107	108	64	59	79	85	46	1076	48.8
12.6 - 18.5	12	14	17	10	19	25	27	43	47	51	49	40	50	46	40	16	508	23.0
18.6 - 24.5	0	0	0	0	0	1	4	6	9	14	7	2	11	21	26	8	109	4.9
24.6 - 32.5	0	1	0	0	0	0	0	1	0	4	0	0	13	13	1	0	33	1.5
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	81	65	79	78	119	135	166	141	174	206	198	126	170	193	192	93	2203	100.0
PERCENT	3.7	3.0	3.8	3.5	8.4	6.1	7.8	6.4	7.9	9.4	8.9	5.7	7.7	8.8	8.3	4.2	100.0	

TABLE 2.3.2-16 (SHEET 13 OF 48)

MONTH OF APRIL

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	.4	.50
CALM + - 3.5	0	1	0	1	1	0	0	0	1	0	2	1	1	1	2	2	13	2.6	2.70
3.6 -7.5	7	4	5	5	3	2	5	3	6	3	9	9	16	8	6	3	94	19.1	5.69
7.6 - 12.5	5	11	8	6	9	13	20	11	6	8	9	17	25	24	10	3	187	38.0	9.84
12.6 - 18.5	2	1	2	3	4	1	5	5	7	3	12	15	29	29	8	4	130	26.4	15.36
18.6 - 24.5	1	0	0	0	0	0	0	0	0	0	2	9	20	18	5	2	57	11.6	20.76
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	0	4	3	1	0	9	1.8	26.26
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	15	17	15	15	17	16	30	19	20	14	35	51	96	84	32	16	492	0.0	8.80
PERCENT	3.0	3.5	3.0	3.0	3.5	3.3	6.1	3.9	4.1	2.8	7.1	10.4	19.5	17.1	6.5	3.3	100.0		
AV SPD	9.8	8.4	9.2	8.7	9.8	9.3	10.4	10.5	9.9	10.1	11.6	13.0	14.1	14.4	12.2	11.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 12.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 8

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	2.6	1.93
3.6 -7.5	0	1	0	1	1	0	1	0	4	4	1	1	0	1	0	1	16	21.1	5.65
7.6 - 12.5	1	1	1	1	1	3	2	3	3	2	1	1	0	3	0	0	30	39.5	9.25
12.6 - 18.5	0	1	0	0	0	0	1	1	0	4	1	4	7	1	1	0	21	27.6	15.44
18.6 - 24.5	0	0	0	0	0	0	0	0	0	1	0	6	2	2	0	0	7	9.2	19.64
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	3	1	2	2	4	4	4	7	18	3	8	9	7	1	2	76	0.0	8.61
PERCENT	1.3	3.9	1.3	2.6	3.6	5.3	5.3	5.3	2.2	23.7	3.9	10.5	11.0	9.2	1.3	2.6	100.0		
AV SPD	11.2	9.4	7.6	7.7	8.3	7.5	10.1	11.2	7.1	10.4	10.8	15.2	17.0	12.0	17.1	4.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-16 (SHEET 14 OF 48)

MONTH OF APRIL

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	0	1	1	0	0	2	1	1	1	1	2	3	0	0	0	1	14	37.8	5.92
7.6 - 12.5	0	0	0	0	0	1	1	3	0	1	2	0	1	1	0	0	10	27.0	9.60
12.6 - 18.5	0	0	0	0	0	0	1	0	0	2	0	0	1	1	1	2	8	21.6	15.69
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	5	13.5	19.31
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	1	1	0	0	3	3	4	1	4	5	3	2	3	3	4	37	0.0	8.86
PERCENT	0.0	2.7	2.7	0.0	0.0	8.1	8.1	10.8	2.7	10.8	13.5	8.1	5.4	8.1	8.1	10.8	100.0		
AV SPD	0.0	6.6	7.1	0.0	0.0	7.5	8.8	8.6	7.3	12.3	10.5	6.4	13.7	15.3	18.6	13.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	2	0	1	1	1	0	1	1	0	1	0	1	2	1	12	3.3	3.03
3.6 -7.5	4	8	3	8	1	6	3	3	7	9	8	2	5	3	4	2	67	18.5	5.64
7.6 - 12.5	3	1	2	6	7	15	13	16	16	24	14	5	13	4	3	2	145	40.1	9.78
12.6 - 18.5	0	1	0	2	3	4	7	6	5	7	14	0	14	19	9	5	105	28.0	15.14
18.6 - 24.5	1	0	0	0	0	0	0	3	1	0	2	5	4	10	4	2	32	8.8	20.40
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.3	25.60
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	10	7	10	12	28	24	28	32	37	36	25	36	37	22	12	362	0.0	9.23
PERCENT	2.2	2.5	1.9	2.8	3.3	7.2	6.6	7.7	8.8	10.2	9.9	6.9	9.9	10.2	6.1	3.3	100.0		
AV SPD	9.1	7.4	6.2	9.3	9.8	8.9	10.4	12.1	10.3	9.8	12.8	13.1	12.9	15.2	13.0	13.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 4

TABLE 2.3.2-16 (SHEET 15 OF 48)

MONTH OF APRIL

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	.4	2.55
3.6 -7.5	3	1	1	3	2	2	9	9	9	8	7	1	4	7	3	0	69	14.8	5.77
7.6 - 12.5	3	4	1	6	8	21	29	31	40	32	11	9	15	15	7	4	237	51.0	10.02
12.6 - 18.5	1	2	1	1	2	0	15	5	10	17	15	15	18	12	22	2	138	29.7	14.13
18.6 - 24.5	0	0	2	0	0	0	0	0	0	3	3	1	1	4	2	0	16	3.4	20.67
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3	.6	25.57
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	7	7	5	10	13	23	53	45	59	60	38	28	38	38	35	6	465	0.0	9.88
PERCENT	1.5	1.5	1.1	2.2	2.8	4.9	11.4	9.7	12.7	12.9	8.2	6.0	8.2	8.2	7.5	1.3	100.0		
AV SPD	8.9	9.7	12.4	8.5	10.1	9.4	10.6	9.8	10.1	11.5	13.0	13.4	12.0	11.9	13.0	11.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	0	0	0	0	1	0	1	0	0	1	0	1	0	0	5	1.7	2.63
3.6 -7.5	3	0	0	1	3	0	1	2	1	4	4	2	3	5	3	5	40	13.5	6.03
7.6 - 12.5	2	3	4	7	15	8	8	7	4	14	20	16	21	12	7	3	151	51.2	10.43
12.6 - 18.5	5	2	2	0	1	4	4	4	8	13	9	14	10	11	4	0	91	30.8	14.39
18.6 - 24.5	0	0	1	0	0	0	0	0	0	0	1	0	1	3	1	1	3	2.7	20.56
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	12	5	7	8	19	12	14	13	14	31	34	33	35	32	15	10	295	0.0	9.93
PERCENT	4.1	2.0	2.4	2.7	6.4	4.1	4.7	4.4	4.7	10.5	11.5	11.2	11.9	10.8	5.1	3.4	100.0		
AV SPD	10.7	11.2	13.4	10.2	9.0	11.4	10.5	10.4	11.8	11.7	11.8	12.0	11.6	12.1	11.1	9.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 16 OF 48)

MONTH OF APRIL

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	1	0	0	1	0	1	1	1	1	0	1	3	1	0	11	5.9	2.34
3.6 -7.5	7	1	2	0	3	4	3	2	4	4	2	2	6	3	3	1	47	25.4	5.17
7.6 - 12.5	2	1	0	2	2	3	5	6	5	3	12	10	12	10	6	3	18	44.3	10.00
12.6 - 18.5	0	0	0	0	3	0	0	0	3	1	15	5	6	7	4	1	45	24.3	14.22
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	2	3	2	8	8	8	9	13	9	30	17	25	23	14	5	185	1.0	7.35
PERCENT	4.9	1.1	1.6	1.1	4.3	4.3	4.3	4.9	7.0	4.9	16.2	9.2	13.5	12.4	7.6	2.7	100.0		
AV SPD	6.7	6.4	3.5	9.6	9.3	6.6	8.2	8.5	9.4	7.1	11.7	11.3	9.5	10.3	9.7	10.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF APRIL
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	.1
CALM + - 3.5	0	2	3	1	2	3	2	1	4	2	3	4	2	6	6	4	45	2.4
3.6 -7.5	26	16	12	12	13	16	23	20	32	33	30	20	34	27	19	14	347	18.1
7.6 - 12.5	10	21	16	28	43	64	78	77	76	87	69	61	87	69	33	17	842	44.0
12.6 - 18.5	8	7	5	0	13	0	33	21	33	17	68	62	85	80	49	14	538	28.1
18.6 - 24.5	2	0	3	0	0	0	0	3	1	4	9	17	28	38	14	6	125	6.5
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	4	1	4	3	1	0	13	.7
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	52	46	39	47	71	82	136	122	146	173	181	165	241	224	122	55	1912	100.0
PERCENT	2.7	2.4	2.0	2.5	3.7	4.6	7.1	6.4	7.6	9.0	9.5	8.6	12.6	11.7	8.4	2.9	100.0	

TABLE 2.3.2-16 (SHEET 17 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	0	0	2	0	1	0	0	1	1	0	2	0	2	1	0	12	2.8	2.68
3.6 -7.5	19	11	11	8	8	2	2	0	4	4	4	10	20	14	10	6	133	30.6	3.79
7.6 - 12.5	11	6	8	8	11	6	1	5	3	3	11	23	32	25	23	10	186	42.8	9.66
12.6 - 18.5	1	2	3	0	0	0	3	4	1	0	5	8	34	16	9	2	88	20.2	14.68
18.6 - 24.5	0	1	0	0	0	1	0	0	0	0	1	2	6	0	0	0	11	2.5	20.69
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	1	5	1.1	27.49
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	33	20	22	18	19	10	6	9	9	8	22	47	93	57	43	19	435	0.0	8.14
PERCENT	7.6	4.6	5.1	4.1	4.4	2.3	1.4	2.1	2.1	1.8	5.1	10.8	21.4	13.1	9.9	4.4	100.0		
AV SPD	7.2	8.2	8.1	7.0	8.2	9.1	11.4	12.1	7.5	7.5	11.7	10.7	12.3	10.1	9.7	9.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2.9	1.82
3.6 -7.5	4	0	4	3	2	0	0	2	5	2	3	2	2	0	0	0	29	42.0	5.28
7.6 - 12.5	2	2	0	1	1	1	1	0	2	2	2	4	4	3	0	1	26	37.7	9.84
12.6 - 18.5	0	0	2	0	0	0	1	0	3	0	1	1	1	1	0	0	10	14.5	14.89
18.6 - 24.5	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2.9	22.20
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	6	2	7	4	3	3	2	2	10	4	6	8	7	4	0	1	69	0.0	6.91
PERCENT	8.7	2.9	10.1	5.8	4.3	4.3	3.9	2.9	14.5	5.8	8.7	11.6	10.1	5.8	0.0	1.4	100.0		
AV SPD	7.0	10.0	10.8	6.9	8.3	4.5	13.2	4.2	9.3	6.7	7.8	11.1	10.2	11.6	0.0	12.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 18 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	3	9.1	2.32
3.6 -7.5	1	0	1	1	3	1	0	0	0	2	0	0	0	0	1	2	12	36.4	5.65
7.6 - 12.5	0	1	2	2	0	1	1	1	1	0	0	1	0	1	0	0	11	33.3	9.47
12.6 - 18.5	0	0	2	0	1	0	0	0	0	0	0	1	1	0	1	0	6	18.2	13.61
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3.0	22.30
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	1	5	4	4	2	1	1	2	2	1	3	1	1	2	2	33	0.0	6.52
PERCENT	3.0	3.0	15.2	12.1	2.1	8.1	3.0	3.0	6.1	6.1	3.0	9.1	3.0	3.0	6.1	6.1	100.0		
AV SPD	7.3	10.1	10.5	8.5	7.7	8.4	7.8	7.6	7.1	5.8	2.6	14.7	14.2	8.3	9.2	4.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	0	2	2	1	0	2	2	0	2	0	1	2	0	1	16	4.8	2.55
3.6 -7.5	4	3	4	10	4	10	9	7	5	4	7	2	3	1	1	5	79	23.7	5.78
7.6 - 12.5	9	5	11	11	6	7	5	18	14	7	13	9	9	6	6	2	141	42.3	9.70
12.6 - 18.5	2	4	11	3	2	2	8	14	11	1	5	2	4	3	4	4	80	24.0	14.77
18.6 - 24.5	0	0	1	0	2	0	0	0	7	1	2	0	2	1	1	0	17	5.1	20.64
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	15	16	27	26	16	20	22	41	39	13	29	13	19	13	12	12	333	0.0	8.18
PERCENT	4.5	4.8	8.1	7.8	4.8	6.0	6.6	12.3	11.7	3.9	8.7	3.9	5.7	3.0	3.6	3.6	100.0		
AV SPD	9.4	9.8	11.8	8.2	9.6	8.1	10.1	10.1	12.7	10.3	10.4	11.3	11.4	10.4	12.0	9.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

TABLE 2.3.2-16 (SHEET 19 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	2	1	0	2	0	1	1	0	1	0	0	3	0	0	2	13	2.6	2.60
3.6 -7.5	1	8	9	7	7	9	22	16	7	6	6	2	6	3	5	8	122	24.7	5.41
7.6 - 12.5	7	4	8	11	12	26	16	45	39	20	25	19	12	6	9	9	268	54.3	9.82
12.6 - 18.5	1	2	8	2	4	1	3	6	11	3	7	10	7	9	7	3	84	17.0	14.09
18.6 - 24.5	0	0	0	1	0	0	0	0	0	0	1	0	0	3	1	0	6	1.2	20.03
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	.2	28.10
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	16	26	21	25	36	42	68	57	30	39	31	28	21	22	23	494	0.0	8.08
PERCENT	1.8	3.2	5.3	4.3	5.1	7.3	8.5	13.8	11.5	6.1	7.9	6.3	5.7	4.3	4.5	4.7	100.0		
AV SPD	9.8	6.9	9.6	9.2	8.9	8.9	7.9	9.1	10.4	9.4	10.7	11.0	9.3	12.8	10.8	9.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	2	1	0	0	0	0	1	2	0	3	4	0	1	0	0	16	5.4	2.67
3.6 -7.5	2	0	6	3	8	7	10	4	2	2	6	2	1	4	3	5	65	22.1	5.80
7.6 - 12.5	4	4	2	5	4	9	16	7	10	5	10	15	10	25	12	7	145	49.3	9.83
12.6 - 18.5	0	5	3	2	3	1	1	1	3	6	9	10	9	7	4	4	68	23.1	13.79
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	11	12	10	15	17	27	13	17	13	28	31	20	37	19	16	294	0.0	7.89
PERCENT	3.7	3.7	4.1	3.4	5.1	5.8	9.2	4.4	5.8	4.4	9.5	10.5	0.8	12.5	6.5	5.4	100.0		
AV SPD	6.8	10.4	7.4	8.0	8.7	8.5	8.8	8.3	9.5	11.1	9.6	10.5	11.0	10.1	10.2	9.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 20 OF 48)

MONTH OF MAY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	.6	.50
CALM + - 3.5	1	1	0	1	0	2	0	2	3	1	2	0	0	0	3	1	17	10.6	2.18
3.6 -7.5	3	1	2	2	1	4	3	1	6	3	2	1	1	3	2	8	43	26.9	5.65
7.6 - 12.5	2	0	3	1	8	3	2	1	3	8	11	5	7	10	5	5	74	46.3	10.14
12.6 - 18.5	1	0	1	0	0	4	0	1	0	3	6	0	4	5	0	0	25	15.6	14.11
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	7	2	6	4	9	13	5	5	12	15	21	6	13	18	10	14	160	0.0	6.04
PERCENT	4.4	1.3	3.8	2.5	5.6	8.1	3.1	3.1	7.5	9.4	13.1	3.8	8.1	11.3	6.3	8.8	100.0		
AV SPD	8.1	4.0	8.8	5.9	9.6	9.3	6.8	6.0	5.1	9.6	10.4	9.9	10.6	10.8	7.5	7.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF MAY
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	.1
CALM + - 3.5	1	6	2	6	4	6	1	6	9	3	8	6	4	5	4	4	79	4.3
3.6 -7.5	34	23	37	34	33	33	46	30	29	23	28	12	33	25	22	34	483	26.6
7.6 - 12.5	15	25	34	39	42	53	42	77	72	45	72	76	74	76	55	34	851	46.8
12.6 - 18.5	5	13	30	7	10	8	16	26	29	13	33	32	60	41	25	13	361	12.9
18.6 - 24.5	0	1	2	1	2	1	0	0	7	1	4	4	8	4	2	0	37	2.0
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	2	6	.3
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	79	68	105	87	81	101	105	139	146	85	146	139	181	151	108	87	1818	100.0
PERCENT	4.3	3.7	5.6	4.8	3.0	3.6	5.8	7.0	3.0	4.7	6.0	7.6	10.0	8.3	5.9	4.8	100.0	

TABLE 2.3.2-16 (SHEET 21 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	1	3	0	1	1	0	0	0	0	1	1	2	0	0	11	2.7	2.76
3.6 -7.5	13	17	7	9	10	7	7	7	3	5	9	11	6	5	1	5	122	29.9	5.53
7.6 - 12.5	7	14	13	17	20	19	8	4	3	7	7	15	31	15	4	6	190	46.6	9.57
12.6 - 18.5	0	1	2	6	2	0	0	2	3	0	4	5	30	16	4	2	77	18.9	14.71
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	2	5	0	1	0	8	2.0	20.30
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	20	33	23	35	32	27	16	13	9	12	20	34	73	30	10	13	408	0.0	7.92
PERCENT	4.9	8.1	5.6	8.6	7.8	6.6	3.9	3.2	2.2	2.9	4.9	8.3	17.0	9.3	10.5	3.2	100.0		
AV SPD	7.0	7.3	8.8	9.2	8.7	8.2	7.4	8.9	10.4	7.6	8.9	9.8	12.4	11.1	11.6	8.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 7

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2.5	2.56
3.6 -7.5	2	1	0	5	2	3	1	2	2	3	1	3	0	0	0	2	37	33.3	5.13
7.6 - 12.5	4	1	1	2	6	4	1	1	3	1	5	3	2	1	2	1	40	49.4	9.31
12.6 - 18.5	1	0	0	0	0	1	1	2	0	1	3	0	2	0	1	0	12	14.8	14.33
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	7	3	2	7	8	8	3	5	7	0	9	6	4	1	3	3	81	0.0	7.25
PERCENT	8.6	3.7	2.5	8.6	9.9	9.9	3.7	6.2	8.6	6.2	11.1	7.4	4.9	1.2	3.7	3.7	100.0		
AV SPD	8.6	6.6	5.9	8.1	8.1	7.9	9.9	9.0	7.9	8.1	11.2	8.1	11.7	10.5	12.0	8.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-16 (SHEET 22 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	0	0	1	0	0	1	0	3	0	1	1	0	0	0	0	0	7	33.3	5.21
7.6 - 12.5	1	1	2	0	0	1	0	0	2	1	1	1	0	0	0	1	11	52.4	9.75
12.6 - 18.5	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	3	14.3	14.73
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	1	3	0	0	2	0	3	3	2	2	2	1	0	0	1	21	0.0	7.85
PERCENT	4.8	4.8	14.3	0.0	0.0	9.5	0.0	14.3	14.3	9.5	9.5	9.5	4.8	0.0	0.0	4.8	100.0		
AV SPD	8.5	8.2	8.9	0.0	0.0	7.1	0.0	5.9	11.9	7.2	8.3	12.7	14.6	0.0	0.0	11.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	2	1	2	0	0	0	2	0	2	2	0	0	2	0	0	13	4.1	2.75
3.6 -7.5	1	9	10	4	6	4	14	16	7	9	8	6	5	2	0	4	105	33.1	5.62
7.6 - 12.5	5	5	4	6	22	12	11	15	7	11	18	9	4	2	9	4	142	44.8	9.64
12.6 - 18.5	2	0	1	1	2	5	2	7	0	5	8	5	5	1	4	0	48	15.1	13.79
18.6 - 24.5	0	0	0	2	0	0	0	0	0	1	1	1	1	1	0	0	7	2.2	19.74
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	.6	25.40
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	16	16	15	30	21	27	40	14	28	35	21	15	8	13	9	317	0.0	7.54
PERCENT	2.5	8.0	5.0	4.7	9.5	6.6	8.5	12.6	4.4	3.6	11.0	6.6	5.0	2.5	4.1	2.5	100.0		
AV SPD	10.0	6.2	6.6	9.5	9.3	10.0	9.2	8.5	8.1	9.1	2.5	10.3	11.6	8.8	11.1	9.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-16 (SHEET 23 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	1	1	1	3	4	1	1	2	0	2	0	0	0	2	1	21	3.9	2.13
3.6 -7.5	6	4	3	7	11	8	21	22	11	9	9	10	3	2	2	4	132	24.5	5.41
7.6 - 12.5	5	1	3	8	18	16	24	60	36	33	28	26	22	5	2	5	292	54.2	9.97
12.6 - 18.5	1	1	5	1	3	3	3	10	10	13	18	8	8	1	2	3	90	16.7	13.91
18.6 - 24.5	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	3	.6	20.39
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.2	33.90
TOTAL	14	7	13	17	35	31	49	93	59	55	59	44	33	9	8	13	539	100.0	7.08
PERCENT	2.6	1.3	2.4	3.2	6.5	5.8	9.1	17.3	10.9	10.2	10.9	8.2	6.1	1.7	1.5	2.4	100.0		
AV SPD	7.5	6.7	11.3	7.7	8.1	8.1	8.2	9.3	9.7	10.5	11.2	10.0	11.0	10.3	7.5	9.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	2	0	3	4	1	2	0	1	1	0	1	0	1	0	0	16	5.9	2.29
3.6 -7.5	4	5	4	7	5	3	5	8	11	4	4	1	2	5	1	2	71	26.0	5.62
7.6 - 12.5	3	3	6	3	7	10	12	20	10	14	21	6	17	3	2	0	143	52.4	9.70
12.6 - 18.5	1	4	0	0	0	2	0	0	2	6	8	13	2	1	0	1	42	15.4	13.93
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.4	24.90
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	14	10	13	16	16	21	34	24	25	33	21	21	11	3	3	273	0.0	7.30
PERCENT	2.9	5.1	3.7	4.8	5.9	5.9	7.7	12.5	8.0	9.2	12.1	7.7	7.7	4.0	1.1	1.1	100.0		
AV SPD	8.4	8.9	8.6	6.1	6.7	9.2	8.4	8.5	8.4	10.0	10.6	11.5	10.1	5.8	9.5	8.4			

AVERAGE SPEED FOR THIS TABLE EQUALS9.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

TABLE 2.3.2-16 (SHEET 24 OF 48)

MONTH OF JUNE

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	0	0	0	1	0	2	0	0	0	1	0	0	1	1	17	7.6	3.03
3.6 -7.5	0	0	1	0	3	1	5	3	5	1	0	0	2	2	1	2	26	28.3	5.54
7.6 - 12.5	3	1	1	1	1	5	2	5	3	3	4	2	5	4	4	5	49	53.3	9.88
12.6 - 18.5	0	0	0	0	1	0	0	2	0	1	1	2	0	0	1	1	9	9.8	13.48
18.6 - 24.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1.1	20.10
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	4	1	2	1	5	7	7	12	9	5	5	5	7	6	7	9	92	0.0	7.26
PERCENT	4.3	1.1	2.2	1.1	5.4	7.6	7.6	13.0	9.8	5.4	5.4	5.4	7.6	6.5	7.6	9.5	100.0		
AV SPD	8.7	8.6	8.6	8.4	8.1	8.9	6.7	8.7	8.9	9.	12.7	9.5	8.2	9.2	8.4	8.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF JUNE
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
CALM + - 3.5	3	7	4	9	7	7	4	5	3	3	4	3	1	5	3	2	70	4.0
3.6 -7.5	26	36	26	32	37	27	53	61	39	32	32	31	18	16	5	19	490	28.3
7.6 - 12.5	28	26	30	37	74	67	58	111	56	70	82	82	81	30	23	22	867	50.1
12.6 - 18.5	5	6	0	8	8	11	8	23	16	26	42	34	48	19	12	7	281	16.2
18.6 - 24.5	0	0	1	2	0	0	0	0	1	1	2	3	6	2	1	0	19	1.1
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3	.2
32.6+	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.1
TOTAL	62	75	69	86	126	112	123	200	125	132	163	133	155	73	44	51	1731	100.0
PERCENT	3.0	4.3	4.0	5.1	7.3	6.8	7.1	11.6	7.2	7.0	9.4	7.7	9.0	4.2	2.5	2.9	100.0	

TABLE 2.3.2-16 (SHEET 25 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	1	0	1	0	1	0	0	0	1	1	0	1	1	0	8	2.7	2.81
3.6 -7.5	4	5	7	5	2	3	2	1	2	1	9	22	27	14	5	3	112	37.5	5.69
7.6 - 12.5	2	0	1	6	20	14	4	1	0	2	16	32	36	19	1	0	154	51.5	9.43
12.6 - 18.5	1	0	1	2	10	3	0	0	0	0	1	2	3	2	0	0	25	8.4	14.17
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	5	10	13	33	20	7	2	2	3	27	57	66	36	7	3	299	0.0	7.36
PERCENT	2.7	1.7	3.3	4.3	11.0	6.7	2.3	.7	.7	1.0	9.0	19.1	22.1	12.0	2.3	1.0	100.0		
AV SPD	7.5	5.0	6.8	8.8	11.0	9.7	8.5	6.5	7.0	8.1	8.4	8.1	8.4	8.0	5.1	5.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 5

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3.6	3.07
3.6 -7.5	0	0	2	2	1	1	0	1	3	1	1	1	2	2	1	3	21	38.2	5.52
7.6 - 12.5	0	0	0	0	2	4	1	0	0	0	3	6	4	2	1	0	23	41.8	9.73
12.6 - 18.5	0	0	0	0	0	0	0	1	1	1	3	0	0	0	0	0	6	10.9	13.90
18.6 - 24.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.8	19.10
24.6 - 32.5	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	3.6	28.37
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	1	3	2	3	5	1	2	4	2	8	7	7	5	2	3	55	0.0	7.46
PERCENT	0.0	1.8	5.5	3.6	5.5	9.1	1.8	3.6	7.3	3.6	14.9	12.7	12.7	9.1	3.6	3.5	100.0		
AV SPD	0.0	19.1	12.8	5.5	9.2	9.9	10.6	2.3	8.7	8.6	13.2	6.8	7.1	6.9	5.7	5.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

TABLE 2.3.2-16 (SHEET 26 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	3	8.1	3.32
3.6 -7.5	0	0	1	4	1	2	0	1	2	0	1	2	4	0	0	1	19	51.4	5.48
7.6 - 12.5	0	0	1	1	2	1	0	0	0	0	1	2	1	1	1	0	11	29.7	10.22
12.6 - 18.5	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	4	10.8	13.33
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	0	3	5	4	4	0	1	3	1	2	5	5	1	2	1	37	0.0	6.44
PERCENT	0.0	0.0	8.1	13.5	10.8	10.8	0.0	2.7	8.1	2.7	5.4	13.5	13.5	2.7	5.4	2.7	100.0		
AV SPD	0.0	0.0	8.0	7.1	7.1	8.8	0.0	6.7	8.0	3.5	9.7	9.5	5.9	9.5	11.2	5.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	1	0	1	0	4	1	1	0	0	0	0	8	3.0	2.88
3.6 -7.5	0	3	9	6	9	9	10	11	7	4	10	10	10	3	2	3	105	39.8	5.57
7.6 - 12.5	0	0	10	5	12	10	9	9	7	10	11	15	11	3	1	0	125	47.3	9.43
12.6 - 18.5	1	1	2	4	0	0	1	1	3	3	4	1	0	1	0	1	23	8.7	14.30
18.6 - 24.5	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	.8	22.50
24.6 - 32.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	.4	24.50
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	4	21	15	21	25	20	22	18	28	26	27	21	7	3	4	264	0.0	7.21
PERCENT	.8	1.5	8.0	5.7	3.0	9.5	7.6	2.3	8.6	10.8	9.8	10.2	8.0	2.7	1.1	1.5	100.0		
AV SPD	19.4	6.7	8.1	9.4	7.7	8.1	7.9	7.3	9.6	9.4	9.1	8.1	8.0	9.1	5.9	8.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 5

TABLE 2.3.2-16 (SHEET 27 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	1	0	1	0	1	1	3	1	2	3	5	1	1	0	1	22	3.4	2.68
3.6 -7.5	4	4	9	6	8	14	16	19	14	16	20	9	13	14	5	1	172	26.6	5.71
7.6 - 12.5	2	3	10	12	19	17	18	52	54	58	72	33	26	5	1	5	392	60.7	9.81
12.6 - 18.5	0	2	1	1	0	1	1	8	12	11	10	4	3	3	1	1	59	9.1	13.98
18.6 - 24.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.2	21.20
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	7	10	21	20	27	33	36	82	81	87	105	56	43	23	7	8	646	0.0	7.82
PERCENT	1.1	1.5	3.3	3.1	4.2	5.1	5.6	12.7	12.5	13.5	16.3	8.7	6.7	3.6	1.1	1.2	100.0		
AV SPD	6.4	8.8	8.5	8.3	8.9	8.0	7.5	9.2	9.9	9.8	9.8	9.0	8.6	7.7	7.5	9.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	.4	.50
CALM + - 3.5	0	1	0	2	0	0	1	0	0	0	1	1	0	0	1	0	7	3.1	1.99
3.6 -7.5	1	1	1	3	2	1	6	9	8	9	8	5	5	1	0	2	52	27.2	5.81
7.6 - 12.5	1	0	2	4	10	10	10	10	11	26	22	19	9	2	0	0	42	72.3	9.63
12.6 - 18.5	0	0	0	1	0	0	0	1	0	5	2	3	2	1	0	0	15	6.6	13.22
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	.4	20.90
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	2	3	10	12	11	17	26	19	40	33	38	17	4	2	2	228	0.0	7.10
PERCENT	.2	.9	1.3	4.4	5.3	4.8	7.5	11.4	8.3	17.5	14.5	12.3	7.5	1.8	.9	.9	100.0		
AV SPD	7.9	5.8	7.7	7.4	9.2	8.8	7.6	8.7	8.1	9.1	9.0	9.5	8.8	10.6	11.0	6.7			

AVERAGE SPEED FOR THIS TABLE EQUALS8.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 28 OF 48)

MONTH OF JULY

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	2	5	11.4	2.97
3.6 -7.5	0	0	1	0	2	1	0	0	1	0	1	2	0	0	0	0	8	18.2	5.38
7.6 - 12.5	0	0	0	4	1	2	2	2	3	7	1	0	2	0	0	1	25	56.8	9.93
12.6 - 18.5	0	0	1	0	0	0	1	0	0	1	2	0	0	0	0	0	5	11.4	14.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2.3	18.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	0	2	4	3	4	3	3	4	8	4	2	3	1	0	3	44	0.0	7.22
PERCENT	0.0	0.0	4.5	9.1	6.8	9.1	6.8	6.8	9.1	18.2	9.1	4.5	6.8	2.3	0.0	6.8	100.0		
AV SPD	0.0	0.0	10.5	9.5	7.9	7.5	12.0	7.0	9.0	10.9	10.4	5.5	7.6	18.8	0.0	5.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

MONTH OF JULY
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	.1
CALM + - 3.5	2	2	2	3	2	3	3	5	1	7	6	8	3	3	8	3	55	3.5
3.6 -7.5	9	13	30	26	25	30	34	42	37	31	50	51	61	34	13	13	499	31.7
7.6 - 12.5	5	3	24	32	66	64	44	88	75	109	126	112	89	32	5	6	872	55.4
12.6 - 18.5	2	3	5	8	10	5	3	11	17	21	22	11	8	7	2	2	137	8.7
18.6 - 24.5	1	1	1	0	0	0	0	0	1	0	0	0	0	1	1	0	6	.4
24.6 - 32.5	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	3	.2
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	19	22	63	60	103	102	84	138	131	169	205	182	152	77	23	24	1573	100.0
PERCENT	1.2	1.4	4.0	4.4	5.5	6.5	5.3	8.8	8.3	10.7	13.0	11.6	10.3	4.9	1.5	1.5	100.0	

TABLE 2.3.2-16 (SHEET 29 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	4	1	2	0	1	1	0	1	2.	0	1	1	0	1	4	1	20	6.7	2.50
3.6 -7.5	18	10	12	8	9	8	1	1	2	1	9	18	20	8	5	6	134	45.0	5.57
7.6 - 12.5	2	7	8	10	16	9	4	0	0	1	13	27	20	4	1	1	123	41.3	9.74
12.6 - 18.5	0	1	4	0	2	5	0	1	0	0	4	3	1	0	0	0	21	7.0	13.68
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	24	19	26	18	28	21	5	3	4	2	27	49	41	13	10	8	298	0.0	7.44
PERCENT	8.1	6.4	8.7	6.0	9.4	7.0	1.7	1.0	1.3	.7	9.1	16.4	13.8	4.4	3.4	2.7	100.0		
AV SPD	5.4	7.5	8.2	8.9	8.7	9.3	10.2	7.6	4.5	7.2	8.9	8.6	7.9	6.0	5.3	5.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 34

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	5	2.4	3.01
3.6 -7.5	2	2	5	2	2	1	0	0	0	0	3	3	1	0	0	0	21	39.8	5.83
7.6 - 12.5	0	1	4	1	4	1	3	0	1	1	4	3	0	0	0	0	23	43.4	8.50
12.6 - 18.5	0	1	0	0	0	0	0	0	0	0	0	1	0	2	0	0	4	7.5	4.10
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	4	11	4	6	2	3	0	1	2	7	7	1	2	0	0	53	0.0	8.65
PERCENT	5.7	7.5	20.8	7.5	11.3	3.8	5.7	0.0	1.9	3.8	13.2	13.2	1.9	3.8	0.0	0.0	100.0		
AV SPD	4.9	8.8	6.5	6.5	8.0	9.5	10.9	0.0	9.3	6.0	8.5	8.0	6.2	14.2	.0.	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

TABLE 2.3.2-16 (SHEET 30 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.3	3.20
3.6 -7.5	1	0	2	1	2	2	1	0	2	1	3	4	2	0	3	0	24	54.5	5.64
7.6 - 12.5	0	1	0	1	2	5	0	0	2	0	1	3	2	0	0	0	17	38.6	9.42
12.6 - 18.5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2.3	13.30
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.3	21.20
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	1	2	2	4	7	2	0	4	1	4	7	4	0	5	0	44	0.0	6.77
PERCENT	2.3	2.3	4.5	4.5	9.1	15.9	4.5	0.0	9.1	2.3	9.1	15.9	9.1	0.0	11.4	0.0	100.0		
AV SPD	3.8	9.9	4.9	9.3	8.5	8.7	9.4	0.0	6.5	7.2	7.1	7.9	7.6	0.0	8.0	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	.3	.50
CALM + - 3.5	1	1	5	1	2	2	1	1	2	4	6	3	2	2	1	0	34	9.4	2.95
3.6 -7.5	3	7	11	9	12	15	11	11	19	11	19	14	9	4	4	0	159	43.9	5.45
7.6 - 12.5	4	5	13	6	10	21	13	13	8	8	19	10	2	2	2	1	137	37.8	9.48
12.6 - 18.5	2	2	3	4	1	2	5	3	2	3	1	0	0	0	0	1	29	8.0	14.20
18.6 - 24.5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	.3	20.90
24.6 - 32.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	.3	25.30
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	10	15	32	20	25	40	31	28	31	27	45	28	13	8	7	2	362	0.0	6.11
PERCENT	2.8	4.1	8.5	5.5	6.0	11.0	8.6	7.7	8.6	7.5	12.4	7.7	3.6	2.2	1.9	.6	100.0		
AV SPD	9.4	8.1	7.6	8.7	7.4	8.3	9.1	8.3	7.3	7.8	7.2	6.7	5.5	8.0	5.7	11.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 7.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 15

TABLE 2.3.2-16 (SHEET 31 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	1	3	0	4	4	5	3	4	5	0	2	3	1	2	0	44	5.9	2.44
3.6 -7.5	6	11	18	17	19	27	34	22	34	38	19	9	8	5	10	3	280	37.4	5.58
7.6 - 12.5	5	2	10	16	38	29	42	48	64	72	40	11	4	2	3	3	389	51.9	9.39
12.6 - 18.5	2	0	1	1	2	0	0	4	10	8	3	0	0	0	2	0	33	4.4	14.13
18.6 - 24.5	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	.3	20.70
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	.1	25.80
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	15	14	33	39	63	60	81	77	113	123	62	22	15	8	18	6	749	0.0	6.68
PERCENT	2.0	1.9	4.4	5.2	8.4	8.0	10.8	10.3	15.1	16.4	8.4	2.9	2.0	1.1	2.4	.8	100.0		
AV SPD	8.5	6.0	7.1	7.1	8.1	7.3	7.4	8.4	8.8	8.8	8.6	6.8	5.9	6.7	7.5	7.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 16

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	.6	.50
CALM + - 3.5	2	1	0	0	2	2	2	3	0	1	3	2	3	2	3	1	27	7.6	2.23
3.6 -7.5	6	6	13	6	10	13	15	13	9	16	8	7	5	5	3	4	139	38.9	5.51
7.6 - 12.5	4	0	3	5	10	17	22	13	24	32	21	11	5	1	4	1	178	49.9	9.36
12.6 - 18.5	0	0	0	0	2	2	2	0	2	1	2	0	0	0	0	0	11	3.1	13.52
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	3	16	12	29	34	41	29	35	50	34	20	13	8	10	6	357	0.0	6.24
PERCENT	3.4	2.2	4.5	3.4	8.1	8.5	11.5	8.1	9.8	14.0	9.5	5.6	3.6	2.2	2.8	1.7	100.0		
AV SPD	6.1	4.8	6.2	6.7	8.0	7.6	7.8	7.1	8.1	8.3	8.6	7.6	6.6	5.5	5.9	5.8			

AVERAGE SPEED FOR THIS TABLE EQUALS7.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 12

TABLE 2.3.2-16 (SHEET 32 OF 48)

MONTH OF AUGUST

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	1	0	0	0	0	0	1	1	0	1	0	0	0	1	6	7.5	2.16
3.6 -7.5	3	4	0	2	0	5	2	0	2	1	2	1	1	1	1	5	30	37.5	5.55
7.6 - 12.5	0	2	3	0	6	2	0	1	3	11	9	0	0	0	1	1	39	48.8	9.92
12.6 - 18.5	0	0	0	0	1	0	0	0	0	2	2	0	0	0	0	0	5	6.3	13.87
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	7	4	2	7	7	2	1	6	15	13	2	1	1	2	7	80	0.0	6.41
PERCENT	3.8	8.8	5.0	2.5	8.8	8.8	2.5	1.3	7.5	18.8	16.3	2.5	1.3	1.3	2.5	8.8	100.0		
AV SPD	5.6	5.4	7.7	5.6	10.7	7.2	4.1	8.2	5.3	9.9	10.9	4.3	7.1	7.1	6.5	6.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF AUGUST
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	3	.2
CALM + - 3.5	10	5	13	7	9	9	8	8	9	12	10	9	8	6	11	3	137	7.1
3.6 -7.5	39	40	61	45	54	50	54	47	68	68	63	56	46	23	26	18	787	40.5
7.6 - 12.5	15	18	41	39	91	84	84	75	102	125	107	65	33	9	11	7	906	46.6
12.6 - 18.5	4	4	8	5	8	9	8	8	14	14	12	4	1	2	2	1	104	5.4
18.6 - 24.5	0	0	1	0	0	0	1	0	1	0	0	0	0	0	1	0	4	.2
24.6 - 32.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	.1
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	68	68	124	97	162	171	165	138	194	220	192	135	88	40	52	29	1943	100.0
PERCENT	3.5	3.5	6.4	5.0	8.3	8.8	8.5	7.1	10.0	11.3	9.9	6.9	4.5	2.1	2.7	1.5	100.0	

TABLE 2.3.2-16 (SHEET 33 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	3	0	1	1	0	0	1	0	0	0	1	2	7	0	1	1	18	5.0	2.53
3.6 -7.5	11	12	13	17	12	8	4	0	1	5	4	7	12	13	10	9	138	38.5	5.39
7.6 - 12.5	11	5	15	17	23	9	8	1	6	6	8	29	11	5	4	5	163	45.5	9.78
12.6 - 18.5	0	1	7	7	9	2	1	0	2	0	1	4	3	1	0	0	38	10.6	14.61
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.3	19.40
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	25	18	36	42	44	19	14	1	9	11	14	43	33	19	15	15	358	0.0	6.88
PERCENT	7.0	5.0	10.1	11.7	12.3	5.3	3.9	.3	2.5	3.1	3.9	12.0	9.2	5.3	4.2	4.2	100.0		
AV SPD	6.8	6.8	9.2	8.7	10.2	8.6	7.9	11.1	10.7	7.5	8.8	9.9	7.5	7.1	6.3	6.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	1	0	0	1	0	1	1	0	0	0	0	1	0	0	5	7.6	3.01
3.6 -7.5	2	3	1	3	1	0	2	1	1	0	0	2	0	2	0	4	22	33.3	4.79
7.6 - 12.5	1	4	2	2	5	2	1	0	1	2	3	1	0	1	1	1	20	43.9	9.73
12.6 - 18.5	0	0	1	2	3	1	0	0	1	0	0	0	0	0	0	1	9	13.6	14.65
18.6 - 24.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1.5	20.80
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	7	5	7	9	4	3	2	5	2	5	2	0	4	1	6	66	0.0	6.57
PERCENT	4.5	10.5	7.6	10.6	13.6	5.1	4.5	3.0	7.6	3.0	7.6	4.5	0.0	5.1	1.5	9.1	100.0		
AV SPD	6.8	7.1	8.8	8.9	11.1	9.0	6.5	5.0	10.7	10.8	10.5	5.3	0.0	6.2	8.4	0.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

TABLE 2.3.2-16 (SHEET 34 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	3	10.3	3.04
3.6 -7.5	2	1	0	0	0	0	2	0	1	0	0	0	0	2	1	0	9	31.0	5.28
7.6 - 12.5	1	1	2	1	1	1	0	2	0	0	0	0	0	1	2	0	12	41.4	9.74
12.6 - 18.5	0	0	0	2	0	0	0	0	0	1	1	0	0	0	1	0	5	17.2	15.74
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	3	2	3	3	1	1	2	3	1	2	1	0	0	3	4	0	29	0.0	6.84
PERCENT	10.3	6.9	10.3	10.3	3.4	3.4	6.9	10.3	3.4	6.9	3.4	0.0	0.0	10.3	13.8	0.0	100.0		
AV SPD	6.4	6.5	8.2	15.5	12.2	8.3	5.3	7.8	5.8	9.2	17.4	0.0	0.0	6.9	9.9	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	.3	.50
CALM + - 3.5	3	3	1	2	1	1	2	1	1	1	2	0	0	1	0	2	21	5.9	2.73
3.6 -7.5	19	10	14	17	11	11	12	7	6	7	8	5	2	6	4	5	144	40.2	5.49
7.6 - 12.5	6	6	25	19	18	9	6	5	10	8	3	0	4	5	3	2	129	36.0	9.58
12.6 - 18.5	0	0	16	14	8	1	1	1	1	6	6	0	0	0	0	1	55	15.4	14.73
18.6 - 24.5	1	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	7	2.0	20.67
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	.3	30.60
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	29	19	58	54	40	22	21	14	18	23	19	6	6	12	7	10	358	0.0	6.69
PERCENT	8.1	5.3	16.2	15.1	11.2	6.1	5.9	3.9	5.0	6.4	5.3	1.7	1.7	3.4	2.0	2.6	100.0		
AV SPD	6.7	6.6	10.8	9.9	10.2	7.4	7.2	6.3	8.2	9.0	9.0	6.5	8.6	6.4	6.7	6.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =4

TABLE 2.3.2-16 (SHEET 35 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	1	0	0	1	0	1	1	1	0	0	1	0	0	0	0	6	.9	.50
CALM + - 3.5	5	8	1	4	4	3	2	2	3	5	1	2	2	2	0	1	46	5.9	2.17
3.6 -7.5	11	12	18	25	15	23	23	12	13	12	17	8	5	7	7	7	215	32.5	5.58
7.6 - 12.5	8	10	49	45	37	24	10	24	38	35	15	23	8	6	8	8	348	52.6	9.55
12.6 - 18.5	0	0	10	7	9	4	3	8	1	2	0	0	0	0	0	0	44	6.6	13.94
18.6 - 24.5	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	3	.5	20.45
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	25	32	78	82	66	54	39	47	56	54	33	34	15	16	15	16	662	0.0	5.94
PERCENT	3.8	4.8	11.8	12.4	10.0	8.2	5.9	7.1	8.5	8.2	5.0	5.1	2.3	2.4	2.3	2.4	100.0		
AV SPD	5.9	6.6	9.7	8.7	8.9	7.8	7.1	9.2	8.5	8.5	7.5	7.9	7.2	7.1	7.3	7.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	.6	.50
CALM + - 3.5	2	1	2	1	1	2	3	0	1	1	1	0	1	0	1	0	17	5.2	1.85
3.6 -7.5	7	3	11	14	17	8	8	9	6	14	10	4	8	3	6	2	130	39.8	5.54
7.6 - 12.5	4	11	10	22	33	16	14	3	5	14	12	5	4	2	2	7	164	50.2	9.57
12.6 - 18.5	0	0	3	3	4	1	0	0	0	0	1	1	0	0	0	1	14	4.3	13.12
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	15	26	40	55	27	25	12	12	30	24	10	14	5	9	10	327	0.0	5.86
PERCENT	4.0	4.6	8.0	12.2	16.8	8.3	7.6	3.7	3.7	9.2	7.3	3.1	4.3	1.5	2.8	3.1	100.0		
AV SPD	6.3	7.9	7.9	8.6	8.9	8.4	7.6	6.6	6.8	6.9	7.7	8.4	5.8	6.7	6.7	9.2			

AVERAGE SPEED FOR THIS TABLE EQUALS7.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 36 OF 48)

MONTH OF SEPTEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	4	3.1	0.50
CALM + - 3.5	3	1	2	2	2	0	3	3	0	1	3	0	2	1	1	0	24	18.6	1.93
3.6 -7.5	1	3	1	1	3	1	1	2	2	4	4	3	3	2	5	1	37	28.7	5.38
7.6 - 12.5	5	1	1	0	5	4	5	3	2	4	9	4	5	4	4	6	62	48.1	9.42
12.6 - 18.5	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1.6	13.56
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	9	6	5	3	10	6	10	8	4	10	16	7	10	8	10	7	129	0.0	3.79
PERCENT	7.0	4.7	3.9	2.3	7.8	4.7	7.8	6.2	3.1	7.8	12.4	5.4	7.8	6.2	7.8	5.4	100.0		
AV SPD	6.7	7.0	5.0	3.2	7.1	8.0	5.6	6.0	6.9	8.0	7.5	7.1	7.0	6.8	6.5	9.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF SEPTEMBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	1	1	0	1	1	2	1	1	2	0	1	1	1	0	0	13	.7
CALM + - 3.5	17	13	9	10	8	7	11	8	6	9	8	4	12	5	3	4	134	6.9
3.6 -7.5	53	44	58	77	59	51	52	31	30	42	43	29	30	35	33	28	695	36.0
7.6 - 12.5	36	38	104	106	122	65	44	38	62	69	52	62	32	24	24	29	907	47.0
12.6 - 18.5	0	2	37	35	33	9	5	9	5	10	9	5	3	1	1	3	167	8.7
18.6 - 24.5	1	1	2	3	2	0	0	0	1	0	0	1	0	1	0	0	12	.6
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	.1
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	107	99	211	231	225	133	114	87	105	132	112	103	78	67	61	64	1929	100.0
PERCENT	5.5	5.1	10.9	12.0	11.7	6.9	5.9	4.5	5.4	6.8	5.8	5.3	4.0	3.5	3.2	3.3	100.0	

TABLE 2.3.2-16 (SHEET 37 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	1	2	0	0	0	1	0	0	0	0	1	0	1	0	1	8	1.9	2.55
3.6 -7.5	8	17	8	17	6	5	2	2	2	2	5	7	8	7	9	5	110	26.0	5.53
7.6 - 12.5	20	27	28	19	13	1	0	0	3	4	8	12	14	14	7	13	183	43.3	9.80
12.6 - 18.5	16	8	10	7	4	1	0	0	0	3	9	7	6	9	7	9	96	22.7	14.53
18.6 - 24.5	2	1	0	0	0	0	0	0	0	0	2	2	9	6	3	0	25	5.9	20.86
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.2	27.30
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	47	54	48	43	23	7	3	2	5	9	24	29	38	37	26	28	423	0.0	8.54
PERCENT	11.1	12.8	11.3	10.2	5.4	1.7	.7	.5	1.2	2.1	5.7	6.9	9.0	8.7	6.1	6.6	100.0		
AV SPD	11.2	9.6	9.7	9.2	9.3	7.1	4.2	5.5	8.4	11.4	11.6	9.9	12.9	12.8	11.2	10.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 5

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2.0	2.70
3.6 -7.5	1	2	6	1	2	1	0	1	0	0	0	1	1	0	1	1	18	36.0	5.49
7.6 - 12.5	6	3	3	0	2	0	0	1	0	0	0	0	2	0	0	3	20	40.0	9.95
12.6 - 18.5	2	2	2	0	1	0	0	0	0	0	1	1	0	0	0	1	10	20.0	14.78
18.6 - 24.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.0	21.20
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	10	7	11	1	6	1	0	2	0	0	1	2	3	0	1	5	50	0.0	7.84
PERCENT	20.0	14.0	22.0	2.0	12.0	2.0	0.0	4.0	0.0	0.0	2.0	4.0	6.0	0.0	2.0	10.0	100.0		
AV SPD	11.7	10.6	8.8	6.9	7.9	7.5	0.0	7.3	0.0	0.0	17.3	8.7	5.0	0.0	4.8	10.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 38 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	7.4	3.35
3.6 -7.5	2	2	2	0	0	0	3	0	0	0	0	0	0	1	0	0	10	37.0	5.51
7.6 - 12.5	3	2	0	1	0	0	0	1	0	0	0	0	0	1	0	4	12	44.4	9.74
12.6 - 18.5	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	3	11.1	14.26
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	5	5	2	1	0	0	3	1	1	0	1	1	0	3	0	4	27	0.0	7.01
PERCENT	18.5	18.5	7.4	3.7	0.0	0.0	11.1	3.7	3.7	0.0	3.7	3.7	0.0	11.1	0.0	14.6	100.0		
AV SPD	8.3	10.7	4.5	7.5	0.0	0.0	5.7	10.4	3.4	0.0	3.0	12.6	0.0	9.4	0.0	10.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	2	0	2	1	1	1	0	0	0	0	0	0	0	0	0	7	2.4	2.62
3.6 -7.5	4	3	9	10	5	8	3	4	1	1	3	1	4	4	4	13	77	26.9	5.56
7.6 - 12.5	10	13	9	13	7	7	3	3	2	6	8	4	4	4	8	10	111	38.8	9.68
12.6 - 18.5	13	9	6	13	3	3	0	2	11	5	2	2	3	2	1	9	86	30.1	14.79
18.6 - 24.5	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	4	1.4	20.93
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.3	25.20
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	27	29	26	38	16	19	7	9	14	12	13	7	12	12	13	32	286	0.0	8.40
PERCENT	9.4	10.1	9.1	13.3	5.6	6.0	2.4	3.1	4.9	4.2	4.5	2.4	4.2	4.2	4.5	11.2	100.0		
AV SPD	12.4	11.6	10.4	10.3	8.5	6.3	6.0	6.4	14.0	10.3	9.8	11.2	10.7	10.6	8.5	9.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 39 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	3	0	0	2	1	0	1	1	2	0	0	1	0	0	0	1	12	2.5	2.79
3.6 -7.5	10	6	12	10	15	8	2	2	3	6	7	2	8	6	6	6	109	23.0	5.60
7.6 - 12.5	16	17	23	15	12	15	10	8	5	12	8	11	10	6	15	11	194	40.9	10.13
12.6 - 18.5	20	8	21	12	0	2	0	0	2	3	9	13	20	8	12	17	147	31.0	14.58
18.6 - 24.5	1	0	0	0	0	0	1	0	0	0	0	5	1	1	1	2	12	2.5	20.37
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	50	31	56	39	28	25	14	11	12	21	24	32	39	21	34	37	474	0.0	8.84
PERCENT	10.5	6.5	11.8	8.8	5.9	5.3	3.0	2.3	2.5	4.4	5.1	6.8	8.2	4.4	7.2	7.8	100.0		
AV SPD	11.2	10.4	10.6	9.9	7.8	9.0	9.9	9.4	9.0	9.7	10.2	13.3	12.2	11.6	11.4	12.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	3	.8	.50
CALM + - 3.5	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	5	1.3	2.38
3.6 -7.5	4	5	7	7	4	5	1	0	3	2	2	1	7	2	4	4	61	15.6	5.92
7.6 - 12.5	19	18	25	24	32	11	7	6	6	8	6	9	20	18	9	11	229	58.7	10.07
12.6 - 18.5	11	10	7	6	5	4	0	1	2	6	9	4	10	10	5	2	92	23.6	13.98
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	35	33	39	37	42	24	9	7	11	18	17	14	37	30	19	18	390	0.0	8.17
PERCENT	9.0	8.5	10.0	9.0	10.8	6.2	2.3	1.9	2.8	4.6	4.4	3.6	9.5	7.7	4.9	4.6	100.0		
AV SPD	11.1	11.0	10.2	10.2	9.6	9.0	8.1	9.5	9.9	9.9	12.5	11.3	10.5	11.2	9.8	9.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 40 OF 48)

MONTH OF OCTOBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	1	0	1	2	1	1	0	0	0	1	0	7	1.6	0.50
CALM + - 3.5	1	1	1	3	2	0	2	1	0	0	2	5	7	0	2	0	27	6.3	2.51
3.6 -7.5	11	8	23	7	8	4	5	2	8	5	4	3	12	6	9	13	128	29.8	5.65
7.6 - 12.5	20	28	22	16	23	7	6	1	6	12	10	11	8	10	5	13	198	46.0	9.64
12.6 - 18.5	14	8	1	4	6	1	0	0	2	14	7	9	2	1	1	0	70	16.3	14.07
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	46	45	47	30	39	13	13	5	18	32	24	28	29	17	18	26	430	0.0	5.86
PERCENT	10.7	10.5	10.9	7.0	9.1	3.0	3.0	1.2	4.2	7.4	5.6	6.5	6.7	4.0	4.2	6.0	100.0		
AV SPD	10.2	9.7	7.6	8.0	9.6	8.2	7.2	4.9	7.3	10.8	10.1	9.5	6.9	8.3	6.3	7.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF OCTOBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	1	1	1	2	2	1	0	0	0	2	0	10	.5
CALM + - 3.5	6	4	3	7	6	2	5	2	3	1	3	7	7	1	2	3	62	3.0
3.6 -7.5	40	43	67	52	40	34	16	11	17	16	21	15	40	26	33	42	513	24.7
7.6 - 12.5	94	108	110	88	89	41	26	20	22	42	40	47	58	53	44	65	947	45.5
12.6 - 18.5	76	46	49	42	19	11	0	3	17	31	37	37	41	31	26	38	504	24.2
18.6 - 24.5	4	3	0	0	0	0	1	0	0	0	2	7	11	8	4	2	42	2.0
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	.1
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	220	204	229	189	154	89	49	37	61	92	104	113	158	120	111	150	2080	100.0
PERCENT	10.6	9.8	11.0	9.1	7.4	4.3	2.4	1.8	2.9	4.4	5.0	5.4	7.6	5.8	5.3	7.2	100.0	

TABLE 2.3.2-16 (SHEET 41 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	0	0	1	0	0	0	1	0	0	2	0	0	3	0	0	9	3.2	2.68
3.6 -7.5	4	2	10	7	2	1	3	2	2	2	4	4	7	9	6	4	69	24.6	5.51
7.6 - 12.5	3	6	12	12	4	9	3	5	2	6	3	9	13	12	12	6	117	41.8	10.09
12.6 - 18.5	3	5	6	1	1	3	1	1	0	3	7	5	9	5	13	2	65	23.2	14.62
18.6 - 24.5	0	1	0	0	0	0	0	0	0	0	1	0	5	6	4	2	19	6.8	20.75
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	.4	26.60
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	12	14	28	21	7	13	7	9	4	11	17	18	34	35	36	14	280	0.0	8.52
PERCENT	4.3	5.0	10.0	7.5	2.5	4.6	2.5	3.2	1.4	3.9	6.1	6.4	12.1	12.5	12.9	5.0	100.0		
AV SPD	9.0	11.0	9.4	8.8	9.2	11.7	8.4	9.3	7.5	11.0	11.0	10.6	12.1	10.9	12.8	10.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	0	2	0	1	0	0	1	0	0	0	0	3	0	0	0	1	8	22.9	5.60
7.6 - 12.5	2	0	2	3	1	0	1	1	0	1	0	1	2	0	3	0	17	48.6	10.24
12.6 - 18.5	0	0	3	0	0	0	0	0	0	0	2	1	0	0	1	1	8	22.9	14.35
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	5.7	10.23
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	2	5	4	1	0	2	1	0	1	2	5	2	1	4	3	35	0.0	9.35
PERCENT	5.7	5.7	14.3	11.4	2.9	0.0	5.7	2.9	0.0	2.9	5.7	14.3	5.7	2.9	11.4	8.6	100.0		
AV SPD	11.3	5.3	12.0	8.5	10.2	0.0	8.3	11.5	0.0	11.7	13.7	9.2	11.2	20.9	11.5	13.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 42 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	10.0	3.35
3.6 -7.5	0	0	0	0	0	0	3	0	0	0	1	0	0	0	1	0	5	25.0	5.42
7.6 - 12.5	0	0	1	1	2	0	1	1	1	0	1	0	0	0	0	0	8	40.0	8.89
12.6 - 18.5	0	0	0	0	0	1	0	0	0	1	0	0	0	3	0	0	5	25.0	14.81
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	0	1	1	2	1	5	1	1	1	2	0	0	3	2	0	20	3.0	7.26
PERCENT	0.0	0.0	5.0	5.0	10.0	5.0	25.0	5.0	5.0	5.0	10.0	0.0	0.0	15.0	10.0	0.0	100.0		
AV SPD	0.0	0.0	8.7	8.4	8.8	12.8	6.3	8.2	9.9	14.5	7.2	0.0	0.0	15.9	4.0	0.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	3	1	1	1	2	3	1	2	0	0	2	2	2	1	1	2	24	6.7	2.81
3.6 -7.5	6	8	12	7	9	9	11	5	9	5	3	5	4	5	1	2	101	28.1	5.47
7.6 - 12.5	6	6	19	21	14	8	5	8	7	17	10	5	5	11	4	1	147	40.9	9.76
12.6 - 18.5	0	3	14	8	2	5	2	3	6	7	10	4	6	2	6	1	79	22.0	14.46
18.6 - 24.5	2	0	1	1	0	0	1	0	0	0	0	0	0	1	0	1	7	1.9	21.65
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.3	24.60
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	17	18	47	38	27	25	20	18	22	29	25	16	17	21	12	7	352	0.0	7.50
PERCENT	4.7	5.0	13.1	10.6	7.5	7.0	5.6	5.0	6.1	8.1	7.0	4.5	4.7	5.8	3.3	1.9	100.0		
AV SPD	8.8	8.4	10.7	10.3	7.9	8.5	8.2	8.9	9.1	10.7	11.0	8.9	8.9	10.0	11.6	9.0			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 5

TABLE 2.3.2-16 (SHEET 43 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	.3	.50
CALM + - 3.5	1	2	5	2	5	8	2	4	1	1	3	2	0	2	2	3	43	5.8	2.50
3.6 -7.5	7	9	16	31	22	10	12	15	19	6	6	4	2	9	4	3	175	23.6	5.84
7.6 - 12.5	11	8	43	40	35	39	22	19	22	26	17	19	14	12	12	11	350	47.2	9.89
12.6 - 18.5	7	6	12	6	7	11	9	5	9	12	11	2	14	24	11	7	153	20.6	14.33
18.6 - 24.5	1	1	5	0	0	0	0	0	0	2	0	0	4	2	3	0	18	2.4	19.97
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	27	26	81	79	69	68	45	44	51	47	37	27	35	49	32	24	741	0.0	7.56
PERCENT	3.6	3.5	10.9	10.7	9.3	9.2	6.1	5.9	6.9	6.3	5.0	3.6	4.7	6.6	4.3	3.2	100.0		
AV SPD	10.3	9.3	10.0	8.7	8.9	9.3	9.6	7.9	9.0	11.1	10.1	9.5	12.7	12.0	11.6	9.8			

AVERAGE SPEED FOR THIS TABLE EQUALS9.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	0	1	0	2	0	0	0	0	1	0	0	1	0	1	7	2.8	2.81
3.6 -7.5	2	3	1	0	3	2	3	3	2	0	1	2	1	4	4	2	33	13.4	5.72
7.6 - 12.5	4	10	8	4	7	12	17	8	15	7	13	4	13	10	12	4	148	60.2	10.02
12.6 - 18.5	6	4	3	1	2	6	1	2	2	2	3	1	4	7	12	2	58	23.6	13.74
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	17	12	6	12	22	21	13	19	9	18	7	18	22	28	9	246	0.0	9.03
PERCENT	5.3	6.9	4.9	2.4	4.9	8.9	8.5	5.3	7.7	3.7	7.3	2.8	7.3	8.9	11.4	3.7	100.0		
AV SPD	11.4	10.3	10.9	9.1	9.8	10.3	9.8	9.4	9.9	11.1	9.8	8.8	11.0	10.6	11.1	9.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 44 OF 48)

MONTH OF NOVEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	3	0	1	1	1	6	5	1	0	0	1	3	7	2	1	34	12.3	2.34
3.6 -7.5	3	5	3	2	3	8	10	6	3	5	5	1	3	6	6	0	69	25.0	5.37
7.6 - 12.5	6	11	4	5	14	6	9	7	21	10	8	7	11	4	6	6	135	48.9	10.04
12.6 - 18.5	0	1	0	1	2	1	1	1	1	6	5	5	4	7	1	2	38	13.8	13.86
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	11	20	7	9	20	16	26	19	25	21	18	14	21	24	15	9	276	0.0	6.34
PERCENT	4.0	7.2	2.5	3.3	7.2	5.8	9.4	6.9	9.4	7.6	6.5	5.1	7.6	8.7	5.4	3.3	100.0		
AV SPD	7.9	8.3	8.5	8.2	9.4	7.1	7.0	7.1	9.1	10.5	10.4	11.0	9.6	7.9	7.6	9.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

MONTH OF NOVEMBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	.1
CALM + - 3.5	9	6	6	6	8	14	10	12	2	1	8	5	5	14	6	7	119	6.1
3.6 -7.5	22	29	42	48	39	30	43	31	35	18	20	19	17	33	22	12	460	23.5
7.6 - 12.5	32	41	89	86	77	74	58	49	68	67	52	45	58	49	49	28	922	47.1
12.6 - 18.5	16	19	38	17	14	27	14	12	18	31	38	18	37	48	44	15	406	20.7
18.6 - 24.5	3	2	6	1	0	0	1	0	0	2	1	0	9	10	7	4	46	2.4
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	.1
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	82	97	181	158	138	145	126	105	123	119	119	87	127	155	129	66	1957	100.0
PERCENT	4.2	5.0	9.2	8.1	7.1	7.4	6.4	5.4	6.3	6.1	6.1	4.4	5.5	7.0	6.6	3.4	100.0	

TABLE 2.3.2-16 (SHEET 45 OF 48)

MONTH OF DECEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	2	0	0	0	3	0	0	0	0	0	0	2	0	0	0	2	7	2.8	2.92
3.6 -7.5	7	5	4	4	4	3	6	4	2	4	9	4	4	5	3	2	70	28.1	5.27
7.6 - 12.5	5	6	12	13	9	4	3	1	1	2	2	2	12	11	7	6	96	38.6	9.71
12.6 - 18.5	1	3	0	3	3	0	0	0	2	0	2	9	8	13	7	1	52	20.9	14.95
18.6 - 24.5	0	0	0	1	0	0	0	0	2	1	0	2	3	5	4	0	18	7.2	20.75
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	6	2.4	28.77
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	13	14	16	21	19	7	9	5	7	7	13	19	27	38	23	11	249	0.0	8.27
PERCENT	5.2	5.6	6.4	8.4	7.6	2.8	3.6	2.0	2.8	2.8	5.2	7.6	10.8	15.3	9.2	4.4	100.0		
AV SPD	6.9	9.8	8.4	10.3	9.0	9.1	6.7	5.9	12.8	8.4	7.7	11.2	12.0	14.8	15.3	8.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	3.8	2.75
3.6 -7.5	0	1	1	1	0	0	1	1	1	0	1	2	1	2	0	1	13	25.0	5.64
7.6 - 12.5	0	1	2	5	4	2	0	0	0	0	1	1	3	3	0	2	24	46.2	9.63
12.6 - 18.5	0	0	0	0	2	0	0	0	0	0	3	3	1	1	0	0	10	19.2	14.99
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1.9	19.20
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	3.8	25.79
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	0	2	3	6	6	2	1	1	1	0	7	8	5	6	1	3	52	0.0	8.23
PERCENT	0.0	3.8	5.8	11.5	11.5	3.8	1.9	1.9	1.9	0.0	13.5	15.4	9.6	11.5	1.9	5.8	100.0		
AV SPD	0.0	6.6	9.2	9.1	11.7	8.8	6.6	5.7	7.1	0.0	12.3	11.7	10.5	9.7	19.2	5.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-16 (SHEET 46 OF 48)

MONTH OF DECEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3.1	1.40
3.6 -7.5	1	1	0	1	0	0	1	3	1	2	0	0	0	2	0	0	12	37.5	6.52
7.6 - 12.5	0	0	0	2	2	0	0	0	1	5	0	1	1	1	0	1	14	43.8	9.53
12.6 - 18.5	0	0	0	0	0	0	1	0	0	0	2	0	1	1	0	0	5	15.6	13.07
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2	1	0	3	2	0	2	3	2	7	2	1	2	4	0	1	32	0.0	7.26
PERCENT	6.3	3.1	0.0	9.4	6.3	0.0	6.3	9.4	6.3	21.9	6.3	3.1	6.3	12.5	0.0	3.1	100.0		
AV SPD	3.8	7.4	0.0	9.8	9.8	0.0	9.2	6.9	7.1	8.9	13.1	7.8	11.7	8.8	0.0	10.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	2	2	0	1	2	2	4	3	4	1	2	2	0	2	2	30	5.6	2.45
3.6 -7.5	9	8	17	7	7	3	11	15	6	6	10	9	11	4	3	20	146	27.4	5.37
7.6 - 12.5	8	11	25	34	22	10	4	7	6	6	14	13	22	11	9	2	204	38.3	9.71
12.6 - 18.5	0	0	3	16	9	0	2	1	11	6	17	10	12	13	7	5	112	21.0	14.91
18.6 - 24.5	0	0	0	1	0	0	0	0	1	2	7	5	0	6	13	1	36	6.8	21.44
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	5	.9	26.66
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	18	21	47	58	39	15	19	27	27	24	49	41	47	36	35	30	533	0.0	7.64
PERCENT	3.4	3.9	8.8	10.9	7.3	2.8	3.6	5.1	5.1	4.5	9.2	7.7	8.8	8.8	6.6	5.6	100.0		
AV SPD	7.2	7.5	8.7	11.3	10.5	8.1	6.9	6.4	10.4	9.5	12.6	11.8	9.6	14.4	15.3	7.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 6

TABLE 2.3.2-16 (SHEET 47 OF 48)

MONTH OF DECEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	1	2	0	1	3	0	0	2	1	0	0	0	1	0	0	12	1.7	2.63
3.6 -7.5	5	6	8	5	6	4	17	9	8	10	3	8	6	4	4	2	105	15.1	5.31
7.6 - 12.5	9	9	15	27	29	23	28	28	11	14	19	22	24	31	23	15	327	47.1	9.88
12.6 - 18.5	1	1	2	8	12	3	2	4	13	31	21	12	25	43	24	13	215	30.9	14.57
18.6 - 24.5	0	0	0	0	0	0	0	0	1	1	3	2	4	19	6	0	36	5.2	20.84
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	16	17	27	40	48	33	47	41	35	57	46	44	59	98	57	30	695	0.0	9.40
PERCENT	2.3	2.4	3.9	5.8	6.9	4.7	6.8	5.9	5.0	8.2	6.6	6.3	8.5	14.1	8.2	4.3	100.0		
AV SPD	8.3	7.8	8.2	10.1	10.4	8.9	8.6	9.5	10.3	12.0	12.8	11.2	12.3	14.3	13.3	11.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 11.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909.15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.4	.50
CALM + - 3.5	1	0	1	0	2	1	0	1	0	0	0	1	0	0	1	0	8	3.5	1.86
3.6 -7.5	3	0	3	2	4	2	1	6	5	3	3	0	3	4	1	2	42	18.5	5.56
7.6 - 12.5	3	1	2	10	20	9	7	6	6	7	13	8	8	8	13	4	125	55.1	9.79
12.6 - 18.5	0	0	0	0	4	1	1	0	7	8	3	0	8	13	3	2	50	22.0	13.91
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.4	20.50
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	8	1	6	12	30	13	9	13	18	18	19	9	19	26	18	8	227	0.0	7.50
PERCENT	3.5	.4	2.6	5.3	13.2	5.7	4.0	5.7	7.9	7.9	8.4	4.0	8.4	11.5	7.9	3.5	100.0		
AV SPD	6.7	9.8	6.6	8.6	9.6	8.3	9.9	7.1	10.5	11.8	10.0	9.0	10.7	12.0	10.2	9.9			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 2

TABLE 2.3.2-16 (SHEET 48 OF 48)

MONTH OF DECEMBER

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-15

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	3	1	1	1	2	0	3	1	0	0	0	0	2	2	1	17	7.6	2.34
3.6 -7.5	1	2	5	7	5	6	6	9	9	1	4	6	5	3	6	2	77	34.4	5.74
7.6 - 12.5	0	2	5	3	3	9	6	10	4	8	10	2	5	6	10	7	90	40.2	9.87
12.6 - 18.5	0	0	0	0	1	6	1	0	3	5	3	5	9	4	2	1	40	17.9	13.92
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1	7	11	11	10	23	13	22	17	14	17	13	19	15	20	11	224	0.0	6.85
PERCENT	.4	3.1	4.9	4.9	4.5	10.3	5.8	9.8	7.6	6.3	7.6	5.8	8.5	6.7	8.9	4.9	100.0		
AV SPD	5.7	5.0	7.2	6.8	7.6	9.6	8.2	7.4	7.8	11.4	10.7	9.2	10.8	9.1	8.9	8.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

MONTH OF DECEMBER
SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.0
CALM + - 3.5	4	6	6	1	8	8	2	8	6	5	2	6	2	3	5	5	77	3.8
3.6 -7.5	26	23	38	27	26	18	43	47	32	26	30	29	30	24	17	29	465	23.1
7.6 - 12.5	25	30	61	94	89	57	48	52	29	42	59	49	75	71	62	37	880	43.7
12.6 - 18.5	2	4	5	27	31	10	7	5	36	50	51	39	64	88	43	22	484	24.1
18.6 - 24.5	0	0	0	2	0	0	0	0	4	4	10	9	7	31	24	1	92	4.6
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	1	3	0	6	3	0	13	.6
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	58	63	110	151	154	93	100	112	107	127	153	135	178	223	154	94	2012	100.0
PERCENT	2.9	3.1	5.5	7.5	7.7	4.6	5.0	5.6	5.3	6.3	7.6	6.7	8.8	11.1	7.7	4.7	100.0	

TABLE 2.3.2-17 (SHEET 1 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE
PERIOD OF RECORD FROM 12/73-12/74, 4/77-4/79
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-16

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	.0	.50
CALM + - 3.5	18	9	11	8	7	3	6	3	4	1	3	11	11	11	9	11	130	3.0	2.62
3.6 -7.5	124	101	105	97	69	49	44	31	30	36	14	102	139	106	74	65	1245	28.9	5.57
7.6 - 12.5	95	104	120	122	149	103	71	32	34	50	30	200	230	193	109	81	1786	41.4	9.72
12.6 - 18.5	25	40	50	36	42	23	16	20	17	14	21	83	175	127	88	29	843	19.6	14.83
18.6 - 24.5	4	3	0	2	1	1	0	1	2	2	1	21	68	69	60	9	254	5.9	20.78
24.6 - 32.5	0	1	0	0	0	0	0	0	0	0	2	2	17	18	10	1	51	1.2	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	266	258	286	265	268	179	137	87	87	103	71	419	641	525	350	196	4311	0.0	8.10
PERCENT	6.2	6.0	6.6	6.1	6.2	4.2	3.2	2.0	2.0	2.4	9.4	9.7		14.9	12.2	8.1	4.5	100.0	
AV SPD	7.9	8.8	8.8	8.9	9.6	9.2	8.8	9.5	9.5	9.3	10.9	10.4	12.1	12.3	12.6	9.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 75

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -1.0 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-16

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	5	2	1	4	0	2	17	1	0	1	1	2	2	1	28	3.7	2.60
3.6 -7.5	20	3	24	21	14	10	8	13	13	13	2	20	10	9	3	16	228	30.2	5.38
7.6 - 12.5	24	0	26	19	31	21	15	10	7	22	4	26	24	24	12	12	329	43.5	9.60
12.6 - 18.5	7	0	13	2	9	3	3	4	1	6	0	12	24	11	5	4	139	18.4	14.80
18.6 - 24.5	1	0	1	0	1	0	0	0	0	1	0	3	4	8	3	2	27	3.6	20.13
24.6 - 32.5	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	5	.7	26.85
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	53	3	70	44	56	38	26	29	39	43	6	63	63	54	25	36	756	0.0	7.69
PERCENT	7.0	5.1	9.3	5.8	7.4	5.0	3.4	3.8	5.2	5.7	10.2	8.3	8.3	7.1	3.3	4.8	100.0		
AV SPD	9.1	5.5	9.1	7.5	9.7	8.3	9.3	7.6	8.8	9.0	7.6	10.1	11.9	11.7	11.0	9.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 14

TABLE 2.3.2-17 (SHEET 2 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTIO
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-16

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	0.00
CALM + - 3.5	1	0	2	1	1	0	1	1	2	2	2	0	0	0	2	0	15	3.9	2.70
3.6 -7.5	10	5	9	9	8	9	13	9	10	7	10	11	8	9	7	7	141	36.6	5.62
7.6 - 12.5	8	9	10	12	11	11	6	12	8	10	7	9	6	11	5	9	144	37.4	9.63
12.6 - 18.5	0	5	3	4	5	3	3	1	2	5	6	7	9	7	5	2	67	17.4	14.39
18.6 - 24.5	1	0	0	0	0	0	0	1	0	0	1	2	0	3	5	2	14	3.6	19.90
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	1.0	26.81
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	20	19	24	26	25	23	23	23	22	24	26	29	23	34	24	20	385	0.0	7.56
PERCENT	5.2	4.9	6.2	6.8	6.5	6.0	6.0	6.0	5.7	6.2	6.8	7.5		6.0	8.8	6.2	5.2	100.0	
AV SPD	7.7	10.6	8.2	9.5	9.1	8.7	7.4	8.2	7.5	9.7	9.1	10.1	10.4	12.9	11.1	9.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 6

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-16

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	.0	.50
CALM + - 3.5	13	16	15	14	10	16	16	13	12	17	17	11	11	14	12	10	217	4.7	2.64
3.6 -7.5	71	76	105	90	82	101	113	97	84	72	84	63	70	48	40	76	1272	27.5	5.56
7.6 - 12.5	90	95	174	154	170	153	110	114	103	116	137	102	113	80	70	43	1824	39.4	9.70
12.6 - 18.5	32	45	99	100	48	39	39	59	69	62	88	59	90	83	68	36	1016	22.0	14.79
18.6 - 24.5	6	4	6	6	8	2	4	11	19	26	24	16	28	51	35	7	253	5.5	20.72
24.6 - 32.5	0	0	0	0	2	0	0	0	3	6	1	3	7	13	2	1	38	.8	26.68
32.6+	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	.0	34.85
TOTAL	212	236	399	364	320	311	282	294	290	300	352	255	319	290	227	173	4624	100.0	7.90
PERCENT	4.6	5.1	8.6	7.9	6.9	6.7	6.1	6.4	6.3	6.5	7.6	5.5	6.9	6.3	4.9	3.7	100.0		
AV SPD	9.3	9.1	10.0	10.2	9.7	8.8	8.6	9.6	10.6	10.8	10.9	10.6	11.5	13.2	12.1	9.2			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.3
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 47

TABLE 2.3.2-17 (SHEET 3 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-16

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	2	0	1	1	0	1	2	1	0	0	1	1	0	0	0	10	.1	0.50
CALM + - 3.5	16	18	18	17	22	26	19	17	19	17	12	17	10	11	9	12	260	3.6	2.42
3.6 -7.5	69	70	110	128	122	123	180	152	138	132	116	67	69	72	61	41	1650	22.7	5.61
7.6 - 12.5	89	78	200	234	267	255	259	361	380	373	306	216	199	171	172	108	3668	50.4	9.84
12.6 - 18.5	46	30	76	63	64	48	56	72	109	139	127	90	159	177	153	63	1472	20.2	14.40
18.6 - 24.5	2	4	10	3	4	1	3	4	12	10	14	14	24	47	29	8	189	2.6	20.48
24.6 - 32.5	0	0	0	0	0	0	0	1	0	0	4	2	4	7	3	1	22	.3	26.31
32.6+	0	0	0	0	0	0	0	0	0	0	3	3	0	1	0	0	7	.1	36.93
TOTAL	222	202	414	446	480	453	518	609	659	671	582	410	466	486	427	233	7278	100.0	8.03
PERCENT	3.1	2.8	5.7	6.1	6.6	6.2	7.1	8.4	9.1	9.2	8.0	5.6		6.4	6.7	5.9	3.2	100.0	
AV SPD	9.2	8.5	9.6	9.2	9.3	8.8	8.7	9.3	9.8	10.2	10.6	10.7	11.7	12.5	11.9	10.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =24

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE
PERIOD OF RECORD FROM 72120417 TO 79040312
SPEED AND DIRECTION FROM 150FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-16

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	1	0	1	0	0	1	1	0	2	0	0	2	0	1	0	10	.3	.50
CALM + - 3.5	14	8	15	7	11	10	9	5	9	6	9	12	5	8	10	3	130	3.8	2.15
3.6 -7.5	44	29	105	50	63	51	56	62	52	56	51	33	46	45	32	35	758	22.3	5.64
7.6 - 12.5	52	65	78	116	161	124	141	121	125	160	167	129	154	123	117	66	1899	55.9	9.86
12.6 - 18.5	25	25	22	19	28	25	19	13	31	54	69	63	59	69	37	27	585	17.2	13.92
18.6 - 24.5	0	0	1	0	0	0	0	0	0	1	1	0	1	4	5	1	14	.4	20.95
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	.1	25.72
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	136	128	158	193	263	210	226	202	217	279	297	237	267	251	202	132	3398	0.0	7.55
PERCENT	4.0	3.8	8.6	5.7	7.7	6.2	6.7	5.9	6.4	8.2	8.7	7.0	7.9	7.4	5.9	3.9	100.0		
AV SPD	8.7	9.5	9.1	9.0	9.1	9.0	8.8	8.5	9.3	9.7	10.2	10.3	10.1	10.6	10.1	9.6			

AVERAGE SPEED FOR THIS TABLE EQUALS9.5
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 16

TABLE 2.3.2-17 (SHEET 4 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE
PERIOD OF RECORD FROM
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 150 FT

REQUEST NUMBER 909-16

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	1	1	0	2	1	1	2	1	2	0	1	1	1	1	15	.7	0.50
CALM + - 3.5	12	10	8	9	8	13	11	20	12	6	8	10	19	14	16	8	184	8.7	2.28
3.6 -7.5	36	33	44	27	36	47	51	31	53	34	28	25	41	36	42	40	604	28.5	5.52
7.6 - 12.5	44	51	48	45	81	56	51	49	62	88	111	65	71	67	61	56	1006	47.4	9.86
12.6 - 18.5	15	10	4	6	16	19	6	5	10	46	56	35	35	33	10	6	312	14.7	14.00
18.6 - 24.5	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	.1	19.43
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	107	104	105	88	141	137	120	106	140	175	205	135	167	152	130	111	2123	0.0	6.16
PERCENT	5.0	4.9	4.9	4.1	6.6	6.5	5.7	5.0	6.6	8.2	9.7	6.4		7.9	7.2	6.1	5.2	100.0	
AV SPD	8.4	8.2	7.5	7.9	9.0	8.3	7.6	7.6	7.9	10.0	10.6	9.8	9.1	9.3	7.9	8.0			

AVERAGE SPEED FOR THIS TABLE EQUALS8.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 3

SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	1	3	1	3	1	2	3	4	3	4	2	2	5	2	2	1	39	.2
CALM + -3.5	75	62	63	58	60	72	62	61	59	50	58	62	57	60	60	45	964	4.2
3.6 -7.5	374	330	450	422	394	390	465	395	384	350	376	321	383	325	259	280	5898	25.8
7.6 - 12.5	402	422	656	702	870	723	653	699	725	819	851	747	797	669	546	375	10656	46.6
12.6 - 18.5	150	163	267	230	212	160	142	174	245	326	425	349	551	507	366	167	4434	19.4
18.6 - 24.5	14	12	18	11	14	4	7	16	35	40	52	56	125	183	137	29	753	3.3
24.6 - 32.5	0	1	1	0	2	0	0	1	3	6	9	8	28	44	15	4	122	.5
32.6+	0	0	0	0	0	0	0	0	0	0	4	3	0	2	0	0	9	.0
TOTAL	1016	993	1456	1426	1553	1351	1332	1350	1454	1595	1777	1548	1946	1792	1385	901	22875	100.0
PERCENT	4.4	4.3	6.4	6.2	6.8	5.9	5.8	5.9	6.4	7.0	7.8	6.8	8.5	7.8	6.1	3.9	100.0	

TABLE 2.3.2-18 (SHEET 1 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO 1.0
SITE AUGUSTA GA.-VOGTLE
PERIOD OF RECORD FROM 590101010 TO 63123123
SPEED AND DIRECTION FROM 100 FT LEVEL
TEMPERATURE DIFFERENCE BETWEENFT ANDFT

REQUEST NUMBER 909-14

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	7.2	0.50
CALM + - 3.5	14	11	8	8	17	25	12	7	12	9	4	5	10	7	10	6	165	42.3	1.70
3.6 -7.5	14	12	17	20	11	15	10	15	9	14	14	9	8	6	13	10	197	50.5	4.39
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	56	23	25	28	28	40	22	22	21	23	18	14	18	13	23	16	390	0.0	1.97
PERCENT	14.4	5.9	6.4	7.2	7.2	10.3	5.6	5.6	5.4	5.9	4.6	3.6		4.6	3.3	5.9	4.1	100.0	
AV SPD	1.8	3.3	3.9	3.8	2.8	2.9	3.1	4.0	3.3	3.5	3.9	3.7	3.4	3.5	3.3	3.4			

AVERAGE SPEED FOR THIS TABLE EQUALS3.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 1.0 BUT LESS THAN OR EQUAL TO 2.0
SITE AUGUSTA GA.-VOGTLE
PERIOD OF RECORD FROM 59010101 TO 63123123
SPEED AND DIRECTION FROM 100 FT LEVEL
TEMPERATURE DIFFERENCE BETWEENFT ANDFT

REQUEST NUMBER 909-14

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	2.8	.50
CALM + - 3.5	258	152	212	187	170	159	254	157	133	64	99	54	65	62	126	135	2287	49.7	2.18
3.6 -7.5	157	108	191	210	144	146	158	85	89	108	141	124	75	80	106	119	2041	44.4	5.27
7.6 - 12.5	7	4	20	15	12	15	9	5	6	10	8	8	5	6	6	8	144	3.1	8.33
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	550	264	423	412	326	320	421	247	228	182	248	186	145	148	238	262	4600	0.0	2.69
PERCENT	12.0	5.7	9.2	9.0	7.1	7.0	9.2	5.4	5.0	4.0	5.4	4.0	3.2	3.2	5.2	5.7	100.0		
AV SPD	2.9	3.8	4.1	4.3	4.0	4.1	3.6	3.6	3.7	4.7	4.5	4.9	4.3	4.3	4.0	4.0			

AVERAGE SPEED FOR THIS TABLE EQUALS3.9
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =0

TABLE 2.3.2-18 (SHEET 2 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.0 BUT LESS THAN OR EQUAL TO 3.0
SITE AUGUSTA GA.-VOGTLE
PERIOD OF RECORD FROM 59010101 TO 63123123
SPEED AND DIRECTION FROM 100 FT LEVEL
TEMPERATURE DIFFERENCE BETWEENFT ANDFT

REQUEST NUMBER 909-14

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	237	3.7	.50
CALM + - 3.5	163	61	71	55	73	56	159	100	101	46	59	30	48	30	75	79	1206	18.9	1.91
3.6 -7.5	217	178	207	181	156	194	206	129	86	115	146	133	107	106	170	203	2534	39.7	5.13
7.6 - 12.5	114	148	216	231	134	160	139	72	61	95	182	219	179	150	134	116	2350	36.9	8.81
12.6 - 18.5	3	3	3	5	1	2	5	0	0	1	4	1	7	6	2	3	46	.7	14.04
18.6 - 24.5	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0.0	21.18
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	734	390	598	472	364	412	509	301	248	257	391	383	343	292	381	401	6376	0.0	3.41
PERCENT	11.5	6.1	7.8	7.4	5.7	6.5	8.0	4.7	3.9	4.0	6.1	6.0		5.4	4.6	6.0	6.3	100.0	
AV SPD	3.6	6.2	6.6	6.8	6.1	6.4	5.3	5.1	5.0	6.2	6.7	7.3	7.3	7.3	6.1	5.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 6.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 3.0 BUT LESS THAN OR EQUAL TO 4.0
SITE AUGUSTA GA.-VOGTLE
PERIOD OF RECORD FROM 59010101 TO 63123123
SPEED AND DIRECTION FROM 100 FT LEVEL
TEMPERATURE DIFFERENCE BETWEENFT ANDFT

REQUEST NUMBER 909-14

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	.5	.50
CALM + - 3.5	45	19	45	24	25	20	38	32	55	29	25	11	19	15	23	18	443	4.1	2.18
3.6 -7.5	204	119	206	198	166	211	258	218	163	166	223	210	133	113	189	193	2970	27.4	5.38
7.6 - 12.5	126	182	345	386	221	262	280	231	165	186	374	480	467	642	326	183	4856	44.7	9.96
12.6 - 18.5	43	52	94	134	83	53	47	47	43	59	115	237	402	690	139	58	2296	21.2	14.57
18.6 - 24.5	1	0	1	0	5	0	3	2	0	1	4	13	53	19	14	1	200	1.8	20.40
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	2	15	16	2	5	40	.4	26.58
32.6+	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.0	36.00
TOTAL	468	373	691	742	500	546	626	530	426	441	741	953	1089	1578	693	458	10855	100.0	7.19
PERCENT	4.3	3.4	6.4	6.8	4.6	5.0	5.8	4.9	3.9	4.1	6.8	8.8	10.0	14.5	6.4	4.2	100.0		
AV SPD	6.6	8.8	8.9	9.5	8.9	8.4	8.0	8.1	7.7	8.6	9.2	10.4	12.2	13.1	9.9	8.6			

AVERAGE SPEED FOR THIS TABLE EQUALS9.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

TABLE 2.3.2-18 (SHEET 3 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 4.0 BUT LESS THAN OR EQUAL TO 5.0
SITE AUGUSTA GA.-VOGTLE
PERIOD OF RECORD FROM 59010101 TO 63123123
SPEED AND DIRECTION FROM 100 FT LEVEL
TEMPERATURE DIFFERENCE BETWEENFT ANDFT

REQUEST NUMBER 909-14

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
3.6 -7.5	172	119	198	202	132	167	258	325	204	196	280	255	168	185	267	219	3347	62.8	5.11
7.6 - 12.5	87	126	156	156	76	104	104	73	67	56	101	151	213	320	125	71	1986	37.2	8.75
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	259	245	354	358	208	271	362	398	271	252	381	406	381	505	392	290	5333	0.0	6.05
PERCENT	4.9	4.6	6.6	6.7	3.9	5.1	6.8	7.5	5.1	4.7	7.1	7.6		7.1	9.5	7.4	5.4	100.0	
AV SPD	6.5	7.3	7.1	7.1	6.7	6.7	6.2	5.7	5.9	6.0	6.1	6.6	7.6	7.8	6.5	6.2			

AVERAGE SPEED FOR THIS TABLE EQUALS6.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 5.0 BUT LESS THAN OR EQUAL TO 6.0
SITE AUGUSTA GA.-VOGTLE
PERIOD OF RECORD FROM 59010101 TO 63123123
SPEED AND DIRECTION FROM 100 FT LEVEL
TEMPERATURE DIFFERENCE BETWEENFT ANDFT

REQUEST NUMBER 909-14

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1036	11.7	.50
CALM + - 3.5	302	101	181	88	180	156	415	333	440	162	351	147	274	170	335	206	3841	43.5	1.82
3.6 -7.5	296	187	305	268	181	164	245	287	213	150	224	285	207	223	417	296	3948	44.7	4.70
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	1634	288	486	356	361	320	660	620	653	312	575	432	481	393	752	502	8825	0.0	1.76
PERCENT	18.5	3.3	5.5	4.0	4.1	3.6	7.5	7.0	7.4	3.5	6.5	4.9	5.5	4.5	8.5	5.7	100.0		
AV SPD	1.6	3.9	3.8	4.3	3.5	3.6	3.1	3.4	3.0	3.4	3.2	4.0	3.3	3.7	3.6	3.6			

AVERAGE SPEED FOR THIS TABLE EQUALS3.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =0

TABLE 2.3.2-18 (SHEET 4 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 6.0
SITE AUGUSTA GA.-VOGTLE
PERIOD OF RECORD FROM 59010101 TO 63123123
SPEED AND DIRECTION FROM 100 FT LEVEL
TEMPERATURE DIFFERENCE BETWEENFT ANDFT

REQUEST NUMBER 909-14

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1759	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1759	23.7	.50
CALM + - 3.5	549	200	291	184	279	214	541	409	474	230	429	266	384	271	565	375	5661	16.3	1.82
3.6 -7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
7.6 - 12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
12.6 - 18.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	2308	200	291	184	279	214	541	409	474	230	429	266	384	271	565	375	7420	0.0	1.12
PERCENT	31.1	2.7	3.9	2.5	3.8	2.9	7.3	5.5	6.4	3.1	5.8	3.6		5.2	3.7	7.6	5.1	100.0	
AV SPD	.9	2.3	2.3	2.2	2.1	2.2	2.2	2.3	2.1	2.3	2.1	2.2	2.0	2.0	2.1	2.1			

AVERAGE SPEED FOR THIS TABLE EQUALS1.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	3237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3237	7.4
CALM + - 3.5	1331	544	808	546	744	630	1419	1038	1215	540	967	513	800	555	10	1134	819	31.1
3.6 -7.5	1060	723	1124	1079	790	897	1135	1059	764	749	1028	1016	698	713	1162	1040	15037	34.3
7.6 - 12.5	334	460	737	788	443	541	532	381	299	347	665	858	864	1118	591	378	9336	21.3
12.6 - 18.5	46	55	97	139	84	55	52	47	43	60	119	238	409	696	141	61	2342	5.3
18.6 - 24.5	1	0	2	0	5	0	3	2	0	1	4	13	55	102	14	1	203	.5
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	2	15	16	2	5	40	.1
32.6+	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	.0
TOTAL	6009	1783	2768	2552	2066	2123	3141	2527	2321	1697	2783	2640	284 1	3200	3044	2304	43799	100.0
PERCENT	13.7	4.1	6.3	5.8	4.7	4.8	7.2	5.8	5.3	3.9	6.4	6.0	6.5	7.3	6.9	5.3	100.0	

TABLE 2.3.2-19 (SHEET 1 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) LESS THAN OR EQUAL TO -1.0
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	8	11	9	6	0	1	1	2	1	0	2	5	4	4	6	9	63	4.6	2.45
3.6 -7.5	30	12	32	26	19	8	10	4	9	9	17	9	84	76	47	35	470	34.7	5.65
7.6 - 12.5	32	0	29	25	21	22	0	6	2	9	11	0	162	103	63	3	624	46.1	9.56
12.6 - 18.5	8	0	9	6	0	3	0	1	0	0	2	0	61	42	28	6	188	13.9	14.15
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	0	10	.7	20.27
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.1	25.20
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	78	23	79	63	40	34	28	13	12	18	32	14	317	227	147	85	1355	0.0	7.36
PERCENT	5.8	5.9	5.8	4.6	3.0	2.5	2.1	1.0	.9	1.3	2.4	3.6		23.4	16.8	10.8	6.0	100.0	
AV SPD	7.9	3.3	7.8	7.6	7.9	9.3	8.0	7.1	6.0	7.7	7.4	3.7	9.8	9.2	9.5	7.7			

AVERAGE SPEED FOR THIS TABLE EQUALS8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 8

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION

REQUEST NUMBER 209.2

FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.9
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 33 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	1	0	2	0	0	0	0	0	0	0	0	0	1	3	0	0	7	3.3	2.71
3.6 -7.5	3	0	10	4	3	8	4	1	2	2	9	6	9	4	3	1	73	34.3	5.54
7.6 - 12.5	6	5	7	6	9	2	7	5	6	1	5	15	14	9	5	4	106	49.8	9.48
12.6 - 18.5	1	2	2	2	0	0	0	0	0	0	0	3	4	1	5	0	25	11.7	14.04
18.6 - 24.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	.9	21.84
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	11	14	21	12	15	16	11	6	2	3	14	24	28	17	14	5	213	0.0	7.39
PERCENT	5.2	6.6	9.9	5.6	7.0	7.5	5.2	2.8	.9	1.4	6.6	11.3	13.1	8.0	6.6	2.3	100.0		
AV SPD	8.7	9.1	7.9	9.0	10.1	8.7	8.5	8.8	6.4	6.6	7.0	6.1	8.6	7.6	11.4	9.3			

AVERAGE SPEED FOR THIS TABLE EQUALS8.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =2

TABLE 2.3.2-19 (SHEET 2 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.9 BUT LESS THAN OR EQUAL TO -.8
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	0	1	1	0	0	0	0	0	0	1	0	0	1	1	6	5.5	2.81
3.6 -7.5	2	3	5	4	0	3	4	2	1	3	5	2	3	2	0	0	39	35.5	5.92
7.6 - 12.5	1	4	7	4	4	4	3	1	2	5	2	5	3	2	1	4	52	47.3	9.50
12.6 - 18.5	1	0	3	3	1	1	0	0	0	1	0	1	1	1	0	0	13	11.8	13.88
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	4	8	15	12	6	8	7	3	3	9	7	9	7	5	2	5	110	0.0	7.27
PERCENT	3.6	7.3	13.6	10.9	5.5	7.3	6.4	2.7	2.7	8.2	6.4	8.2	6.2	4.5	1.8	4.5	100.0		
AV SPD	8.8	7.3	9.1	9.6	9.0	9.3	7.8	6.9	7.1	8.9	6.9	8.4	8.6	10.0	6.0	8.8			

AVERAGE SPEED FOR THIS TABLE EQUALS 8.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN -.8 BUT LESS THAN OR EQUAL TO -.3
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 33 FT AND 33 FT

REQUEST NUMBER 209-2

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	5	4	5	3	4	1	2	4	2	5	2	2	3	3	6	5	56	3.8	2.67
3.6 -7.5	40	33	41	28	28	23	33	31	35	39	28	40	27	22	17	19	484	32.9	5.75
7.6 - 12.5	52	64	88	80	49	62	42	36	34	26	41	53	51	21	28	21	748	50.8	9.52
12.6 - 18.5	7	27	28	27	12	2	4	3	12	9	5	4	7	9	11	2	169	11.5	14.03
18.6 - 24.5	0	1	0	3	0	0	0	1	4	1	0	0	1	0	2	1	14	1.0	20.52
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	104	129	162	141	93	88	81	75	87	80	76	99	89	55	64	48	1471	0.0	7.49
PERCENT	7.1	8.8	11.0	9.6	6.3	6.0	5.5	5.1	5.9	5.4	5.2	6.7	6.1	3.7	4.4	3.3	100.0		
AV SPD	8.2	9.6	9.6	10.1	8.9	8.7	8.3	7.8	9.3	8.0	8.2	8.1	8.9	8.4	9.1	7.6			

AVERAGE SPEED FOR THIS TABLE EQUALS8.8
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 5

TABLE 2.3.2-19 (SHEET 3 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN -.3 BUT LESS THAN OR EQUAL TO .8
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	1	1	0	0	0	0	1	0	0	1	0	0	0	1	0	1	6	.2	.50
CALM + - 3.5	13	16	21	16	12	16	19	26	14	17	14	23	18	11	18	9	263	9.4	2.54
3.6 -7.5	71	56	60	67	61	79	109	123	148	138	153	136	103	72	81	57	1514	54.3	5.39
7.6 - 12.5	56	58	60	65	47	33	40	33	72	47	48	57	49	72	71	49	857	30.8	9.21
12.6 - 18.5	11	17	20	7	7	2	3	0	12	15	1	5	2	7	16	10	135	4.8	14.21
18.6 - 24.5	1	2	1	0	0	0	0	0	3	0	0	0	0	0	2	2	11	.4	19.41
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	153	150	152	155	127	130	172	182	249	218	210	221	172	163	188	128	2780	0.0	5.58
PERCENT	5.5	5.4	5.8	5.6	4.6	4.7	6.2	6.5	8.9	7.8	7.8	7.9		6.2	5.9	6.7	4.6	100.0	
AV SPD	7.6	8.2	8.0	7.3	7.1	6.4	6.2	5.8	7.1	6.7	6.1	6.5	6.4	7.5	7.7	7.8			

AVERAGE SPEED FOR THIS TABLE EQUALS7.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
REQUEST NUMBER 209-2
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN .8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 33 FT AND 33 FT

WIND DIRECTION

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	.2	.50
CALM + - 3.5	6	11	30	12	14	14	13	24	20	17	15	19	17	13	14	11	250	19.8	2.50
3.6 -7.5	30	32	24	32	16	31	53	31	55	64	98	126	94	88	55	23	852	67.5	5.06
7.6 - 12.5	7	4	4	0	2	12	3	6	3	5	10	15	20	10	16	6	129	10.2	8.96
12.6 - 18.5	0	0	0	3	2	0	1	1	0	4	3	5	1	0	3	1	24	1.9	13.64
18.6 - 24.5	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	5	.4	19.43
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	43	48	59	56	35	57	70	63	78	91	126	165	132	111	88	41	1263	0.0	4.34
PERCENT	3.4	3.8	4.7	4.4	2.8	4.5	5.5	5.0	6.2	7.2	10.0	13.1	10.5	8.8	7.0	3.2	100.0		
AV SPD	5.4	4.7	4.0	6.4	5.0	5.4	4.8	4.7	4.8	5.4	5.5	6.8	5.6	5.4	6.2	5.3			

AVERAGE SPEED FOR THIS TABLE EQUALS5.4
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION =0

TABLE 2.3.2-19 (SHEET 4 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100FT) GREATER THAN 2.2
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTIONS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	2	1	2	1	1	0	0	1	0	1	1	2	0	0	0	0	12	1.5	.50
CALM + - 3.5	22	29	26	15	20	15	6	9	12	7	19	13	15	13	14	13	248	30.7	2.31
3.6 -7.5	8	36	22	7	12	9	12	6	22	31	69	88	55	87	31	8	483	59.9	4.97
7.6 - 12.5	2	2	2	0	1	1	3	4	2	2	7	5	10	7	7	0	55	6.8	9.30
12.6 - 18.5	1	0	1	3	0	0	0	0	0	2	0	0	0	0	1	1	9	1.1	14.44
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	35	68	53	26	34	25	21	20	36	43	96	108	80	87	53	22	807	0.0	3.43
PERCENT	4.3	8.4	6.6	3.2	4.2	3.1	2.6	2.5	4.5	5.3	11.9	13.4		9.9	10.8	6.6	2.7	100.0	
AV SPD	3.6	4.0	3.7	4.6	3.7	3.9	5.0	4.7	4.5	5.2	5.1	5.2	5.4	5.1	4.8	3.8			

AVERAGE SPEED FOR THIS TABLE EQUALS4.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION = 1

SUMMARY TABLE

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	3	3	3	1	1	0	1	2	0	2	1	2	0	1	0	1	21	.3
CALM + - 3.5	55	68	93	53	51	47	41	65	49	46	52	60	58	47	59	48	892	11.1
3.6 -7.5	188	198	194	168	139	159	226	198	272	286	379	429	375	331	234	143	3915	48.9
7.6 - 12.5	156	151	197	186	133	142	114	91	115	95	124	214	309	224	191	119	2571	32.1
12.6 - 18.5	29	58	63	51	25	10	8	5	24	31	11	28	76	60	64	20	563	7.0
18.6 - 24.5	1	4	1	6	1	0	0	1	7	2	0	0	7	1	8	3	42	.5
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	.0
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
TOTAL	426	492	551	465	350	358	390	362	467	462	567	733	825	665	556	334	8005	100.0
PERCENT	5.3	6.1	6.9	5.8	4.4	4.5	4.9	4.5	5.8	5.8	7.1	9.2	10.3	8.3	6.9	4.2	100.0	

TABLE 2.3.2-20 (SHEET 1 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEGF/100FT) LESS THAN OR EQUAL TO-1.0
SITE VOGTLE MET TOWER
PERIOD O FRECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	.1	.50
CALM + - 3.5	7	3	5	7	4	2	2	0	2	1	2	0	5	2	4	9	55	4.0	2.53
3.6 -7.5	33	20	25	27	31	20	17	11	12	8	8	14	29	39	76	39	409	29.7	5.59
7.6 - 12.5	40	32	13	21	23	24	16	25	10	5	4	12	33	99	130	55	542	39.4	9.80
12.6 - 18.5	20	12	7	10	8	6	4	3	2	0	0	1	18	53	114	44	302	21.9	14.74
18.6 - 24.5	2	1	1	2	0	0	0	0	0	0	0	0	1	11	25	14	57	4.1	20.48
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3	8	.6	26.80
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	.1	35.00
TOTAL	102	68	51	67	66	52	39	39	20	14	14	27	80	200	302	107	1376	100.0	7.82
PERCENT	7.4	4.9	3.7	4.9	4.8	3.8	2.8	2.8	1.9	1.0	1.0	2.0		6.3	15.0	25.6	12.1	100.0	
AV SPD	9.2	9.2	8.0	8.5	7.9	8.5	8.4	9.3	7.7	7.5	6.7	7.9	9.3	11.1	11.7	11.3			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.1
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION=5

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
REQUEST NUMBER 209-1
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN-1.0 BUT LESS THAN OR EQUAL TO-.9
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT
WIND DIRECTION

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	4	1.9	2.64
3.6 -7.5	4	1	4	3	5	6	4	2	7	2	1	7	4	3	8	0	61	28.6	5.59
7.6 - 12.5	1	4	3	6	6	9	9	4	5	4	1	1	10	12	8	6	95	44.6	9.81
12.6 - 18.5	1	3	1	2	6	3	3	1	0	1	0	0	4	5	8	4	42	19.7	14.40
18.6 - 24.5	0	1	0	0	0	1	0	0	0	0	0	0	0	3	2	2	9	4.2	19.92
24.6 - 32.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	.9	27.72
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	6	9	10	11	17	20	16	8	12	8	2	8	24	23	26	13	213	0.0	8.34
PERCENT	2.8	4.2	4.7	5.2	8.0	9.4	7.5	3.8	5.6	3.8	.9	3.8	11.3	10.0	12.2	6.1	100.0		
AV SPD	7.7	11.7	9.0	9.5	10.4	9.5	9.9	9.3	7.6	8.5	7.8	6.9	10.2	11.5	11.2	14.6			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION=1

TABLE 2.3.2-20 (SHEET 2 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN-.9 BUT LESS THAN OR EQUAL TO-.8
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTIONS

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
CALM + - 3.5	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	1	5	4.5	2.92
3.6 -7.5	1	0	0	1	4	2	0	4	2	4	2	2	4	0	1	1	28	25.0	6.00
7.6 - 12.5	2	1	4	3	5	3	6	4	3	1	4	2	4	5	2	1	50	44.6	9.76
12.6 - 18.5	2	1	0	1	6	2	3	0	0	1	0	1	3	3	3	1	27	24.1	15.05
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	.9	19.30
24.6 - 32.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	.9	25.40
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	5	3	4	5	15	8	10	8	5	7	7	5	12	8	6	4	112	0.0	8.37
PERCENT	4.5	2.7	3.6	4.5	13.4	7.1	8.9	7.1	4.5	6.3	6.3	4.5		10.7	7.1	5.4	3.6	100.0	
AV SPD	12.0	9.1	9.6	10.2	10.7	10.4	10.5	7.2	9.0	10.7	7.6	9.0	10.9	12.7	11.6	9.4			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION=0

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN-.8 BUT LESS THAN OR EQUAL TO-.3
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 150 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

REQUEST NUMBER 209-1

WIND DIRECTION

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	(MPH)
CALM	1	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	5	.3	.50
CALM + - 3.5	3	5	3	4	6	2	1	2	1	1	4	3	1	4	2	6	48	3.3	2.55
3.6 -7.5	8	16	23	13	28	27	25	19	21	13	24	21	23	16	15	11	308	20.9	5.67
7.6 - 12.5	26	35	54	48	70	55	59	49	42	34	36	44	57	31	30	22	692	47.0	9.90
12.6 - 18.5	16	20	28	23	59	49	23	8	9	19	14	11	18	18	25	22	362	24.6	14.56
18.6 - 24.5	0	0	2	2	3	2	1	0	0	6	5	6	1	3	6	8	45	3.1	20.57
24.6 - 32.5	1	0	1	0	0	0	0	0	1	3	0	0	0	0	1	2	9	.6	27.77
32.6+	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	.1	35.19
TOTAL	55	77	113	95	166	155	109	79	75	76	83	86	100	72	79	71	1471	100.0	8.15
PERCENT	3.7	5.2	7.7	6.5	11.3	9.2	7.4	5.4	5.1	5.2	5.6	5.8	6.8	4.9	5.4	4.8	100.0		
AV SPD	10.4	9.7	10.3	10.5	11.1	11.1	10.0	9.1	9.8	11.9	9.9	10.4	10.0	10.6	11.8	12.1			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.6
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION=4

TABLE 2.3.2-20 (SHEET 3 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN-.3 BUT LESS THAN OR EQUAL TO-.8
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTIONS

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	.1	.50
CALM + - 3.5	3	1	0	0	4	2	7	4	5	7	3	4	5	3	3	1	64	2.3	2.33
3.6 -7.5	23	18	15	24	37	35	25	35	72	72	59	37	42	21	27	26	588	21.5	5.72
7.6 - 12.5	48	67	75	50	66	71	90	96	87	122	146	139	107	111	94	63	1432	52.2	9.91
12.6 - 18.5	42	25	31	34	48	37	17	11	10	40	32	22	50	44	67	86	596	21.7	14.26
18.6 - 24.5	4	1	7	1	2	0	0	0	0	9	5	1	1	0	6	13	50	1.8	20.20
24.6 - 32.5	3	1	0	0	0	0	0	0	2	1	0	0	0	0	0	2	9	.3	28.15
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	123	113	154	115	157	145	139	146	176	251	245	203	208	179	197	192	2741	0.0	8.47
PERCENT	4.5	4.1	5.6	4.2	5.7	5.3	5.1	5.3	6.4	9.2	8.9	7.4		7.5	6.5	7.2	7.0	100.0	
AV SPD	11.5	10.5	10.2	10.1	10.4	10.0	9.5	8.9	8.5	9.7	9.8	9.6	10.2	10.5	11.3	12.7			

AVERAGE SPEED FOR THIS TABLE EQUALS 10.2
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION=1

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION — REQUEST NUMBER 209-2
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN. 8 BUT LESS THAN OR EQUAL TO 2.2
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 33 FT AND 33 FT

WIND DIRECTION

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	.1	.50
CALM + - 3.5	0	2	0	4	2	1	6	2	3	1	3	3	2	1	1	2	33	2.6	2.59
3.6 -7.5	13	10	4	11	22	13	20	21	34	29	20	26	26	17	19	22	307	24.5	5.66
7.6 - 12.5	21	10	12	20	14	24	39	40	31	40	40	73	67	78	98	48	667	53.2	9.91
12.6 - 18.5	13	6	2	2	3	4	10	7	5	5	9	18	30	41	50	37	242	19.3	13.90
18.6 - 24.5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	.2	20.08
24.6 - 32.5	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	.2	26.54
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	47	34	18	38	41	43	76	70	73	75	79	120	125	137	169	109	1254	0.0	8.15
PERCENT	3.7	2.7	1.4	3.0	3.3	3.4	6.1	5.6	5.8	6.0	6.3	9.6	10.0	10.9	13.5	8.7	100.0		
AV SPD	10.4	9.4	9.2	7.7	7.9	9.0	9.0	8.8	8.3	8.3	9.1	9.7	10.1	10.7	11.0	10.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.7
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION=0

TABLE 2.3.2-20 (SHEET 4 OF 4)

JOINT FREQUENCY TABLES OF WIND SPEED AND DIRECTION
FOR TEMPERATURE DIFFERENCE (DEG F/100 FT) GREATER THAN 2.2
SITE VOGTLE MET TOWER
PERIOD OF RECORD FROM 80040401 TO 81033124
SPEED AND DIRECTION FROM 33 FT LEVEL
TEMPERATURE DIFFERENCE BETWEEN 150 FT AND 33 FT

WIND DIRECTIONS

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT	GEO MEAN SPD (MPH)
CALM	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	3	.4	.50
CALM + - 3.5	2	3	2	5	2	3	5	3	5	3	2	0	7	1	4	5	52	6.6	2.29
3.6 -7.5	21	12	13	10	8	11	19	16	7	12	10	19	13	12	18	13	214	27.2	5.58
7.6 - 12.5	22	18	13	13	11	6	21	17	15	14	10	32	52	45	52	28	375	47.7	9.79
12.6 - 18.5	1	2	3	5	2	0	1	0	3	2	3	25	29	28	24	14	142	18.1	13.92
18.6 - 24.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
24.6 - 32.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
32.6+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00
TOTAL	46	35	31	34	23	20	46	37	30	31	31	77	101	86	98	60	786	0.0	6.80
PERCENT	5.9	4.5	3.9	4.3	2.9	2.5	5.9	4.7	3.8	3.9	3.9	9.8		12.8	10.9	12.5	7.6	100.0	
AV SPD	7.8	7.5	8.3	8.1	7.9	6.3	7.4	7.4	8.0	7.9	8.2	10.3	10.3	10.5	10.1	9.5			

AVERAGE SPEED FOR THIS TABLE EQUALS 9.0
HOURS IN ABOVE TABLE WITH VARIABLE DIRECTION=0

SUMMARY TABLE

SPEED(MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	PERCENT
CALM	1	1	2	2	0	0	0	2	0	0	0	1	1	0	0	2	12	.2
CALM + - 3.5	15	15	17	26	18	12	22	12	16	14	15	10	20	11	14	24	261	3.3
3.6 -7.5	103	77	104	94	135	114	110	108	155	140	124	126	141	106	164	112	1915	24.1
7.6 - 12.5	160	173	174	161	195	192	240	235	193	220	253	303	336	381	414	223	3853	48.4
12.6 - 18.5	95	69	72	77	132	101	61	30	29	68	58	78	152	192	291	208	1713	21.5
18.6 - 24.5	8	3	10	5	5	4	1	0	0	15	10	7	4	17	40	37	164	2.1
24.6 - 32.5	4	1	2	0	0	0	1	0	3	5	1	0	0	2	4	8	31	.4
32.6+	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	4	.1
TOTAL	384	339	381	365	485	423	435	387	397	462	461	526	654	711	927	616	7953	100.0
PERCENT	4.8	4.3	4.8	4.8	6.1	5.3	5.5	4.9	5.0	5.8	5.8	6.6	8.2	8.9	11.7	7.7	100.0	

TABLE 2.3.2-21

SEASONAL AND ANNUAL MORNING AND AFTERNOON MEAN
MIXING HEIGHT IN THE VEGP SITE REGION

Season	Morning (m)	Afternoon (m)
Annual	375	1475
Winter	395	950
Spring	380	1700
Summer	390	1800
Fall	290	1400

TABLE 2.3.3-1

VEGP METEOROLOGICAL TOWER SUMMARY OF DATA RECOVERY

Parameter(s)	Percent of Recovery 1972-1973	1977-1978	1978-1979	1980-1981
Ambient temperature, 33 ft	87.3	98.8	95.6	96.8
Dewpoint temperature, 33 ft	84.5	99.0	95.3	96.2
Delta temperature, 99-33 ft	86.0	99.3	91.1	98.2
Delta temperature, 150-33 ft	84.2	96.4	96.4	96.1
Windspeed, 33 ft	87.5	98.4	95.3	99.5
Wind direction, 33 ft	88.1	98.9	91.6	96.0
Windspeed, 150 ft	82.1	97.9	94.3	96.4
Wind direction, 150 ft	83.7	99.2	95.0	99.0
Solar radiation	61.5	98.4	96.4	100.0
Rainfall	88.9	99.4	95.1	70.0
All parameters	83.4	98.6	94.6	94.8
Composite				
WS and WD, 33 ft; DT 150-33 ft	79.8	94.8	90.0	92.1
WS and WD, 33 ft; DT 99-33 ft	81.2	97.8	85.5	94.4
WS and WD, 150 ft; DT 150-33 ft	74.4	94.4	92.6	91.6

TABLE 2.3.4-1

SUMMARY OF ACCIDENT X/Q VALVES (s/m^3)

Based on 3 Years of VEGP Site Data

Averaging Time Period after Accident (h)	Site Boundary 0.5 Percent Probable Direction-Dependent	Site Boundary 5 Percent Probable Direction-Independent	Site Boundary 50 Percent Probable Direction-Independent	LPZ 0.5 Percent Probable[a]	LPZ 50 Percent Probable[b]	Worst Condition[c]
1	1.8E-4	1.5E-4	2.8E-5	7.2E-5	1.0E-5	4.7E-4
8	--	--	--	3.3E-5	7.0E-6	1.8E-4
16	--	--	--	2.2E-5	2.0E-6	1.9E-5
72	--	--	--	9.2E-6	1.3E-6	5.0E-6
624	--	--	--	2.7E-6	7.0E-7	1.6E-6

Based on Most Recent Year of VEGP Site Data

Averaging Time Period after Accident (h)	Site Boundary 0.5 Percent Probable Direction-Dependent	Site Boundary 5 Percent Probable Direction-Independent	Site Boundary 50 Percent Probable Direction-Independent	LPZ 0.5 Percent Probable[a]	LPZ 50 Percent Probable[b]	Worst Condition[c]
1	1.6E-4	1.4E-4	2.7E-5	6.6E-5	1.1E-5	4.7E-4
8	--	--	--	3.8E-5	6.2E-6	1.2E-4
16	--	--	--	6.3E-6	1.8E-6	1.4E-5
72	--	--	--	5.2E-6	1.1E-6	5.0E-6
624	--	--	--	1.6E-6	6.3E-7	1.2E-6

a. Based on log-log interpolation. Five percent probable direction-independent approach gives the same results above.

b. Based on running-mean calculations over appropriate averaging periods using direction-independent approach.

c. Values shown are based on running-mean calculations and are the highest calculated during any of the three 1-year periods of record. The fact that values are lower than reported for the 0.5 percent and 5 percent probable cases for certain averaging periods is due to differences in methodology introduced by the log-log interpolation scheme of Regulatory Guide 1.145. (See figure 2.3.4-8.)

TABLE 2.3.4-2

ASSUMED DISTANCE TO SITE BOUNDARY IN EACH DIRECTION

Direction (from Plant to Site Boundary)	Distance (m)
N	1344
NNE	1097
NE	1097
ENE	1097
E	1369
ESE	1817
SE	1866
SSE	1773
S	1692
SSW	1680
SW	1462
WSW	1462
W	1462
WNW	1649
NW	2240
NNW	1804

TABLE 2.3.4-3

TEMPERATURE DIFFERENCE GROUPS FOR
DETERMINING PASQUILL STABILITY CATEGORIES

Pasquill Category	NRC ΔT Classification (°F/100 ft)[a]
A	ΔT < -1.0
B	-1.0 ≤ ΔT < -0.9
C	-0.9 ≤ ΔT < -0.8
D	-0.8 ≤ ΔT < -0.3
E	-0.3 ≤ ΔT < 0.8
F	0.8 ≤ ΔT < 2.2
G	2.2 ≤ ΔT

a. In conversion from °C/100 m (Regulatory Guide 1.23) to °F/100 ft, values were rounded to nearest tenth of a degree.

TABLE 2.3.5-1

LIST OF COMPUTER RUNS AT VEGP SITE

Run Number	Vent Identification	Data Used	Type of Run	Hourly or Joint Frequency Meteorological Data Used	Season	To Be Used For Evaluating Releases from the Following Vents	Location of Results in the Report
VX-1	Plant vent	1977-78	Wake-split	Hourly	Annual	Used for comparison with VX-3	Table 2.3.5-6
VX-2	All other release points	1977-78	Ground release in building wake	Hourly	Annual	Used for comparison with VX-4	Table 2.3.5-7
VX-3	Plant vent	3-year	Wake-split	Joint frequency	Annual	Plant vent	Tables 2.3.5-8 and 2.3.5-10
VX-4	All other release points	3-year	Ground release in building wake	Joint frequency	Annual	All other vents	Tables 2.3.5-9 and 2.3.5-11
209-10	Plant vent	1980-81	Wake-split	Hourly	Annual	Plant vent	Table 2.3.5-12
209-11	All other release points	1980-81	Ground release in building wake	Hourly	Annual	All other vents	Table 2.3.5-13

TABLE 2.3.5-2

GASEOUS DISCHARGE POINT AT VEGP SITE

System	Vent
Containment preaccess purge exhaust	Plant vent
Turbine building ventilation	Into building wake
Turbine building condenser vacuum exhaust filter system	Into building wake
Steam packing exhauster blower	Into building wake
Fuel handling building normal filter exhaust	Plant vent
Auxiliary building continuous filter exhaust	Plant vent
Laboratory area and hood exhaust	Plant vent
Radwaste processing facility vent	Into building wake

TABLE 2.3.5-3

VENT DESIGN INFORMATION AT VEGP SITE

Vent	Location	Operating Conditions	Height of Release (ft) Above Sea Level	Height of Release (ft) Above Grade[a]	Inside Dimensions Exit (in.)	Cross-Sectional Area (ft^2)	Effluent Conditions Flowrate (ft^3/min)	Effluent Conditions Discharge Temperature (°F)	Effluent Conditions Velocity (ft/min)
Plant vent[b]	Containment Unit 1	Normal power generation	419	200	60 x 120	50	140,600(c)	68-103	2810
		Refueling	419	200	60 x 120	50	150,600	67-103	3010
Plant vent [c]	Containment Unit 2	Normal power generation	419	200	60 x 78	32.5	81,350	71-101	2500
		Refueling	419	200	60 x 78	32.5	91,350	68-103	2810
Turbine building vent[d]	Turbine building Unit 1	Normal power generation	313	94	17.25	1.62	1168	131-193	720
Turbine building vent[d]	Turbine building Unit 2	Normal power generation	313	94	17.25	1.62	1168	131-193	720
Turbine building ventilation-general [e][f]	Turbine building Unit 1	Normal power generation	344	125	97	51.3	1.2 x 10	85-104	2350
Turbine building ventilation-general [e][f]	Turbine building Unit 2	Normal power generator	344	125	97	51.3	1.2 x 10	85-104	2350

a. Nominal building grade elevation is approximately 219 ft.

b. Vent not capped.

c. Unit 1 flowrate includes additional flow from common refueling building.

d. Vent not capped but has 18-in. 180° return elbow.

e. Fan housing is capped with rectangular shroud.

f. Data for each power roof ventilator; nine units total (table 9.4.4-1).

TABLE 2.3.5-4

TABULATION OF INPUT ASSUMPTIONS FOR CALCULATIONS AT VEGP SITE

Parameter	Assumed Value or Characteristic
Height of meteorological instruments for hourly wake split runs	33 ft and 150 ft
Height of meteorological instruments for wake-split runs using joint frequency tables	33 ft extrapolated to vent height
Method for determining stability and diffusion coefficients	Temperature difference using Regulatory Guide 1.23 and Pasquill curves
Calms treatment	Assumed 0.3 mph (threshold for Climet is about 0.6 mph). Assumed to have same direction as measured.
Upper limit for σ_z (m)	1000
Height of tallest structure for computation of Σ effective (m)	55.0
Vent exit conditions	From table 2.3.5-3
Delta temperature correction factor	None
Terrain height	See table 2.3.5-5

TABLE 2.3.5-5

TERRAIN ELEVATION ABOVE PLANT GRADE (m)

	Wind Direction from Plant to Receptor															
Distance (m)	S	SSW	SW	WSW	W	WNW	NW	NNW	N	NNE	NE	ENE	E	ESE	SE	SSE
500	0.0	4.7	8.7	5.7	1.4	5.8	5.7	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1000	0.0	4.7	16.7	13.4	3.3	10.4	11.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1500	0.0	4.7	21.7	18.6	7.3	12.2	14.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	0.0	4.7	21.7	18.6	7.3	12.2	14.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2500	0.0	4.7	21.7	18.6	7.3	12.2	14.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3000	0.0	4.7	23.7	18.6	7.3	12.2	14.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3500	0.0	4.7	24.4	18.6	7.3	12.2	16.9	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4000	0.0	4.7	24.4	18.6	7.3	12.2	16.9	7.3	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0
5000	0.0	4.7	24.7	18.6	7.3	12.2	16.9	7.3	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0
6000	0.0	4.7	26.8	18.6	7.3	12.2	16.9	7.3	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0
7000	3.6	4.7	26.8	18.6	7.3	12.2	16.9	7.3	0.0	0.0	0.0	7.8	0.0	0.0	11.1	0.0
8000	14.6	4.7	26.8	18.6	7.3	12.2	16.9	7.3	0.0	0.0	21.1	13.9	0.0	0.0	11.8	0.0
9000	14.6	5.1	26.8	18.6	7.3	12.2	16.9	7.3	0.0	0.0	24.4	14.6	0.0	0.0	12.7	7.1
10,000	14.6	6.8	26.8	18.6	7.3	12.2	16.9	7.3	0.0	10.2	24.4	20.2	0.0	0.0	17.1	17.0
12,000	14.6	6.8	34.1	28.9	13.4	12.2	16.9	7.3	0.0	15.9	26.8	20.2	0.0	0.0	17.1	19.5
14,000	14.6	6.8	34.1	28.9	13.4	16.5	19.7	7.3	0.0	15.9	26.8	20.2	0.0	0.0	17.1	19.5
16,000	14.6	6.8	34.1	28.9	13.4	16.5	25.7	7.3	0.0	15.9	26.8	21.7	13.2	0.0	17.1	19.5

TABLE 2.3.5-6 (SHEET 1 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR VOGTLE
VENT - PLANT VENT SEASON – ANNUAL RUN NO. VX-1

ATMOSPHERIC DISPERSION FACTORS FOR- VENT- SEASON- REQ-

IN DIRECTION SECTOR	RUN TYPE - X/Q SEC/M3				DISTANCE (METERS)					
	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.30E-07	8.00E-08	5.40E-08	4.00E-08	3.10E-08	1.70E-08	8.70E-09	5.20E-09	3.40E-09	2.40E-09
NNE	1.90E-07	9.00E-08	6.00E-08	4.30E-08	3.30E-08	2.20E-08	1.00E-08	5.60E-09	3.80E-09	2.70E-09
NE	2.50E-07	1.10E-07	6.90E-08	5.00E-08	4.00E-08	2.90E-08	1.30E-08	7.50E-09	4.90E-09	3.60E-09
ENE	2.30E-07	9.60E-08	5.90E-08	4.20E-08	3.60E-08	2.20E-08	1.10E-08	5.60E-09	3.80E-09	2.80E-09
E	1.70E-07	9.40E-08	5.70E-08	4.10E-08	3.10E-08	1.70E-08	1.00E-08	5.30E-09	3.50E-09	2.60E-09
ESE	1.20E-07	9.10E-08	5.50E-08	3.90E-08	3.00E-08	1.60E-08	8.00E-09	4.50E-09	3.00E-09	2.20E-09
SE	9.50E-08	7.40E-08	4.70E-08	3.70E-08	2.80E-08	1.60E-08	6.90E-09	3.70E-09	2.50E-09	1.80E-09
SSE	5.80E-08	4.60E-08	3.00E-08	2.20E-08	1.70E-08	1.20E-08	5.00E-09	2.70E-09	1.80E-09	1.40E-09
S	7.10E-08	5.30E-08	3.50E-08	2.60E-08	2.20E-08	1.40E-08	6.40E-09	3.70E-09	2.60E-09	1.90E-09
SSW	7.80E-08	5.80E-08	3.80E-08	2.80E-08	2.20E-08	1.30E-08	6.80E-09	3.80E-09	2.60E-09	2.30E-09
SW	1.80E-07	1.20E-07	8.10E-08	5.80E-08	4.40E-08	2.60E-08	1.10E-08	5.80E-09	3.90E-09	2.80E-09
WSW	1.40E-07	9.80E-08	6.40E-08	4.50E-08	3.40E-08	2.10E-08	8.70E-09	4.60E-09	3.00E-09	2.20E-09
W	1.10E-07	7.30E-08	4.90E-08	3.60E-08	2.70E-08	1.60E-08	7.00E-09	4.00E-09	2.70E-09	2.10E-09
WNW	1.10E-07	8.20E-08	5.40E-08	3.90E-08	3.00E-08	1.70E-08	8.10E-09	4.50E-09	3.60E-09	2.60E-09
NW	8.40E-08	8.00E-08	5.60E-08	4.00E-08	3.10E-08	1.80E-08	8.40E-09	4.90E-09	3.80E-09	2.70E-09
NNW	9.70E-08	7.90E-08	5.30E-08	3.80E-08	3.00E-08	1.60E-08	7.10E-09	4.30E-09	2.90E-09	2.10E-09

IN DIRECTION SECTOR	RUN TYPE - DEPLETED X/Q SEC/M3				DISTANCE (METERS)					
	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.20E-07	7.20E-08	4.90E-08	3.60E-08	2.80E-08	1.50E-08	7.50E-09	3.10E-09	1.70E-09	1.10E-09
NNE	1.70E-07	8.10E-08	5.40E-08	3.90E-08	3.00E-08	1.90E-08	8.50E-09	3.80E-09	2.00E-09	1.30E-09
NE	2.30E-07	9.80E-08	6.10E-08	4.40E-08	3.50E-08	2.60E-08	1.10E-08	5.10E-09	3.00E-09	2.00E-09
ENE	2.10E-07	8.60E-08	5.20E-08	3.70E-08	3.10E-08	2.00E-08	8.80E-09	4.40E-09	2.80E-09	2.00E-09
E	1.50E-07	8.40E-08	5.10E-08	3.60E-08	2.70E-08	1.50E-08	8.00E-09	3.60E-09	2.20E-09	1.40E-09
ESE	1.10E-07	8.10E-08	4.80E-08	3.40E-08	2.60E-08	1.40E-08	6.80E-09	3.50E-09	2.20E-09	1.60E-09
SE	8.50E-08	6.60E-08	4.20E-08	3.30E-08	2.50E-08	1.40E-08	5.90E-09	3.10E-09	2.00E-09	1.40E-09
SSE	5.20E-08	4.20E-08	2.80E-08	2.00E-08	1.50E-08	1.00E-08	4.40E-09	2.40E-09	1.60E-09	1.10E-09
S	6.40E-08	4.80E-08	3.20E-08	2.30E-08	2.00E-08	1.30E-08	5.60E-09	3.20E-09	2.10E-09	1.60E-09
SSW	7.10E-08	5.30E-08	3.50E-08	2.50E-08	2.00E-08	1.20E-08	6.10E-09	3.40E-09	2.30E-09	1.60E-09
SW	1.60E-07	1.10E-07	7.60E-08	5.40E-08	4.10E-08	2.40E-08	9.40E-09	4.70E-09	3.00E-09	2.10E-09
WSW	1.30E-07	9.20E-08	5.90E-08	4.20E-08	3.10E-08	1.90E-08	7.60E-09	3.90E-09	2.50E-09	1.80E-09
W	9.60E-08	6.70E-08	4.50E-08	4.20E-08	2.50E-08	1.50E-08	6.20E-09	3.50E-09	2.30E-09	1.50E-09
WNW	9.80E-08	7.60E-08	5.00E-08	3.60E-08	2.70E-08	1.50E-08	7.10E-09	3.70E-09	1.90E-09	1.30E-09
NW	7.70E-08	7.40E-08	5.10E-08	3.70E-08	2.90E-08	1.60E-08	7.40E-09	3.80E-09	1.90E-09	1.30E-09
NNW	8.80E-08	7.20E-08	4.90E-08	3.50E-08	2.70E-08	1.50E-08	6.30E-09	3.70E-09	2.30E-09	1.70E-09

TABLE 2.3.5-6 (SHEET 2 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR- VENT- SEASON- REQ-

IN DIRECTION SECTOR	RUN TYPE - DEPOSITION D/Q M-2 SP	2413	4022	5631	DISTANCE (METERS) 7240	12067	24135	40225	56315	72405
N	9.80E-10	4.30E-10	2.00E-10	1.20E-10	7.70E-11	3.40E-11	1.30E-11	1.50E-11	7.30E-12	4.60E-12
NNE	1.40E-09	5.00E-10	2.40E-10	1.40E-10	8.90E-11	4.10E-11	1.50E-11	2.10E-11	8.40E-12	5.10E-12
NE	2.10E-09	6.90E-10	6.10E-10	1.80E-10	1.20E-10	5.40E-11	2.20E-11	2.60E-11	1.30E-11	8.20E-12
ENE	2.80E-09	8.90E-10	4.00E-10	2.30E-10	1.50E-10	6.90E-11	2.20E-11	1.10E-11	7.10E-12	5.40E-12
E	3.10E-09	1.20E-09	5.40E-10	3.10E-10	2.00E-10	9.20E-11	5.40E-11	2.50E-11	1.40E-11	9.30E-12
ESE	1.70E-09	1.10E-09	4.70E-10	2.70E-10	1.70E-10	7.80E-11	2.60E-11	1.30E-11	8.20E-12	6.10E-12
SE	1.30E-09	8.70E-10	3.90E-10	2.20E-10	1.40E-10	6.40E-11	2.10E-11	9.50E-12	6.10E-12	4.50E-12
SSE	7.50E-10	4.80E-10	2.20E-10	1.30E-10	8.40E-11	3.90E-11	1.20E-11	5.50E-12	3.50E-12	2.60E-12
S	7.80E-10	4.70E-10	2.20E-10	1.30E-10	8.60E-11	3.90E-11	1.20E-11	5.60E-12	3.60E-12	2.70E-12
SSW	1.00E-09	6.10E-10	2.80E-10	1.60E-10	1.99E-10	4.70E-11	1.50E-11	6.80E-12	4.30E-12	4.30E-12
SW	2.00E-09	9.50E-10	4.20E-10	2.40E-10	1.60E-10	7.10E-11	2.30E-11	1.10E-11	7.50E-12	5.60E-12
WSW	1.60E-00	7.40E-10	3.30E-10	1.90E-10	1.20E-10	5.50E-11	1.70E-11	8.10E-12	5.40E-12	4.10E-12
W	1.10E-09	5.60E-10	2.60E-10	1.50E-10	9.80E-11	4.40E-11	1.40E-11	6.10E-12	4.10E-12	4.10E-12
WNW	9.00E-10	5.20E-10	2.40E-10	1.40E-10	9.10E-11	4.10E-11	1.30E-11	6.20E-12	6.60E-12	4.20E-12
NW	4.90E-10	4.40E-10	2.00E-10	1.20E-10	7.40E-11	3.30E-11	1.00E-11	7.70E-12	6.20E-12	3.90E-12
NNW	6.70E-10	4.50E-10	2.10E-10	1.30E-10	8.10E-11	3.60E-11	1.10E-11	5.00E-12	3.60E-12	2.80E-12

TABLE 2.3.5-7 (SHEET 1 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR VOGTLE
VENT - GROUND WAKE SEASON – ANNUAL RUN NO. VX-2

ATMOSPHERIC DISPERSION FACTORS FOR- VENT- SEASON- REQ-

IN DIRECTION	RUN TYPE - X/Q SEC/M3				DISTANCE (METERS)					
SECTOR	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.20E-06	5.10E-07	2.40E-07	1.50E-07	1.10E-07	5.10E-08	1.90E-08	9.60E-09	6.20E-09	4.50E-09
NNE	1.80E-06	6.00E-07	2.90E-07	1.80E-07	1.30E-07	6.00E-08	2.30E-08	1.10E-08	7.40E-09	5.40E-09
NE	2.30E-06	7.40E-07	3.60E-07	2.30E-07	1.60E-07	7.80E-08	3.00E-08	1.50E-08	1.00E-08	7.30E-09
ENE	2.00E-06	6.40E-07	3.10E-07	2.00E-07	1.40E-07	6.80E-08	2.70E-08	1.40E-08	9.00E-09	6.60E-09
E	1.20E-06	5.40E-07	2.60E-07	1.70E-07	1.20E-07	5.70E-08	2.20E-08	1.10E-08	7.40E-09	5.50E-09
ESE	7.90E-07	5.30E-07	2.60E-07	1.60E-07	1.10E-07	5.50E-08	2.10E-08	1.10E-08	7.10E-09	5.20E-09
SE	6.70E-07	4.70E-07	2.30E-07	1.40E-07	1.00E-07	4.90E-08	1.90E-08	9.60E-09	6.30E-09	4.60E-09
SSE	5.80E-07	3.70E-07	1.80E-07	1.10E-07	8.10E-08	3.90E-08	1.50E-08	7.80E-09	5.10E-09	3.70E-09
S	7.60E-07	4.60E-07	2.20E-07	1.40E-07	1.00E-07	4.90E-08	1.90E-08	9.90E-09	6.50E-09	4.80E-09
SSW	7.60E-07	4.50E-07	2.20E-07	1.40E-07	9.90E-08	4.90E-08	1.90E-08	9.80E-09	6.50E-09	4.80E-09
SW	1.20E-06	5.90E-07	2.90E-07	1.80E-07	1.30E-07	6.00E-08	2.30E-08	1.20E-08	7.70E-09	5.60E-09
WSW	9.70E-07	4.80E-07	2.30E-07	1.40E-07	9.90E-08	4.70E-08	1.80E-08	9.10E-09	5.90E-09	4.30E-09
W	1.00E-06	5.00E-07	2.40E-07	1.50E-07	1.10E-07	5.10E-08	2.00E-08	1.00E-08	6.60E-09	4.80E-09
WNW	8.90E-07	5.20E-07	2.50E-07	1.60E-07	1.10E-07	5.30E-08	2.00E-08	1.00E-08	6.70E-09	4.90E-09
NW	5.70E-07	5.10E-07	2.50E-07	1.50E-07	1.10E-07	5.30E-08	2.00E-08	1.00E-08	6.70E-09	4.90E-09
NNW	8.60E-07	5.70E-07	2.70E-07	1.70E-07	1.20E-07	5.70E-08	2.20E-08	1.10E-08	7.20E-09	5.20E-09

IN DIRECTION	RUN TYPE - DEPLETED X/Q SEC/M3				DISTANCE (METERS)					
SECTOR	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.00E-06	4.30E-07	2.00E-07	1.20E-07	8.00E-08	3.50E-08	1.20E-08	5.30E-09	3.10E-09	2.10E-09
NNE	1.60E-06	5.10E-07	2.30E-07	1.40E-07	9.40E-08	4.20E-08	1.40E-08	6.30E-09	3.70E-88	2.50E-09
NE	2.00E-06	6.30E-07	2.90E-07	1.70E-07	1.20E-07	5.40E-08	1.90E-08	8.40E-09	5.00E-09	3.40E-09
ENE	1.80E-06	5.40E-07	2.50E-07	1.50E-07	1.10E-07	4.80E-08	1.70E-08	7.50E-09	4.50E-09	3.00E-09
E	1.10E-06	4.60E-07	2.10E-07	1.30E-07	8.80E-08	4.00E-08	1.40E-08	6.20E-09	3.70E-09	2.50E-09
ESE	6.80E-07	4.50E-07	2.10E-07	1.20E-07	8.60E-08	3.90E-08	1.30E-08	6.00E-09	3.60E-09	2.40E-09
SE	5.80E-07	3.90E-07	1.80E-07	1.10E-07	7.60E-08	3.40E-08	1.20E-08	5.30E-09	3.20E-09	2.10E-09
SSE	5.10E-07	3.20E-07	1.50E-07	8.70E-08	6.40E-08	2.70E-08	9.50E-09	4.30E-09	2.60E-09	1.70E-09
S	6.70E-07	3.90E-07	1.80E-07	1.10E-07	7.60E-08	3.40E-08	1.20E-08	5.40E-09	3.30E-09	2.20E-09
SSW	6.70E-07	3.80E-07	1.80E-07	1.10E-07	7.50E-08	3.40E-08	1.20E-08	5.40E-09	3.20E-09	2.20E-09
SW	1.10E-06	5.00E-07	2.30E-07	1.40E-07	9.40E-08	4.20E-08	1.40E-08	6.40E-09	3.80E-09	2.60E-09
WSW	8.60E-07	4.00E-07	1.80E-07	1.10E-07	7.50E-08	3.30E-08	1.10E-08	5.00E-09	3.00E-09	2.00E-09
W	9.00E-07	4.20E-07	1.90E-07	1.10E-07	8.00E-08	3.60E-08	1.20E-08	5.60E-09	3.30E-09	2.20E-09
WNW	7.80E-07	4.40E-07	2.00E-07	1.20E-07	8.20E-08	3.70E-08	1.30E-08	5.60E-09	3.40E-09	2.30E-09
NW	4.90E-07	4.30E-07	2.00E-07	1.20E-07	8.20E-08	3.70E-08	1.20E-08	5.60E-09	3.30E-09	2.20E-09
NNW	7.50E-07	4.80E-07	2.20E-07	1.80E-07	9.00E-08	4.00E-08	1.40E-08	6.10E-09	3.60E-09	2.40E-09

TABLE 2.3.5-7 (SHEET 2 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR- VENT- SEASON- REQ-

IN DIRECTION SECTOR	RUN TYPE - X/Q SEC/M3				DISTANCE (METERS)					
	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	5.10E-09	1.80E-09	7.50E-10	4.20E-10	2.50E-10	1.10E-10	3.30E-11	1.40E-11	7.20E-12	4.60E-12
NNE	7.80E-09	2.00E-09	8.40E-10	4.70E-10	2.80E-10	1.30E-10	3.70E-11	1.50E-11	8.10E-12	5.10E-12
NE	9.60E-09	2.50E-09	1.00E-09	5.70E-10	3.50E-10	1.50E-10	4.50E-11	1.90E-11	9.90E-12	6.30E-12
ENE	9.40E-09	2.40E-09	1.00E-09	5.60E-10	3.40E-10	1.50E-10	4.40E-11	1.80E-11	9.70E-12	6.10E-12
E	7.50E-09	2.70E-09	1.10E-09	6.30E-10	3.80E-10	1.70E-10	5.00E-11	2.10E-11	1.10E-11	6.90E-12
ESE	4.10E-09	2.60E-09	1.10E-09	5.90E-10	3.60E-10	1.60E-10	4.70E-11	1.90E-11	1.00E-11	6.40E-12
SE	3.20E-09	2.10E-09	8.60E-10	4.80E-10	2.90E-10	1.30E-10	3.80E-11	1.60E-11	8.30E-12	5.30E-12
SSE	2.10E-09	1.20E-09	5.10E-10	2.90E-10	1.70E-10	7.70E-11	2.30E-11	9.40E-12	5.00E-12	3.10E-12
S	2.60E-09	1.40E-09	5.60E-10	3.10E-10	1.90E-10	8.40E-11	2.50E-11	1.00E-11	5.40E-12	3.40E-12
SSW	3.10E-09	1.60E-09	6.80E-10	3.80E-10	2.30E-10	1.00E-10	3.00E-11	1.20E-11	6.60E-12	4.20E-12
SW	5.80E-09	2.40E-09	9.70E-10	5.40E-10	3.30E-10	1.50E-10	4.30E-11	1.80E-11	9.40E-12	5.90E-12
WSW	4.80E-09	1.90E-09	8.00E-10	4.40E-10	2.70E-10	1.20E-10	3.50E-11	1.50E-11	7.70E-12	4.90E-12
W	4.10E-09	1.70E-09	6.80E-10	3.40E-10	2.30E-10	1.00E-10	3.00E-11	1.20E-11	6.60E-12	4.20E-12
WNW	3.30E-09	1.70E-09	6.80E-10	3.40E-10	2.30E-10	1.00E-10	3.00E-11	1.20E-11	6.60E-12	4.20E-12
NW	1.70E-09	1.50E-09	6.40E-10	3.50E-10	2.20E-10	9.50E-11	2.80E-11	1.20E-11	6.20E-12	3.90E-12
NNW	2.60E-09	1.60E-09	6.60E-10	3.70E-10	2.20E-10	9.90E-11	2.90E-11	1.20E-11	6.40E-12	4.00E-12

TABLE 2.3.5-8 (SHEET 1 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR VOGTLE
VENT - PLANT VENT SEASON – ANNUAL RUN NO. VX-3

ATMOSPHERIC DISPERSION FACTORS FOR-VOGTLE GND WAKE VENT-ANNUAL VX-3 3-YR SEASON-S JFT GND REQ-

IN DIRECTION	RUN TYPE - X/Q SEC/M3				DISTANCE (METERS)					
SECTOR	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.40E-07	7.80E-08	5.00E-08	3.60E-08	2.80E-08	1.60E-08	8.60E-09	5.80E-09	3.80E-09	2.80E-09
NNE	1.90E-07	8.30E-08	5.20E-08	3.80E-08	2.90E-08	1.90E-08	9.70E-09	5.60E-09	3.90E-09	2.80E-09
NE	2.00E-07	8.60E-08	5.40E-08	3.90E-08	3.10E-08	2.40E-08	1.20E-08	6.80E-09	4.50E-09	3.30E-09
ENE	1.80E-07	7.80E-08	4.80E-08	3.50E-08	3.00E-08	2.00E-08	9.90E-09	5.40E-09	3.60E-09	2.70E-09
E	1.20E-07	7.10E-08	4.40E-08	3.20E-08	2.50E-08	1.40E-08	1.00E-08	5.50E-09	3.70E-09	2.70E-09
ESE	9.40E-08	7.10E-08	4.40E-08	3.10E-08	2.40E-08	1.40E-08	7.60E-09	4.70E-09	3.20E-09	2.30E-09
SE	8.30E-08	6.40E-08	4.10E-08	3.20E-08	2.50E-08	1.50E-08	6.90E-09	3.90E-09	2.60E-09	2.00E-09
SSE	4.80E-08	3.70E-08	2.50E-08	1.80E-08	1.40E-08	1.10E-08	5.20E-09	2.90E-09	2.00E-09	1.50E-09
S	6.80E-08	4.90E-08	3.10E-08	2.30E-08	1.90E-08	1.30E-08	6.20E-09	3.90E-09	2.70E-09	2.10E-09
SSW	7.70E-08	5.50E-08	3.50E-08	2.50E-08	2.00E-08	1.20E-08	6.30E-09	3.60E-09	2.50E-09	2.30E-09
SW	1.70E-07	1.10E-07	7.10E-08	5.10E-08	4.00E-08	2.50E-08	1.10E-08	5.90E-09	4.00E-09	3.00E-09
WSW	1.50E-07	9.60E-08	5.90E-08	4.10E-08	3.10E-08	2.00E-08	8.30E-09	4.50E-09	3.00E-09	2.20E-09
W	1.20E-07	7.70E-08	5.00E-08	3.60E-08	2.80E-08	1.70E-08	7.70E-09	4.60E-09	3.20E-09	2.60E-09
WNW	1.00E-07	7.60E-08	4.90E-08	3.50E-08	2.70E-08	1.50E-08	7.50E-09	4.20E-09	3.60E-09	2.60E-09
NW	8.50E-08	8.00E-08	5.60E-08	4.00E-08	3.10E-08	1.80E-08	8.40E-09	5.00E-09	3.90E-09	2.80E-09
NNW	9.40E-08	7.60E-08	5.10E-08	3.80E-08	2.90E-08	1.60E-08	7.20E-09	4.40E-09	3.00E-09	2.20E-09

IN DIRECTION	RUN TYPE - DEPLETED X/Q SEC/M3				DISTANCE (METERS)					
SECTOR	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.20E-07	7.00E-08	4.50E-08	3.20E-08	2.50E-08	1.40E-08	7.50E-09	3.50E-09	1.90E-09	1.30E-09
NNE	1.70E-07	7.40E-08	4.70E-08	3.30E-08	2.60E-08	1.70E-08	8.20E-09	3.80E-09	2.00E-09	1.30E-09
NE	1.80E-07	7.70E-08	4.80E-08	3.40E-08	2.80E-08	2.10E-08	9.70E-09	4.70E-09	2.80E-09	1.90E-09
ENE	1.70E-07	7.00E-08	4.30E-08	3.10E-08	2.70E-08	1.80E-08	8.50E-09	4.40E-09	2.90E-09	2.00E-09
E	1.10E-07	6.30E-08	3.90E-08	2.80E-08	2.20E-08	1.30E-08	8.40E-09	3.90E-09	2.40E-09	1.60E-09
ESE	8.40E-08	6.40E-08	3.90E-08	2.80E-08	2.10E-08	1.20E-08	6.70E-09	3.90E-09	2.50E-09	1.80E-09
SE	7.40E-08	5.70E-08	3.60E-08	2.90E-08	2.20E-08	1.40E-08	6.10E-09	3.40E-09	2.30E-09	1.70E-09
SSE	4.40E-08	3.40E-08	2.20E-08	1.60E-08	1.30E-08	1.00E-08	4.70E-09	2.60E-09	1.80E-09	1.30E-09
S	6.10E-08	4.40E-08	2.80E-08	2.00E-08	1.70E-08	1.20E-08	5.60E-09	3.50E-09	2.40E-09	1.80E-09
SSW	7.00E-08	5.00E-08	3.20E-08	2.30E-08	1.80E-08	1.10E-08	5.70E-09	3.20E-09	2.20E-09	1.60E-09
SW	1.60E-07	1.00E-07	6.50E-08	4.70E-08	3.60E-08	2.20E-08	9.30E-09	4.80E-09	3.10E-09	2.20E-09
WSW	1.40E-07	8.80E-08	5.40E-08	3.70E-08	2.80E-08	1.80E-08	7.20E-09	3.70E-09	2.40E-09	1.70E-09
W	1.10E-07	7.00E-08	4.60E-08	3.30E-08	2.50E-08	1.50E-08	6.80E-09	4.00E-09	2.70E-09	1.80E-09
WNW	9.40E-08	7.00E-08	4.50E-08	3.20E-08	2.50E-08	1.40E-08	6.60E-09	3.50E-09	1.80E-09	1.20E-09
NW	7.80E-08	7.40E-08	5.10E-08	3.70E-08	2.90E-08	1.60E-08	7.50E-09	3.90E-09	2.00E-09	1.30E-09
NNW	8.50E-08	7.00E-08	4.70E-08	3.40E-08	2.70E-08	1.50E-08	6.50E-09	3.80E-09	2.50E-09	1.70E-09

TABLE 2.3.5-8 (SHEET 2 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR-VOGTLE GND WAKE VENT-ANNUAL VX-3 3-YR SEASON-S JFT GND REQ-

IN DIRECTION SECTOR	RUN TYPE - DISPOSITION D/QQ M-2				DISTANCE (METERS)					
	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.30E-09	5.60E-10	2.60E-10	1.50E-10	9.60E-11	4.30E-11	1.50E-11	1.60E-11	7.70E-12	4.90E-12
NNE	1.80E-09	6.00E-10	2.80E-10	1.60E-10	1.00E-10	4.80E-11	1.70E-11	2.00E-11	8.30E-12	5.00E-12
NE	2.30E-09	7.50E-10	3.40E-10	2.00E-10	1.30E-10	5.80E-11	2.20E-11	2.30E-11	1.20E-11	7.50E-12
ENE	2.80E-09	8.70E-10	3.80E-10	2.20E-10	1.50E-10	6.60E-11	2.10E-11	1.00E-11	6.70E-12	5.10E-12
E	2.70E-09	1.10E-09	4.90E-10	2.80E-10	1.80E-10	8.30E-11	4.60E-11	2.20E-11	1.20E-11	8.20E-12
ESE	1.60E-09	1.00E-09	4.30E-10	2.50E-10	1.60E-10	7.30E-11	2.40E-11	1.10E-11	7.40E-12	5.50E-12
SE	1.20E-09	7.70E-10	3.40E-10	2.00E-10	1.30E-10	5.70E-11	1.80E-11	8.30E-12	5.20E-12	3.90E-12
SSE	7.00E-10	4.40E-10	2.00E-10	1.20E-10	7.50E-11	3.50E-11	1.10E-11	5.00E-12	3.20E-12	2.40E-12
S	9.20E-10	5.40E-10	2.40E-10	1.40E-10	9.40E-11	4.30E-11	1.40E-11	6.20E-12	4.00E-12	3.00E-12
SSW	1.10E-09	6.30E-10	2.80E-10	1.60E-10	1.10E-10	4.80E-11	1.50E-11	6.90E-12	4.40E-12	4.30E-12
SW	2.20E-09	9.90E-10	4.40E-10	2.50E-10	1.60E-10	7.30E-11	2.40E-11	1.20E-11	7.70E-12	5.70E-12
WSW	1.80E-09	8.20E-10	3.60E-10	2.10E-10	1.30E-10	6.00E-11	1.90E-11	8.90E-12	5.80E-12	4.40E-12
W	1.50E-09	7.20E-10	3.30E-10	1.90E-10	1.20E-10	5.60E-11	1.70E-11	7.90E-12	5.20E-12	5.10E-12
WNW	1.00E-09	5.90E-10	2.70E-10	1.60E-10	1.00E-10	4.50E-11	1.40E-11	6.80E-12	6.80E-12	4.30E-12
NW	6.30E-10	5.60E-10	2.60E-10	1.50E-10	9.40E-11	4.20E-11	1.30E-11	9.50E-12	7.10E-12	4.50E-12
NNW	7.70E-10	5.10E-10	2.40E-10	1.40E-10	8.90E-11	4.00E-11	1.20E-11	5.60E-12	4.00E-12	3.10E-12

TABLE 2.3.5-9 (SHEET 1 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR VOGTLE
VENT - GROUND WAKE SEASON – ANNUAL RUN NO. VX-4

AMOSPHERIC DISPERSION FACTORS FOR-VOGTLE GND WAKE VENT-ANNUAL VX-4 3-YR SEASON-S JFT GND REQ-

IN DIRECTION SECTOR	RUN TYPE - X/Q SEC/M3				DISTANCE (METERS)					
	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.40E-06	6.00E-07	2.90E-07	1.80E-07	1.30E-07	6.20E-08	2.40E-08	1.20E-08	7.90E-09	5.70E-09
NNE	1.90E-06	6.20E-07	3.00E-07	1.90E-07	1.30E-07	6.30E-08	2.40E-08	1.20E-08	8.00E-09	5.80E-09
NE	2.20E-06	7.20E-07	3.50E-07	2.20E-07	1.60E-07	7.70E-08	3.00E-08	1.50E-08	1.00E-08	7.50E-09
ENE	2.00E-06	6.50E-07	3.20E-07	2.00E-07	1.40E-07	7.00E-08	2.80E-08	1.40E-08	9.30E-09	6.90E-09
E	1.30E-06	5.90E-07	2.90E-07	1.80E-07	1.30E-07	6.30E-08	2.50E-08	1.30E-08	8.40E-09	6.20E-09
ESE	8.80E-07	5.80E-07	2.90E-07	1.80E-07	1.30E-07	6.30E-08	2.50E-08	1.30E-08	8.40E-09	6.20E-09
SE	8.00E-07	5.50E-07	2.70E-07	1.70E-07	1.20E-07	6.00E-08	2.40E-08	1.20E-08	8.00E-09	5.90E-09
SSE	6.60E-07	4.20E-07	2.10E-07	1.30E-07	9.50E-08	4.70E-08	1.90E-08	9.60E-09	6.30E-09	4.70E-09
S	9.90E-07	5.90E-07	2.90E-07	1.90E-07	1.30E-07	6.70E-08	2.70E-08	1.40E-08	9.30E-09	6.80E-09
SSW	9.10E-07	5.40E-07	2.70E-07	1.70E-07	1.20E-07	6.00E-08	2.40E-08	1.20E-08	8.10E-09	6.00E-09
SW	1.50E-06	7.30E-07	3.60E-07	2.30E-07	1.60E-07	7.90E-08	3.10E-08	1.60E-08	1.10E-08	7.80E-09
WSW	1.20E-06	5.80E-07	2.80E-07	1.80E-07	1.30E-07	6.10E-08	2.40E-08	1.20E-08	7.90E-09	5.80E-09
W	1.30E-06	6.50E-07	3.20E-07	2.00E-07	1.40E-07	7.00E-08	2.70E-08	1.40E-08	9.20E-09	6.70E-09
WNW	9.60E-07	5.60E-07	2.70E-07	1.70E-07	1.20E-07	5.80E-08	2.20E-08	1.10E-08	7.40E-09	5.40E-09
NW	6.90E-07	6.20E-07	3.00E-07	1.90E-07	1.30E-07	6.40E-08	2.50E-08	1.20E-08	8.20E-09	6.00E-09
NNW	9.20E-07	6.10E-07	2.90E-07	1.80E-07	1.30E-07	6.10E-08	2.30E-08	1.20E-08	7.60E-09	5.50E-09

IN DIRECTION SECTOR	RUN TYPE - DEPLETED X/Q SEC/M3				DISTANCE (METERS)					
	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	1.20E-06	5.10E-07	2.30E-07	1.40E-07	9.60E-08	4.30E-08	1.50E-08	6.60E-09	4.00E-09	2.70E-09
NNE	1.70E-06	5.30E-07	2.40E-07	1.40E-07	9.90E-08	4.40E-08	1.50E-08	6.70E-09	4.00E-09	2.70E-09
NE	2.00E-06	6.10E-07	2.80E-07	1.70E-07	1.20E-07	5.40E-08	1.90E-08	8.50E-09	5.10E-09	3.40E-09
ENE	1.80E-06	5.50E-07	2.60E-07	1.50E-07	1.10E-07	4.90E-08	1.70E-08	7.80E-09	4.70E-09	3.20E-09
E	1.20E-06	5.00E-07	2.30E-07	1.40E-07	9.70E-08	4.40E-08	1.50E-08	7.00E-09	4.20E-09	2.80E-09
ESE	7.60E-07	5.00E-07	2.30E-07	1.40E-07	9.70E-08	4.40E-08	1.50E-08	7.00E-09	4.20E-09	2.90E-09
SE	6.90E-07	4.70E-07	2.20E-07	1.30E-07	9.10E-08	4.20E-08	1.50E-08	6.60E-09	4.00E-09	2.70E-09
SSE	5.80E-07	3.60E-07	1.70E-07	1.00E-07	7.10E-08	3.30E-08	1.20E-08	5.30E-09	3.20E-09	2.20E-09
S	8.60E-07	5.00E-07	2.30E-07	1.40E-07	1.00E-07	4.70E-08	1.70E-08	7.60E-09	4.60E-09	3.20E-09
SSW	7.90E-07	4.60E-07	2.10E-07	1.30E-07	9.10E-08	4.20E-08	1.50E-08	6.70E-09	4.10E-09	2.80E-09
SW	1.30E-06	6.20E-07	2.90E-07	1.70E-07	1.20E-07	5.50E-08	1.90E-08	8.80E-09	5.30E-09	3.60E-09
WSW	1.10E-06	4.90E-07	2.30E-07	1.40E-07	9.40E-08	4.30E-08	1.50E-08	6.60E-09	4.00E-09	2.70E-09
W	1.20E-06	5.60E-07	2.60E-07	1.50E-07	1.10E-07	4.90E-08	1.70E-08	7.60E-09	4.60E-09	3.10E-09
WNW	8.40E-07	4.70E-07	2.20E-07	1.30E-07	9.00E-08	4.00E-08	1.40E-08	6.20E-09	3.70E-09	2.50E-09
NW	5.90E-07	5.20E-07	2.40E-07	1.40E-07	9.90E-08	4.50E-08	1.50E-08	6.90E-09	4.10E-09	2.80E-09
NNW	8.00E-07	5.20E-07	2.30E-07	1.40E-07	9.60E-08	4.20E-08	1.40E-08	6.40E-09	3.80E-09	2.50E-09

TABLE 2.3.5-9 (SHEET 2 OF 2)

AMOSPHERIC DISPERSION FACTORS FOR-VOGTLE GND WAKE VENT-ANNUAL VX-4 3-YR SEASON-S JFT GND REQ-

IN DIRECTION SECTOR	RUN TYPE - DEPOSITION D/Q M-2				DISTANCE (METERS)					
	SB	2413	4022	5631	7240	12067	24135	40225	56315	72405
N	5.40E-09	1.90E-09	7.90E-10	4.40E-10	2.70E-10	1.20E-10	3.50E-11	1.40E-11	7.70E-12	4.90E-12
NNE	7.70E-09	2.00E-09	8.20E-10	4.60E-10	2.80E-10	1.20E-10	3.60E-11	1.50E-11	8.00E-12	5.00E-12
NE	8.80E-09	2.30E-09	9.40E-10	5.20E-10	3.20E-10	1.40E-10	4.20E-11	1.70E-11	9.10E-12	5.80E-12
ENE	8.80E-09	2.30E-09	9.40E-10	5.20E-10	3.20E-10	1.40E-10	4.10E-11	1.70E-11	9.10E-12	5.70E-12
E	6.80E-09	2.50E-09	1.00E-09	5.70E-10	3.50E-10	1.50E-10	4.50E-11	1.80E-11	9.80E-12	6.20E-12
ESE	3.80E-09	2.30E-09	9.50E-10	5.30E-10	3.20E-10	1.40E-10	4.20E-11	1.70E-11	9.20E-12	5.80E-12
SE	3.00E-09	1.90E-09	8.00E-10	4.50E-10	2.70E-10	1.20E-10	3.50E-11	1.50E-11	7.70E-12	4.90E-12
SSE	2.10E-09	1.20E-09	5.00E-10	2.80E-10	1.70E-10	7.50E-11	2.20E-11	9.10E-12	4.90E-12	3.10E-12
S	2.90E-09	1.50E-09	6.30E-10	3.50E-10	2.10E-10	9.40E-11	2.80E-11	1.10E-11	6.10E-12	3.80E-12
SSW	3.10E-09	1.60E-09	6.70E-10	3.70E-10	2.30E-10	1.00E-10	3.00E-11	1.20E-11	6.50E-12	4.10E-12
SW	5.70E-09	2.30E-09	9.60E-10	5.30E-10	3.30E-10	1.40E-10	4.20E-11	1.70E-11	9.30E-12	5.90E-12
WSW	5.00E-09	2.00E-09	8.30E-10	4.60E-10	2.80E-10	1.20E-10	3.70E-11	1.50E-11	8.10E-12	5.10E-12
W	4.90E-09	2.00E-09	8.30E-10	4.60E-10	2.80E-10	1.20E-10	3.70E-11	1.50E-11	8.00E-12	5.10E-12
WNW	3.40E-09	1.70E-09	7.00E-10	3.90E-10	2.40E-10	1.00E-10	3.10E-11	1.30E-11	6.80E-12	4.30E-12
NW	2.00E-09	1.80E-09	7.30E-10	4.10E-10	2.50E-10	1.10E-10	3.20E-11	1.30E-11	7.10E-12	4.50E-12
NNW	2.90E-09	1.80E-09	7.30E-10	4.10E-10	2.50E-10	1.10E-10	3.20E-11	1.30E-11	7.10E-12	4.50E-12

TABLE 2.3.5-10 (SHEET 1 OF 2)

DIFFUSION AND DEPOSITION ESTIMATES FOR ALL RECEPTOR LOCATIONS

Release Point: Plant Vent/Wake-Split Season: Annual Computer Run ID: VX-3

Direction	Distance to Nearest Milk Cow (m)[a]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Distance to Nearest Meat Animal (m)[a]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Distance to Nearest Milk Goat (m)[a]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})
N	-	2.5E-08	2.2E-08	8.2E-11	-	2.5E-08	2.2E-08	8.2E-11	-	2.5E-08	2.2E-08	8.2E-11
NNE	-	2.6E-08	2.3E-08	9.0E-11	-	2.6E-00	2.3E-08	9.0E-11	-	2.6E-08	2.3E-08	9.0E-11
NE	-	3.5E-08	3.2E-08	1.1E-10	-	3.5E-08	3.2E-08	1.1E-10	-	3.5E-08	3.2E-08	1.1E-10
ENE	-	2.9E-08	2.6E-08	1.3E-10	-	2.9E-08	2.6E-08	1.3E-10	-	2.9E-08	2.6E-08	1.3E-10
E	-	2.2E-08	2.0E-08	1.6E-10	-	2.2E-08	2.0E-08	1.6E-10	-	2.2E-08	2.0E-08	1.6E-10
ESE	-	2.2E-08	1.9E-08	1.4E-10	-	2.2E-08	1.9E-08	1.4E-10	-	2.2E-08	1.9E-08	1.4E-10
SE	-	2.3E-08	2.0E-08	1.1E-10	6920	2.6E-08	2.3E-08	1.4E-10	-	2.3E-08	2.0E-08	1.1E-10
SSE	-	1.3E-08	1.2E-08	6.4E-11	-	1.3E-08	1.2E-08	6.4E-11	-	1.3E-08	1.2E-08	6.4E-11
S	-	2.0E-08	1.8E-08	8.1E-11	7242	2.0E-08	1.8E-08	9.4E-11	-	2.0E-08	1.8E-08	8.1E-11
SSW	-	1.8E-08	1.6E-08	9.1E-11	7805	1.8E-08	1.6E-08	9.4E-11	-	1.8E-08	1.6E-08	9.1E-11
SW	-	3.6E-08	3.2E-08	1.4E-10	4828	5.9E-08	5.3E-08	3.2E-10	-	3.6E-08	3.2E-08	1.4E-10
WSW	-	2.8E-08	2.5E-08	1.2E-10	3862	6.2E-08	5.6E-08	3.9E-10	-	2.8E-08	2.5E-08	1.2E-10
W	-	2.5E-08	2.3E-08	1.1E-10	5713	3.6E-08	3.2E-08	1.9E-10	-	2.5E-08	2.3E-08	1.1E-10
WNW	-	2.4E-08	2.2E-08	8.7E-11	4184	4.7E-08	4.3E-08	2.5E-10	-	2.4E-08	2.2E-08	8.7E-11
NW	-	2.8E-08	2.6E-08	8.1E-11	6437	3.5E-08	3.2E-08	1.2E-10	-	2.8E-08	2.6E-08	8.1E-11
NNW	-	2.6E-08	2.4E-08	7.6E-11	-	2.6E-08	2.4E-08	7.6E-11	-	2.6E-08	2.4E-08	7.6E-11

TABLE 2.3.5-10 (SHEET 2 OF 2)

Direction	Distance to Nearest Residence (m)[(a)]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Distance to Nearest Veg. Garden (m)[(a)]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Nearest Site Boundary (m)	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})
N	-	2.5E-08	2.2E-08	8.2E-11	-	2.5E-08	2.2E-08	8.2E-11	1344	1.4E-07	1.2E-07	1.3E-09
NNE	-	2.6E-08	2.3E-08	9.0E-11	-	2.6E-08	2.3E-08	9.0E-11	1097	1.9E-07	1.7E-07	1.8E-09
NE	-	3.5E-08	3.2E-08	1.1E-10	-	3.5E-08	3.2E-08	1.1E-10	1097	2.0E-07	1.8E-07	2.3E-09
ENE	-	2.9E-08	2.6E-08	1.3E-10	-	2.9E-08	2.6E-08	1.3E-10	1097	1.8E-07	1.7E-07	2.8E-09
E	-	2.2E-08	2.0E-08	1.6E-10	-	2.2E-08	2.0E-08	1.6E-10	1369	1.2E-07	1.1E-07	2.7E-09
ESE	-	2.2E-08	1.9E-08	1.4E-10	-	2.2E-08	1.9E-08	1.4E-10	1817	9.4E-08	8.4E-08	1.6E-09
SE	5150	3.5E-08	3.1E-08	2.3E-10	6920	2.6E-07	2.3E-07	1.4E-10	1866	8.3E-08	7.4E-08	1.2E-09
SSE	-	1.3E-08	1.2E-08	6.4E-11	-	1.3E-08	1.2E-08	6.4E-11	1773	4.8E-08	4.4E-08	7.0E-10
S	7242	1.9E-08	1.7E-08	9.4E-11	7242	2.0E-08	1.8E-08	9.4E-11	1692	6.8E-08	6.1E-08	9.2E-10
SSW	7483	1.9E-08	1.7E-08	1.0E-10	7805	1.8E-08	1.6E-08	9.4E-11	1680	7.7E-08	7.0E-08	1.1E-09
SW	4828	5.9E-08	5.3E-08	3.2E-10	7725	3.7E-08	3.4E-08	1.4E-10	1462	1.7E-07	1.6E-07	1.2E-09
WSW	1931	1.2E-07	1.1E-07	1.1E-09	1931	1.2E-07	1.1E-07	1.1E-09	1462	1.5E-07	1.4E-07	1.8E-09
W	5713	3.6E-08	3.2E-08	1.9E-10	7081	2.8E-08	2.6E-08	1.3E-10	1462	1.2E-07	1.1E-07	1.5E-09
WNW	3701	5.3E-08	4.9E-08	3.1E-10	3701	5.3E-08	4.9E-08	3.1E-10	1649	1.0E-07	9.4E-08	1.0E-09
NW	3701	6.0E-08	5.6E-08	2.9E-10	3701	6.0E-08	5.6E-08	2.9E-10	2240	8.5E-08	7.8E-08	6.3E-10
NNW	-	2.6E-08	2.4E-08	7.6E-11	-	2.6E-08	2.4E-08	7.6E-11	1840	9.4E-08	8.5E-08	7.7E-10

a. Receptor distance greater than 8000 m is indicated by (-); diffusion values given are for 8000 m.

TABLE 2.3.5-11 (SHEET 1 OF 2)

DIFFUSION AND DEPOSITION ESTIMATES FOR ALL RECEPTOR LOCATIONS

Release Point: Assumed Ground Release in Building Wake   Season: Annual   Computer Run ID: VX-4

Direction	Distance to Nearest Milk Cow (m)[(a)]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Distance to Nearest Meat Animal (m)[(a)]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Distance to Nearest Milk Goat (m)[(a)]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})
N	-	1.1E-07	8.2E-08	2.4E-10	-	1.1E-07	8.2E-08	2.4E-10	-	1.1E-07	8.2E-08	2.4E-10
NNE	-	1.1E-07	8.4E-08	2.4E-10	-	1.1E-07	8.4E-08	2.4E-10	-	1.1E-07	8.4E-08	2.4E-10
NE	-	1.4E-07	1.0E-07	2.8E-10	-	1.4E-07	1.0E-07	2.8E-10	-	1.4E-07	1.0E-07	2.8E-10
ENE	-	1.2E-07	9.2E-08	2.8E-10	-	1.2E-07	9.2E-08	2.8E-10	-	1.2E-07	9.2E-08	2.8E-10
E	-	1.1E-07	8.2E-08	3.0E-10	-	1.1E-07	8.2E-08	3.0E-10	-	1.1E-07	8.2E-08	3.0E-10
ESE	-	1.1E-07	8.3E-08	2.8E-10	-	1.1E-07	8.3E-08	2.8E-10	-	1.1E-07	8.3E-08	2.8E-10
SE	-	1.1E-07	7.8E-08	2.4E-10	6920	1.3E-07	9.8E-08	2.9E-10	-	1.1E-07	7.8E-08	2.4E-10
SSE	-	8.2E-08	6.1E-08	1.5E-10	-	8.2E-08	6.1E-08	1.5E-10	-	8.2E-08	6.1E-08	1.5E-10
S	-	1.2E-07	8.6E-08	1.9E-10	7242	1.3E-07	1.0E-07	2.1E-10	-	1.2E-08	8.6E-08	1.9E-10
SSW	-	1.0E-07	7.7E-08	2.0E-10	7805	1.1E-07	8.1E-08	2.1E-10	-	1.0E-07	7.7E-08	2.0E-10
SW	-	1.4E-07	1.0E-07	2.9E-10	4828	2.8E-07	2.1E-07	6.9E-10	-	1.4E-07	1.0E-07	2.9E-10
WSW	-	1.1E-07	8.0E-08	2.5E-10	3862	3.0E-07	2.4E-07	9.0E-10	-	1.1E-07	8.0E-08	2.5E-10
W	-	1.2E-07	9.1E-08	2.5E-10	5713	2.0E-07	1.5E-07	4.5E-10	-	1.2E-07	9.1E-08	2.5E-10
WNW	-	1.0E-07	7.6E-08	2.1E-10	4184	2.5E-07	2.0E-07	6.5E-10	-	1.0E-07	7.6E-08	2.1E-10
NW	-	1.1E-07	8.4E-08	2.2E-10	6437	1.6E-07	1.2E-07	3.1E-10	-	1.1E-07	8.4E-08	2.2E-10
NNW	-	1.1E-07	8.1E-08	2.2E-10	-	1.1E-07	8.1E-08	2.2E-10	-	1.1E-07	8.1E-08	2.2E-10

TABLE 2.3.5-11 (SHEET 2 OF 2)

Direction	Distance to Nearest Residence (m)[(a)]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Distance to Nearest Veg. Garden (m)[(a)]	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})	Nearest Site Boundary (m)	X/Q (s/m^3)	Depleted X/Q (s/m^3)	D/Q (m^{-2})
N	-	1.1E-07	8.2E-08	2.4E-10	-	1.1E-07	8.2E-08	2.4E-10	1344	1.4E-06	1.2E-06	5.4E-09
NNE	-	1.1E-07	8.4E-08	2.4E-10	-	1.1E-07	8.4E-08	2.4E-10	1097	1.9E-06	1.7E-06	7.7E-09
NE	-	1.4E-07	1.0E-07	2.8E-10	-	1.4E-07	1.0E-07	2.8E-10	1097	2.2E-06	2.0E-06	8.8E-09
ENE	-	1.2E-07	9.2E-08	2.8E-10	-	1.2E-07	9.2E-08	2.8E-10	1097	2.0E-06	1.8E-06	8.8E-09
E	-	1.1E-07	8.2E-08	3.0E-10	-	1.1E-07	8.2E-08	3.0E-10	1369	1.3E.06	1.2E-06	6.8E-09
ESE	-	1.1E-07	8.3E-07	2.8E-10	-	1.1E-07	8.3E-08	2.8E-10	1817	8.8E-06	7.6E-07	3.8E-09
SE	5150	1.9E-07	1.5E-07	5.2E-10	6920	1.3E-07	9.8E-08	2.9E-10	1866	8.0E-07	6.9E-07	3.0E-08
SSE	-	8.2E-08	6.1E-08	1.5E-10	-	8.2E-08	6.1E-08	1.5E-10	1773	6.6E-07	5.8E-07	2.1E-09
S	7242	1.3E-07	1.0E-07	2.1E-10	7242	1.3E-07	1.0E-07	2.1E-10	1692	9.9E-07	8.6E-07	2.9E-09
SSW	7483	1.1E-07	8.6E-08	2.2E-10	7805	1.1E-07	8.1E-08	2.1E-10	1680	9.1E-07	7.9E-07	3.1E-09
SW	4828	2.8E-07	2.1E-07	6.9E-10	7725	1.5E-07	1.1E-07	3.0E-10	1462	1.5E-06	1.3E-06	5.7E-09
WSW	1931	8.1E-07	7.0E-07	2.9E-09	1931	8.1E-07	7.0E-07	2.9E-09	1462	1.2E-06	1.1E-06	5.0E-09
W	5713	2.0E-07	1.5E-07	4.5E-10	7081	1.5E-07	1.1E-07	2.9E-10	1462	1.3E-06	1.2E-06	4.9E-09
WNW	3701	3.0E-07	2.5E-07	8.2E-10	3701	3.0E-07	2.5E-07	3.2E-10	1649	9.6E-07	8.4E-07	3.4E-09
NW	3701	3.3E-07	2.7E-07	8.5E-10	3701	3.3E-07	2.7E-07	8.5E-10	2240	6.9E-07	5.9E-07	2.0E-09
NNW	-	1.1E-07	8.1E-08	2.2E-10	-	1.1E-07	8.1E-08	2.2E-10	1804	9.2E-07	8.0E-07	2.9E-09

a. Receptor distance greater than 8000 m is indicated by (-); diffusion values given are for 8000 m.

TABLE 2.3.5-12 (SHEET 1 OF 2)

ATMOSPHERIC DISPERSION FACTORS 1980-81

VENT - WAKE SPLIT SEASON – ANNUAL RUN NO. 209-10

ATMOSPHERIC DISPERSION FACTORS FOR VENT- SEASON- REQ-

RUN TYPE - X/Q SEC/M3 — DISTANCE (METERS)

IN DIRECTION SECTOR	SB	2413.5	4022.5	5631.5	7240.5	12067.5	24135.0	40225.0	56315.0	72405.0
N	.905E-07	.634E-07	.378E-07	.262E-07	.209E-07	.122E-07	.530E-08	.308E-08	.208E-08	.154E-08
NNE	.117E-06	.790E-07	.454E-07	.311E-07	.234E-07	.133E-07	.676E-08	.383E-08	.262E-08	.238E-08
NE	.177E-06	.105E-06	.630E-07	.447E-07	.342E-07	.212E-07	.920E-08	.499E-08	.336E-08	.249E-08
ENE	.151E-06	.909E-07	.520E-07	.351E-07	.260E-07	.153E-07	.633E-08	.335E-08	.223E-08	.163E-08
E	.944E-07	.581E-07	.347E-07	.240E-07	.181E-07	.105E-07	.463E-08	.274E-08	.189E-08	.152E-08
ESE	.927E-07	.640E-07	.382E-07	.265E-07	.200E-07	.110E-07	.521E-08	.287E-08	.228E-08	.165E-08
SE	.841E-07	.786E-07	.503E-07	.352E-07	.266E-07	.145E-07	.664E-08	.358E-08	.255E-08	.184E-08
SSE	.883E-07	.689E-07	.439E-07	.313E-07	.239E-07	.134E-07	.580E-08	.348E-08	.235E-08	.172E-08
S	.159E-06	.850E-07	.509E-07	.357E-07	.270E-07	.150E-07	.794E-08	.504E-08	.330E-08	.239E-08
SSW	.206E-06	.853E-07	.514E-07	.362E-07	.275E-07	.178E-07	.878E-08	.499E-08	.351E-08	.257E-08
SW	.252E-06	.990E-07	.589E-07	.417E-07	.332E-07	.246E-07	.119E-07	.704E-08	.467E-08	.345E-08
WSW	.308E-06	.119E-06	.692E-07	.486E-07	.406E-07	.262E-07	.127E-07	.687E-08	.463E-08	.345E-08
W	.185E-06	.961E-07	.563E-07	.397E-07	.303E-07	.174E-07	.120E-07	.625E-08	.416E-08	.308E-08
WNW	.122E-06	.874E-07	.505E-07	.354E-07	.270E-07	.155E-07	.842E-08	.515E-08	.349E-08	.261E-08
NW	.109E-06	.820E-07	.488E-07	.369E-07	.278E-07	.164E-07	.714E-08	.391E-08	.264E-08	.196E-08
NNW	.656E-07	.479E-07	.287E-07	.201E-07	.152E-07	.102E-07	.440E-08	.240E-08	.161E-08	.119E-08

RUN TYPE - DELETED X/Q SEC/M3 — DISTANCE (METERS)

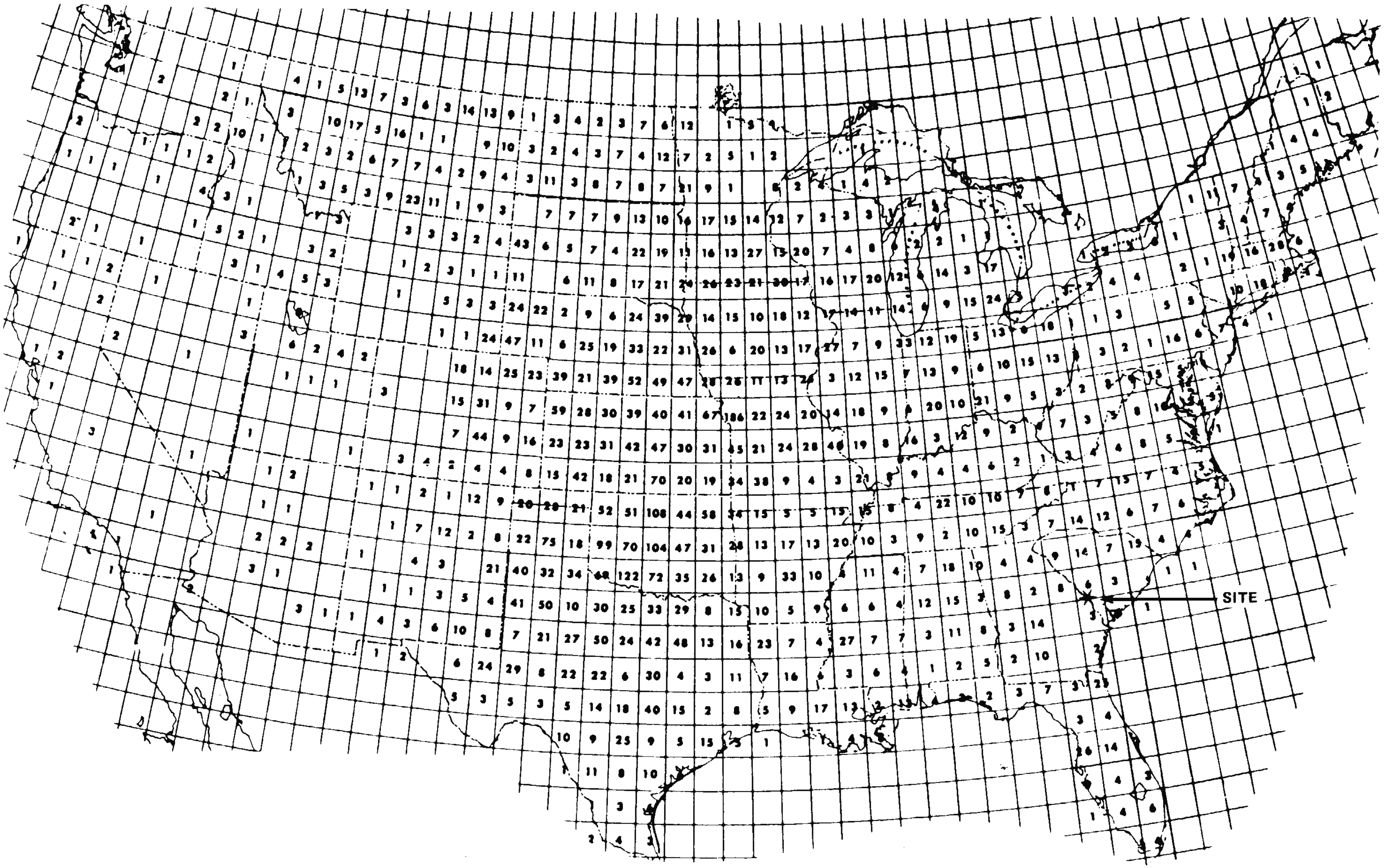
IN DIRECTION SECTOR	SB	2413.5	4022.5	5631.5	7240.5	12067.5	24135.0	40225.0	56315.0	72405.0
N	.811E-07	.565E-07	.334E-07	.229E-07	.184E-07	.107E-07	.453E-08	.257E-08	.171E-08	.123E-08
NNE	.105E-06	.702E-07	.398E-07	.269E-07	.202E-07	.114E-07	.578E-08	.323E-08	.218E-08	.162E-08
NE	.162E-06	.953E-07	.567E-07	.400E-07	.306E-07	.188E-07	.778E-08	.397E-08	.255E-08	.181E-08
ENE	.138E-06	.823E-07	.465E-07	.310E-07	.230E-07	.133E-07	.526E-08	.264E-08	.169E-08	.119E-08
E	.856E-07	.523E-07	.310E-07	.212E-07	.160E-07	.927E-08	.400E-08	.230E-08	.152E-08	.102E-08
ESE	.841E-07	.578E-07	.342E-07	.235E-07	.177E-07	.964E-08	.445E-08	.227E-08	.115E-08	.765E-09
SE	.762E-07	.712E-07	.456E-07	.317E-07	.239E-07	.129E-07	.552E-08	.265E-08	.128E-08	.852E-09
SSE	.795E-07	.622E-07	.396E-07	.281E-07	.215E-07	.120E-07	.511E-08	.294E-08	.187E-08	.132E-08
S	.142E-06	.750E-07	.446E-07	.310E-07	.235E-07	.129E-07	.668E-08	.295E-08	.166E-08	.111E-08
SSW	.186E-06	.753E-07	.450E-07	.314E-07	.239E-07	.156E-07	.724E-08	.338E-08	.182E-08	.119E-08
SW	.227E-06	.869E-07	.512E-07	.358E-07	.287E-07	.216E-07	.977E-08	.472E-08	.281E-08	.189E-08
WSW	.277E-06	.104E-06	.598E-07	.414E-07	.351E-07	.227E-07	.105E-07	.535E-08	.345E-08	.246E-08
W	.166E-06	.846E-07	.488E-07	.339E-07	.259E-07	.147E-07	.929E-08	.422E-08	.252E-08	.170E-08
WNW	.108E-06	.765E-07	.435E-07	.300E-07	.229E-07	.130E-07	.708E-08	.403E-08	.261E-08	.186E-08
NW	.964E-07	.720E-07	.424E-07	.320E-07	.241E-07	.141E-07	.601E-08	.320E-08	.212E-08	.153E-08
NNW	.585E-07	.425E-07	.252E-07	.175E-07	.133E-07	.896E-08	.378E-08	.200E-08	.132E-08	.951E-09

TABLE 2.3.5-12 (SHEET 2 OF 2)

ATMOSPHERIC DISPERSION FACTORS FOR VENT- SEASON- REQ-

RUN TYPE - DEPOSITION D/Q M-2

IN DIRECTION SECTOR	DISTANCE (METERS) SB	2413.5	4022.5	5631.5	7240.5	12067.5	24135.0	40225.0	56315.0	72405.0
N	.118E-08	.690E-09	.311E-09	.181E-09	.118E-09	.530E-10	.164E-10	.729E-11	.456E-11	.335E-11
NNE	.146E-08	.840E-09	.375E-09	.216E-09	.138E-09	.617E-10	.190E-10	.830E-11	.507E-11	.497E-11
NE	.233E-08	.106E-08	.461E-09	.262E-09	.165E-09	.758E-10	.247E-10	.118E-10	.735E-11	.526E-11
ENE	.194E-08	.891E-09	.390E-09	.222E-09	.140E-09	.625E-10	.194E-10	.900E-11	.563E-11	.409E-11
E	.118E-08	.562E-09	.253E-09	.147E-09	.933E-10	.419E-10	.128E-10	.570E-11	.374E-11	.345E-11
ESE	.986E-09	.555E-09	.248E-09	.143E-09	.907E-10	.404E-10	.124E-10	.614E-11	.564E-11	.356E-11
SE	.581E-09	.522E-09	.233E-09	.134E-09	.843E-10	.375E-10	.116E-10	.946E-11	.614E-11	.388E-11
SSE	.608E-09	.401E-09	.184E-09	.107E-09	.675E-10	.300E-10	.901E-11	.425E-11	.315E-11	.251E-11
S	.132E-08	.541E-09	.244E-09	.141E-09	.885E-10	.393E-10	.141E-10	.148E-10	.726E-11	.458E-11
SSW	.171E-08	.533E-09	.240E-09	.139E-09	.877E-10	.398E-10	.140E-10	.186E-10	.736E-11	.452E-11
SW	.190E-08	.584E-09	.260E-09	.150E-09	.960E-10	.442E-10	.201E-10	.233E-10	.119E-10	.726E-11
WSW	.319E-08	.959E-09	.421E-09	.243E-09	.157E-09	.705E-10	.232E-10	.116E-10	.781E-11	.602E-11
W	.376E-08	.149E-08	.636E-09	.364E-09	.235E-09	.106E-09	.656E-10	.303E-10	.167E-10	.109E-10
WNW	.179E-08	.112E-08	.476E-09	.272E-09	.175E-09	.780E-10	.260E-10	.129E-10	.850E-11	.637E-11
NW	.141E-08	.934E-09	.402E-09	.232E-09	.148E-09	.661E-10	.211E-10	.951E-11	.598E-11	.441E-11
NNW	.900E-09	.550E-09	.239E-09	.138E-09	.885E-10	.403E-10	.128E-10	.583E-11	.370E-11	.274E-11



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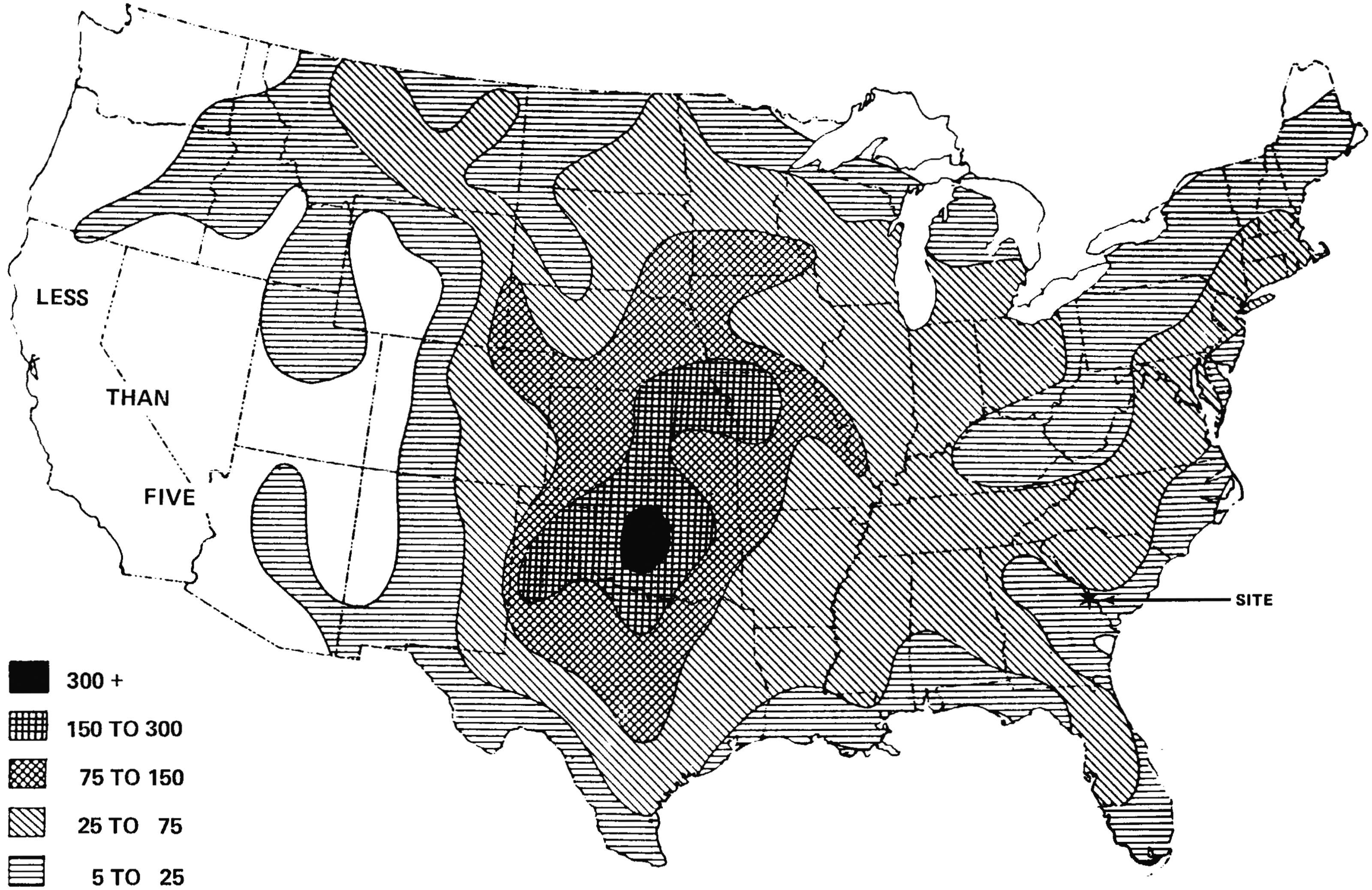
SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOTAL NUMBER OF HAIL REPORTS
3/4 in. AND GREATER
BY 1° SQUARES 1955 TO 1967

FIGURE 2.3.1–1



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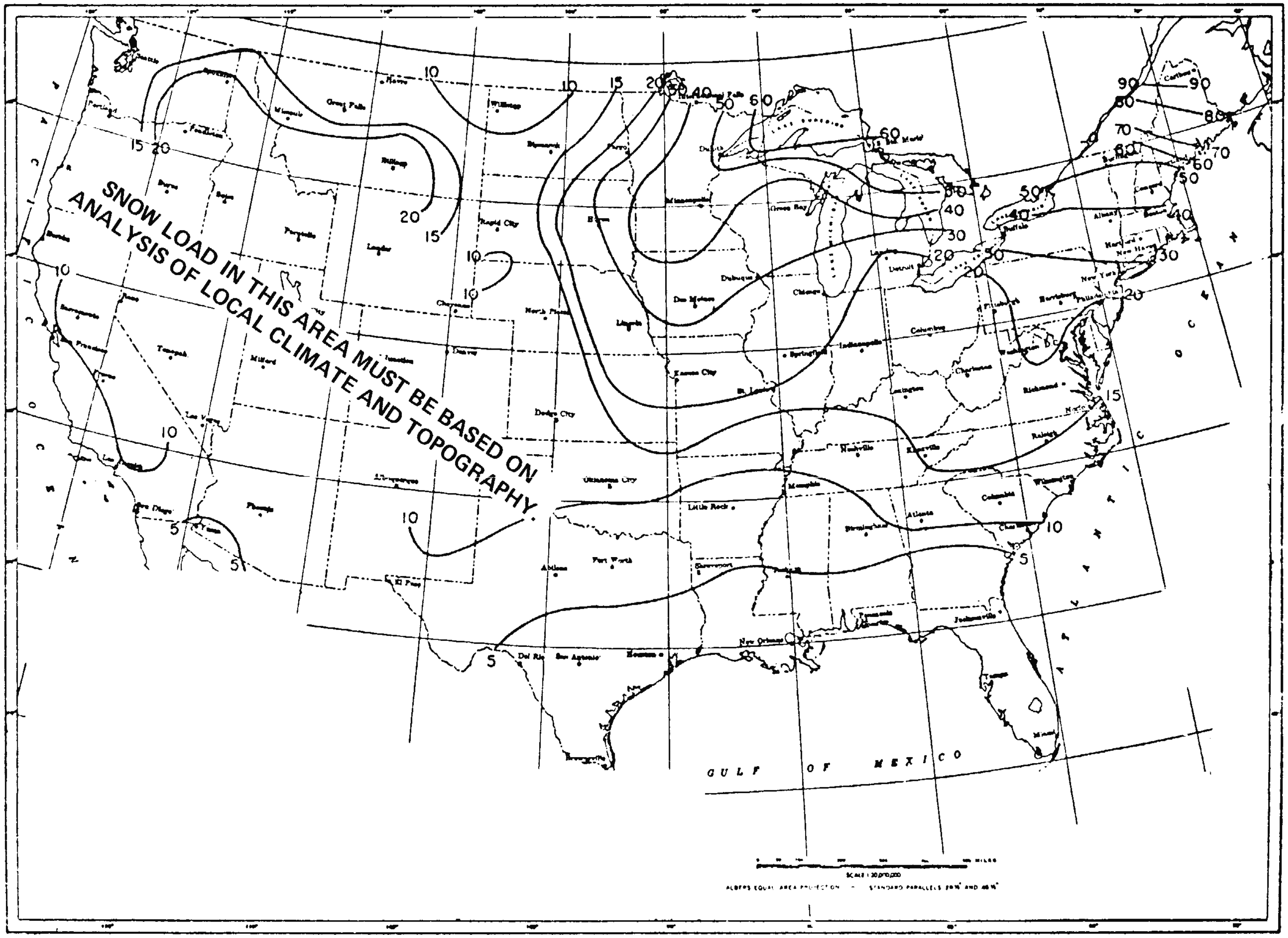
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOTAL NUMBER OF HAIL REPORTS
3/4 in. AND GREATER
BY 2° SQUARES 1955 TO 1967

FIGURE 2.3.1–2



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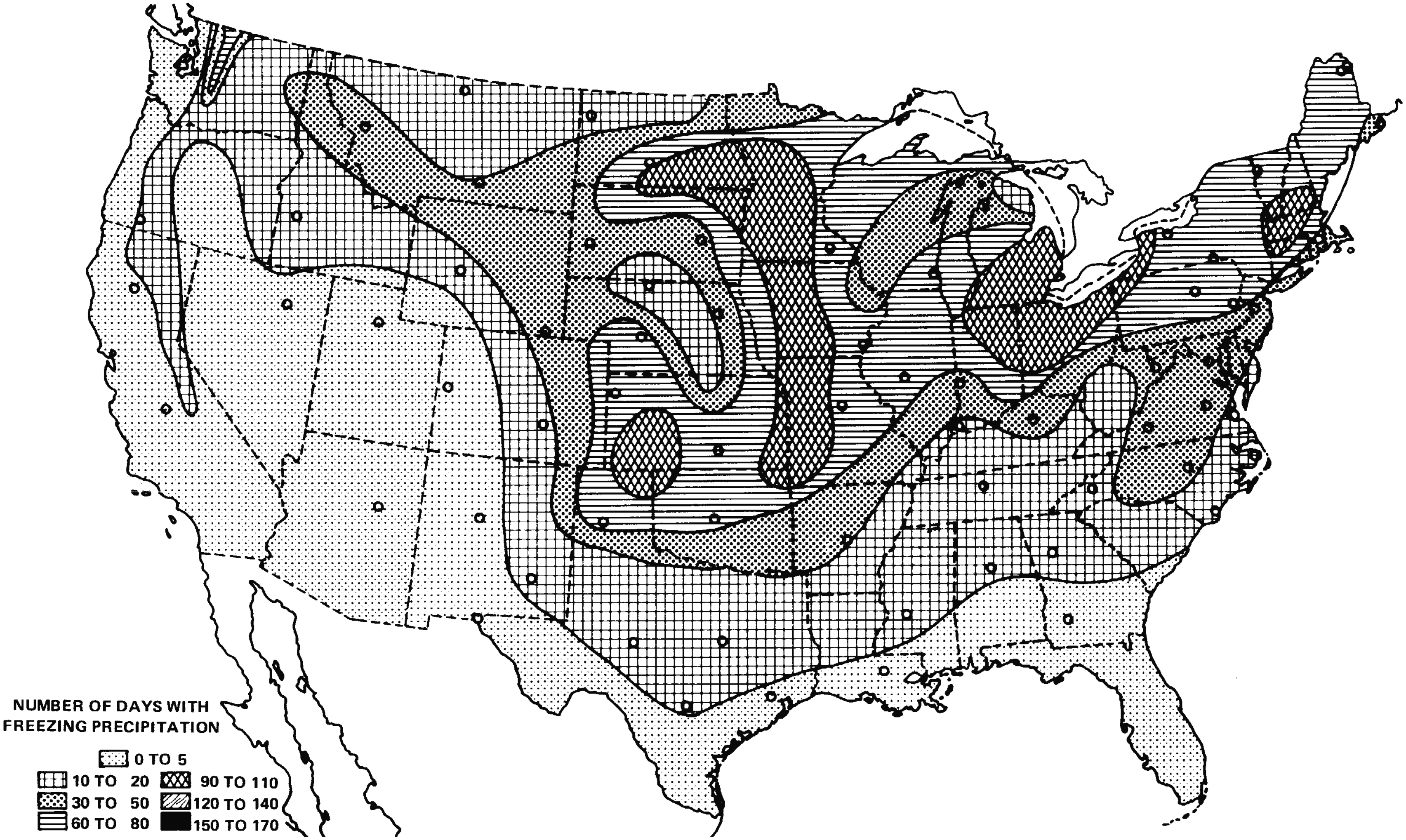
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

SNOW LOAD IN lb/ft^2 ON THE GROUND
100–YEAR MEAN RECURRENCE INTERVAL

FIGURE 2.3.1–3



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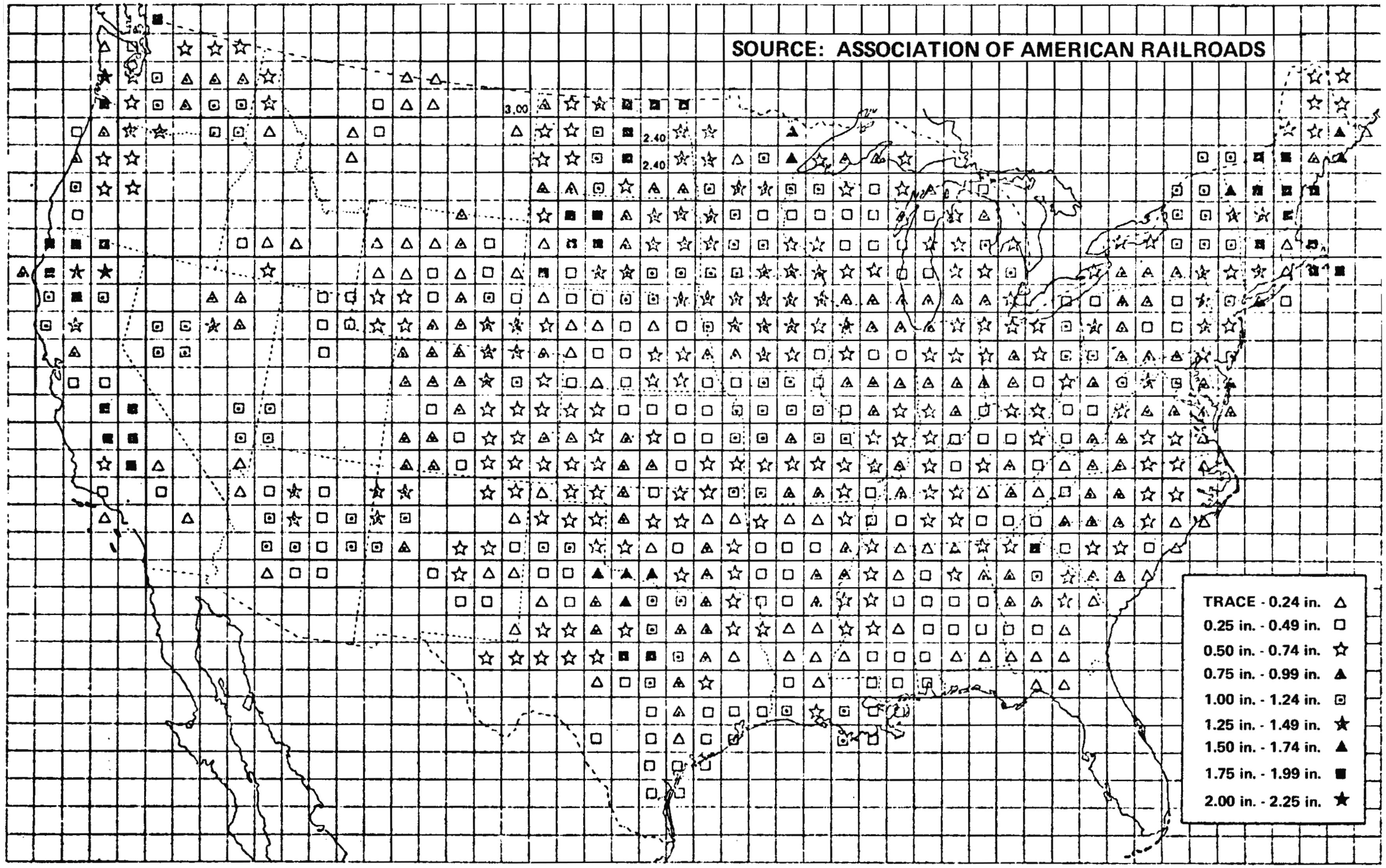
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOTAL NUMBER DAYS WITH
FREEZING PRECIPITATION 1939 TO 1948

FIGURE 2.3.1–4



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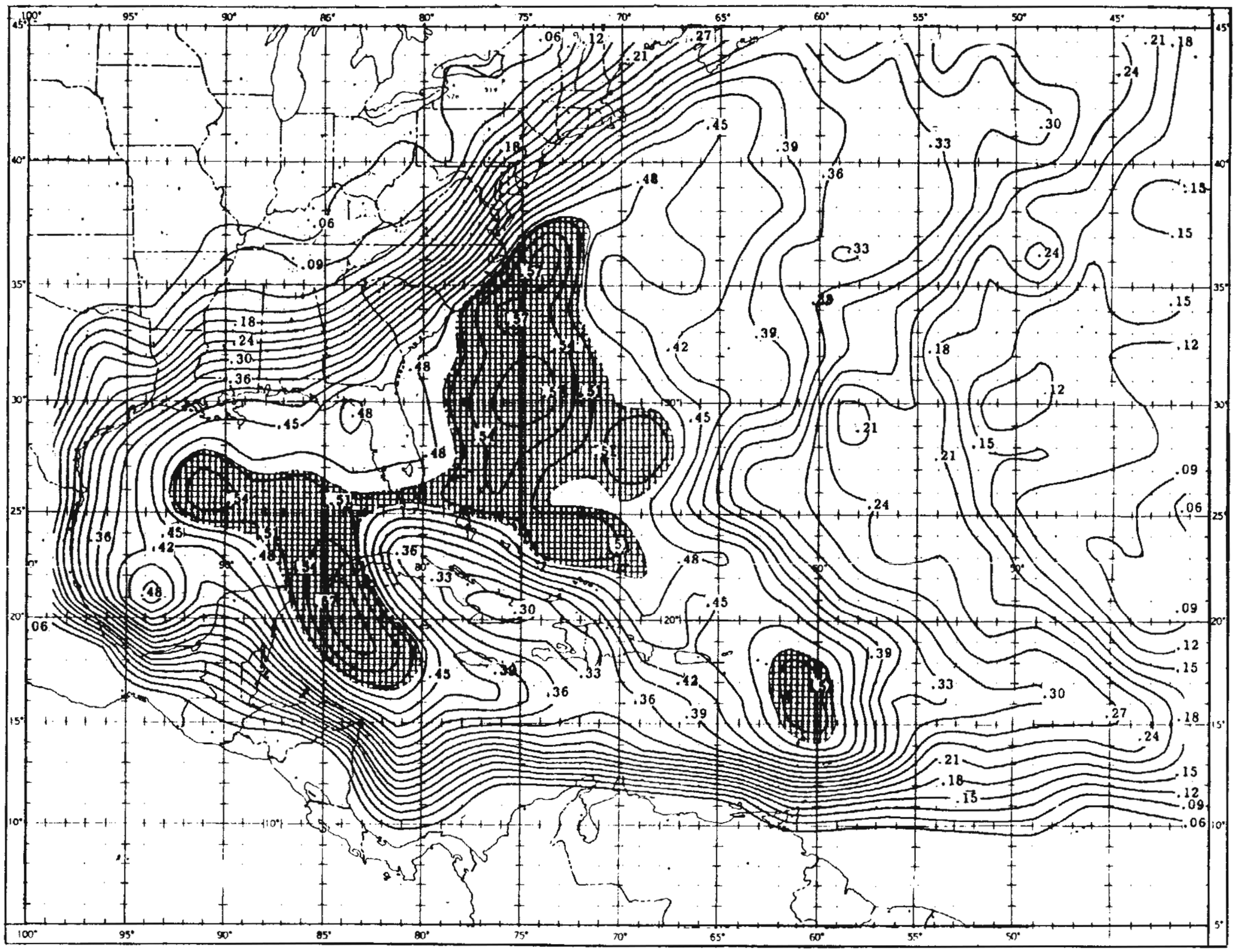
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

EXTREME RADIAL THICKNESS OF GLAZE
ON UTILITY WIRES 1928–29 TO 1936–37

FIGURE 2.3.1–5



PROBABILITY OF AT LEAST ONE TROPICAL STORM OR HURRICANE PER SEASON ENTERING UNIT 2½° LATITUDE-LONGITUDE BOXES. THE SHADED AREAS DELINEATE REGIONS WHERE THIS PROBABILITY EXCEEDS 0.50.

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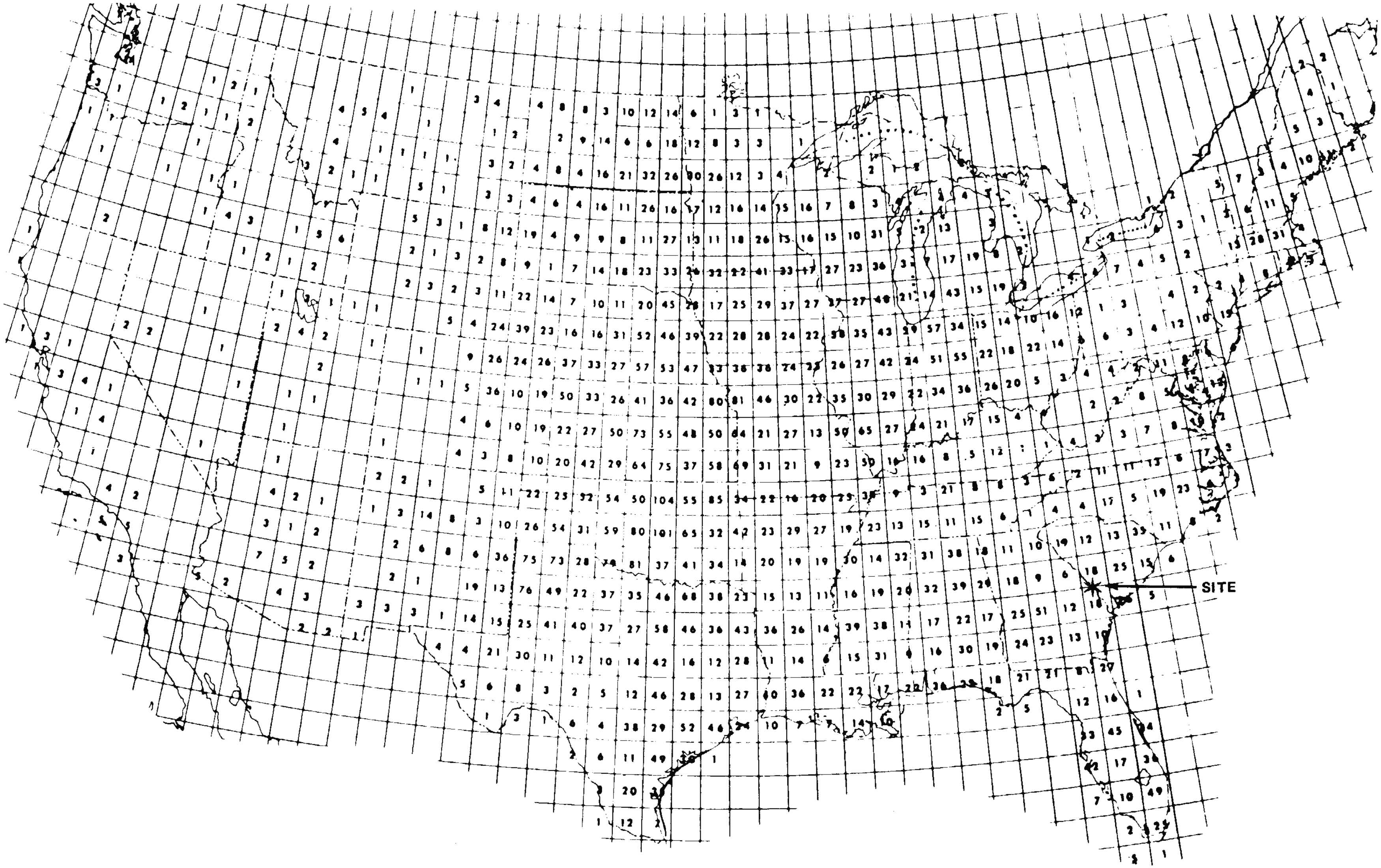
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TROPICAL STORM AND
HURRICANE PROBABILITY

FIGURE 2.3.1–6



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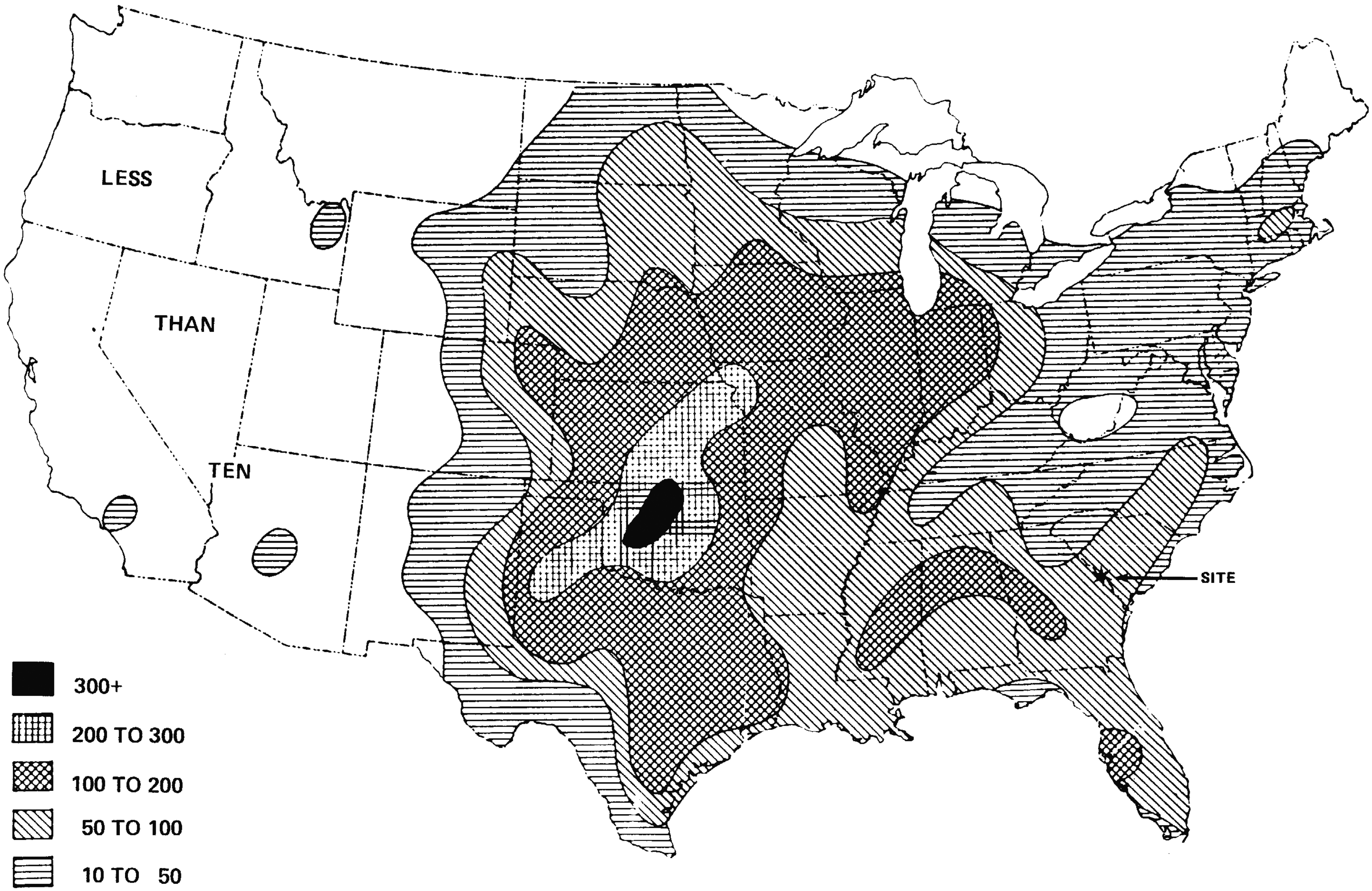
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOTAL TORNADOES BY 1°SQUARES
1955 TO 1967

FIGURE 2.3.1–7



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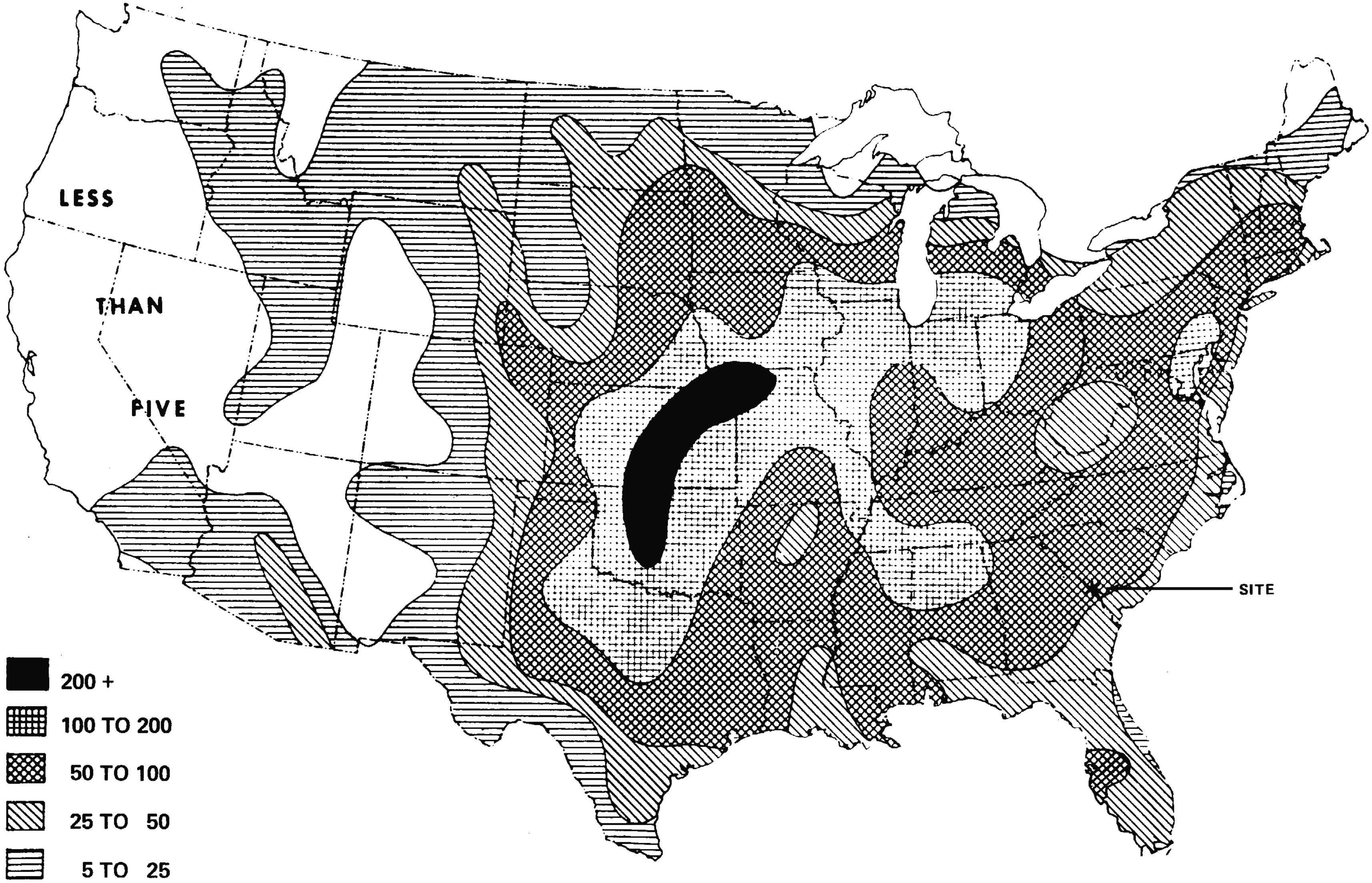
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOTAL TORNADOES BY 2° SQUARES
1955 TO 1967

FIGURE 2.3.1–8



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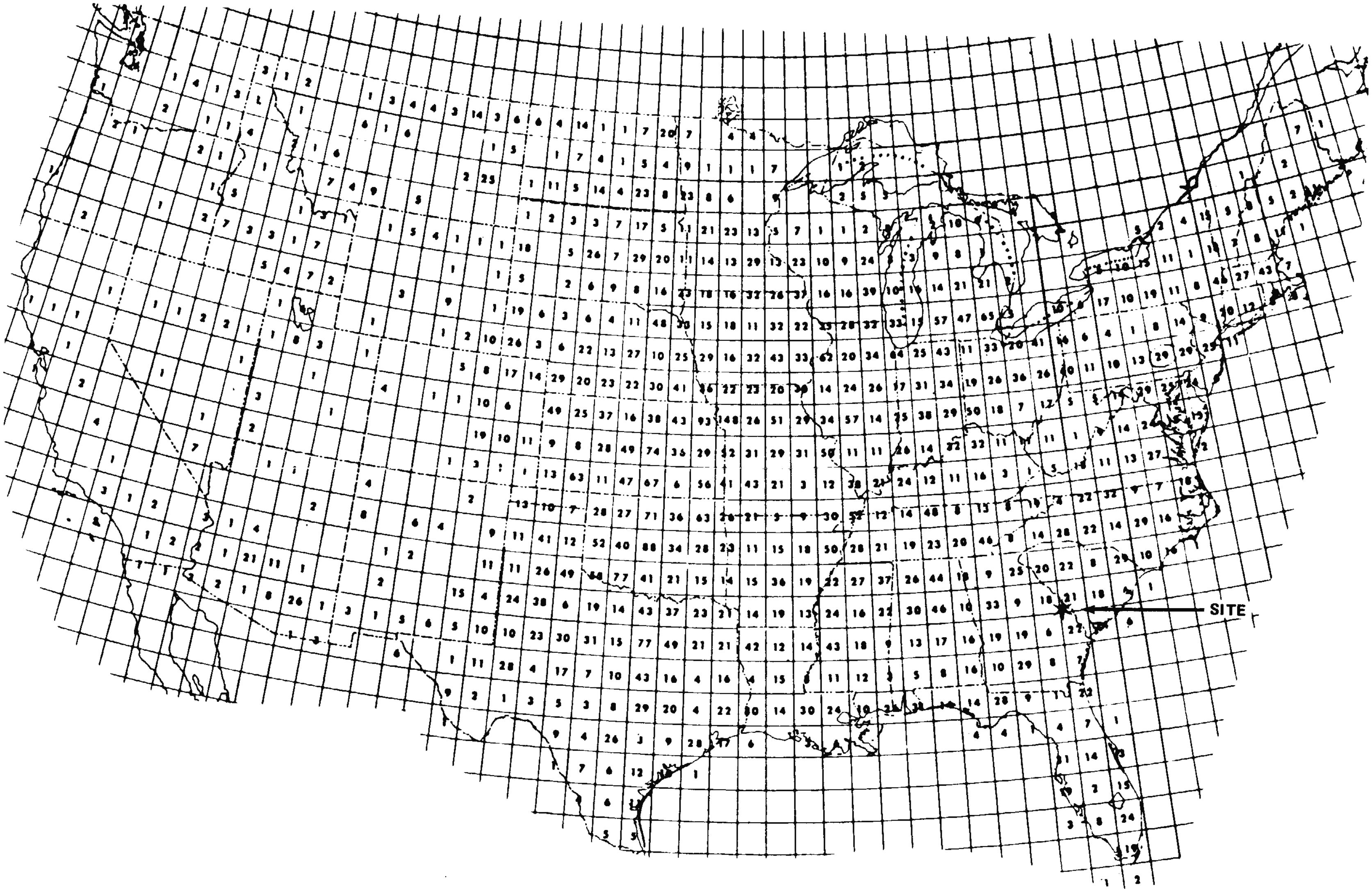
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

SOUTHERN COMPANY
Energy to Serve Your World®

TOTAL WINDSTORMS
50 KNOTS AND GREATER
BY 2° SQUARES 1955 TO 1967

FIGURE 2.3.1–9



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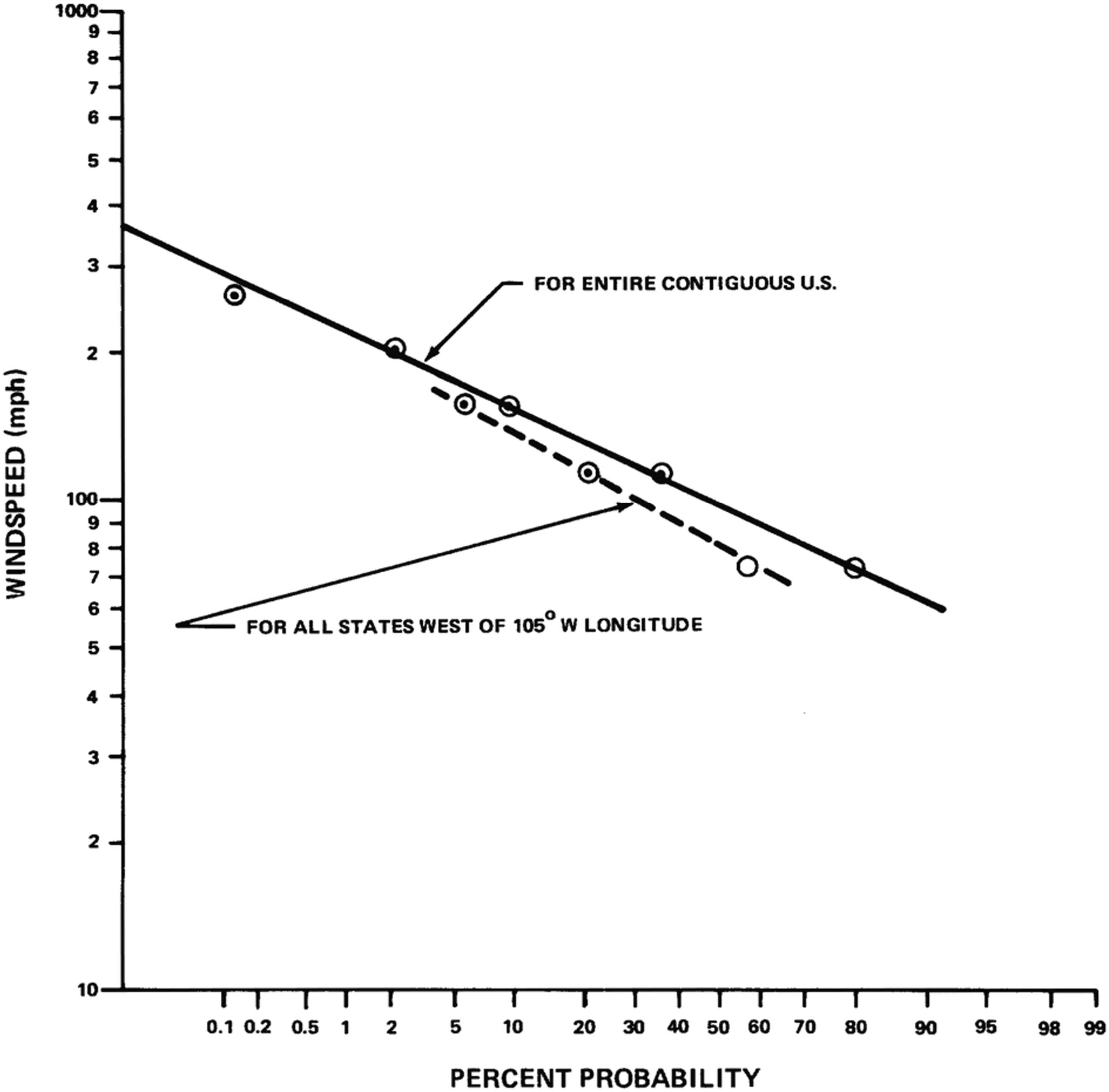
SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOTAL WINDSTORMS
50 KNOTS AND GREATER
BY 1° SQUARES 1955 TO 1967

FIGURE 2.3.1–10



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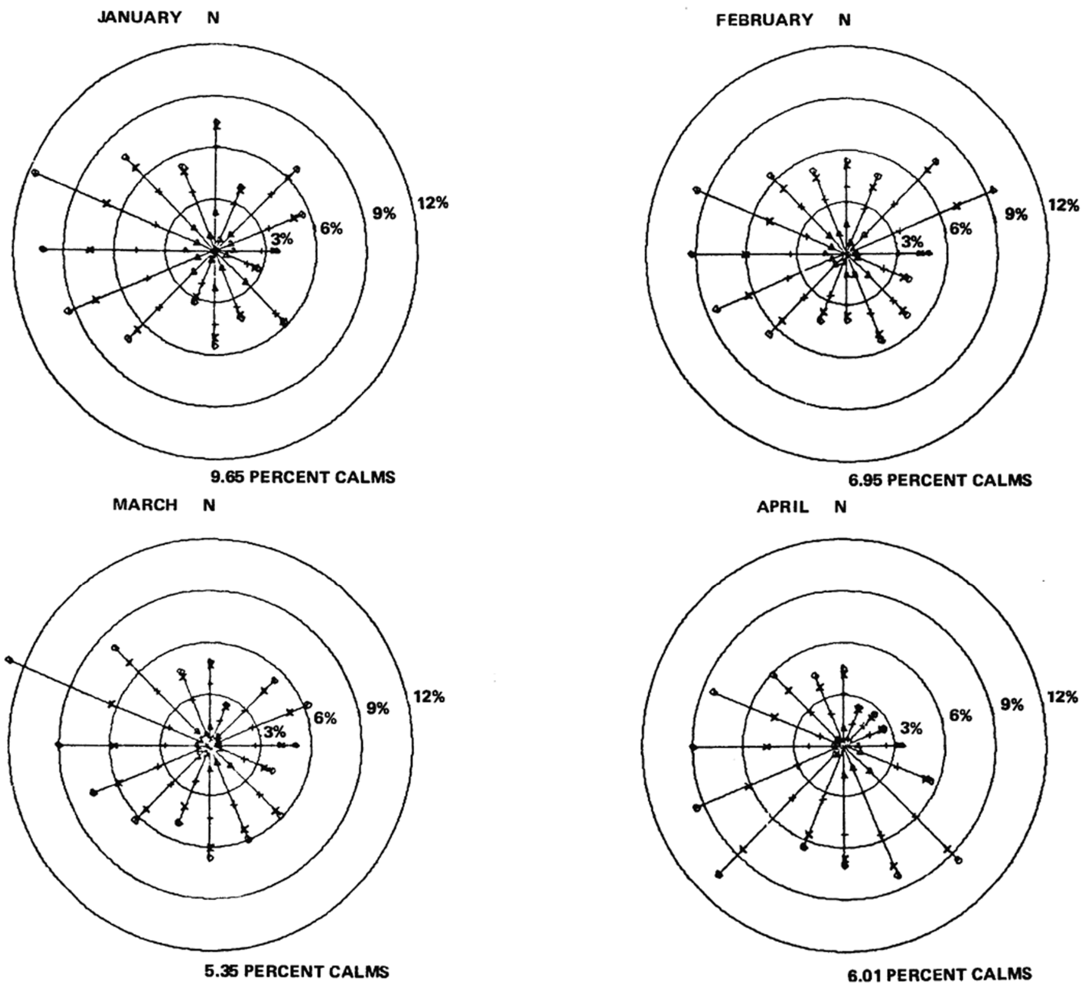
SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	TORNADO WIND GROUPS FIGURE 2.3.1–11



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.

   W 12% 9% 6% 3%

   THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH (INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)), 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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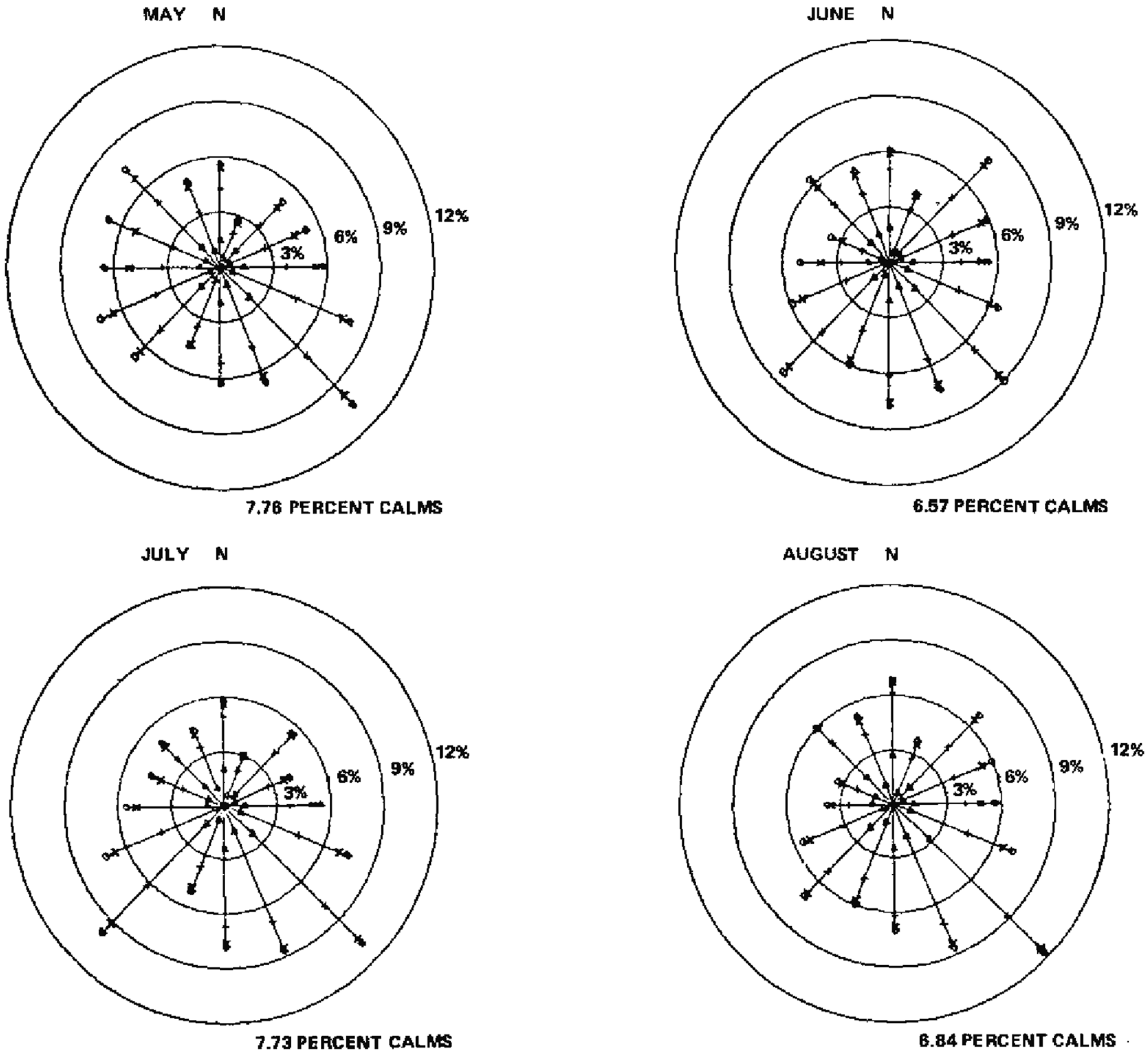
SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

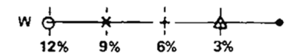
MONTHLY WIND ROSES FROM
AUGUSTA AIRPORT (1959 TO 1963)

FIGURE 2.3.2–1 (SHEET 1 OF 3)



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH (INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)), 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph

△ WIND SPEED LESS THAN 3.5 mph

\+ WIND SPEED LESS THAN 7.5 mph

X WIND SPEED LESS THAN 12.5 mph

O WIND SPEED LESS THAN 999.0 mph

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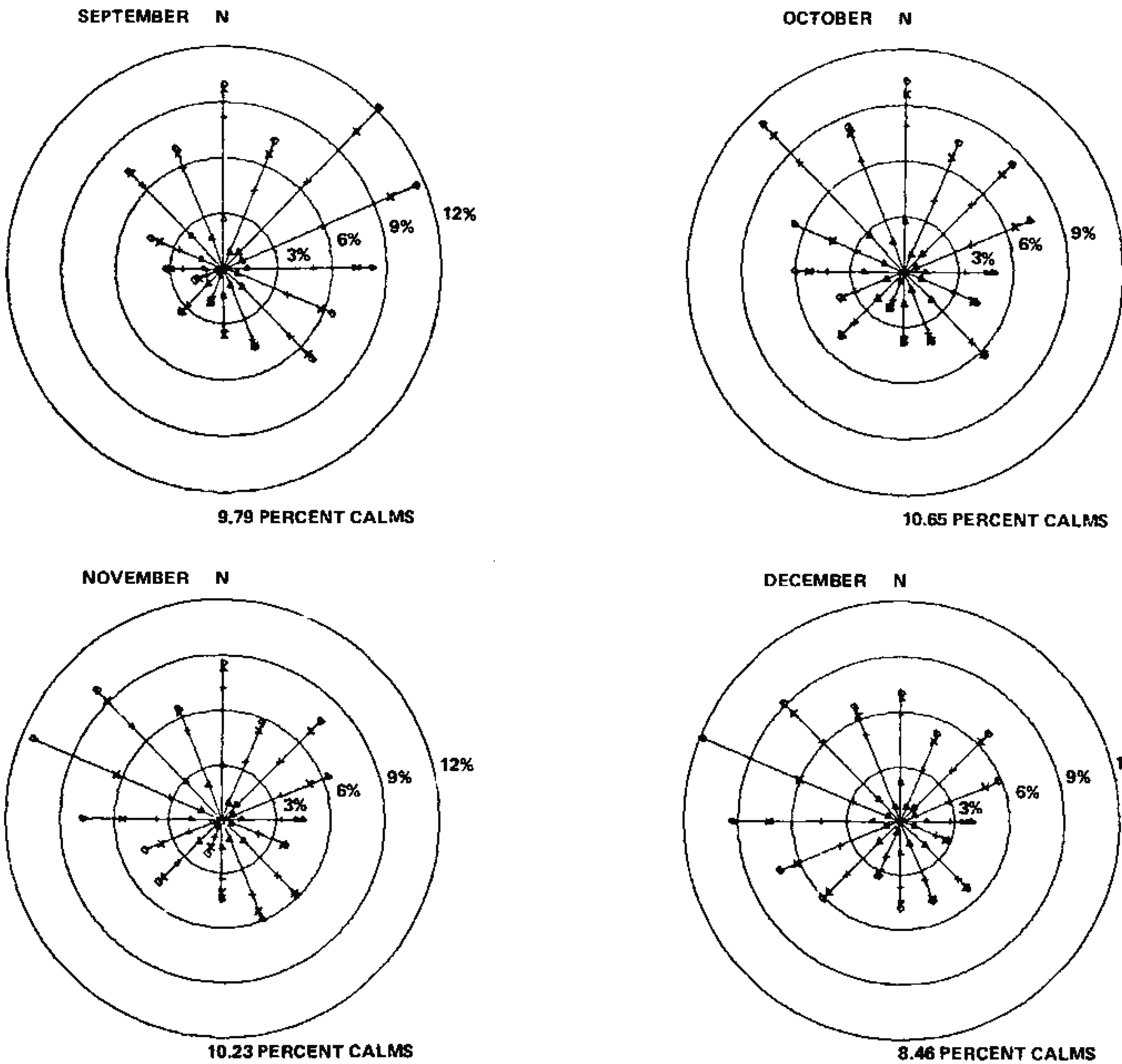
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

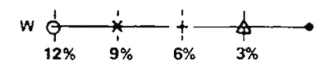
MONTHLY WIND ROSES FROM AUGUSTA AIRPORT (1959 TO 1963)

FIGURE 2.3.2–1 (SHEET 2 OF 3)



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



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CALMS - WIND SPEEDS LESS THAN 0.5 mph

△ WIND SPEED LESS THAN 3.5 mph

\+ WIND SPEED LESS THAN 7.5 mph

X WIND SPEED LESS THAN 12.5 mph

O WIND SPEED LESS THAN 999.0 mph

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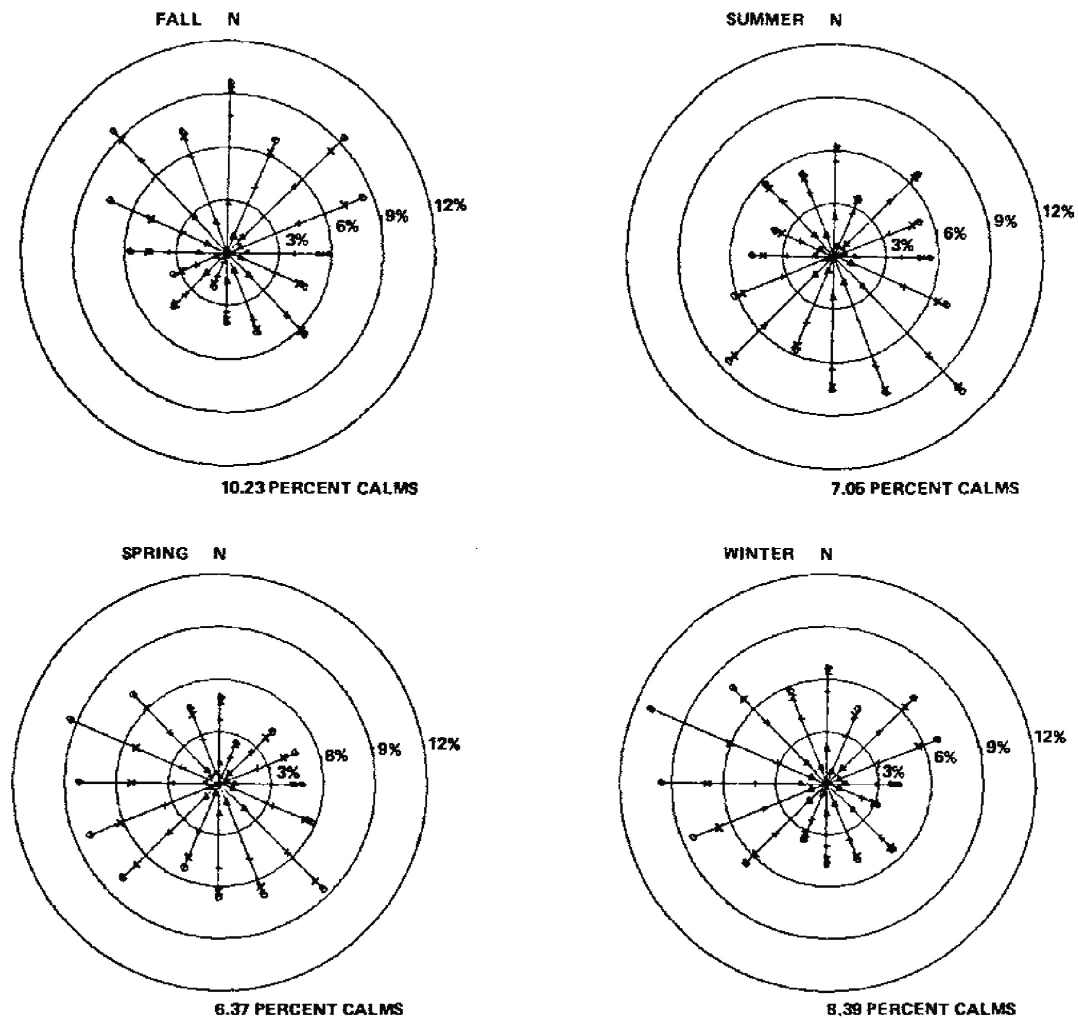
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

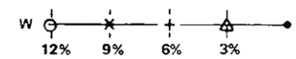
MONTHLY WIND ROSES FROM
AUGUSTA AIRPORT (1959 TO 1963)

FIGURE 2.3.2–1 (SHEET 3 OF 3)



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE. FOR EXAMPLE.



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△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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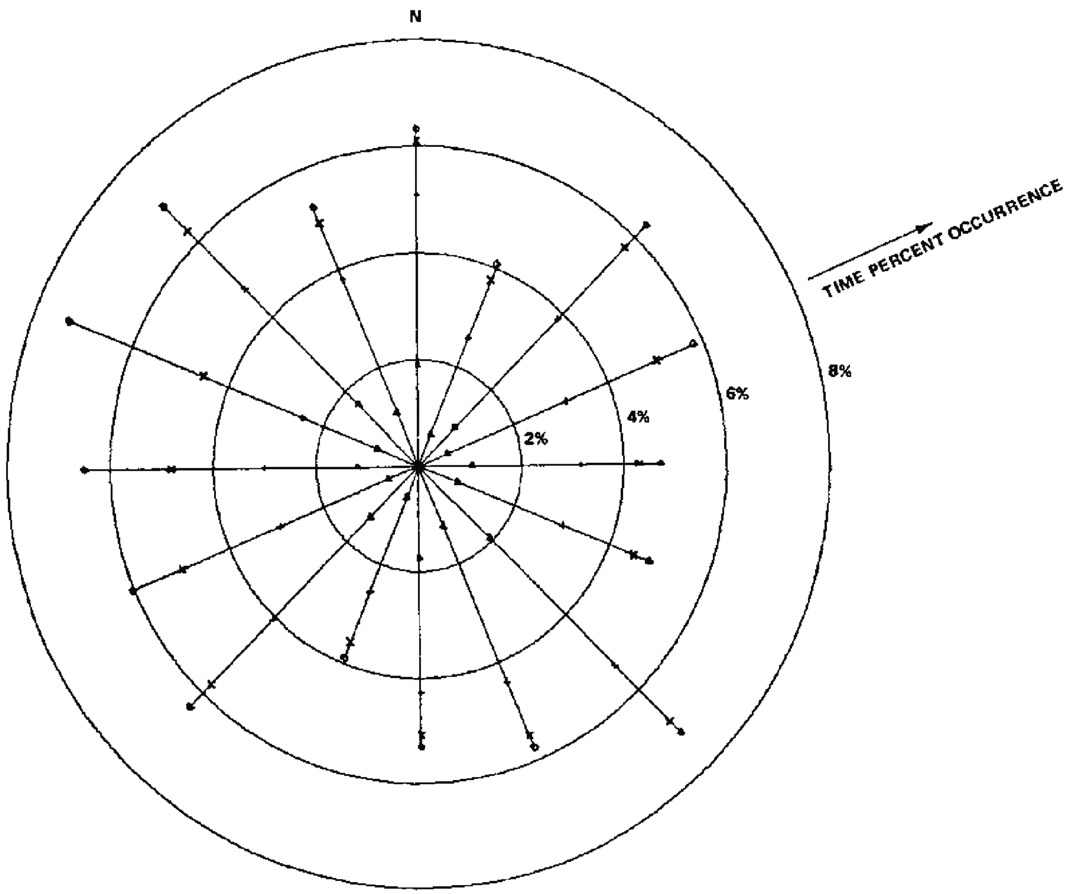
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

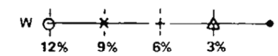
SEASONAL WIND ROSES FOR
AUGUSTA AIRPORT (1959 TO 1963)

FIGURE 2.3.2–2



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



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△ WIND SPEED LESS THAN 3.5 mph
\+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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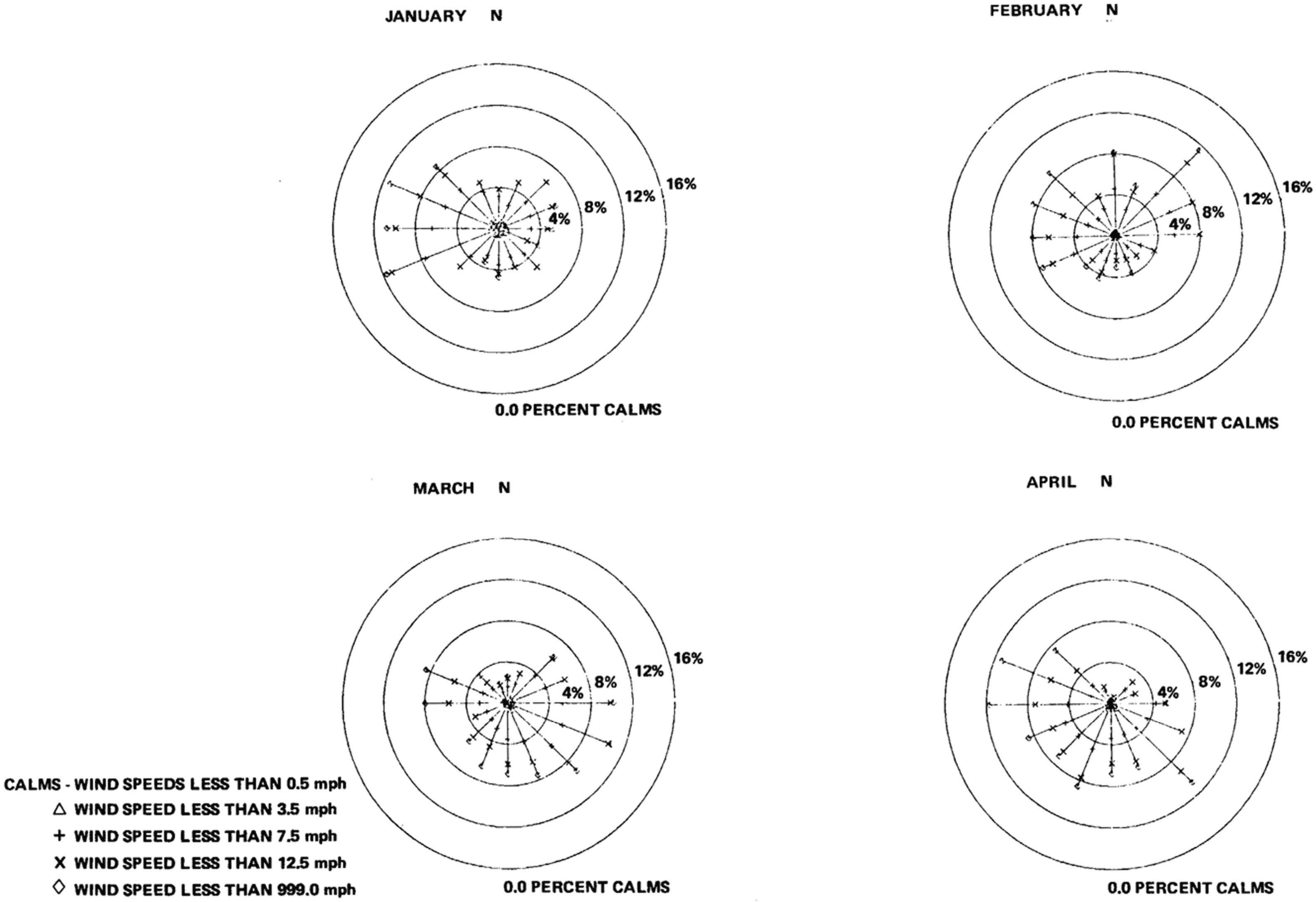
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

ANNUAL WIND ROSE FOR AUGUSTA AIRPORT 1959 TO 1963

FIGURE 2.3.2–3



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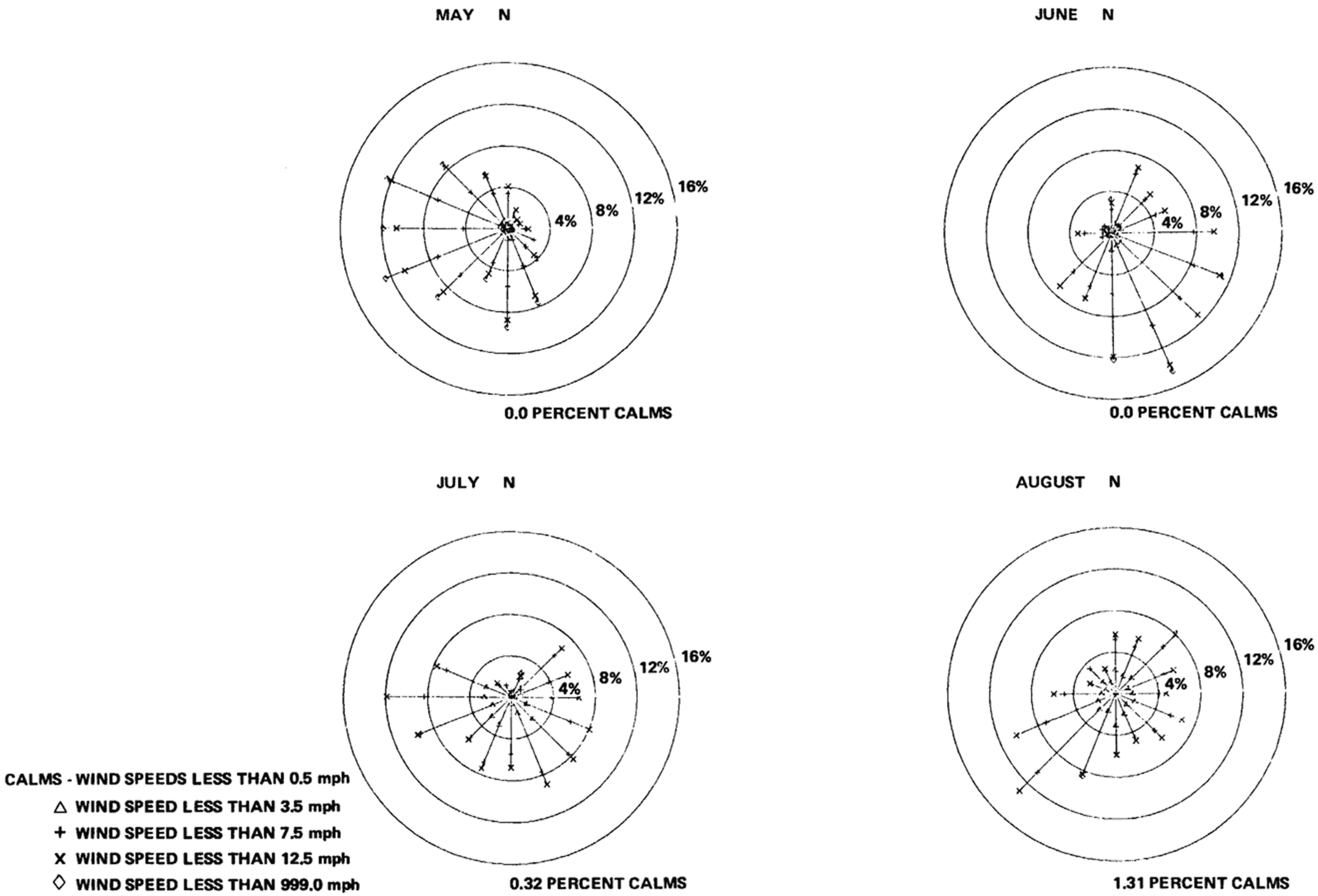
SOUTHERN COMPANY *Energy to Serve Your World®* VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	33–FT LEVEL MONTHLY WIND ROSE 1972 TO 1973 VEGP SITE DATA
	FIGURE 2.3.2–4 (SHEET 1 OF 3)



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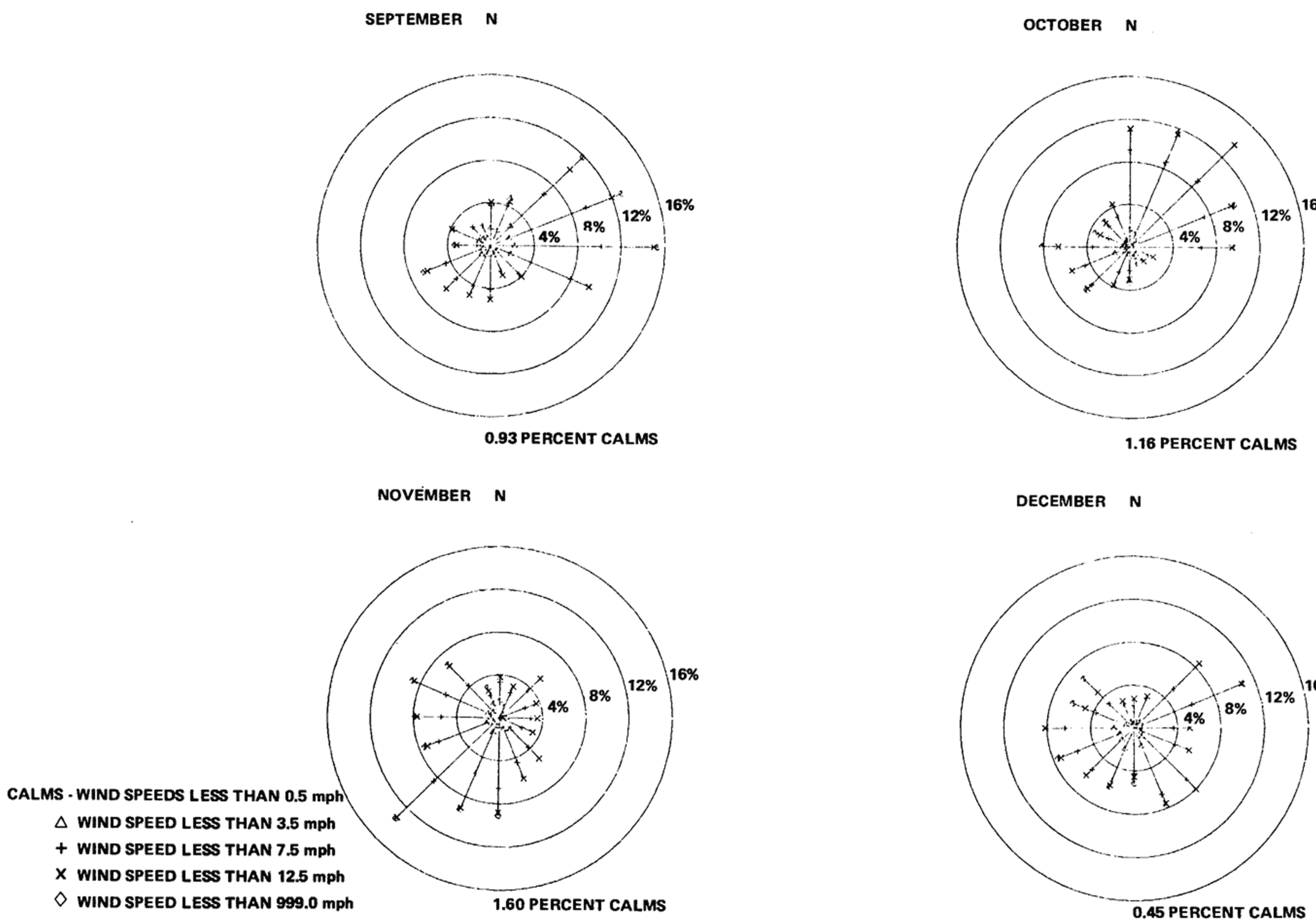
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–4 (SHEET 2 OF 3)



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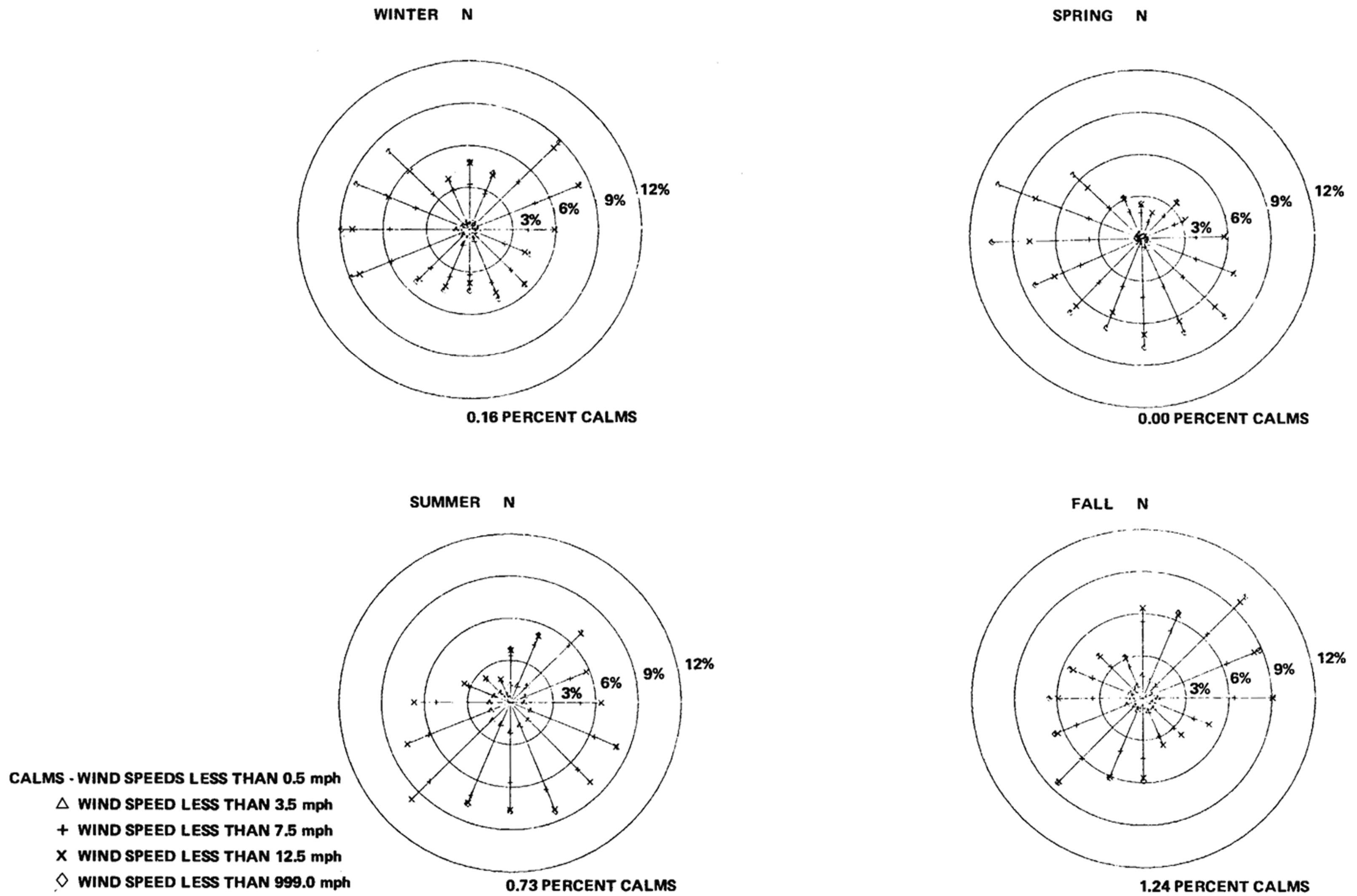
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–4 (SHEET 3 OF 3)



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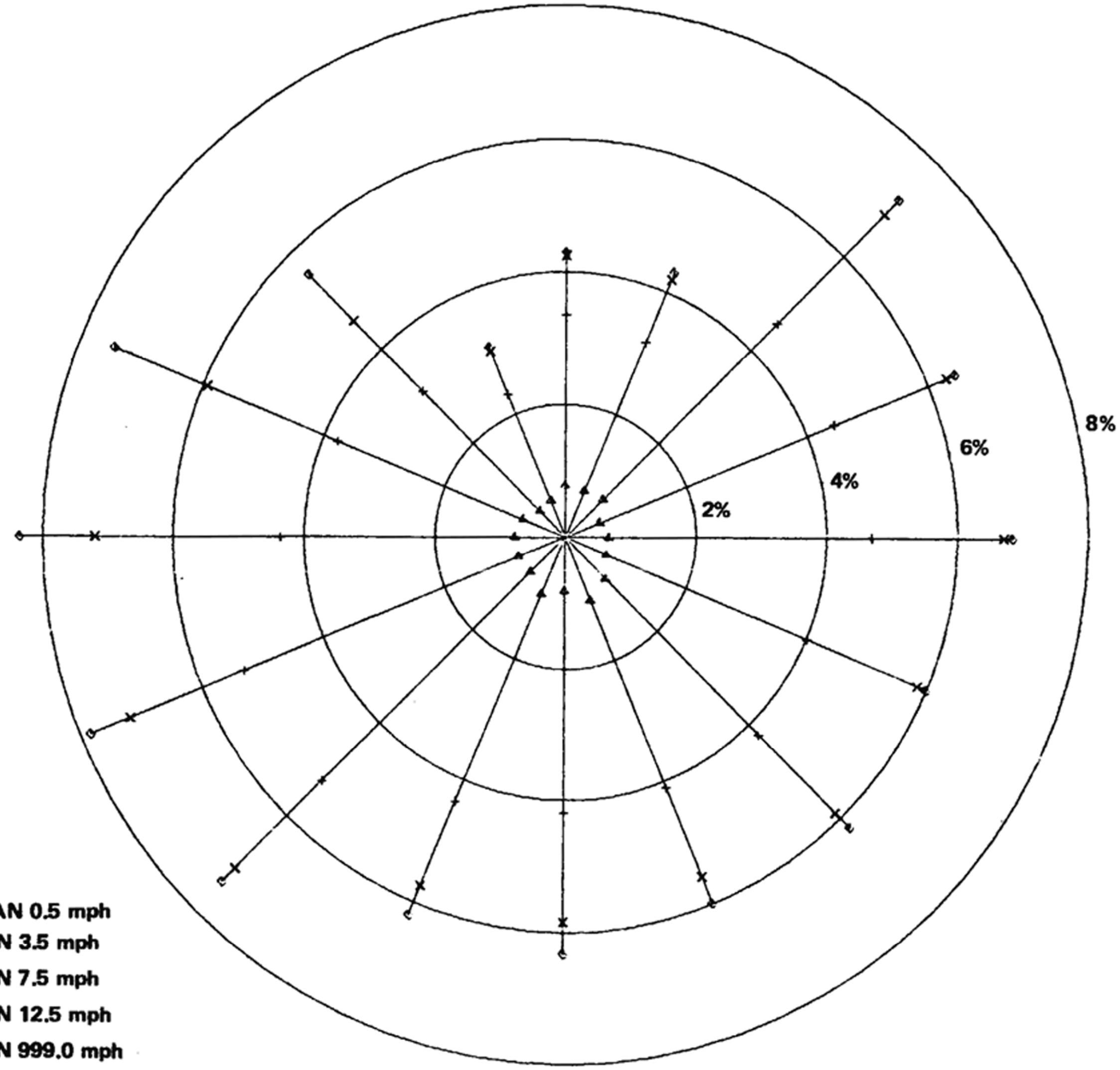
UNIT 1 AND UNIT 2

33–FT LEVEL SEASONAL WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–5



CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
◇ WIND SPEED LESS THAN 999.0 mph

0.49 PERCENT CALMS

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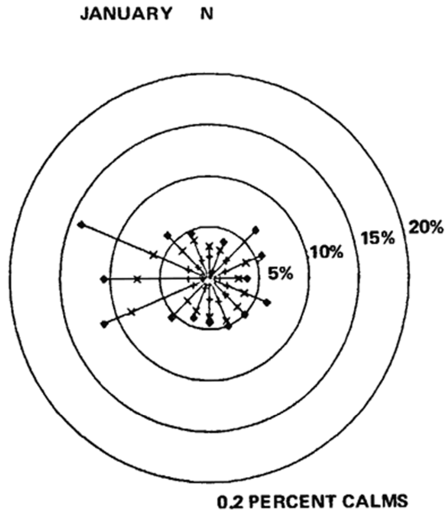
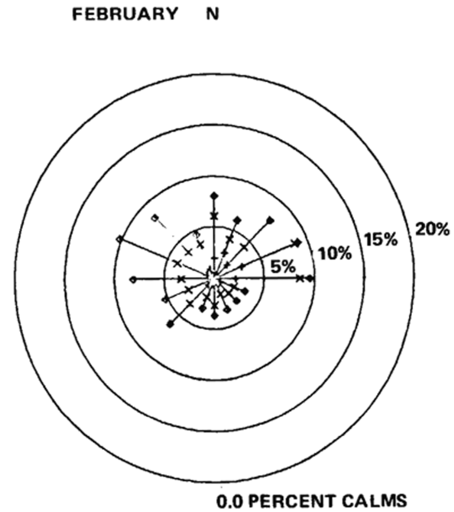
Energy to Serve Your World®

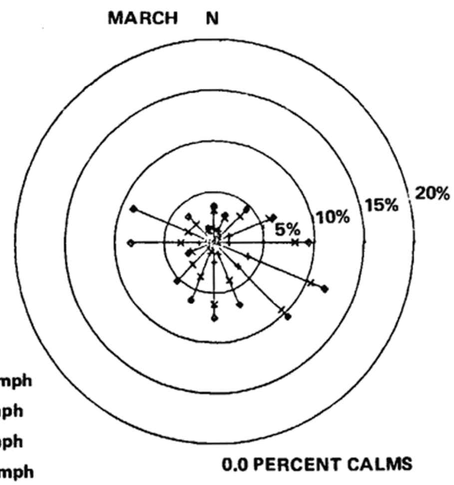
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

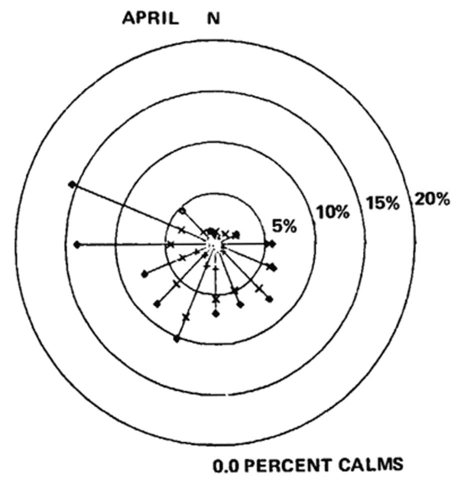
33–FT LEVEL ANNUAL WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–6









CALMS - WIND SPEEDS LESS THAN 0.5 mph
- △ WIND SPEED LESS THAN 3.5 mph
- + WIND SPEED LESS THAN 7.5 mph
- X WIND SPEED LESS THAN 12.5 mph
- ◇ WIND SPEED LESS THAN 999.0 mph

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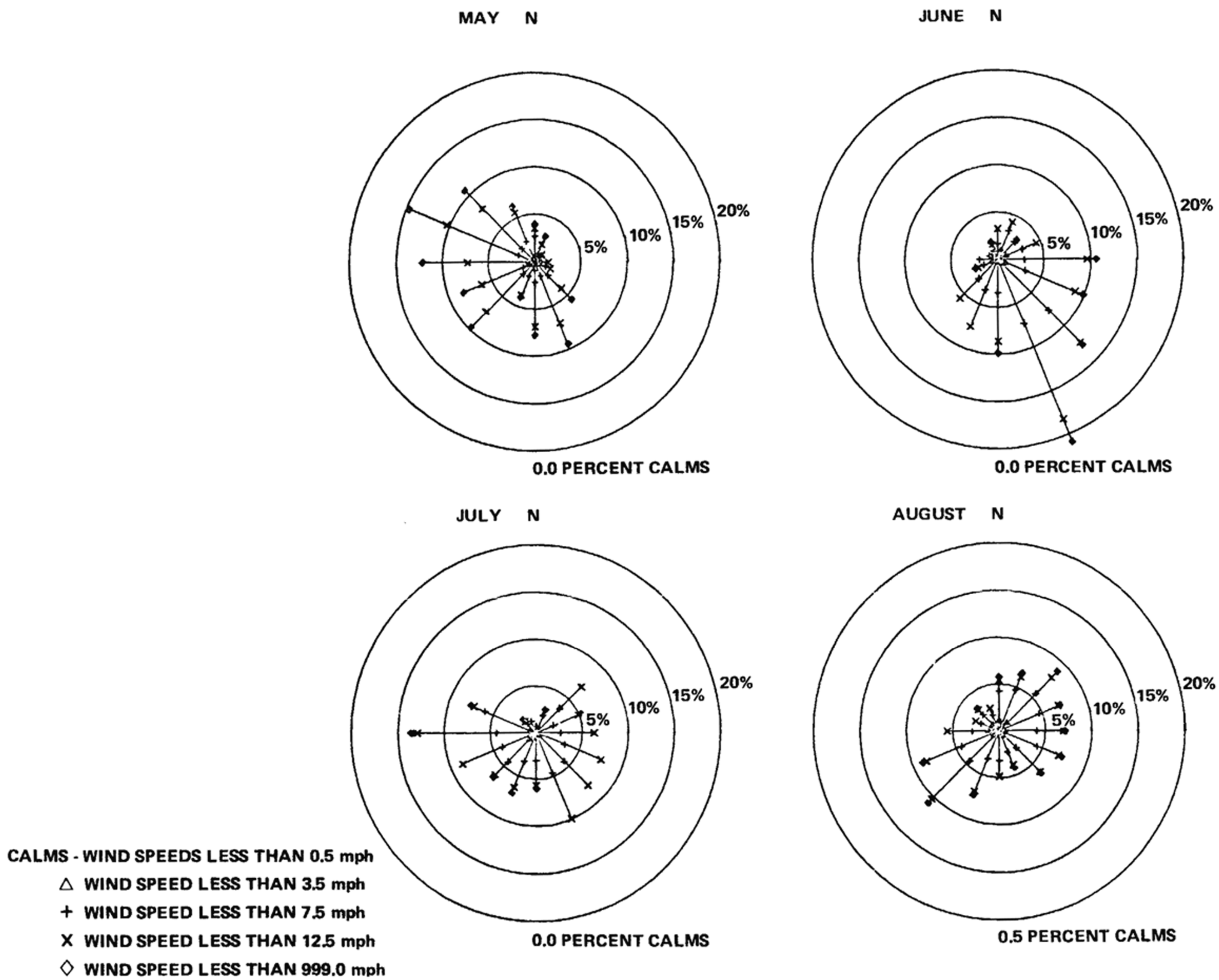
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–7 (SHEET 1 OF 3)



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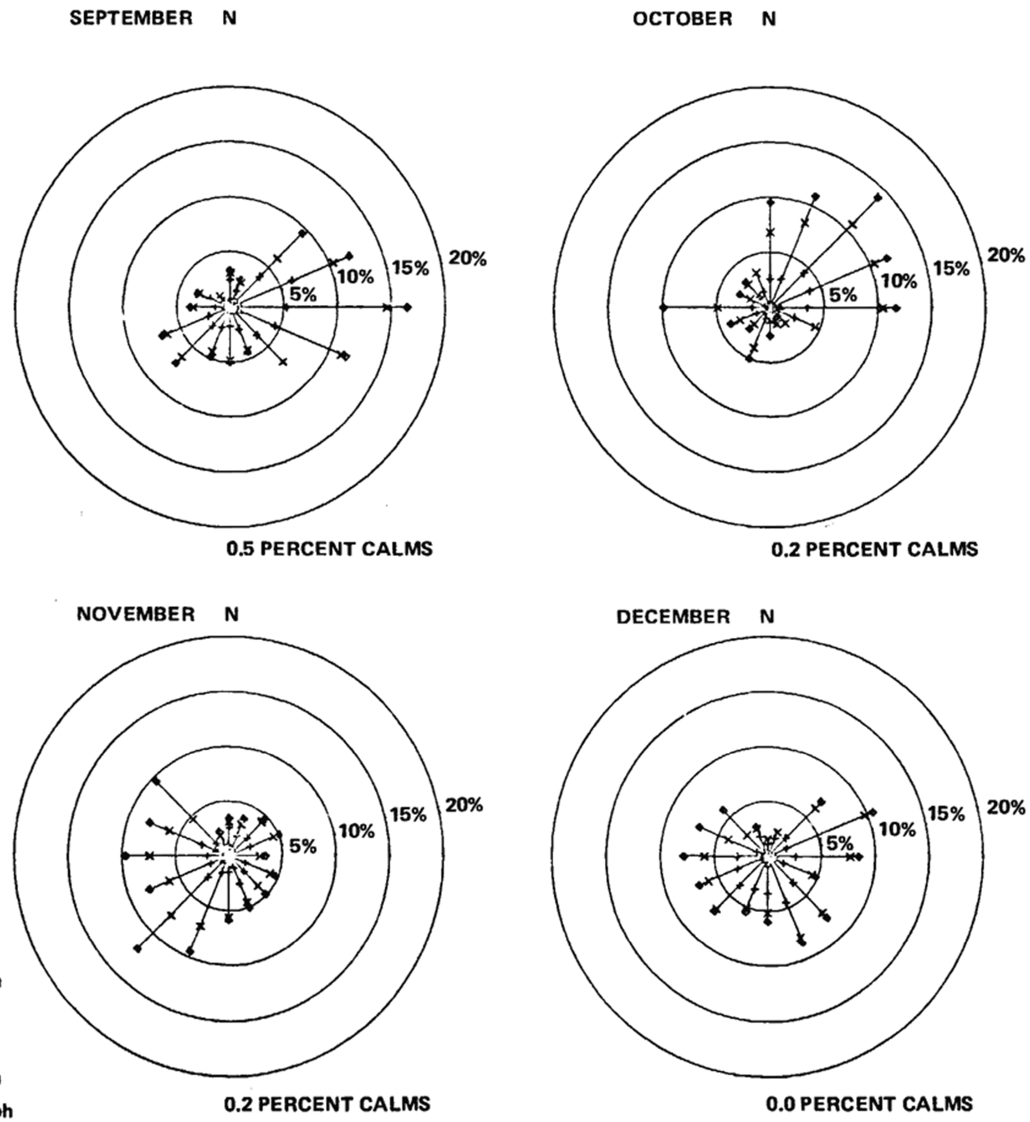
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–7 (SHEET 2 OF 3)



CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
◇ WIND SPEED LESS THAN 999.0 mph

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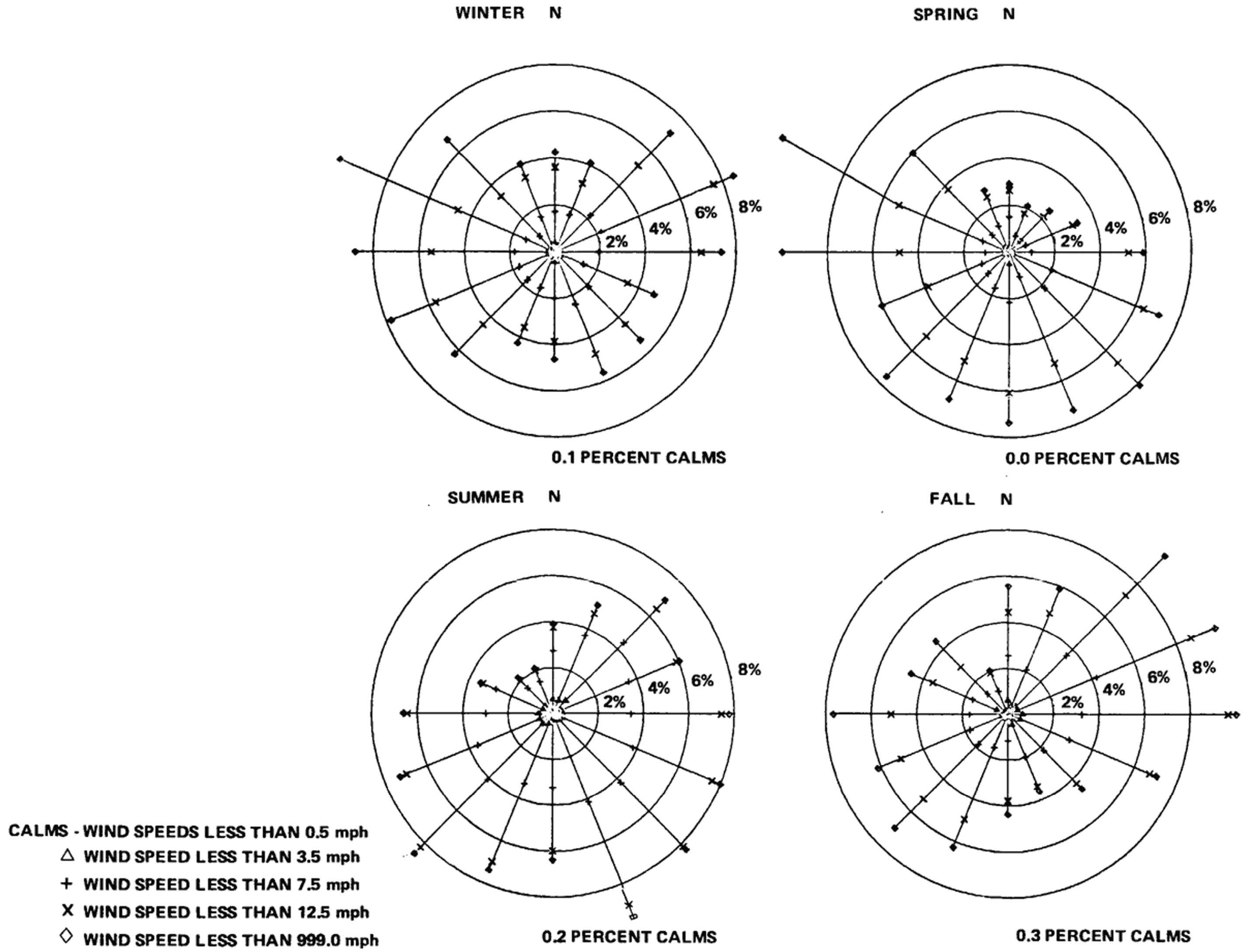
SOUTHERN COMPANY *Energy to Serve Your World®* VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	150–FT LEVEL MONTHLY WIND ROSE 1972 TO 1973 VEGP SITE DATA
	FIGURE 2.3.2–7 (SHEET 3 OF 3)



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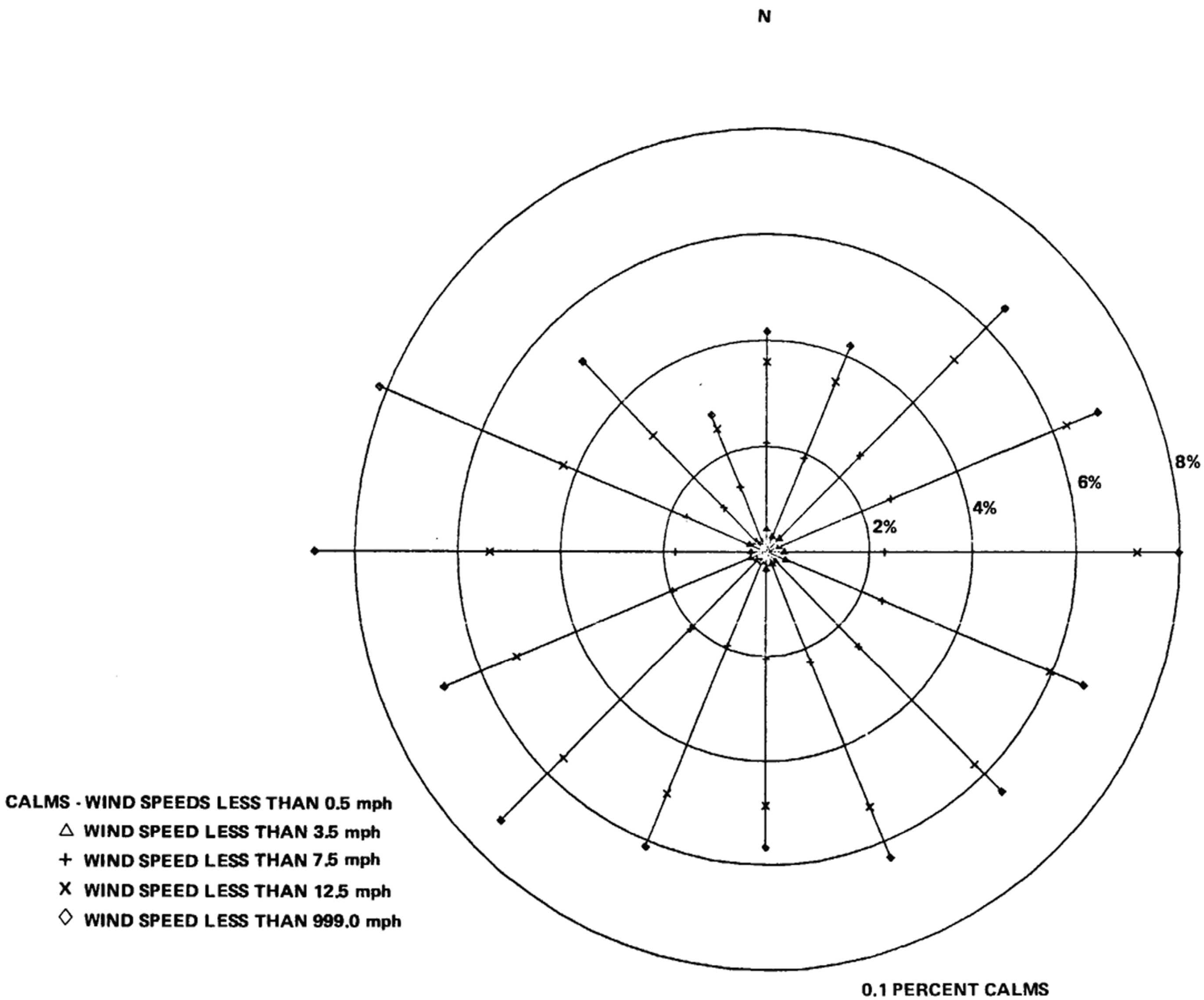
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

150–FT LEVEL SEASONAL WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–8



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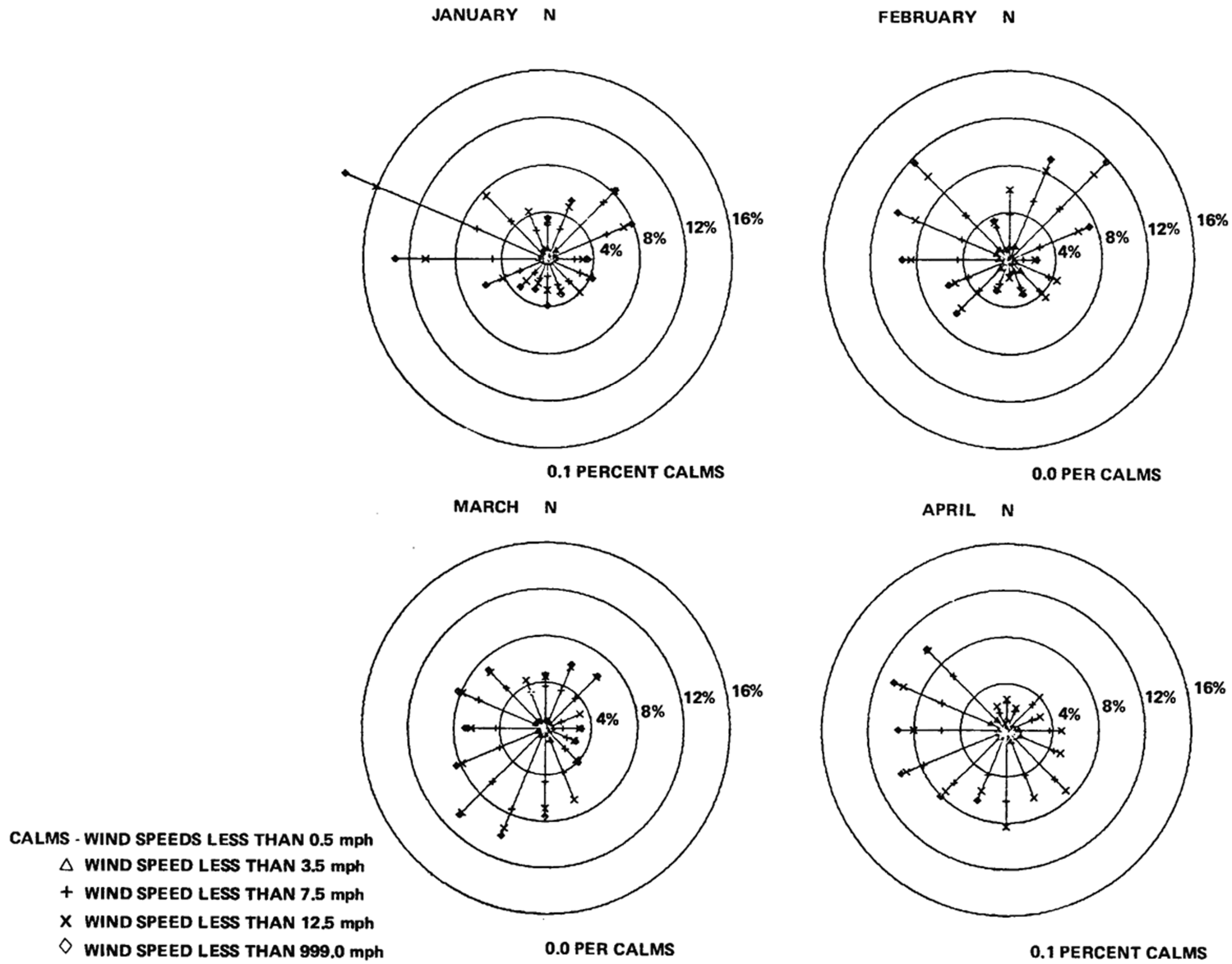
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

150–FT LEVEL ANNUAL WIND ROSE
1972 TO 1973 VEGP SITE DATA

FIGURE 2.3.2–9



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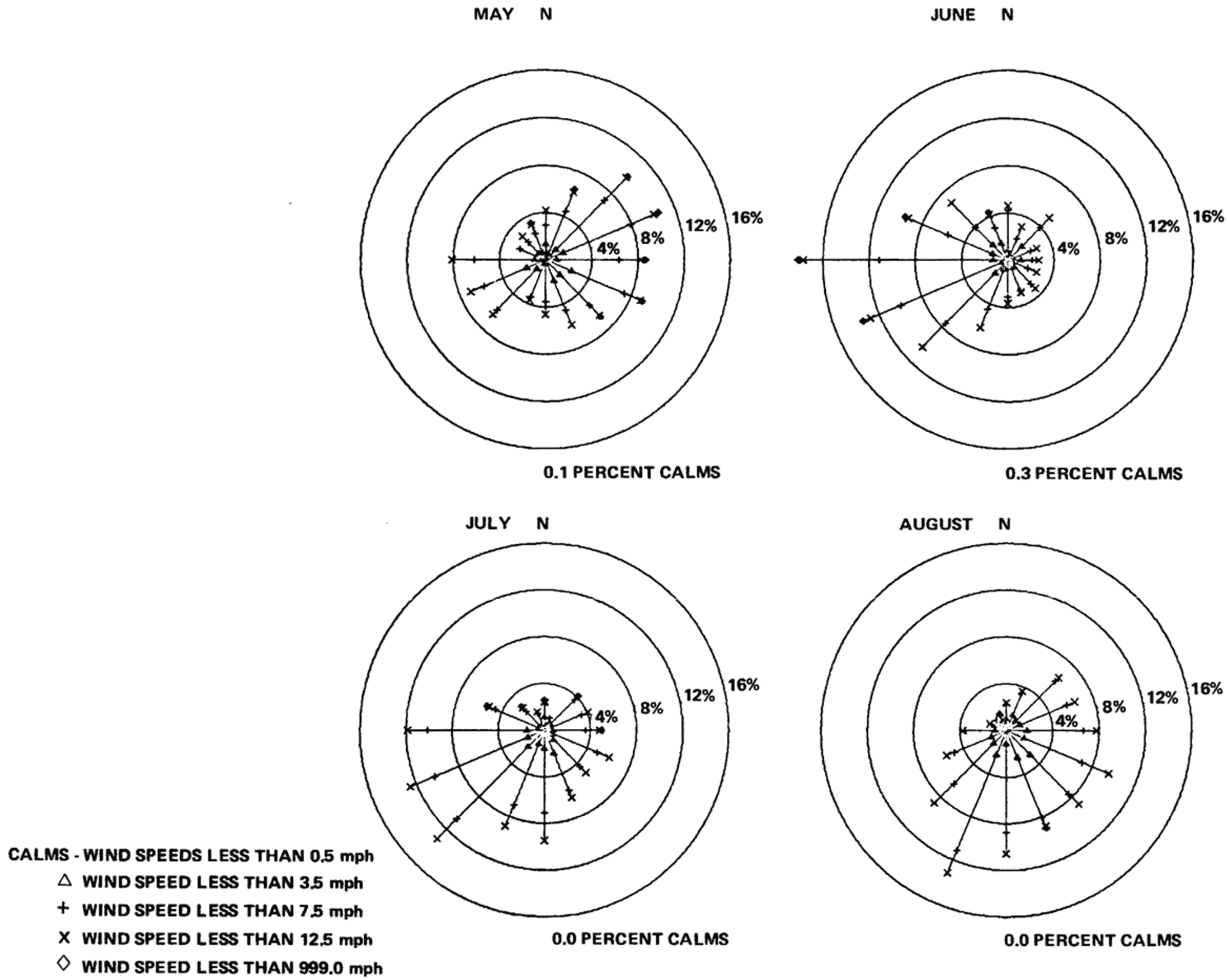
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–10 (SHEET 1 OF 3)



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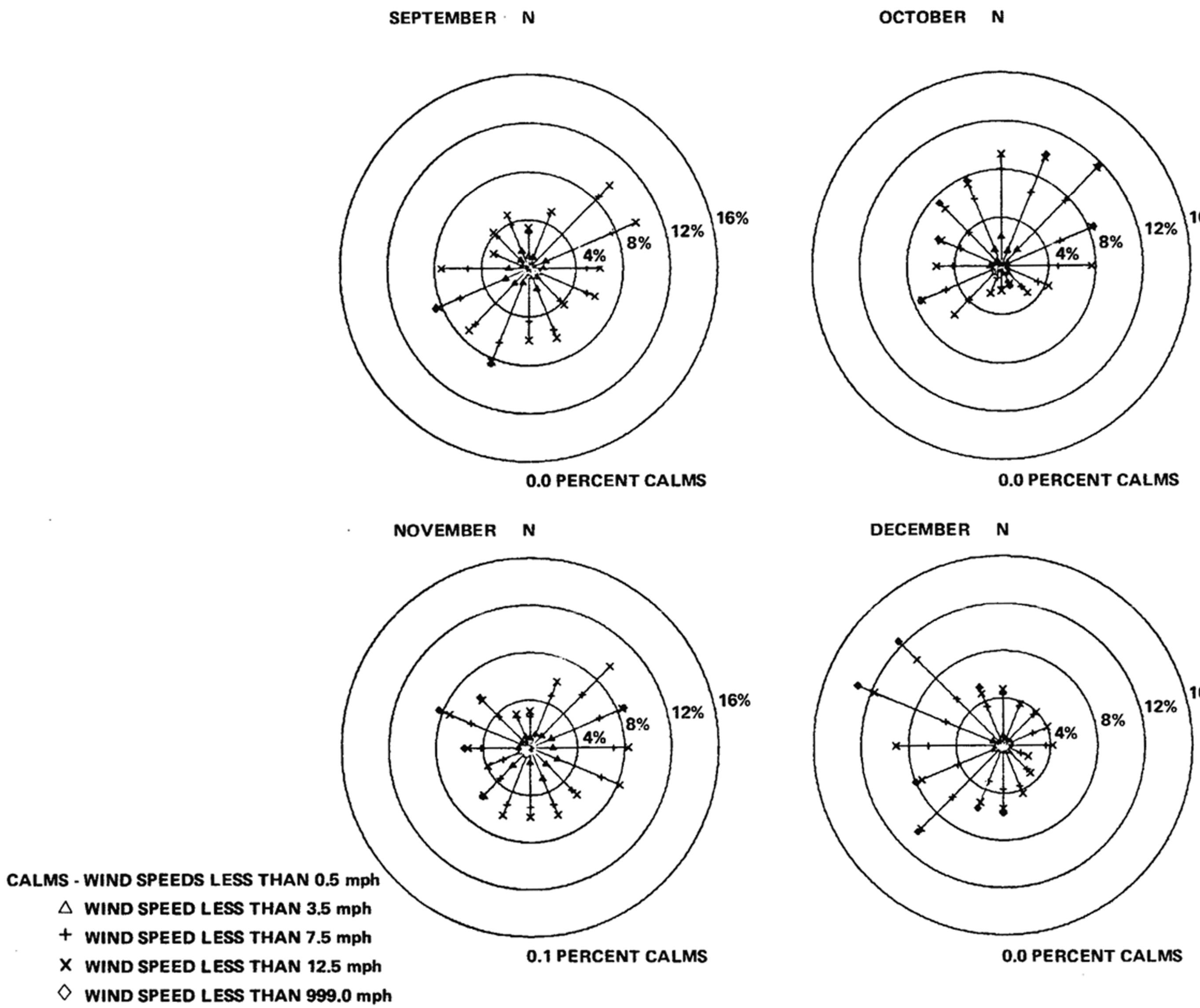
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–10 (SHEET 2 OF 3)



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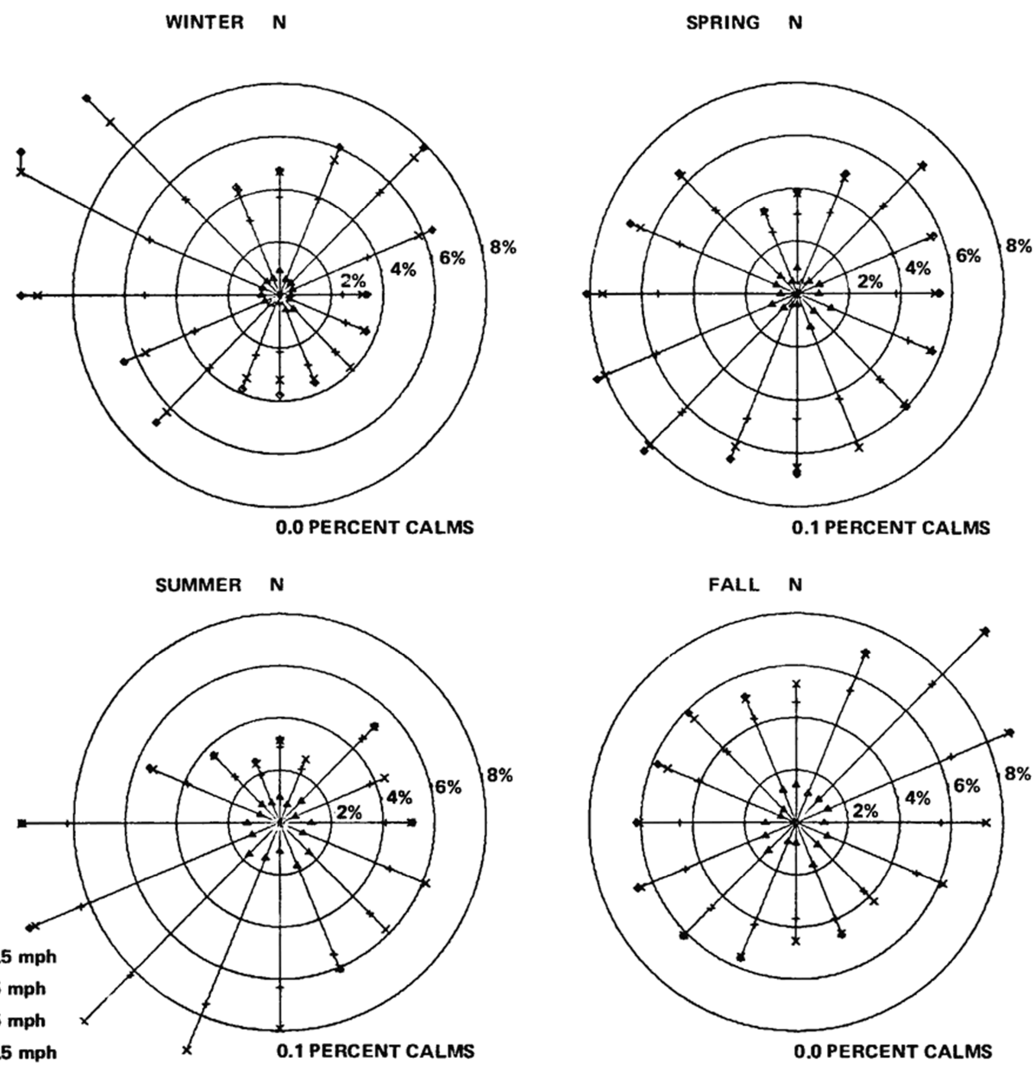
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–10 (SHEET 3 OF 3)



CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
◇ WIND SPEED LESS THAN 999.0 mph

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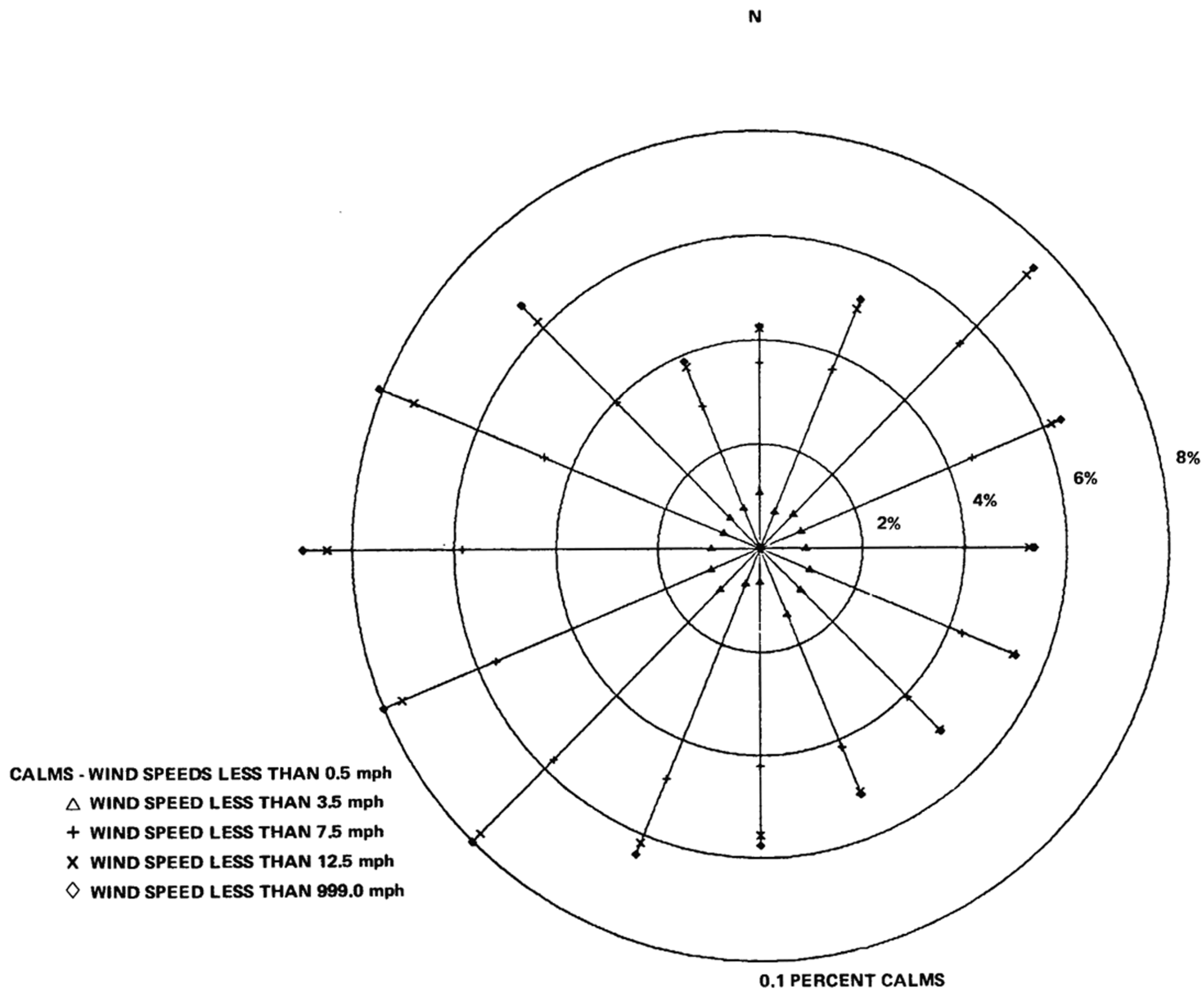
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL SEASONAL WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–11



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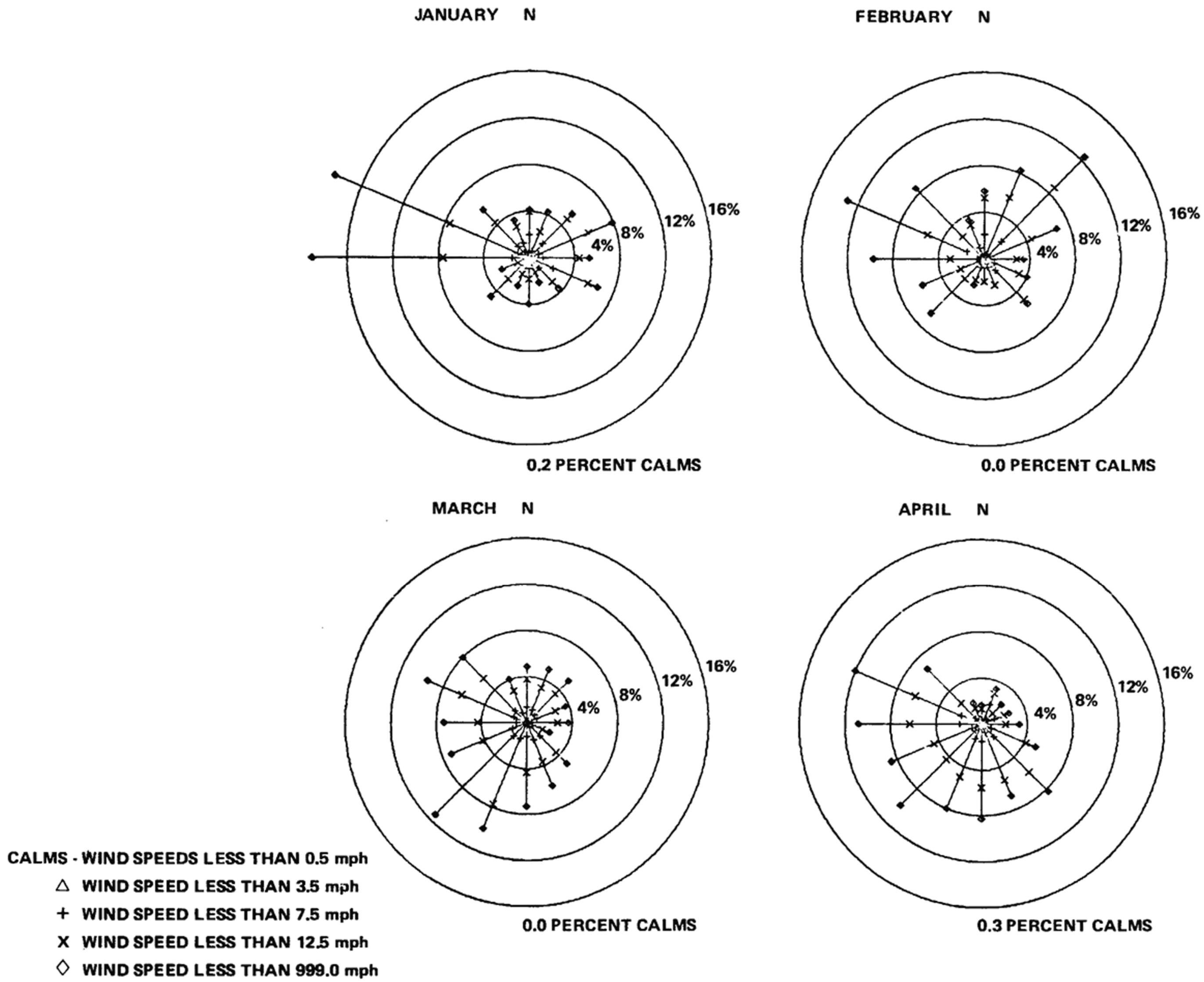
UNIT 1 AND UNIT 2

33–FT LEVEL ANNUAL WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–12



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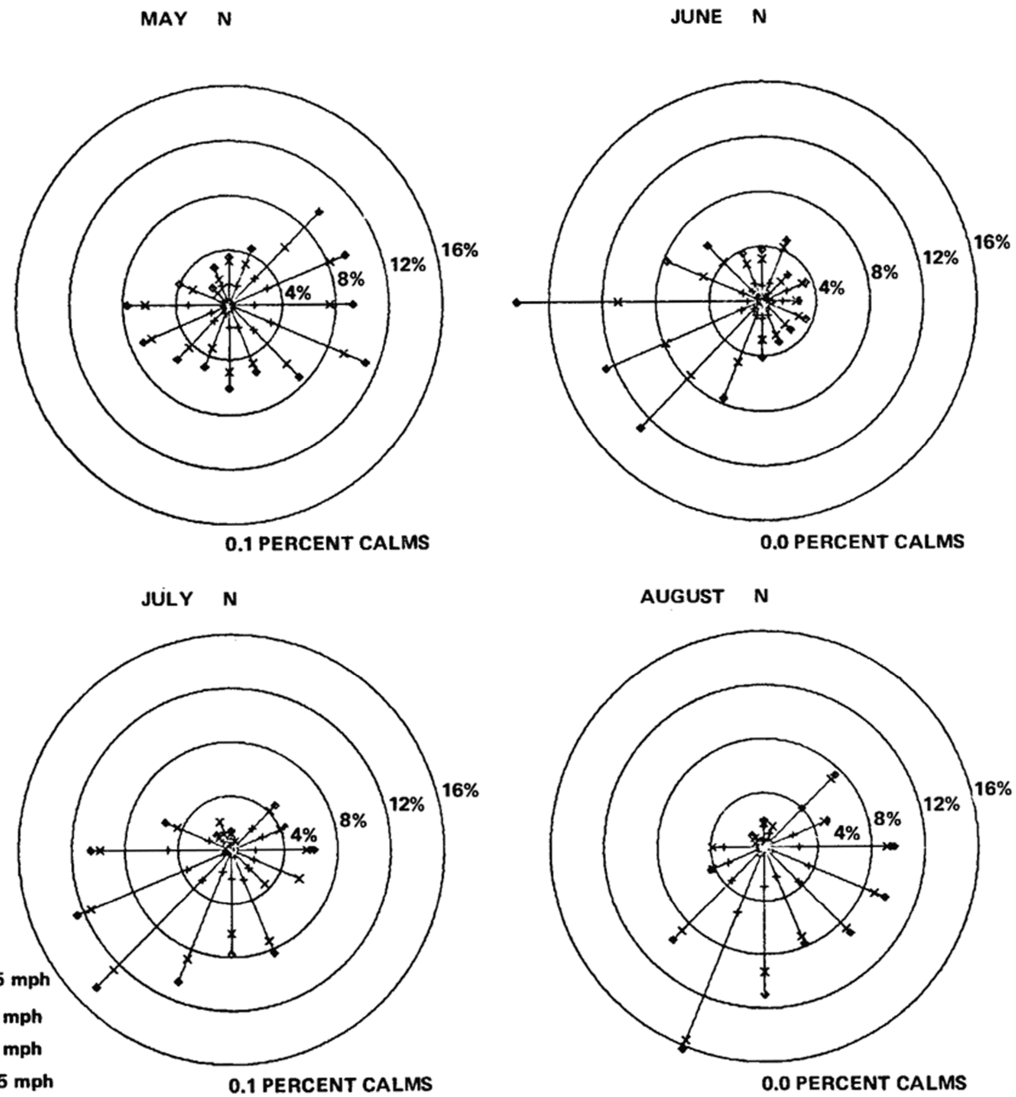
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLYWIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–13 (SHEET 1 OF 3)



CALMS - WIND SPEEDS LESS THAN 0.5 mph

△ WIND SPEED LESS THAN 3.5 mph

+ WIND SPEED LESS THAN 7.5 mph

X WIND SPEED LESS THAN 12.5 mph

◇ WIND SPEED LESS THAN 999.0 mph

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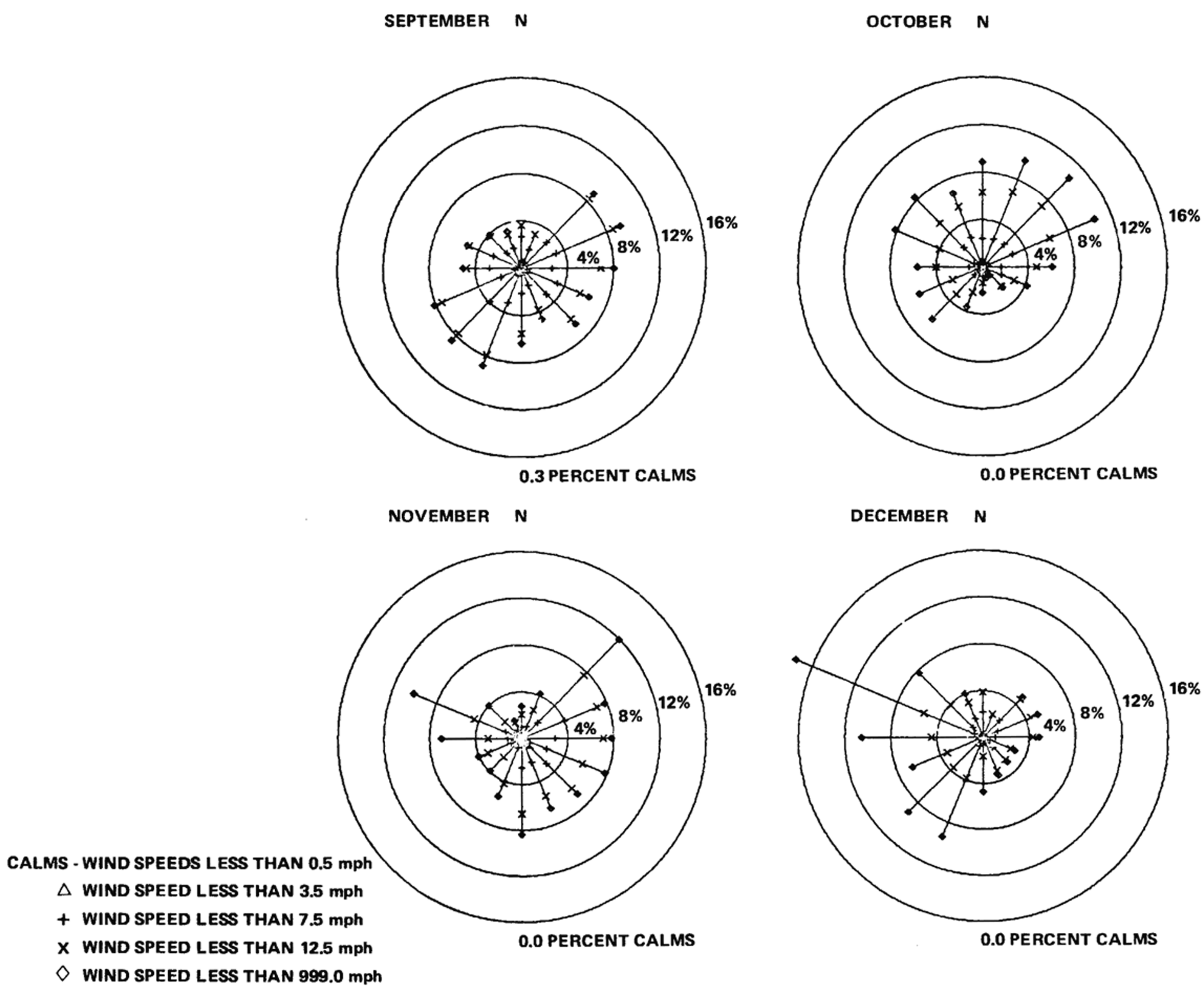
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–13 (SHEET 2 OF 3)



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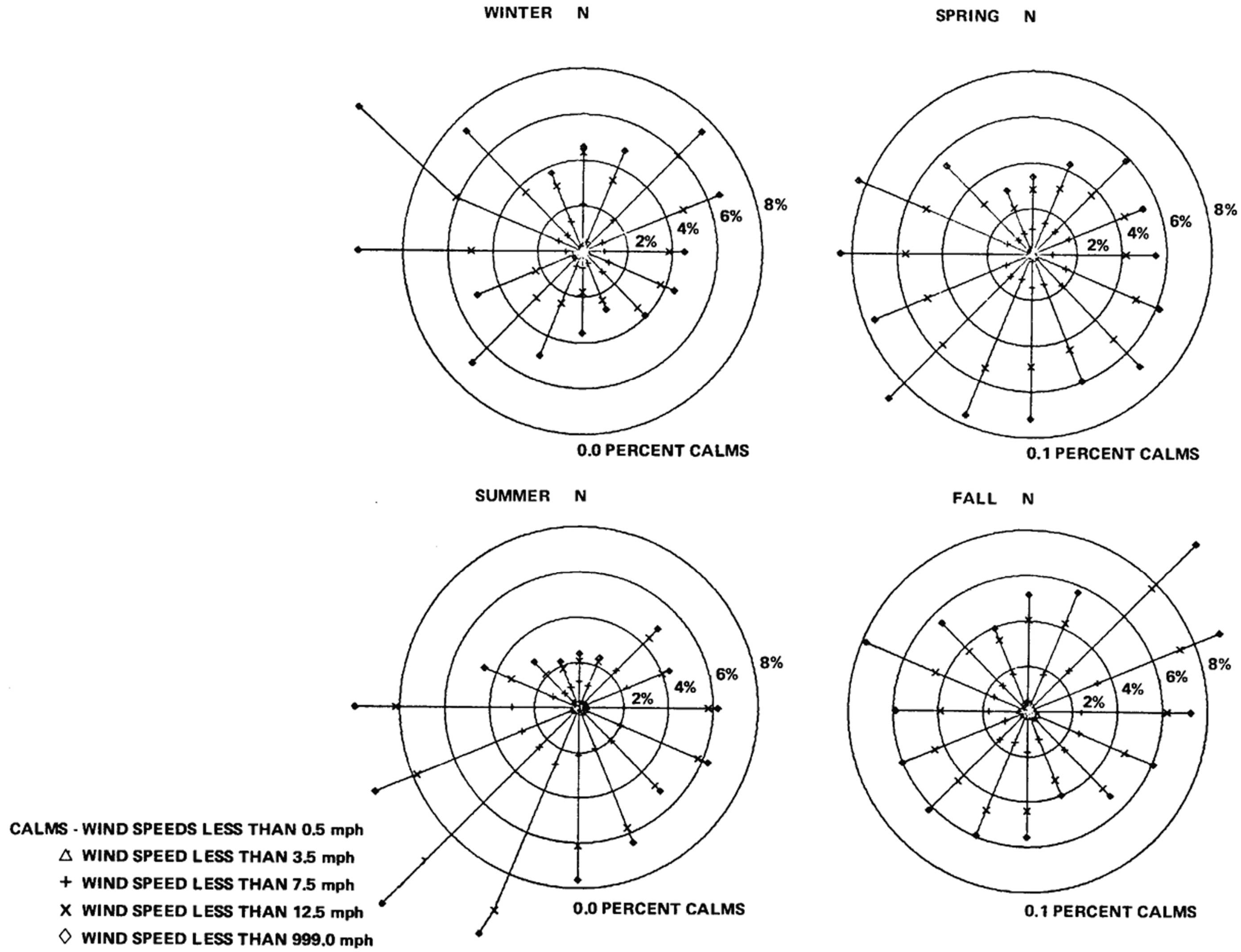
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–13 (SHEET 3 OF 3)



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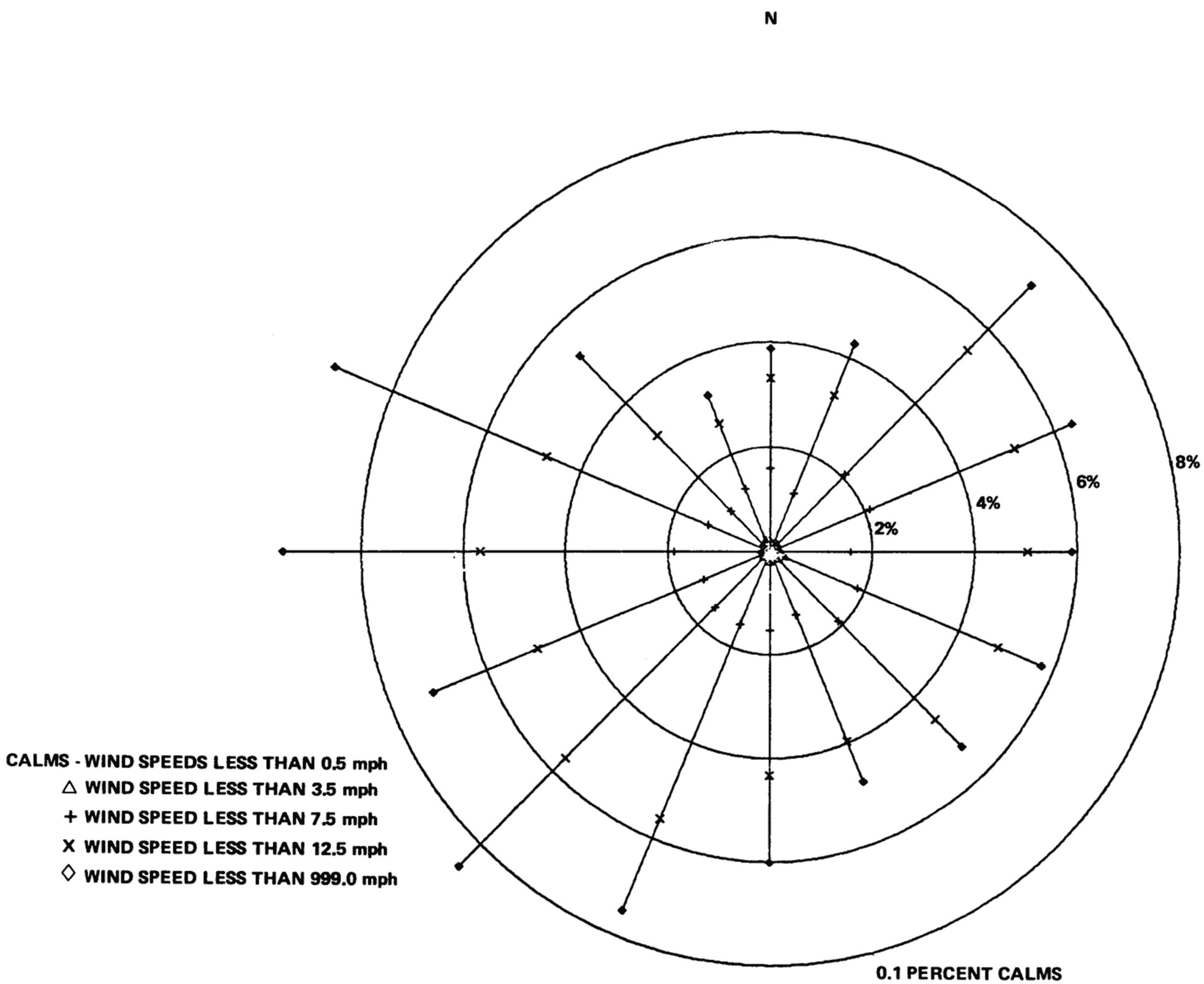
UNIT 1 AND UNIT 2

150–FT LEVEL SEASONAL WIND ROSE
1977 TO 1978 VEGP SITE DATA

FIGURE 2.3.2–14



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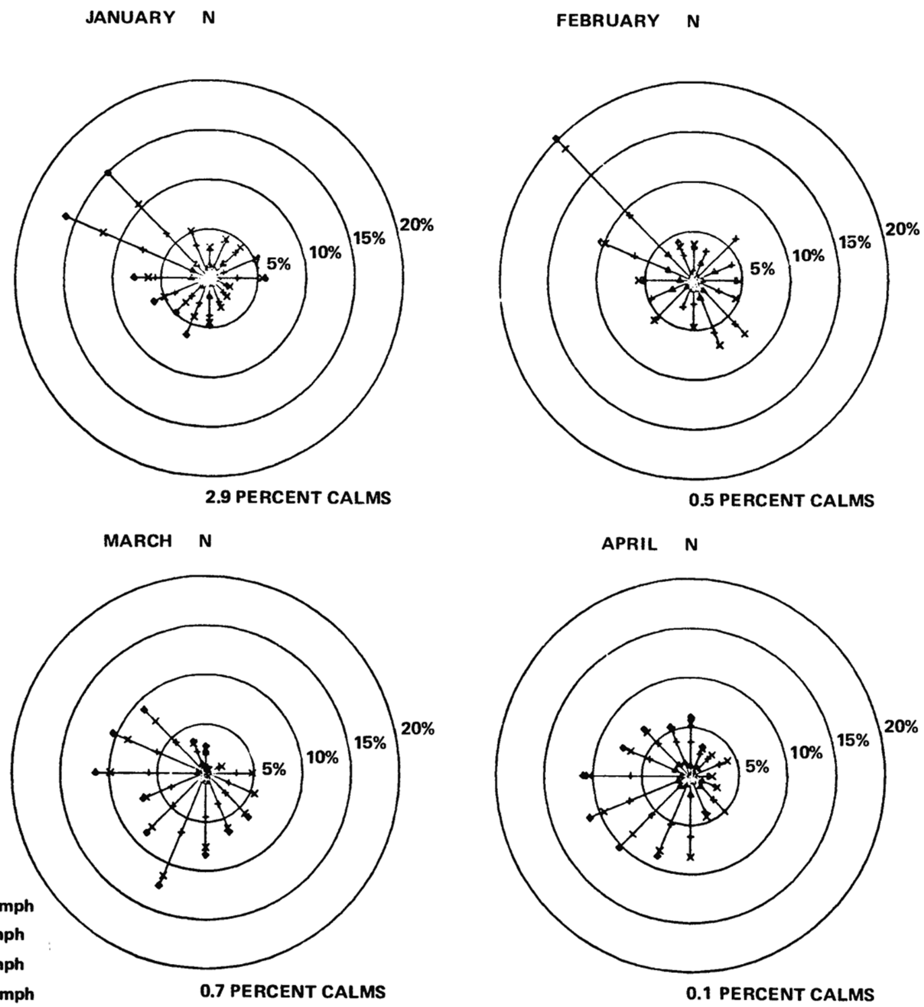
UNIT 1 AND UNIT 2

150–FT LEVEL ANNUAL WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–15



CALMS - WIND SPEEDS LESS THAN 0.5 mph

△ WIND SPEED LESS THAN 3.5 mph

+ WIND SPEED LESS THAN 7.5 mph

X WIND SPEED LESS THAN 12.5 mph

◇ WIND SPEED LESS THAN 999.0 mph

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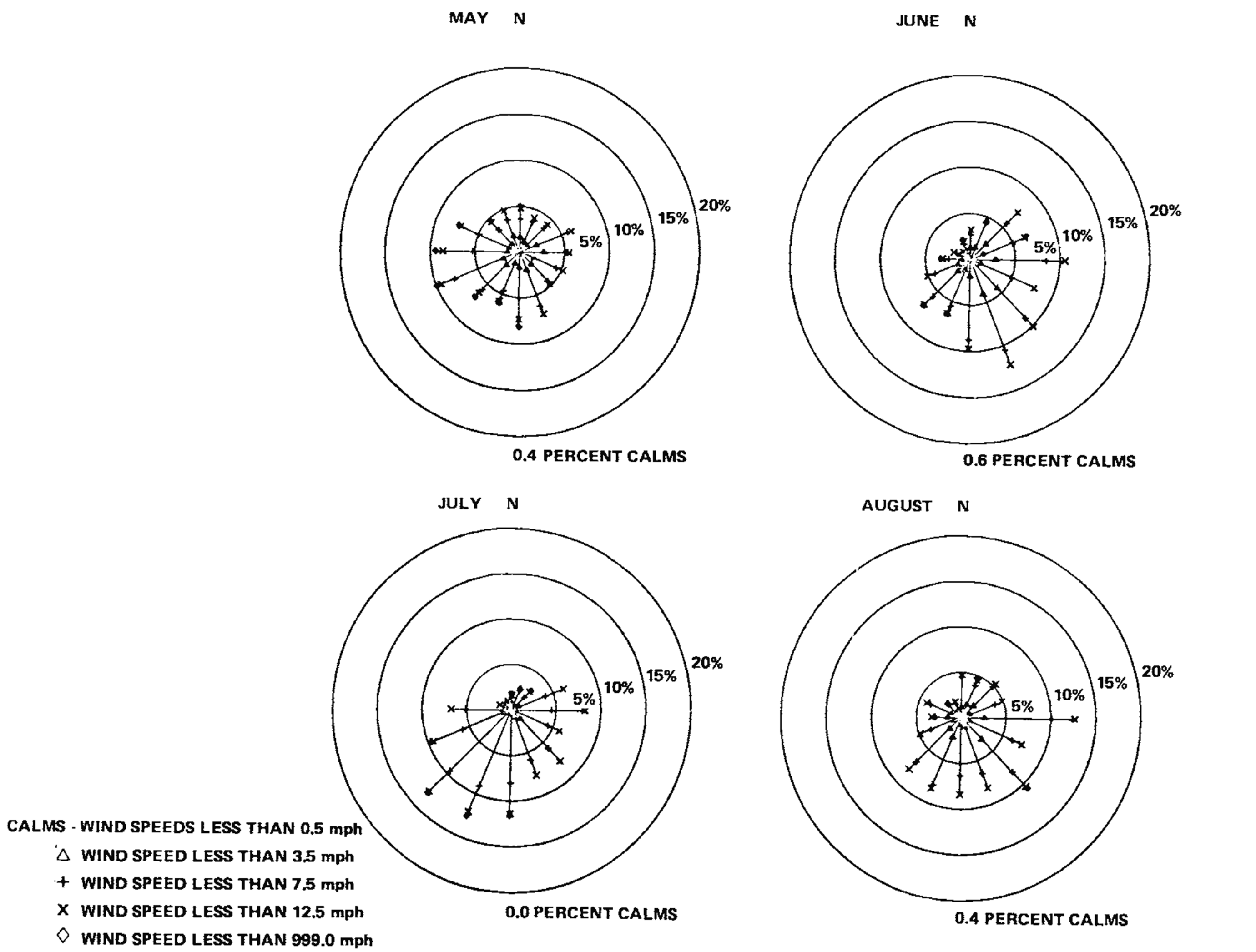
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–16 (SHEET 1 OF 3)



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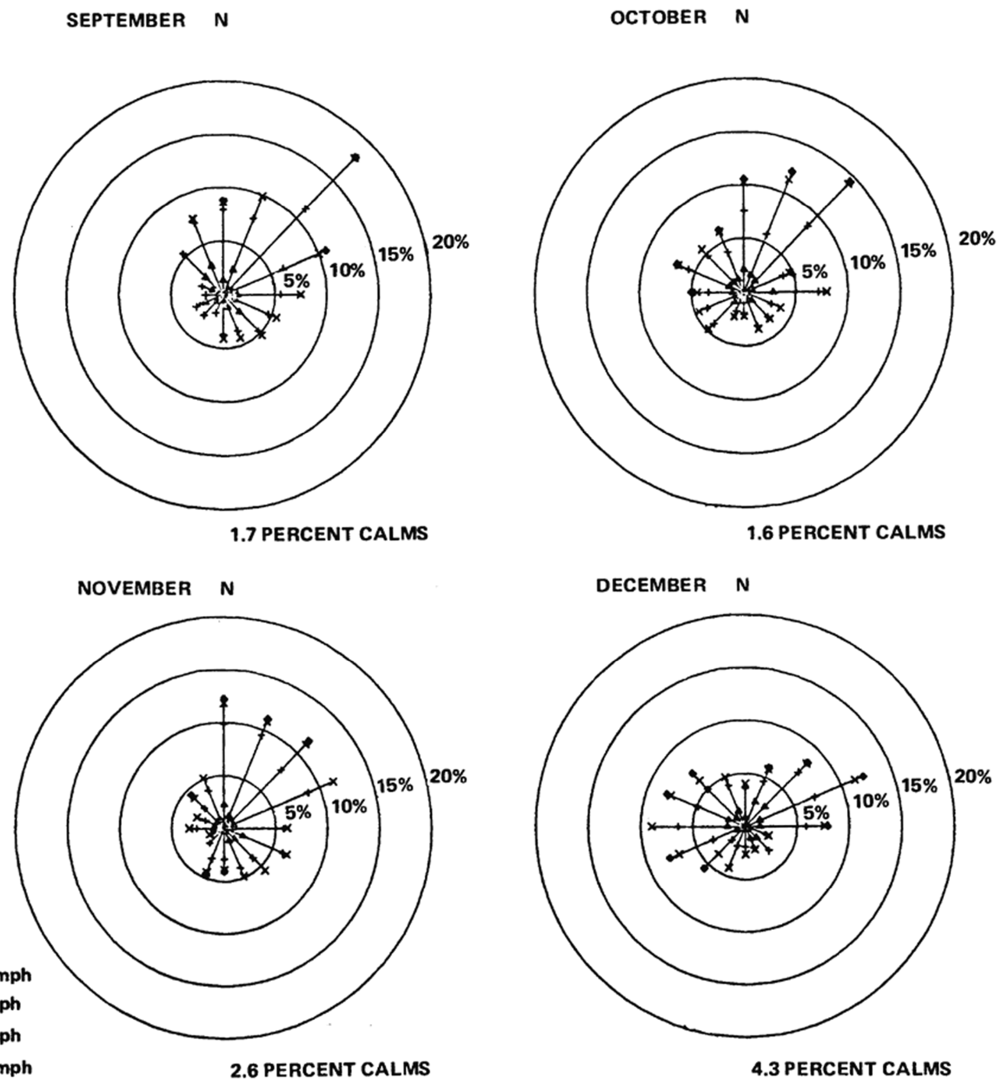
SOUTHERN COMPANY *Energy to Serve Your World®* VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	33–FT LEVEL MONTHLY WIND ROSE 1978 TO 1979 VEGP SITE DATA FIGURE 2.3.2–16 (SHEET 2 OF 3)



CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
◇ WIND SPEED LESS THAN 999.0 mph

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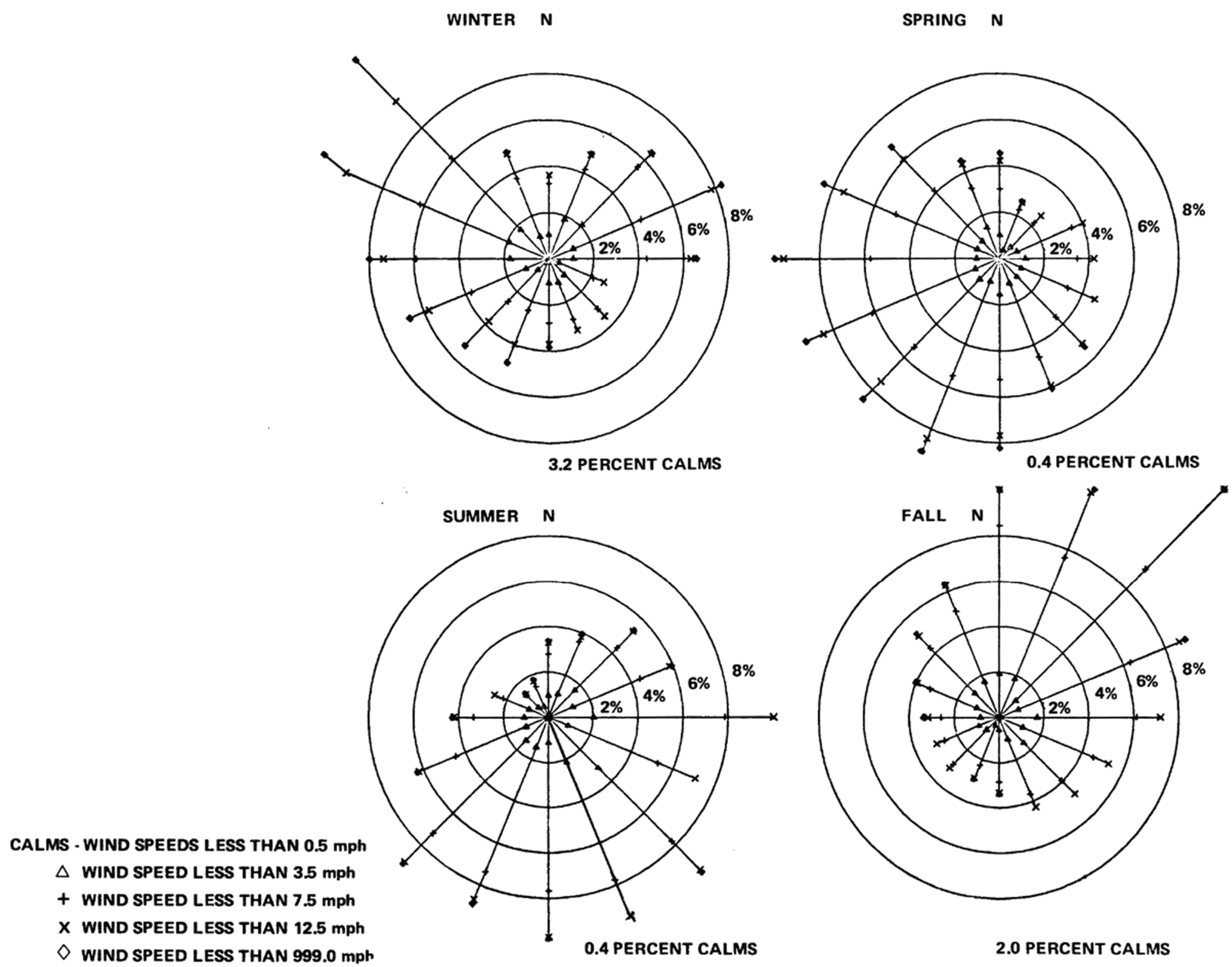
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–16 (SHEET 3 OF 3)



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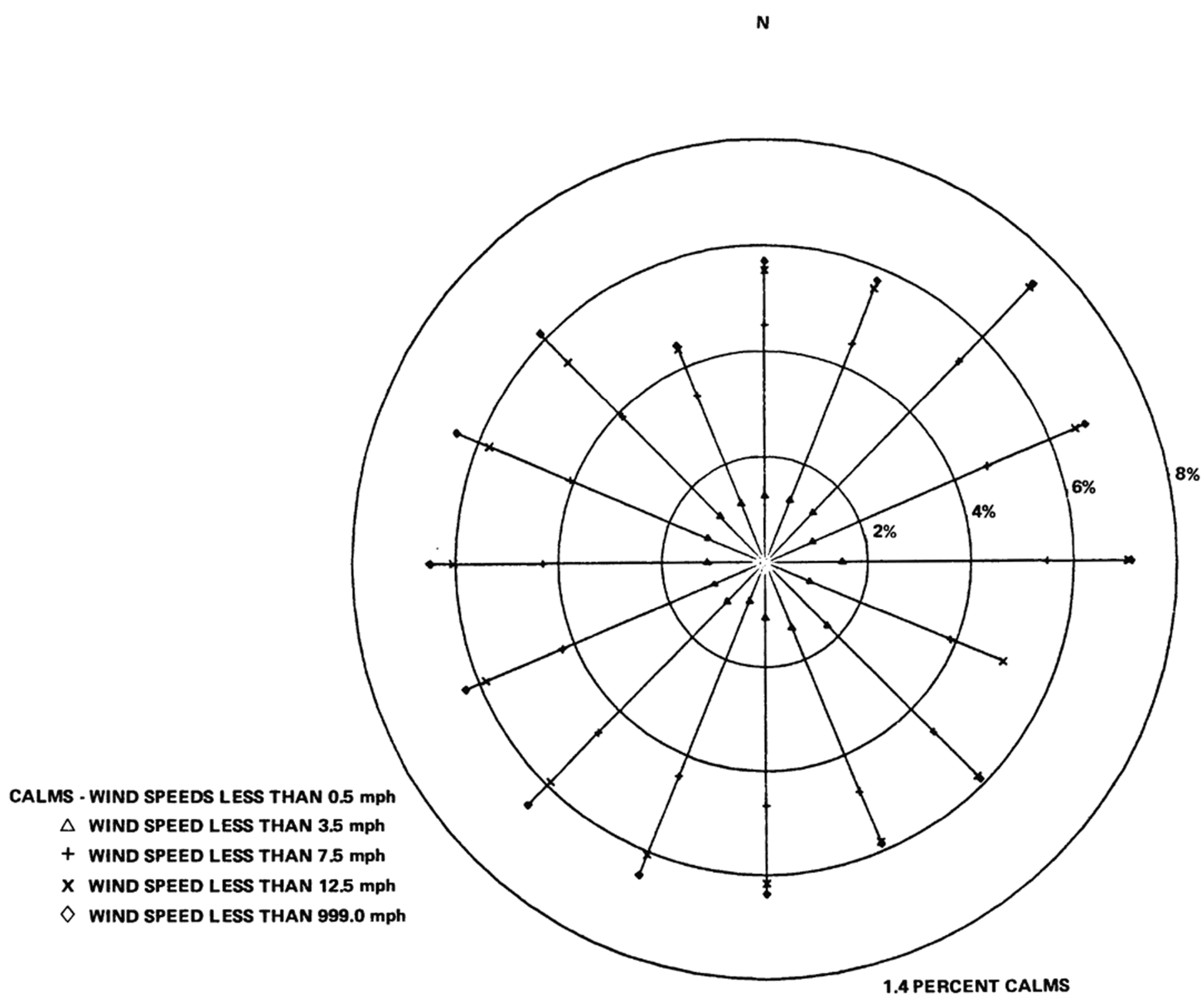
UNIT 1 AND UNIT 2

33–FT LEVEL SEASONAL WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–17



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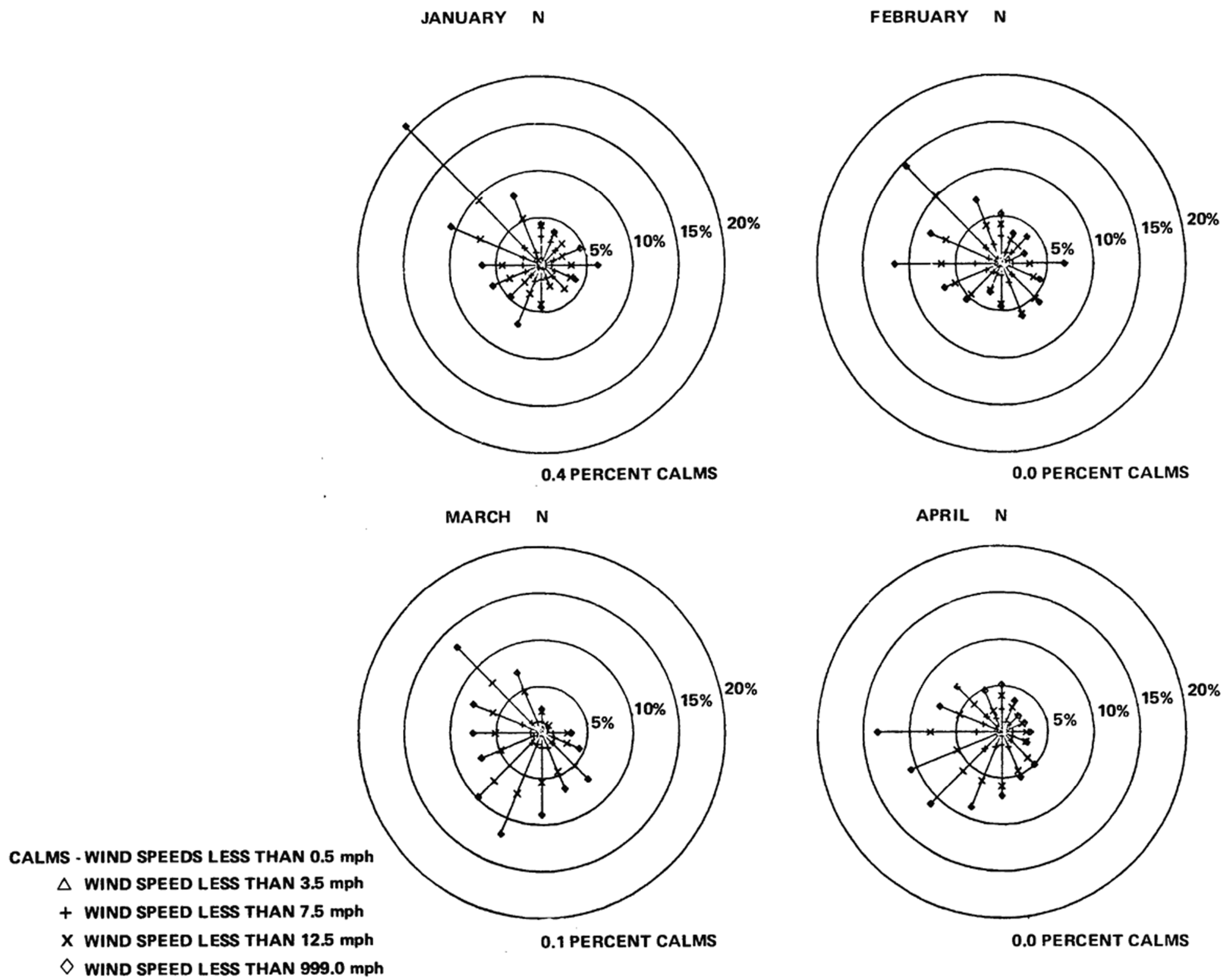
UNIT 1 AND UNIT 2

33–FT LEVEL ANNUAL WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–18



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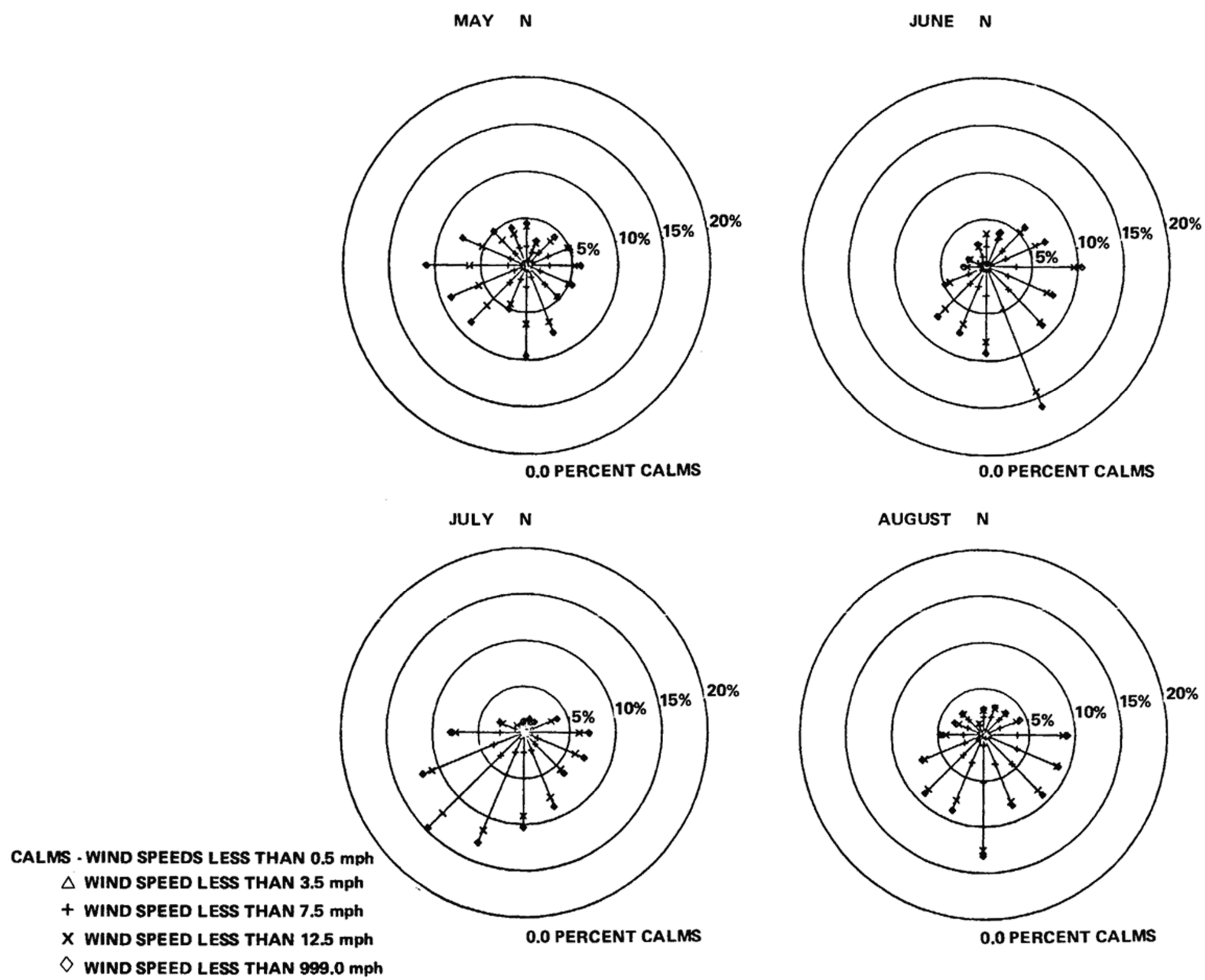
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–19 (SHEET 1 OF 3)



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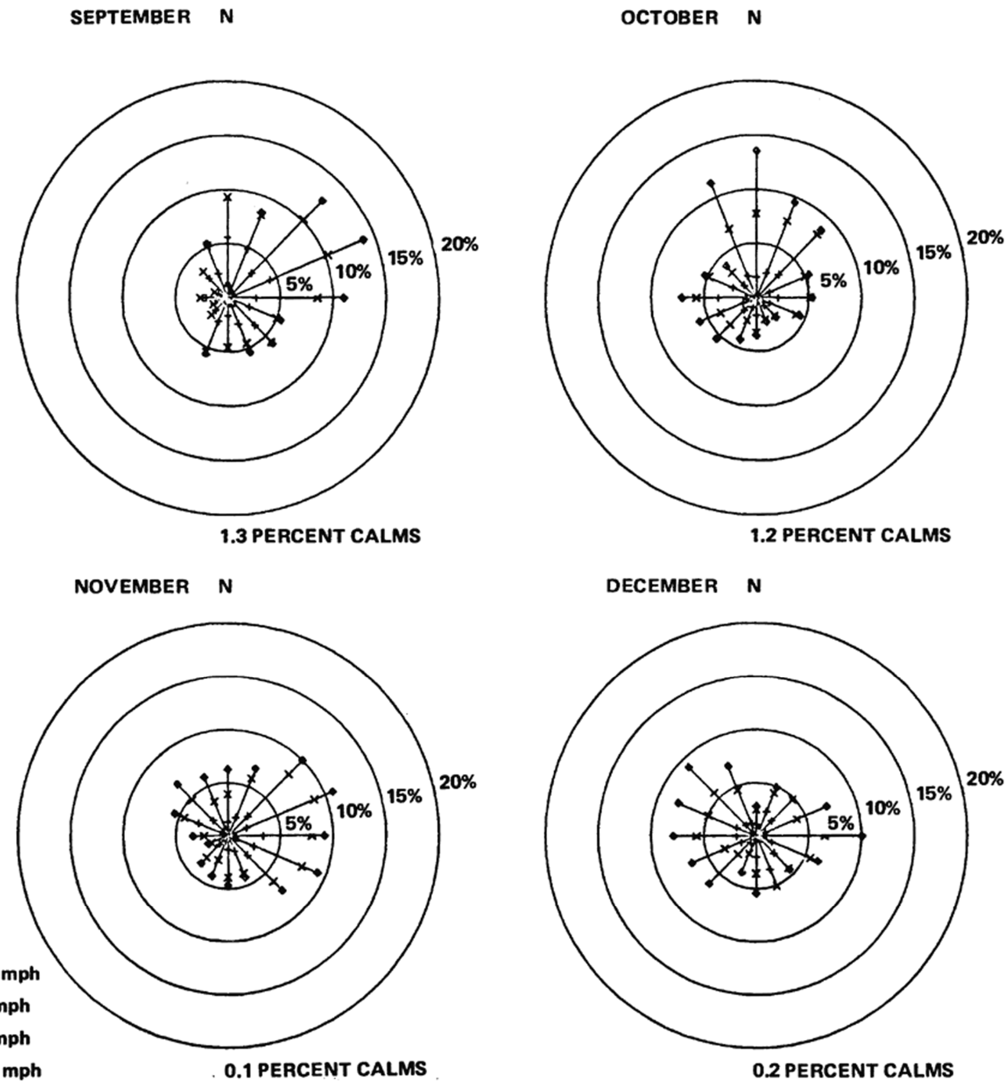
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–19 (SHEET 2 OF 3)



CALMS - WIND SPEEDS LESS THAN 0.5 mph

△ WIND SPEED LESS THAN 3.5 mph

+ WIND SPEED LESS THAN 7.5 mph

X WIND SPEED LESS THAN 12.5 mph

◇ WIND SPEED LESS THAN 999.0 mph

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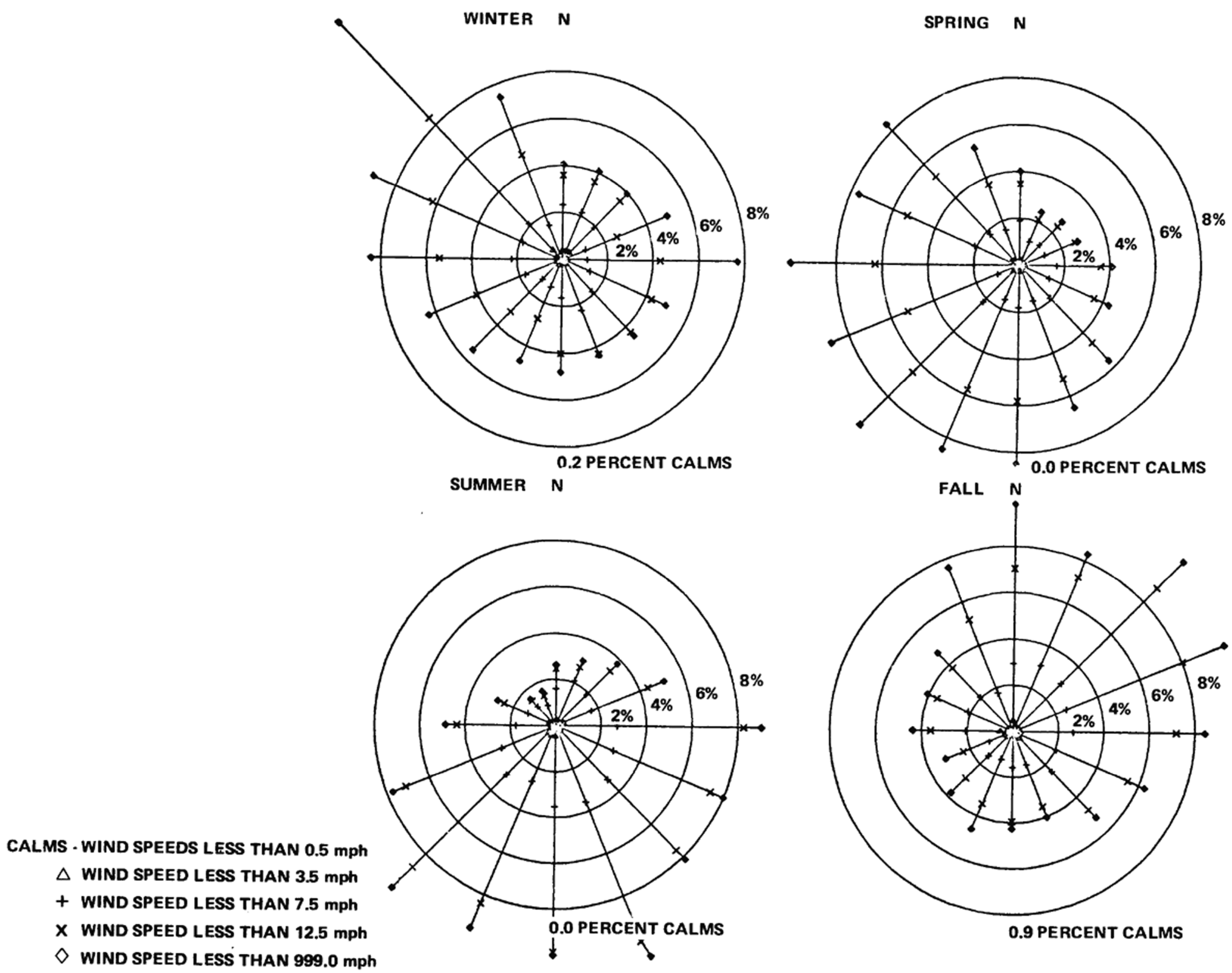
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–19 (SHEET 3 OF 3)



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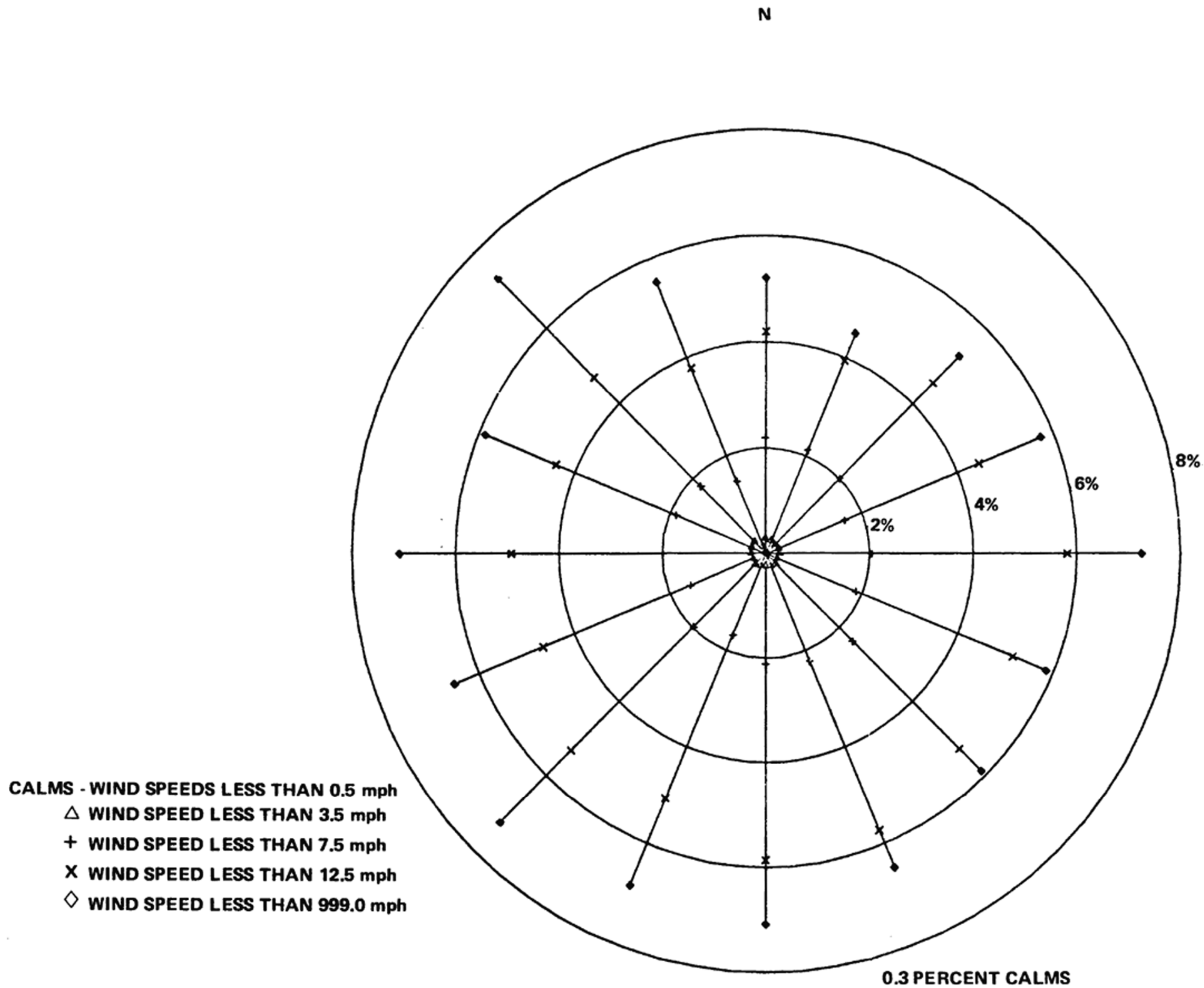
UNIT 1 AND UNIT 2

150–FT LEVEL SEASONAL WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–20



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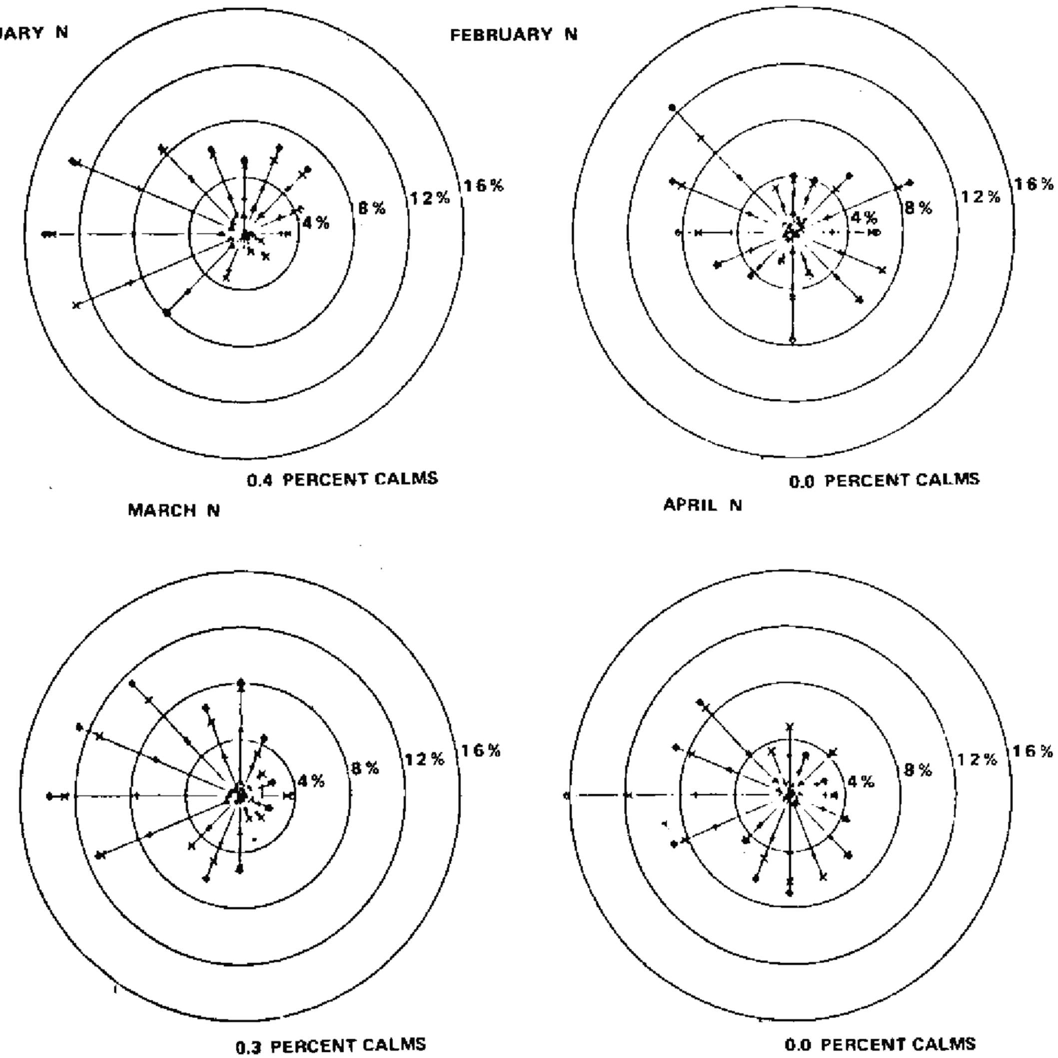
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

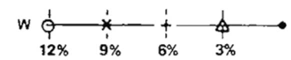
150–FT LEVEL ANNUAL WIND ROSE
1978 TO 1979 VEGP SITE DATA

FIGURE 2.3.2–21



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH (INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)), 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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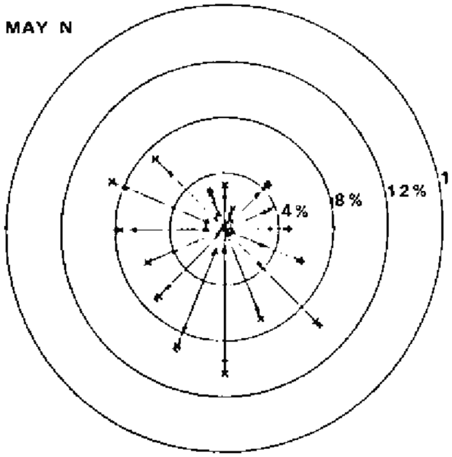
UNIT 1 AND UNIT 2

33–FT LEVEL MONTHLY WIND ROSE
1980 TO 1981 VEGP SITE DATA

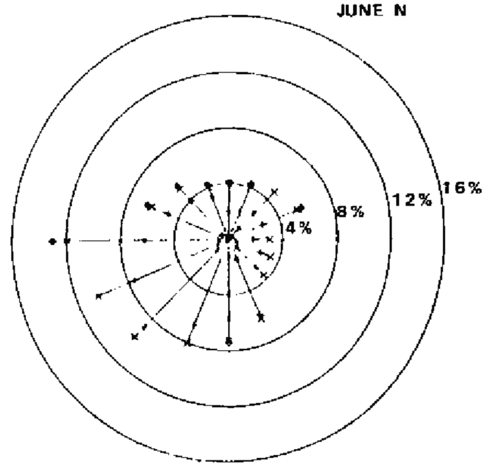
FIGURE 2.3.2–22 (SHEET 1 OF 3)

MAY N



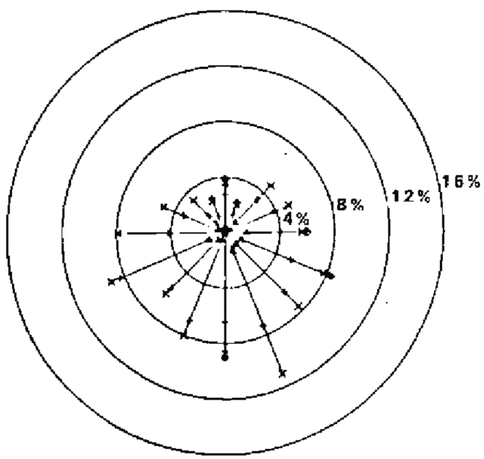
0.0 PERCENT CALMS

JUNE N



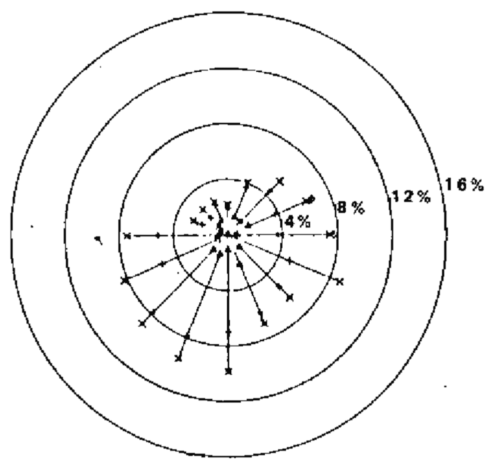
0.2 PERCENT CALMS

JULY N



0.1 PERCENT CALMS

AUGUST N



0.1 PERCENT CALMS

NOTES:

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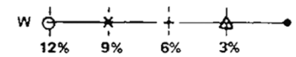
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH [INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph

- △ WIND SPEED LESS THAN 3.5 mph
- \+ WIND SPEED LESS THAN 7.5 mph
- X WIND SPEED LESS THAN 12.5 mph
- O WIND SPEED LESS THAN 999.0 mph

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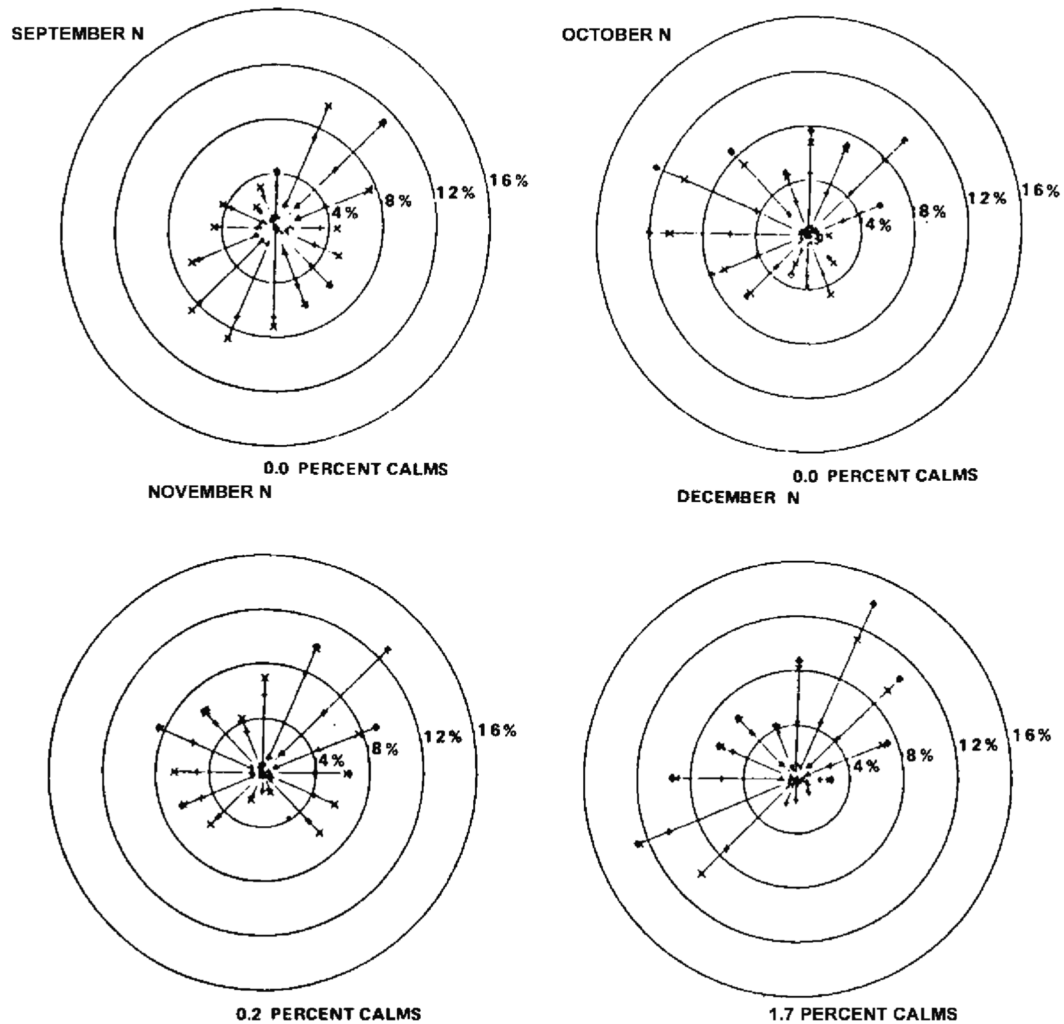
UNIT 1 AND UNIT 2

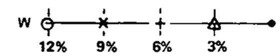
33–FT LEVEL MONTHLY WIND ROSE
1980 TO 1981 VEGP SITE DATA

FIGURE 2.3.2–22 (SHEET 2 OF 3)



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE. FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH (INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)), 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph

△ WIND SPEED LESS THAN 3.5 mph

\+ WIND SPEED LESS THAN 7.5 mph

X WIND SPEED LESS THAN 12.5 mph

O WIND SPEED LESS THAN 999.0 mph

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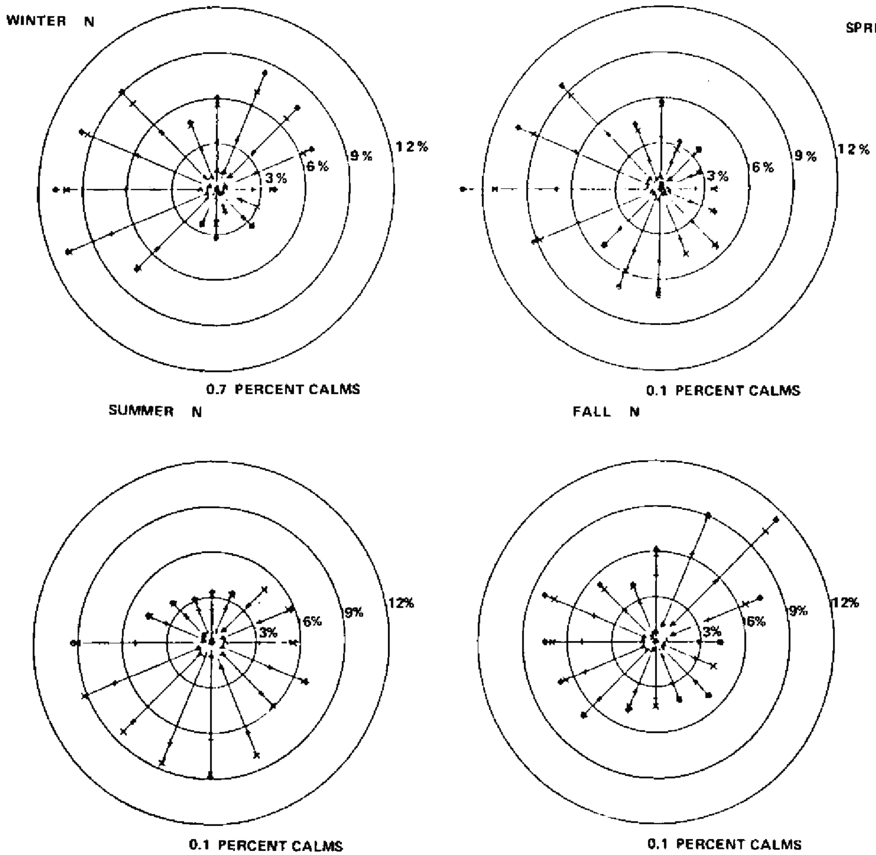
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

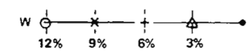
33–FT LEVEL MONTHLY WIND ROSE
1980 TO 1981 VEGP SITE DATA

FIGURE 2.3.2–22 (SHEET 3 OF 3)



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH (INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)), 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
\+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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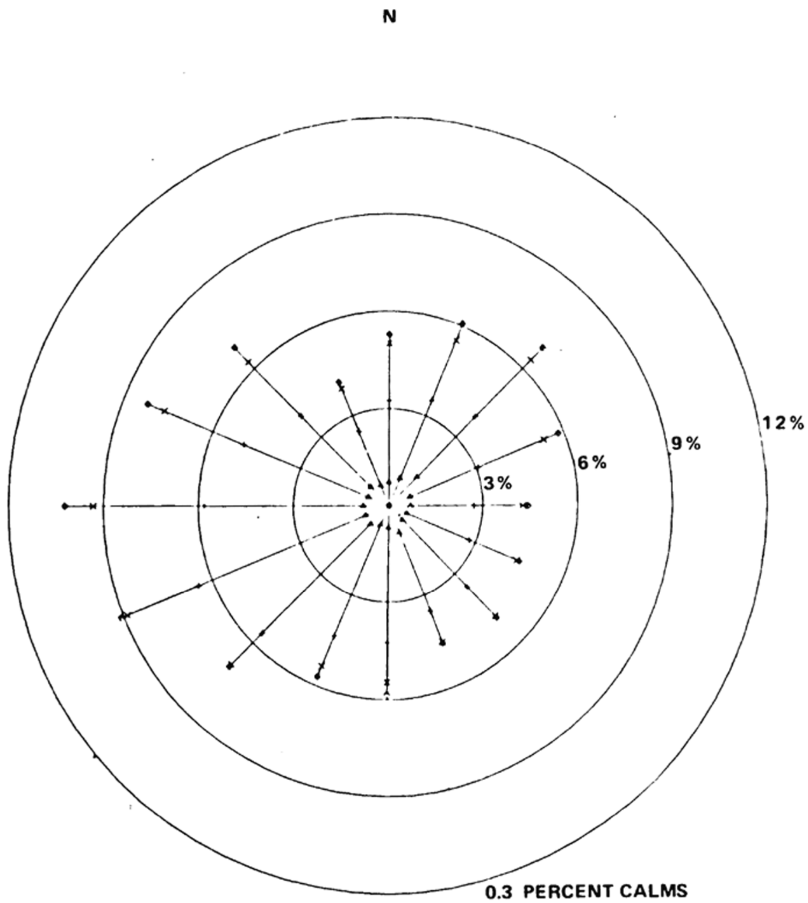
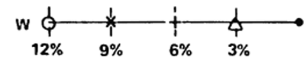
SOUTHERN COMPANY *Energy to Serve Your World®* — **VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2**	33–FT LEVEL SEASONAL WIND ROSE 1980 TO 1981 VEGP SITE DATA
	FIGURE 2.3.2–23



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE,



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH [INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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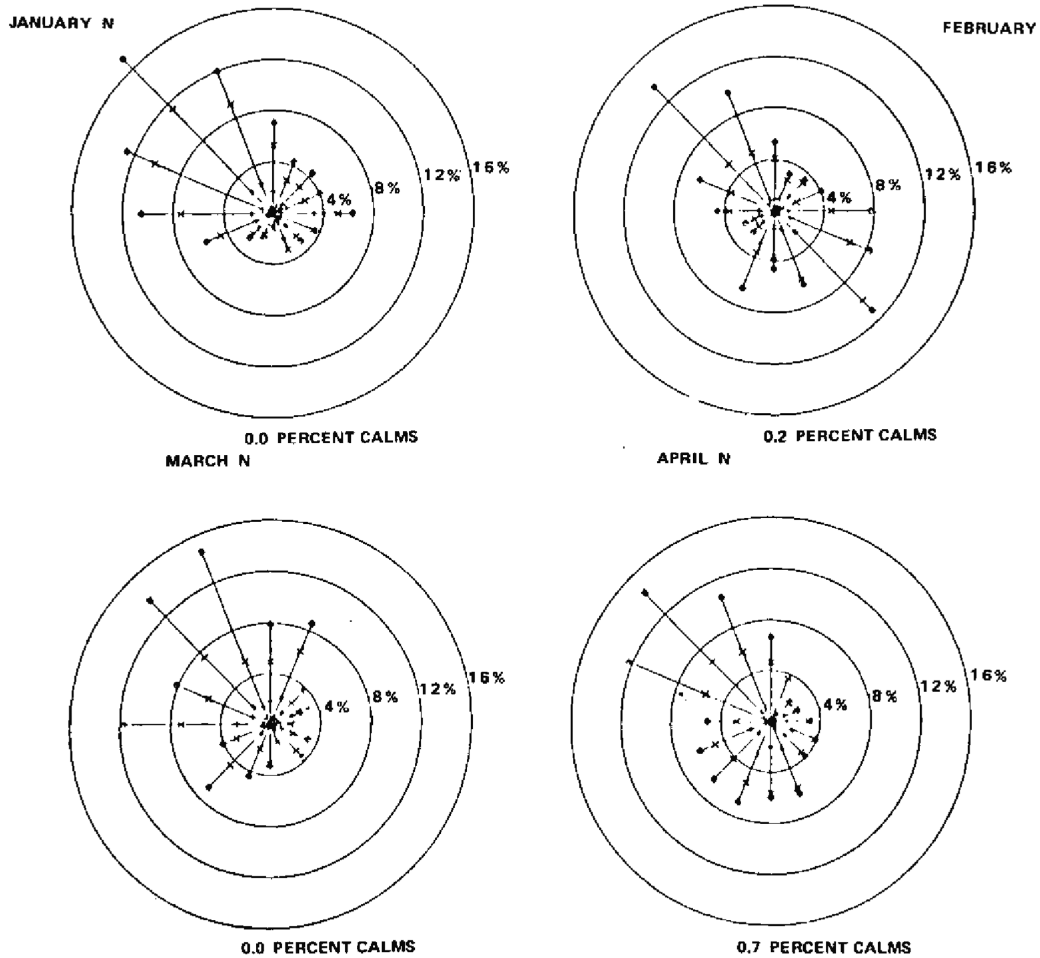
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

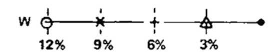
33–FT LEVEL ANNUAL WIND ROSE
1980 TO 1981 VEGP SITE DATA

FIGURE 2.3.2–24



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH (INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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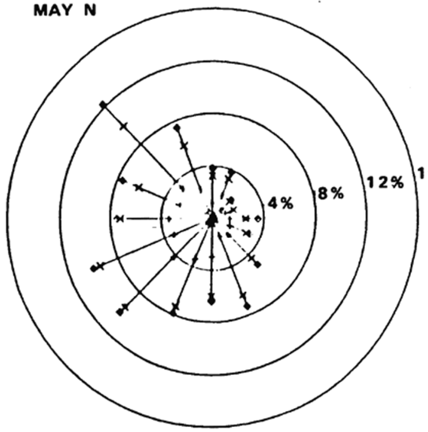
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1980 TO 1981 VEGP SITE DATA

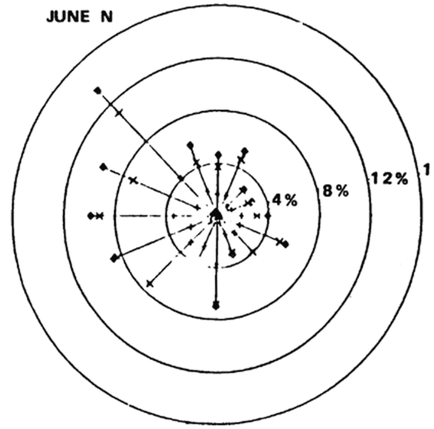
FIGURE 2.3.2–25 (SHEET 1 OF 3)

MAY N



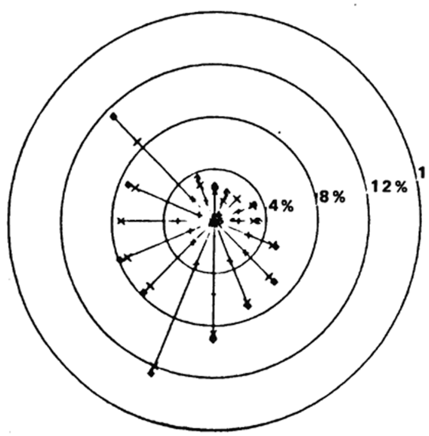
0.1 PERCENT CALMS

JUNE N



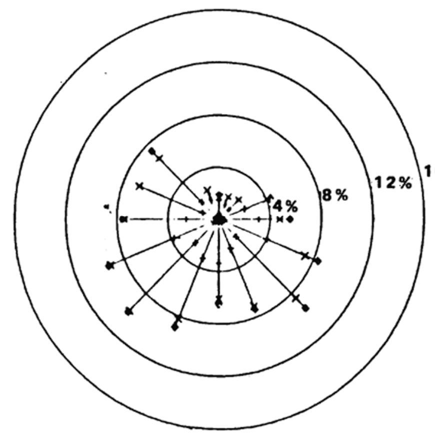
0.0 PERCENT CALMS

JULY N



0.0 PERCENT CALMS

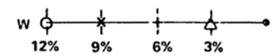
AUGUST N



0.0 PERCENT CALMS

NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH [INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
\+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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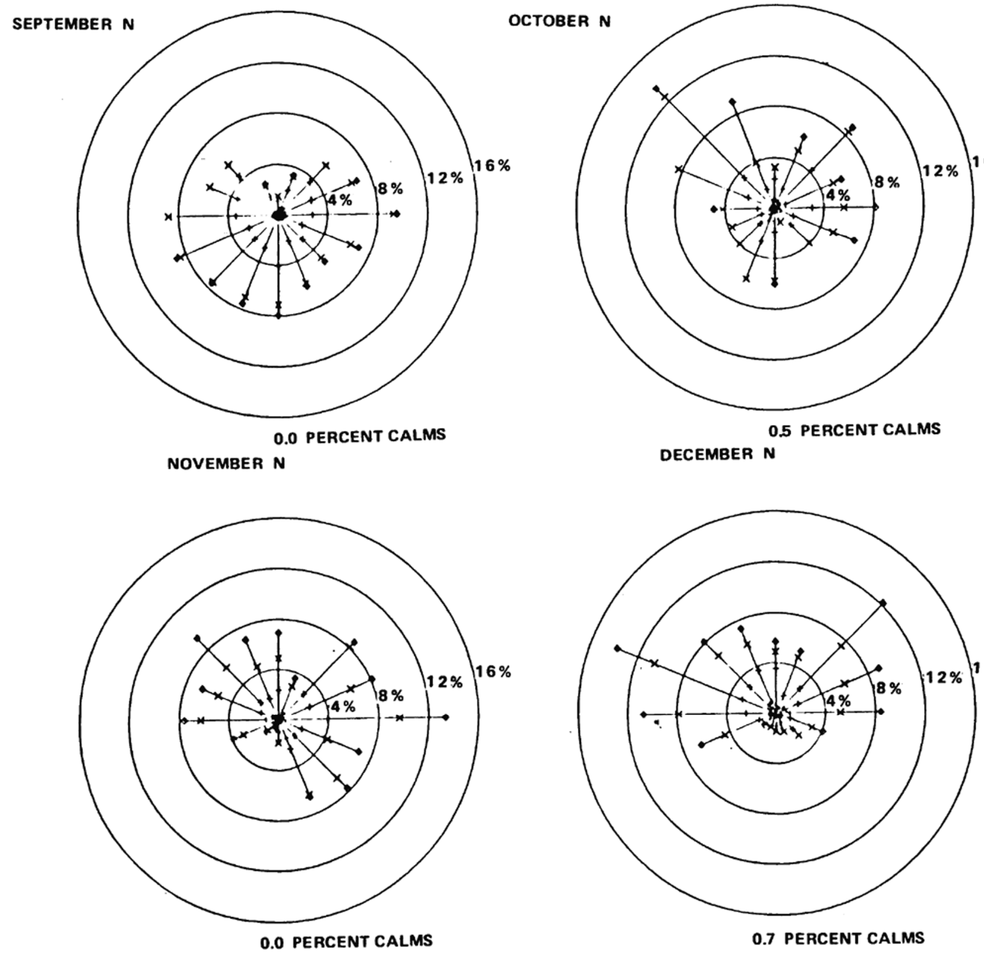
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

150–FT LEVEL MONTHLY WIND ROSE
1980 TO 1981 VEGP SITE DATA

FIGURE 2.3.2–25 (SHEET 2 OF 3)



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH RANGE.
   FOR EXAMPLE.

W O——X——+——△——•
12% 9% 6% 3%

THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE 25 PERCENT HAD SPEEDS 0-3 MPH (INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)), 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE. 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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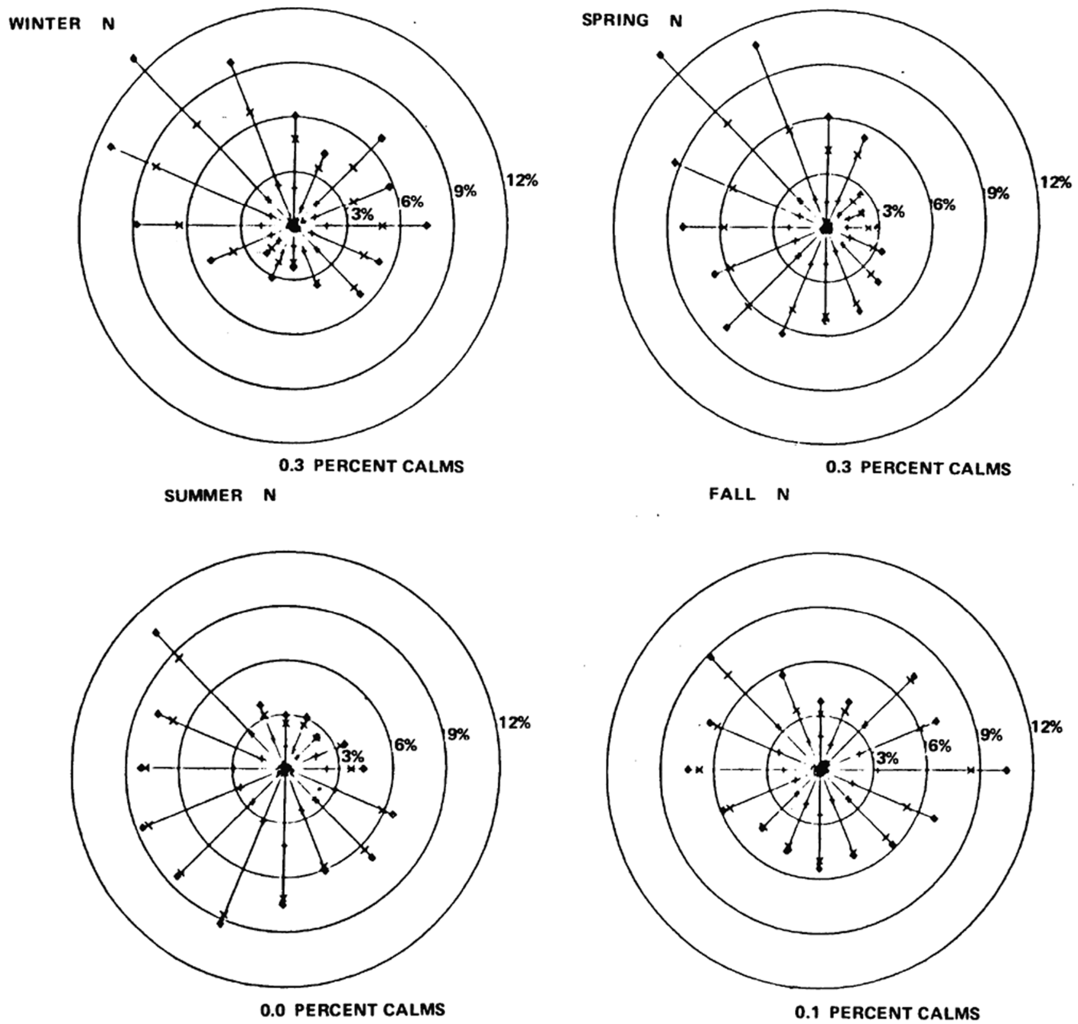
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

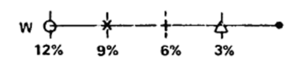
150–FT LEVEL MONTHLY WIND ROSE
1980 TO 1981 VEGP SITE DATA

FIGURE 2.3.2–25 (SHEET 3 OF 3)



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES BASED ON WINDS WHICH OCCURRE SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH RANGE. FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MI (INDICATED BY △ AT ... LINE (25 PERCENT OF ... PERCENT)). 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY ... AT 9 PERCENT LINE, 100 PERCENT HAD WI... 0-999 MPH (INDICATED ... AT ... OF LINE; THIS WILL OBVIOUSL... TRUE OF EVERY RA... OF ... WIND ROSES). WINDS ... IES SUCH AS 7-12 MP... T... BY DIFFERE... L... PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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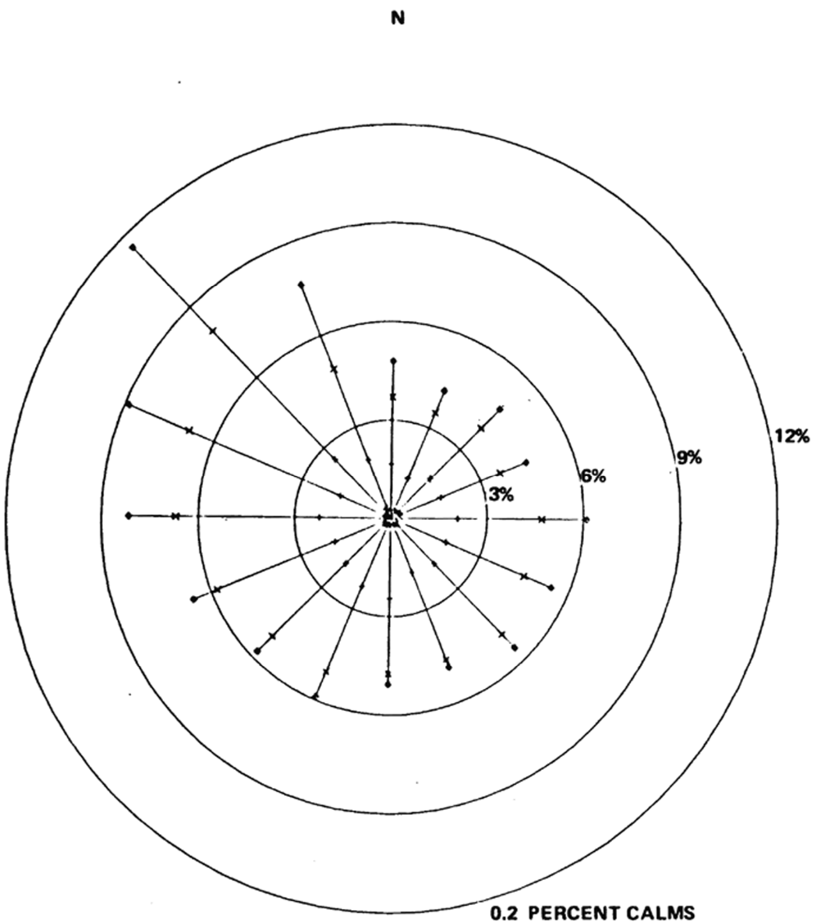
SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

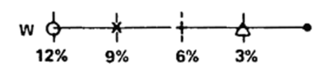
150–FT LEVEL SEASONAL WIND ROSE
1980 TO 1981 VEGP SITE DATA

FIGURE 2.3.2–26



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH [INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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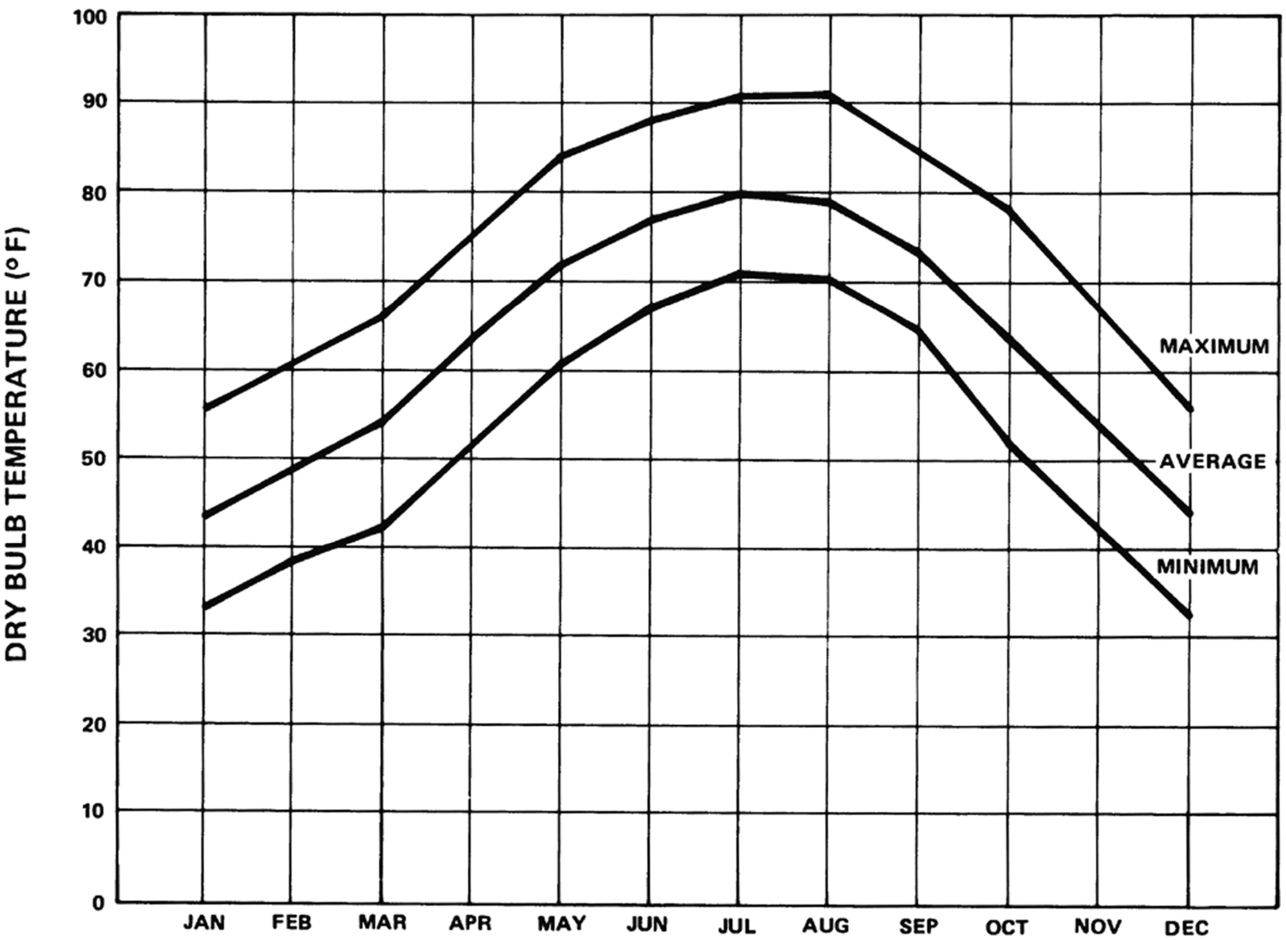
SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	150–FT LEVEL ANNUAL WIND ROSE 1980 TO 1981 VEGP SITE DATA FIGURE 2.3.2–27

AUGUSTA, GEORGIA
1959 TO 1963



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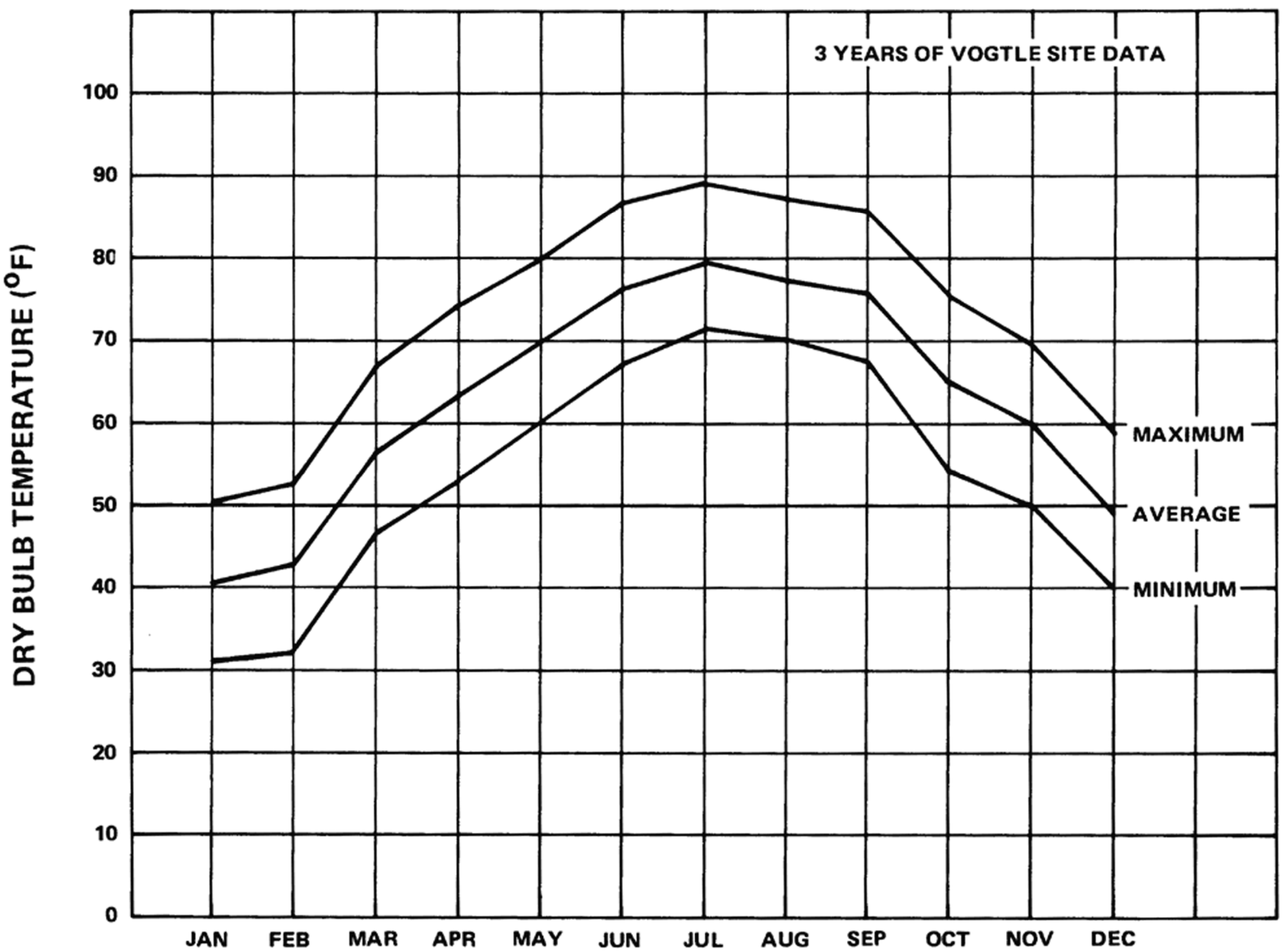
SOUTHERN COMPANY *Energy to Serve Your World®*	**VOGTLE** **ELECTRIC GENERATING PLANT** **UNIT 1 AND UNIT 2**	MONTHLY AVERAGE AND AVERAGE DAILY EXTREMES OF DRY BULB TEMPERATURES
		FIGURE 2.3.2–28



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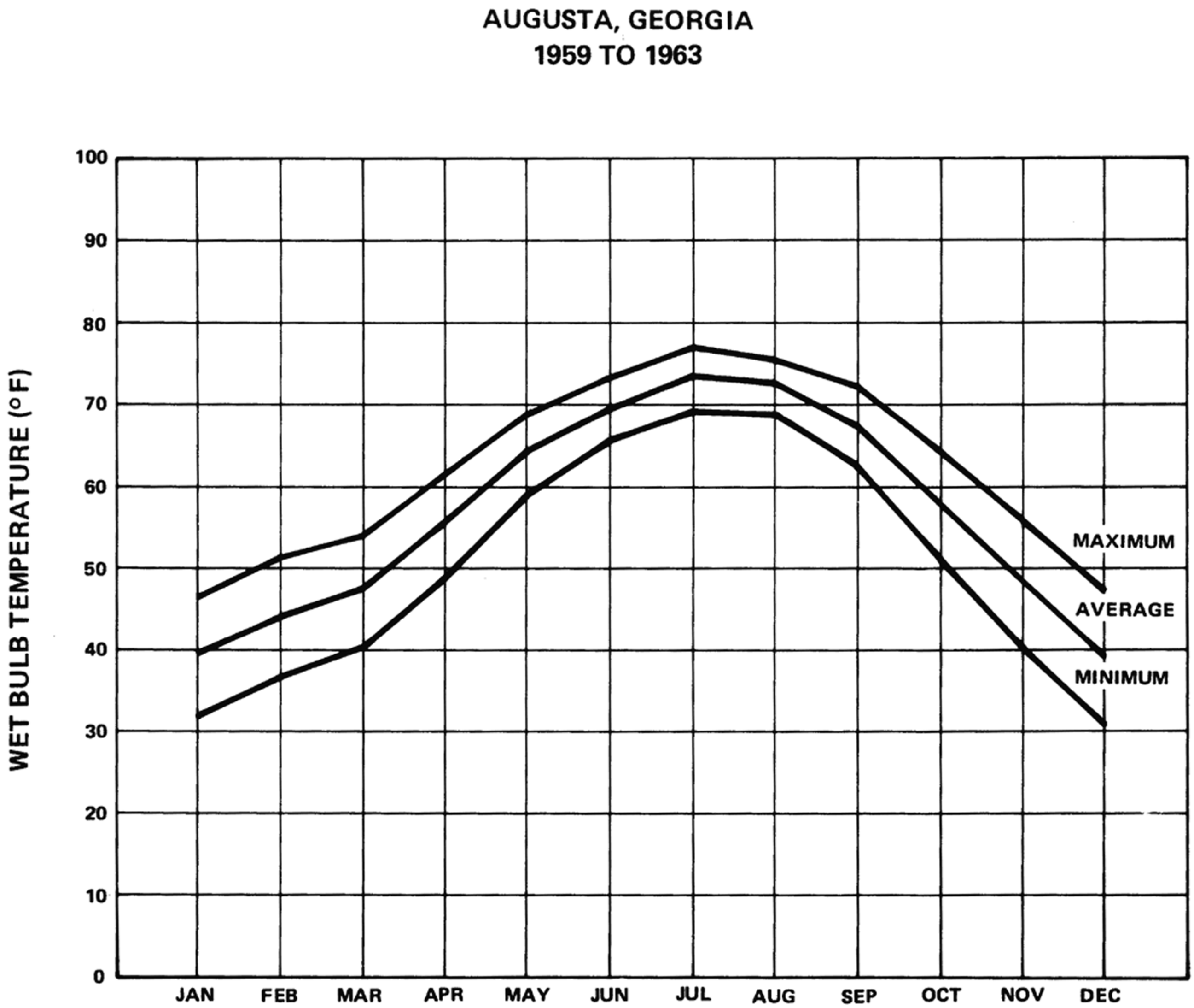
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND AVERAGE
OF DAILY EXTREMES
OF DRY BULB TEMPERATURE

FIGURE 2.3.2–29



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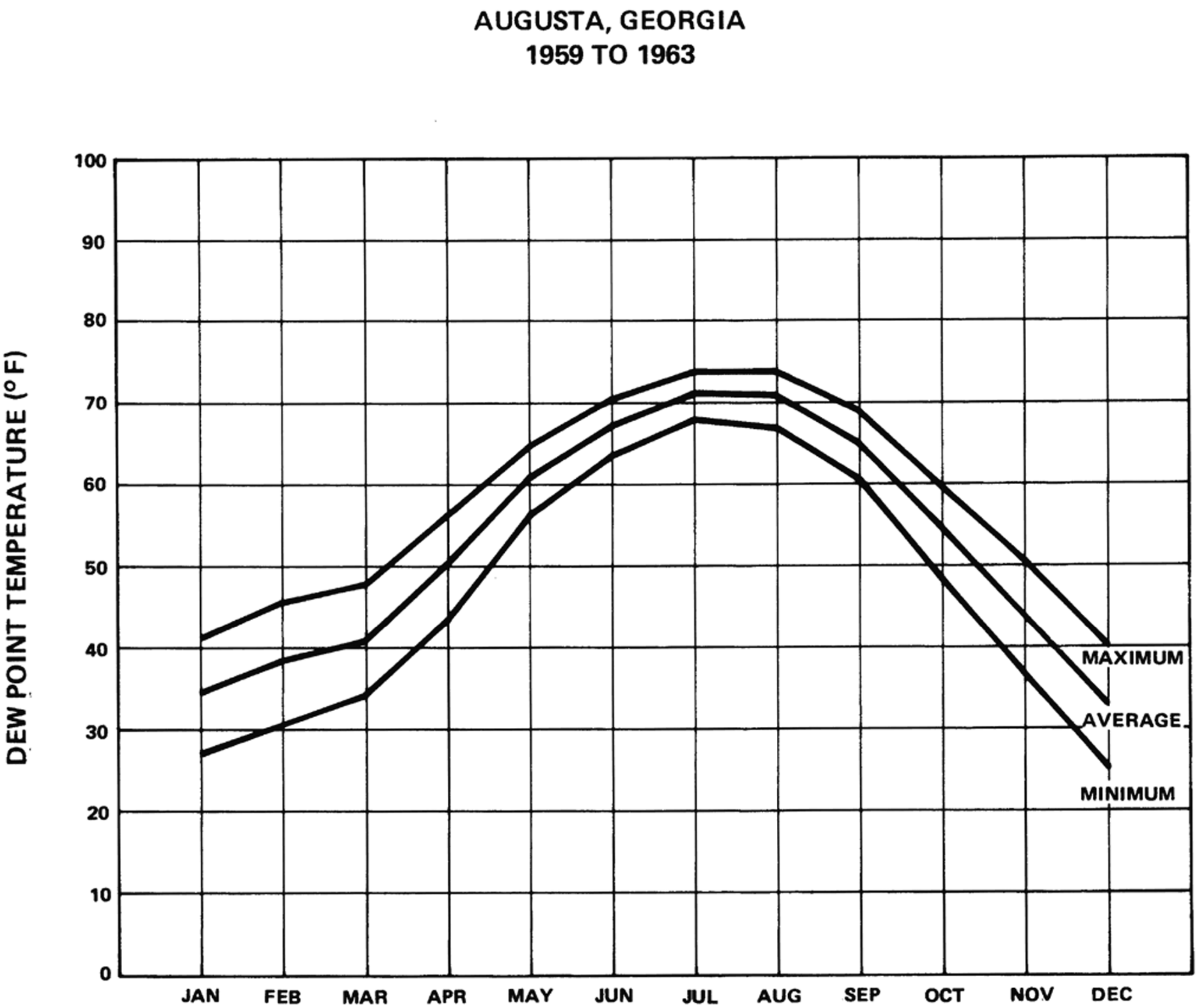
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND
AVERAGE OF DAILY EXTREMES
OF WET BULB TEMPERATURES

FIGURE 2.3.2–30



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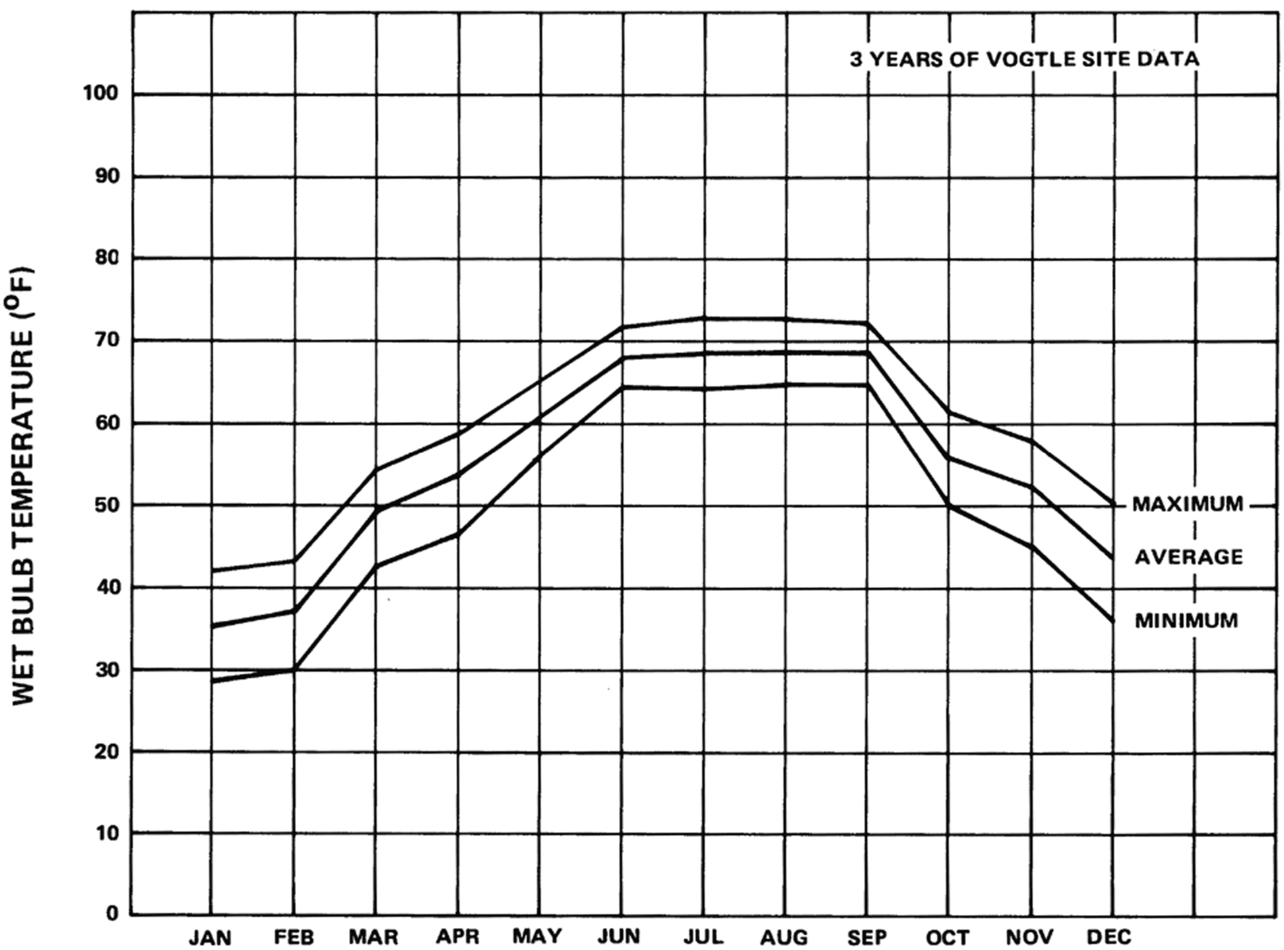
SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	MONTHLY AVERAGE AND AVERAGE DAILY EXTREMES OF DEWPOINT TEMPERATURE FIGURE 2.3.2–31



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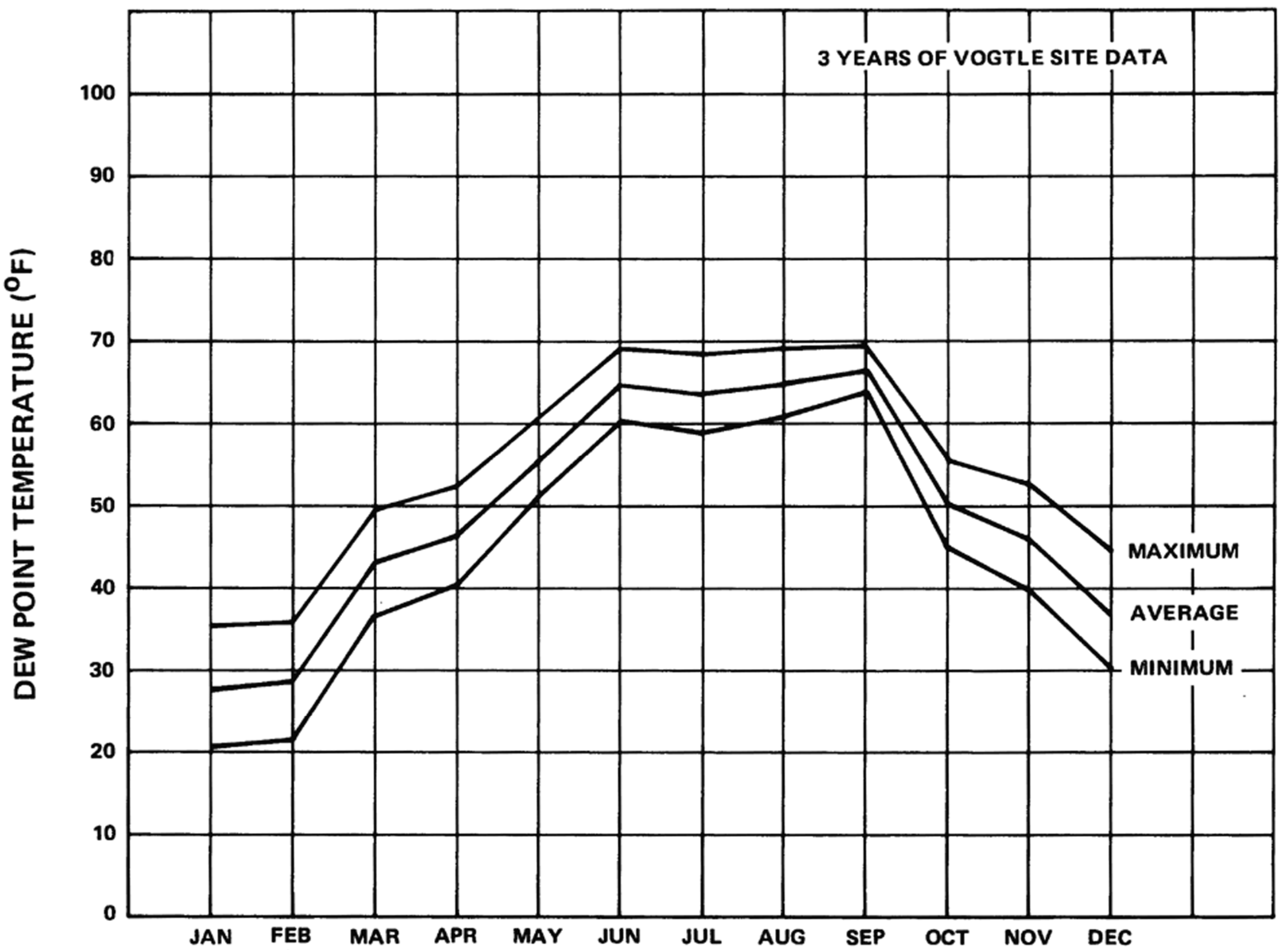
SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	MONTHLY AVERAGE AND AVERAGE OF DAILY EXTREMES OF WET BULB TEMPERATURE FIGURE 2.3.2–32



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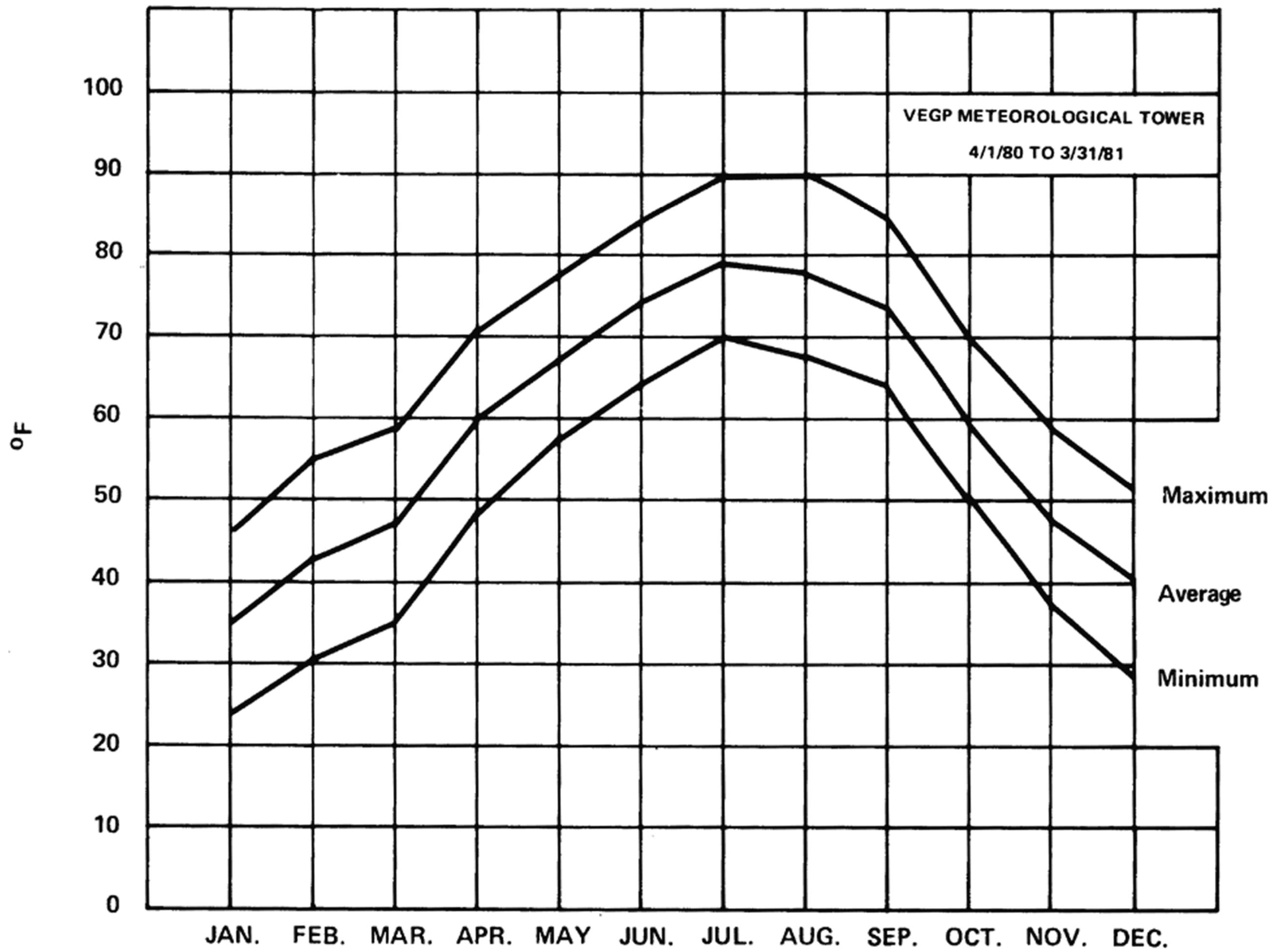
SOUTHERN COMPANY Energy to Serve Your World® VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	MONTHLY AVERAGE AND AVERAGE DAILY EXTREMES OF DEWPOINT TEMPERATURE
	FIGURE 2.3.2–33



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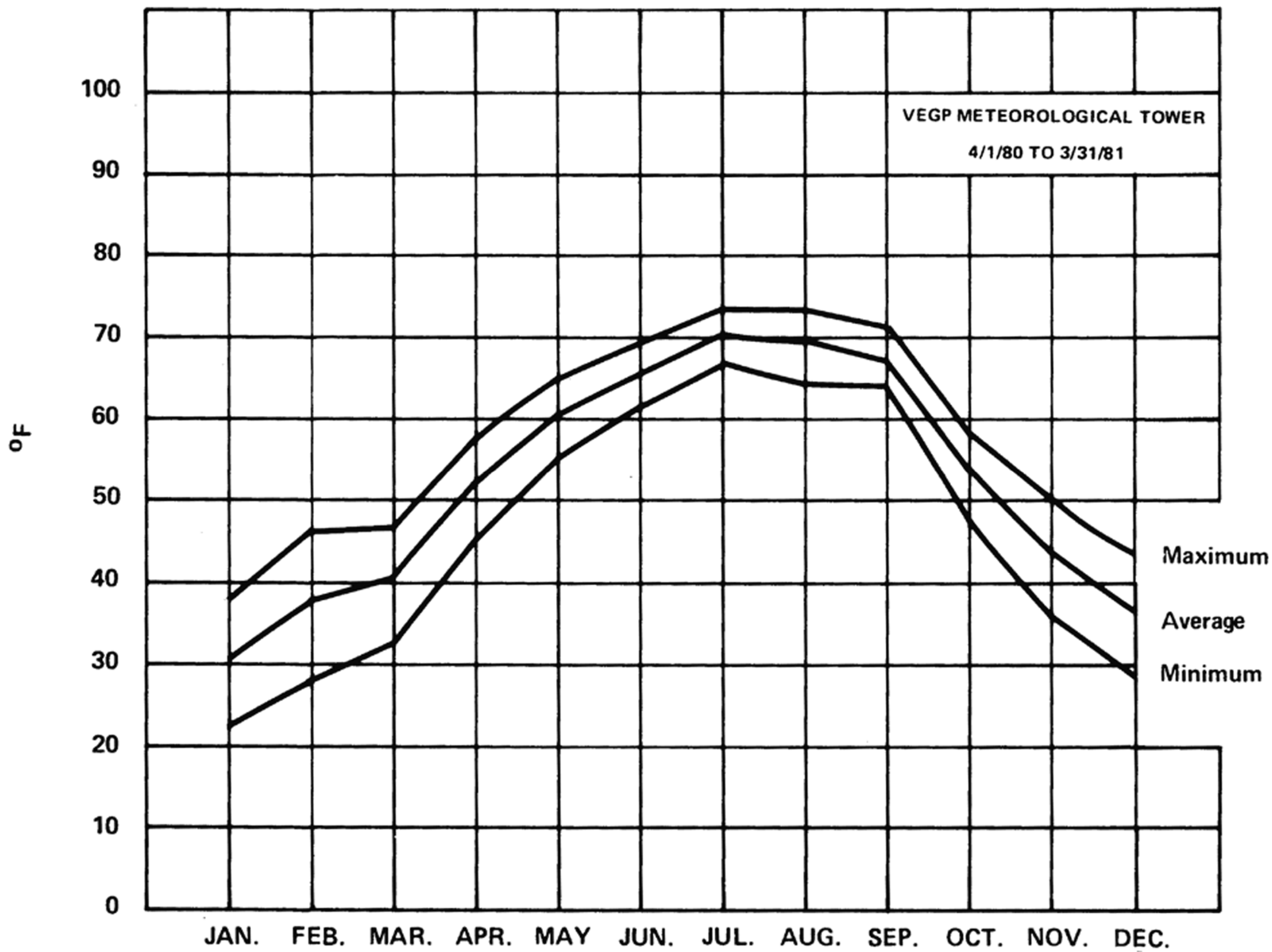
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND
AVERAGE DAILY EXTREMES OF
DRY BULB TEMPERATURE

FIGURE 2.3.2–34



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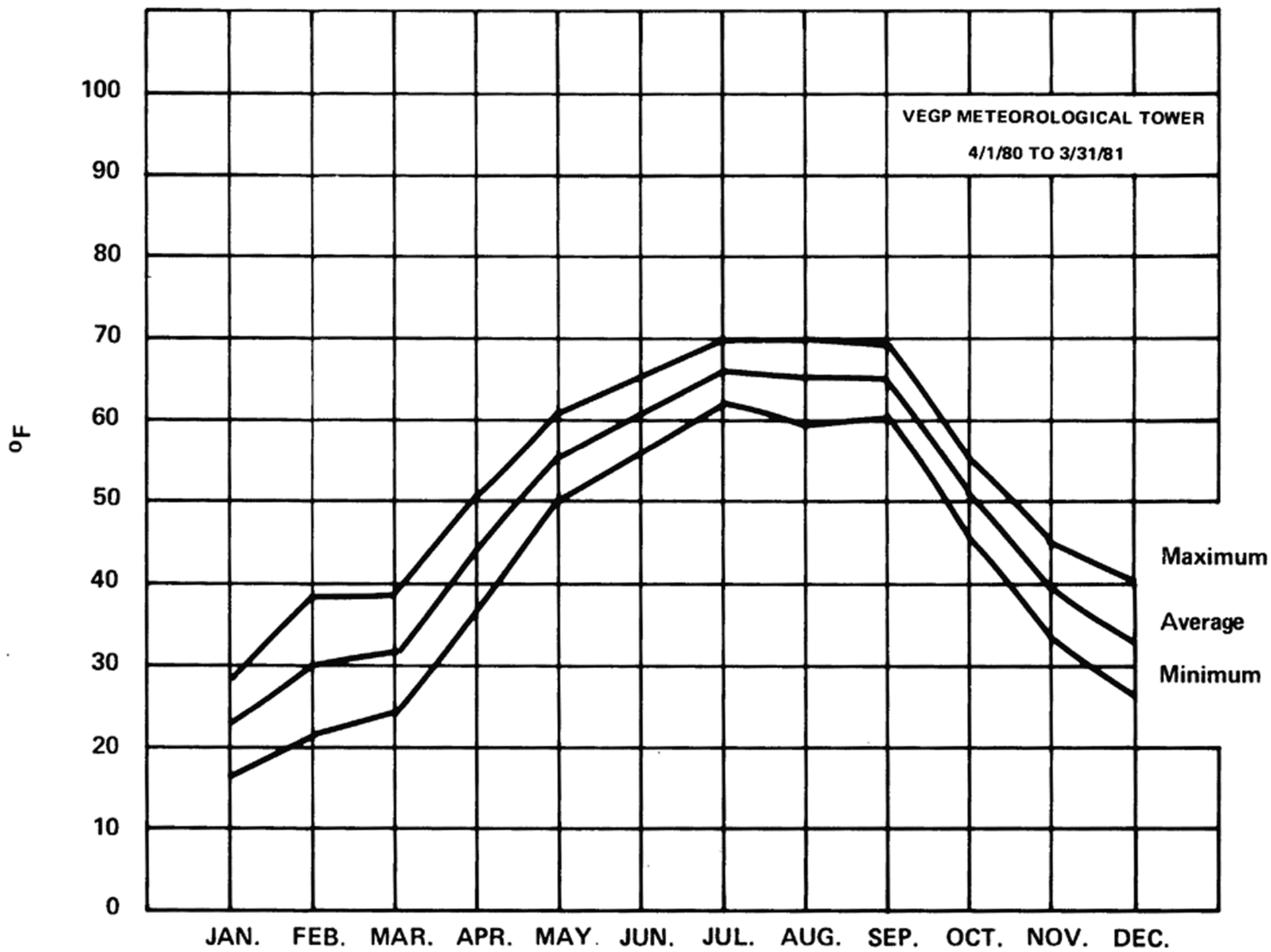
SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	MONTHLY AVERAGE AND AVERAGE DAILY EXTREMES OF WET BULB TEMPERATURE FIGURE 2.3.2–35



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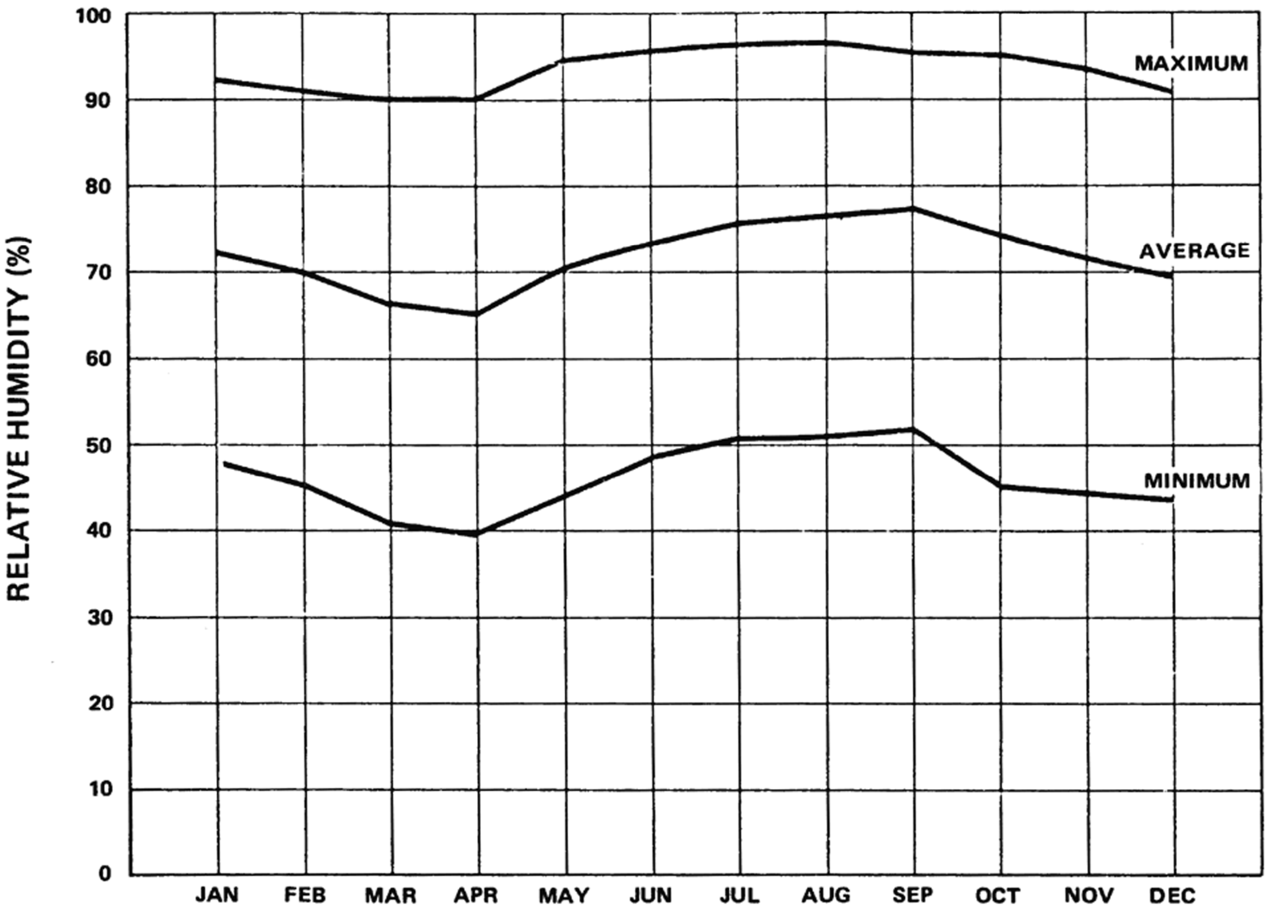
Energy to Serve Your World®

**VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2**

MONTHLY AVERAGE AND
AVERAGE DAILY EXTREMES OF
DEWPOINT TEMPERATURE

FIGURE 2.3.2–36

AUGUSTA, GEORGIA
1959 TO 1963



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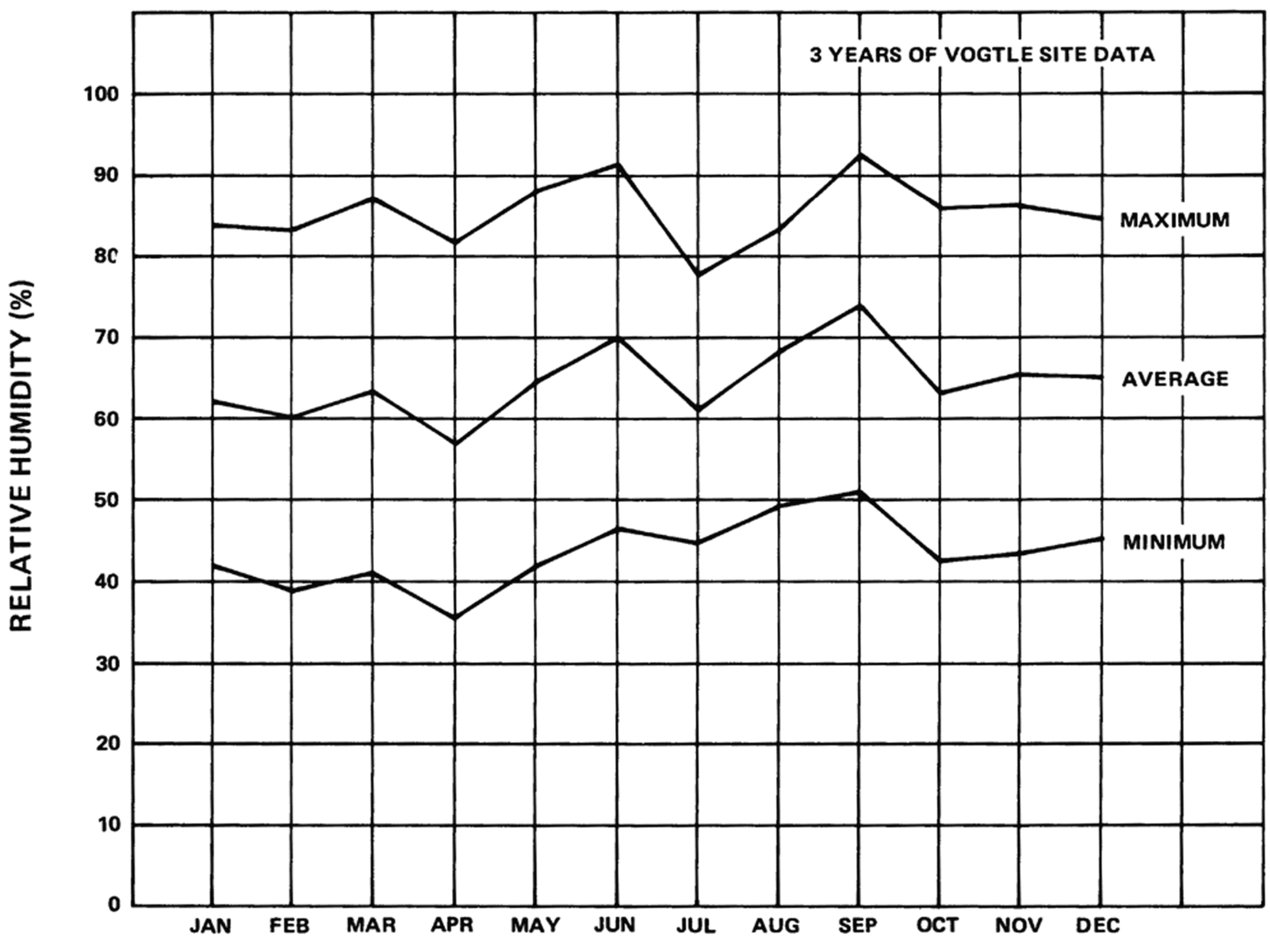
SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND
AVERAGE OF DAILY EXTREMES
OF RELATIVE HUMIDITY

FIGURE 2.3.2–37



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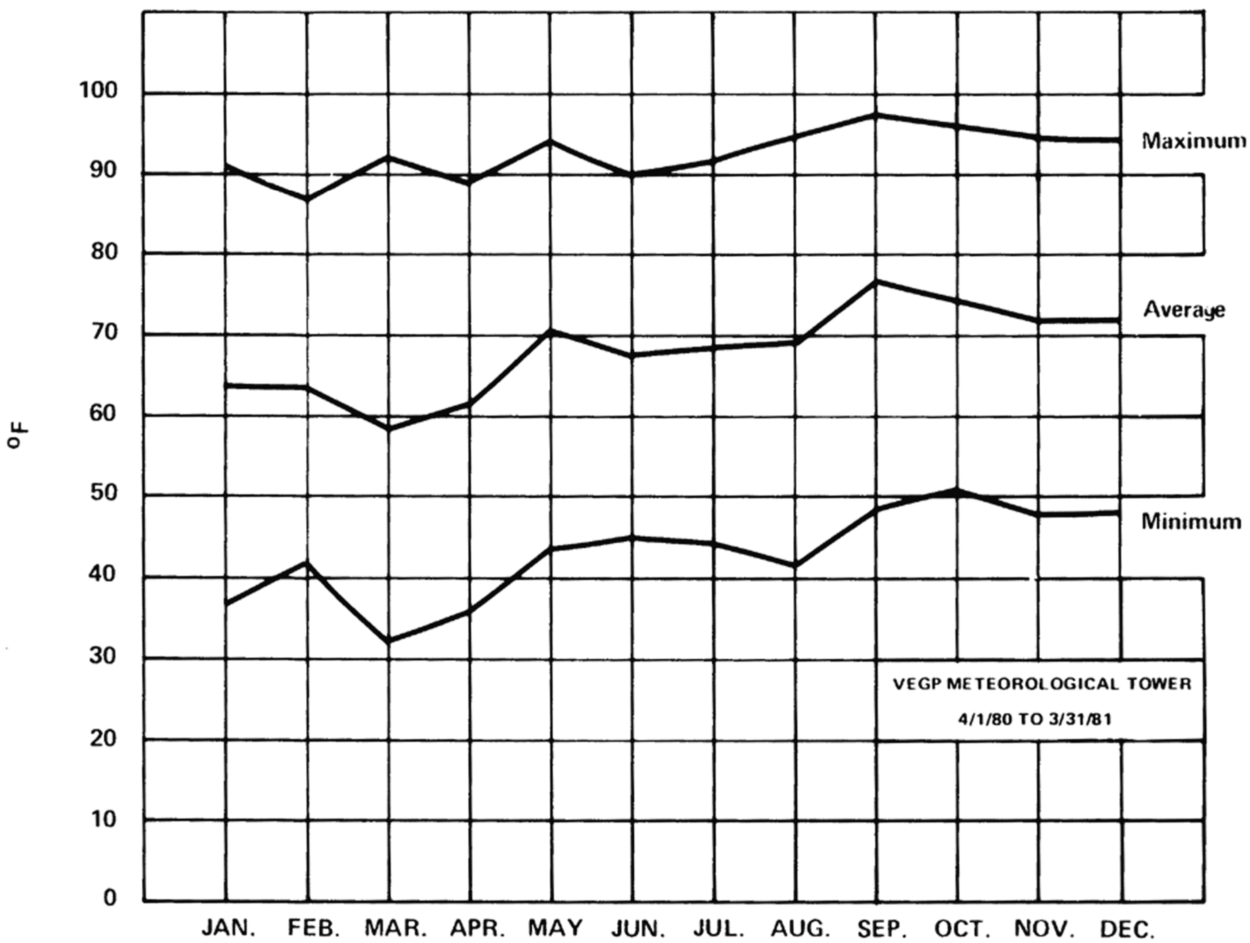
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND AVERAGE
OF DAILY EXTREMES
OF RELATIVE HUMIDITY

FIGURE 2.3.2–38



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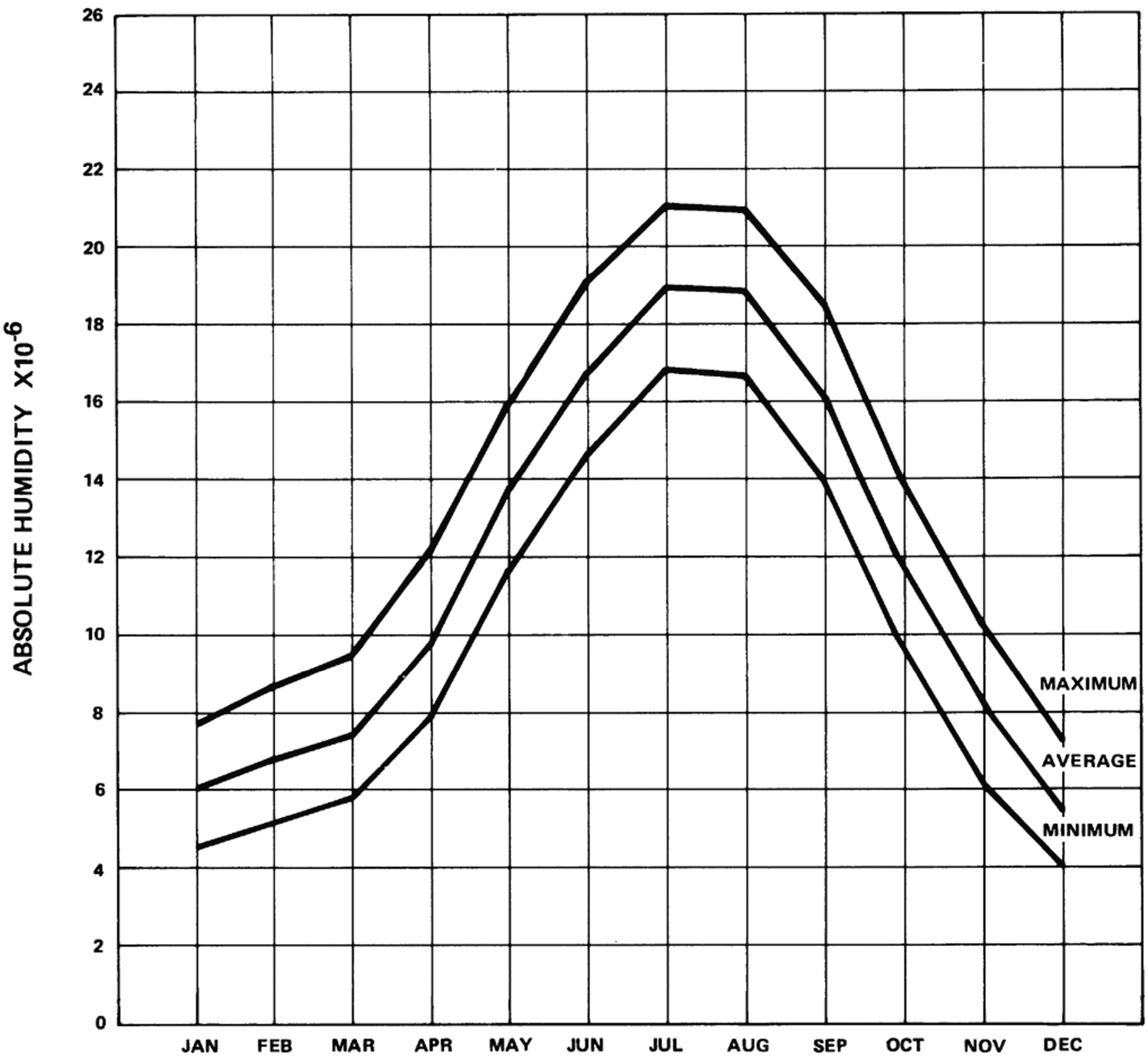
SOUTHERN COMPANY
Energy to Serve Your World®

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND
AVERAGE DAILY EXTREMES OF
RELATIVE HUMIDITY

FIGURE 2.3.2–39

AUGUSTA, GEORGIA
1959 TO 1963



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SOUTHERN COMPANY
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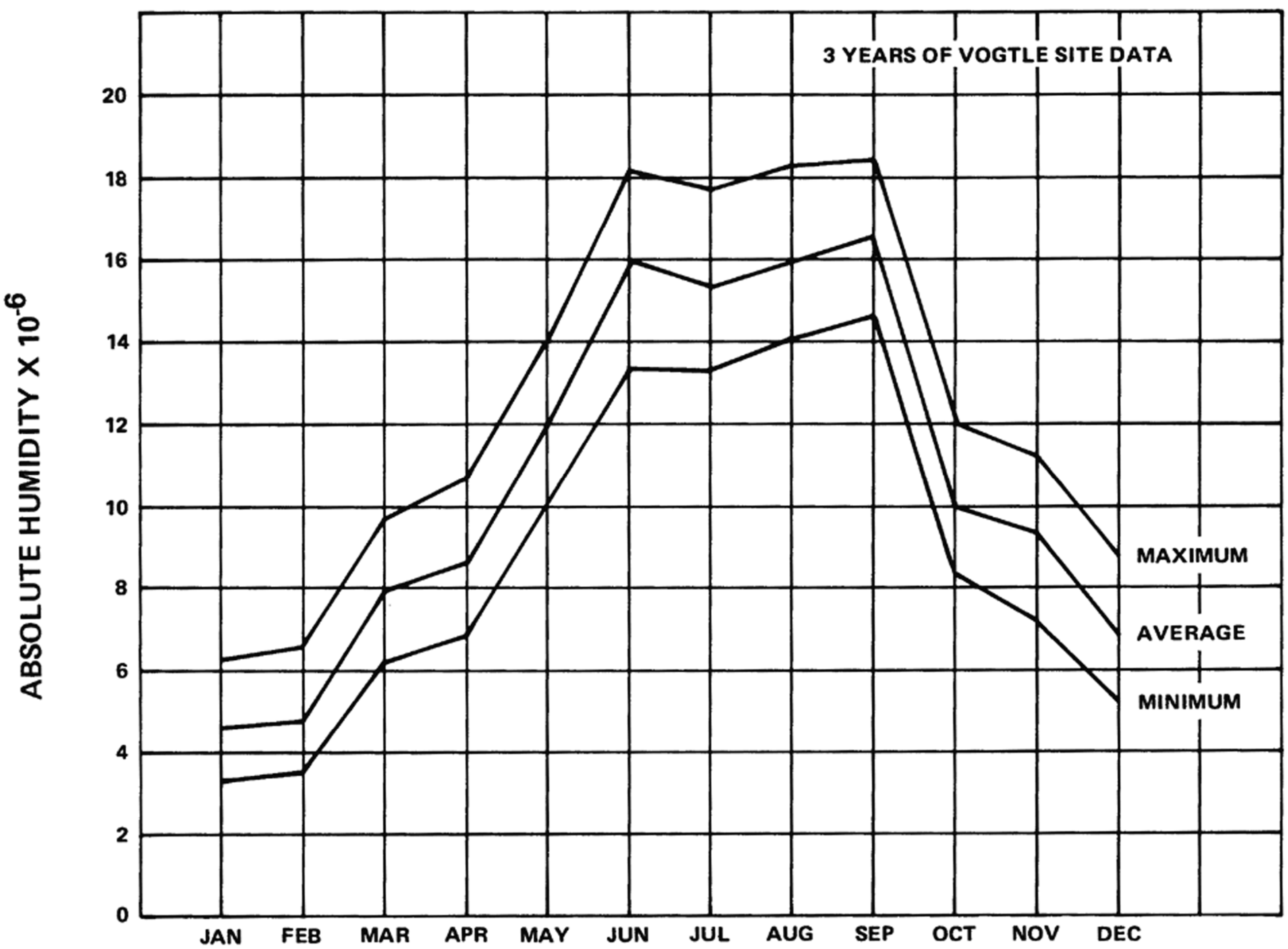
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND
AVERAGE OF DAILY EXTREMES
OF ABSOLUTE HUMIDITY

FIGURE 2.3.2–40



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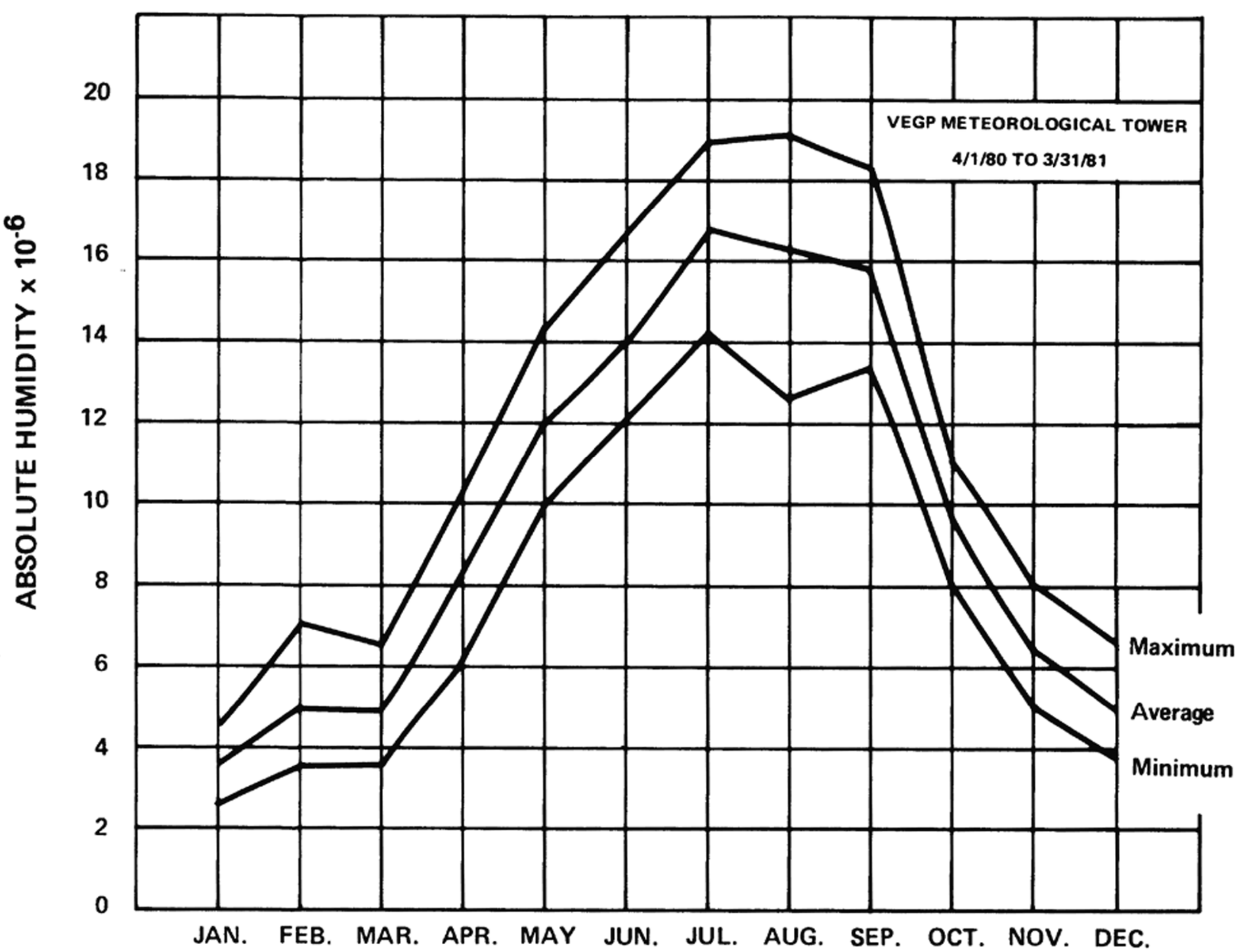
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND AVERAGE
OF DAILY EXTREMES
OF ABSOLUTE HUMIDITY

FIGURE 2.3.2–41



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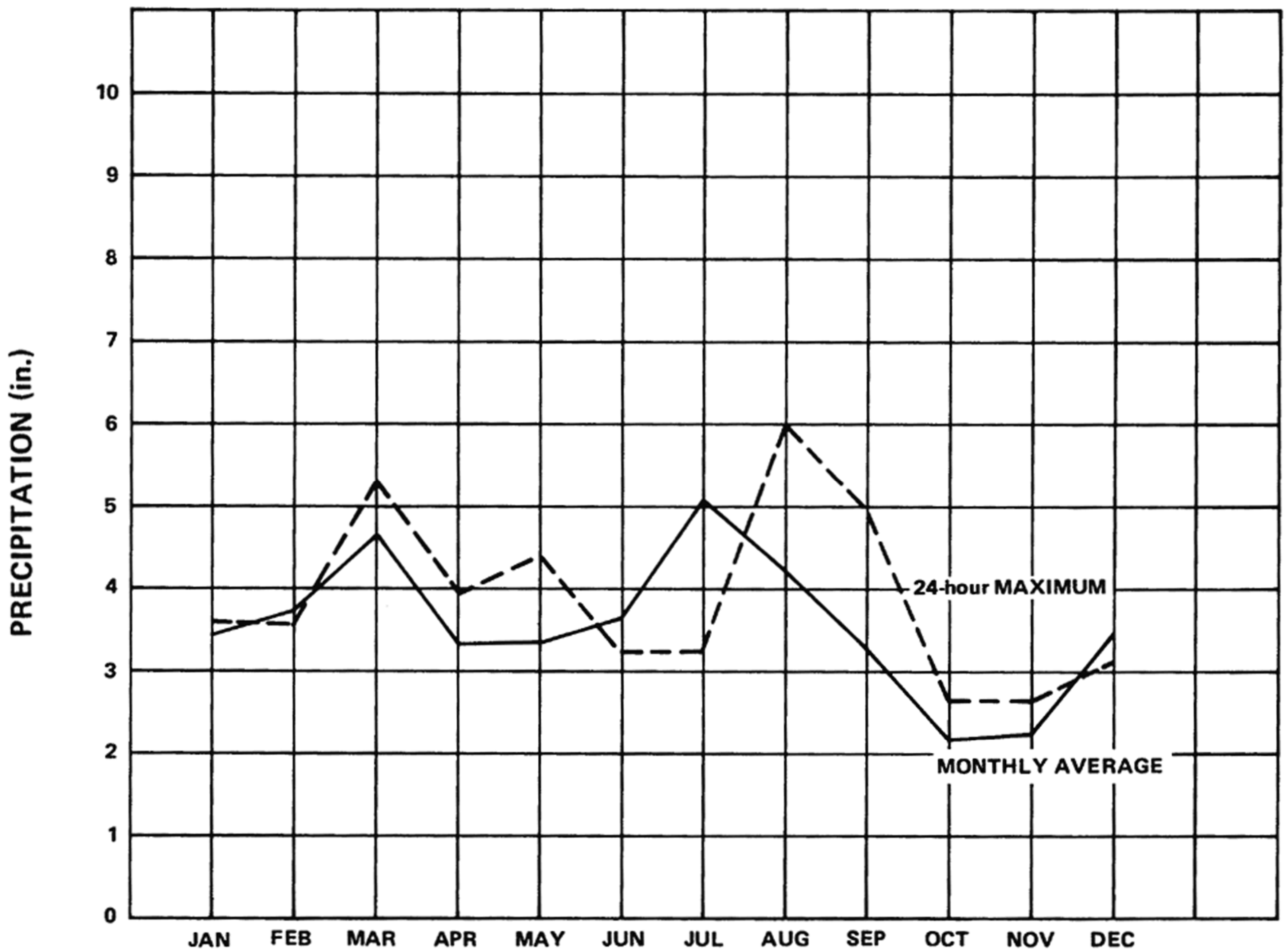
SOUTHERN COMPANY Energy to Serve Your World®	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	MONTHLY AVERAGE AND AVERAGE DAILY EXTREMES OF ABSOLUTE HUMIDITY FIGURE 2.3.2–42



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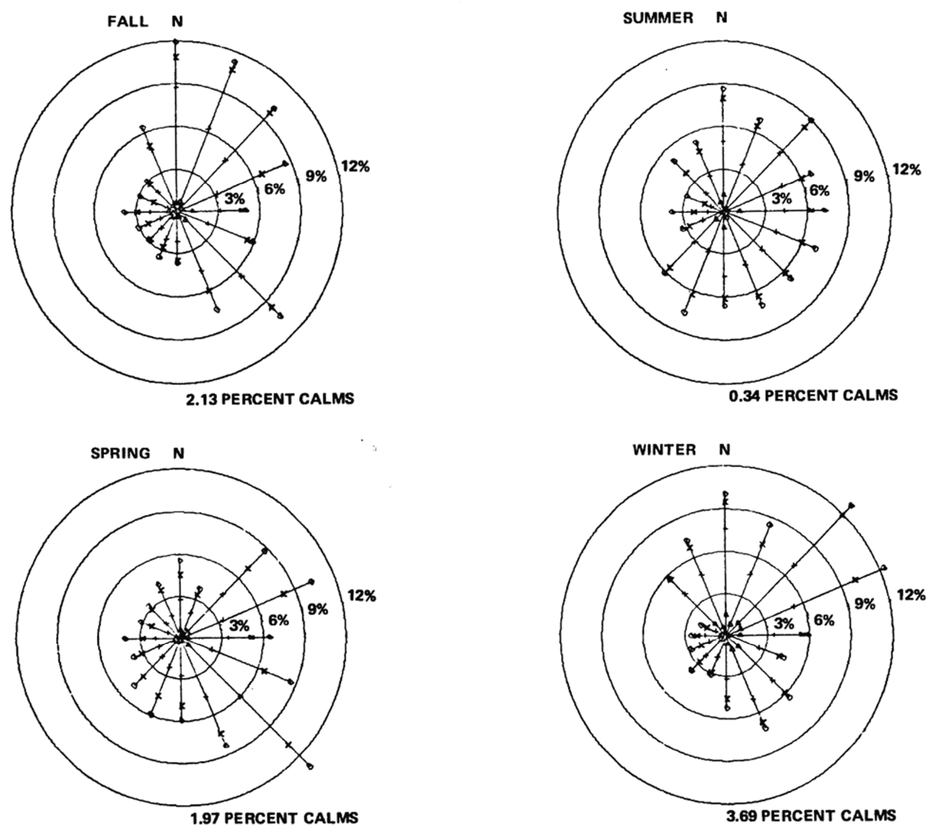
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND
24–HOUR MAXIMUM PRECIPITAION

FIGURE 2.3.2–43



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.

   W 12% 9% 6% 3%

   THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH [INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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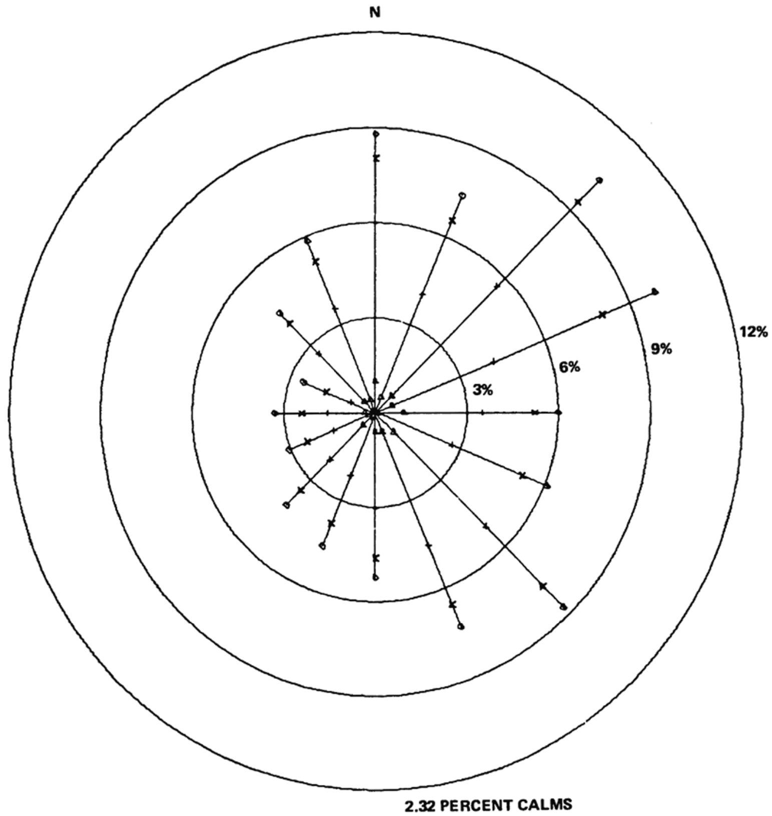
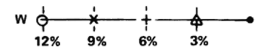
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

PRECIPITATION WIND ROSES FOR AUGUSTA AIRPORT (1959 TO 1963)

FIGURE 2.3.2–44



NOTES:
1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH [INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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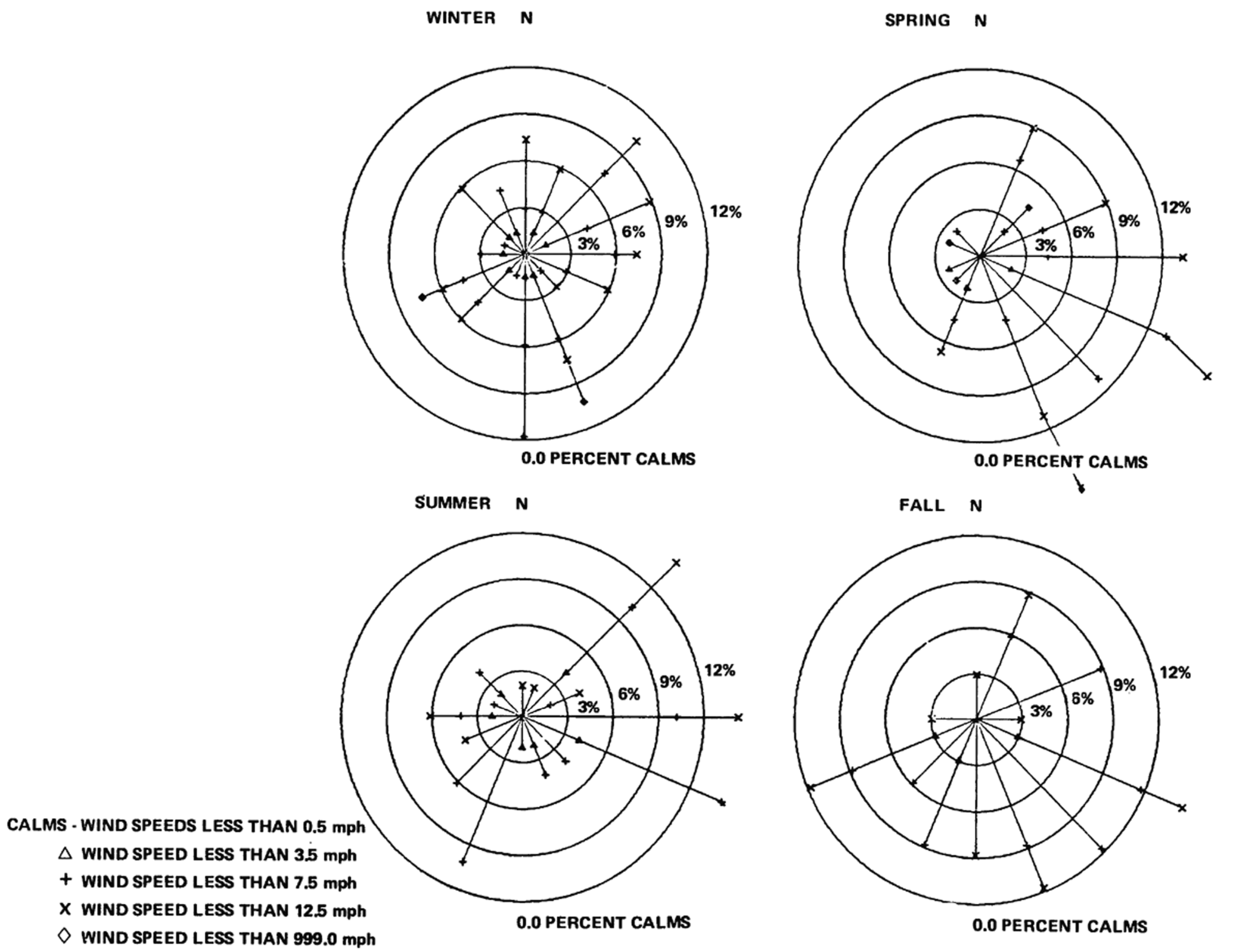
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

PRECIPITATION WIND ROSES FOR AUGUSTA AIRPORT (1959 TO 1963)

FIGURE 2.3.2–45



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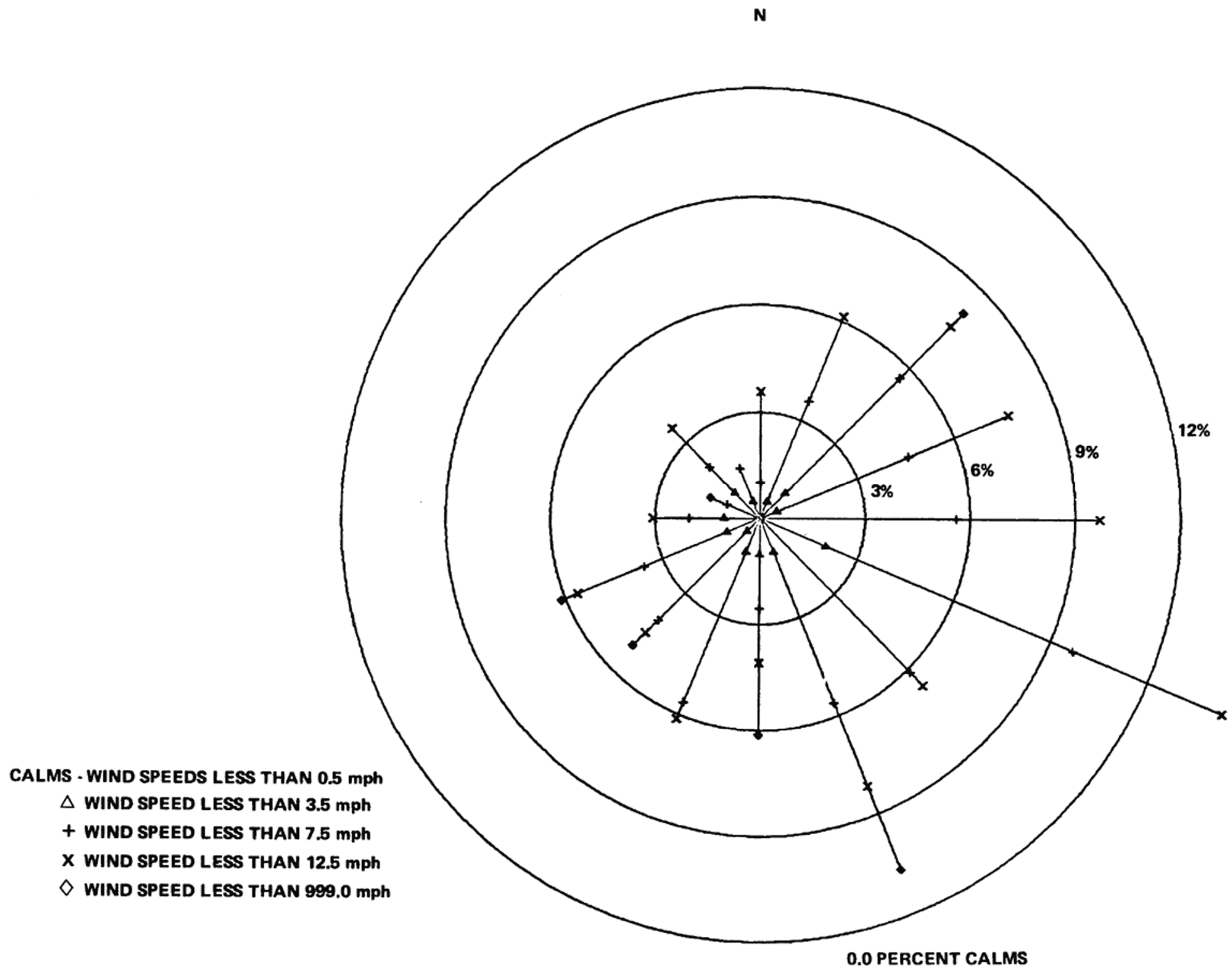
SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	33–FT LEVEL PRECIPITATION WIND ROSE 1972 TO 1973 FIGURE 2.3.2–46



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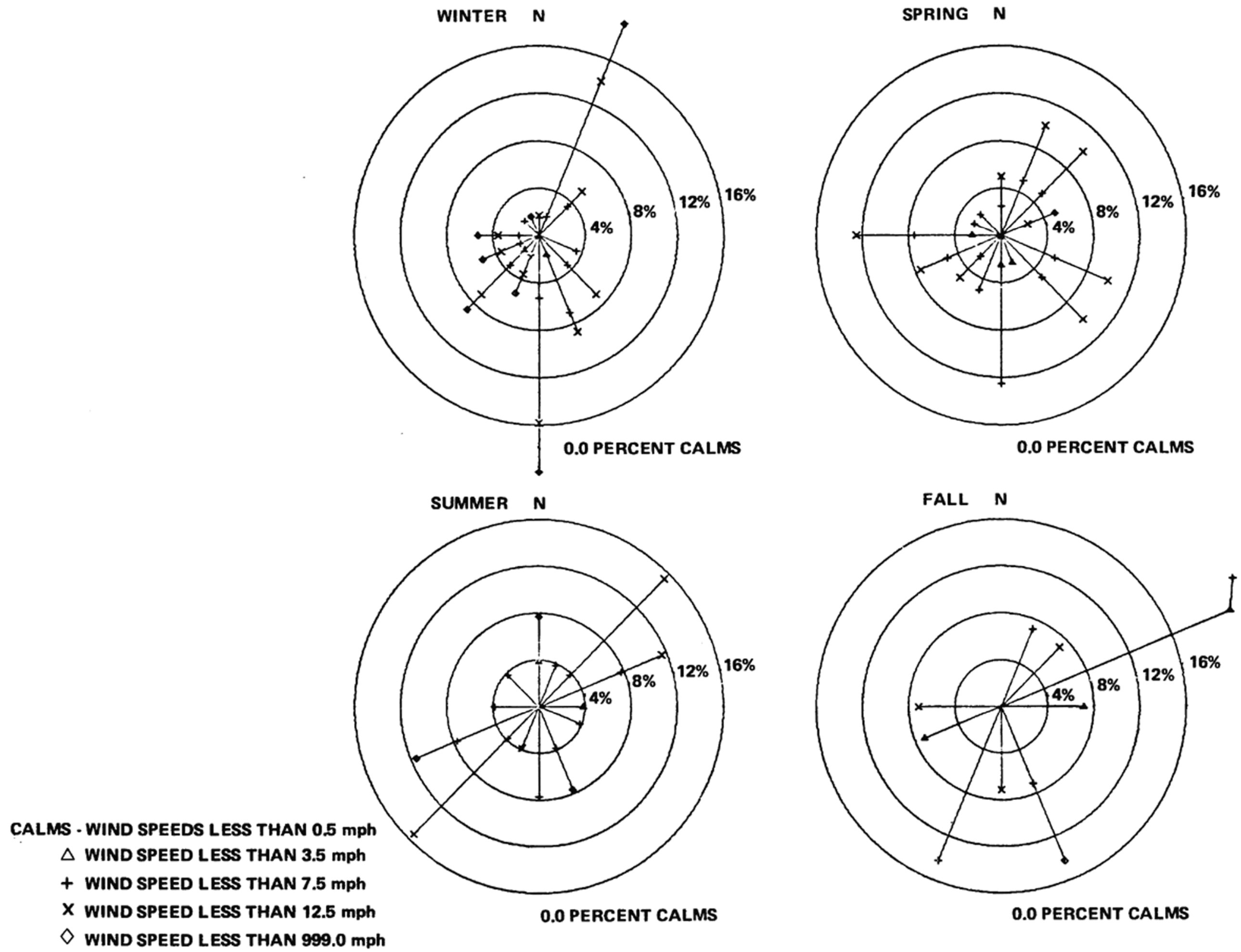
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL PRECIPITATION
WIND ROSE 1972 TO 1973

FIGURE 2.3.2–47



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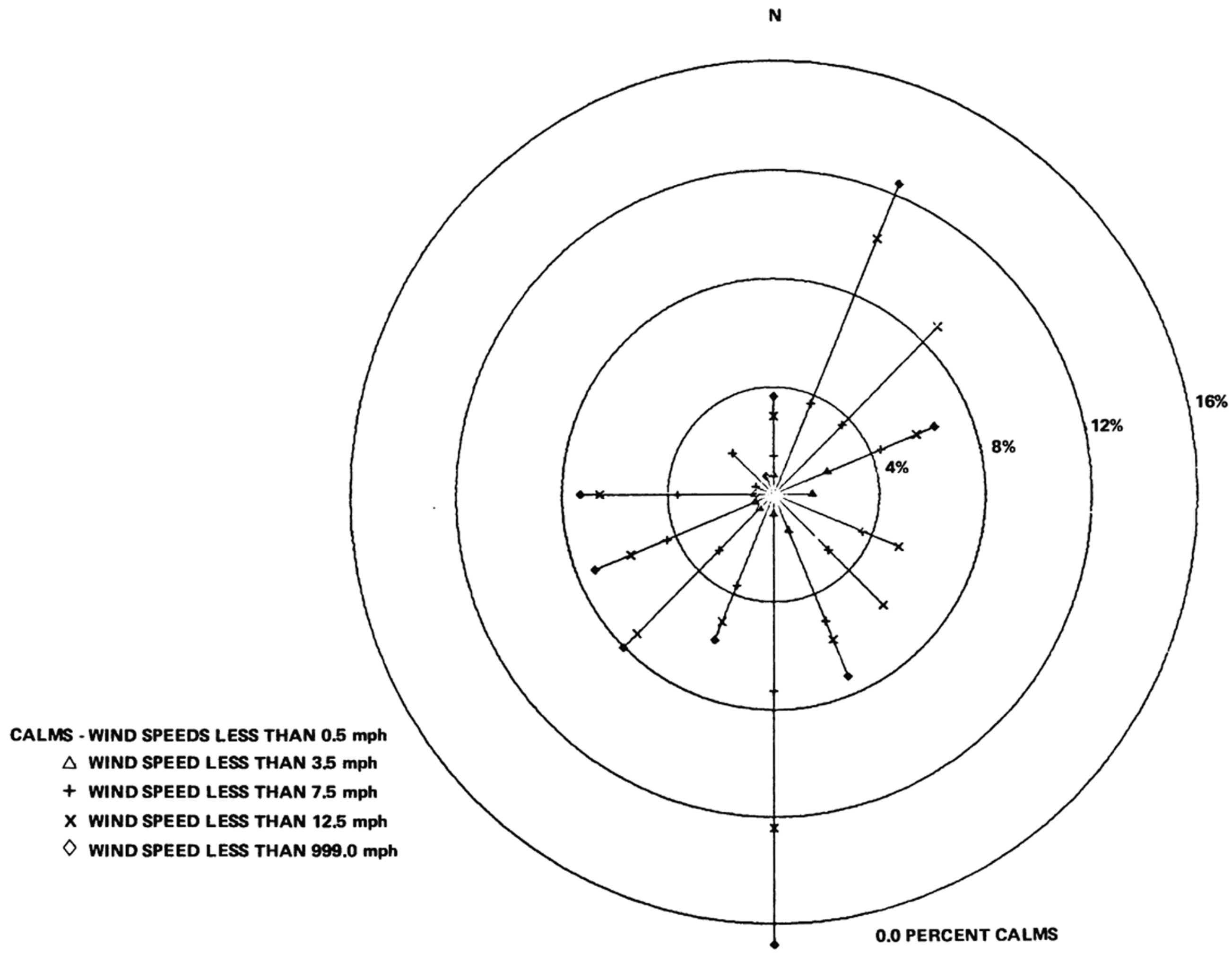
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL PRECIPITATION
WIND ROSE 1977 TO 1978

FIGURE 2.3.2–48



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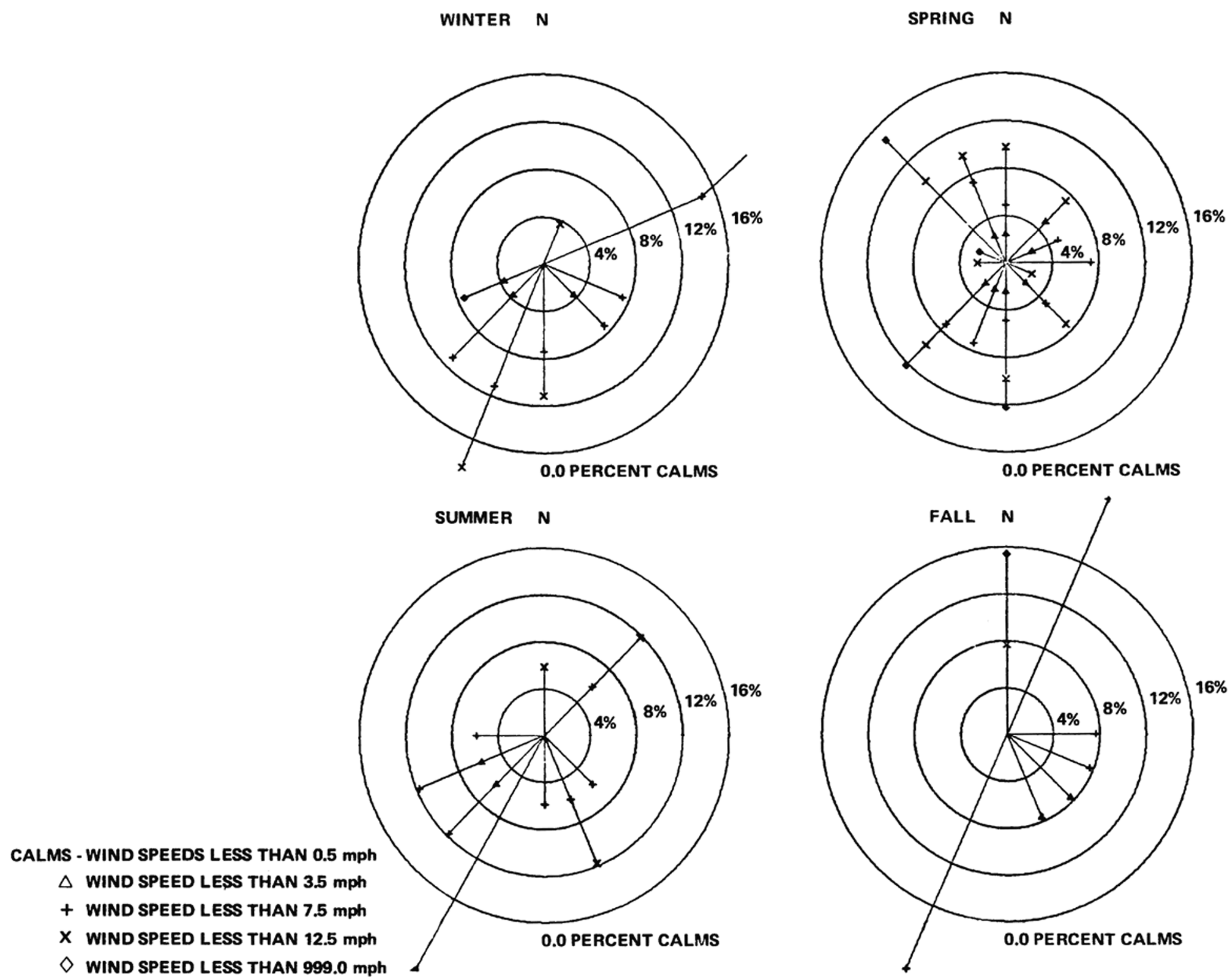
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL PRECIPITATION
WIND ROSE 1977 TO 1978

FIGURE 2.3.2–49



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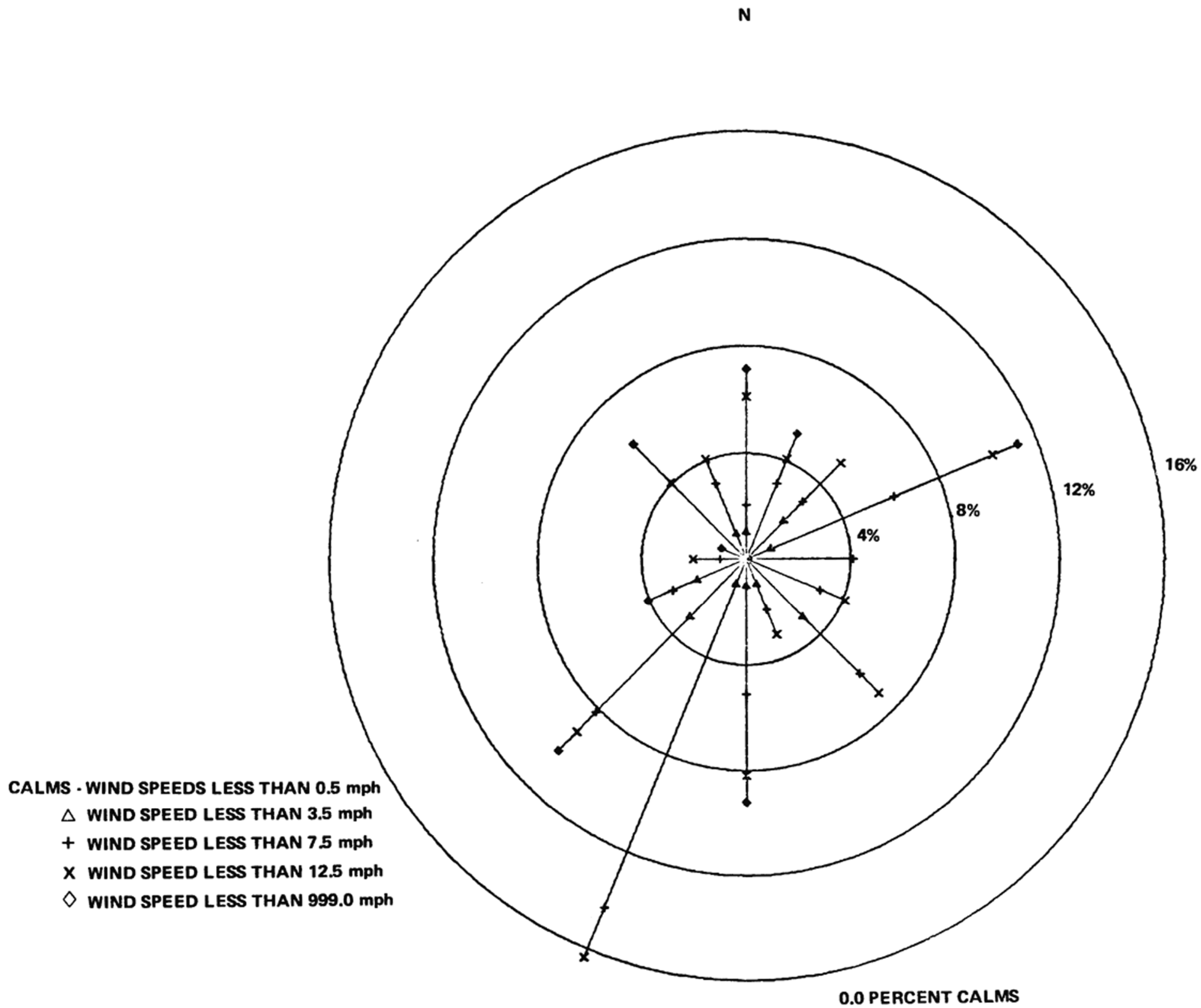
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL PRECIPITATION
WIND ROSE 1978 TO 1979

FIGURE 2.3.2–50



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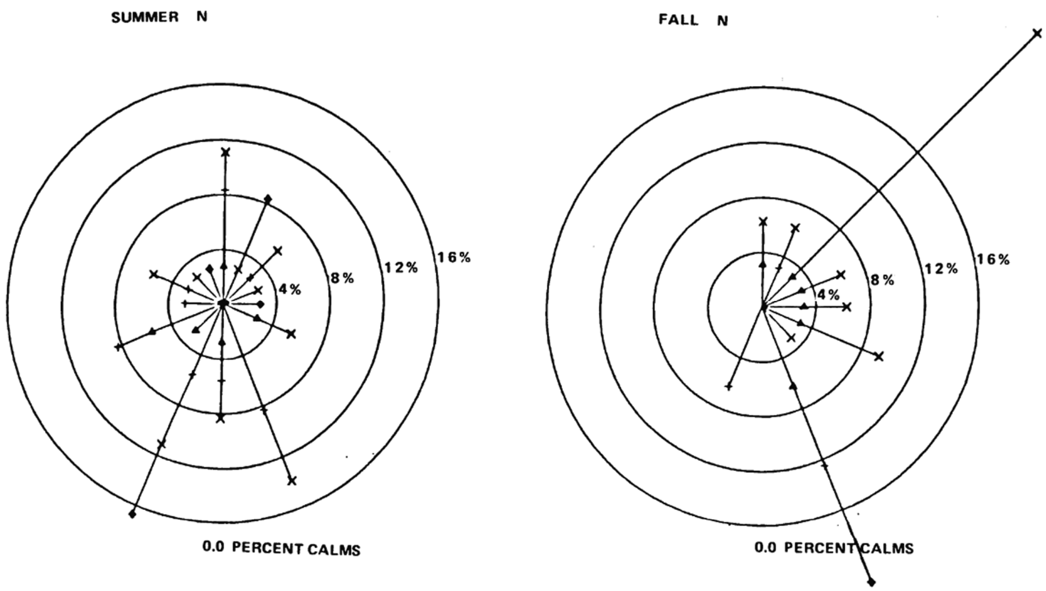
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

33–FT LEVEL PRECIPITATION
WIND ROSE 1978 TO 1979

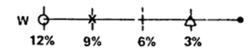
FIGURE 2.3.2–51



NOTES:

1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △, +, X, O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.

FOR EXAMPLE.



THIS RADIAL, REPRESENTING WIND FROM THE WEST, INDICATES A TOTAL FREQUENCY OF 12 PERCENT WINDS FROM THE WEST; OF THESE, 25 PERCENT HAD SPEEDS 0-3 MPH [INDICATED BY △ AT 3 PERCENT LINE (25 PERCENT OF 12 PERCENT)], 50 PERCENT HAD WINDS 0-7 MPH (INDICATED BY + AT 6 PERCENT LINE), 75 PERCENT HAD WINDS 0-12 MPH (INDICATED BY X AT 9 PERCENT LINE, 100 PERCENT HAD WINDS 0-999 MPH (INDICATED BY O AT END OF LINE; THIS WILL OBVIOUSLY BE TRUE OF EVERY RADIAL OF ALL WIND ROSES). WINDS IN CATEGORIES SUCH AS 7-12 MPH CAN BE OBTAINED BY DIFFERENCES OF CUMULATIVE PERCENTS.

CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
\+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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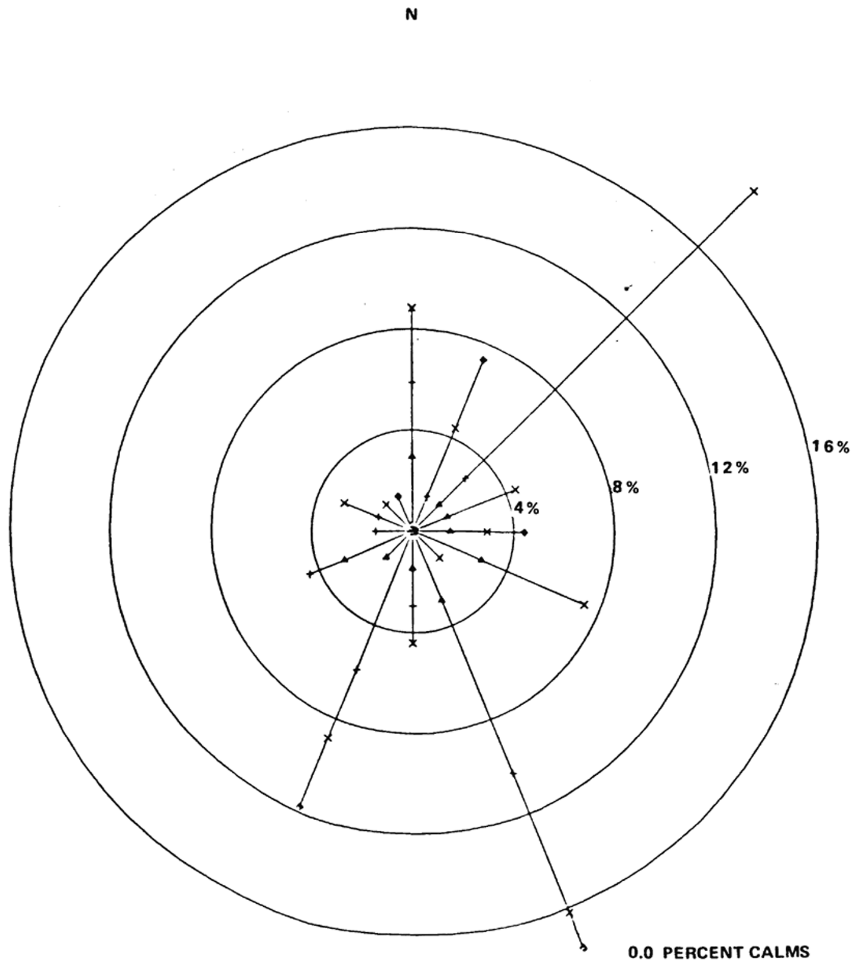
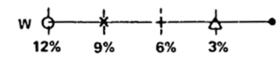
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

PRECIPITATION WIND ROSE
SEASONAL 1980 TO 1981

FIGURE 2.3.2–52



NOTES:
1. WIND SPEEDS INDICATED ARE IN MILES PER HOUR.
2. ALL WIND ROSES USE UPWIND SECTORS, i.e., INDICATED NORTH MEANS WIND FROM THE NORTH.
3. PRECIPITATION WIND ROSES ARE BASED ON WINDS WHICH OCCURRED SIMULTANEOUSLY WITH PRECIPITATION OF ANY TYPE OR INTENSITY.
4. THE △ , +, X , O ENTRIES ON WIND ROSE RADIALS ARE CUMULATIVE FRACTIONS OF WIND FROM THE PARTICULAR DIRECTION OF THAT RADIAL WHICH HAD SPEED IN GIVEN MPH-RANGE.
   FOR EXAMPLE.



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CALMS - WIND SPEEDS LESS THAN 0.5 mph
△ WIND SPEED LESS THAN 3.5 mph
+ WIND SPEED LESS THAN 7.5 mph
X WIND SPEED LESS THAN 12.5 mph
O WIND SPEED LESS THAN 999.0 mph

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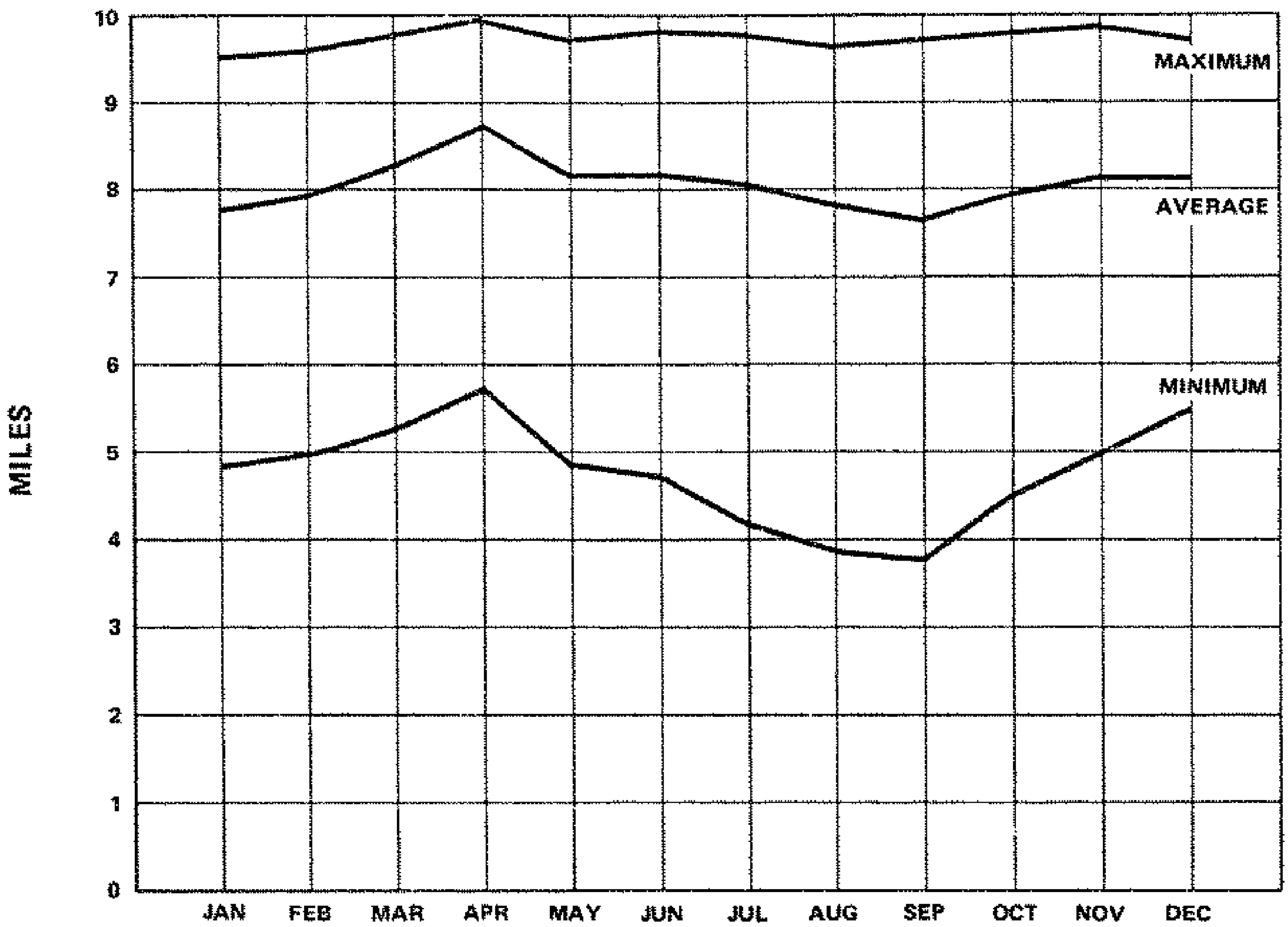
UNIT 1 AND UNIT 2

PRECIPITATION WIND ROSE
ANNUAL 1980 TO 1981

FIGURE 2.3.2–53



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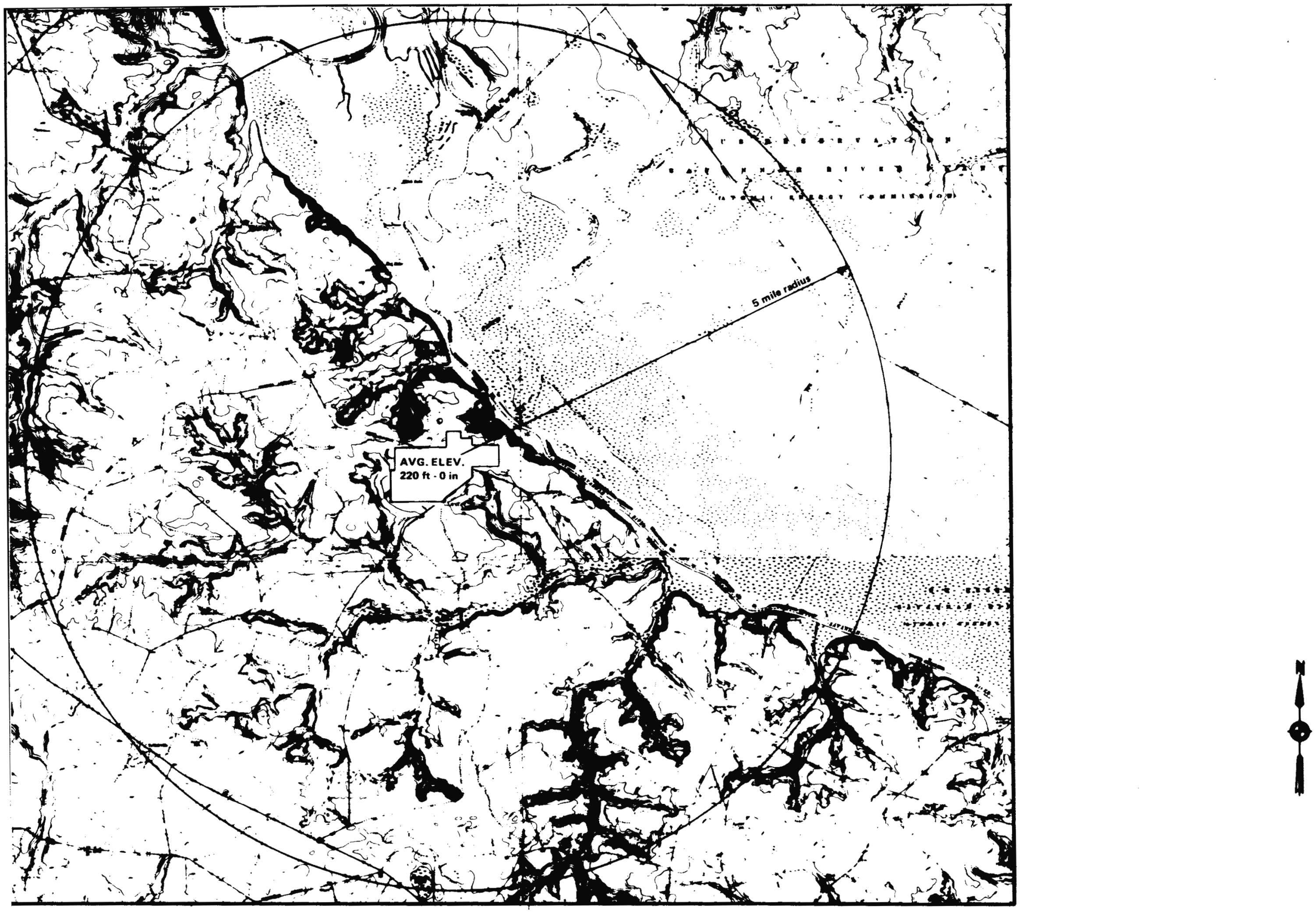
UNIT 1 AND UNIT 2

MONTHLY AVERAGE AND AVERAGES OF DAILY EXTREMES OF VISIBILITY

FIGURE 2.3.2–54



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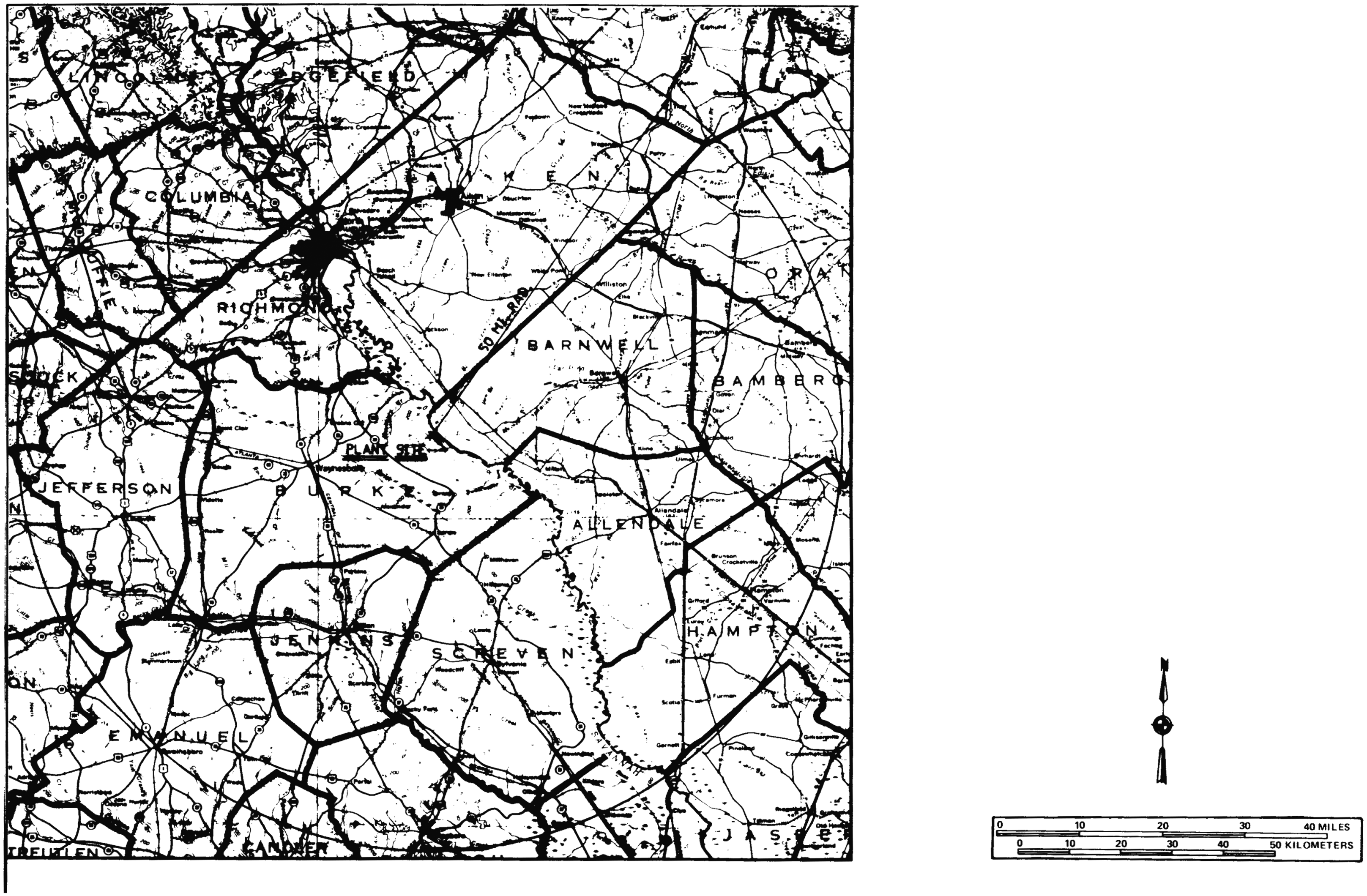
UNIT 1 AND UNIT 2

TOPOGRAPHIC FEATURES
0– TO 5– MILE RADIUS FROM PLANT SITE

FIGURE 2.3.2–55



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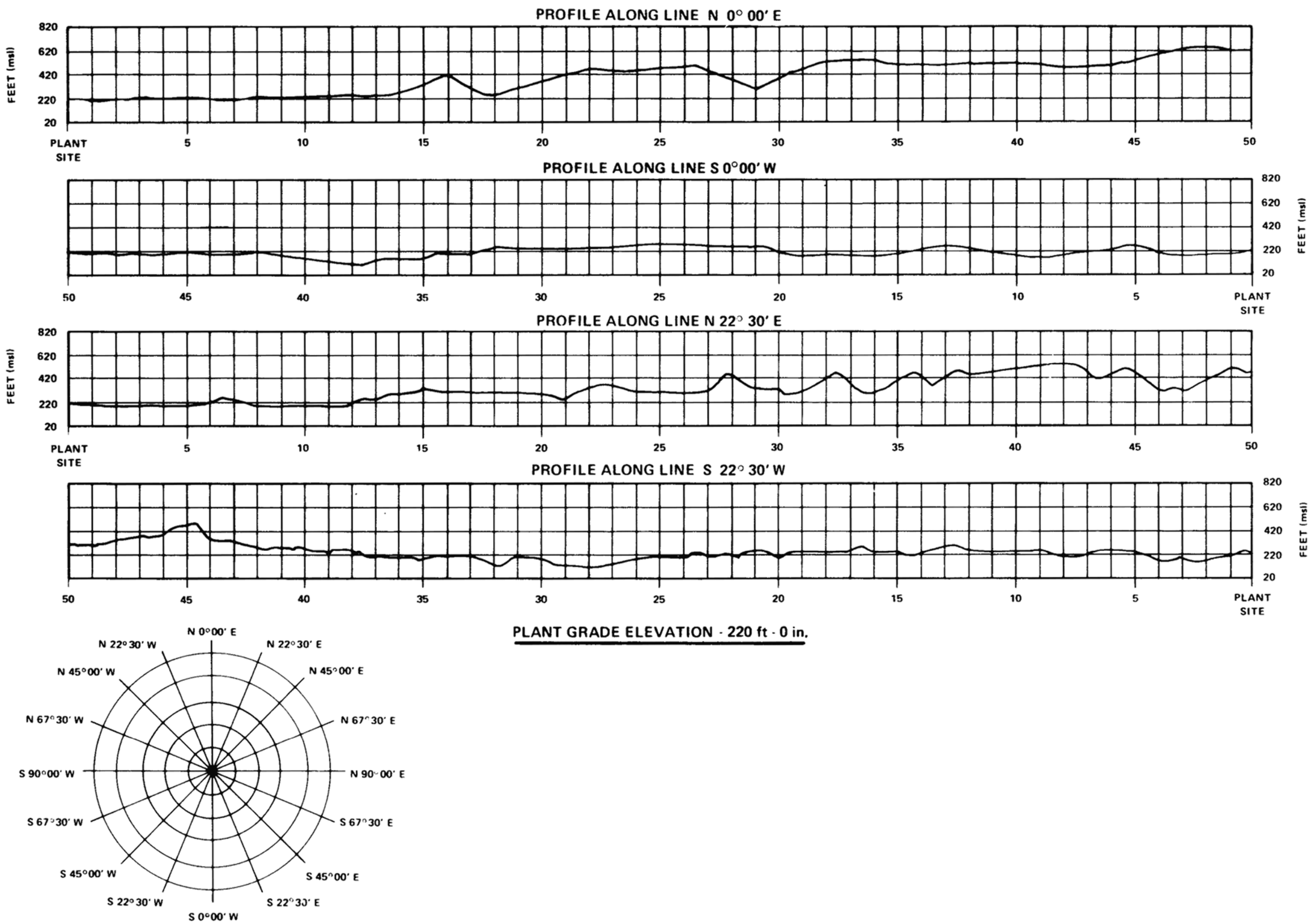
UNIT 1 AND UNIT 2

TOPOGRAPHIC FEATURES
0– TO 5– MILE RADIUS FROM PLANT SITE

FIGURE 2.3.2–56



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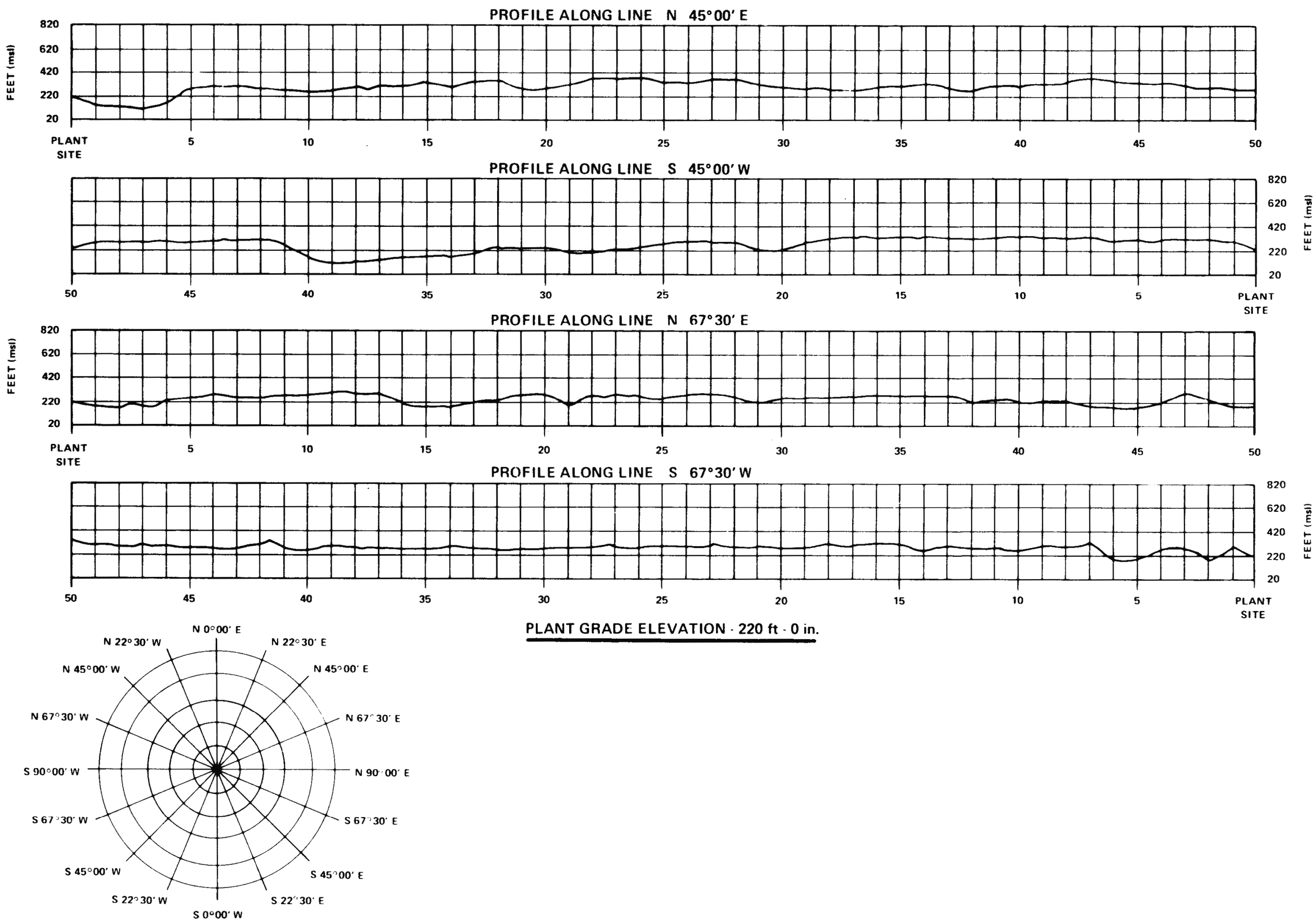
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOPOGRAPHIC FEATURES

FIGURE 2.3.2–57 (SHEET 1 OF 4)



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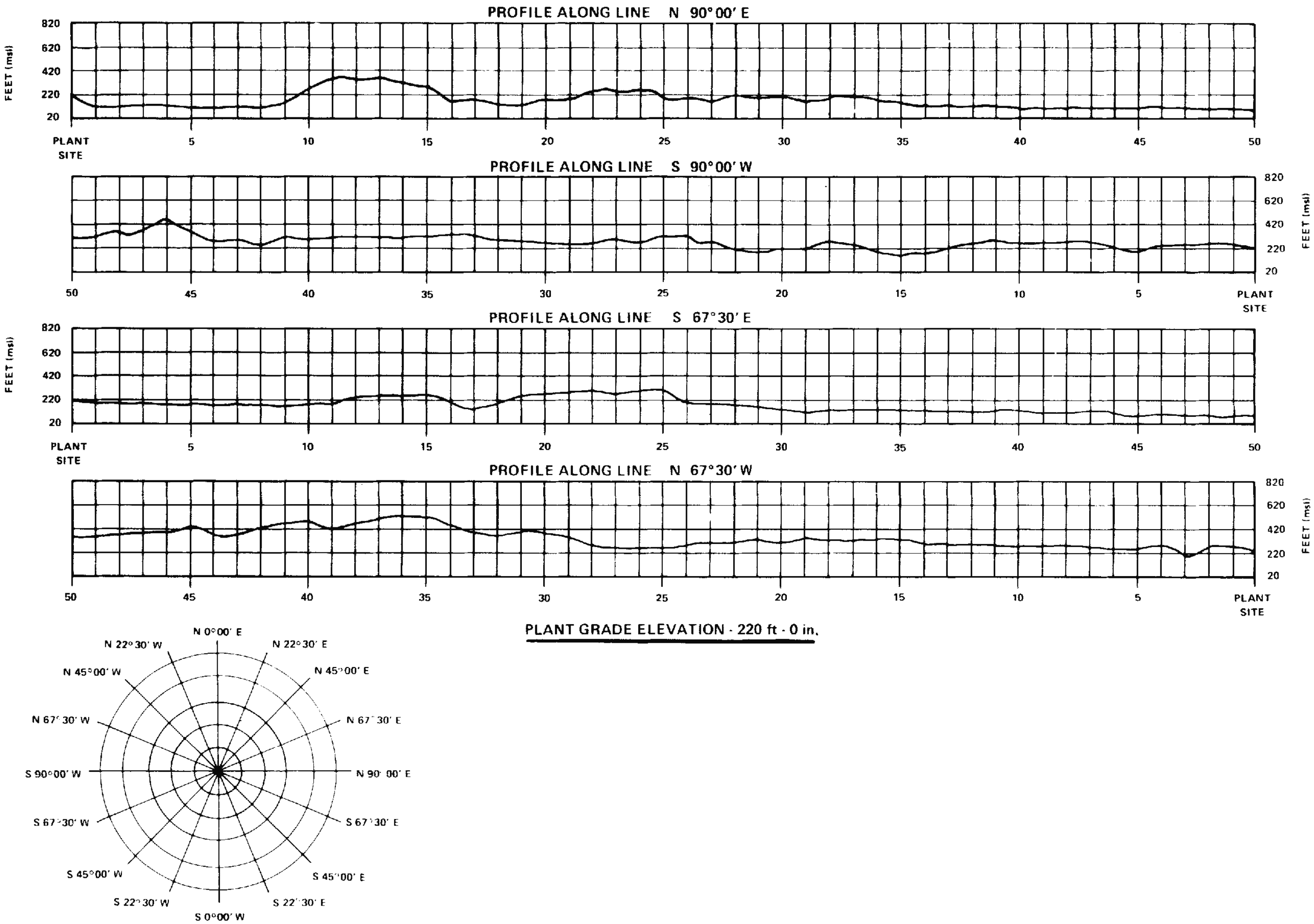
UNIT 1 AND UNIT 2

TOPOGRAPHIC FEATURES

FIGURE 2.3.2–57 (SHEET 2 OF 4)



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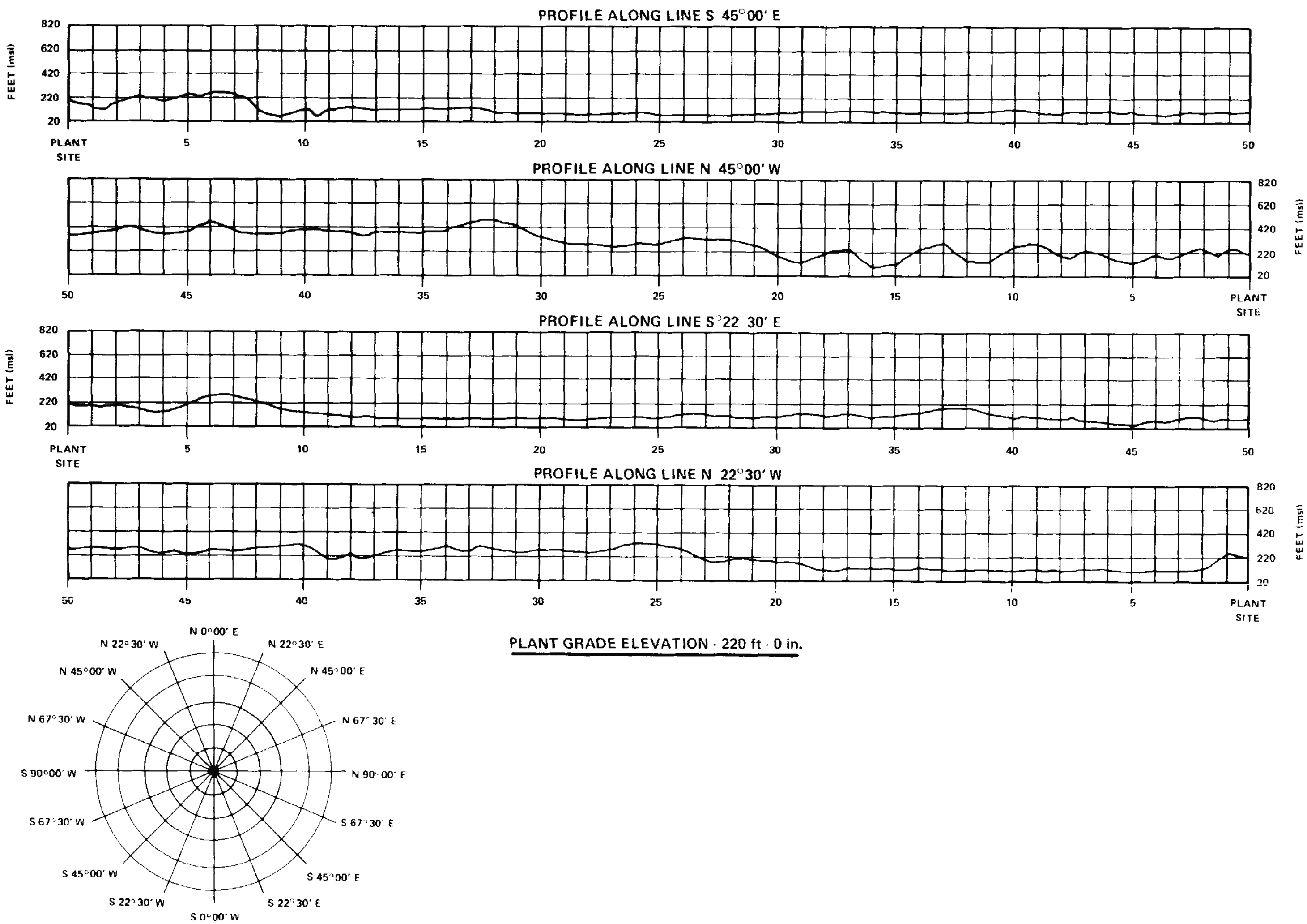
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TOPOGRAPHIC FEATURES

FIGURE 2.3.2–57 (SHEET 3 OF 4)



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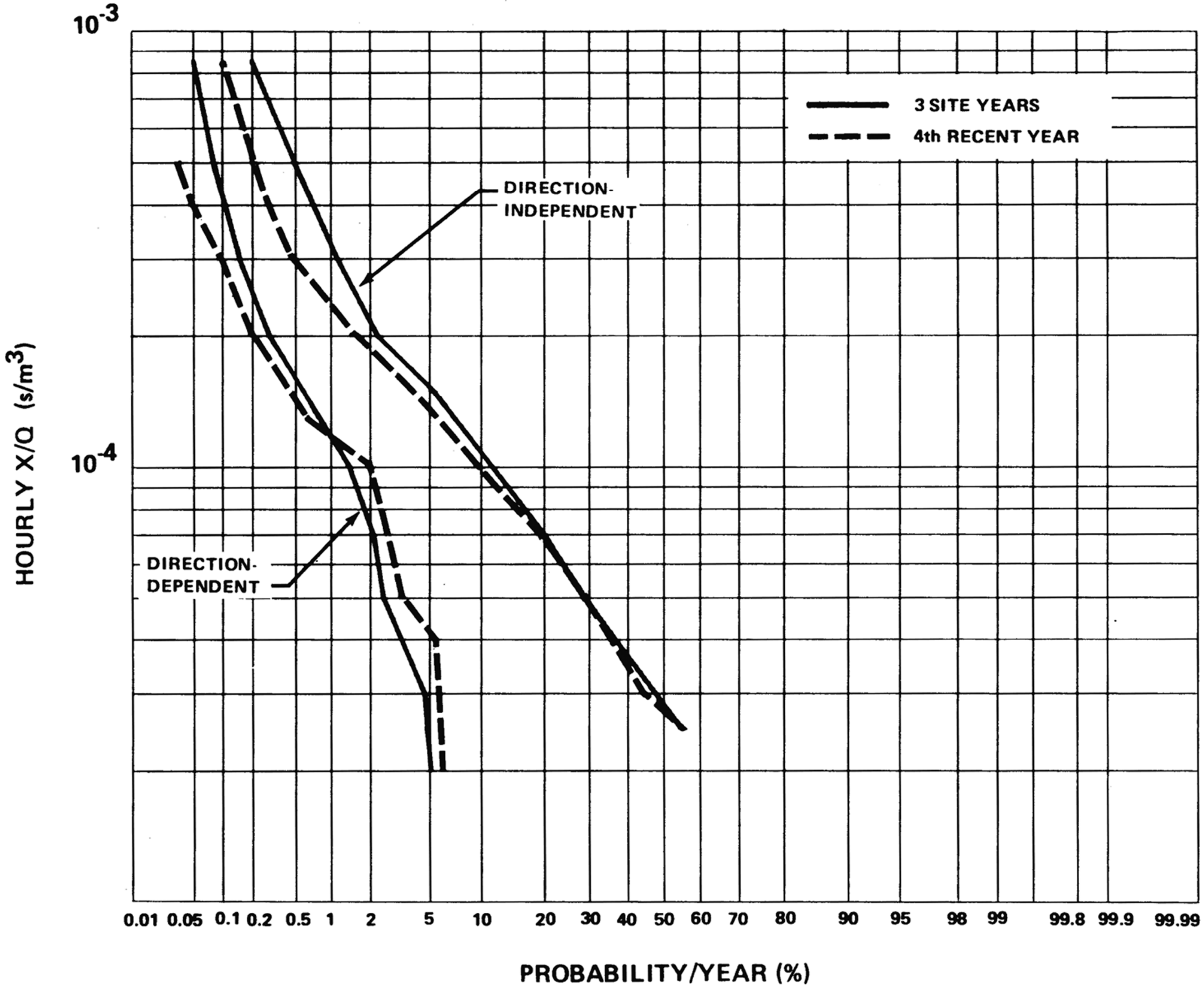
UNIT 1 AND UNIT 2

TOPOGRAPHIC FEATURES

FIGURE 2.3.2–57 (SHEET 4 OF 4)



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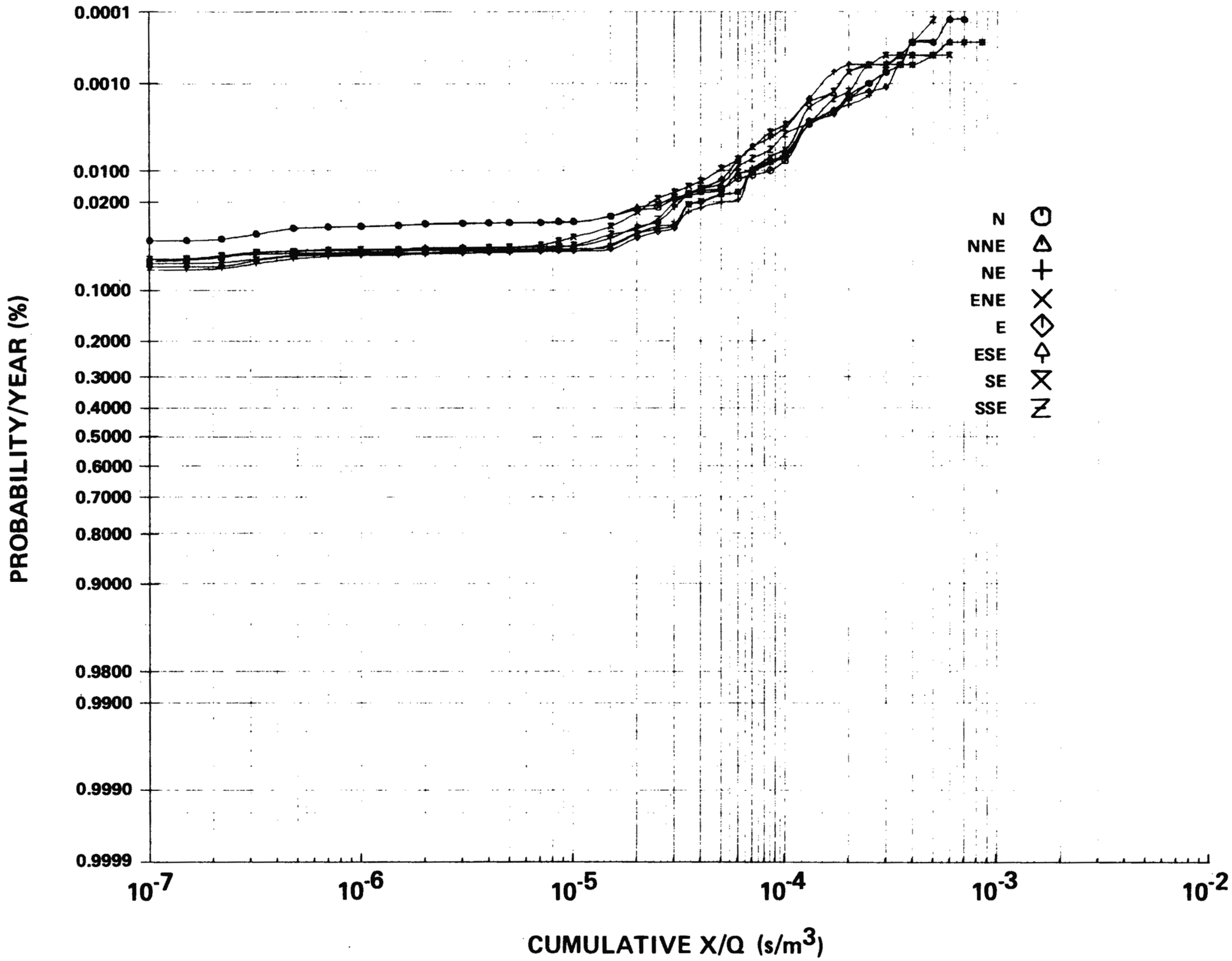
SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	CUMULATIVE PROBABILITY OF HOURLY X/Q VALUES FIGURE 2.3.4–1



BASED ON VOGTLE SITE DATA (12/72 - 12/73)

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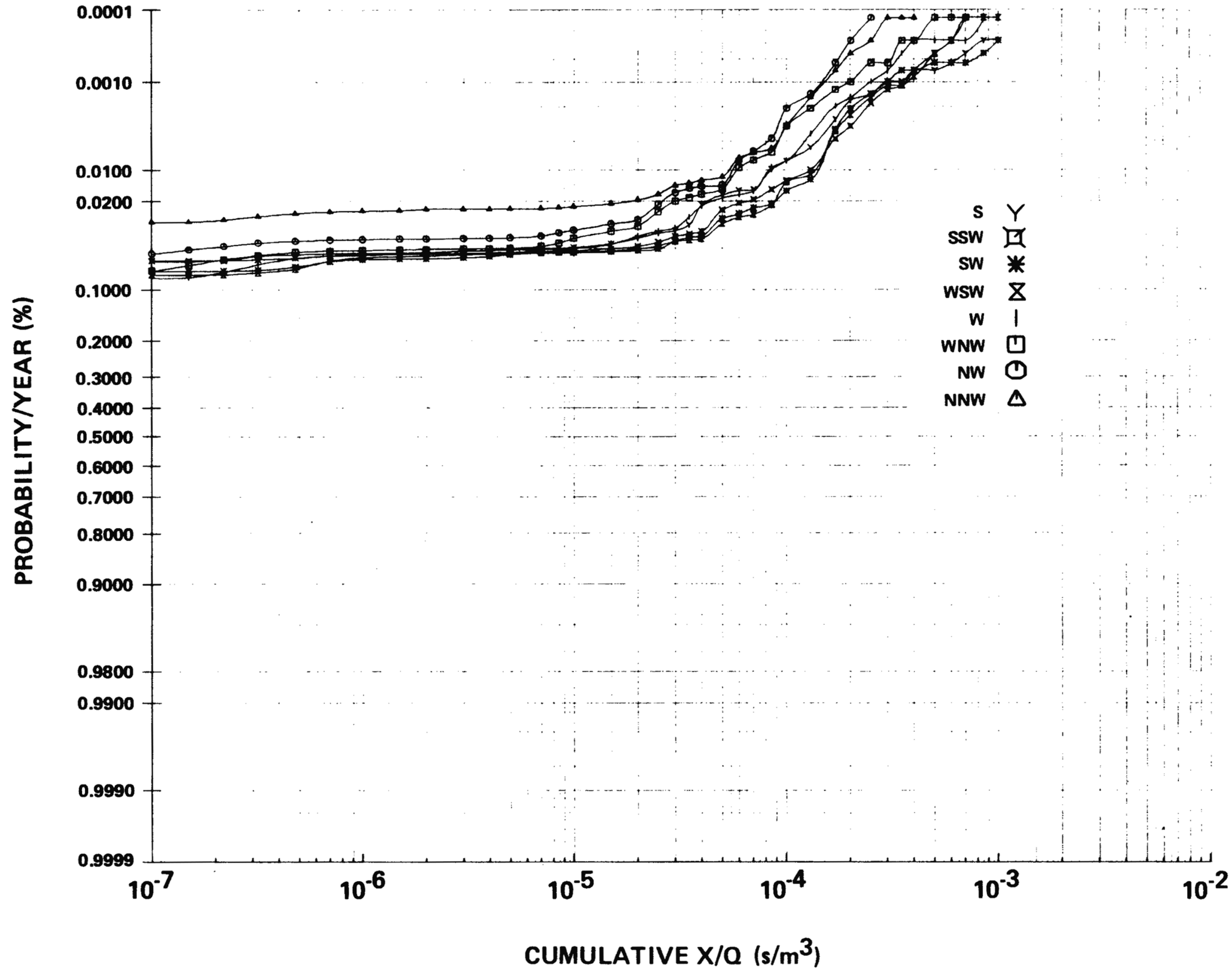
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

CUMULATIVE DISTRIBUTION OF X/Q
FOR DIRECTIONS (N THROUGH SSE)

FIGURE 2.3.4–2 (SHEET 1 OF 2)



BASED ON VOGTLE SITE DATA (12/72 - 12/73)

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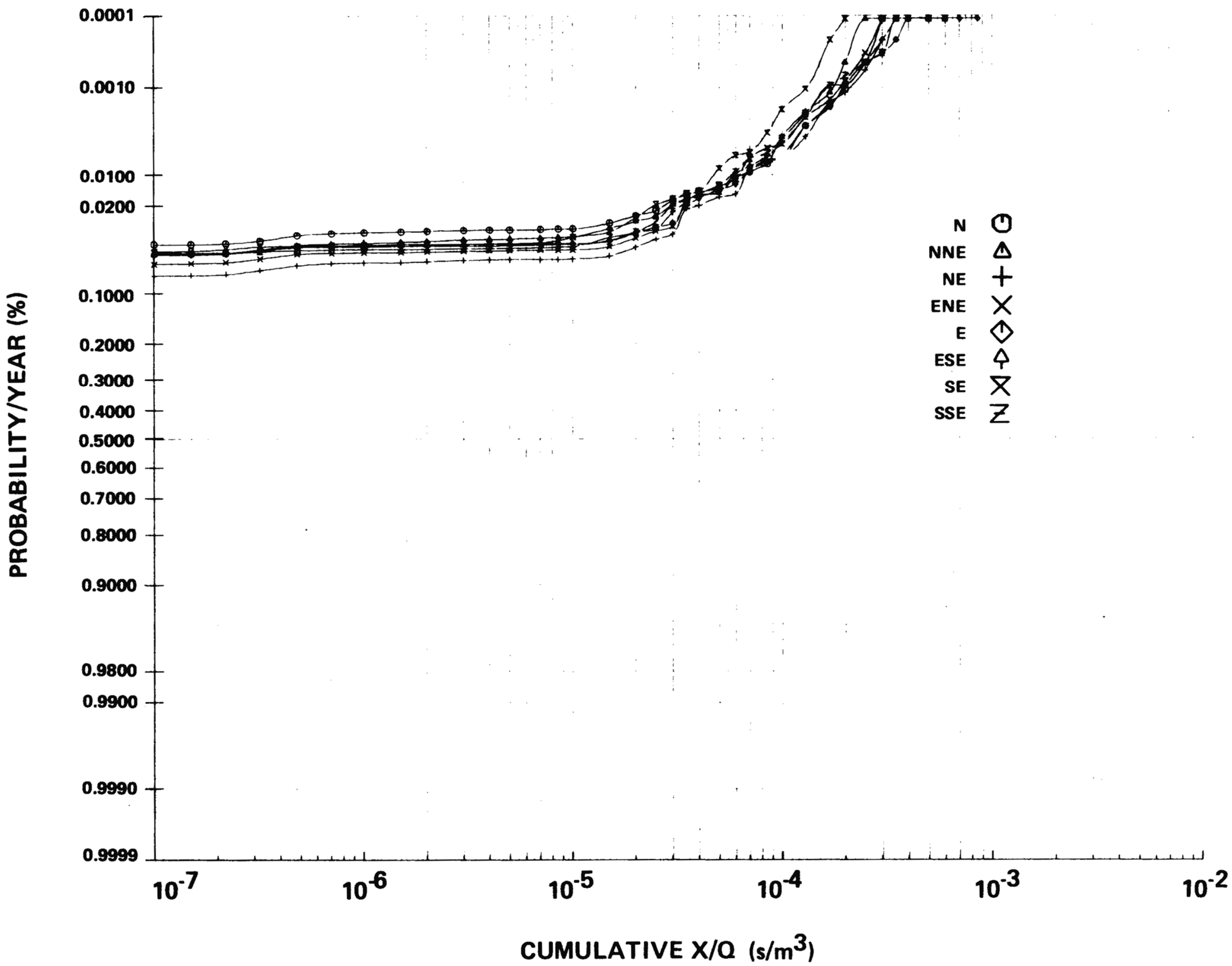
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

CUMULATIVE DISTRIBUTION OF X/Q
FOR DIRECTIONS (S THROUGH NNW)

FIGURE 2.3.4–2 (SHEET 2 OF 2)



BASED ON VOGTLE SITE DATA (4/77 - 4/78)

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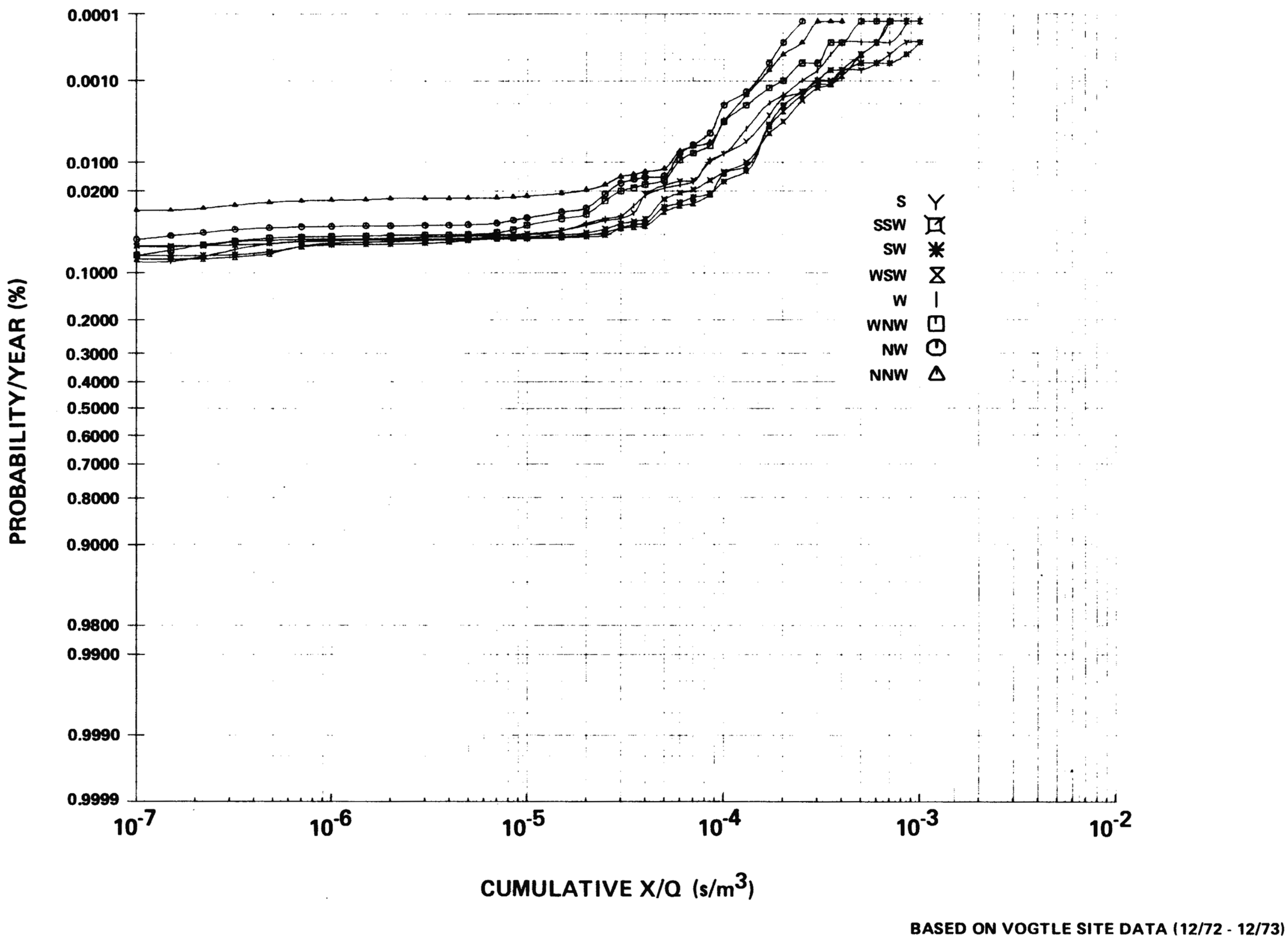
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

CUMULATIVE DISTRIBUTION OF X/Q
FOR DIRECTIONS (N THROUGH SSE)

FIGURE 2.3.4–3 (SHEET 1 OF 2)



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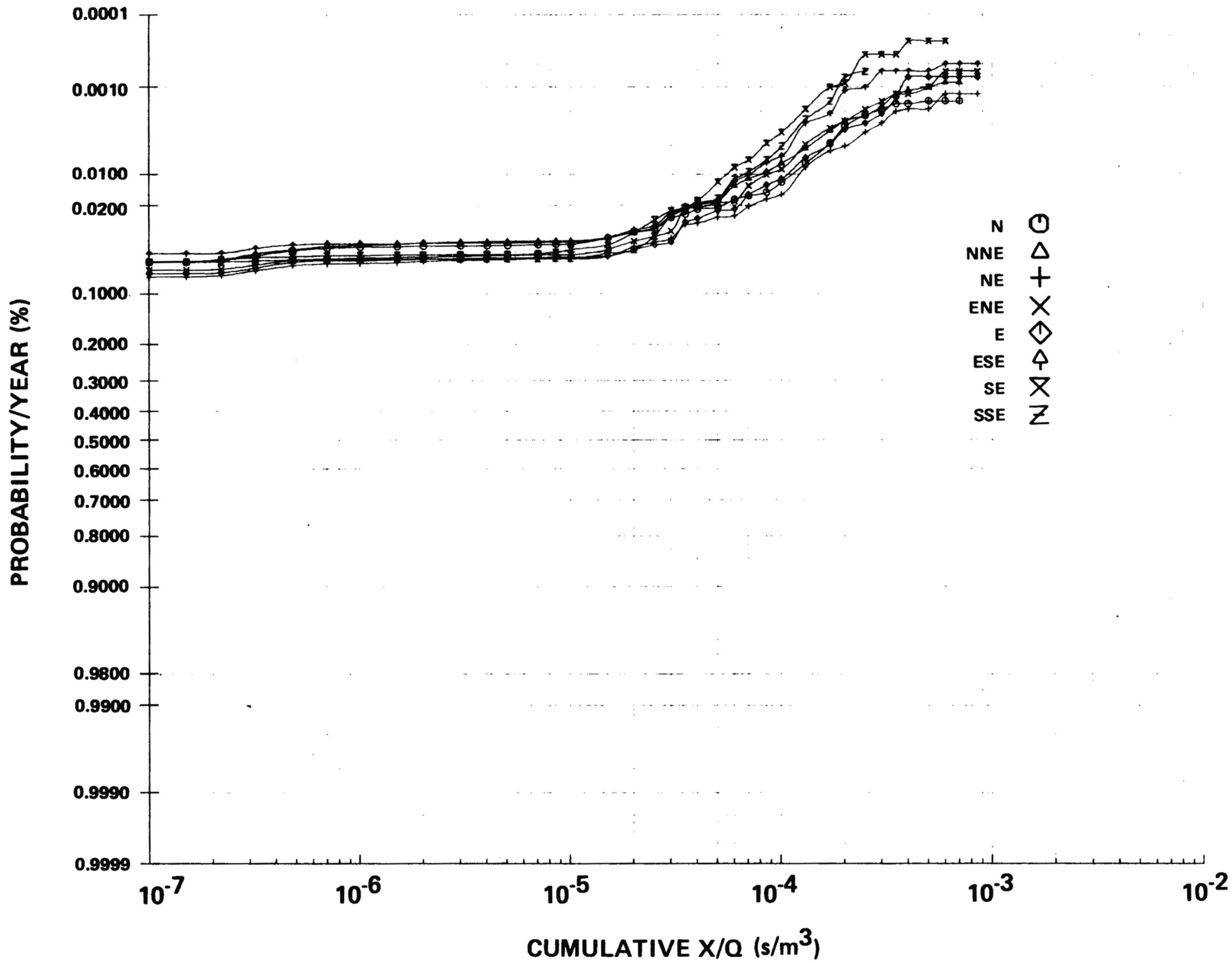
VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

CUMULATIVE DISTRIBUTION OF X/Q
FOR DIRECTIONS (S THROUGH NNW)

FIGURE 2.3.4–3 (SHEET 2 OF 2)



BASED ON VOGTLE SITE DATA (4/78 - 4/79)

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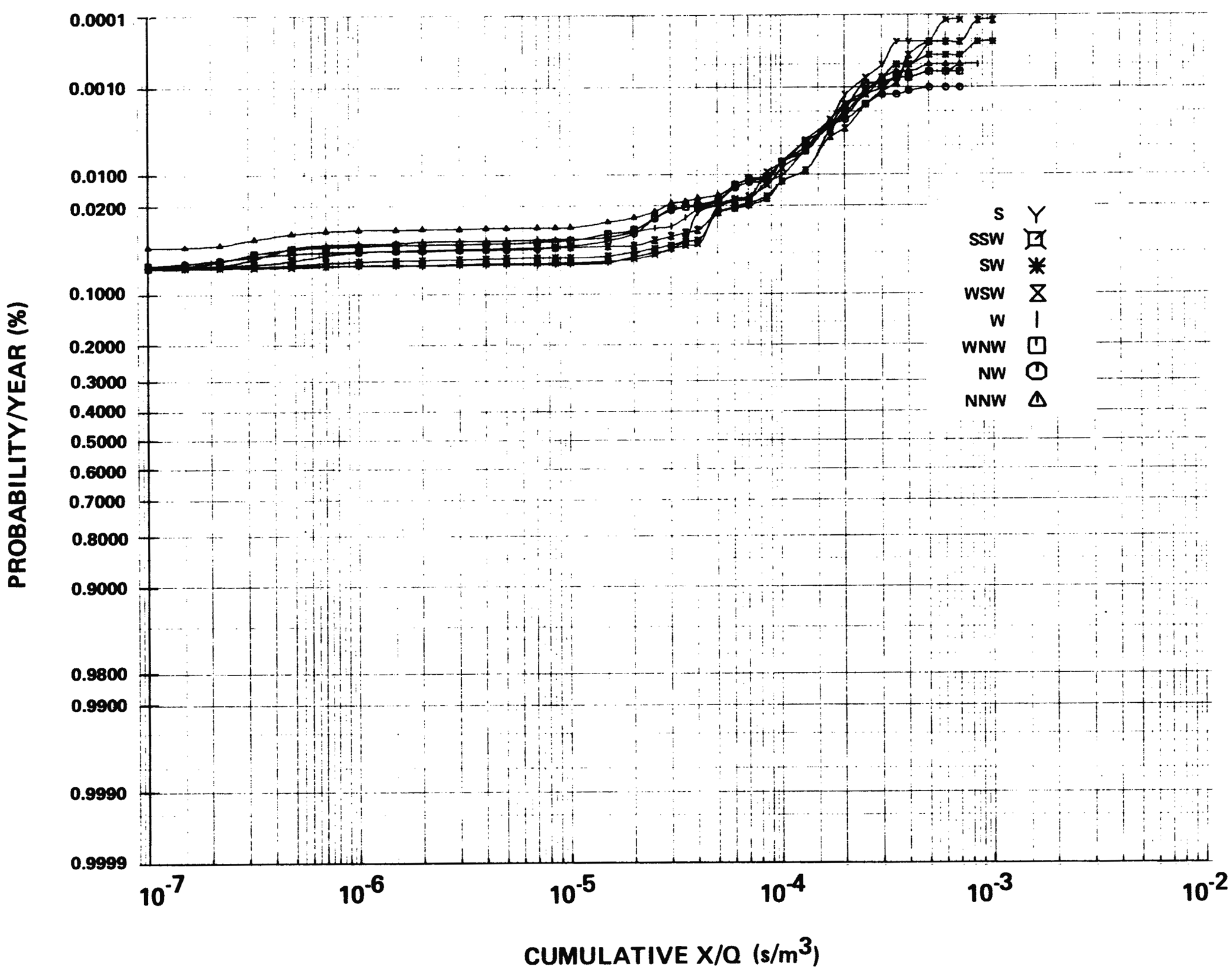
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

CUMULATIVE DISTRIBUTION OF X/Q
FOR DIRECTIONS (N THROUGH SSE)

FIGURE 2.3.4–4 (SHEET 1 OF 2)



BASED ON VOGTLE SITE DATA (4/78 - 4/79)

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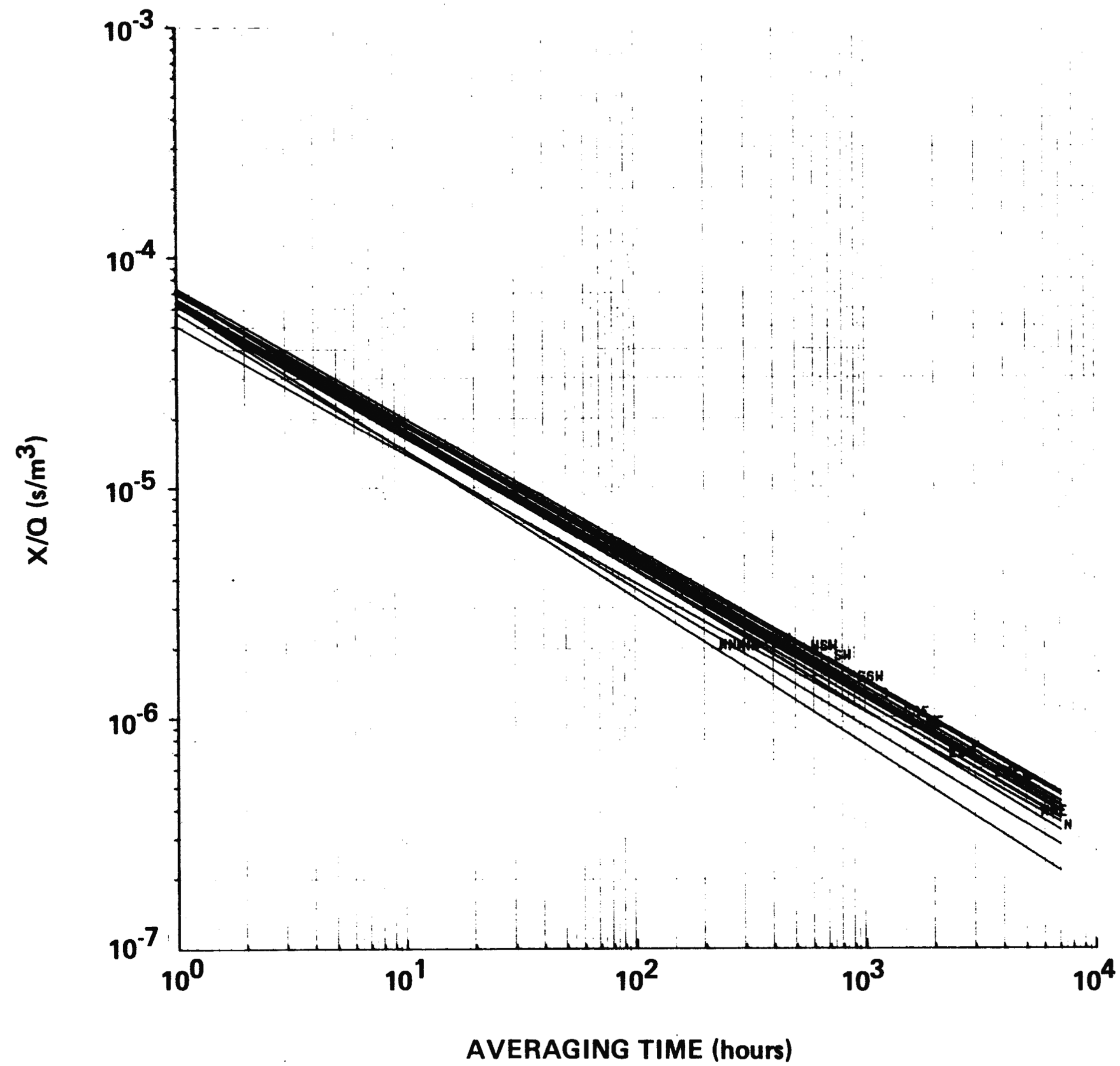
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

CUMULATIVE DISTRIBUTION OF X/Q
FOR DIRECTIONS (S THROUGH NNW)

FIGURE 2.3.4–4 (SHEET 2 OF 2)



BASED ON VOGTLE SITE DATA (12/72 - 12/73)

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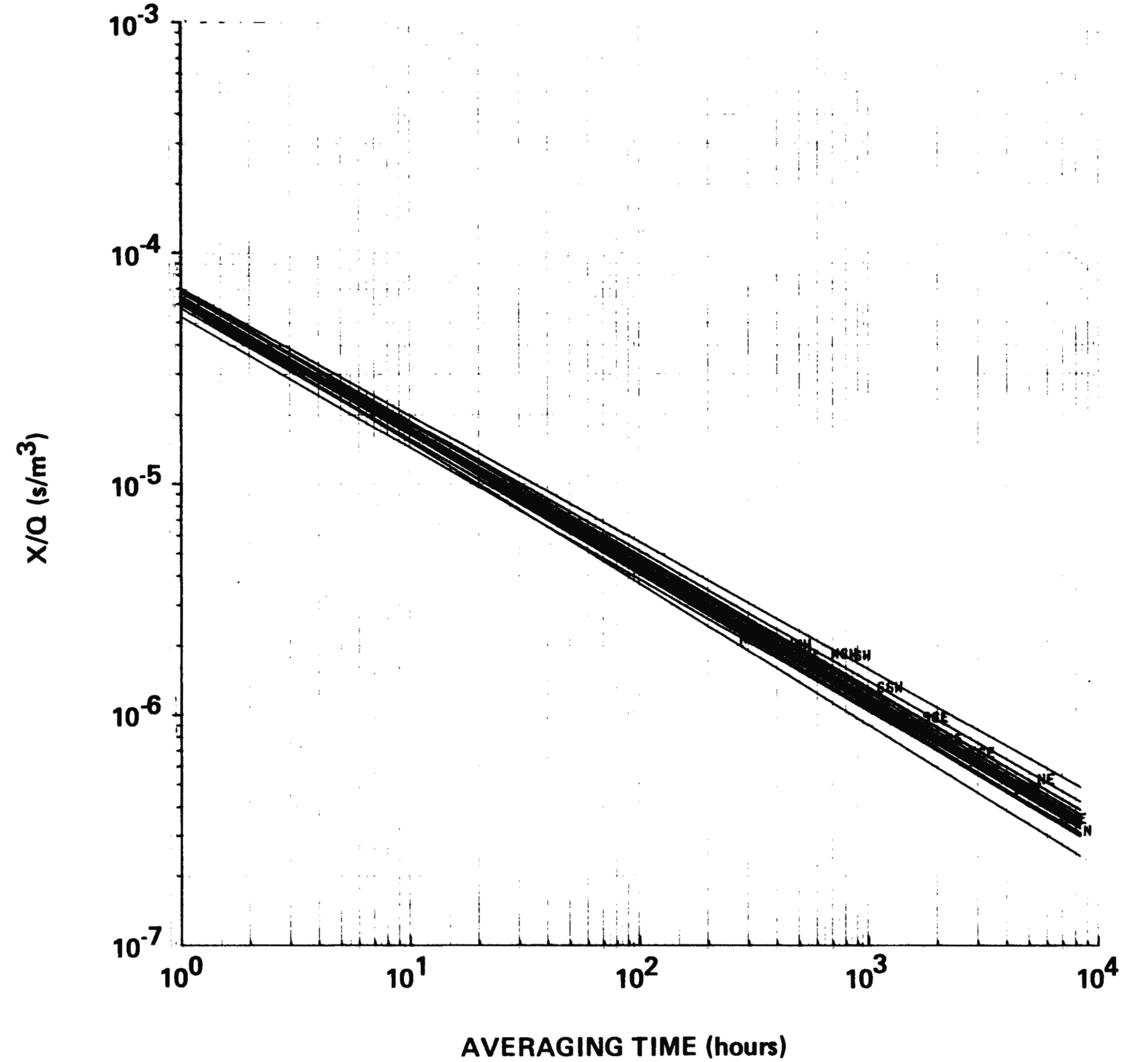
UNIT 1 AND UNIT 2

PLOT OF X/Q AT THE LPZ VS AVERAGING TIMES FOR ALL DIRECTION SECTORS

FIGURE 2.3.4–5



BASED ON VOGTLE SITE DATA (4/77 - 4/78)

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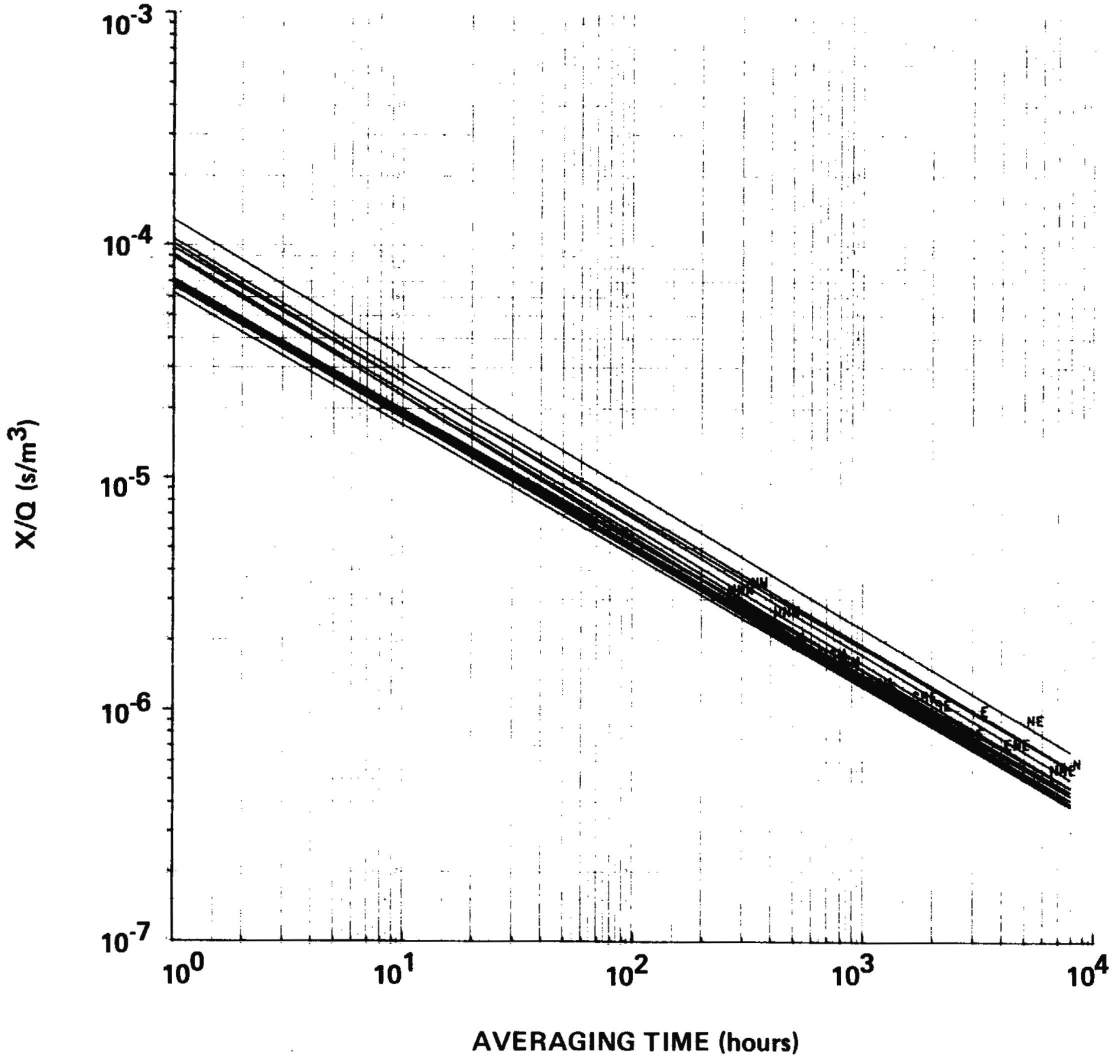
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

PLOT OF X/Q AT THE LPZ VS AVERAGING TIMES FOR ALL DIRECTION SECTORS

FIGURE 2.3.4–6



BASED ON VOGTLE SITE DATA (4/78 - 4/79)

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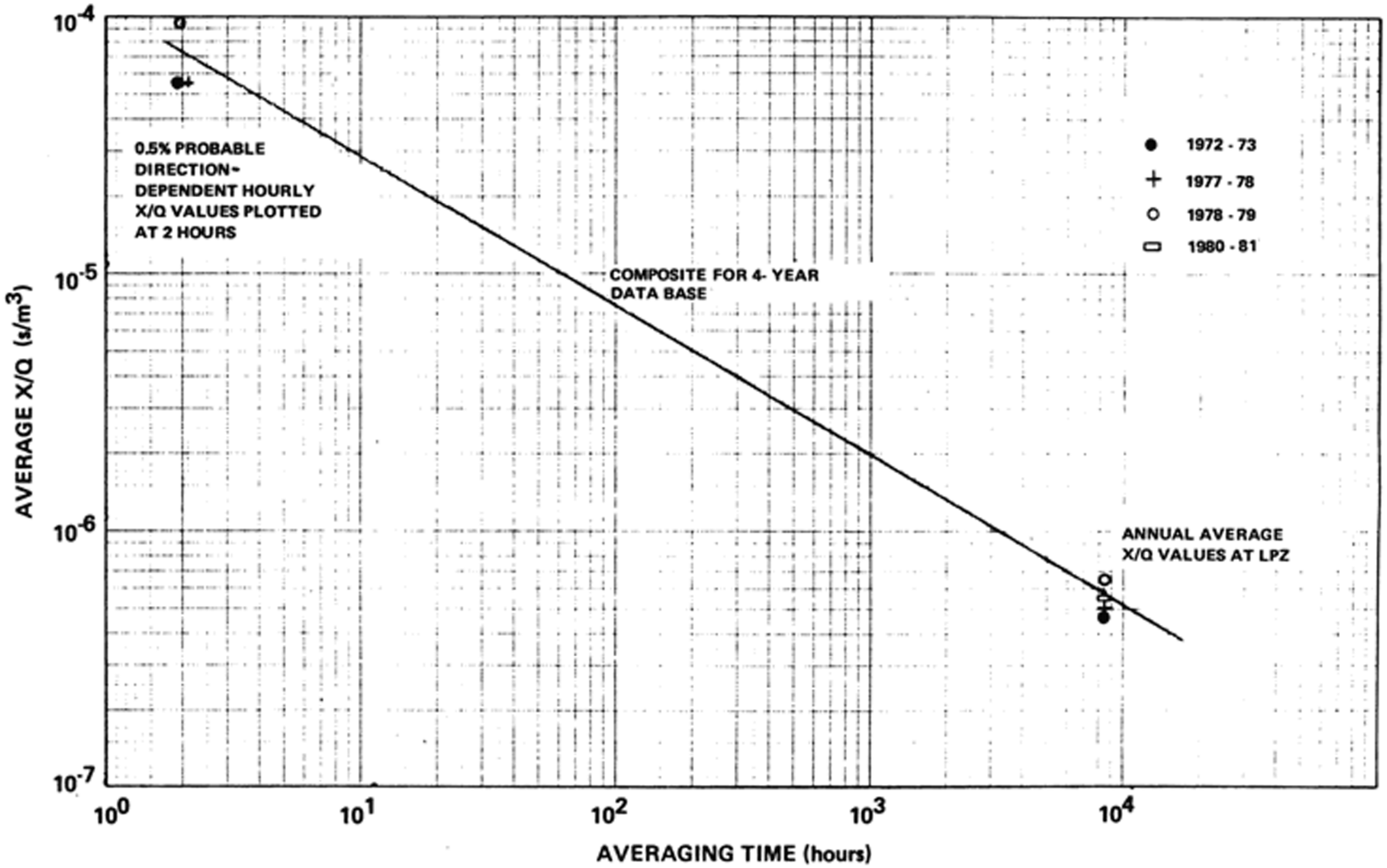
**VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2**

PLOT OF X/Q AT THE LPZ VS AVERAGING TIMES FOR ALL DIRECTION SECTORS

FIGURE 2.3.4–7



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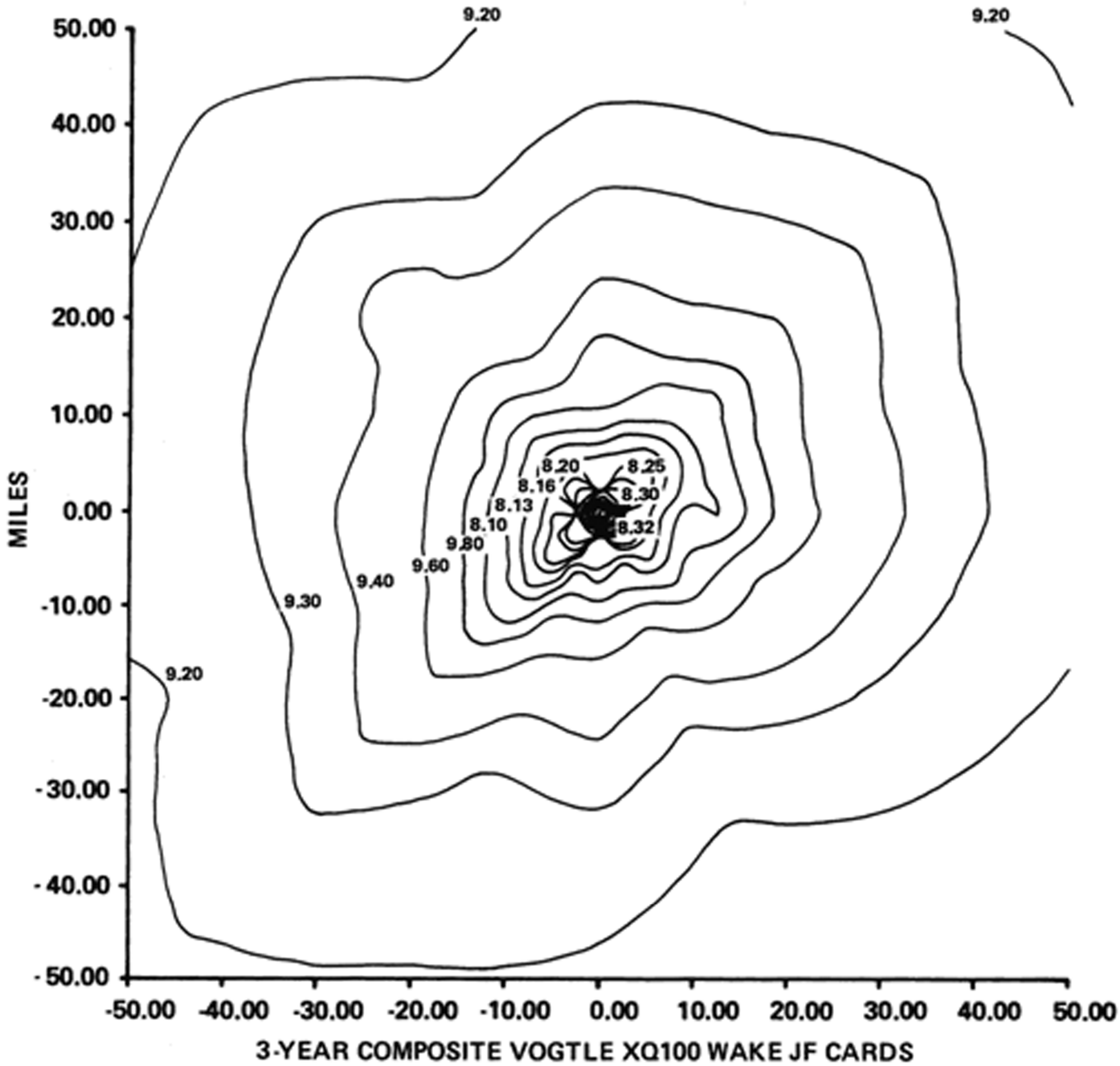
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

PLOT OF X/Q AVERAGING
TIMES BASED ON VOGTLE SITE DATA
(4–YEAR COMPOSITE)

FIGURE 2.3.4–8

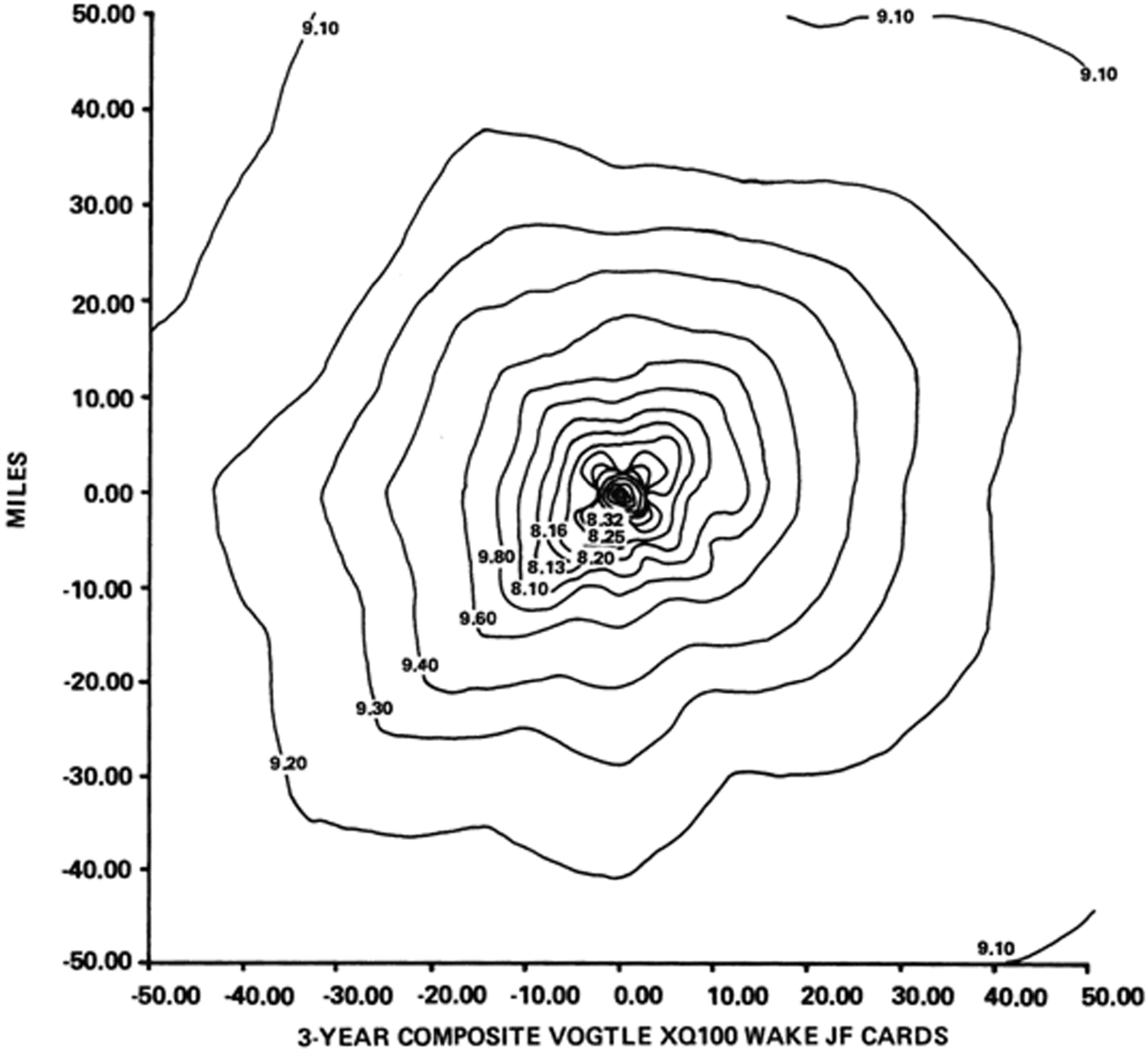
BASED ON 3 YEARS OF RECORD
AND JOINT FREQUENCY TABLES
(0 TO 50 MILES)



REV 14 10/07

SOUTHERN COMPANY *Energy to Serve Your World®*	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	ISOPLETH OF ANNUAL X/Q FIGURE 2.3.5–1

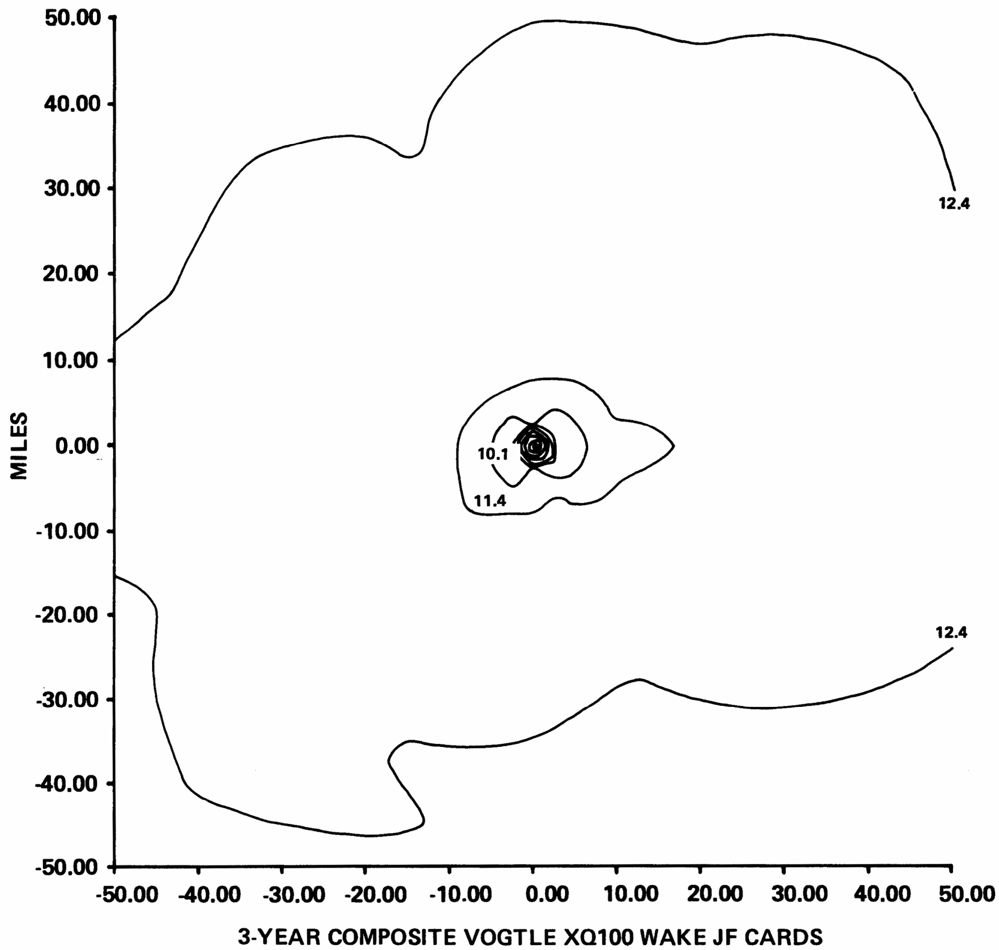
BASED ON 3 YEARS OF RECORD
AND JOINT FREQUENCY TABLES
(0 TO 50 MILES)



REV 14 10/07

SOUTHERN COMPANY *Energy to Serve Your World®* VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	ISOPLETH OF ANNUAL AVERAGE DEPLETED X/Q
	FIGURE 2.3.5–2

BASED ON 3 YEARS OF RECORD
AND JOINT FREQUENCY TABLES
(0 TO 50 MILES)



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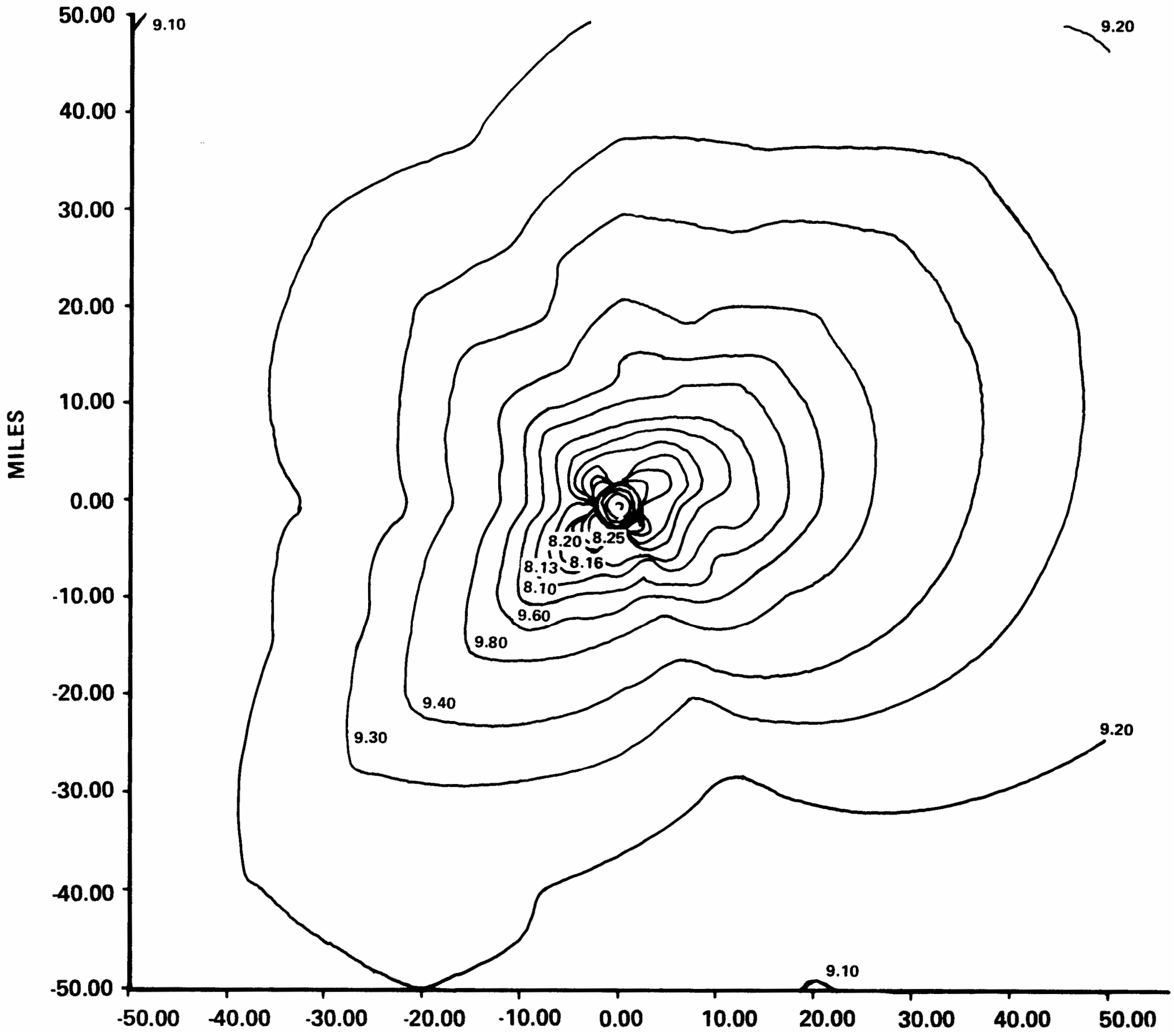
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

ISOPLETH OF ANNUAL AVERAGE
DEPOSITION (D/Q)

FIGURE 2.3.5–3

BASED ON 4TH YEAR OF VEGP SITE
METEOROLOGICAL DATA 1980-81
(0 TO 50 MILES)



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ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

ISOPLETH OF ANNUAL AVERAGE DEPOSITION (D/Q)

FIGURE 2.3.5–4