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2.3 METEOROLOGY

This section of the U.S. EPR FSAR is incorporated by reference with the following departures and/or supplements.

The U.S. EPR FSAR includes the following COL Item in Section 2.3.1:

> If a COL applicant that references the U.S. EPR design certification identifies site-specific meteorology values outside the range of the design parameters in Table 2.1-1, then the COL applicant will demonstrate the acceptability of the site-specific values in the appropriate sections of the Combined License application.

This COL Item is addressed as follows:

The {Callaway Plant Unit 2} site-specific meteorology values have been reviewed and compared to determine if they are within the bounds of the assumed meteorology values for a U.S. EPR. This comparison is provided in Table 2.0-1. The {Callaway Plant Unit 2} site-specific meteorology parameters are within the bounds of the conservative limiting meteorology values presented in Table 2.0-1.

2.3.1 REGIONAL CLIMATOLOGY

No departures or supplements.

2.3.1.1 Basis for Meteorological Parameters

The U.S. EPR FSAR includes the following COL Item in Section 2.3.1.1:

> A COL applicant that references the U.S. EPR design certification will provide site-specific characteristics for regional climatology.

This COL Item is addressed as follows:

{Callaway Plant Unit 2 is located in Callaway County, Missouri, approximately 10 miles (16 km) southeast of Fulton, Missouri. The Callaway site is on a plateau between nearby shallow river valleys. The Missouri River flows in a 2 mile (3.2 km) wide, east-west valley approximately 5 miles (8.0 km) south of the site at an elevation of approximately 340 ft (104 m) below the Callaway site.

The weather data periods used to create this narrative are identified in each subsection. The Callaway site is located in the 23-02 state climatic division where 23 stands for the State of Missouri and 02 indicates the second division (Northeast Prairie) in the state (NOAA, 2007). Missouri has a continental type of climate marked by strong seasonality. In winter, dry-cold air masses, unchallenged by any topographic barriers, periodically swing south from the northern plains and Canada. If cold air masses meet reasonably humid air, snowfall or rainfall can result. In summer, moist, warm air masses, equally unchallenged by topographic barriers, swing north from the Gulf of Mexico and can produce copious amounts of rain, either by fronts or by convectional processes. In some summers, high pressure stagnates over Missouri, creating extended drought periods. Spring and fall are transitional seasons when abrupt changes in temperature and precipitation may occur due to successive, fast-moving fronts separating contrasting air masses.

Frontal systems are frequently strong during all seasons except summer. A strong cold front is often preceded by a shower or thunderstorm and followed by a shift in wind direction from

south to north and drops in temperature of as much as 20°F (11°C) in 2 hours. Warm fronts usually are preceded by general rainfall and followed by a shift from north to south winds and warmer temperatures. Frontal systems are usually weak and reach the region less frequently during the summer months.

Winds

The prevailing winds at the surface are determined by the frequency and intensity of anticyclones and cyclones that move over the area. At Callaway the predominant 10 m (33 ft) wind direction is from the south-southeast. Airflow is primarily from southwest to southeast during most of the year; however, during winter and spring months, winds from the west to northwest occur frequently and may constitute the prevailing wind direction during some winter and spring months. Wind speeds are generally greatest during spring and lowest during summer.

During light wind situations, some air drainage from the Callaway site into the Missouri River Valley may occur; however, such drainage is expected to be minimal due to the distance separating the site from the edge of the valley and the difference in terrain height.

Severe thunderstorm winds may gust in excess of 100 mph (161 km per hr), and tornadic winds, though they are rare, may be substantially higher (U.S. Dept. of Commerce, 1968, 1973).

Surface mean wind speeds range from 5 mph to 6 mph (2.2 m per sec to 2.7 m per sec) in summer to 7 mph to 8 mph (3.1 m per sec to 3.6 m per sec) in winter and early spring. The highest mean wind speeds are associated with thunderstorms and with cyclones and anticyclones associated with frontal passages, particularly in the early spring.

Storm Tracks

The Callaway Plant Unit 2 is located near the Missouri River and near the geographical "center" of the United States. Thus, with a somewhat modified continental climate, the area experiences the changes of a four-season climate without the undue hardship of prolonged periods of extreme heat or high humidity. To the south is the warm, moist air of the Gulf of Mexico, and to the north, in Canada, is a favored region of cold air masses. The alternate invasion air masses from these sources, and the conflict along the frontal zones where they come together, produce a variety of weather conditions.

High and low pressure systems pass over the region generally from west to east. They alternate every few days, except during late summer and autumn when high pressure systems occasionally stagnate over the region for a week or more. These stagnating high pressure conditions provide the worst macro-scale diffusion conditions. Locally, diffusion is worst during strong inversion situations and light winds. Such conditions, which commonly last only a few hours, occur most frequently during predawn hours of autumn and winter. The low pressure systems promote atmospheric mixing and provide favorable diffusion conditions. The path of low pressure systems is generally to the north of the region during summer and near or just to the south of the region during winter. Low pressure systems reach their maximum intensity during winter and spring but are weak during summer. Frontal systems are frequently strong during all seasons except summer. A strong cold front is often preceded by a shower or thunderstorm and followed by a shift in wind direction from south to north and drops in temperature. Warm fronts usually are preceded by general rainfall and followed by a shift from north to south winds and warmer temperatures. Frontal systems are usually weak and reach the region less frequently during the summer months.

Temperatures

The mean annual temperature in central Missouri (Columbia) is 54.1°F (12.3°C). The winter climate has periods of cold weather usually interrupted by periods of at least a few mild days. The average frost penetration is about 30 in (78 mm) in central Missouri. Summer is characterized by considerable warm weather with at least several hot, humid periods. Nights are usually comfortable.

On average, temperatures of 90°F (32.2°C) or higher occur 30 to 40 days per year in central Missouri. The average number of days per year with minimum temperature of 32°F (0°C) or lower is about 105 in this area. Average relative humidity is lower in the early spring in March and April, and highest in the winter (December and January) although the monthly average values only vary from 66% in April to 75% in December.

In this region, summers are warm with the midsummer months averaging in the upper 70s°F (25°C); temperatures reach 90°F (32°C) on nearly half of all summer days and frequently do not drop below 65°F (18°C) at night. Temperatures average below freezing during midwinter, and 5 subzero (°F) nights generally occur each winter season. The transition seasons are characterized by rapid temperature changes. (NWS, 2006)

Precipitation

Precipitation is moderate; heaviest amounts usually fall during late spring, and lightest amounts occur during midwinter. The most favorable situation for rain occurs during the spring and summer when the jet stream shifts to the north and high pressure in the Atlantic Ocean allows southerly winds to carry large quantities of moisture from the Gulf of Mexico into Missouri. Summer precipitation and spring precipitation, to some extent, is commonly convective and occasionally very intense. Autumn, winter, and some spring precipitation are lighter, but of greater duration which is characteristic of synoptic scale precipitation producing systems.

Annual average precipitation is about 40 inches (1,016 mm). Distribution is generally uniform throughout the year except for the winter months that average about 2.25 inches (57.2 mm) per month. The heaviest precipitation occurs in the spring (a maximum of 12.31 inches (312.7 mm) in May 1995). Winter precipitation is less dependable and more variable than in spring. There have been lengthy periods of drought during the 1930s, in the early 1950s and again in the late 1980s.

Annual average snowfall in central Missouri ranges from 20 inches to 25 inches (50.8 cm to 63.5 cm). However for the last 10 years (1996-2005) the annual average has only been about 13 inches (33.0 cm). Annual snowfall totals vary considerably from one year to another with a minimum of 3.4 inches (8.6 cm) and a maximum of 54.9 inches (139.4 cm) over the last 30 years. Ice storms and hail occur frequently in the Callaway site area. Freezing rain and sleet may occur from November through March. On infrequent occasions, heavy accumulation of freezing rain causes substantial damage. In November 2006 a damaging ice storm caused ice accumulations of more than one inch (2.5 cm). Hailstones larger than ¾ inch (1.9 cm) are commonly associated with severe thunderstorms in the site area (Pautz, 1967).

2.3.1.2 Meteorological Data for Evaluating the Ultimate Heat Sink

The U.S. EPR FSAR includes the following COL Item in Section 2.3.1.2:

A COL applicant that references the U.S. EPR design certification will describe the means for providing UHS makeup sufficient to meet the maximum evaporative and drift water loss after 72 hours through the remainder of the 30 day period consistent with RG 1.27.

This COL item is addressed in Section 2.3.1.2.2.13.

Sections 2.3.1.2.1 and 2.3.1.2.2 are added as a supplement to the U.S. EPR FSAR.

2.3.1.2.1 Regional Air Quality

Background

The Clean Air Act (PL, 1977) which was last amended in 1990, requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (CFR, 2007a) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air ($\mu g/m^3$). Areas are either in attainment of the air quality standards or in nonattainment. Attainment means that the air quality is better than the standard.

{Callaway County

Based on USEPA data, Callaway County, Missouri, is in attainment for all the National Ambient Air Quality Standards (NAAQS) as of December 5, 2006 (EPA, 2007a). Callaway County is part of the Northern Missouri Intrastate Air Quality Control Region (AQCR), as designated in 40 CFR 81.116, (CFR, 2007b). The attainment status of the Northern Missouri Intrastate AQCR with regard to national ambient air quality standards is listed as being better than national standards for total suspended particulates, sulfur dioxide, nitrogen dioxide, carbon monoxide, PM-2.5 (particulate matter with diameter less than 2.5 microns), and for the 8 hour ozone standard (CFR, 2007c). Table 2.3-1 shows the National Ambient Air Quality Standards}

Class 1 Federal Lands

Class 1 federal lands include areas such as national parks, national wilderness areas, and national monuments. These areas are granted special air quality protections under Section 162(a) of the federal Clean Air Act. 40 CFR Section 51.307 requires the operator of any new major stationary source or major modification located within 62 mi (100 km) of a Class I area to contact the Federal Land Managers for that area.

{There are no Class1 federal lands within 62 miles (100 Km) of the Callaway site (CFR, 2007d)}

2.3.1.2.2 Severe Weather Phenomena

2.3.1.2.2.1 {Tornadoes and Waterspouts

The Callaway site is located in a region of relatively numerous and severe tornadoes. The region of maximum worldwide tornado occurrence is located just west in Kansas and Oklahoma. A total of 608 tornadoes were reported throughout the state of Missouri over the 13-year period

of 1955 through 1967 (Pautz, 1969). Tornadoes have been observed during every month of the year; however, approximately 60% of the annual total occurred during April, May and June. While tornadoes have occurred during all hours of the day, they are most frequent between 4 and 6 p.m. (OMSC, 2007**)**. As can be seen in Figure 2.3-1 and Figure 2.3-2 (NOAA, 2000), the annual average number of tornadoes and strong-violent tornadoes (F2 to F5) during the period 1950 to 1995 are 26 and 8, respectively.

In the period from January 1, 1950 through December 31, 2004, 26 tornados were reported in Callaway County (NWS, 2005). This corresponds to an annual average of 0.5 tornados per year. The magnitude of the tornados ranged from F0 to F2, as designated by the National Weather Service. An F0 tornado has estimated wind speeds less than 73 mph (33 m per sec). An F1 tornado has estimated wind speeds between 73 mph and 112 mph (33 m per sec and 50 m per sec). An F2 tornado has estimated wind speeds between 113 mph and 157 mph (50 m per sec and 70 m per sec). The widths of the paths of the 26 tornados in Callaway County were estimated to range from 10 yards to 200 yards (9 m to 183 m). (NWS, 2005)

In a study reported in the Journal of Weather and Forecasting of the American Meteorological Society (AMS, 2003), an estimate was made of the probability of an occurrence of a tornado day near any location in the contiguous U.S. for any time during the year. The study applied Gaussian smoothers in space and time to the observed tornado days from 1980 to 1999 to produce daily maps and annual cycles at any point on a 50 mile by 50 mile (80 km by 80 km) grid. Figure 2.3-3 shows the date of maximum tornado threat for locations meeting the minimum data requirements of the study (the gray shaded areas). Areas with a white background signify that there was not enough information to predict the maximum tornado threat date, not that a tornado would not or could not occur. The date of maximum tornado threat for the part of Missouri that includes Callaway Plant Unit 2 is indicated on Figure 2.3-3 to be between early and late May.

There are no large bodies of water in Callaway or the surrounding counties. Therefore waterspouts do not present a hazard at the Callaway site.

2.3.1.2.2.2 Hurricanes

Hurricanes typically develop over tropical ocean waters and dissipate rapidly when passing over land masses and regions of cooler temperatures. Therefore, the influence of hurricanes on the climatology of the Callaway site and the surrounding area is insignificant.

2.3.1.2.2.3 Thunderstorms

Thunderstorms are observed during every month of the year. During the summer they are most frequent, occurring on the average of one day out of four. From November through February, they seldom occur. The most damaging thunderstorms are usually those associated with the passage of a cold front or a squall line during the spring and summer. Table 2.3-2 presents the average monthly and annual number of days with thunderstorms for Columbia, Missouri for the period of 1970-2006. The annual average frequency of thunderstorms is 51 days per year with about 60% of them occurring between May and August.

2.3.1.2.2.4 Lightning

J. L. Marshall (Marshall, 1973) presented a methodology for estimating lightning strike frequencies which includes consideration of the attractive area of structures. His method consists of determining the number of lightning flashes to earth per year per square kilometer and then defining an area over which the structure can be expected to attract a lightning strike. There are 6 flashes to earth per year per square kilometer in the vicinity of Callaway Plant Unit 2

(conservatively estimated using Figure 2.3-4 (NOAA, 2007a). Marshall (Marshall, 1973) defines the total attractive area, A, of a structure with length L, width W, and height H, for lightning flashes with a current magnitude of 50% of all lightning flashes as:

$$A = LW + 6H (L + W) + 12.57 H^2 \quad \text{Eq. 2.3.1-1}$$

The following building dimensions were used to estimate conservatively the attractive area of Callaway Plant Unit 2 (these values are larger than the approximate dimensions of the combined containment, the four safeguards buildings, the access building, the fuel building, and the nuclear auxiliary building):

$$L = 215 \text{ m}, W = 140\text{m}, H = 40\text{m} \quad \text{Eq. 2.3.1-2}$$

The total attractive area is therefore equal to 0.14 square kilometers.

The number of lightning strikes to earth per thunderstorm day per square kilometer (Ne) is given by:

$$Ne = (0.1 + 0.35 \sin x) (0.40 \pm 0.2), \text{ where x= site latitude of 38° 47'} \quad \text{Eq. 2.3.1-3}$$

$$Ne= 0.128$$

$0.128 \times (51 \text{ thunderstorm days per year}) = 6.53 \text{ flashes per km}^2 \text{ year}$

Using the attractive area of 0.14 km^2, the probability is that there will be

$6.53 \text{ flashes per km}^2 \text{ year} \times 0.14 \text{ km}^2 = 0.91 \text{ flashes per year}$

or one lightning flash every 1.1 years (401 days).

2.3.1.2.2.5 Droughts

Drought may be conceptualized in different ways. Meteorological drought, based on precipitation records, is different from agricultural or soil-moisture drought and the physiological drought of plants. Drought is commonly thought of as a growing season phenomenon, but precipitation deficiency during colder months does affect moisture abundance during the following warmer months. If drought is defined as a month during which less than 40% of normal precipitation for that month is received, then the average probability of such a dry month, based on records at Columbia, is about 15%, or one in seven years. For the months of April and May, the probability reduces to eight%, but for August and September, it rises to 18 and 21%, respectively, or one in five years. Thus, monthly precipitation is more variable in August and September than in April and May. The probability of three consecutive months receiving less than 60% of mean precipitation, again at Columbia, for the months of April through October, is 13%, or about one year in eight. There is no convincing evidence that severe droughts occur in Missouri with any cyclic regularity (OMSC, 2007).

2.3.1.2.2.6 High Winds

Table 2.3-3 presents the maximum monthly 2-minute wind speed and 5-second gust for Columbia, MO. These data were retrieved from the National Climatic Data Center (NOAA, 1959, 1969, 1979, 1989, 1999 and 2006). The highest 2-minute wind speed was 63 mph (28 m per sec) in 1952 and the highest 5-second value of 95 mph (42 m per sec) occurred in June, 1985.

2.3.1.2.2.7 Hail

Hail occurs throughout the Callaway region and may occur throughout the year, but it is much less likely in winter. May has the greatest number of days with hail. The Callaway site area is subject to frequent hail. Hailstones up to 3 inches in diameter (7.6 cm) are not infrequent, however the most commonly reported hailstone is 0.75 inch (1.9 cm) (Pautz, 1967).

2.3.1.2.2.8 Dust/Sand Storms

Since the region receives appreciable precipitation and is extensively cultivated, the land is well covered by vegetation. Therefore, dust does not become airborne during windy conditions, except on a limited scale. Occasional convectively induced "dust devils" occur during the warm months. Winds produced by these phenomena are rarely strong enough to cause damage and visibility is reduced only within the "dust devil" which constitutes a local hazard.

2.3.1.2.2.9 Ice Storms

Freezing rain may occur in the region of the Callaway site from November through March. On the average about five (Changnon, 2004) of these events occur each year. Ice accumulation can range from a light glazing to over two inches (51 mm) on trees and power lines (Changnon, 2004). The average ice accumulation is one-half of an inch (13 mm) per storm. The most recent severe ice storm occurred on November 30, 2006 when more than one inch (25 mm) of ice accumulated in the site area.

2.3.1.2.2.10 Snow Storms

Snowfall may occur in the site region from October through May, but is most common in December, January and February. The extreme 24-hour and single-storm snowfall of 27.6 inches (70.1 cm) for the state of Missouri occurred March 16 to 17, 1970 at Neosho. In Columbia, MO near the site the greatest 24 hour total during the period of 1950-2006 was 19.7 inches (50 cm) in January 1995 (NOAA, 2006a).

2.3.1.2.2.11 High Air Pollution Potential

It has been observed that major air pollution episodes are usually related to the presence of stagnating anticyclones. Such anticyclones may linger over an area four days or more. During such a period, surface wind speeds can fall to very low values. The near surface circulation is therefore insufficient to disperse accumulated pollutants. These air stagnation events were analyzed in "Air Stagnation Climatology for the U.S. (1948-1998)," (NOAA, 1999). It was determined that 10 air stagnation days occur per year, on average for the period 1948 to 1998, in the vicinity of the Callaway site. The maximum number of air stagnation days for the United States (averaged over the same period), around 80 per year, occurs near the border of California, Arizona, and Mexico. Most air stagnation events happen in an extended summer season from May to October as a result of weaker pressure and temperature gradients and the concomitant weaker wind circulations.

The Callaway site area is characterized by frequent storm passages, cloudiness, high winds, and thermal instability, all of which favor the rapid transport and dispersion of atmospheric pollutants. Hosler (Hosler, 1961) has presented a climatological study on the frequency of occurrence of low-level inversions in the contiguous United States based on radiosonde data. Based on data from Columbia, MO for the period, June 1955 through May 1959, the seasonal summary of the percent frequency of inversions at the selected times and for the total time was calculated. The annual inversion frequency in the winter and spring is 31% and reaches a maximum of 43% in autumn.

A USEPA study which derived climatological statistics on morning and afternoon mixing heights and associated vertically averaged wind speeds, indicates that the mean annual morning mixing height depth over Callaway Plant Unit 2 will be approximately 1,312 ft (400 m) and that the mean annual afternoon mixing height depth over Callaway Plant Unit 2 will be approximately 4,592 ft (1,400 m). The mean annual wind speed through the morning mixing layer was found to be approximately 12 miles per hr (5.5 m per sec) and the mean annual wind speed through the afternoon mixing layer was found to be approximately 15.7 miles per hr (7.0 m per sec) (EPA, 1972).

2.3.1.2.2.12 Snow/Ice Load on Roofs of Safety Related Structures

The NRC Branch Position for Winter Precipitation Loads (NRC, 1975) establishes an acceptable method to develop a winter precipitation load for the design of nuclear power plants. The prescribed loads to be included in the combination of normal live loads are based on the weight of the 100 year snow pack or snowfall, whichever is greater, recorded at ground level. Winter precipitation loads to be included in the combination of extreme live loads is based on the addition of the weight of the 100 year snow pack at ground level plus the weight of the 48 hour Probable Maximum Winter Precipitation (PMWP) at ground level for the month corresponding to the selected snow pack. Snow pack and snowfall are adjusted for density differences and ground level values are adjusted to represent appropriate weights on roofs. Values are expressed in the units used in the methodology.

As indicated in the NRC Branch Position for Winter Precipitation Loads (NRC, 1975), it is acceptable to determine the 100 year snow pack and snowfall utilizing information in American National Standards Institute (ANSI) A58.1,"Minimum Design Loads for Buildings and Other Structures" (ANSI, 1972) with an adjustment of 30 years or more of regional data and maximization of water content for snow depth. The 100-year return period snow load, unadjusted, is 24 lb per sq ft (11.74 g per sq cm). The basic snow load coefficient of 0.8 (ANSI, 1972), applicable to flat-roofed unexposed buildings, may be applied to the unadjusted snow load to yield an effective snow load of 19.23 lb per sq ft (9.36 g per sq cm). Based on more recent information (ASCE, 1998) issued 26 years since ANSI A58.1, the 50 year mean recurrence ground snow load in the Callaway Plant Unit 2 region is 20 lb per sq ft (9.77 g per sq cm). The ANSI importance factor described in ASCE 7-98, "Minimum Design Loads for Buildings and Other Structures," (ASCE, 1998) can be used to adjust the 50 year recurrence ground snow load to a 100 year recurrence. Using an importance factor of 1.2, the 100 year mean recurrence ground snow load is 24 lb per sq ft (11.74 g per sq cm).

The 48 hour PMWP can be determined from Hydrometeorological Report (HMR) Number 33 (USWB, 1956) by taking the probable maximum 48 hour precipitation during the winter months of December through February. The 10 sq mile (26 sq km), 48 hour PMWP is conservatively selected for the site. The PMWP is summarized in Table 2.3-4 (USWB, 1956).

The month of December provides the most conservative PMWP of 19.7 inches (500 mm). Note that the average total precipitation for December is 2.47 inches (62.7 mm) in the Callaway site area. Considering that hourly temperature values measured in the Callaway site area during the period from 2004 to 2006 were below 32°F (0°C) about 19% of the time, most of this PMWP would occur as rain. In order to define the overall ground snow load, it was assumed that 25% of the PMWP combines with the 100 year mean recurrence ground snow load of 24 lb per sq ft (11.74 g per sq cm). Therefore, the PMWP component is (where 62.4 lb per sq ft (30.5 g per sq cm) is the density of water):

$$\text{PMWP Load} = [(19.7 \text{ inches})\ (62.4 \text{ lb/ft}^2)/\ (12 \text{ inches})]\ (0.25) = 25.6 \text{ lb/ft}^2 \qquad \text{Eq. 2.3.1-3}$$

Combining the 100 year mean recurrence ground snow load of 24 lb per sq ft (11.7 g per sq cm) with the PMWP load of 25.6 lb per sq ft (12.5 g per sq cm) yields an overall design ground snow load of 49.6 lb per sq ft (24.2 g per sq cm) for use in the design of roofs. This site-specific overall design ground snow load is bounded by the U.S. EPR design value

2.3.1.2.2.13 Conditions for Maximum Evaporation, Cooling and Potential Water Freezing in the Essential Service Water Emergency Makeup System

In accordance with NRC Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Power Plants," (NRC, 1976), the meteorological conditions resulting in maximum evaporation and drift loss should be the worst 30 day average combination of controlling parameters (wet bulb and dry bulb temperatures). {Monthly design wet bulb and mean coincident dry bulb temperatures were determined by the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) using 30 years (1972 to 2001) of meteorological data from Columbia, Missouri a nearby representative site (ASHRE, 2005). These 30 years of data were used because Columbia, MO NWS is the closest source of atmospheric moisture data to the Callaway site and is located in a similar meteorological region. The highest monthly design wet bulb and mean coincident dry bulb temperatures reported were for the month of July. The 2% design values (the values that would be exceeded 2% of the time in the month of July or roughly 15 hours out of 744) are 79.3°F (26.3°C) and 89.7°F (32.1°C) for the wet and coincident dry bulb temperatures, respectively. The 1.0% design values for the month of July are 80.2°F (26.8°C) and 90.0°F (32.2°C) for the wet and coincident dry bulb temperatures, respectively. The 0.4% design values for the month of July are 81.2°F (27.3°C) and 90.3°F (32.4°C) for the wet and coincident dry bulb temperatures, respectively.

Since mechanical draft cooling towers with water storage basins will comprise the 72 hour Ultimate Heat Sink for Callaway Plant Unit 2, another meteorological condition to consider is the maximum 1 hour dry bulb temperature. The maximum 1 hour dry bulb temperature determined for Columbia, Missouri, in Local Climatological Data, 2006 Annual Summary with Comparative Data, (NOAA, 2006) is 113°F (45°C). This value was determined over a 67 year period of record (1940 to 2006).

The meteorological conditions resulting in minimum cooling due to evaporation of water should be periods of high wet bulb temperature values. Using 30 years (1972-2001) of meteorological data from Columbia, Missouri, NWS the wet bulb temperatures that are exceeded only 2%, 1%, and 0.4% of the time per year are 76.2°F (24.6°C), 77.5°F (25.3°C), and 78.9°F (26.1°C), respectively (ASHRE, 2005).

The meteorological condition resulting in the potential for water freezing in the Essential Service Water Emergency Management System (ESWEMS) water storage pond is low dry bulb temperature because the formation of ice is dependent on the temperature difference betweenthe ice/water interface and the ambient air. The temperatures in the lower depths of the pond must have cooled to approximately 39°F (4°C) before the pond can stratify and the suface water can cool to the freezing point. Wind or other surface disturbances will inhabit the formation of ice. Using 30 years of meteorological data from Columbia, MO NWS, the coldest month wind speed and coincident dry bulb temperature that are exceeded only 1% of the time per year are 25.9 miles per hr (11.6 m per sec) and 31.4°F (-0.3°C).

The impace of ice coverage on the ESWEMS pons was considered. Based on over 40 years of NCDC data from Columbia, Missouri, the minimum temperature of 19.8°F (-6.8°C) used in the analysis is the bounding coldest monthly average daily low (January). The maximum thickness for the ice coverage of 20.5" (0.52 m) was conservatively calculated based on using the average low temperature recorded for the coldest month and assuming the temperature remained

consistant for 31 consecutive days, with no credit taken for tempertures warming during each day or for ice melting during the 30 day period, required for the ESWS makeup. It was also assumed that the pond surface had sufficiently cooled to the freezing point before the period of ice formation.

According to information from ASHRE (ASHRE, 2005), the 100-year return period values of maximum and minimum dry bulb temperature are 112.5°F (44.72°C) and -28.3 °F (-33.5°C, respectively. The median value of extreme wet bulb temperature coincident with the mean coincident dry bulb temperature (91 °F (32.8 °C)) is 81°F (27.2°C).

Nuclear Regulatory Commission (NRC) Regulatory Guide 1.27 requires the Ultimate Heat Sink (UHS) be designed for the worst 30 day period of evaporation. The worst 30 days for Callaway Plant Unit 2 were found by analyzing hourly dry bulb and wet bulb temperatures from 1961 to 2004 and considering the 30 day period used for Unit 1 from July 1954. All data was recorded at the Columbia Regional Airport, which is located approximately 24 1/4 miles (39.0 km) northwest of the Callaway site. This location was judged to be representative of the Callaway site in the Unit 1 evaluation and this remains valid.

The 30 day periods above were analyzed to determine the worst case evaporation. For this evaluation, the worst case evaporation was determined based upon the Thornthwaite-Holzman equation (Reference 1) for vapor transport:

$$\dot{m}_v = \frac{K_w k^2 \rho_a \left(q_{v_1} - q_{v_2}\right)\left(u_2 - u_1\right)}{K_m \left[\ln\left(z_2 / z_1\right)\right]^2}$$

Where:

$\dot{m}_v = mass\ \ flow\ \ rate\ \ of\ \ evaporation$
$K_w = vapor\ \ eddy\ \ diffusivity$
$k = von\ \ Karman\ \ cons\tan t$
$\rho_a = air\ \ density$
$q_{v_1} = specific\ \ humidity:\ \ elevation\ \ z_1$
$q_{v_2} = specific\ \ humidity:\ \ elevation\ \ z_2$
$u_1 = wind\ \ velocity:\ \ elevation\ \ z_1$
$u_2 = wind\ \ velocity:\ \ elevation\ \ z_2$
$K_m = eddy\ \ vis\cos ity$
$z_1 = boundary\ \ layer\ \ elevation$
$z_2 = above\ \ boundary\ \ layer\ \ elevation$

The Thornthwaite-Holzman equation shows that evaporation is a function of the difference between actual vapor pressure and saturation vapor pressure at ambient temperature. Therefore, the worst case evaporation corresponds to the lowest relative humidity. Regulatory Guide 1.27 refers to dewpoint depression, which is proportional to relative humidity, as a controlling parameter. Regulatory Guide 1.27 also makes reference to windspeed and solar radiation as controlling parameters; however, due to a causative relationship, these parameters are reflected in the wet bulb temperatures used in this analysis.

Table 2.3-103 provides the historical meteorological conditions during the 30-day period which would result in the greatest evaporative loss from the retention pond. After evaluation of hourly data between 1961 and 2004 as well as the July 1954 data, the worst period was determined to be July 2 through July 31, 1954.

Additional information on the ESWS and ESWEMS is provided in Section 9.2.1 and Section 9.2.5.

2.3.1.2.2.14 Tornado Parameters

Using the methodology from NRC Regulatory Guide 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants," (NRC, 2007), the design-basis tornado characteristics for Callaway Plant Unit 2 are presented in Table 2.3-5. The maximum tornado wind speed is 230miles per hr (103 m per sec) and the pressure drop is 1.2 psi (83 mbar).

2.3.1.2.2.15 100 Year Return Period 3 Second Wind Gust

In accordance with ASCE 7-05, "Minimum Design Loads for Buildings and Other Structures," (ASCE, 2006), the basic wind speed to be used in the determination of design wind loads on buildings and other structures is given in Figure 6-1 of that document. This value for the Callaway site is 90 miles per hr (40 m per sec). Note that this value is the 3 second wind gust for a 50 year return period. Using the appropriate conversion factor from Table C6-7 of ASCE 7-05 (ASCE, 2006), the 100 year return period 3 second wind gust value is 90 miles per hr X 1.07 = 96.3 miles per hr (43.05 m per sec).

2.3.1.2.2.16 Temperature and Humidity for Heating, Ventilation and Air Conditioning

Table 2.3-6 through Table 2.3-11 (ASHRE, 2005) present data for Columbia, Missouri, from Weather Data Viewer. Columbia NWS is located about 25 miles (40 km) northwest of the Callaway site.

The annual 1% exceedance dry bulb temperature and coincident wet bulb temperature are 91.7°F (33.2°C) and 75.6°F (24.2°C) respectively. The annual 2% exceedance dry bulb temperature and coincident wet bulb temperature are 89.1°F (31.7°C) and 74.6°F (23.7°C) respectively.

The annual 1% exceedance summer wet bulb temperature and coincident dry bulb temperature are 77.5°F (25.3°C) and 87.9°F (31.1°C) respectively. The annual 2% exceedance summer wet bulb temperature and coincident dry bulb temperature are 76.2°F (24.6°C) and 86.1°F (30.1°C) respectively. The annual 99.6% and 99% exceedance winter dry bulb temperatures are -0.3°F (-17.9°C) and 5.4°F (-14.8°C), respectively.

According to information from ASHRE (ASHRE, 2005), the 100 year return period values of maximum and minimum dry bulb temperature are 112.5°F (44.72°C) and -28.3°F (-33.5°C, respectively. The median value of extreme wet bulb temperature coincident with the mean coincident dry bulb temperature (91 °F (32.8 °C)) is 81°F (27.2°C) year return period value of maximum wet bulb temperature (non-coincident) is 94.8° F (34.9° C).

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2.3.2 LOCAL METEOROLOGY

The U.S. EPR FSAR includes the following COL Item in Section 2.3.2:

> A COL applicant that references the U.S. EPR design certification will provide site-specific characteristics for local meteorology.

This COL Item is addressed as follows:

{Sections 2.3.2.1 through Section 2.3.2.4 are added as a supplement to the U.S. EPR FSAR.

Section 2.3.2.1 and Section 2.3.2.2 present local summaries of meteorological data based on onsite measurements made in accordance with Nuclear Regulatory Commission (NRC) Safety Guide 23 (Regulatory Guide (RG) 1.23, Revision 0), Onsite Meteorological Programs (NRC, 1972). Instrument modifications were made in October, 2007 to bring the on-site meteorological data collection system into compliance with RG 1.23, Revision 1 "Meteorological Monitoring Programs for Nuclear Power Plants", (NRC, 2007a) and National Weather Service station summaries from appropriate nearby locations.

Onsite meteorological data compiled for Callaway Plant Unit 1 were used in this analysis for Callaway Plant Unit 2. Callaway Plant Unit 2 is located approximately 1,350 ft (410 m) northwest of Callaway Plant Unit 1.

These data are from the existing Callaway Plant Unit 1 onsite meteorological monitoring program which was designed, and has been operated according to Safety Guide 23 (RG1.23, Revision 0), Onsite Meteorological Programs (NRC, 1972).

The data recovery goal of 90% was met for each of the 3 years of data (2004 to 2006).

The pre-operational meteorological monitoring program also meets the substantive requirements of RG 1.23, Revision 1 (NRC, 2007a).

Local meteorological values used for design and operating bases are bounded by those in the U.S. EPR FSAR.

2.3.2.1 Normal and Extreme Values of Meteorological Parameters

{Monthly and annual summaries of meteorological data are provided in Sections 2.3.2.1.1 through 2.3.2.1.6.

2.3.2.1.1 Wind Speed and Direction

Table 2.3-12 presents annual joint frequency distributions (JFD) of wind speed and direction as a function of atmospheric stability derived from the Callaway Plant onsite meteorological monitoring program 10 m (33 ft) level. Table 2.3-13 presents annual joint frequency distributions (JFD) of wind speed and direction as a function of atmospheric stability derived from the Callaway Plant197 ft (60 m) onsite meteorological data. Table 2.3-14 through Table 2.3-25 present monthly joint frequency distributions of wind speed and direction as a function of atmospheric stability for the 10 m (33 ft) data. Table 2.3-26 through Table 2.3-37 present monthly joint frequency distributions of wind speed and direction as a function of atmospheric stability for the 197 ft (60 m) data. These tables were developed using 3 years of

onsite meteorological data (2004 to 2006) following the guidance in RG 1.23 Revision 1 (NRC, 2007a). Note that additional wind speed classes were added to provide greater coverage of the lower wind speeds that are most important for atmospheric dispersion.

Figure 2.3-5 and Figure 2.3-6 present 3-year wind rose plots of the 2004 to 2006 meteorological data for the 33 ft (10 m) and 197 ft (60 m) elevations using the wind speed classes utilized for the JFD tables. Figure 2.3-7 through Figure 2.3-12 present annual wind rose plots for the years 2004 through 2006 at the 33 ft (10 m) and 197 ft (60 m) elevations using the wind speed classes utilized for the JFD tables. Figure 2.3-13 through Figure 2.3-36 present monthly wind rose plots of the 2004 to 2006 meteorological data for the 33 ft (10 m) and 197 ft (60 m) elevations using the wind speed classes provided in RG 1.23 Revision 1 (NRC, 2007a). Figure 2.3-37 through Figure 2.3-41 present three -year (2004 through 2006) average annual wind rose plots for five National Weather Service (NWS) stations in Missouri that are around the Callaway site (Columbia, St. Louis, Kansas City, Jefferson City, and Vichy-Rolla). Meteorological data used to create the plots were downloaded from the National Oceanic and Atmospheric Administration (NOAA) web site and were measured at approximately 20 ft (7 m) above ground level. The annual prevailing wind direction (the direction from which the wind blows most often) at the Callaway site at the 33 ft (10 m) level is from the south-southeast, approximately 12% of the time. Winds from the southeast through southwest sectors occur approximately 45% of the time. Conversely, winds from the northwest through northeast sectors occur approximately 32% of the time. The annual prevailing wind direction at the Callaway site at the 197 ft (60 m) level is from the south, approximately 10% of the time. Winds from the southeast through southwest sectors occur approximately 44% of the time. Conversely, winds from the northwest through northeast sectors occur approximately 30% of the time. As is normally the case, there are more observations of calm winds at the lower level than at the upper level (0.12% versus 0.01%). At both the 33 ft (10 m) and 197 ft (60 m) levels, winds occur most infrequently from the east (4%).

The annual prevailing wind direction at the Columbia, MO airport, the closest NWS station to the Callaway site, is from the south, approximately 13% of the time. At St. Louis and Jefferson City the annual prevailing wind directions are from the north and east-southeast respectively, approximately 16% of the time at both sites. At Vichy-Rolla and Kansas City the annual prevailing wind direction is from the south, approximately 15% and 18% respectively. Note that there are more observations of calm winds at these five NWS sites than at the Callaway site. This is due to the use of higher threshold wind speed instruments at NWS sites. Also, at the NWS sites the prevailing wind directions tend to follow the runway pattern at the airport.

The Callaway site is located in the open plains with a very long wind fetch. Of the five NWS stations, Columbia, MO Regional Airport is approximately 25 miles (40 km) northwest of the site in similar terrain. The other NWS sites are located closer to rivers where the wind direction will be influenced by both the river valley and the runway alignment.

The use of different wind measurement instruments corresponds to the different needs at the sites. The NWS sites are at airports, where high wind speeds are more important than low wind speeds since they have a greater impact on aviation. At the Callaway site, wind measurements are made to determine atmospheric dispersion to aid in dose assessment; therefore, low wind speeds are more important since they will lead to less dispersion and higher dose.

During the winter months (December through February), the prevailing wind direction at both levels at Callaway is from the northwest, approximately 9% at 33 ft (10 m) and 10% at 197 ft (60 m). During the spring months (March through May), the prevailing wind direction is from the south-southeast approximately 11% of the time at the lower level, and from the south

approximately 11% of the time at the upper level. During the summer months (June through August), the prevailing wind direction is from the south-southeast approximately 13% of the time at the lower level and from the south-southwest about 11% of the time at the upper level. During the autumn months (September through November), the prevailing wind direction at both levels is from the south-southeast approximately 14% of the time at the 33 ft (10 m) and approximately 13% of the time at the 197 ft (60 m) level.

The most prevalent wind speed class at the Callaway site on an annual basis for the 33 ft (10 m) level is the 6.9 mph to 11 mph (3.1 m per sec to 5.0 m per sec) class, which occurs approximately 32% of the time. The most prevalent wind speed class on an annual basis for the 197 ft (60 m) level is the 11.4 mph to 15.7 mph (5.1 m per sec to 7.0 m per sec) class, which occurs approximately 35% of the time.

During the three year period of 2004 through 2006 the average wind speed at Columbia, MO Airport was 9.3 mph (4.15 m per sec) and there have been hourly observations of wind speed as high as 39 mph (17.4 m per sec). At other airports in Jefferson City and St. Louis, MO, the average wind speed was 8.4 mph (3.75 m per sec) and 8.9 mph (4.0 m per sec) respectively. There have been observations of wind speeds as high as 39 mph (17.43 m per sec) and 47 mph (21 m per sec) at those two airports. At Kansas City and Vichy-Rolla, MO airports, the average wind speed was 10.8 mph (4.83 m per sec) and 9.3 mph (4.15 m per sec) respectively. There have been observations of wind speeds up to 37 mph (16.54 m per sec) and 38 mph (17 m per sec) at those two sites.

On a seasonal basis, the most prevalent wind speed class for the 33 ft (10 m) level is the 6.9 mph to 11.1 mph (3.1 m per sec to 5.0 m per sec) class, which occurs approximately 42% of the time during the winter months (December through February), 36% of the time during the spring months (March through May) and 30% during the autumn months (September through November). During the summer months (June through August), the most prevalent wind speed class is the 4.7 mph to 6.7 mph (2.1 m per to 3.0 m per sec) class which occurs approximately 32% of the time. At the 197 ft (60 m) level, the most prevalent wind speed class is the 11.4 mph to 15.6 mph (5.1 m per sec to 7.0 m per sec) class, which occurs approximately 36% of the time during the winter months (December through February), 38% during the spring months (March through May), and 36% during the autumn months (September through November). During the summer months (June through August), the most prevalent wind speed class is the 6.9 mph to 11.2 mph (3.1 m per sec to 5.0 m per sec) class which occurs approximately 45% of the time.

The maximum hourly wind speed measured at the 33 ft (10 m) level is 22.8 mph (10.2 m per sec); the maximum hourly wind speed measured at the 197 ft (60 m) level is 34.9 mph (15.6 m/sec).

Table 2.3-38 through Table 2.3-45 present annual and three-year wind direction persistence summaries for the 33 ft (10 m) and 197 ft (60 m) measurement levels at the Callaway site. These tables were developed using 3 years of onsite meteorological data (2004 to 2006). Most of the time, approximately 97%, wind direction persistence events last for 4 hours or less at both measurement levels. Low speed (5 mph [2 m per sec] or less) wind direction persistence events lasting 12 hours or more occur hundreds of times per year for both measurement levels. Higher wind speed persistence events occur more than 50 times per year for the lower and upper measurement levels. Wind direction persistence events lasting greater than 24 hours occurred four times at the lower measurement level and 13 times at the upper measurement level for the three years of onsite data.

A comparison was made of the original FSAR data from the Callaway on-site meteorological tower (1973-75 and 1978-79) and the 2004-2006 data used to support the Callaway Plant Unit 2 FSAR. In general the data were found to agree well with the average wind speed, directions and temperatures all very similar. While the data for the most recent three years (2004-2006) were consistent, there was a distinct shift towards more unstable hours (about 15% and correspondingly less neutral and stable hours) when compared with the earlier data.

2.3.2.1.2 Temperature and Humidity

Monthly and annual temperature summaries from the Callaway Plant onsite meteorological monitoring program are presented in Table 2.3-46 through Table 2.3-52 for the period from January 2004 through December 2006. Table 2.3-46 presents the monthly wet bulb temperature, dew point temperature, relative humidity, and the mean coincident dry bulb temperature for the Callaway site. The monthly mean temperature at the Callaway site ranges from 25.8°F (-3.4°C) in January to 85.8°F (68.0°C) in July. The maximum hourly temperature at the Callaway site was 102.2°F (39.0°C) in July and the minimum hourly temperature was –1.5°F (-18.6°C) in January (see Table 2.3-50 and Table 2.3-51). The diurnal temperature range throughout the year is close to 17°F (9.5°C) (see Table 2.3-47). The frequency of occurrence of hourly temperature values falling below the freezing point (32°F or 0°C) is approximately 11.4% (see Table 2.3-52).

Temperature and humidity statistics from sites around the Callaway site are presented in Table 2.3-53 through Table 2.3-62. Dry bulb temperature values are from the 30 year period from 1971 through 2000 for Columbia, St. Louis and Kansas City, MO and for 2004-2006 for Jefferson City and Vichy-Rolla, MO. Wet bulb temperature values are from the 23 year period from 1978 to 2000. The monthly mean temperatures measured at the Callaway site show good correspondence with the values presented in these tables. For example, almost all of the mean monthly temperatures measured at the Callaway site fall within the range of values reported by the surrounding stations.

Table 2.3-63 through Table 2.3-65 present the monthly design wet bulb temperature and the mean coincident dry bulb temperature for locations in the vicinity of the Callaway site. These wet bulb temperature values correspond to 0.4%, 1.0%, and 2.0% cumulative frequency of occurrence for the indicated month. The data were determined from the American Society of Heating, Refrigeration, and Air-Conditioning Engineers Weather Data Viewer (ASHRAE, 2005). Data for Columbia, St. Louis and Kansas City, Missouri, are from the period 1972 to 2001.

2.3.2.1.3 Precipitation and Fog

The monthly and annual precipitation summary from the Callaway Plant onsite meteorological monitoring program is presented in Table 2.3-66 through Table 2.3-69 for the period from 2004 to 2006. The rainfall rate distribution is provided in Table 2.3-68. Historical precipitation statistics from NWS sites around the site are presented in Table 2.3-70, with snowfall in Table 2.3-71 and days with precipitation in Table 2.3-72. Monthly and annual summaries of heavy fog (visibility less than one-quarter mile) are presented in Table 2.3-73 for sites around the Callaway site.

Monthly average precipitation at the Callaway site ranges from 0.95 inches (24.07 mm) in February to 4.53 inches (115.06 mm) in August. Monthly percent frequency of occurrence of precipitation at the Callaway site ranges from 2.96% in September to 8.33% in November. The rainfall rate distribution presented in Table 2.3-68 indicates that heavy rainfalls occur infrequently at the Callaway site. The maximum monthly precipitation measured at the Callaway site does not correspond well with the values from the NWS sites around the plant.

The minimum monthly precipitation measured at Callaway Plant, however, does correspond well with the values from the NWS sites around the plant; this may be due to the difference in the period of records (3 years for the Callaway site versus 30 years for the NWS sites).

Figure 2.3-42 through Figure 2.3-47 present annual precipitation wind roses of the 2004 to 2006 meteorological data measured at the Callaway site for the 33 ft (10 m) and 197 ft (60 m) elevations. These precipitation wind roses portray joint frequency distributions of wind speed and direction for only the hours in which precipitation was recorded. These annual precipitation wind roses show that the most frequent wind direction has either a northerly or southeast to east-southeast component. Figure 2.3-48 and Figure 2.3-49 present three-year (2004-2006) precipitation wind roses measured at the Callaway site for the 33 ft (10 m) and 197 ft (60 m) elevations.

Figure 2.3-50 through Figure 2.3-73 present monthly precipitation wind roses of wind speed and direction for all precipitation hours of the 2004 to 2006 meteorological data measured at the Callaway Plant for the 33 ft (10 m) and 197 ft (60 m) elevations. These precipitation wind roses portray joint frequency distributions of wind speed and direction as a function of precipitation rate class for only the hours in which precipitation was recorded. These figures show that for the larger precipitation rate classes (0.5 in per hr [12.7 mm per hr] and greater) in the summer where there is more than a single observation, the most frequent wind direction may have a southerly or westerly component. This could indicate high rainfall rates due to thunderstorms rather than typical frontal passage rain showers and their associated southeasterly winds.

Fog observations are not made as part of the onsite meteorological monitoring program. Fog observations were made at the NWS stations at Columbia, St. Louis and Kansas City, Missouri. The average number of days per year with heavy fog (visibility less than one-quarter mile) are 23.5, 11.1, and 19.1 for Columbia, St. Louis and Kansas City, respectively. No information was provided on the duration of heavy fog events in the reference material reviewed (NOAA, 2007a) (NOAA, 2007b) (NOAA, 2007c).

2.3.2.1.4 Atmospheric Stability

Depending on the amount of incoming solar radiation and other factors, the atmosphere may be more or less turbulent at any given time. Meteorologists have defined atmospheric stability classes, each representing a different degree of turbulence in the atmosphere. When moderate to strong incoming solar radiation heats air near the ground, causing it to rise and generate large eddies, the atmosphere is considered unstable, or relatively turbulent. Unstable conditions are associated with atmospheric stability classes A and B. When solar radiation is relatively weak or absent, air near the surface has a reduced tendency to rise, and less turbulence develops. In this case, the atmosphere is considered stable, or less turbulent, and the stability class would be E or F. Stability classes D and C represent conditions of more neutral stability, or moderate turbulence. Neutral conditions are associated with relatively strong wind speeds and moderate solar radiation.

Atmospheric stability is determined by the delta temperature method as defined in RG 1.23, Revision 1 (NRC, 2007a). This methodology classifies atmospheric stability based on the temperature change with height (°C per 100 m). At the Callaway site, atmospheric stability is classified according to the difference between the temperature measurements at the 60 m (197 ft) and 10 m (33 ft) levels.

Table 2.3-74 through Table 2.3-77 and Table 2.3-78 through Table 2.3-81 present annual and three year atmospheric stability persistence summaries at the Callaway site for the 33 ft (10 m)

and 197 ft (60 m) measurement levels. The annual tables were developed using 3 years of onsite meteorological data (2004 to 2006). Note that there are slight differences between the 33 ft (10 m) and 197 ft (60 m) tables even though they use the same delta-temperature measurements to determine atmospheric stability. This is because the computer code used to develop the tables checks the validity of the wind speed and direction values as well as the delta-temperature values.

Most of the time (approximately 75%), stability persistence events last for less than 4 hours. Stability persistence events lasting 12 hours occur 19 times per year on the average and events lasting for greater than 24 hours occur one time per year on the average (see Table 2.3-74 through Table 2.3-77 and Table 2.3-78 through Table 2.3-81).

2.3.2.1.5 Monthly Mixing Height Data and Inversion Summary

Monthly average mixing height values for the period from 1997 through 2006 were calculated from the daily average values for each month of each year (as data were available) based on twice daily mixing height data from the National Climatic Data Center (NOAA, 2007d). These data were taken from the upper air and surface National Weather Service station (Springfield, MO) closest to the Callaway site. Overall monthly average mixing height values were calculated from the individual monthly average values; for example, the January overall monthly average mixing height value of 1,633 ft (498 m) is the average of all of the individual January mixing height values from 1997 through 2006. On average, the number of valid days of data per month ranged from 26 to 31 (that is, days that had both a morning and afternoon mixing height value); Data were unavailable about 2.4% of the time over the ten year period.

Figure 2.3-74 presents the monthly average mixing height values. Table 2.3-82 shows the monthly average mixing height values in tabular form. As shown, the monthly average mixing heights ranged from 1,444 ft (498 m) in December to 4,959 ft (1.512 m) in July. The annual average mixing height was 3,562ft (1,086 m).

Frequency and persistence of temperature inversion conditions at the Callaway site are shown in Table 2.3-83 through Table 2.3-85. These tables were developed using 3 years of onsite meteorological data (2004 through 2006). The maximum temperature inversion duration was 16 hours. Approximately two-thirds of the inversions lasted less than 9 hours.

2.3.2.1.6 Air Quality

Based on EPA data, {Callaway County, Missouri} is in attainment for all the National Ambient Air Quality Standards (NAAQS). Attainment means that the air quality is better than the standard. A nonattainment designation requires a state plan to be sent to the EPA describing how the area will implement air quality improvements. The NAAQS (EPA, 2007c) are presented in Table 2.3-86.

Callaway County is part of the Northern Missouri Intrastate Air Quality Control Region (AQCR), as designated in 40 CFR 81.116 (CFR, 2007a). The attainment status of the Northern Missouri Intrastate AQCR with regard to national ambient air quality standards is listed as being better than national standards for total suspended particulates, sulphur dioxide, and nitrogen dioxide, and unclassifiable/attainment for carbon monoxide, PM-2.5 (particulate matter with diameter less than 2.5 microns), and for the 8 hour ozone standard (CFR, 2007b).

2.3.2.2 Potential Influence of the Plant and its Facilities on Local Meteorology

The Callaway site consists of flat plateau farmland. Elevations across the site range from 843 ft (257 m) above mean sea level (msl) to 514 ft (157 m) msl. The highest terrain in the vicinity of

the site is in the west through north-northwest sectors. The Ozark Mountains lie in the southeast through southwest sectors.

Figure 2.3-75 presents a map which shows the topography within a 1 mile (1.6 km) radius of the Callaway site, the location of the meteorological tower, and Callaway Plant Unit 1. Figure 2.3-76 presents a map which shows the topography within a 5 mile (8 km) radius of the Callaway site. Figure 2.3-77 presents a map which shows the topography within a 50 mile (80 km) radius of the Callaway site. Figure 2.3-78 presents a plot of maximum elevation versus distance from the center of the plant in each of the sixteen 22.5 degree compass point sectors (centered on true north, north-northeast, northeast, etc.) radiating from the plant to a distance of 50 miles (80 km).

Callaway Plant Unit 2 will be northwest of the existing Callaway Plant Unit 1. Some portions of the Callaway site will be cleared of existing vegetation and graded to accommodate Callaway Plant Unit 2 and its ancillary structures. These terrain modifications would be limited to the Callaway Plant Unit 2 area and the immediately surrounding area and, therefore, will not represent a significant alteration to the topographic character of the region around the Callaway site.

Construction activity will meet all pertinent Federal and State air quality regulations.

Waste heat produced by Callaway Plant Unit 2 will be dissipated by a closed-cycle, wet-cooling system, consisting of two natural draft cooling towers.

For Callaway Plant Unit 2, the impacts from fogging, icing, shadowing, and drift deposition from the cooling towers were modeled using the Electric Power Research Institute's Seasonal/Annual Cooling Tower Impact (SACTI) prediction code. This code incorporates the modeling concepts (Policastro, 1993), which were endorsed by the NRC in NUREG-1555 (NRC, 1999). The model provides predictions of seasonal, monthly, and annual cooling tower impacts from mechanical or natural draft cooling towers. It predicts average plume length, rise, drift deposition, fogging, icing, and shadowing, providing results that have been validated with experimental data (Policastro, 1993).

The modeling determined the following:

- Due to the varying directions that the plume travels and the plume height and length, impacts from elevated plumes would be SMALL and not warrant mitigation.
- Impacts from the cooling towers from fogging and icing would be SMALL and would not require mitigation. Fogging and icing are not expected to occur due to the height of the release.
- Impacts from salt deposition from the cooling towers would be very SMALL.
- Salt deposition was predicted at rates below the NUREG-1555 significance level where visible vegetation damage may occur for both onsite and offsite locations.
- Impacts from cloud shadowing and additional precipitation would be SMALL and would not require mitigation.
- Impacts from increases in absolute and relative humidity would be SMALL and mitigation would not be warranted.

As such, Callaway Plant Unit 2 is not expected to cause any significant influence on local meteorology. These conclusions are further supported by cooling tower impact studies performed on six occasions between 1984 and 1993 assessing the impact of the Callaway Plant Unit 1 cooling tower on local vegetation. These studies were required by Environmental Condition 4.2 contained in the Facility Operating License. These studies uniformly concluded that there was no evidence of adverse effects of drift from the cooling tower. With improvements in design, the Callaway Plant Unit 2 cooling towers are expected to release drift at a rate approximately 5% of that of the Callaway Plant Unit 1 cooling tower.

2.3.2.3 Local Meteorological Conditions for Design and Operating Bases

Meteorological conditions for design and operating bases are discussed in Section 2.3.1.2.

2.3.2.4 References

ASHRAE, 2005. Weather Data Viewer, version 3.0, American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), Inc., 2005.

CFR, 2007a. Title 40, Code of Federal Regulations, Part 81.116 – Northern Missouri Intrastate Air Quality Control Region, 2007.

CFR, 2007b. Title 40, Code of Federal Regulations, Part 81.416 – Missouri, 2007.

EPA, 2007a. Support Center for Regulatory Air Models, U.S. Environmental Protection Agency, Website: http://www.epa.gov/scram001/, Date accessed: June 2007.

EPA, 2007b. Nonattainment Map for Missouri, U.S. Environmental Protection Agency, Website: http://www.epa.gov/air/data/nonat.html?st~MO~Missouri, Date accessed: August 17, 2007.

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NOAA, 2007b. Local Climatological Data, 2006 Annual Summary with Comparative Data, St. Louis, Missouri (STL), National Oceanic and Atmospheric Administration/National Environmental Satellite, Data, and Information Service, National Climatic Data Center, 2007.

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NOAA, 2007d. Upper Air Meteorological Data from Springfield, MO for the period of 1997 - 2007.

NRC, 1972. Onsite Meteorological Programs, Safety Guide 23 (Regulatory Guide 1.23 Revision 0), Nuclear Regulatory Commission, February 1972.

NRC, 1999. Standard Review Plans for Environmental Reviews of Nuclear Power Plants. NUREG-1555, Nuclear Regulatory Commission, October 1999.

NRC, 2007a. Meteorological Monitoring Programs for Nuclear Power Plants, Regulatory Guide 1.23, Revision 1, Nuclear Regulatory Commission, March 2007.

Policastro, 1993. A Model for Seasonal and Annual Cooling Tower Impacts, Atmospheric Environment Volume. 28, Number. 3. pp 379-395, Elsevier Science Ltd, Great Britain, A. Policastro, W. Dunn, and R. Carhart, 1993.}

2.3.3 ONSITE METEOROLOGICAL MEASUREMENT PROGRAM

The U.S. EPR FSAR includes the following COL Item in Section 2.3.3:

> A COL Applicant that references the U.S. EPR design certification will provide the site-specific, onsite meteorological measurement program.

This COL Item is as follows:

{Sections 2.3.3.1 through 2.3.3.3 are added as a supplement to the U.S. EPR FSAR.

2.3.3.1 Preoperational Meteorological Measurement Program

The pre-application meteorological measurement program described herein for the Callaway Plant Unit 2 utilized the operational meteorological measurement program and equipment established for Callaway Plant Unit 1. Data from the Callaway Plant Unit 1 operational meteorological measurement program were used in this analysis for Callaway Plant Unit 2. Callaway Plant Unit 2 is located approximately 1,350 ft (410 m) northwest of Callaway Plant Unit 1.

This program was designed and maintained in accordance with the guidance provided in Safety Guide 23, "Onsite Meteorological Programs" (NRC, 1972). Safety Guide 23 was replaced by Regulatory Guide (RG) 1.23 Revision 1 dated March 2007. Deviations from RG 1.23 Revision 1 are discussed in Section 2.3.3.1.7.

2.3.3.1.1 Tower Location

The meteorological tower for the Callaway site is located in an open field approximately 1.4 miles (2.3 km) east-northeast of Callaway Plant Unit 1. The tower is on a plateau that has flat to undulating terrain. The elevation at the base of the tower is approximately 824 ft (251m) above mean sea level.

Figure 2.3-79 shows the location of the meteorological tower as well as the topography of the Callaway site. The meteorological tower was sited for Callaway Plant Unit 1 according to the guidance provided in Safety Guide 23 (NRC, 1972). Figure 2.3-80 shows the general topographic features within 5 miles (8 km) of the Callaway site.

The meteorological tower is located on level, open terrain at a distance equal to at least 10 times the height of any nearby obstruction that exceeds one-half the height of the wind measurement. The tower is located far enough away from Callaway Plant Unit 2 structures and topographical features to avoid airflow modifications. The terrain height difference between the meteorological tower and the Callaway Plant Unit 2 reactor area is approximately 16 ft (5 m). The distance between the meteorological tower and the Callaway Plant Unit 2 reactor is approximately 7,500 ft (2,290 m). Therefore, the terrain profile has a very gentle slope and has an insignificant impact on site dispersion conditions.

2.3.3.1.2 Tower Design

The meteorological tower was a Rohn Series 80, 305 ft (93 m) tall with a lattice frame. Data from instruments on the tower are sent to a meteorological shed which is located 92 ft (28 m) from the tower base.

The meteorological tower is designed to be capable of withstanding wind speeds of up to 70 miles per hr (31.3 m per sec).

2.3.3.1.3 Instrumentation

The tower instrumentation consisted of wind speed, wind direction, and aspirated temperature sensors located at 296 ft (90 m), 197 ft (60 m) and 33 ft (10 m) above ground level. A dew point temperature instrument was located at 33 ft (10 m) and 197 ft (90 m) and a tipping bucket rain gauge was located approximately 35 ft (11 m) east of the meteorological shed in a small fenced enclosure.

The specifications of the instrumentation met or exceeded the accuracy and resolution requirements of Safety Guide 23 (NRC, 1972).

The instruments were positioned on the meteorological tower in accordance with the guidance in Safety Guide 23 (NRC, 1972).

Table 2.3-87 provides the meteorological instrument accuracy and resolution and compares them with regulatory guidance provided in Safety Guide 23 (NRC, 1972).

To ensure the desired 90% data recovery, both analog and digital data recording systems were installed at the meteorological tower. Wind speed and direction from 33 ft, 197 ft, and 295 ft (10 m, 60 m, and 90 m) were recorded on strip chart recorders. Ambient temperature, dew point temperature, vertical temperature differences, shed temperature, and precipitation were also recorded. Meteorological measurements (5-second values) were transmitted via telephone lines to the plant computer and averaged over 15-minute and hourly intervals. These 15-minute and hourly averages were displayed in the control room and stored in the plant computer.

2.3.3.1.4 Instrument Maintenance and Surveillance Schedules

The meteorological instruments were inspected and serviced at a frequency that assured at least a 90% data recovery rate for all parameters, including the combination of wind speed, wind direction, and delta temperature. The instrumentation specified in Safety Guide 23 (NRC, 1972) were channel checked on a daily basis and instrument calibrations were performed semi-annually.

System calibrations encompassed the entire data channel for each instrument, including recording devices and displays (those located at the tower, in emergency response facilities, and those used to compile the historical data set). The system calibrations were performed by either a series of sequential, overlapping, or total channel steps.

2.3.3.1.5 Data Reduction and Compilation

Wind and temperature data were averaged over 15 minute and hourly periods. The plant computer employs validation that monitors the various sensors and activate flags as necessary. The validation compared the data values from the 33 ft (10 m), 197 ft (60 m), and 295 ft (90 m) levels of the tower with an expected range of values for each parameter.

Averaged data values from the plant computer were collected by the meteorological software, along with wind direction variance (sigma-theta). Hourly data values were determined from the 15 minute averaged values. Output options included various functions and averages as well as graphical displays.

The 15 minute averaged data were available for use in the determination of magnitude and continuous assessment of the impact of releases of radioactive materials to the environment during a radiological emergency (as required in 10 CFR 50.47 (CFR, 2007a) and 10 CFR 50 Appendix E (CFR, 2007b)). The hourly averaged data were available for use in:

1. Determining radiological effluent release limits associated with normal operations to ensure these limits are met for any individual located offsite.

2. Determining radiological dose consequences of postulated accidents meet prescribed dose limits at the Exclusion Area Boundary (EAB) and Low Population Zone (LPZ).

3. Evaluating personnel exposures in the control room during radiological and airborne hazardous material accident conditions.

4. Determining compliance with numerical guides for design objectives and limiting conditions for operation to meet the requirement that radioactive material in effluents released to unrestricted areas be kept as low as is reasonably achievable.

5. Determining compliance with dose limits for individual members of the public.

Annual summaries of meteorological data in the form of joint frequency distributions of wind speed and wind direction by atmospheric stability class were maintained onsite and are available upon request.

A summary of the 2004 through 2006 onsite meteorological data in the form of joint frequency distributions of wind speed and wind direction by atmospheric stability class are presented in Section 2.3.2.

Wind roses (graphical depictions of joint frequency distribution tables) summarizing data from 2004 to 2006 for five National Weather Service (NWS) sites are also presented in Section 2.3.2.

A comparison of the Callaway site and the Columbia, MO data (of the five NWS sites, the Columbia, MO, site is closest to the Callaway site) reveals that both sites have the same general prevailing wind direction, southerly, with the actual prevailing direction of winds from the south-southeast at Callaway and winds from the south at Columbia. For the south-southeast wind direction, the wind speed is between 4.7 miles per hr and 15.6 miles per hr (2.1 m per sec and 7.0 m per sec) approximately 8% of the time at the Callaway site and the wind speed is between 4.7 miles per hr and 15.6 miles per hr (2.1 m per sec and 7.0 m per sec) approximately 11% of the time at the Columbia, Missouri site. The most prevalent wind speed class at the Callaway site, 11.4 miles per hr to 15.6 miles per hr (5.1 m per sec to 7.0 m per sec), occurs approximately 32% of the time. The most prevalent wind speed class at the Columbia, Missouri, site, 6.9 miles per hr to 11.2 miles per hr (3.1 m per sec to 5.0 m per sec), occurs approximately 47% of the time. These results indicate that the Callaway Plant onsite data also represent long-term conditions at the site.

2.3.3.1.6 Nearby Obstructions to Air Flow

Downwind distances from the meteorological tower to nearby (within 0.5 mile [0.8 km]) obstructions to air flow were determined using U.S. Geological Survey topographical maps. There are no obstructions to the meteorological instrumentation within 0.5 mile (0.8 km).

From the information provided in Figure 2.3-79 and Figure 2.3-80 and with the knowledge that the base of the tower is at an elevation of approximately 824 ft (251 m), it can be seen that there are no significant nearby obstructions to airflow.

2.3.3.1.7 Deviations to Guidance from Safety Guide 23

The pre-application meteorological monitoring program for Callaway Plant Unit 2 complied with Safety Guide 23 (NRC, 1972). The meteorological tower is located on level, open terrain in an area where plant structures will have little or no influence on meteorological measurements (i.e., the tower is located far enough away from Callaway Plant Unit 1 structures and topographical features to avoid airflow modifications). Further discussion is provided in Section 2.3.3.1.1.

Tower, guy wires and anchor inspections was not a requirement stipulated in Safety Guide 23 (NRC, 1972). The data reduction and compilation methodology described in 2.3.3.1.5 complied with the requirements of Safety Guide 23 in effect during the pre-application monitoring period, but do not fully comply with the methodology described in RG 1.23 Revision 1 dated March 2007.

2.3.3.2 Preoperational and Operational Meteorological Measurement Programs

The preoperational and operational meteorological measurement programs for Callaway Plant Unit 2 are based on the operational meteorological measurement program for Callaway Plant Unit 1 with new instrumentation as described in Section 2.3.3.2.3 and revised operational procedures as described in Section 2.3.3.2.5. This program was originally designed according to the guidance provided in Safety Guide 23 (NRC, 1972) and was upgraded in October 2007 to comply with RG 1.23, Revision 1 (NRC, 2007).

2.3.3.2.1 Tower Location

The meteorological tower for the Callaway site is described in Section 2.3.3.1.1.

2.3.3.2.2 Tower Design

The meteorological tower design is described in Section 2.3.3.1.2. The tower height was reduced from 305 ft (93 m) to 196 ft (60 m) in conjunction with instrumentation changes made in October 2007.

2.3.3.2.3 Instrumentation

The tower instrumentation was changed from that used during pre-application monitoring in October 2007. It now consists of redundant wind speed, wind direction, and aspirated temperature sensors located at 196 ft (60 m) and 33 ft (10 m) above ground level. Dew point temperatures (converted from relative humidity sensors) are located at 33 ft (10 m) and 196 ft (60 m) and a tipping bucket rain gauge is located approximately 35 ft (10.7 m) east of the meteorological shed.

The instruments are positioned on the meteorological tower in accordance with the guidance in RG 1.23, Revision 1 (NRC, 2007).

Table 2.3-87 presents meteorological instrument specifications and compares them with regulatory guidance provided in RG 1.23, Revision 1 (NRC, 2007).

Signals from the sensors are collected and processed by a data logger. The data logger collects 5-second samples of the data from the meteorological tower, and performs calculations of 15-minute and hourly average values of all parameters, wind direction sigma theta, and temperature difference between the 196 ft (60 m) and 33 ft (10 m) levels of the meteorological tower. The data logger sends the averaged data values to a second data logger and personal computer located in the meteorological shed, to a personal computer located in the plant computer room and to the plant computer system. In addition, the averaged data values are transmitted to the appropriate locations for operational and emergency response purposes:

- For preoperational monitoring:
  - Callaway Plant Unit 1 Control Room, Technical Support Center, and Emergency Operations Facility;
- For operational monitoring:
  - Callaway Plant Unit 1 Control Room, Callaway Plant Unit 2 Control Room, and Technical Support Center, and Emergency Operations Facility.

In all cases the averaged data is also submitted to the NRC's Emergency Response Data System as provided for in Section VI of Appendix E to 10 CFR Part 50 (CFR, 2007b).

2.3.3.2.4 Instrument Maintenance and Surveillance Schedules

The meteorological instruments are inspected and serviced at a frequency that assures at least a 90% data recovery rate for all parameters, including the combination of wind speed, wind direction, and delta temperature. The instrumentation specified in RG 1.23, Revision 1 is channel checked on a daily basis and instrument calibrations are performed semi-annually.

System calibrations encompass the entire data channel for each instrument, including data logger devices and displays (those located at the tower, in emergency response facilities, and those used to compile the historical data set). The system calibrations are performed by either a series of sequential, overlapping, or total channel steps.

2.3.3.2.5 Data Reduction and Compilation

Wind and temperature 5-second data are averaged over 15-minute and hourly periods. The plant computer employs a validation that monitors the various sensors and activates flags as necessary. The validation compares the data values from the 33 ft (10 m) and 197 ft (60 m) levels of the tower with a set of ranges for each parameter. A daily channel check of all parameters is performed to determine if values are outside of specified limits.

Averaged data values from the data logger are collected by the plant computer along with wind direction variance (sigma-theta). Hourly data values are determined from the 15 minute averaged values. Output options include various functions and averages as well as graphical displays.

The 15 minute averaged data are available for use in the determination of magnitude and continuous assessment of the impact of releases of radioactive materials to the environment

during a radiological emergency (as required in 10 CFR 50.47 (CFR, 2007a) and 10 CFR 50 Appendix E (CFR, 2007b)). The hourly averaged data are available for use in:

1. Determining radiological effluent release limits associated with normal operations to ensure these limits are met for any individual located offsite.

2. Determining that radiological dose consequences of postulated accidents meet prescribed dose limits at the EAB and LPZ.

3. Evaluating personnel exposures in the control room during radiological and airborne hazardous material accident conditions.

4. Determining compliance with numerical guides for design objectives and limiting conditions for operation to meet the requirement that radioactive material in effluents released to unrestricted areas be kept as low as is reasonably achievable.

5. Determining compliance with dose limits for individual members of the public.

Annual summaries of meteorological data in the form of joint frequency distributions of wind speed and wind direction by atmospheric stability class are maintained onsite and are available upon request.

As described in Section 2.3.3.1.5, comparison of the Callaway site and the Columbia, MO data (of the five NWS sites, the Columbia, MO, site is closest to the Callaway site) revealed that both sites have the same general prevailing wind direction, southerly, with the actual prevailing wind direction of winds from the south-southeast at Callaway and winds from the south at Columbia. These comparisons will be repeated during the site preparation and construction, preoperational, and operational monitoring programs to confirm that the Callaway Plant onsite data also represent long-term conditions at the site.

2.3.3.2.6 Nearby Obstructions to Air Flow

Downwind distances from the meteorological tower to nearby (within 0.5 mile (0.8 km)) obstructions to air flow were determined using U.S. Geological Survey topographical maps. There are no obstructions to the meteorological instrumentation within 0.5 mile (0.8km).

From the information provided in Figure 2.3-79 and Figure 2.3-80 and with the knowledge that the base of the tower is at an elevation of approximately 824 ft (251 m), it can be seen that there are no significant nearby obstructions to airflow.

2.3.3.2.7 Deviations to Guidance from Regulatory Guide 1.23, Revision 1

The meteorological tower is not sited at the same elevation as finished plant grade. This was done in order to assure that the meteorological tower is located on level, open terrain at a distance at least 10 times the height of any nearby obstruction that exceeds one-half the height of the wind measurement; i.e., the tower is located far enough away from Callaway Plant Unit 1 and Callaway Plant Unit 2 structures and topographical features to avoid airflow modifications. Further discussion is provided in Section 2.3.3.2.1. No specific timeframe for the frequency of inspection has been set for the tower, guy wires and anchors.

2.3.3.3 References

CFR, 2007a. Title 10, Code of Federal Regulations, Part 50.47, Emergency Plans, 2007.

CFR, 2007b. Title 10, Code of Federal Regulations, Part 50, Appendix E, Emergency Planning and Preparedness for Production and Utilization Facilities, 2007.

NRC, 1972. Onsite Meteorological Programs, Safety Guide 23 (Regulatory Guide 1.23 Revision 0), Nuclear Regulatory Commission, February 1972.

NRC, 2007. Meteorological Monitoring Programs for Nuclear Power Plants, Regulatory Guide 1.23, Revision 1, Nuclear Regulatory Commission, March 2007.}

2.3.4 SHORT TERM ATMOSPHERIC DISPERSION ESTIMATES FOR ACCIDENT RELEASES

The U.S. EPR FSAR includes the following COL Item in Section 2.3.4:

A COL applicant that references the U.S. EPR design certification will confirm that site-specific χ/Q values, based on site-specific meteorological data, are bounded by those specified in Table 2.1-1 at the EAB and LPZ and by Table 2.3-1 at the control room.

For site-specific χ/Q values that exceed the bounding χ/Q values, a COL applicant that references the U.S. EPR design certification will demonstrate that the radiological consequences associated with the controlling design basis accident continue to meet the dose reference values given in 10 CFR Part 50.34 and the control room operator dose limits given in GDC 19 using site-specific χ/Q values.

A COL applicant that references the U.S. EPR design certification will provide a description of the atmospheric dispersion modeling used in evaluating potential design basis events to calculate concentrations of hazardous materials (e.g., flammable or toxic clouds) outside building structures resulting from the onsite and/or offsite airborne releases of such materials.

A COL applicant that references the U.S. EPR design certification will provide χ/Q values for each cumulative frequency distribution which exceeds the median value (50% of the time) as part of the assessment of the postulated impact of an accident on the environment.

These COL Items are addressed in Section 2.3.4.2.1 through 2.3.4.2.4.

Sections 2.3.4.1 through 2.3.4.3 are added as a supplement to the U.S. EPR FSAR.

2.3.4.1 Objective

This section provides, for appropriate time periods up to 30 days after an accident, conservative estimates of atmospheric dispersion factors (χ/Q) values at the exclusion area boundary (EAB), at the outer boundary of the low population zone (LPZ), and at the control room for postulated accidental radioactive airborne releases. This section also addresses atmospheric dispersion modeling used in Section 2.2.3 to evaluate potential design basis events resulting from the onsite and/or offsite airborne releases of hazardous materials (e.g., flammable vapor clouds, toxic chemicals, and smoke from fires).

2.3.4.2 Calculations

2.3.4.2.1 Conservative Short-Term (Accident Release) Atmospheric Dispersion Estimates for EAB and LPZ

Short-term atmospheric dispersion estimate (χ/Q) values at the Exclusion Area Boundary (EAB) and Low Population Zone (LPZ) are provided in Table 2.1-1 of the U.S. EPR FSAR. {Conservative

estimates of site-specific atmospheric dispersion for the Callaway Plant Unit 2 EAB and the outer boundary of the site-specific LPZ were determined using computer code AEOLUS3 and five years of meteorological data (2003 through 2007) from the onsite monitoring program at the existing Callaway Plant Unit 1. At the time of the analysis, the most current onsite meteorological data were from 2007.

AEOLUS3 was developed and validated by Entech Engineering. It implements the guidance in Regulatory Guide 1.145, "Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants," for accidental releases (NRC, 1982). The code has been used in past licensing submittals and its results have been found to be acceptable by the NRC (NRC, 2005a).

The following assumptions were made for the short-term atmospheric dispersion analysis:

- Short-term atmospheric dispersion factors determined using AEOLUS3 assumed a ground level release. Therefore, in accordance with Regulatory Guide 1.145, the release point and receptor elevations were assumed to be the same.

- For EAB/LPZ atmospheric dispersion factors for DBAs, all post-accident release points were based on the ground level release model with no dispersion credit for building wake effects. However, plume meander, which predominates building wake effects during short time intervals, is accounted for.

- Downwind distances for which atmospheric dispersion factors for DBA analyses will be determined using computer code AEOLUS3 version 1.0 are: 402 m (0.25 mi), 610 m (0.379 mi), 644 m (0.4 mi), 692 m (0.43 mi), 805 m (0.5 mi), 845 m (0.53 mi or 2,772 ft), 1,207 m (0.75 mi), 1,340 m (the EAB at 0.83 mi), 1,609 m (1.0 mi), 2,414 m (1.5 mi), 3,219 m (2.0 mi), 4,023 m (2.5 mi), 4,180 m (the EPZ at 2.6 mi), 4,828 m (3.0 mi), 6,437 m (4.0 mi), and 8,047 m (5.0 mi).

Inputs to the AEOLUS3 computer code are provided in Table 2.3-88. The determination of the site-specific atmospheric dispersion for the EAB and the outer boundary of the LPZ complies with the guidance provided in Regulatory Guide 1.145, Revision 1 (NRC, 1982).

Conservative estimates of the site-specific atmospheric dispersion for EAB and the outer boundary of the LPZ for Callaway Plant Unit 2 are presented in Table 2.3-89. The values for the EAB and LPZ presented in Table 2.3-89 are bounded by those in Table 2.1-1 within the U.S. EPR FSAR.}

2.3.4.2.2 Realistic Short-Term (Accident Release) Atmospheric Dispersion Estimates for EAB and LPZ

{Realistic estimates of the site-specific atmospheric dispersion for the Callaway Plant EAB and the outer boundary of the site-specific LPZ were determined using computer code AEOLUS3 and five years of meteorological data (2003 through 2007) from the onsite monitoring program at the existing Callaway Plant Unit 1. Site-specific local meteorological data are described in Section 2.3.2.

The 50th percentile 2 hour to 8 hour, 8 hour to 24 hour, 1 day to 4 days, and 4 days to 30 days χ/Q's for Section 7.1 of the Environmental Report were determined using the methodology in Sections 1.4 and 2.2 of Regulatory Guide 1.145 (NRC, 1982) and the 0 hour to 2 hour 50th percentile value was calculated by the computer code AEOLUS3 and 5 years of onsite

meteorological data from Callaway Plant Unit 1 (2003 through 2007). The 0 hour to 2 hour 50th percentile value for the EAB was extracted directly from the computer output.

Regulatory Guide 1.145 requires the following steps to be performed for computation of the accident atmospheric dispersion factors (χ/Q) at the Low Population Zone (LPZ):

1. The 2-hour accident χ/Q and the annual average χ/Q are determined for each sector at the outer LPZ boundary distances.

2. The two values for any given sector (the 2-hour accident χ/Q and the annual average χ/Q) are plotted on a log-log graph, and values at other time intervals of interest are determined through logarithmic interpolation between these two points.

3. The time periods should be selected to represent appropriate meteorological time regimes (an 8-hour interval for releases during the first 8 hours of the postulated accident, a 16-hour interval for releases between 8 hours and 24 hours, a 3-day interval for releases between 1 day and 4 days, and a 26-day interval for releases between 4 days and 30 days).

Since the annual average χ/Q is an integral part of the model for determination of accident χ/Q values, it is possible to use the Regulatory Guide 1.145 methodology in reverse order to determine the annual average χ/Q which was used in the computation of the accident χ/Q values. The accident χ/Q values and the annual average χ/Q value should be on a straight line when plotted on a log-log graph. The 50th percentile atmospheric dispersion factors were determined – these factors are presented in Table 2.3-95.}

2.3.4.2.3 Short-Term (Accident Release) Atmospheric Dispersion Estimates for the Control Room

Short-term atmospheric dispersion estimates (χ/Q) values estimated for the control room are provided in Table 2.3-1 of the U.S. EPR FSAR. Short-term atmospheric dispersion χ/Q estimates for unfiltered inleakage into the control room are provided in Table 2.3-2 of the U.S. EPR FSAR. {Conservative estimates of the site-specific atmospheric dispersion for the control room were determined using computer code ARCON96 and five years of meteorological data (2003-2007) from the onsite monitoring program at Callaway Plant Unit 1. The version of the ARCON96 code which was used is the May 9, 1997 version which is endorsed in Regulatory Guide 1.194 (NRC, 2003). Site-specific local meteorological data are described in Section 2.3.2, Local Meteorology.

ARCON96 implements the guidance in Regulatory Guide 1.194, "Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants," (NRC, 2003). ARCON96 was specifically developed for the Nuclear Regulatory Commission (NRC. 1997). The determination of the site-specific atmospheric dispersion for the control room complies with the guidance provided in Regulatory Guide 1.194, Revision 0 (NRC, 2003).

Inputs to the ARCON96 computer code are provided in Table 2.3-88. Conservative site-specific estimates of atmospheric dispersion for the Callaway Plant Unit 2 control room are presented in Table 2.3-90 through Table 2.3-94. The values for the control room presented in Table 2.3-90 through Table 2.3-94 are bounded by those in Table 2.3-1 within the U.S. EPR FSAR. In addition, the atmospheric dispersion factors for the new plant unfiltered in-leakage in Table 2.3-2 of the U.S. EPR FSAR are bounded.

Figure 2.3-1 of the U.S. EPR FSAR indicates the locations of potential accident release pathways and their relationship to the control room. Figure 2.3-81 and Figure 2.1-7 provide the Callaway site plant and control room location.

- There are two redundant outside air intakes for the CR/TSC envelope (see Figure 2.3-81), one on the roof of Safeguard Building Division #2 (Building 2UJK), and another on Safeguard Building #3 (Building 3UJK). The locations for these intakes are in the corners farthest away from the containment building (on the northwest corner of Division 2 and the northeast corner of Division 3). In addition, there could be multiple/alternative release points for any given accident, such as four Main Steam Relief Trains for a postulated Steam Generator Tube Rupture accident. In the present application, it was assumed that the outside air for the CR/TSC envelope will be from a single intake.

- For the canopy and depressurization shaft releases, intervening walls and roof in the line of sight between the release points and the Control Room air intakes were conservatively ignored.

Conservative site-specific estimates of atmospheric dispersion for the Callaway Plant Unit 2 control room are presented in Table 2.3-90 through Table 2.3-94. The values for the control room presented in Table 2.3-90 through Table 2.3-94 are bounded by those in Table 2.3-1 within the U.S. EPR FSAR. Figure 15A-1 of the U.S. EPR FSAR provides the locations of potential accident release pathways and their relationship to the control room, and Figure 2.3-81 and Figure 2.1-7 provide the Callaway site plan and control room location.

2.3.4.2.4 Atmospheric Dispersion Modeling for Hazardous Materials

The description of the atmospheric modeling used in the evaluation of potential design basis events to calculate concentration of hazardous material is provided in Sections 2.2.3.1.2 and 2.2.3.1.3.

2.3.4.3 References

NRC, 1977. Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors, Regulatory Guide 1.111, Revision 1, Nuclear Regulatory Commission, July 1977.

NRC, 1982. Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants, Regulatory Guide 1.145, Revision 1, Nuclear Regulatory Commission, November 1982.

NRC, 1997. Atmospheric Relative Concentrations in Building Wakes, NUREG/CR-6331, Nuclear Regulatory Commission, May 1997.

NRC, 2003. Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants, Regulatory Guide 1.194, Revision 0, Nuclear Regulatory Commission, June 2003.

NRC, 2005. Letter NRC (Boska) to Entergy (Kansler), Pilgrim Nuclear Power Station, Issuance of Amendment (215), NRC Adams Accession Number ML 051040065, Dated April 28, 2005.

NRC, 2005a. U.S. Nuclear Regulatory Commission NUREG-1827, "Safety Evaluation Report for the National Enrichment Facility in Lea County, New Mexico", Docket No. 70-3103, June 2005.}

2.3.5 LONG-TERM ATMOSPHERIC DISPERSION ESTIMATES FOR ROUTINE RELEASES

The U.S. EPR FSAR includes the following COL Items in Section 2.3.5:

> A COL applicant that references the U.S. EPR design certification will provide the site-specific, long-term diffusion estimates for routine releases. In developing this information, the COL applicant should consider the guidance provided in Regulatory Guides 1.23, 1.109, 1.111, and 1.112. The maximum annual average χ/Q value at the site boundary, provided in Table 2.1-1, is used to calculate radionuclide concentrations associated with routine gaseous effluent releases, addressed in Section 11.3, for comparison with environmental release limits and dose limits given in 10 CFR Part 20. If a reactor site has an annual average χ/Q value that exceeds the reference value, then a site-specific evaluation will be performed.
>
> A COL applicant that references the U.S. EPR design certification will also provide estimates of annual average atmospheric dispersion (χ/Q values) and deposition (D/Q values) for 16 radial sectors to a distance of 50 mi (80 km) from the plant as part of its environmental assessment.

These COL Items are addressed as follows:

Sections 2.3.5.1 through 2.3.5.3 are added as a supplement to U.S. EPR FSAR.

2.3.5.1 Objective

This section provides realistic estimates of annual average atmospheric dispersion (χ/Q values) and deposition (D/Q values) to a distance of 50 mi (80 km) for annual average release limit calculations and person-rem estimates.

2.3.5.2 Calculations

{Realistic estimates of site-specific annual average atmospheric transport and diffusion characteristics were determined using computer code XDCALC Version 1.5.12 and three years of meteorological data (2004 through 2006) from the onsite monitoring program at the existing Callaway Plant Unit 1. These data were the most recent available at the time of the analysis and were found to be representative of the area when compared with data from the closest National Weather Service (NWS) station at Columbia, MO as described in Section 2.3.1. In the interim, additional data for calendar year 2007 were validated. These data, along with on-site data from 2003 were used to calculate short term diffusion estimates for accident releases using 5 years of data as discussed in Section 2.3.4. The three year data set was used in the calculation of long term dispersion estimates for routine releases in this section because an assessment of the annual average χ/Q values for the three year data set were determined to predict somewhat higher exposures than the five-year data set at the EAB and LPZ as illustrated in the table below:

Period	Distance Downwind	Annual Average χ/Q
3-Year Data Set (2004 – 2006)	EAB 4,395 ft (1,340 m)	2.37 E -06
	LPZ 2.6 miles (4,180 m)	4.95 E -07
5-Year Data Set (2003 – 2007)	EAB 4,395 ft (1,340 m)	2.19 E -06
	LPZ 2.6 miles (4,180 m)	4.44 E -07

XDCALC was developed and validated by ABS Consulting. It implements the methodology of Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of

Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors," Revision 1, (NRC, 1977a). The code has been used in many previous licensing submittals.

XDCALC operates in a batch-input mode with various options that are user selectable. The program is based on a straight-line trajectory Gaussian plume model. The plume can be depleted by dry deposition, and by radioactive decay. The computed ground-level concentration can be modified to account for plume recirculation. The program computes an effective plume height which accounts for the physical release height, aerodynamic downwash, plume rise, and terrain heights.

XDCALC produces the following dispersion parameters at offsite locations of interest:

- the concentration (χ) of gaseous releases for a given a release rate (Q) expressed as χ/Q,
- the concentration of depleted halogen and particulate releases that deposit while traveling downwind (expressed as depleted χ/Q), and
- the deposition factor D/Q, which is used as a measure of the relative deposition of released halogen and particulate radioactive materials.

These factors are used to compute doses due to postulated routine effluent releases from Callaway Plant Unit 2.

XDCALC computes plume standard deviations in the horizontal and vertical dimensions (σ_y and σ_z, respectively) using the analytical expressions from the Nuclear Regulatory Commission-sponsored computer program XOQDOQ. XDCALC was written following the methodology in the Regulatory Guides. Calculations performed using the XDCALC code and site-specific meteorological data have previously been submitted to NRC in support of licensing applications. These applications were accepted on the basis of χ/Q values generated by the XDCALC code. The XDCALC code is also used to generate Annual Reports submitted to the NRC each year. NRC accepts these results as evidenced by the fact that comments related to these submittals have not been received.

The onsite meteorological data used in the dispersion analysis has been shown to be representative of the region as discussed in Section 2.3.2. Thus, the atmospheric dispersion and deposition factors determined by XDCALC from the site boundary to a radius of 45 mi (72 km) from the plant are appropriate for use in estimating the consequences of routine releases for Callaway Plant Unit 2. The 45-mile calculation is made at the center of the last radial segment (40-50 miles) for use with the population in the same segment.

Meteorological data summaries used as input to XDCALC are provided in Section 2.3.2. The regulatory guidance described in Regulatory Guide (RG) 1.23, Revision 1 (NRC, 2007), was followed in the determination of appropriate onsite meteorological data. The regulatory guidance described in RG 1.112 (NRC, 1977c) was followed in the determination of points of routine release of radioactive materials to the atmosphere and their characteristics. The regulatory guidance described in RG 1.109, Revision 1 (NRC, 1977b), was followed in the determination of potential receptors of interest.

XDCALC was run using the following data and options:

- Three years of onsite meteorological data were used (2004 through 2006),

- A mixed mode release from the stack
- Lower level (10 m or 33 ft) and mid level (60 m or 197 ft) wind speed and direction data were used,
- Vertical temperature difference (10 m [33 ft] temperature minus 60 m [197 ft] temperature) data were used,
- Building wake credit was taken using a Reactor Building height of 60 m (197 ft) and cross-sectional area of 2,940 sq m (31,630 sq ft),
- Stack height was assumed to be 62 m (203 ft),
- Stack inner diameter was assumed to be 3.8 m (12.5 ft) (a conservative assumption),
- Stack flow rate was assumed to be 6,865,646 l per min (242,458 CFM) (a conservative assumption),
- Values were computed for each hour of meteorological data using the measured speed, direction and stability.
- Plume rise was considered for the elevated portion of the mixed mode release,
- The sector average dispersion model was used in accordance with RG 1.111 (NRC, 1977a),
- Dispersion coefficients were modeled as provided in RG 1.111 (NRC, 1977a),
- RG 1.111, (NRC, 1977a) depletion and deposition curves were used,
- Special receptors based on the Callaway Plant 2007 Land Use Census Report (Ameren, 2007) were included at the site boundary, nearest residents, gardens, meat animals, and milk cows).
- Terrain heights of receptors out to 45 miles were considered.

The atmospheric transport and diffusion models used to determine the long-term atmospheric dispersion estimates for routine releases for Callaway Plant Unit 2 comply with the guidance provided in RG 1.111, Revision 1, (NRC, 1977a).

A mixed mode release from the Callaway Plant Unit 2 stack was modeled to determine routine release normal effluent atmospheric dispersion and deposition factors. Figure 15A-1 of the U.S. EPR FSAR indicates the location of the stack. As previously stated, three years of meteorological data (2004 through 2006) from the onsite monitoring program at the Callaway Plant were used in the analysis. A summary of these data in the form of a joint frequency distribution of wind speed and direction as a function of atmospheric stability class is provided Section 2.3.2.

Credit for building wake effect was taken. The release point was 203 ft (62 m) above grade (6.6 ft (2 m) above the Reactor Building). Terrain height values for downwind receptor locations were determined using Digital Terrain Elevation Data (DTED) from the U.S. Geological Survey. A stack flow rate of 242,458 CFM (6,865,646 l per min) was used; this is a conservative value, since the actual flow rate for normal operations will be higher.

Table 2.3-96 through Table 2.3-101 present the site-specific normal effluent annual average atmospheric dispersion and deposition factors for a mixed mode release from the Callaway Plant Unit 2 stack. Locations of interest (i.e., site boundary, nearest resident, nearest garden, nearest meat animal, and nearest milk cow) were derived from the annual Callaway site land use census, and from regulatory guidance.

The specific locations of the potential receptors of interest are provided in Table 2.3-102. The maximum site-specific annual average χ/Q and D/Q values at or beyond the site boundary are 2.79E-07 sec/m^3 and 1.97E-09 1/m^2, respectively. The maximum annual average χ/Q at or beyond the site boundary is lower than the value presented in Table 2.1-1 in the U.S. EPR FSAR.

2.3.5.3 References

Ameren, 2007. Callaway Plant 2007 Land Use Census Report, October 2007.

NRC, 1977a. Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases From Light-Water-Cooled Reactors, Regulatory Guide 1.111, Revision 1, Nuclear Regulatory Commission, July 1977.

NRC, 1977b. Calculation of Annual Dose to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Regulatory Guide 1.109, Revision 1, Nuclear Regulatory Commission, October 1977.

NRC, 1977c. Calculation of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Light-Water-Cooled Power Reactors, Regulatory Guide 1.112, Revision 0-R, Nuclear Regulatory Commission, May 1977.

NRC, 2007. Meteorological Monitoring Programs for Nuclear Power Plants, Regulatory Guide 1.23, Revision 1, Nuclear Regulatory Commission, October 2007.}

2.3.6 REFERENCES

No departures or supplements.

Table 2.3-1—{National Ambient Air Quality Standards}

Pollutant	Primary Standards	Averaging Times	Secondary Standards
Carbon Monoxide	9 ppm (10 mg/m^3)	8 hour(1)	None
	35 ppm (40 mg/m^3)	1 hour(1)	None
Lead	1.5 µg/m^3	Quarterly Average	Same as Primary
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary
Particulate Matter (PM10)	Revoked(2)	Annual(2) (Arithmetic Mean)	-------
	150 µg/m^3	24 hour(3)	-------
Particulate Matter (PM2.5)	15.0 µg/m^3	Annual(4) (Arithmetic Mean)	Same as Primary
	35 µg/m^3	24 hour(5)	
Ozone	0.08 ppm	8 hour(6)	Same as Primary
	0.12 ppm	1 hour(7) (Applies only in limited areas)	Same as Primary
Sulfur Oxides	0.03 ppm	Annual (Arithmetic Mean)	-------
	0.14 ppm	24 hour(1)	-------
	-------	3 hour(1)	0.5 ppm (1,300 µg/m^3)

Notes:

(1) Not to be exceeded more than once per year.

(2) Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual PM10 Standard in 2006 (effective December 17, 2006).

(3) Not to be exceeded more than once per year on average over three years.

(4) To attain this standard, the three year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.

(5) To attain this standard, the three year average of the 98th percentile of 24 hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).

(6) To attain this standard, the three year average of the fourth-highest daily maximum 8 hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

(7) (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1, as determined by Appendix H.

(b) As of June 15, 2005 EPA revoked the 1 hour ozone standard in all areas except the fourteen 8 hour ozone nonattainment Early Action Compact Areas.

Table 2.3-2—{Monthly Mean Number of Days with Thunderstorms}

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO Regional Airport	0.7	1.0	2.8	5.2	8.0	7.6	7.6	7.0	4.8	3.2	1.9	0.7	50.5
St. Louis, MO	0.7	0.9	2.9	5.5	6.7	7.7	6.9	6.2	3.6	2.5	1.7	0.7	46.0
Kansas City, MO	0.4	0.8	2.7	5.0	8.0	8.9	7.9	7.3	5.4	3.1	1.4	0.4	51.3

Table 2.3-3—{Maximum Monthly Wind Speed (mph) at Columbia, Missouri 1950-2006}

Month	Fastest MPH[1]	Year	Peak Gust[2]	Year
January	56	1951	53	1984
February	51	1984	63	1984
March	59	1964	64	1984
April	57	1953	69	1984
May	58	1950	58	1988
June	59	1985	95	1985
July	61	1958	64	1986
August	56	1954	81	2003
September	63	1952	54	1985
October	49	1959	59	1996
November	49	1955	53	1998
December	58	1971	55	1984

notes:
(1) 1950-2006 Maximum 2-minute wind speed
(2) 1984-2006 Maximum 5-second

Table 2.3-4—{Probable Maximum Winter Precipitation (PMWP) Values}

Winter Months	10 mi^2 48-Hour PMWP in (mm)
December	19.7 (500.3)
January	18.7 (475.0)
February	19.6 (497.8)

Table 2.3-5—{Design Basis Tornado Characteristics for Callaway Plant Unit 2}

Region	Maximum Wind Speed m/s (mph)	Translational Speed m/s (mph)	Maximum Rotational Speed m/s (mph)	Radius of Maximum Rotational Speed m (ft)	Pressure Drop mb (psi)	Rate of Pressure Drop mb/s (psi/s)
I	103 (230)	21 (46)	82 (184)	45.7 (150)	83 (1.2)	37 (0.5)

Table 2.3-6—{Annual Heating and Humidification Design Conditions for Columbia, Missouri (1972-2001)}

Annual Heating and Humidification Design Conditions														
Coldest month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6 percent DB	
			99.6 percent			99 percent			0.4 percent		1 percent			
	99.6 percent	99 percent	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	3a	3b	4a	4b	4c	4d	4e	4f	5a	5b	5c	5d	6a	6b
1	-0.3°F	5.4°F	-9.7°F	3.4	1.3°F	-3.5°F	4.7	7.1°F	28.1mph	32.3°F	25.9mph	31.4°F	9.9mph	300°
1	-17.9°C	-14.8°C	-23.2°C	3.4	-17.1°C	-19.7°C	4.7	-13.8°C	12.6 mps	0.2°C	11.6 mps	-0.3°C	4.4 mps	300°

Notes:
DB = dry bulb
DP = dew point
HR = humidity ratio
MCDB = mean coincident dry bulb
WS = wind speed
MCWS = mean coincident wind speed
PCWD = prevailing coincident wind direction, degrees with respect to True North

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Table 2.3-7—{Annual Cooling, Dehumidification, and Enthalpy Design Conditions for Columbia, Missouri (1972-2001)}

Annual Cooling, Dehumidification, and Enthalpy Design Conditions															
Hottest month	Hottest month DB range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4 percent DB	
		0.4 percent		1 percent		2 percent		0.4 percent		1 percent		2 percent			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	8	9a	9b	9c	9d	9e	9f	10a	10b	10c	10d	10e	10f	11a	11b
7	20.0°F	94.7°F	75.7°F	91.7°F	75.6°F	89.1°F	74.6°F	78.9°F	89.3°F	77.5°F	87.9°F	76.2°F	86.1°F	10.4 mph	180
7	36.0°C	34.8°C	24.7°C	33.2°C	24.2°C	31.7°C	23.7°C	26.1°C	31.8°C	25.3°C	31.1°C	24.6°C	30.1°C	4.7 mps	180

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						
0.4 percent			1 percent			2 percent			0.4 percent		1 percent		2 percent		
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	
12a	12b	12c	12d	12e	12f	12g	12h	12i	13a	13b	13c	13d	13e	13f	
76.1°F	140.8	85.3°F	74.5°F	133.5	83.6°F	73.2°F	127.5	82.0°F	35.4 kJ/kg	89.2.°F	33.9 kJ/kg	88.1°F	32.5 kJ/kg	86.1°F	
24.5°C	140.8	29.6°C	23.6°C	133.5	28.7°C	22.9°C	127.5	27.8°C	35.4 kJ/kg	31.8°C	33.9 kJ/kg	31.2°C	32.5 kJ/kg	30.1°C	

Notes:
DB = dry bulb
MCDB = mean coincident dry bulb
MCWB = mean coincident wet bulb
MCWS = mean coincident wind speed
PCWD = prevailing coincident wind direction, degrees with respect to True North
HR = humidity ratio
Enth = Enthalpy

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Table 2.3-8—{Extreme Annual Design Conditions for Columbia, Missouri (1972-2001)}

Extreme Annual Design Conditions															
Extreme Annual WS			Extreme Max WB	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard Deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1 percent	2.5 percent	5 percent		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
14a	14b	14c	15	16a	16b	16c	16d	17a	17b	17c	17d	17e	17f	17g	17h
24.2mph	20.6mph	18.7mph	83.8°F	99.0°F	-7.9°F	4.3°F	6.5°F	102.1°F	-12.6°F	104.6°F	-16.4°F	107.0°F	-20.0°F	110.1°F	-24.7°F
10.8mps	9.2mps	8.4mps	28.8°C	37.2°C	-22.2°C	-15.4°C	-14.2°C	38.9°C	-24.8°C	40.3°C	-26.9°C	41.7°C	-28.9°C	43.4°C	-31.5°C

Notes:
WS = wind speed
WB = wet bulb
DB = dry bulb

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Table 2.3-9—{Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperature Values for Columbia, Missouri (1972-2001)}

Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures												
percent	**Jan**		**Feb**		**Mar**		**Apr**		**May**		**Jun**	
	DB	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**
	18a	***18b***	***18c***	***18d***	***18e***	***18f***	***18g***	***18h***	***18i***	***18j***	***18k***	***18l***
0.4 percent	61.8°F	53.0°F	69.8°F	55.8°F	78.9°F	61.2°F	84.1°F	66.0°F	86.9°F	72.4°F	94.2°F	74.8°F
	16.6°C	11.7°C	21.0°C	13.2°C	26.1°C	16.2°C	28.9°C	18.9°C	30.5°C	22.4°C	34.6°C	23.8°C
1 percent	58.2°F	49.9°F	66.3°F	53.6°F	75.7°F	59.7°F	82.1°F	65.1°F	85.2°F	71.6°F	91.6°F	75.1°F
	14.6°C	9.9°C	19.1°C	12.0°C	24.3°C	15.4°C	27.8°C	18.4°C	29.6°C	22.0°C	33.1°C	23.9°C
2 percent	55.3°F	49.0°F	62.8°F	52.5°F	73.0°F	58.5°F	79.8°F	63.6°F	83.4°F	70.7°F	89.8°F	74.9°F
	12.9°C	9.4°C	17.1°C	11.4°C	22.8°C	14.7°C	26.6°C	17.6°C	28.6°C	21.5°C	32.1°C	23.8°C

percent	**Jul**		**Aug**		**Sep**		**Oct**		**Nov**		**Dec**	
	DB	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**	**DB**	**MCWB**
	18m	***18n***	***18o***	***18p***	***18q***	***18r***	***18s***	***18t***	***18u***	***18v***	***18w***	***18x***
0.4 percent	102.2°F	74.6°F	99.0°F	75.4°F	93.2°F	73.8°F	84.0°F	66.6°F	75.1°F	62.0°F	66.1°F	59.2°F
	39.0°C	23.7°C	37.2°C	24.1°C	34.0°C	23.2°C	28.9°C	19.2°C	23.9°C	16.7°C	18.9°C	15.1°C
1 percent	97.6°F	76.1°F	96.4°F	75.3°F	91.2°F	73.5°F	81.5°F	65.9°F	71.5°F	59.8°F	63.1°F	56.6°F
	36.4°C	24.5°C	35.8°C	24.1°C	32.9°C	23.1°C	27.5°C	18.8°C	21.9°C	15.4°C	17.3°C	13.7°C
2 percent	95.1°F	76.3°F	94.6°F	75.6°F	89.1°F	72.8°F	78.7°F	64.6°F	68.8°F	58.9°F	59.7°F	53.7°F
	35.1°C	24.6°C	34.8°C	24.2°C	31.7°C	22.7°C	25.9°C	18.1°C	20.4°C	14.9°C	15.4°C	12.1°C

Notes:
DB = dry bulb
MCWB = mean coincident wet bulb

Table 2.3-10— {Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperature Values for Columbia, Missouri (1972-2001)}

percent	Jan		Feb		Mar		Apr		May		Jun	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19a	*19b*	*19c*	*19d*	*19e*	*19f*	*19g*	*19h*	*19i*	*19j*	*19k*	*19l*
0.4 percent	55.4°F	59.5°F	59.0°F	65.0°F	64.1°F	74.3°F	68.5°F	79.3°F	75.5°F	83.9°F	79.1°F	88.8°F
	13.0°C	15.3°C	15.0°C	18.3°C	17.8°C	23.5°C	20.3°C	26.3°C	24.2°C	28.8°C	26.2°C	31.6°C
1 percent	52.8°F	56.2°F	56.5°F	62.6°F	62.5°F	72.0°F	67.4°F	77.7°F	74.3°F	82.5°F	78.1°F	87.9°F
	11.6°C	13.4°C	13.6°C	17.0°C	16.9°C	22.2°C	19.7°C	25.4°C	23.5°C	28.1°C	25.6°C	31.1°C
2 percent	49.8°F	53.8°F	54.1°F	60.5°F	60.7°F	69.7°F	66.1°F	76.5°F	72.9°F	80.9°F	77.2°F	86.9°F
	9.9°C	12.1°C	12.3°C	15.8°C	15.9°C	20.9°C	18.9°C	24.7°C	22.7°C	27.2°C	25.1°C	30.5°C

percent	Jul		Aug		Sep		Oct		Nov		Dec	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19m	*19n*	*19o*	*19p*	*19q*	*19r*	*19s*	*19t*	*19u*	*19v*	*19w*	*19x*
0.4 percent	81.2°F	90.3°F	80.7°F	90.7°F	77.3°F	88.3°F	69.8°F	78.1°F	64.4°F	70.8°F	60.6°F	65.0°F
	27.3°C	32.4°C	27.1°C	32.6°C	25.2°C	31.3°C	21.0°C	25.6°C	18.0°C	21.6°C	15.9°C	18.3°C
1 percent	80.2°F	90.0°F	79.7°F	90.1°F	76.0°F	86.8°F	68.4°F	76.2°F	62.7°F	68.3°F	57.8°F	62.2°F
	26.8°C	32.2°C	26.5°C	32.3°C	24.4°C	30.4°C	20.2°C	24.6°C	17.1°C	20.2°C	14.3°C	16.8°C
2 percent	79.3°F	89.7°F	78.5°F	88.9°F	75.0°F	85.2°F	67.2°F	74.4°F	61.3°F	66.4°F	55.1°F	58.8°F
	26.3°C	32.1°C	25.8°C	31.6°C	23.9°C	29.6°C	19.6°C	23.6°C	16.3°C	19.1°C	12.8°C	14.9°C

Notes:
WB = wet bulb
MCDB = mean coincident dry bulb

Table 2.3-11—{Monthly Mean /Daily Temperature Range for Columbia, Missouri (1972-2001)}

Monthly Mean Daily Temperature Range											
Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
20a	**20b**	**20c**	**20d**	**20e**	**20f**	**20g**	**20h**	**20i**	**20j**	**20k**	**20l**
16.2°F	17.7°F	19.5°F	20.4°F	19.6°F	19.5°F	20.0°F	20.8°F	21.0°F	21.0°F	17.5°F	16.1°F
9.0°C	9.8°C	10.8°C	11.3°C	10.9°C	10.8°C	11.1°C	11.6°C	11.7°C	11.7°C	9.7°C	8.9°C

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	NNE	0	0	3	6	15	43	46	14	0	0	0	0	127
	NE	0	0	2	6	25	48	37	2	0	0	0	0	120
	ENE	0	0	2	13	25	46	26	1	0	0	0	0	113
	E	0	0	4	13	15	35	37	3	1	0	0	0	108
	ESE	0	0	1	12	19	37	53	7	0	0	0	0	129
	SE	0	0	1	17	40	125	155	23	0	0	0	0	361
	SSE	0	1	1	16	38	137	174	53	12	0	0	0	432
	S	0	1	1	18	52	114	199	76	17	0	0	0	478
	SSW	0	1	2	20	43	125	198	54	13	0	0	0	456
	SW	0	0	5	20	30	107	170	43	4	3	0	0	382
	WSW	0	0	2	15	20	31	61	22	0	0	0	0	151
	W	0	0	1	14	18	60	128	39	7	0	0	0	267
	WNW	1	0	1	7	10	56	146	43	11	0	0	0	275
	NW	0	0	2	7	9	44	104	55	5	0	0	0	226
	NNW	0	0	1	6	8	43	61	31	7	0	0	0	157
	Totals	2	3	29	191	385	1083	1666	480	78	3	0	0	3920
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							3920						
	Total Hours for the Period							26304						

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	5	6	18	51	4	1	0	0	0	85
	NNE	0	0	0	3	7	18	29	10	0	0	0	0	67
	NE	0	0	1	1	6	17	21	3	0	0	0	0	49
	ENE	0	0	1	5	7	19	22	3	0	0	0	0	57
	E	0	0	1	1	8	8	18	2	0	0	0	0	38
	ESE	0	0	1	2	4	16	13	4	0	0	0	0	40
	SE	0	0	1	4	13	36	35	2	0	0	0	0	91
	SSE	0	0	2	6	14	22	54	5	6	0	0	0	109
	S	0	0	1	5	17	21	47	22	4	0	0	0	117
	SSW	0	0	1	4	11	31	35	19	3	0	0	0	104
	SW	0	0	1	2	13	23	33	7	4	0	0	0	83
	WSW	0	0	0	3	8	21	24	7	0	1	0	0	64
	W	0	0	0	4	7	21	32	7	0	0	0	0	71
	WNW	0	0	1	3	5	27	44	9	1	0	0	0	90
	NW	0	0	1	3	7	25	58	20	3	0	0	0	117
	NNW	0	0	0	1	7	24	37	7	1	0	0	0	77
	Totals	0	0	12	52	140	347	553	131	23	1	0	0	1259
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							1259						
	Total Hours for the Period							26304						

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	4	7	29	41	7	1	0	0	0	90
	NNE	0	1	1	5	4	31	43	4	0	0	0	0	89
	NE	0	0	5	5	7	34	21	0	0	0	0	0	72
	ENE	0	1	1	4	4	18	22	1	0	0	0	0	51
	E	0	0	0	2	1	15	27	1	2	0	0	0	48
	ESE	0	0	1	5	2	20	22	0	0	0	0	0	50
	SE	0	0	1	7	11	24	47	6	0	0	0	0	96
	SSE	0	0	1	2	13	19	50	7	1	0	0	0	93
	S	0	0	0	4	15	37	51	19	6	0	0	0	132
	SSW	0	0	0	4	8	22	36	12	2	0	0	0	84
	SW	0	0	0	6	7	17	44	11	0	1	0	0	86
	WSW	0	1	1	7	9	14	24	9	6	0	0	0	71
	W	0	0	1	9	4	20	32	12	0	0	0	0	78
	WNW	0	0	1	1	7	20	42	16	2	0	0	0	89
	NW	0	1	2	1	7	21	67	17	3	0	0	0	119
	NNW	0	0	1	3	8	25	74	12	2	0	0	0	125
	Totals	0	4	17	69	114	366	643	134	25	1	0	0	1373
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							1373						
	Total Hours for the Period							26304						

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	2	3	9	26	57	227	328	99	24	0	0	0	775
	NNE	0	5	7	39	80	209	232	41	4	0	0	0	617
	NE	7	7	11	51	98	167	139	5	0	0	0	0	485
	ENE	2	7	15	35	55	121	136	11	0	0	0	0	382
	E	1	2	13	25	42	111	123	27	8	0	0	0	352
	ESE	2	1	7	23	38	91	181	18	0	0	0	0	361
	SE	0	3	9	20	52	130	253	47	1	0	0	0	515
	SSE	1	0	7	21	39	115	232	63	8	0	0	0	486
	S	2	2	6	21	35	91	178	78	11	0	0	0	424
	SSW	1	5	10	22	36	63	124	52	7	0	0	0	320
	SW	1	1	12	22	35	83	103	28	11	0	0	0	296
	WSW	1	0	3	23	21	54	54	35	8	0	0	0	199
	W	0	4	9	28	23	73	176	71	9	0	0	0	393
	WNW	1	1	7	31	43	107	218	74	9	0	0	0	491
	NW	0	3	10	38	58	164	281	125	12	0	0	0	691
	NNW	1	2	12	33	53	201	380	159	28	0	0	0	869
	Totals	22	46	147	458	765	2007	3138	933	140	0	0	0	7656
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							7656						
	Total Hours for the Period							26304						

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	5	5	9	36	57	144	75	4	0	0	0	0	335
	NNE	5	8	16	48	55	91	27	2	0	0	0	0	252
	NE	11	4	20	65	63	81	8	0	0	0	0	0	252
	ENE	6	10	17	49	37	61	11	1	0	0	0	0	192
	E	3	7	11	46	48	76	29	1	0	0	0	0	221
	ESE	7	5	13	52	61	103	47	5	1	0	0	0	294
	SE	3	4	13	45	65	294	288	21	3	0	0	0	736
	SSE	2	2	14	36	83	257	394	46	5	0	0	0	839
	S	5	4	15	50	74	202	430	65	4	0	0	0	849
	SSW	2	8	11	34	48	106	132	20	1	0	0	0	362
	SW	2	7	18	40	61	93	105	5	3	0	0	0	334
	WSW	2	5	16	57	34	89	76	10	0	0	0	0	289
	W	7	18	26	56	59	145	103	4	0	0	0	0	418
	WNW	3	10	27	47	72	107	80	4	0	0	0	0	350
	NW	3	2	20	83	104	149	102	19	0	0	0	0	482
	NNW	5	7	15	41	66	137	71	5	0	0	0	0	347
	Totals	71	106	261	785	987	2135	1978	212	17	0	0	0	6552
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							6552						
	Total Hours for the Period							26304						

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	7	6	18	26	42	45	4	0	0	0	0	0	148
	NNE	4	11	29	33	26	26	0	0	0	0	0	0	129
	NE	6	23	41	35	10	3	0	0	0	0	0	0	118
	ENE	5	5	25	33	11	6	0	0	0	0	0	0	85
	E	4	7	20	28	19	5	1	0	0	0	0	0	84
	ESE	8	8	17	63	45	15	1	0	0	0	0	0	157
	SE	8	6	24	74	121	187	95	1	0	0	0	0	516
	SSE	12	8	36	47	115	336	142	1	0	0	0	0	697
	S	7	9	26	36	61	180	100	0	0	0	0	0	419
	SSW	3	15	20	45	52	98	28	0	0	0	0	0	261
	SW	10	12	22	45	70	84	17	0	0	0	0	0	260
	WSW	5	7	28	41	26	29	8	0	0	0	0	0	144
	W	7	18	32	50	37	35	3	0	0	0	0	0	182
	WNW	8	9	29	65	47	22	1	0	0	0	0	0	181
	NW	4	7	16	62	71	38	0	0	0	0	0	0	198
	NNW	5	5	11	30	45	44	2	0	0	0	0	0	142
	Totals	103	156	394	713	798	1153	402	2	0	0	0	0	3721
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							3721						
	Total Hours for the Period							26304						

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	8	11	18	61	24	1	0	0	0	0	0	0	123
	NNE	8	13	27	38	10	0	0	0	0	0	0	0	96
	NE	20	14	28	24	2	0	0	0	0	0	0	0	88
	ENE	5	13	15	6	2	0	0	0	0	0	0	0	41
	E	14	6	9	8	2	0	0	0	0	0	0	0	39
	ESE	6	15	15	18	4	0	0	0	0	0	0	0	58
	SE	11	18	28	47	33	47	8	0	0	0	0	0	192
	SSE	7	23	34	96	100	103	30	0	0	0	0	0	393
	S	12	17	21	27	32	19	2	0	0	0	0	0	130
	SSW	15	11	29	27	17	13	0	0	0	0	0	0	112
	SW	5	7	11	22	22	17	1	0	0	0	0	0	85
	WSW	5	4	5	10	3	1	0	0	0	0	0	0	28
	W	2	9	11	20	6	3	0	0	0	0	0	0	51
	WNW	10	11	14	33	11	2	0	0	0	0	0	0	81
	NW	6	9	11	30	13	4	0	0	0	0	0	0	73
	NNW	5	6	15	44	21	10	0	0	0	0	0	0	101
	Totals	139	187	291	511	302	220	41	0	0	0	0	0	1691
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							1691						
	Total Hours for the Period							26304						

Table 2.3-12—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	23	25	55	159	211	496	570	128	27	0	0	0	1694
	NNE	17	38	83	172	197	418	377	71	4	0	0	0	1377
	NE	44	48	108	187	211	350	226	10	0	0	0	0	1184
	ENE	18	36	76	145	141	271	217	17	0	0	0	0	921
	E	22	22	58	123	135	250	235	34	11	0	0	0	890
	ESE	23	29	55	175	173	282	317	34	1	0	0	0	1089
	SE	22	31	77	214	335	843	881	100	4	0	0	0	2507
	SSE	22	34	95	224	402	989	1076	175	32	0	0	0	3049
	S	26	33	70	161	286	664	1007	260	42	0	0	0	2549
	SSW	21	40	73	156	215	458	553	157	26	0	0	0	1699
	SW	18	27	69	157	238	424	473	94	22	4	0	0	1526
	WSW	13	17	55	156	121	239	247	83	14	1	0	0	946
	W	16	49	80	181	154	357	474	133	16	0	0	0	1460
	WNW	23	31	80	187	195	341	531	146	23	0	0	0	1557
	NW	13	22	62	224	269	445	612	236	23	0	0	0	1906
	NNW	16	20	55	158	208	484	625	214	38	0	0	0	1818
	Totals	337	502	1151	2779	3491	7311	8421	1892	283	5	0	0	26172
	Number of Calm Hours for this Table							31						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							26172						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	2	1	0	0	0	0	3
	ESE	0	0	0	0	0	3	0	3	0	0	0	0	6
	SE	0	0	0	0	0	6	9	2	0	0	0	0	17
	SSE	0	0	0	0	0	12	22	6	0	0	0	0	40
	S	0	0	0	0	0	6	27	17	6	0	0	0	56
	SSW	0	0	0	0	1	6	27	14	1	0	0	0	49
	SW	0	0	0	1	0	2	13	10	3	0	0	0	29
	WSW	0	0	0	1	1	1	2	0	0	0	0	0	5
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	1	0	0	0	1
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	2	2	36	102	53	11	0	0	0	206
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							206						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	1	1	2	0	0	0	0	5
	NNE	0	0	0	0	1	3	2	0	0	0	0	0	6
	NE	0	0	0	1	1	0	2	1	0	0	0	0	5
	ENE	0	0	0	0	0	0	1	0	0	0	0	0	1
	E	0	0	0	0	1	3	3	2	0	0	0	0	9
	ESE	0	0	0	0	1	5	10	0	0	0	0	0	16
	SE	0	0	0	1	5	15	35	6	1	0	0	0	63
	SSE	0	0	0	1	4	16	41	14	9	0	0	0	85
	S	0	0	0	0	3	18	41	36	17	1	0	0	116
	SSW	0	0	0	0	2	12	44	28	10	0	0	0	96
	SW	0	0	0	0	0	15	39	21	6	0	0	0	81
	WSW	0	0	0	1	1	0	8	3	2	0	0	0	15
	W	0	0	0	0	0	2	2	0	2	1	0	0	7
	WNW	0	0	0	0	1	1	1	5	8	0	0	0	16
	NW	0	0	0	0	1	1	3	1	10	0	0	0	16
	NNW	0	0	0	0	0	1	3	1	0	0	0	0	5
	Totals	0	0	0	4	22	93	236	120	65	2	0	0	542
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							542						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	5	15	7	0	0	0	0	27
	NNE	0	0	0	0	0	2	12	0	1	0	0	0	15
	NE	0	0	0	0	0	8	9	2	0	0	0	0	19
	ENE	0	0	0	0	7	12	11	0	0	0	0	0	30
	E	0	0	0	3	2	9	10	5	0	0	0	0	29
	ESE	0	0	0	1	3	8	15	10	3	0	0	0	40
	SE	0	0	0	0	8	22	66	22	7	0	0	0	125
	SSE	0	0	0	0	2	22	51	22	15	1	0	0	113
	S	0	0	0	4	4	16	31	36	16	3	0	0	110
	SSW	0	0	0	4	4	19	41	29	26	1	0	0	124
	SW	0	0	0	5	4	11	40	33	20	4	0	0	117
	WSW	0	0	0	0	2	3	10	7	6	2	0	0	30
	W	0	0	0	1	2	11	21	20	12	7	0	0	74
	WNW	0	0	0	2	3	5	31	34	28	13	0	0	116
	NW	0	0	0	1	1	5	12	17	22	0	0	0	58
	NNW	0	0	0	0	1	3	6	13	15	0	0	0	38
	Totals	0	0	0	21	43	161	381	257	171	31	0	0	1065
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							1065						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	9	14	72	274	172	69	7	0	0	617
	NNE	0	0	2	12	30	99	318	129	29	2	0	0	621
	NE	0	0	3	18	30	116	215	67	4	0	0	0	453
	ENE	0	1	3	13	25	65	160	58	8	0	0	0	333
	E	0	0	5	12	16	42	124	53	18	9	0	0	279
	ESE	0	0	2	10	12	46	111	67	13	0	0	0	261
	SE	0	0	2	12	24	79	161	118	24	1	0	0	421
	SSE	0	0	2	13	20	67	237	186	52	6	0	0	583
	S	0	0	1	8	17	77	183	171	125	9	0	0	591
	SSW	0	0	5	9	22	61	143	131	95	26	4	0	496
	SW	0	0	0	7	25	60	166	159	88	19	8	0	532
	WSW	0	0	1	8	24	48	89	66	64	21	3	0	324
	W	0	0	2	3	24	45	96	126	134	22	0	0	452
	WNW	0	1	1	13	13	47	164	182	151	45	7	0	624
	NW	0	0	0	5	16	54	212	236	178	41	7	0	749
	NNW	0	1	4	6	22	95	270	246	106	17	0	0	767
	Totals	0	3	33	158	334	1073	2923	2167	1158	225	29	0	8103
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							8103						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	0	8	14	58	218	217	24	15	0	0	555
	NNE	0	0	3	5	6	38	247	156	29	3	0	0	487
	NE	1	2	6	13	13	69	262	85	4	0	0	0	455
	ENE	0	1	1	8	5	53	172	85	8	0	0	0	333
	E	0	2	3	9	9	47	214	100	11	0	0	0	395
	ESE	0	0	1	5	12	39	230	195	21	1	0	0	504
	SE	0	2	0	7	10	38	232	473	137	5	0	0	904
	SSE	0	0	2	3	6	36	206	584	224	8	0	0	1069
	S	1	0	1	8	11	31	213	531	303	10	0	0	1109
	SSW	0	1	1	6	10	45	165	388	232	11	0	0	859
	SW	0	0	1	9	8	41	171	195	128	6	0	0	559
	WSW	0	2	1	4	13	30	116	126	74	8	2	0	376
	W	0	1	2	7	11	40	130	244	145	7	2	0	589
	WNW	1	1	2	5	15	41	165	238	121	9	0	0	598
	NW	0	0	4	2	14	42	249	315	143	17	1	0	787
	NNW	0	0	0	4	8	48	217	281	98	9	0	0	665
	Totals	3	13	28	103	165	696	3207	4213	1702	109	5	0	10244
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							10244						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:			**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M	
Stability Class		F			Delta Temperature Moderately Stable									
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	2	0	1	1	3	9	35	47	13	0	0	0	111
	NNE	0	0	0	2	5	10	35	55	6	0	0	0	113
	NE	0	0	1	10	8	25	84	33	0	0	0	0	161
	ENE	0	0	1	4	6	11	53	55	0	0	0	0	130
	E	0	3	1	1	3	12	64	42	0	0	0	0	126
	ESE	0	0	0	1	4	26	78	55	1	0	0	0	165
	SE	0	0	1	2	4	16	109	120	3	0	0	0	255
	SSE	0	0	0	2	2	20	117	209	55	0	0	0	405
	S	1	0	1	3	3	28	160	200	23	0	0	0	419
	SSW	0	0	0	0	4	11	114	154	37	0	0	0	320
	SW	0	0	0	1	5	21	66	98	73	1	0	0	265
	WSW	0	1	0	4	7	16	56	59	17	0	0	0	160
	W	1	1	0	1	9	19	52	40	8	0	0	0	131
	WNW	0	0	1	2	4	18	45	68	19	0	0	0	157
	NW	0	0	1	2	4	12	54	59	2	0	0	0	134
	NNW	1	0	1	0	2	11	32	57	10	0	0	0	114
	Totals	5	5	9	36	73	265	1154	1351	267	1	0	0	3166
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							3166						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:			**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M	
Stability Class		G			Delta Temperature Extremely Stable									
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	6	9	11	0	0	0	0	27
	NNE	0	0	2	2	2	5	16	10	0	0	0	0	37
	NE	0	0	0	1	2	5	21	8	0	0	0	0	37
	ENE	0	0	0	1	3	4	35	15	0	0	0	0	58
	E	0	0	0	3	3	5	8	2	0	0	0	0	21
	ESE	0	0	2	3	2	7	8	2	0	0	0	0	24
	SE	0	0	0	2	2	4	8	7	0	0	0	0	23
	SSE	0	0	3	1	2	8	14	13	0	0	0	0	41
	S	0	0	1	4	2	11	42	18	1	0	0	0	79
	SSW	0	0	1	2	2	6	37	21	4	0	0	0	73
	SW	0	0	0	1	0	1	7	17	1	0	0	0	27
	WSW	0	0	0	2	3	4	5	5	0	0	0	0	19
	W	0	0	0	2	3	5	5	2	0	0	0	0	17
	WNW	0	0	0	2	1	5	4	7	0	0	0	0	19
	NW	0	0	0	2	0	1	4	8	0	0	0	0	15
	NNW	0	1	0	1	4	7	9	4	1	0	0	0	27
	Totals	0	1	9	29	32	84	232	150	7	0	0	0	544
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							544						
	Total Hours for the Period							26304						

Table 2.3-13—{Callaway Plant Joint Frequency Distribution - 2004-2006}

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60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 Total Period												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	2	1	1	18	33	151	552	456	106	22	0	0	1342
	NNE	0	0	7	21	44	157	630	350	65	5	0	0	1279
	NE	1	2	10	43	54	223	593	196	8	0	0	0	1130
	ENE	0	2	5	26	46	145	432	213	16	0	0	0	885
	E	0	5	9	28	34	118	425	205	29	9	0	0	862
	ESE	0	0	5	20	34	134	452	332	38	1	0	0	1016
	SE	0	2	3	24	53	180	620	748	172	6	0	0	1808
	SSE	0	0	7	20	36	181	688	1034	355	15	0	0	2336
	S	2	0	4	27	40	187	697	1009	491	23	0	0	2480
	SSW	0	1	7	21	45	160	571	765	405	38	4	0	2017
	SW	0	0	1	24	42	151	502	533	319	30	8	0	1610
	WSW	0	3	2	20	51	102	286	266	163	31	5	0	929
	W	1	2	4	14	49	122	306	432	301	37	2	0	1270
	WNW	1	2	4	24	37	117	410	534	327	67	7	0	1530
	NW	0	0	5	12	36	115	534	636	356	58	8	0	1760
	NNW	1	2	5	11	37	165	537	602	230	26	0	0	1616
	Totals	8	22	79	353	671	2408	8235	8311	3381	368	34	0	23870
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							2432						
	Number of Valid Hours for this Table							23870						
	Total Hours for the Period							26304						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	0	0	0	0	0	0	3
	NNE	0	0	1	0	0	1	0	0	0	0	0	0	2
	NE	0	0	0	0	0	0	1	0	0	0	0	0	1
	ENE	0	0	0	0	0	0	1	0	0	0	0	0	1
	E	0	0	1	0	0	0	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	1	1	0	0	0	0	0	2
	SE	0	0	0	0	0	2	8	0	0	0	0	0	10
	SSE	0	0	0	0	0	1	6	0	0	0	0	0	7
	S	0	1	0	1	2	10	9	4	0	0	0	0	27
	SSW	0	0	0	0	1	7	0	2	0	0	0	0	10
	SW	0	0	0	2	0	3	6	3	0	0	0	0	14
	WSW	0	0	0	0	2	2	7	5	0	0	0	0	16
	W	0	0	0	0	1	0	12	3	1	0	0	0	17
	WNW	0	0	0	0	1	3	1	1	0	0	0	0	6
	NW	0	0	0	0	1	3	10	2	4	0	0	0	20
	NNW	0	0	0	0	0	3	1	4	0	0	0	0	8
	Totals	0	1	2	3	8	39	63	24	5	0	0	0	145
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							145						
	Total Hours for the Period							2232						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	0	4	0	0	0	0	0	5
	NNE	0	0	0	0	1	3	0	0	0	0	0	0	4
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	3	0	0	0	0	0	3
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	2	2	0	0	0	0	0	4
	SE	0	0	0	0	1	2	0	0	0	0	0	0	3
	SSE	0	0	0	1	0	3	3	0	0	0	0	0	7
	S	0	0	0	0	2	3	7	4	1	0	0	0	17
	SSW	0	0	0	1	1	3	2	2	0	0	0	0	9
	SW	0	0	0	0	1	4	3	2	3	0	0	0	13
	WSW	0	0	0	0	0	1	0	1	0	0	0	0	2
	W	0	0	0	0	1	0	3	2	0	0	0	0	6
	WNW	0	0	0	0	2	0	3	1	1	0	0	0	7
	NW	0	0	0	0	0	0	3	2	1	0	0	0	6
	NNW	0	0	0	0	1	5	3	0	0	0	0	0	9
	Totals	0	0	0	2	11	26	36	14	6	0	0	0	95
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							95						
	Total Hours for the Period							2232						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	6	0	0	0	0	0	9
	NNE	0	0	1	2	0	0	4	0	0	0	0	0	7
	NE	0	0	0	0	0	6	0	0	0	0	0	0	6
	ENE	0	0	1	0	0	2	6	0	0	0	0	0	9
	E	0	0	0	0	0	0	1	0	0	0	0	0	1
	ESE	0	0	1	2	0	1	4	0	0	0	0	0	8
	SE	0	0	0	0	2	1	0	0	0	0	0	0	3
	SSE	0	0	0	0	0	2	5	0	0	0	0	0	7
	S	0	0	0	0	0	4	6	1	0	0	0	0	11
	SSW	0	0	0	0	0	0	2	3	1	0	0	0	6
	SW	0	0	0	1	0	1	2	3	0	0	0	0	7
	WSW	0	0	0	0	1	0	1	3	3	0	0	0	8
	W	0	0	0	0	0	1	6	1	0	0	0	0	8
	WNW	0	0	1	0	1	0	6	1	1	0	0	0	10
	NW	0	0	1	0	0	1	6	0	3	0	0	0	11
	NNW	0	0	0	0	0	3	3	1	0	0	0	0	7
	Totals	0	0	5	5	4	25	58	13	8	0	0	0	118
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							118						
	Total Hours for the Period							2232						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	1	4	13	36	49	7	0	0	0	0	111
	NNE	0	1	0	5	14	31	46	3	0	0	0	0	100
	NE	1	0	2	8	19	45	29	3	0	0	0	0	107
	ENE	2	1	2	2	6	18	32	5	0	0	0	0	68
	E	0	0	2	6	4	10	19	2	0	0	0	0	43
	ESE	0	0	0	5	1	6	17	0	0	0	0	0	29
	SE	0	1	2	1	2	7	17	6	0	0	0	0	36
	SSE	0	0	0	1	1	9	21	4	0	0	0	0	36
	S	0	0	1	1	3	7	19	10	0	0	0	0	41
	SSW	1	1	1	0	3	2	11	5	2	0	0	0	26
	SW	1	0	0	1	1	11	10	5	0	0	0	0	29
	WSW	0	0	0	1	2	7	5	4	1	0	0	0	20
	W	0	0	2	1	1	7	14	11	0	0	0	0	36
	WNW	0	0	3	2	9	9	28	11	4	0	0	0	66
	NW	0	0	2	1	11	18	40	26	7	0	0	0	105
	NNW	0	0	1	9	13	43	94	26	1	0	0	0	187
	Totals	5	5	19	48	103	266	451	128	15	0	0	0	1040
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							1040						
	Total Hours for the Period							2232						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	3	1	0	1	3	11	5	0	0	0	0	0	24
	NNE	1	1	0	6	5	8	2	0	0	0	0	0	23
	NE	1	0	1	8	1	13	2	0	0	0	0	0	26
	ENE	1	2	3	6	2	6	0	0	0	0	0	0	20
	E	0	1	0	5	3	3	3	0	0	0	0	0	15
	ESE	1	0	1	3	1	7	6	0	0	0	0	0	19
	SE	0	0	2	1	2	16	33	1	0	0	0	0	55
	SSE	0	0	1	1	2	10	60	4	0	0	0	0	78
	S	0	0	0	3	4	13	37	8	0	0	0	0	65
	SSW	0	0	1	1	4	5	15	1	0	0	0	0	27
	SW	0	1	0	1	3	10	22	1	0	0	0	0	38
	WSW	0	0	1	2	4	7	20	3	0	0	0	0	37
	W	0	1	2	6	5	20	25	1	0	0	0	0	60
	WNW	0	0	3	5	4	11	5	3	0	0	0	0	31
	NW	0	0	0	6	5	18	22	4	0	0	0	0	55
	NNW	0	0	2	2	4	5	8	0	0	0	0	0	21
	Totals	7	7	17	57	52	163	265	26	0	0	0	0	594
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							594						
	Total Hours for the Period							2232						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	3	0	0	0	0	0	0	0	0	0	4
	NNE	0	0	0	0	1	0	0	0	0	0	0	0	1
	NE	0	0	3	0	0	0	0	0	0	0	0	0	3
	ENE	0	0	1	1	1	0	0	0	0	0	0	0	3
	E	0	1	2	0	0	0	0	0	0	0	0	0	3
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	1	2	2	5	14	1	0	0	0	0	25
	SSE	1	0	1	3	0	14	29	1	0	0	0	0	49
	S	0	0	2	2	1	8	19	0	0	0	0	0	32
	SSW	0	0	0	1	1	3	1	0	0	0	0	0	6
	SW	0	1	3	0	3	5	2	0	0	0	0	0	14
	WSW	0	0	2	3	1	3	2	0	0	0	0	0	11
	W	0	1	0	2	2	3	0	0	0	0	0	0	8
	WNW	0	0	2	5	3	2	0	0	0	0	0	0	12
	NW	0	0	0	1	0	1	0	0	0	0	0	0	2
	NNW	0	1	1	1	0	0	0	0	0	0	0	0	3
	Totals	1	5	21	21	15	44	67	2	0	0	0	0	176
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							176						
	Total Hours for the Period							2232						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	1	0	0	0	0	0	0	0	0	0	0	2
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	1	0	0	0	0	0	0	0	0	0	1
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	1	0	0	0	0	0	0	0	0	0	0	0	1
	SE	0	1	0	0	0	4	2	0	0	0	0	0	7
	SSE	0	0	1	1	5	8	11	0	0	0	0	0	26
	S	0	0	1	1	0	4	2	0	0	0	0	0	8
	SSW	0	0	1	1	3	1	0	0	0	0	0	0	6
	SW	0	1	0	2	0	0	0	0	0	0	0	0	3
	WSW	0	0	0	1	0	0	0	0	0	0	0	0	1
	W	0	1	1	1	0	0	0	0	0	0	0	0	3
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	1	0	0	0	0	0	0	0	0	0	1
	Totals	2	4	6	7	8	17	15	0	0	0	0	0	59
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							59						
	Total Hours for the Period							2232						

Table 2.3-14—{Callaway Plant Joint Frequency Distribution - January}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	4	4	4	5	17	53	64	7	0	0	0	0	158
	NNE	1	2	2	13	21	43	52	3	0	0	0	0	137
	NE	2	0	6	16	20	64	32	3	0	0	0	0	143
	ENE	3	3	8	9	9	26	42	5	0	0	0	0	105
	E	0	2	5	11	7	13	23	2	0	0	0	0	63
	ESE	2	0	2	10	2	17	30	0	0	0	0	0	63
	SE	0	2	5	4	9	37	74	8	0	0	0	0	139
	SSE	1	0	3	7	8	47	135	9	0	0	0	0	210
	S	0	1	4	8	12	49	99	27	1	0	0	0	201
	SSW	1	1	3	4	13	21	31	13	3	0	0	0	90
	SW	1	3	3	7	8	34	45	14	3	0	0	0	118
	WSW	0	0	3	7	10	20	35	16	4	0	0	0	95
	W	0	3	5	10	10	31	60	18	1	0	0	0	138
	WNW	0	0	9	12	20	25	43	17	6	0	0	0	132
	NW	0	0	3	8	17	41	81	34	15	0	0	0	199
	NNW	0	1	5	12	18	59	109	31	1	0	0	0	236
	Totals	15	22	70	143	201	580	955	207	34	0	0	0	2227
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							2227						
	Total Hours for the Period							2232						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

(Page 1 of 8)

10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	10	2	0	0	0	0	12
	NNE	0	0	0	0	1	2	4	5	0	0	0	0	12
	NE	0	0	0	0	0	2	4	0	0	0	0	0	6
	ENE	0	0	0	0	0	3	2	0	0	0	0	0	5
	E	0	0	0	0	1	1	3	0	0	0	0	0	5
	ESE	0	0	0	0	1	0	1	0	0	0	0	0	2
	SE	0	0	0	1	0	4	7	0	0	0	0	0	12
	SSE	0	0	0	2	1	2	12	5	2	0	0	0	24
	S	0	0	0	0	3	5	2	7	1	0	0	0	18
	SSW	0	0	0	0	2	5	9	4	0	0	0	0	20
	SW	0	0	0	0	2	8	21	10	2	0	0	0	43
	WSW	0	0	0	2	0	1	6	1	0	0	0	0	10
	W	0	0	0	1	0	11	25	2	0	0	0	0	39
	WNW	0	0	0	0	1	7	24	3	0	0	0	0	35
	NW	0	0	0	0	0	4	15	5	0	0	0	0	24
	NNW	0	0	0	0	0	1	1	1	0	0	0	0	3
	Totals	0	0	0	6	12	56	146	45	5	0	0	0	270
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							270						
	Total Hours for the Period							2040						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	2	4	0	0	0	0	0	7
	NNE	0	0	0	0	1	0	0	3	0	0	0	0	4
	NE	0	0	0	0	0	1	4	1	0	0	0	0	6
	ENE	0	0	0	0	1	2	1	0	0	0	0	0	4
	E	0	0	1	0	0	1	3	0	0	0	0	0	5
	ESE	0	0	0	0	1	2	0	0	0	0	0	0	3
	SE	0	0	0	0	0	1	1	0	0	0	0	0	2
	SSE	0	0	0	0	2	1	3	1	2	0	0	0	9
	S	0	0	0	0	0	1	0	1	0	0	0	0	2
	SSW	0	0	1	0	2	0	3	1	0	0	0	0	7
	SW	0	0	0	0	1	3	3	2	0	0	0	0	9
	WSW	0	0	0	0	2	0	1	0	0	0	0	0	3
	W	0	0	0	0	1	1	2	0	0	0	0	0	4
	WNW	0	0	0	0	0	3	4	0	0	0	0	0	7
	NW	0	0	0	0	0	3	9	3	0	0	0	0	15
	NNW	0	0	0	0	0	4	1	0	0	0	0	0	5
	Totals	0	0	2	0	12	25	39	12	2	0	0	0	92
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							92						
	Total Hours for the Period							2040						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	3	0	1	0	0	0	5
	NNE	0	0	0	0	0	1	2	0	0	0	0	0	3
	NE	0	0	0	0	0	2	4	0	0	0	0	0	6
	ENE	0	0	0	0	0	1	1	0	0	0	0	0	2
	E	0	0	0	0	0	0	3	0	0	0	0	0	3
	ESE	0	0	0	0	1	2	2	0	0	0	0	0	5
	SE	0	0	0	0	0	1	1	0	0	0	0	0	2
	SSE	0	0	0	0	0	0	3	1	0	0	0	0	4
	S	0	0	0	0	1	0	0	1	1	0	0	0	3
	SSW	0	0	0	0	0	1	1	0	0	0	0	0	2
	SW	0	0	0	1	0	3	3	0	0	0	0	0	7
	WSW	0	0	0	0	0	2	0	0	1	0	0	0	3
	W	0	0	0	0	0	3	3	0	0	0	0	0	6
	WNW	0	0	0	0	2	1	5	0	0	0	0	0	8
	NW	0	0	0	0	2	1	9	0	0	0	0	0	12
	NNW	0	0	0	0	0	1	5	0	0	0	0	0	6
	Totals	0	0	0	1	6	20	45	2	3	0	0	0	77
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							77						
	Total Hours for the Period							2040						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	1	1	6	3	14	26	16	5	0	0	0	73
	NNE	0	1	0	3	10	9	19	8	0	0	0	0	50
	NE	2	0	3	3	4	8	20	1	0	0	0	0	41
	ENE	0	1	1	4	5	5	22	0	0	0	0	0	38
	E	0	1	3	3	6	6	15	0	0	0	0	0	34
	ESE	0	0	0	1	2	10	19	0	0	0	0	0	32
	SE	0	0	0	2	2	7	43	3	0	0	0	0	57
	SSE	1	0	1	1	2	1	17	7	1	0	0	0	31
	S	0	1	2	0	1	1	1	6	0	0	0	0	12
	SSW	0	0	2	6	4	3	5	4	0	0	0	0	24
	SW	0	0	1	2	5	5	4	3	1	0	0	0	21
	WSW	0	0	1	3	2	4	1	5	0	0	0	0	16
	W	0	0	0	3	3	13	20	14	2	0	0	0	55
	WNW	1	0	0	0	2	16	43	19	0	0	0	0	81
	NW	0	0	0	2	4	14	40	14	1	0	0	0	75
	NNW	0	1	2	3	6	21	25	5	0	0	0	0	63
	Totals	5	6	17	42	61	137	320	105	10	0	0	0	703
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							703						
	Total Hours for the Period							2040						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E	Delta Temperature Slightly Stable												
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	2	2	7	7	13	1	0	0	0	0	32
	NNE	0	1	1	6	5	12	2	0	0	0	0	0	27
	NE	3	0	1	2	12	12	0	0	0	0	0	0	30
	ENE	0	1	0	6	4	6	0	0	0	0	0	0	17
	E	0	1	2	3	5	12	2	0	0	0	0	0	25
	ESE	0	0	0	3	4	15	3	0	0	0	0	0	25
	SE	0	1	1	2	0	13	27	1	0	0	0	0	45
	SSE	1	0	0	0	0	12	25	2	0	0	0	0	40
	S	1	0	1	4	4	6	40	6	0	0	0	0	62
	SSW	0	1	1	4	1	5	13	2	0	0	0	0	27
	SW	0	1	1	7	11	13	15	0	0	0	0	0	48
	WSW	0	1	3	9	6	12	4	0	0	0	0	0	35
	W	0	1	3	8	6	14	7	0	0	0	0	0	39
	WNW	1	1	2	9	5	16	14	0	0	0	0	0	48
	NW	1	1	1	9	11	21	15	1	0	0	0	0	60
	NNW	1	1	3	1	4	13	4	0	0	0	0	0	27
	Totals	8	11	22	75	85	189	184	13	0	0	0	0	587
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							587						
	Total Hours for the Period							2040						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	3	2	0	0	0	0	0	0	6
	NNE	0	1	3	5	4	2	0	0	0	0	0	0	15
	NE	1	0	6	2	3	0	0	0	0	0	0	0	12
	ENE	1	0	1	4	2	2	0	0	0	0	0	0	10
	E	0	0	0	1	0	0	0	0	0	0	0	0	1
	ESE	1	0	0	1	0	0	0	0	0	0	0	0	2
	SE	0	0	1	0	1	2	1	0	0	0	0	0	5
	SSE	2	0	0	2	4	13	12	0	0	0	0	0	33
	S	0	0	1	0	2	9	14	0	0	0	0	0	26
	SSW	0	1	1	4	4	6	1	0	0	0	0	0	17
	SW	0	0	1	5	10	17	3	0	0	0	0	0	36
	WSW	0	0	1	1	4	5	3	0	0	0	0	0	14
	W	0	1	2	6	0	1	1	0	0	0	0	0	11
	WNW	1	1	2	4	5	3	1	0	0	0	0	0	17
	NW	1	0	4	4	3	0	0	0	0	0	0	0	12
	NNW	0	0	1	3	4	5	0	0	0	0	0	0	13
	Totals	7	4	24	43	49	67	36	0	0	0	0	0	230
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							230						
	Total Hours for the Period							2040						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

(Page 7 of 8)

10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	2	1	1	0	0	0	0	0	0	0	4
	NE	1	0	1	3	1	0	0	0	0	0	0	0	6
	ENE	0	0	1	1	1	0	0	0	0	0	0	0	3
	E	0	0	0	1	0	0	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	1	1	2	0	0	0	0	0	0	0	4
	SSE	0	0	0	2	4	7	2	0	0	0	0	0	15
	S	0	0	0	4	3	2	0	0	0	0	0	0	9
	SSW	0	0	0	1	3	5	0	0	0	0	0	0	9
	SW	0	0	0	3	2	6	0	0	0	0	0	0	11
	WSW	0	0	0	1	2	0	0	0	0	0	0	0	3
	W	0	0	0	0	1	3	0	0	0	0	0	0	4
	WNW	0	0	0	1	1	0	0	0	0	0	0	0	2
	NW	0	0	0	2	0	0	0	0	0	0	0	0	2
	NNW	0	0	0	0	1	0	0	0	0	0	0	0	1
	Totals	1	0	5	21	22	23	2	0	0	0	0	0	74
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							74						
	Total Hours for the Period							2040						

Table 2.3-15—{Callaway Plant Joint Frequency Distribution - February}

(Page 8 of 8)

10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	1	3	9	14	26	56	19	6	0	0	0	135
	NNE	0	3	6	15	22	26	27	16	0	0	0	0	115
	NE	7	0	11	10	20	25	32	2	0	0	0	0	107
	ENE	1	2	3	15	13	19	26	0	0	0	0	0	79
	E	0	2	6	8	12	20	26	0	0	0	0	0	74
	ESE	1	0	0	5	9	29	25	0	0	0	0	0	69
	SE	0	1	3	6	5	28	80	4	0	0	0	0	127
	SSE	4	0	1	7	13	36	74	16	5	0	0	0	156
	S	1	1	4	8	14	24	57	21	2	0	0	0	132
	SSW	0	2	5	15	16	25	32	11	0	0	0	0	106
	SW	0	1	3	18	31	55	49	15	3	0	0	0	175
	WSW	0	1	5	16	16	24	15	6	1	0	0	0	84
	W	0	2	5	18	11	46	58	16	2	0	0	0	158
	WNW	3	2	4	14	16	46	91	22	0	0	0	0	198
	NW	2	1	5	17	20	43	88	23	1	0	0	0	200
	NNW	1	2	6	7	15	45	36	6	0	0	0	0	118
	Totals	21	21	70	188	247	517	772	177	20	0	0	0	2033
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							2033						
	Total Hours for the Period							2040						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

(Page 1 of 8)

10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	3	9	2	1	0	0	0	16
	NNE	0	0	1	0	0	4	3	1	0	0	0	0	9
	NE	0	0	0	0	1	4	0	0	0	0	0	0	5
	ENE	0	0	0	0	3	4	4	0	0	0	0	0	11
	E	0	0	0	0	0	3	1	2	1	0	0	0	7
	ESE	0	0	0	0	1	3	3	3	0	0	0	0	10
	SE	0	0	0	0	0	7	17	14	0	0	0	0	38
	SSE	0	0	0	1	3	11	12	12	4	0	0	0	43
	S	0	0	0	0	0	4	5	15	6	0	0	0	30
	SSW	0	0	0	2	1	3	8	6	5	0	0	0	25
	SW	0	0	0	2	1	1	12	7	1	3	0	0	27
	WSW	0	0	1	0	1	3	1	5	0	0	0	0	11
	W	0	0	0	1	0	5	12	5	6	0	0	0	29
	WNW	0	0	0	0	0	6	25	14	11	0	0	0	56
	NW	0	0	0	1	0	2	18	14	1	0	0	0	36
	NNW	0	0	0	0	1	7	17	4	1	0	0	0	30
	Totals	0	0	2	7	13	70	147	104	37	3	0	0	383
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							383						
	Total Hours for the Period							2232						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

(Page 2 of 8)

10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	11	1	1	0	0	0	14
	NNE	0	0	0	1	0	1	4	3	0	0	0	0	9
	NE	0	0	0	0	1	0	1	0	0	0	0	0	2
	ENE	0	0	0	0	0	1	1	0	0	0	0	0	2
	E	0	0	0	0	0	0	3	2	0	0	0	0	5
	ESE	0	0	0	0	0	0	1	3	0	0	0	0	4
	SE	0	0	0	0	0	2	3	2	0	0	0	0	7
	SSE	0	0	0	0	1	0	3	0	1	0	0	0	5
	S	0	0	0	0	1	0	3	3	0	0	0	0	7
	SSW	0	0	0	1	1	2	2	1	1	0	0	0	8
	SW	0	0	0	0	0	0	0	0	1	0	0	0	1
	WSW	0	0	0	0	0	0	0	1	0	1	0	0	2
	W	0	0	0	0	0	3	3	2	0	0	0	0	8
	WNW	0	0	0	0	0	1	4	4	0	0	0	0	9
	NW	0	0	0	0	0	3	4	1	1	0	0	0	9
	NNW	0	0	0	0	0	5	4	1	0	0	0	0	10
	Totals	0	0	0	2	4	19	47	24	5	1	0	0	102
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							102						
	Total Hours for the Period							2232						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	2	7	1	0	0	0	0	11
	NNE	0	0	0	1	0	2	1	0	0	0	0	0	4
	NE	0	0	0	0	0	1	0	0	0	0	0	0	1
	ENE	0	0	0	0	1	2	0	0	0	0	0	0	3
	E	0	0	0	0	0	2	5	1	2	0	0	0	10
	ESE	0	0	0	1	0	2	7	0	0	0	0	0	10
	SE	0	0	0	0	0	0	6	1	0	0	0	0	7
	SSE	0	0	0	0	0	0	4	2	1	0	0	0	7
	S	0	0	0	0	0	1	2	1	2	0	0	0	6
	SSW	0	0	0	0	1	1	1	1	0	0	0	0	4
	SW	0	0	0	0	0	1	0	1	0	1	0	0	3
	WSW	0	0	0	0	2	0	1	1	1	0	0	0	5
	W	0	0	0	1	0	0	4	2	0	0	0	0	7
	WNW	0	0	0	0	0	1	10	6	1	0	0	0	18
	NW	0	0	0	0	0	6	13	6	0	0	0	0	25
	NNW	0	0	0	0	0	1	10	1	0	0	0	0	12
	Totals	0	0	0	3	5	22	71	24	7	1	0	0	133
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							133						
	Total Hours for the Period							2232						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	1	1	6	19	35	8	0	0	0	0	71
	NNE	0	1	1	0	7	16	17	1	0	0	0	0	43
	NE	1	0	0	4	3	7	19	0	0	0	0	0	34
	ENE	0	0	1	3	2	6	18	4	0	0	0	0	34
	E	0	0	1	1	2	10	25	14	8	0	0	0	61
	ESE	0	0	2	1	3	10	28	0	0	0	0	0	44
	SE	0	0	0	0	1	7	33	8	0	0	0	0	49
	SSE	0	0	0	0	2	2	16	13	4	0	0	0	37
	S	0	0	0	1	3	1	25	11	1	0	0	0	42
	SSW	0	0	0	1	2	2	9	4	0	0	0	0	18
	SW	0	0	0	0	0	0	8	1	1	0	0	0	10
	WSW	0	0	0	0	0	2	3	7	7	0	0	0	19
	W	0	0	0	0	1	3	21	12	1	0	0	0	38
	WNW	0	0	0	0	5	15	38	9	2	0	0	0	69
	NW	0	0	0	3	1	13	22	21	4	0	0	0	64
	NNW	1	0	1	2	3	10	34	22	6	0	0	0	79
	Totals	2	2	7	17	41	123	351	135	34	0	0	0	712
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							712						
	Total Hours for the Period							2232						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	0	3	2	13	4	0	0	0	0	0	23
	NNE	0	2	1	9	7	10	3	0	0	0	0	0	32
	NE	0	0	0	6	7	3	0	0	0	0	0	0	16
	ENE	0	0	2	6	4	13	4	1	0	0	0	0	30
	E	0	0	0	7	4	12	8	0	0	0	0	0	31
	ESE	2	0	3	2	4	17	5	0	0	0	0	0	33
	SE	0	0	0	1	2	21	40	2	0	0	0	0	66
	SSE	0	0	0	2	1	9	31	15	4	0	0	0	62
	S	0	0	0	0	3	9	38	12	3	0	0	0	65
	SSW	0	1	0	1	1	8	10	3	1	0	0	0	25
	SW	0	1	3	0	2	3	18	0	3	0	0	0	30
	WSW	0	0	0	5	5	2	5	5	0	0	0	0	22
	W	0	0	1	2	5	8	10	0	0	0	0	0	26
	WNW	0	1	2	5	11	17	24	0	0	0	0	0	60
	NW	0	0	3	10	6	26	19	7	0	0	0	0	71
	NNW	0	0	2	4	5	20	12	3	0	0	0	0	46
	Totals	2	6	17	63	69	191	231	48	11	0	0	0	638
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							638						
	Total Hours for the Period							2232						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	1	2	2	0	0	0	0	0	0	0	6
	NNE	0	1	1	1	3	2	0	0	0	0	0	0	8
	NE	0	0	1	8	1	0	0	0	0	0	0	0	10
	ENE	1	0	1	2	0	0	0	0	0	0	0	0	4
	E	0	0	2	2	0	0	0	0	0	0	0	0	4
	ESE	0	0	1	2	3	3	0	0	0	0	0	0	9
	SE	0	1	2	6	2	8	10	0	0	0	0	0	29
	SSE	0	0	2	2	2	7	4	0	0	0	0	0	17
	S	0	1	2	2	1	5	3	0	0	0	0	0	14
	SSW	0	0	2	2	2	9	5	0	0	0	0	0	20
	SW	1	1	1	3	7	5	1	0	0	0	0	0	19
	WSW	0	0	1	6	2	2	0	0	0	0	0	0	11
	W	0	1	2	5	5	6	1	0	0	0	0	0	20
	WNW	0	0	1	5	3	5	0	0	0	0	0	0	14
	NW	0	1	0	1	11	1	0	0	0	0	0	0	14
	NNW	0	0	0	0	0	3	1	0	0	0	0	0	4
	Totals	2	7	20	49	44	56	25	0	0	0	0	0	203
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							203						
	Total Hours for the Period							2232						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

(Page 7 of 8)

10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	1	1	0	0	0	0	0	0	0	2
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	1	0	0	0	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	1	1	2	3	0	0	0	0	0	7
	SSE	0	0	0	2	2	9	3	0	0	0	0	0	16
	S	0	0	0	0	0	1	0	0	0	0	0	0	1
	SSW	0	0	1	1	2	4	0	0	0	0	0	0	8
	SW	0	0	0	1	3	5	0	0	0	0	0	0	9
	WSW	0	0	0	1	1	0	0	0	0	0	0	0	2
	W	0	0	1	0	0	0	0	0	0	0	0	0	1
	WNW	0	0	0	0	1	1	0	0	0	0	0	0	2
	NW	0	0	0	0	0	3	0	0	0	0	0	0	3
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	3	7	11	25	6	0	0	0	0	0	52
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							52						
	Total Hours for the Period							2232						

Table 2.3-16—{Callaway Plant Joint Frequency Distribution - March}

(Page 8 of 8)

10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	3	2	6	12	38	66	12	2	0	0	0	141
	NNE	0	4	4	12	17	35	28	5	0	0	0	0	105
	NE	1	0	1	19	14	15	20	0	0	0	0	0	70
	ENE	1	0	4	11	10	26	27	5	0	0	0	0	84
	E	0	0	4	10	6	27	42	19	11	0	0	0	119
	ESE	2	0	6	6	11	35	44	6	0	0	0	0	110
	SE	0	1	2	8	6	47	112	27	0	0	0	0	203
	SSE	0	0	2	7	11	38	73	42	14	0	0	0	187
	S	0	1	2	3	8	21	76	42	12	0	0	0	165
	SSW	0	1	3	8	10	29	35	15	7	0	0	0	108
	SW	1	2	4	6	13	15	39	9	6	4	0	0	99
	WSW	0	0	2	12	11	9	10	19	8	1	0	0	72
	W	0	1	4	9	11	25	51	21	7	0	0	0	129
	WNW	0	1	3	10	20	46	101	33	14	0	0	0	228
	NW	0	1	3	15	18	54	76	49	6	0	0	0	222
	NNW	1	0	3	6	9	46	78	31	7	0	0	0	181
	Totals	6	15	49	148	187	506	878	335	94	5	0	0	2223
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							8						
	Number of Valid Hours for this Table							2223						
	Total Hours for the Period							2232						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

(Page 1 of 8)

10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	4	4	4	0	0	0	0	12
	NNE	0	0	0	1	1	4	12	7	0	0	0	0	25
	NE	0	0	0	0	3	2	4	1	0	0	0	0	10
	ENE	0	0	1	0	1	2	4	0	0	0	0	0	8
	E	0	0	0	1	2	2	4	1	0	0	0	0	10
	ESE	0	0	0	0	2	3	4	4	0	0	0	0	13
	SE	0	0	0	0	2	2	9	3	0	0	0	0	16
	SSE	0	0	0	0	4	6	19	11	3	0	0	0	43
	S	0	0	0	0	2	6	22	25	9	0	0	0	64
	SSW	0	1	0	2	1	11	21	12	8	0	0	0	56
	SW	0	0	1	2	1	6	14	10	1	0	0	0	35
	WSW	0	0	0	0	4	7	4	3	0	0	0	0	18
	W	0	0	0	0	5	8	14	1	0	0	0	0	28
	WNW	0	0	0	0	3	7	28	6	0	0	0	0	44
	NW	0	0	0	0	1	6	15	22	0	0	0	0	44
	NNW	0	0	0	0	0	4	9	11	6	0	0	0	30
	Totals	0	1	2	6	32	80	187	121	27	0	0	0	456
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							456						
	Total Hours for the Period							2160						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

(Page 2 of 8)

10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	0	1	6	1	0	0	0	0	9
	NNE	0	0	0	0	0	1	4	1	0	0	0	0	6
	NE	0	0	0	0	0	0	3	2	0	0	0	0	5
	ENE	0	0	0	0	0	2	1	0	0	0	0	0	3
	E	0	0	0	0	0	0	1	0	0	0	0	0	1
	ESE	0	0	0	0	0	1	0	1	0	0	0	0	2
	SE	0	0	0	0	1	2	5	0	0	0	0	0	8
	SSE	0	0	0	1	0	0	6	1	2	0	0	0	10
	S	0	0	1	1	0	3	6	7	0	0	0	0	18
	SSW	0	0	0	0	0	0	2	5	2	0	0	0	9
	SW	0	0	0	0	0	1	3	1	0	0	0	0	5
	WSW	0	0	0	1	0	0	3	1	0	0	0	0	5
	W	0	0	0	0	2	1	4	0	0	0	0	0	7
	WNW	0	0	0	0	0	2	1	0	0	0	0	0	3
	NW	0	0	1	0	0	5	2	4	0	0	0	0	12
	NNW	0	0	0	0	0	0	3	1	1	0	0	0	5
	Totals	0	0	2	4	3	19	50	25	5	0	0	0	108
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							108						
	Total Hours for the Period							2160						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	1	1	0	0	0	0	2
	NNE	0	0	0	0	0	4	4	1	0	0	0	0	9
	NE	0	0	1	0	0	3	2	0	0	0	0	0	6
	ENE	0	1	0	0	0	2	0	0	0	0	0	0	3
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	3	2	1	0	0	0	0	6
	SSE	0	0	0	0	1	1	3	0	0	0	0	0	5
	S	0	0	0	0	1	3	7	4	0	0	0	0	15
	SSW	0	0	0	0	0	0	1	1	1	0	0	0	3
	SW	0	0	0	0	1	0	4	0	0	0	0	0	5
	WSW	0	0	0	0	1	0	1	0	0	0	0	0	2
	W	0	0	0	0	0	1	3	0	0	0	0	0	4
	WNW	0	0	0	0	0	0	2	0	0	0	0	0	2
	NW	0	0	0	1	0	1	4	6	0	0	0	0	12
	NNW	0	0	0	0	2	2	5	5	1	0	0	0	15
	Totals	0	1	1	1	6	20	39	19	2	0	0	0	89
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							89						
	Total Hours for the Period							2160						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	3	9	33	21	3	0	0	0	69
	NNE	0	0	0	3	3	18	28	9	1	0	0	0	62
	NE	1	0	0	2	3	14	22	1	0	0	0	0	43
	ENE	0	1	1	3	4	8	13	0	0	0	0	0	30
	E	0	0	0	0	1	7	10	1	0	0	0	0	19
	ESE	0	0	0	0	1	5	10	9	0	0	0	0	25
	SE	0	0	0	4	3	6	19	8	1	0	0	0	41
	SSE	0	0	1	1	0	7	17	5	1	0	0	0	32
	S	0	0	1	1	2	5	15	11	5	0	0	0	40
	SSW	0	1	0	0	3	7	10	14	1	0	0	0	36
	SW	0	0	3	1	3	7	11	5	0	0	0	0	30
	WSW	0	0	0	0	0	5	8	2	0	0	0	0	15
	W	0	1	0	4	1	4	12	2	3	0	0	0	27
	WNW	0	0	0	0	2	4	7	2	3	0	0	0	18
	NW	0	0	0	2	3	5	12	12	0	0	0	0	34
	NNW	0	0	1	2	3	7	17	19	3	0	0	0	52
	Totals	1	3	7	23	35	118	244	121	21	0	0	0	573
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							573						
	Total Hours for the Period							2160						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	2	5	14	14	0	0	0	0	0	36
	NNE	1	1	1	2	5	8	0	0	0	0	0	0	18
	NE	0	0	2	4	4	7	1	0	0	0	0	0	18
	ENE	0	0	0	2	3	3	1	0	0	0	0	0	9
	E	0	0	3	0	1	8	9	1	0	0	0	0	22
	ESE	0	0	0	2	4	10	11	3	0	0	0	0	30
	SE	0	0	0	4	4	16	14	5	2	0	0	0	45
	SSE	0	0	1	4	4	14	42	9	1	0	0	0	75
	S	0	0	0	1	4	10	53	19	0	0	0	0	87
	SSW	1	0	1	1	2	9	12	5	0	0	0	0	31
	SW	0	0	2	2	5	5	10	2	0	0	0	0	26
	WSW	0	0	1	2	1	4	7	1	0	0	0	0	16
	W	1	3	1	6	4	2	5	2	0	0	0	0	24
	WNW	0	0	1	7	5	12	2	0	0	0	0	0	27
	NW	0	1	0	4	19	10	13	2	0	0	0	0	49
	NNW	0	0	2	4	7	16	11	0	0	0	0	0	40
	Totals	3	5	16	47	77	148	205	49	3	0	0	0	553
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							553						
	Total Hours for the Period							2160						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	0	2	2	1	0	0	0	0	0	6
	NNE	0	1	4	5	0	4	0	0	0	0	0	0	14
	NE	0	2	2	3	1	1	0	0	0	0	0	0	9
	ENE	0	1	2	2	2	0	0	0	0	0	0	0	7
	E	0	0	1	2	2	1	0	0	0	0	0	0	6
	ESE	1	1	1	1	3	0	0	0	0	0	0	0	7
	SE	0	0	1	5	7	10	2	0	0	0	0	0	25
	SSE	1	0	1	4	5	13	20	0	0	0	0	0	44
	S	0	2	0	2	3	13	4	0	0	0	0	0	24
	SSW	0	1	1	2	3	6	1	0	0	0	0	0	14
	SW	0	0	1	4	2	9	0	0	0	0	0	0	16
	WSW	1	0	1	6	3	0	0	0	0	0	0	0	11
	W	1	2	3	7	2	4	0	0	0	0	0	0	19
	WNW	1	1	2	7	3	1	0	0	0	0	0	0	15
	NW	0	1	0	5	12	13	0	0	0	0	0	0	31
	NNW	0	0	2	4	2	5	1	0	0	0	0	0	14
	Totals	6	12	22	59	52	82	29	0	0	0	0	0	262
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							262						
	Total Hours for the Period							2160						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	4	0	0	0	0	0	0	0	0	4
	NNE	0	1	2	1	0	0	0	0	0	0	0	0	4
	NE	1	0	2	1	0	0	0	0	0	0	0	0	4
	ENE	0	1	2	0	1	0	0	0	0	0	0	0	4
	E	2	0	0	0	0	0	0	0	0	0	0	0	2
	ESE	0	1	0	2	0	0	0	0	0	0	0	0	3
	SE	0	0	0	8	2	4	0	0	0	0	0	0	14
	SSE	0	1	3	6	5	13	3	0	0	0	0	0	31
	S	2	0	1	1	1	0	0	0	0	0	0	0	5
	SSW	0	1	1	2	2	1	0	0	0	0	0	0	7
	SW	0	1	1	0	0	2	0	0	0	0	0	0	4
	WSW	1	0	1	1	0	0	0	0	0	0	0	0	3
	W	0	0	3	5	1	0	0	0	0	0	0	0	9
	WNW	1	0	0	7	4	0	0	0	0	0	0	0	12
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	2	2	1	0	1	0	0	0	0	0	0	6
	Totals	7	8	18	39	16	21	3	0	0	0	0	0	112
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							112						
	Total Hours for the Period							2160						

Table 2.3-17—{Callaway Plant Joint Frequency Distribution - April}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	1	7	10	30	59	27	3	0	0	0	138
	NNE	1	3	7	12	9	39	48	18	1	0	0	0	138
	NE	2	2	7	10	11	27	32	4	0	0	0	0	95
	ENE	0	4	6	7	11	17	19	0	0	0	0	0	64
	E	2	0	4	3	6	18	24	3	0	0	0	0	60
	ESE	1	2	1	5	10	19	25	17	0	0	0	0	80
	SE	0	0	1	21	19	43	51	17	3	0	0	0	155
	SSE	1	1	6	16	19	54	110	26	7	0	0	0	240
	S	2	2	3	6	13	40	107	66	14	0	0	0	253
	SSW	1	4	3	7	11	34	47	37	12	0	0	0	156
	SW	0	1	8	9	12	30	42	18	1	0	0	0	121
	WSW	2	0	3	10	9	16	23	7	0	0	0	0	70
	W	2	6	7	22	15	20	38	5	3	0	0	0	118
	WNW	2	1	3	21	17	26	40	8	3	0	0	0	121
	NW	0	2	1	12	35	40	46	46	0	0	0	0	182
	NNW	0	2	7	11	14	35	46	36	11	0	0	0	162
	Totals	17	30	68	179	221	488	757	335	58	0	0	0	2153
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							5						
	Number of Valid Hours for this Table							2153						
	Total Hours for the Period							2160						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

(Page 1 of 8)

10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	0	2	1	0	0	0	0	0	0	4
	NNE	0	0	0	1	4	3	0	0	0	0	0	0	8
	NE	0	0	0	3	3	10	0	0	0	0	0	0	16
	ENE	0	0	1	4	4	7	1	0	0	0	0	0	17
	E	0	0	1	1	0	12	6	0	0	0	0	0	20
	ESE	0	0	0	1	2	5	11	0	0	0	0	0	19
	SE	0	0	0	1	5	13	23	2	0	0	0	0	44
	SSE	0	0	0	4	1	21	21	10	0	0	0	0	57
	S	0	0	0	2	6	13	40	10	0	0	0	0	71
	SSW	0	0	0	4	1	10	47	15	0	0	0	0	77
	SW	0	0	1	0	0	20	29	0	0	0	0	0	50
	WSW	0	0	0	4	4	2	12	3	0	0	0	0	25
	W	0	0	1	4	2	8	7	10	0	0	0	0	32
	WNW	0	0	1	1	1	7	21	4	0	0	0	0	35
	NW	0	0	0	1	1	6	12	4	0	0	0	0	24
	NNW	0	0	0	0	1	4	5	4	0	0	0	0	14
	Totals	1	0	5	31	37	142	235	62	0	0	0	0	513
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							513						
	Total Hours for the Period							2232						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	0	1	3	0	0	0	0	0	5
	NNE	0	0	0	0	0	1	1	0	0	0	0	0	2
	NE	0	0	0	0	1	2	0	0	0	0	0	0	3
	ENE	0	0	1	1	1	1	0	0	0	0	0	0	4
	E	0	0	0	0	2	0	6	0	0	0	0	0	8
	ESE	0	0	0	0	0	2	3	0	0	0	0	0	5
	SE	0	0	0	0	2	2	2	0	0	0	0	0	6
	SSE	0	0	1	0	0	2	3	1	0	0	0	0	7
	S	0	0	0	0	1	0	3	1	0	0	0	0	5
	SSW	0	0	0	0	2	1	3	2	0	0	0	0	8
	SW	0	0	0	2	2	3	2	0	0	0	0	0	9
	WSW	0	0	0	0	1	7	5	0	0	0	0	0	13
	W	0	0	0	0	1	2	10	1	0	0	0	0	14
	WNW	0	0	0	1	1	5	8	0	0	0	0	0	15
	NW	0	0	0	0	2	4	12	0	0	0	0	0	18
	NNW	0	0	0	0	0	1	2	2	0	0	0	0	5
	Totals	0	0	2	5	16	34	63	7	0	0	0	0	127
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							127						
	Total Hours for the Period							2232						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

(Page 3 of 8)

10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	2	1	0	0	0	0	0	3
	NNE	0	0	0	0	0	1	5	0	0	0	0	0	6
	NE	0	0	1	0	1	2	1	0	0	0	0	0	5
	ENE	0	0	0	0	2	2	5	0	0	0	0	0	9
	E	0	0	0	0	0	2	7	0	0	0	0	0	9
	ESE	0	0	0	0	0	2	3	0	0	0	0	0	5
	SE	0	0	0	0	2	2	11	1	0	0	0	0	16
	SSE	0	0	0	0	0	3	7	1	0	0	0	0	11
	S	0	0	0	0	1	3	7	5	0	0	0	0	16
	SSW	0	0	0	0	0	2	5	0	0	0	0	0	7
	SW	0	0	0	1	3	2	10	0	0	0	0	0	16
	WSW	0	0	0	1	0	3	6	1	0	0	0	0	11
	W	0	0	0	0	0	2	1	1	0	0	0	0	4
	WNW	0	0	0	0	1	1	3	2	0	0	0	0	7
	NW	0	0	1	0	2	4	17	0	0	0	0	0	24
	NNW	0	0	0	0	3	0	13	2	0	0	0	0	18
	Totals	0	0	2	2	15	33	102	13	0	0	0	0	167
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							167						
	Total Hours for the Period							2232						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
	Wind Speed (m/s)													
Wind Direction (from)	0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
N	0	0	1	1	2	6	14	13	0	0	0	0	37
NNE	0	0	1	3	0	7	8	0	0	0	0	0	19
NE	0	1	2	4	7	3	6	0	0	0	0	0	23
ENE	0	1	3	1	2	8	12	1	0	0	0	0	28
E	0	0	0	4	0	6	5	0	0	0	0	0	15
ESE	0	0	0	1	2	5	4	0	0	0	0	0	12
SE	0	0	1	1	3	8	11	0	0	0	0	0	24
SSE	0	0	1	5	2	18	32	4	0	0	0	0	62
S	0	0	0	2	0	8	15	1	0	0	0	0	26
SSW	0	0	1	0	3	11	9	1	0	0	0	0	25
SW	0	0	2	1	2	6	9	0	0	0	0	0	20
WSW	0	0	1	2	1	4	6	0	0	0	0	0	14
W	0	0	0	2	1	2	4	3	0	0	0	0	12
WNW	0	0	0	8	3	3	9	2	0	0	0	0	25
NW	0	0	0	8	4	24	10	3	0	0	0	0	49
NNW	0	1	0	1	3	9	30	7	0	0	0	0	51
Totals	0	3	13	44	35	128	184	35	0	0	0	0	442
Number of Calm Hours for this Table							1						
Number of Variable Direction Hours for this Table							0						
Number of Invalid Hours							0						
Number of Valid Hours for this Table							442						
Total Hours for the Period							2232						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	6	5	6	0	0	0	0	0	19
	NNE	0	0	2	3	6	5	1	0	0	0	0	0	17
	NE	0	1	5	6	5	4	2	0	0	0	0	0	23
	ENE	1	0	0	4	7	5	0	0	0	0	0	0	17
	E	0	1	0	2	3	1	1	0	0	0	0	0	8
	ESE	0	0	1	8	4	5	2	0	0	0	0	0	20
	SE	0	0	1	5	5	37	8	0	0	0	0	0	56
	SSE	0	0	1	5	14	35	31	1	0	0	0	0	87
	S	0	0	0	5	5	33	39	3	0	0	0	0	85
	SSW	0	1	0	4	7	16	5	0	0	0	0	0	33
	SW	0	0	1	4	7	9	8	0	0	0	0	0	29
	WSW	0	2	1	1	3	6	3	0	0	0	0	0	16
	W	1	2	2	2	1	12	5	0	0	0	0	0	25
	WNW	0	2	4	2	16	9	4	0	0	0	0	0	37
	NW	0	0	1	16	16	12	5	0	0	0	0	0	50
	NNW	0	0	2	5	12	13	5	1	0	0	0	0	38
	Totals	2	9	21	74	117	207	125	5	0	0	0	0	560
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							560						
	Total Hours for the Period							2232						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	6	2	5	0	0	0	0	0	0	14
	NNE	0	1	0	0	0	1	0	0	0	0	0	0	2
	NE	1	2	3	1	0	0	0	0	0	0	0	0	7
	ENE	0	0	2	4	0	1	0	0	0	0	0	0	7
	E	0	0	0	2	3	2	0	0	0	0	0	0	7
	ESE	1	0	2	11	5	0	0	0	0	0	0	0	19
	SE	1	1	1	6	10	10	2	0	0	0	0	0	31
	SSE	1	0	3	3	5	36	1	0	0	0	0	0	49
	S	1	1	3	3	12	27	1	0	0	0	0	0	48
	SSW	0	0	1	3	8	16	0	0	0	0	0	0	28
	SW	1	1	2	2	5	3	3	0	0	0	0	0	17
	WSW	1	1	2	7	3	3	0	0	0	0	0	0	17
	W	1	1	1	7	6	4	0	0	0	0	0	0	20
	WNW	1	1	7	7	10	1	0	0	0	0	0	0	27
	NW	0	1	3	8	5	5	0	0	0	0	0	0	22
	NNW	0	0	1	7	7	5	0	0	0	0	0	0	20
	Totals	9	10	32	77	81	119	7	0	0	0	0	0	335
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							335						
	Total Hours for the Period							2232						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	2	2	2	0	0	0	0	0	0	0	7
	NNE	1	0	1	1	1	0	0	0	0	0	0	0	4
	NE	0	1	1	1	0	0	0	0	0	0	0	0	3
	ENE	0	2	1	1	0	0	0	0	0	0	0	0	4
	E	1	1	0	1	0	0	0	0	0	0	0	0	3
	ESE	0	1	2	2	0	0	0	0	0	0	0	0	5
	SE	1	2	1	0	1	0	0	0	0	0	0	0	5
	SSE	0	2	0	6	5	3	1	0	0	0	0	0	17
	S	1	1	1	4	2	1	0	0	0	0	0	0	10
	SSW	0	0	4	1	0	0	0	0	0	0	0	0	5
	SW	0	0	0	2	1	1	0	0	0	0	0	0	4
	WSW	0	1	1	0	0	0	0	0	0	0	0	0	2
	W	0	0	0	0	2	0	0	0	0	0	0	0	2
	WNW	0	1	1	5	0	0	0	0	0	0	0	0	7
	NW	0	0	0	2	3	0	0	0	0	0	0	0	5
	NNW	1	0	1	0	2	0	0	0	0	0	0	0	4
	Totals	5	13	16	28	19	5	1	0	0	0	0	0	87
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							87						
	Total Hours for the Period							2232						

Table 2.3-18—{Callaway Plant Joint Frequency Distribution - May}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	1	4	12	14	20	24	13	0	0	0	0	89
	NNE	1	1	4	8	11	18	15	0	0	0	0	0	58
	NE	1	5	12	15	17	21	9	0	0	0	0	0	80
	ENE	1	3	8	15	16	24	18	1	0	0	0	0	86
	E	1	2	1	10	8	23	25	0	0	0	0	0	70
	ESE	1	1	5	23	13	19	23	0	0	0	0	0	85
	SE	2	3	4	13	28	72	57	3	0	0	0	0	182
	SSE	1	2	6	23	27	118	96	17	0	0	0	0	290
	S	2	2	4	16	27	85	105	20	0	0	0	0	261
	SSW	0	1	6	12	21	56	69	18	0	0	0	0	183
	SW	1	1	6	12	20	44	61	0	0	0	0	0	145
	WSW	1	4	5	15	12	25	32	4	0	0	0	0	98
	W	2	3	4	15	13	30	27	15	0	0	0	0	109
	WNW	1	4	13	24	32	26	45	8	0	0	0	0	153
	NW	0	1	5	35	33	55	56	7	0	0	0	0	192
	NNW	1	1	4	13	28	32	55	16	0	0	0	0	150
	Totals	17	35	91	261	320	668	717	122	0	0	0	0	2231
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							2231						
	Total Hours for the Period							2232						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

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10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	4	6	8	1	0	0	0	0	19
	NNE	0	0	1	0	3	5	6	0	0	0	0	0	15
	NE	0	0	0	2	4	13	1	0	0	0	0	0	20
	ENE	0	0	0	2	3	10	0	0	0	0	0	0	15
	E	0	0	0	1	5	5	2	0	0	0	0	0	13
	ESE	0	0	0	0	4	4	2	0	0	0	0	0	10
	SE	0	0	0	5	8	30	15	0	0	0	0	0	58
	SSE	0	0	0	2	10	20	24	6	0	0	0	0	62
	S	0	0	0	3	14	12	26	7	0	0	0	0	62
	SSW	0	0	1	5	11	21	26	1	0	0	0	0	65
	SW	0	0	2	7	7	12	8	2	0	0	0	0	38
	WSW	0	0	0	4	2	3	5	1	0	0	0	0	15
	W	0	0	0	3	3	3	9	6	0	0	0	0	24
	WNW	0	0	0	1	1	2	5	0	0	0	0	0	9
	NW	0	0	1	4	4	7	11	1	0	0	0	0	28
	NNW	0	0	0	0	1	5	5	0	0	0	0	0	11
	Totals	0	0	5	39	84	158	153	25	0	0	0	0	464
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							464						
	Total Hours for the Period							2160						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	1	0	0	0	0	0	4
	NNE	0	0	0	0	1	2	1	0	0	0	0	0	4
	NE	0	0	1	0	0	0	0	0	0	0	0	0	1
	ENE	0	0	0	1	1	5	4	0	0	0	0	0	11
	E	0	0	0	0	1	1	2	0	0	0	0	0	4
	ESE	0	0	0	0	0	0	2	0	0	0	0	0	2
	SE	0	0	0	0	1	3	6	0	0	0	0	0	10
	SSE	0	0	0	2	2	5	9	1	0	0	0	0	19
	S	0	0	0	0	2	1	2	0	0	0	0	0	5
	SSW	0	0	0	0	0	3	4	1	0	0	0	0	8
	SW	0	0	0	0	2	3	2	0	0	0	0	0	7
	WSW	0	0	0	0	1	1	2	0	0	0	0	0	4
	W	0	0	0	0	0	1	1	0	0	0	0	0	2
	WNW	0	0	1	0	0	2	0	0	0	0	0	0	3
	NW	0	0	0	1	0	1	1	1	0	0	0	0	4
	NNW	0	0	0	0	4	2	2	0	0	0	0	0	8
	Totals	0	0	2	4	15	33	39	3	0	0	0	0	96
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							96						
	Total Hours for the Period							2160						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

(Page 3 of 8)

10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	0	0	2	6	0	0	0	0	0	9
	NNE	0	1	0	0	1	2	5	2	0	0	0	0	11
	NE	0	0	1	2	0	3	2	0	0	0	0	0	8
	ENE	0	0	0	0	1	1	1	0	0	0	0	0	3
	E	0	0	0	0	0	2	1	0	0	0	0	0	3
	ESE	0	0	0	0	0	3	1	0	0	0	0	0	4
	SE	0	0	0	3	3	2	3	0	0	0	0	0	11
	SSE	0	0	1	0	4	3	9	2	0	0	0	0	19
	S	0	0	0	1	4	4	4	2	0	0	0	0	15
	SSW	0	0	0	0	1	6	0	1	0	0	0	0	8
	SW	0	0	0	1	0	3	2	1	0	0	0	0	7
	WSW	0	0	0	1	0	0	2	0	0	0	0	0	3
	W	0	0	0	0	0	1	4	1	0	0	0	0	6
	WNW	0	0	0	0	0	0	8	1	0	0	0	0	9
	NW	0	0	0	0	0	0	2	0	0	0	0	0	2
	NNW	0	0	0	0	0	3	9	0	0	0	0	0	12
	Totals	0	1	3	8	14	35	59	10	0	0	0	0	130
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							130						
	Total Hours for the Period							2160						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	4	15	14	2	0	0	0	0	37
	NNE	0	0	0	5	6	16	17	3	0	0	0	0	47
	NE	0	1	1	2	5	5	6	0	0	0	0	0	20
	ENE	0	0	1	5	1	7	1	0	0	0	0	0	15
	E	0	0	3	0	5	7	0	0	0	0	0	0	15
	ESE	0	0	1	5	5	3	0	0	0	0	0	0	14
	SE	0	0	0	1	7	14	8	2	0	0	0	0	32
	SSE	0	0	0	4	8	22	19	2	0	0	0	0	55
	S	1	0	0	3	4	11	6	4	0	0	0	0	29
	SSW	0	1	1	2	4	3	13	2	0	0	0	0	26
	SW	0	0	0	3	5	8	9	2	0	0	0	0	27
	WSW	0	0	0	1	1	3	1	0	0	0	0	0	6
	W	0	0	0	1	2	4	3	0	0	0	0	0	10
	WNW	0	0	0	3	3	3	4	0	0	0	0	0	13
	NW	0	1	1	5	5	7	9	0	0	0	0	0	28
	NNW	0	0	1	0	1	15	21	2	0	0	0	0	40
	Totals	1	3	9	42	66	143	131	19	0	0	0	0	414
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							414						
	Total Hours for the Period							2160						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	7	3	6	3	0	0	0	0	0	19
	NNE	0	1	0	5	3	0	2	1	0	0	0	0	12
	NE	1	0	1	9	0	2	0	0	0	0	0	0	13
	ENE	0	1	2	1	1	3	1	0	0	0	0	0	9
	E	1	0	2	6	4	1	0	0	0	0	0	0	14
	ESE	0	1	0	9	8	2	0	0	0	0	0	0	20
	SE	0	0	1	5	10	35	12	0	0	0	0	0	63
	SSE	1	1	2	5	13	30	28	0	0	0	0	0	80
	S	0	0	1	8	14	16	14	0	0	0	0	0	53
	SSW	0	0	0	3	4	14	5	0	0	0	0	0	26
	SW	0	0	5	5	3	4	3	0	0	0	0	0	20
	WSW	1	1	1	3	0	5	3	0	0	0	0	0	14
	W	0	2	1	2	2	2	3	1	0	0	0	0	13
	WNW	0	0	1	3	3	1	0	0	0	0	0	0	8
	NW	1	0	1	6	10	7	1	0	0	0	0	0	26
	NNW	1	1	3	5	7	12	5	0	0	0	0	0	34
	Totals	6	8	21	82	85	140	80	2	0	0	0	0	424
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							424						
	Total Hours for the Period							2160						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	2	0	3	5	8	4	0	0	0	0	0	0	22
	NNE	0	3	5	4	2	0	0	0	0	0	0	0	14
	NE	1	4	4	0	1	0	0	0	0	0	0	0	10
	ENE	2	0	3	5	1	0	0	0	0	0	0	0	11
	E	1	1	3	6	1	1	0	0	0	0	0	0	13
	ESE	0	2	3	10	7	1	0	0	0	0	0	0	23
	SE	1	1	2	10	14	14	0	0	0	0	0	0	42
	SSE	1	2	4	6	21	44	3	0	0	0	0	0	81
	S	1	2	1	6	6	10	0	0	0	0	0	0	26
	SSW	0	4	2	6	12	8	1	0	0	0	0	0	33
	SW	2	2	2	12	8	2	1	0	0	0	0	0	29
	WSW	0	0	2	2	3	4	0	0	0	0	0	0	11
	W	0	0	2	1	3	1	0	0	0	0	0	0	7
	WNW	1	1	1	7	3	0	0	0	0	0	0	0	13
	NW	0	0	3	8	8	5	0	0	0	0	0	0	24
	NNW	1	1	2	1	8	3	0	0	0	0	0	0	16
	Totals	13	23	42	89	106	97	5	0	0	0	0	0	375
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							375						
	Total Hours for the Period							2160						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	3	3	16	5	0	0	0	0	0	0	0	28
	NNE	1	4	4	14	4	0	0	0	0	0	0	0	27
	NE	2	4	4	4	0	0	0	0	0	0	0	0	14
	ENE	3	1	1	1	0	0	0	0	0	0	0	0	6
	E	0	0	2	3	0	0	0	0	0	0	0	0	5
	ESE	0	2	3	2	1	0	0	0	0	0	0	0	8
	SE	0	3	0	3	4	0	0	0	0	0	0	0	10
	SSE	0	2	2	9	11	6	0	0	0	0	0	0	30
	S	1	1	4	7	10	2	0	0	0	0	0	0	25
	SSW	3	1	6	5	3	1	0	0	0	0	0	0	19
	SW	0	0	2	4	5	2	0	0	0	0	0	0	13
	WSW	0	1	0	1	0	1	0	0	0	0	0	0	3
	W	1	2	2	5	0	0	0	0	0	0	0	0	10
	WNW	3	2	4	4	2	0	0	0	0	0	0	0	15
	NW	2	3	1	5	1	0	0	0	0	0	0	0	12
	NNW	0	1	4	12	2	1	0	0	0	0	0	0	20
	Totals	17	30	42	95	48	13	0	0	0	0	0	0	245
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							245						
	Total Hours for the Period							2160						

Table 2.3-19—{Callaway Plant Joint Frequency Distribution - June}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	3	3	7	30	24	36	32	3	0	0	0	0	138
	NNE	1	9	10	28	20	25	31	6	0	0	0	0	130
	NE	4	9	12	19	10	23	9	0	0	0	0	0	86
	ENE	5	2	7	15	8	26	7	0	0	0	0	0	70
	E	2	1	10	16	16	17	5	0	0	0	0	0	67
	ESE	0	5	7	26	25	13	5	0	0	0	0	0	81
	SE	1	4	3	27	47	98	44	2	0	0	0	0	226
	SSE	2	5	9	28	69	130	92	11	0	0	0	0	346
	S	3	3	6	28	54	56	52	13	0	0	0	0	215
	SSW	3	6	10	21	35	56	49	5	0	0	0	0	185
	SW	2	2	11	32	30	34	25	5	0	0	0	0	141
	WSW	1	2	3	12	7	17	13	1	0	0	0	0	56
	W	1	4	5	12	10	12	20	8	0	0	0	0	72
	WNW	4	3	7	18	12	8	17	1	0	0	0	0	70
	NW	3	4	7	29	28	27	24	2	0	0	0	0	124
	NNW	2	3	10	18	23	41	42	2	0	0	0	0	141
	Totals	37	65	124	359	418	619	467	59	0	0	0	0	2148
	Number of Calm Hours for this Table							5						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							7						
	Number of Valid Hours for this Table							2148						
	Total Hours for the Period							2160						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	3	9	19	0	0	0	0	0	32
	NNE	0	0	0	3	3	11	4	0	0	0	0	0	21
	NE	0	0	1	1	4	7	14	0	0	0	0	0	27
	ENE	0	0	0	2	4	2	2	0	0	0	0	0	10
	E	0	0	0	3	2	2	7	0	0	0	0	0	14
	ESE	0	0	0	2	3	12	10	0	0	0	0	0	27
	SE	0	0	0	0	6	13	10	1	0	0	0	0	30
	SSE	0	0	0	1	6	15	12	0	0	0	0	0	34
	S	0	0	0	0	2	16	18	0	0	0	0	0	36
	SSW	0	0	1	0	4	24	29	6	0	0	0	0	64
	SW	0	0	0	2	4	17	25	3	0	0	0	0	51
	WSW	0	0	0	2	3	9	10	0	0	0	0	0	24
	W	0	0	0	3	1	7	5	0	0	0	0	0	16
	WNW	0	0	0	4	3	7	0	0	0	0	0	0	14
	NW	0	0	1	0	1	3	5	0	0	0	0	0	10
	NNW	0	0	0	3	2	12	10	0	0	0	0	0	27
	Totals	0	0	3	27	51	166	180	10	0	0	0	0	437
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							437						
	Total Hours for the Period							2232						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	4	7	0	0	0	0	0	12
	NNE	0	0	0	1	0	2	4	0	0	0	0	0	7
	NE	0	0	0	0	2	3	3	0	0	0	0	0	8
	ENE	0	0	0	0	0	1	3	0	0	0	0	0	4
	E	0	0	0	0	0	1	0	0	0	0	0	0	1
	ESE	0	0	0	0	1	1	0	0	0	0	0	0	2
	SE	0	0	0	1	3	7	0	0	0	0	0	0	11
	SSE	0	0	0	0	3	2	1	0	0	0	0	0	6
	S	0	0	0	2	4	3	2	0	0	0	0	0	11
	SSW	0	0	0	0	1	13	3	1	0	0	0	0	18
	SW	0	0	0	0	4	6	4	0	0	0	0	0	14
	WSW	0	0	0	2	0	4	3	0	0	0	0	0	9
	W	0	0	0	0	1	3	0	0	0	0	0	0	4
	WNW	0	0	0	1	0	3	0	0	0	0	0	0	4
	NW	0	0	0	0	1	1	3	0	0	0	0	0	5
	NNW	0	0	0	1	0	0	2	0	0	0	0	0	3
	Totals	0	0	0	8	21	54	35	1	0	0	0	0	119
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							119						
	Total Hours for the Period							2232						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	3	8	0	0	0	0	0	12
	NNE	0	0	0	0	0	4	4	0	0	0	0	0	8
	NE	0	0	0	2	0	4	5	0	0	0	0	0	11
	ENE	0	0	0	0	0	1	1	1	0	0	0	0	3
	E	0	0	0	0	0	3	3	0	0	0	0	0	6
	ESE	0	0	0	1	1	1	0	0	0	0	0	0	3
	SE	0	0	0	1	0	4	2	0	0	0	0	0	7
	SSE	0	0	0	1	2	4	2	0	0	0	0	0	9
	S	0	0	0	0	2	4	6	0	0	0	0	0	12
	SSW	0	0	0	2	3	6	11	1	0	0	0	0	23
	SW	0	0	0	0	0	4	11	1	0	0	0	0	16
	WSW	0	0	0	4	1	4	5	0	0	0	0	0	14
	W	0	0	0	3	2	3	2	0	0	0	0	0	10
	WNW	0	0	0	1	1	2	0	0	0	0	0	0	4
	NW	0	1	0	0	1	1	1	0	0	0	0	0	4
	NNW	0	0	0	0	0	6	5	0	1	0	0	0	12
	Totals	0	1	0	15	14	54	66	3	1	0	0	0	154
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							154						
	Total Hours for the Period							2232						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	5	26	26	5	0	0	0	0	63
	NNE	0	0	1	3	4	16	9	1	0	0	0	0	34
	NE	1	3	0	0	4	8	11	0	0	0	0	0	27
	ENE	0	2	0	1	2	9	3	0	0	0	0	0	17
	E	0	0	0	3	3	9	2	1	0	0	0	0	18
	ESE	0	0	0	1	5	2	3	0	0	0	0	0	11
	SE	0	0	2	3	3	14	3	2	0	0	0	0	27
	SSE	0	0	1	1	3	12	6	0	0	0	0	0	23
	S	0	0	1	2	8	16	13	0	0	0	0	0	40
	SSW	0	0	3	4	4	11	12	0	0	0	0	0	34
	SW	0	1	1	4	8	21	16	0	0	0	0	0	51
	WSW	0	0	0	4	1	5	6	0	0	0	0	0	16
	W	0	2	0	7	2	5	1	0	0	0	0	0	17
	WNW	0	0	1	1	4	3	0	0	0	0	0	0	9
	NW	0	0	2	5	6	8	2	0	0	0	0	0	23
	NNW	0	0	0	0	1	10	12	5	0	0	0	0	28
	Totals	1	8	12	40	63	175	125	14	0	0	0	0	438
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							438						
	Total Hours for the Period							2232						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	1	0	2	8	27	8	0	0	0	0	0	47
	NNE	0	0	2	1	8	6	1	1	0	0	0	0	19
	NE	0	0	1	5	1	6	0	0	0	0	0	0	13
	ENE	0	0	2	4	2	5	1	0	0	0	0	0	14
	E	1	0	2	3	3	6	0	0	0	0	0	0	15
	ESE	1	0	3	5	11	1	0	0	0	0	0	0	21
	SE	0	1	0	5	6	17	2	0	0	0	0	0	31
	SSE	0	1	3	7	14	17	5	0	0	0	0	0	47
	S	1	1	8	14	19	34	19	0	0	0	0	0	96
	SSW	0	2	2	4	6	14	6	0	0	0	0	0	34
	SW	0	2	1	9	9	8	0	0	0	0	0	0	29
	WSW	0	0	2	5	5	10	1	0	0	0	0	0	23
	W	1	3	3	4	3	5	3	0	0	0	0	0	22
	WNW	0	1	3	2	5	3	0	0	0	0	0	0	14
	NW	1	0	2	6	6	13	2	0	0	0	0	0	30
	NNW	0	0	0	6	10	13	9	0	0	0	0	0	38
	Totals	6	12	34	82	116	185	57	1	0	0	0	0	493
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							493						
	Total Hours for the Period							2232						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	1	2	1	5	7	0	0	0	0	0	0	17
	NNE	0	1	2	7	5	2	0	0	0	0	0	0	17
	NE	2	3	11	5	0	0	0	0	0	0	0	0	21
	ENE	1	1	6	3	0	0	0	0	0	0	0	0	11
	E	0	1	4	6	3	0	0	0	0	0	0	0	14
	ESE	1	3	4	7	4	2	0	0	0	0	0	0	21
	SE	2	0	4	14	20	20	1	0	0	0	0	0	61
	SSE	0	2	5	7	17	34	1	0	0	0	0	0	66
	S	1	0	4	14	17	37	4	0	0	0	0	0	77
	SSW	1	1	2	9	8	13	0	0	0	0	0	0	34
	SW	1	1	1	4	4	1	0	0	0	0	0	0	12
	WSW	0	1	3	1	0	0	0	0	0	0	0	0	5
	W	1	2	2	6	0	0	0	0	0	0	0	0	11
	WNW	2	0	1	4	1	0	0	0	0	0	0	0	8
	NW	1	1	2	12	5	2	0	0	0	0	0	0	23
	NNW	0	0	0	2	8	3	0	0	0	0	0	0	13
	Totals	14	18	53	102	97	121	6	0	0	0	0	0	411
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							411						
	Total Hours for the Period							2232						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	1	4	13	3	0	0	0	0	0	0	0	22
	NNE	2	3	7	9	1	0	0	0	0	0	0	0	22
	NE	2	1	4	1	0	0	0	0	0	0	0	0	8
	ENE	0	1	0	0	0	0	0	0	0	0	0	0	1
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	1	4	1	0	0	0	0	0	0	0	0	6
	SE	1	2	3	4	3	3	0	0	0	0	0	0	16
	SSE	0	3	5	10	7	2	0	0	0	0	0	0	27
	S	0	2	1	1	0	1	0	0	0	0	0	0	5
	SSW	1	3	1	3	0	0	0	0	0	0	0	0	8
	SW	0	1	0	0	0	0	0	0	0	0	0	0	1
	WSW	2	1	2	1	0	0	0	0	0	0	0	0	6
	W	0	2	0	2	0	0	0	0	0	0	0	0	4
	WNW	1	2	2	4	0	0	0	0	0	0	0	0	9
	NW	1	1	2	7	6	0	0	0	0	0	0	0	17
	NNW	1	1	5	13	2	0	0	0	0	0	0	0	22
	Totals	12	25	40	69	22	6	0	0	0	0	0	0	174
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							174						
	Total Hours for the Period							2232						

Table 2.3-20—{Callaway Plant Joint Frequency Distribution - July}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	3	3	6	18	26	76	68	5	0	0	0	0	205
	NNE	2	4	12	24	21	41	22	2	0	0	0	0	128
	NE	5	7	17	14	11	28	33	0	0	0	0	0	115
	ENE	1	4	8	10	8	18	10	1	0	0	0	0	60
	E	1	1	6	15	11	21	12	1	0	0	0	0	68
	ESE	2	4	11	17	25	19	13	0	0	0	0	0	91
	SE	3	3	9	28	41	78	18	3	0	0	0	0	183
	SSE	0	6	14	27	52	86	27	0	0	0	0	0	212
	S	2	3	14	33	52	111	62	0	0	0	0	0	277
	SSW	2	6	9	22	26	81	61	8	0	0	0	0	215
	SW	1	5	3	19	29	57	56	4	0	0	0	0	174
	WSW	2	2	7	19	10	32	25	0	0	0	0	0	97
	W	2	9	5	25	9	23	11	0	0	0	0	0	84
	WNW	3	3	7	17	14	18	0	0	0	0	0	0	62
	NW	3	3	9	30	26	28	13	0	0	0	0	0	112
	NNW	1	1	5	25	23	44	38	5	1	0	0	0	143
	Totals	33	64	142	343	384	761	469	29	1	0	0	0	2226
	Number of Calm Hours for this Table							3						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							2226						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

(Page 1 of 8)

10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	2	1	0	0	0	0	0	0	3
	NNE	0	0	0	0	1	3	2	0	0	0	0	0	6
	NE	0	0	0	0	3	6	11	1	0	0	0	0	21
	ENE	0	0	0	1	2	6	9	0	0	0	0	0	18
	E	0	0	0	0	2	4	9	0	0	0	0	0	15
	ESE	0	0	0	1	3	3	8	0	0	0	0	0	15
	SE	0	0	0	4	9	18	15	0	0	0	0	0	46
	SSE	0	1	1	2	4	29	15	0	0	0	0	0	52
	S	0	0	0	4	6	20	17	0	0	0	0	0	47
	SSW	0	0	0	2	8	16	16	0	0	0	0	0	42
	SW	0	0	0	2	7	18	14	0	0	0	0	0	41
	WSW	0	0	1	0	0	1	6	0	0	0	0	0	8
	W	0	0	0	0	3	6	2	0	0	0	0	0	11
	WNW	0	0	0	0	0	5	5	0	0	0	0	0	10
	NW	0	0	0	0	1	6	1	0	0	0	0	0	8
	NNW	0	0	0	1	1	2	1	1	0	0	0	0	6
	Totals	0	1	2	17	52	144	131	2	0	0	0	0	349
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							349						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	1	1	0	0	0	0	0	3
	NNE	0	0	0	0	0	2	4	2	0	0	0	0	8
	NE	0	0	0	1	0	6	8	0	0	0	0	0	15
	ENE	0	0	0	2	2	2	5	0	0	0	0	0	11
	E	0	0	0	1	0	1	2	0	0	0	0	0	4
	ESE	0	0	1	0	1	2	3	0	0	0	0	0	7
	SE	0	0	0	2	0	4	6	0	0	0	0	0	12
	SSE	0	0	0	0	3	3	5	0	0	0	0	0	11
	S	0	0	0	1	0	2	1	0	0	0	0	0	4
	SSW	0	0	0	1	1	3	6	0	0	0	0	0	11
	SW	0	0	0	0	0	0	2	0	0	0	0	0	2
	WSW	0	0	0	0	2	0	0	0	0	0	0	0	2
	W	0	0	0	0	0	0	1	0	0	0	0	0	1
	WNW	0	0	0	1	1	0	5	0	0	0	0	0	7
	NW	0	0	0	1	0	2	5	0	0	0	0	0	8
	NNW	0	0	0	0	0	5	3	0	0	0	0	0	8
	Totals	0	0	1	10	11	33	57	2	0	0	0	0	114
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							114						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	5	1	2	0	0	0	0	9
	NNE	0	0	0	1	2	5	4	0	0	0	0	0	12
	NE	0	0	0	0	2	9	3	0	0	0	0	0	14
	ENE	0	0	0	0	0	5	2	0	0	0	0	0	7
	E	0	0	0	0	0	4	2	0	0	0	0	0	6
	ESE	0	0	0	0	0	2	1	0	0	0	0	0	3
	SE	0	0	1	1	1	2	3	0	0	0	0	0	8
	SSE	0	0	0	1	1	3	1	0	0	0	0	0	6
	S	0	0	0	1	1	1	2	0	0	0	0	0	5
	SSW	0	0	0	0	1	1	3	1	0	0	0	0	6
	SW	0	0	0	1	1	1	6	0	0	0	0	0	9
	WSW	0	1	0	1	0	2	1	0	0	0	0	0	5
	W	0	0	0	0	1	3	1	0	0	0	0	0	5
	WNW	0	0	0	0	2	2	1	0	0	0	0	0	5
	NW	0	0	0	0	1	3	2	0	0	0	0	0	6
	NNW	0	0	1	0	2	2	7	1	0	0	0	0	13
	Totals	0	1	2	6	16	50	40	4	0	0	0	0	119
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							119						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	1	6	26	36	0	1	0	0	0	71
	NNE	0	0	0	5	16	29	18	0	0	0	0	0	68
	NE	0	1	0	13	18	27	3	0	0	0	0	0	62
	ENE	0	0	0	5	9	18	3	0	0	0	0	0	35
	E	0	0	2	3	7	22	6	0	0	0	0	0	40
	ESE	0	0	0	3	6	4	6	0	0	0	0	0	19
	SE	0	0	1	3	2	8	7	0	0	0	0	0	21
	SSE	0	0	1	1	6	6	11	3	1	0	0	0	29
	S	0	0	0	1	5	9	17	1	0	0	0	0	33
	SSW	0	1	1	2	4	11	13	1	0	0	0	0	33
	SW	0	0	3	3	6	5	9	1	0	0	0	0	27
	WSW	1	0	1	0	6	1	2	0	0	0	0	0	11
	W	0	0	2	1	2	3	2	0	0	0	0	0	10
	WNW	0	0	2	4	2	4	1	0	0	0	0	0	13
	NW	0	0	1	3	7	5	8	0	0	0	0	0	24
	NNW	0	0	0	2	4	12	11	1	0	0	0	0	30
	Totals	2	2	14	50	106	190	153	7	2	0	0	0	526
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							526						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	4	5	4	17	12	3	0	0	0	0	46
	NNE	1	1	2	6	3	14	11	0	0	0	0	0	38
	NE	1	2	4	9	14	3	1	0	0	0	0	0	34
	ENE	0	1	1	9	7	4	1	0	0	0	0	0	23
	E	1	2	0	8	8	12	0	0	0	0	0	0	31
	ESE	2	1	0	9	10	11	2	0	0	0	0	0	35
	SE	2	0	5	6	15	32	11	0	0	0	0	0	71
	SSE	0	0	0	3	6	31	21	0	0	0	0	0	61
	S	0	0	0	3	4	21	20	1	0	0	0	0	49
	SSW	1	1	1	4	9	6	4	0	0	0	0	0	26
	SW	0	1	1	2	5	5	0	0	0	0	0	0	14
	WSW	1	0	2	4	0	1	0	0	0	0	0	0	8
	W	2	1	0	5	1	2	2	0	0	0	0	0	13
	WNW	1	1	2	2	2	1	1	0	0	0	0	0	10
	NW	0	0	2	2	4	5	2	0	0	0	0	0	15
	NNW	0	0	1	2	3	10	4	1	0	0	0	0	21
	Totals	12	12	25	79	95	175	92	5	0	0	0	0	495
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							495						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	2	4	4	5	3	1	0	0	0	0	0	20
	NNE	3	0	5	4	3	7	0	0	0	0	0	0	22
	NE	0	4	4	4	1	1	0	0	0	0	0	0	14
	ENE	0	2	4	5	3	1	0	0	0	0	0	0	15
	E	0	2	3	1	0	0	1	0	0	0	0	0	7
	ESE	2	1	1	11	3	1	0	0	0	0	0	0	19
	SE	1	0	1	12	12	24	4	0	0	0	0	0	54
	SSE	3	3	5	4	28	50	7	0	0	0	0	0	100
	S	1	1	4	2	10	22	8	0	0	0	0	0	48
	SSW	1	2	2	5	5	8	2	0	0	0	0	0	25
	SW	2	2	5	3	2	2	1	0	0	0	0	0	17
	WSW	2	3	7	4	5	1	0	0	0	0	0	0	22
	W	3	2	6	1	2	0	0	0	0	0	0	0	14
	WNW	1	3	4	6	4	0	0	0	0	0	0	0	18
	NW	0	0	1	5	5	2	0	0	0	0	0	0	13
	NNW	2	0	2	5	8	4	0	0	0	0	0	0	21
	Totals	22	27	58	76	96	126	24	0	0	0	0	0	429
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							429						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

(Page 7 of 8)

10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	2	4	6	3	0	0	0	0	0	0	0	16
	NNE	1	2	3	9	2	0	0	0	0	0	0	0	17
	NE	7	1	7	1	0	0	0	0	0	0	0	0	16
	ENE	1	0	4	0	0	0	0	0	0	0	0	0	5
	E	2	2	2	1	0	0	0	0	0	0	0	0	7
	ESE	2	1	2	3	0	0	0	0	0	0	0	0	8
	SE	0	1	4	4	5	9	0	0	0	0	0	0	23
	SSE	1	3	1	9	6	7	0	0	0	0	0	0	27
	S	2	5	6	1	1	0	0	0	0	0	0	0	15
	SSW	2	2	5	1	0	0	0	0	0	0	0	0	10
	SW	0	1	2	1	1	0	0	0	0	0	0	0	5
	WSW	1	1	0	1	0	0	0	0	0	0	0	0	3
	W	1	1	1	2	0	0	0	0	0	0	0	0	5
	WNW	2	3	1	3	0	0	0	0	0	0	0	0	9
	NW	1	1	2	6	0	0	0	0	0	0	0	0	10
	NNW	1	2	1	7	3	0	0	0	0	0	0	0	14
	Totals	25	28	45	55	21	16	0	0	0	0	0	0	190
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							190						
	Total Hours for the Period							2232						

Table 2.3-21—{Callaway Plant Joint Frequency Distribution - August}

(Page 8 of 8)

10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	3	5	12	16	22	53	51	5	1	0	0	0	168
	NNE	5	3	10	25	27	60	39	2	0	0	0	0	171
	NE	8	8	15	28	38	52	26	1	0	0	0	0	176
	ENE	1	3	9	22	23	36	20	0	0	0	0	0	114
	E	3	6	7	14	17	43	20	0	0	0	0	0	110
	ESE	6	3	4	27	23	23	20	0	0	0	0	0	106
	SE	3	1	12	32	44	97	46	0	0	0	0	0	235
	SSE	4	7	8	20	54	129	60	3	1	0	0	0	286
	S	3	6	10	13	27	75	65	2	0	0	0	0	201
	SSW	4	6	9	15	28	45	44	2	0	0	0	0	153
	SW	2	4	11	12	22	31	32	1	0	0	0	0	115
	WSW	5	5	11	10	13	6	9	0	0	0	0	0	59
	W	6	4	9	9	9	14	8	0	0	0	0	0	59
	WNW	4	7	9	16	11	12	13	0	0	0	0	0	72
	NW	1	1	6	17	18	23	18	0	0	0	0	0	84
	NNW	3	2	5	17	21	35	26	4	0	0	0	0	113
	Totals	61	71	147	293	397	734	497	20	2	0	0	0	2222
	Number of Calm Hours for this Table							7						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							3						
	Number of Valid Hours for this Table							2222						
	Total Hours for the Period							2232						

Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

(Page 1 of 8)

10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	2	2	4	3	0	0	0	0	11
	NNE	0	0	0	1	2	3	12	1	0	0	0	0	19
	NE	0	0	1	0	7	0	1	0	0	0	0	0	9
	ENE	0	0	0	3	4	7	0	1	0	0	0	0	15
	E	0	0	2	6	2	2	1	0	0	0	0	0	13
	ESE	0	0	0	5	3	4	4	0	0	0	0	0	16
	SE	0	0	1	3	4	26	20	0	0	0	0	0	54
	SSE	0	0	0	4	5	19	31	8	0	0	0	0	67
	S	0	0	1	6	12	18	32	0	0	0	0	0	69
	SSW	0	0	0	4	10	13	12	3	0	0	0	0	42
	SW	0	0	1	1	3	6	10	1	0	0	0	0	22
	WSW	0	0	0	2	1	1	1	0	0	0	0	0	5
	W	0	0	0	0	1	0	8	0	0	0	0	0	9
	WNW	1	0	0	0	0	1	3	0	0	0	0	0	5
	NW	0	0	0	1	0	3	2	1	0	0	0	0	7
	NNW	0	0	1	2	2	3	1	0	0	0	0	0	9
	Totals	1	0	7	38	58	108	142	18	0	0	0	0	372
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							372						
	Total Hours for the Period							2160						

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Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	1	3	4	1	0	0	0	0	11
	NNE	0	0	0	0	2	0	6	0	0	0	0	0	8
	NE	0	0	0	0	1	0	0	0	0	0	0	0	1
	ENE	0	0	0	1	1	1	2	0	0	0	0	0	5
	E	0	0	0	0	3	1	0	0	0	0	0	0	4
	ESE	0	0	0	1	1	4	1	0	0	0	0	0	7
	SE	0	0	0	0	3	4	3	0	0	0	0	0	10
	SSE	0	0	1	1	2	3	7	1	0	0	0	0	15
	S	0	0	0	1	5	3	3	2	0	0	0	0	14
	SSW	0	0	0	1	0	3	1	0	0	0	0	0	5
	SW	0	0	1	0	1	0	0	0	0	0	0	0	2
	WSW	0	0	0	0	0	2	1	0	0	0	0	0	3
	W	0	0	0	0	0	1	1	0	0	0	0	0	2
	WNW	0	0	0	0	0	2	8	0	0	0	0	0	10
	NW	0	0	0	0	2	1	9	1	0	0	0	0	13
	NNW	0	0	0	0	1	1	4	0	0	0	0	0	6
	Totals	0	0	2	7	23	29	50	5	0	0	0	0	116
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							116						
	Total Hours for the Period							2160						

Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	2	6	3	1	0	0	0	0	14
	NNE	0	0	0	0	0	7	9	1	0	0	0	0	17
	NE	0	0	1	1	2	0	1	0	0	0	0	0	5
	ENE	0	0	0	2	0	0	2	0	0	0	0	0	4
	E	0	0	0	2	1	0	0	0	0	0	0	0	3
	ESE	0	0	0	1	0	4	1	0	0	0	0	0	6
	SE	0	0	0	1	3	4	3	2	0	0	0	0	13
	SSE	0	0	0	0	3	2	6	0	0	0	0	0	11
	S	0	0	0	1	1	5	3	0	0	0	0	0	10
	SSW	0	0	0	0	0	0	2	0	0	0	0	0	2
	SW	0	0	0	1	1	0	1	0	0	0	0	0	3
	WSW	0	0	1	0	1	1	1	0	0	0	0	0	4
	W	0	0	0	0	0	0	1	0	0	0	0	0	1
	WNW	0	0	0	0	0	4	0	0	0	0	0	0	4
	NW	0	0	0	0	0	2	5	0	0	0	0	0	7
	NNW	0	0	0	1	1	2	8	0	0	0	0	0	12
	Totals	0	0	2	12	15	37	46	4	0	0	0	0	116
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							116						
	Total Hours for the Period							2160						

Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	3	2	6	13	16	2	0	0	0	0	42
	NNE	0	1	1	1	5	13	8	0	0	0	0	0	29
	NE	0	0	1	0	10	7	1	0	0	0	0	0	19
	ENE	0	0	1	2	6	3	1	0	0	0	0	0	13
	E	1	1	0	1	1	5	3	2	0	0	0	0	14
	ESE	1	0	2	0	2	11	2	1	0	0	0	0	19
	SE	0	0	0	1	5	8	12	5	0	0	0	0	31
	SSE	0	0	0	4	5	6	17	1	0	0	0	0	33
	S	1	0	0	4	3	10	9	0	0	0	0	0	27
	SSW	0	0	0	0	2	3	3	1	0	0	0	0	9
	SW	0	0	1	2	1	3	1	0	0	0	0	0	8
	WSW	0	0	0	3	1	2	0	0	0	0	0	0	6
	W	0	1	0	2	2	4	3	0	0	0	0	0	12
	WNW	0	0	1	3	1	10	4	0	0	0	0	0	19
	NW	0	0	1	0	3	8	21	1	0	0	0	0	34
	NNW	0	0	2	3	1	17	9	4	2	0	0	0	38
	Totals	3	3	13	28	54	123	110	17	2	0	0	0	353
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							353						
	Total Hours for the Period							2160						

Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	1	5	10	20	5	0	0	0	0	0	42
	NNE	0	1	0	5	7	10	2	0	0	0	0	0	25
	NE	0	1	1	6	4	3	0	0	0	0	0	0	15
	ENE	2	0	0	2	1	1	1	0	0	0	0	0	7
	E	0	0	0	3	2	4	1	0	0	0	0	0	10
	ESE	0	0	0	4	3	9	2	2	0	0	0	0	20
	SE	1	1	1	6	5	35	32	5	0	0	0	0	86
	SSE	0	0	3	4	12	20	30	2	0	0	0	0	71
	S	2	1	4	3	1	10	14	0	0	0	0	0	35
	SSW	0	1	2	4	2	4	1	0	0	0	0	0	14
	SW	0	0	1	3	1	1	0	0	0	0	0	0	6
	WSW	0	0	2	4	2	4	2	0	0	0	0	0	14
	W	1	4	2	1	6	9	3	0	0	0	0	0	26
	WNW	0	2	1	4	5	3	1	0	0	0	0	0	16
	NW	0	0	2	4	9	9	3	0	0	0	0	0	27
	NNW	3	2	0	8	5	14	1	0	0	0	0	0	33
	Totals	9	14	20	66	75	156	98	9	0	0	0	0	447
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							447						
	Total Hours for the Period							2160						

Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	2	0	1	3	8	16	2	0	0	0	0	0	32
	NNE	1	1	1	1	3	4	0	0	0	0	0	0	11
	NE	0	6	2	1	0	1	0	0	0	0	0	0	10
	ENE	0	1	2	3	1	0	0	0	0	0	0	0	7
	E	2	1	3	3	5	0	0	0	0	0	0	0	14
	ESE	1	0	2	14	13	4	0	0	0	0	0	0	34
	SE	0	0	6	11	28	37	4	0	0	0	0	0	86
	SSE	0	0	6	7	19	50	5	0	0	0	0	0	87
	S	1	1	4	2	1	4	1	0	0	0	0	0	14
	SSW	1	3	4	4	1	1	0	0	0	0	0	0	14
	SW	0	3	1	3	4	4	1	0	0	0	0	0	16
	WSW	0	1	2	3	0	1	1	0	0	0	0	0	8
	W	1	2	4	2	2	2	0	0	0	0	0	0	13
	WNW	1	1	2	6	0	0	0	0	0	0	0	0	10
	NW	2	2	2	6	3	2	0	0	0	0	0	0	17
	NNW	1	3	2	1	2	9	0	0	0	0	0	0	18
	Totals	13	25	44	70	90	135	14	0	0	0	0	0	391
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							391						
	Total Hours for the Period							2160						

Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	5	11	10	0	0	0	0	0	0	0	26
	NNE	1	0	2	3	0	0	0	0	0	0	0	0	6
	NE	6	6	3	7	0	0	0	0	0	0	0	0	22
	ENE	0	4	3	3	0	0	0	0	0	0	0	0	10
	E	7	1	1	1	1	0	0	0	0	0	0	0	11
	ESE	3	4	3	6	2	0	0	0	0	0	0	0	18
	SE	8	4	16	18	5	5	0	0	0	0	0	0	56
	SSE	4	10	13	35	28	12	1	0	0	0	0	0	103
	S	1	1	2	4	9	3	0	0	0	0	0	0	20
	SSW	5	1	5	3	0	0	0	0	0	0	0	0	14
	SW	2	1	5	2	2	0	0	0	0	0	0	0	12
	WSW	1	0	0	2	0	0	0	0	0	0	0	0	3
	W	0	2	1	1	0	0	0	0	0	0	0	0	4
	WNW	3	2	2	7	1	0	0	0	0	0	0	0	15
	NW	1	4	5	2	0	1	0	0	0	0	0	0	13
	NNW	0	0	0	6	8	5	0	0	0	0	0	0	19
	Totals	42	40	66	111	66	26	1	0	0	0	0	0	352
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							352						
	Total Hours for the Period							2160						

Table 2.3-22—{Callaway Plant Joint Frequency Distribution - September}

(Page 8 of 8)

10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	2	1	10	25	39	60	34	7	0	0	0	0	178
	NNE	2	3	4	11	19	37	37	2	0	0	0	0	115
	NE	6	13	9	15	24	11	3	0	0	0	0	0	81
	ENE	2	5	6	16	13	12	6	1	0	0	0	0	61
	E	10	3	6	16	15	12	5	2	0	0	0	0	69
	ESE	5	4	7	31	24	36	10	3	0	0	0	0	120
	SE	9	5	24	40	53	119	74	12	0	0	0	0	336
	SSE	4	10	23	55	74	112	97	12	0	0	0	0	387
	S	5	3	11	21	32	53	62	2	0	0	0	0	189
	SSW	6	5	11	16	15	24	19	4	0	0	0	0	100
	SW	2	4	10	12	13	14	13	1	0	0	0	0	69
	WSW	1	1	5	14	5	11	6	0	0	0	0	0	43
	W	2	9	7	6	11	16	16	0	0	0	0	0	67
	WNW	5	5	6	20	7	20	16	0	0	0	0	0	79
	NW	3	6	10	13	17	26	40	3	0	0	0	0	118
	NNW	4	5	5	21	20	51	23	4	2	0	0	0	135
	Totals	68	82	154	332	381	614	461	53	2	0	0	0	2147
	Number of Calm Hours for this Table							9						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							4						
	Number of Valid Hours for this Table							2147						
	Total Hours for the Period							2160						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

(Page 1 of 8)

10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	4	3	16	0	0	0	0	0	23
	NNE	0	0	0	0	0	6	2	0	0	0	0	0	8
	NE	0	0	0	0	0	4	0	0	0	0	0	0	4
	ENE	0	0	0	1	4	4	2	0	0	0	0	0	11
	E	0	0	0	1	1	4	3	0	0	0	0	0	9
	ESE	0	0	0	3	0	1	7	0	0	0	0	0	11
	SE	0	0	0	0	5	6	17	0	0	0	0	0	28
	SSE	0	0	0	0	4	9	9	1	0	0	0	0	23
	S	0	0	0	1	3	5	20	4	0	0	0	0	33
	SSW	0	0	0	1	2	4	13	4	0	0	0	0	24
	SW	0	0	0	2	1	10	8	1	0	0	0	0	22
	WSW	0	0	0	1	3	0	4	3	0	0	0	0	11
	W	0	0	0	0	0	4	15	8	0	0	0	0	27
	WNW	0	0	0	0	0	4	14	5	0	0	0	0	23
	NW	0	0	0	0	0	1	9	1	0	0	0	0	11
	NNW	0	0	0	0	0	2	5	2	0	0	0	0	9
	Totals	0	0	0	10	27	67	144	29	0	0	0	0	277
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							277						
	Total Hours for the Period							2232						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	1	1	10	0	0	0	0	0	13
	NNE	0	0	0	1	1	3	1	0	0	0	0	0	6
	NE	0	0	0	0	1	5	1	0	0	0	0	0	7
	ENE	0	0	0	0	1	4	0	2	0	0	0	0	7
	E	0	0	0	0	1	2	1	0	0	0	0	0	4
	ESE	0	0	0	1	0	2	0	0	0	0	0	0	3
	SE	0	0	0	1	1	6	2	0	0	0	0	0	10
	SSE	0	0	0	0	1	1	4	0	0	0	0	0	6
	S	0	0	0	0	0	2	6	1	0	0	0	0	9
	SSW	0	0	0	0	2	2	1	1	0	0	0	0	6
	SW	0	0	0	0	0	0	1	1	0	0	0	0	2
	WSW	0	0	0	0	1	1	1	4	0	0	0	0	7
	W	0	0	0	1	0	1	1	1	0	0	0	0	4
	WNW	0	0	0	0	1	1	5	0	0	0	0	0	7
	NW	0	0	0	0	0	0	3	0	0	0	0	0	3
	NNW	0	0	0	0	1	0	3	2	0	0	0	0	6
	Totals	0	0	0	5	12	31	40	12	0	0	0	0	100
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							100						
	Total Hours for the Period							2232						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	1	4	4	1	0	0	0	0	11
	NNE	0	0	0	1	1	3	0	0	0	0	0	0	5
	NE	0	0	0	0	1	1	2	0	0	0	0	0	4
	ENE	0	0	0	0	0	1	3	0	0	0	0	0	4
	E	0	0	0	0	0	1	3	0	0	0	0	0	4
	ESE	0	0	0	0	0	2	2	0	0	0	0	0	4
	SE	0	0	0	0	0	2	4	0	0	0	0	0	6
	SSE	0	0	0	0	2	0	3	0	0	0	0	0	5
	S	0	0	0	0	1	5	1	2	2	0	0	0	11
	SSW	0	0	0	1	2	1	2	0	0	0	0	0	6
	SW	0	0	0	0	0	1	0	2	0	0	0	0	3
	WSW	0	0	0	0	1	0	1	2	1	0	0	0	5
	W	0	0	0	1	0	2	4	0	0	0	0	0	7
	WNW	0	0	0	0	0	2	3	1	0	0	0	0	6
	NW	0	0	0	0	1	0	3	1	0	0	0	0	5
	NNW	0	0	0	0	0	3	2	1	0	0	0	0	6
	Totals	0	0	0	4	10	28	37	10	3	0	0	0	92
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							92						
	Total Hours for the Period							2232						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	3	3	25	26	4	2	0	0	0	63
	NNE	0	0	1	4	10	21	6	0	0	0	0	0	42
	NE	1	0	0	8	7	23	7	0	0	0	0	0	46
	ENE	0	1	2	3	6	18	11	0	0	0	0	0	41
	E	0	0	1	0	1	18	8	0	0	0	0	0	28
	ESE	0	1	0	1	3	14	43	4	0	0	0	0	66
	SE	0	1	0	1	6	21	33	2	0	0	0	0	64
	SSE	0	0	0	1	1	8	17	2	0	0	0	0	29
	S	0	1	0	2	1	11	13	5	2	0	0	0	35
	SSW	0	0	0	3	0	2	10	5	1	0	0	0	21
	SW	0	0	1	1	1	7	3	1	1	0	0	0	15
	WSW	0	0	0	4	6	8	5	4	0	0	0	0	27
	W	0	0	3	1	1	6	14	1	0	0	0	0	26
	WNW	0	0	0	3	6	11	14	2	0	0	0	0	36
	NW	0	1	1	1	7	28	34	7	0	0	0	0	79
	NNW	0	0	0	4	9	23	43	13	1	0	0	0	93
	Totals	1	5	9	40	68	244	287	50	7	0	0	0	711
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							711						
	Total Hours for the Period							2232						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	2	5	11	4	0	0	0	0	0	23
	NNE	1	0	2	2	1	1	2	0	0	0	0	0	9
	NE	2	0	0	4	7	14	2	0	0	0	0	0	29
	ENE	1	2	3	0	0	6	1	0	0	0	0	0	13
	E	0	0	2	3	7	4	3	0	0	0	0	0	19
	ESE	0	0	2	3	4	7	6	0	0	0	0	0	22
	SE	0	1	1	3	5	25	22	0	0	0	0	0	57
	SSE	0	0	2	2	5	33	16	0	0	0	0	0	58
	S	0	1	0	6	5	13	47	2	0	0	0	0	74
	SSW	0	0	1	1	4	4	6	2	0	0	0	0	18
	SW	0	0	2	2	3	2	9	2	0	0	0	0	20
	WSW	0	0	1	4	1	7	9	1	0	0	0	0	23
	W	0	0	3	2	15	22	7	0	0	0	0	0	49
	WNW	0	0	2	5	6	5	3	0	0	0	0	0	21
	NW	0	0	3	4	5	9	2	0	0	0	0	0	23
	NNW	0	1	0	1	4	6	3	0	0	0	0	0	15
	Totals	5	5	24	44	77	169	142	7	0	0	0	0	473
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							473						
	Total Hours for the Period							2232						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	1	2	3	5	0	0	0	0	0	0	12
	NNE	0	1	6	6	5	3	0	0	0	0	0	0	21
	NE	1	2	4	9	3	0	0	0	0	0	0	0	19
	ENE	0	0	0	1	0	0	0	0	0	0	0	0	1
	E	0	1	1	2	3	0	0	0	0	0	0	0	7
	ESE	0	0	2	5	4	2	0	0	0	0	0	0	13
	SE	3	2	3	4	17	36	8	0	0	0	0	0	73
	SSE	1	1	7	2	8	34	11	0	0	0	0	0	64
	S	1	0	2	0	1	11	3	0	0	0	0	0	18
	SSW	0	1	0	2	6	7	0	0	0	0	0	0	16
	SW	1	0	0	1	5	11	3	0	0	0	0	0	21
	WSW	1	0	3	3	2	6	2	0	0	0	0	0	17
	W	0	4	4	3	8	12	1	0	0	0	0	0	32
	WNW	0	1	3	5	1	0	0	0	0	0	0	0	10
	NW	0	1	0	5	7	1	0	0	0	0	0	0	14
	NNW	0	0	0	1	4	4	0	0	0	0	0	0	9
	Totals	8	15	36	51	77	132	28	0	0	0	0	0	347
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							347						
	Total Hours for the Period							2232						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	4	3	0	9	1	1	0	0	0	0	0	0	18
	NNE	2	3	6	0	1	0	0	0	0	0	0	0	12
	NE	1	1	6	4	0	0	0	0	0	0	0	0	12
	ENE	1	4	2	0	0	0	0	0	0	0	0	0	7
	E	2	2	3	1	1	0	0	0	0	0	0	0	9
	ESE	0	4	1	2	1	0	0	0	0	0	0	0	8
	SE	1	3	1	4	6	11	2	0	0	0	0	0	28
	SSE	2	2	8	7	16	16	1	0	0	0	0	0	52
	S	5	5	3	3	0	1	0	0	0	0	0	0	17
	SSW	4	3	4	6	2	0	0	0	0	0	0	0	19
	SW	3	1	1	3	4	1	0	0	0	0	0	0	13
	WSW	0	0	1	1	0	0	0	0	0	0	0	0	2
	W	0	1	1	2	0	0	0	0	0	0	0	0	4
	WNW	0	1	4	2	0	0	0	0	0	0	0	0	7
	NW	1	0	0	5	3	0	0	0	0	0	0	0	9
	NNW	2	0	1	5	2	3	0	0	0	0	0	0	13
	Totals	28	33	42	54	37	33	3	0	0	0	0	0	230
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							230						
	Total Hours for the Period							2232						

Table 2.3-23— {Callaway Plant Joint Frequency Distribution - October}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	5	4	1	18	18	50	60	5	2	0	0	0	163
	NNE	3	4	15	14	19	37	11	0	0	0	0	0	103
	NE	5	3	10	25	19	47	12	0	0	0	0	0	121
	ENE	2	7	7	5	11	33	17	2	0	0	0	0	84
	E	2	3	7	7	14	29	18	0	0	0	0	0	80
	ESE	0	5	5	15	12	28	58	4	0	0	0	0	127
	SE	4	7	5	13	40	107	88	2	0	0	0	0	266
	SSE	3	3	17	12	37	101	61	3	0	0	0	0	237
	S	6	7	5	12	11	48	90	14	4	0	0	0	197
	SSW	4	4	5	14	18	20	32	12	1	0	0	0	110
	SW	4	1	4	9	14	32	24	7	1	0	0	0	96
	WSW	1	0	5	13	14	22	22	14	1	0	0	0	92
	W	0	5	11	10	24	47	42	10	0	0	0	0	149
	WNW	0	2	9	15	14	23	39	8	0	0	0	0	110
	NW	1	2	4	15	23	39	51	9	0	0	0	0	144
	NNW	2	1	1	11	20	41	56	18	1	0	0	0	151
	Totals	42	58	111	208	308	704	681	108	10	0	0	0	2230
	Number of Calm Hours for this Table							2						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							0						
	Number of Valid Hours for this Table							2230						
	Total Hours for the Period							2232						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	1	2	0	0	0	0	3
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	1	0	0	0	0	0	1
	ENE	0	0	0	0	0	0	1	0	0	0	0	0	1
	E	0	0	0	0	0	0	1	0	0	0	0	0	1
	ESE	0	0	1	0	0	1	0	0	0	0	0	0	2
	SE	0	0	0	3	1	3	7	0	0	0	0	0	14
	SSE	0	0	0	0	0	3	11	0	0	0	0	0	14
	S	0	0	0	1	2	4	6	4	0	0	0	0	17
	SSW	0	0	0	0	1	5	11	1	0	0	0	0	18
	SW	0	0	0	0	0	3	8	4	0	0	0	0	15
	WSW	0	0	0	0	0	1	2	0	0	0	0	0	3
	W	0	0	0	1	1	2	7	0	0	0	0	0	11
	WNW	0	0	0	0	0	3	13	8	0	0	0	0	24
	NW	0	0	0	0	0	1	4	3	0	0	0	0	8
	NNW	0	0	0	0	0	0	1	3	0	0	0	0	4
	Totals	0	0	1	5	5	26	74	25	0	0	0	0	136
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							136						
	Total Hours for the Period							2160						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	1	3	1	0	0	0	0	5
	NE	0	0	0	0	0	0	1	0	0	0	0	0	1
	ENE	0	0	0	0	0	0	2	1	0	0	0	0	3
	E	0	0	0	0	1	0	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	1	0	1	3	5	0	0	0	0	0	10
	SSE	0	0	0	1	0	2	7	0	0	0	0	0	10
	S	0	0	0	0	2	2	9	3	1	0	0	0	17
	SSW	0	0	0	0	1	1	3	3	0	0	0	0	8
	SW	0	0	0	0	0	1	2	0	0	0	0	0	3
	WSW	0	0	0	0	0	0	2	0	0	0	0	0	2
	W	0	0	0	3	1	2	3	1	0	0	0	0	10
	WNW	0	0	0	0	0	5	1	3	0	0	0	0	9
	NW	0	0	0	1	0	0	3	3	0	0	0	0	7
	NNW	0	0	0	0	0	0	7	1	0	0	0	0	8
	Totals	0	0	1	5	6	17	48	16	1	0	0	0	94
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							94						
	Total Hours for the Period							2160						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	1	0	0	0	0	0	1
	NNE	0	0	0	0	0	0	2	0	0	0	0	0	2
	NE	0	0	0	0	1	1	0	0	0	0	0	0	2
	ENE	0	0	0	1	0	1	1	0	0	0	0	0	3
	E	0	0	0	0	0	1	1	0	0	0	0	0	2
	ESE	0	0	0	0	0	1	0	0	0	0	0	0	1
	SE	0	0	0	1	0	2	6	0	0	0	0	0	9
	SSE	0	0	0	0	0	0	7	1	0	0	0	0	8
	S	0	0	0	1	1	2	6	2	0	0	0	0	12
	SSW	0	0	0	1	0	2	6	2	0	0	0	0	11
	SW	0	0	0	0	1	0	1	0	0	0	0	0	2
	WSW	0	0	0	0	2	1	1	0	0	0	0	0	4
	W	0	0	1	2	0	0	0	4	0	0	0	0	7
	WNW	0	0	0	0	0	3	1	4	0	0	0	0	8
	NW	0	0	0	0	0	1	2	1	0	0	0	0	4
	NNW	0	0	0	2	0	0	3	0	0	0	0	0	5
	Totals	0	0	1	8	5	15	38	14	0	0	0	0	81
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							81						
	Total Hours for the Period							2160						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	3	3	20	17	11	13	0	0	0	68
	NNE	0	1	2	4	2	18	33	16	3	0	0	0	79
	NE	0	1	2	4	13	10	14	0	0	0	0	0	44
	ENE	0	0	1	5	9	15	15	1	0	0	0	0	46
	E	0	0	1	2	9	8	14	0	0	0	0	0	34
	ESE	0	0	2	4	6	14	9	2	0	0	0	0	37
	SE	0	1	1	2	13	22	23	5	0	0	0	0	67
	SSE	0	0	2	1	7	16	41	15	0	0	0	0	82
	S	0	0	1	2	3	10	21	16	2	0	0	0	55
	SSW	0	1	1	4	2	4	5	2	1	0	0	0	20
	SW	0	0	0	1	1	3	7	5	8	0	0	0	25
	WSW	0	0	0	2	0	1	0	7	0	0	0	0	10
	W	0	0	0	3	6	10	23	16	3	0	0	0	61
	WNW	0	1	0	3	3	15	19	13	0	0	0	0	54
	NW	0	1	2	5	5	17	32	13	0	0	0	0	75
	NNW	0	0	3	5	3	12	29	19	10	0	0	0	81
	Totals	0	6	19	50	85	195	302	141	40	0	0	0	838
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							838						
	Total Hours for the Period							2160						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	2	5	1	0	0	0	0	0	8
	NNE	1	0	4	1	4	14	1	0	0	0	0	0	25
	NE	2	0	4	5	7	12	0	0	0	0	0	0	30
	ENE	1	3	2	5	5	5	1	0	0	0	0	0	22
	E	0	2	0	3	5	5	0	0	0	0	0	0	15
	ESE	1	2	2	3	3	12	3	0	1	0	0	0	27
	SE	0	0	0	4	4	29	41	1	0	0	0	0	79
	SSE	0	0	1	1	8	24	65	8	0	0	0	0	107
	S	1	1	1	2	9	24	52	12	1	0	0	0	103
	SSW	0	0	2	3	1	11	19	5	0	0	0	0	41
	SW	2	1	0	2	3	11	9	0	0	0	0	0	28
	WSW	0	0	2	9	1	5	5	0	0	0	0	0	22
	W	0	0	3	8	2	7	5	0	0	0	0	0	25
	WNW	1	1	4	2	3	20	12	1	0	0	0	0	44
	NW	0	0	1	6	5	14	13	0	0	0	0	0	39
	NNW	0	2	0	1	3	5	7	0	0	0	0	0	18
	Totals	9	12	26	55	65	203	234	27	2	0	0	0	633
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							633						
	Total Hours for the Period							2160						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	0	1	1	0	0	0	0	0	0	3
	NNE	0	1	0	0	0	1	0	0	0	0	0	0	2
	NE	0	0	0	1	0	0	0	0	0	0	0	0	1
	ENE	0	0	3	2	0	1	0	0	0	0	0	0	6
	E	0	0	1	3	0	0	0	0	0	0	0	0	4
	ESE	1	0	1	1	2	0	0	0	0	0	0	0	5
	SE	0	0	1	2	4	11	35	0	0	0	0	0	53
	SSE	0	0	0	4	2	28	25	0	0	0	0	0	59
	S	0	0	0	3	3	16	25	0	0	0	0	0	47
	SSW	0	1	2	1	0	6	2	0	0	0	0	0	12
	SW	1	0	0	1	3	14	2	0	0	0	0	0	21
	WSW	0	0	4	3	0	1	0	0	0	0	0	0	8
	W	0	1	3	4	3	0	0	0	0	0	0	0	11
	WNW	0	0	2	6	10	6	0	0	0	0	0	0	24
	NW	0	0	0	3	12	6	0	0	0	0	0	0	21
	NNW	0	0	0	2	0	1	0	0	0	0	0	0	3
	Totals	2	3	18	36	40	92	89	0	0	0	0	0	280
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							280						
	Total Hours for the Period							2160						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	1	4	4	5	1	0	0	0	0	0	15
	SSE	0	0	0	5	10	12	6	0	0	0	0	0	33
	S	0	2	1	1	3	3	0	0	0	0	0	0	10
	SSW	0	0	0	3	1	0	0	0	0	0	0	0	4
	SW	0	0	0	4	2	0	0	0	0	0	0	0	6
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	1	2	2	0	0	0	0	0	0	0	5
	WNW	0	0	0	0	2	1	0	0	0	0	0	0	3
	NW	0	0	1	0	0	0	0	0	0	0	0	0	1
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	2	4	19	24	21	7	0	0	0	0	0	77
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							77						
	Total Hours for the Period							2160						

Table 2.3-24—{Callaway Plant Joint Frequency Distribution - November}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	2	3	6	26	20	13	13	0	0	0	83
	NNE	1	2	6	5	6	34	39	17	3	0	0	0	113
	NE	2	1	6	10	21	23	16	0	0	0	0	0	79
	ENE	1	3	6	13	14	22	20	2	0	0	0	0	81
	E	0	2	2	8	15	14	16	0	0	0	0	0	57
	ESE	2	2	6	8	11	28	12	2	1	0	0	0	72
	SE	0	1	4	16	27	75	118	6	0	0	0	0	247
	SSE	0	0	3	12	27	85	162	24	0	0	0	0	313
	S	1	3	3	10	23	61	119	37	4	0	0	0	261
	SSW	0	2	5	12	6	29	46	13	1	0	0	0	114
	SW	3	1	0	8	10	32	29	9	8	0	0	0	100
	WSW	0	0	6	14	3	9	10	7	0	0	0	0	49
	W	0	1	8	23	15	21	38	21	3	0	0	0	130
	WNW	1	2	6	11	18	53	46	29	0	0	0	0	166
	NW	0	1	4	15	22	39	54	20	0	0	0	0	155
	NNW	0	2	3	10	6	18	47	23	10	0	0	0	119
	Totals	11	23	70	178	230	569	792	223	43	0	0	0	2139
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							21						
	Number of Valid Hours for this Table							2139						
	Total Hours for the Period							2160						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

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10m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	1	1	0	0	0	0	0	2
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	1	0	0	0	0	0	0	1
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	2	0	0	0	0	0	2
	SE	0	0	0	0	0	1	7	3	0	0	0	0	11
	SSE	0	0	0	0	0	1	2	0	3	0	0	0	6
	S	0	0	0	0	0	1	2	0	1	0	0	0	4
	SSW	0	0	0	0	1	6	6	0	0	0	0	0	13
	SW	0	0	0	0	4	3	15	2	0	0	0	0	24
	WSW	0	0	0	0	0	1	3	1	0	0	0	0	5
	W	0	0	0	1	1	6	12	4	0	0	0	0	24
	WNW	0	0	0	0	0	4	7	2	0	0	0	0	13
	NW	0	0	0	0	0	2	2	2	0	0	0	0	6
	NNW	0	0	0	0	0	0	5	1	0	0	0	0	6
	Totals	0	0	0	1	6	27	64	15	4	0	0	0	117
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							117						
	Total Hours for the Period							2232						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

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10m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	0	1	0	0	0	0	2
	NNE	0	0	0	0	1	2	1	0	0	0	0	0	4
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	1	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	1	0	0	0	0	0	1
	SE	0	0	0	0	0	0	2	0	0	0	0	0	2
	SSE	0	0	0	0	0	0	3	0	1	0	0	0	4
	S	0	0	0	0	0	1	5	0	2	0	0	0	8
	SSW	0	0	0	0	0	0	5	2	0	0	0	0	7
	SW	0	0	0	0	2	2	11	1	0	0	0	0	16
	WSW	0	0	0	0	1	5	6	0	0	0	0	0	12
	W	0	0	0	0	0	6	3	0	0	0	0	0	9
	WNW	0	0	0	0	0	3	5	1	0	0	0	0	9
	NW	0	0	0	0	2	5	4	5	1	0	0	0	17
	NNW	0	0	0	0	0	1	3	0	0	0	0	0	4
	Totals	0	0	0	0	6	27	49	10	4	0	0	0	96
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							96						
	Total Hours for the Period							2232						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

(Page 3 of 8)

10m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	1	1	0	1	0	0	0	0	4
	NNE	0	0	0	0	0	2	3	0	0	0	0	0	5
	NE	0	0	1	0	0	2	1	0	0	0	0	0	4
	ENE	0	0	0	1	0	0	0	0	0	0	0	0	1
	E	0	0	0	0	0	0	1	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	1	0	0	0	0	0	1
	SE	0	0	0	0	0	1	6	1	0	0	0	0	8
	SSE	0	0	0	0	0	1	0	0	0	0	0	0	1
	S	0	0	0	0	2	5	7	1	1	0	0	0	16
	SSW	0	0	0	0	0	2	2	2	0	0	0	0	6
	SW	0	0	0	0	0	1	4	3	0	0	0	0	8
	WSW	0	0	0	0	0	1	4	2	0	0	0	0	7
	W	0	0	0	2	1	4	3	3	0	0	0	0	13
	WNW	0	0	0	0	0	4	3	1	0	0	0	0	8
	NW	0	0	0	0	0	1	3	3	0	0	0	0	7
	NNW	0	0	0	0	0	2	4	1	0	0	0	0	7
	Totals	0	0	1	4	4	27	42	18	1	0	0	0	97
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							97						
	Total Hours for the Period							2232						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

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10m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	2	3	18	36	10	0	0	0	0	70
	NNE	0	0	0	3	3	15	23	0	0	0	0	0	44
	NE	0	0	0	3	5	10	1	0	0	0	0	0	19
	ENE	0	0	2	1	3	6	5	0	0	0	0	0	17
	E	0	0	0	2	3	3	16	7	0	0	0	0	31
	ESE	1	0	0	1	2	7	40	2	0	0	0	0	53
	SE	0	0	2	1	5	8	44	6	0	0	0	0	66
	SSE	0	0	0	1	2	8	18	7	1	0	0	0	37
	S	0	0	0	2	2	2	24	13	1	0	0	0	44
	SSW	0	0	0	0	5	4	24	13	2	0	0	0	48
	SW	0	0	0	3	2	7	16	5	0	0	0	0	33
	WSW	0	0	0	3	1	12	17	6	0	0	0	0	39
	W	0	0	2	3	1	12	59	12	0	0	0	0	89
	WNW	0	0	0	4	3	14	51	16	0	0	0	0	88
	NW	0	0	0	3	2	17	51	28	0	0	0	0	101
	NNW	0	0	1	2	6	22	55	36	5	0	0	0	127
	Totals	1	0	8	34	48	165	480	161	9	0	0	0	906
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							906						
	Total Hours for the Period							2232						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

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10m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	5	2	8	0	0	0	0	0	0	16
	NNE	0	0	1	2	1	3	0	0	0	0	0	0	7
	NE	1	0	0	1	1	2	0	0	0	0	0	0	5
	ENE	0	0	2	4	1	4	0	0	0	0	0	0	11
	E	0	0	0	3	3	8	2	0	0	0	0	0	16
	ESE	0	1	1	1	5	7	7	0	0	0	0	0	22
	SE	0	0	1	3	7	18	46	6	1	0	0	0	82
	SSE	0	0	0	2	4	22	40	5	0	0	0	0	73
	S	0	0	0	1	2	13	57	2	0	0	0	0	75
	SSW	0	1	0	4	7	10	36	2	0	0	0	0	60
	SW	0	0	1	3	9	22	11	0	0	0	0	0	46
	WSW	0	1	0	9	6	26	17	0	0	0	0	0	59
	W	1	1	5	10	9	42	28	0	0	0	0	0	96
	WNW	0	1	2	1	7	9	14	0	0	0	0	0	34
	NW	0	0	4	10	8	5	5	5	0	0	0	0	37
	NNW	0	0	0	2	2	10	2	0	0	0	0	0	16
	Totals	2	5	18	61	74	209	265	20	1	0	0	0	655
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							655						
	Total Hours for the Period							2232						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

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10m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	2	3	0	0	0	0	0	0	0	6
	NNE	0	0	2	0	0	0	0	0	0	0	0	0	2
	NE	0	0	1	1	0	0	0	0	0	0	0	0	2
	ENE	0	0	0	1	1	1	0	0	0	0	0	0	3
	E	1	0	0	0	2	1	0	0	0	0	0	0	4
	ESE	0	1	0	0	1	2	1	0	0	0	0	0	5
	SE	0	1	1	2	4	10	14	0	0	0	0	0	32
	SSE	2	0	2	3	4	13	24	0	0	0	0	0	48
	S	1	1	3	0	4	18	18	0	0	0	0	0	45
	SSW	0	1	3	6	2	15	15	0	0	0	0	0	42
	SW	1	1	5	7	17	11	0	0	0	0	0	0	42
	WSW	0	1	0	2	3	3	0	0	0	0	0	0	9
	W	0	1	3	6	4	2	0	0	0	0	0	0	16
	WNW	0	0	2	3	4	4	0	0	0	0	0	0	13
	NW	0	0	1	4	0	0	0	0	0	0	0	0	5
	NNW	1	0	0	3	2	2	0	0	0	0	0	0	8
	Totals	6	7	24	40	51	82	72	0	0	0	0	0	282
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							282						
	Total Hours for the Period							2232						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

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10m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	1	0	0	0	0	0	0	0	0	1
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	1	0	0	0	0	0	0	0	0	0	0	1
	SE	0	2	1	0	0	4	0	0	0	0	0	0	7
	SSE	0	0	1	4	1	8	2	0	0	0	0	0	16
	S	0	0	1	0	3	1	0	0	0	0	0	0	5
	SSW	0	0	1	0	1	1	0	0	0	0	0	0	3
	SW	0	1	0	0	2	0	1	0	0	0	0	0	4
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	1	0	0	0	0	0	0	0	0	1
	NNW	0	0	0	0	1	0	0	0	0	0	0	0	1
	Totals	0	4	4	6	8	14	3	0	0	0	0	0	39
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							39						
	Total Hours for the Period							2232						

Table 2.3-25—{Callaway Plant Joint Frequency Distribution - December}

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10m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD10M		**Direction:**		DIR10M		**Lapse:**		DT60M-C		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	3	10	9	28	36	12	0	0	0	0	98
	NNE	0	0	3	5	5	23	28	0	0	0	0	0	64
	NE	1	0	2	6	6	14	2	0	0	0	0	0	31
	ENE	0	0	4	7	5	12	5	0	0	0	0	0	33
	E	1	0	0	5	8	13	19	7	0	0	0	0	53
	ESE	1	3	1	2	8	16	52	2	0	0	0	0	85
	SE	0	3	5	6	16	42	119	16	1	0	0	0	208
	SSE	2	0	3	10	11	53	89	12	5	0	0	0	185
	S	1	1	4	3	13	41	113	16	5	0	0	0	197
	SSW	0	2	4	10	16	38	88	19	2	0	0	0	179
	SW	1	2	6	13	36	46	58	11	0	0	0	0	173
	WSW	0	2	0	14	11	48	47	9	0	0	0	0	131
	W	1	2	10	22	16	72	105	19	0	0	0	0	247
	WNW	0	1	4	8	14	38	80	20	0	0	0	0	165
	NW	0	0	5	18	12	30	65	43	1	0	0	0	174
	NNW	1	0	1	7	11	37	69	38	5	0	0	0	169
	Totals	9	16	55	146	197	551	975	224	19	0	0	0	2192
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							40						
	Number of Valid Hours for this Table							2192						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	1	0	0	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	2	0	0	0	0	0	2
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	1	1	0	0	0	0	0	2
	SSW	0	0	0	0	0	0	1	0	0	0	0	0	1
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	1	1	0	0	0	0	2
	W	0	0	0	0	0	0	0	0	2	0	0	0	2
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	1	0	2	1	0	0	0	4
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	1	0	2	5	3	3	0	0	0	14
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							14						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	3	4	50	16	2	0	0	0	76
	NNE	0	0	0	2	5	9	52	19	4	0	0	0	91
	NE	0	0	2	3	2	17	46	12	0	0	0	0	82
	ENE	0	0	0	1	0	6	24	14	2	0	0	0	47
	E	0	0	2	3	2	1	14	8	2	0	0	0	32
	ESE	0	0	0	3	1	1	12	15	0	0	0	0	32
	SE	0	0	1	3	1	8	15	5	2	0	0	0	35
	SSE	0	0	0	2	1	4	20	8	3	0	0	0	38
	S	0	0	0	2	1	10	24	17	11	1	0	0	66
	SSW	0	0	1	1	0	6	12	6	9	3	0	0	38
	SW	0	0	0	0	4	4	18	10	10	4	0	0	50
	WSW	0	0	1	0	1	2	12	4	12	6	1	0	39
	W	0	0	1	0	1	3	9	15	16	3	0	0	48
	WNW	0	1	0	4	1	4	12	25	15	2	4	0	68
	NW	0	0	0	0	0	3	18	30	36	11	7	0	105
	NNW	0	0	0	1	3	19	38	47	16	1	0	0	125
	Totals	0	1	8	26	26	101	376	251	140	31	12	0	972
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							972						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	3	11	26	15	0	0	0	0	55
	NNE	0	0	0	0	1	9	17	6	0	0	0	0	33
	NE	0	0	1	1	2	18	33	6	0	0	0	0	61
	ENE	0	0	0	1	1	5	22	12	0	0	0	0	41
	E	0	0	1	0	3	5	23	4	0	0	0	0	36
	ESE	0	0	0	2	2	4	13	7	1	0	0	0	29
	SE	0	0	0	0	4	3	9	40	18	0	0	0	74
	SSE	0	0	0	1	0	3	2	34	33	0	0	0	73
	S	0	0	0	1	0	1	13	47	35	0	0	0	97
	SSW	0	0	0	0	0	1	13	31	18	0	0	0	63
	SW	0	0	0	1	0	1	10	20	27	1	0	0	60
	WSW	0	0	0	0	1	1	12	17	22	2	0	0	55
	W	0	1	0	0	2	1	14	21	32	0	0	0	71
	WNW	0	0	0	1	1	1	21	15	10	2	0	0	51
	NW	0	0	0	0	0	6	32	39	25	7	0	0	109
	NNW	0	0	0	0	3	9	29	35	11	1	0	0	88
	Totals	0	1	2	8	23	79	289	349	232	13	0	0	996
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							996						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	0	0	1	1	0	0	0	0	0	3
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	1	1	0	0	0	0	0	2
	E	0	0	0	0	0	1	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	1	2	0	0	0	0	3
	SSE	0	0	0	0	0	3	2	14	19	0	0	0	38
	S	0	0	0	2	0	0	0	19	3	0	0	0	24
	SSW	0	0	0	0	0	0	5	8	11	0	0	0	24
	SW	0	0	0	0	0	1	3	2	3	1	0	0	10
	WSW	0	0	0	1	0	1	2	3	0	0	0	0	7
	W	1	0	0	0	2	1	2	0	0	0	0	0	6
	WNW	0	0	0	0	0	0	5	6	1	0	0	0	12
	NW	0	0	0	0	0	0	4	2	0	0	0	0	6
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	2	0	0	3	2	9	26	56	37	1	0	0	136
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							136						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	2	0	0	0	0	2
	S	0	0	0	0	1	1	2	2	0	0	0	0	6
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	2	0	0	0	0	2
	WSW	0	0	0	0	1	0	0	0	0	0	0	0	1
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	2	1	2	6	0	0	0	0	11
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							11						
	Total Hours for the Period							2232						

Table 2.3-26—{Callaway Plant Joint Frequency Distribution - January}

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60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 January												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	1	6	16	77	31	2	0	0	0	134
	NNE	0	0	0	2	6	18	69	25	4	0	0	0	124
	NE	0	0	3	4	4	35	79	18	0	0	0	0	143
	ENE	0	0	0	2	1	12	47	26	2	0	0	0	90
	E	0	0	3	4	5	7	37	12	2	0	0	0	70
	ESE	0	0	0	5	3	5	25	22	1	0	0	0	61
	SE	0	0	1	3	5	11	27	47	20	0	0	0	114
	SSE	0	0	0	3	1	10	24	58	55	0	0	0	151
	S	0	0	0	5	2	13	40	85	49	1	0	0	195
	SSW	0	0	1	1	0	7	31	45	38	3	0	0	126
	SW	0	0	0	1	4	6	31	34	40	6	0	0	122
	WSW	0	0	1	1	3	4	27	25	34	8	1	0	104
	W	1	1	1	0	5	5	25	36	50	3	0	0	127
	WNW	0	1	0	5	2	5	38	46	26	4	4	0	131
	NW	0	0	0	0	0	10	54	73	62	18	7	0	224
	NNW	0	0	0	1	6	28	67	82	27	2	0	0	213
	Totals	2	2	10	38	53	192	698	665	412	45	12	0	2129
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							102						
	Number of Valid Hours for this Table							2129						
	Total Hours for the Period							2232						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2040						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	1	1	0	0	0	0	2
	SSW	0	0	0	0	0	0	1	1	0	0	0	0	2
	SW	0	0	0	0	0	0	2	0	1	0	0	0	3
	WSW	0	0	0	0	0	0	0	0	2	0	0	0	2
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	4	2	3	0	0	0	9
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							9						
	Total Hours for the Period							2040						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	1	3	0	0	0	0	4
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	2	0	0	0	0	0	2
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	1	1	4	0	0	0	0	0	6
	SSE	0	0	0	0	1	0	3	2	1	1	0	0	8
	S	0	0	0	0	0	1	1	2	0	1	0	0	5
	SSW	0	0	0	0	0	3	5	0	3	0	0	0	11
	SW	0	0	0	0	0	0	3	8	6	1	0	0	18
	WSW	0	0	0	0	0	0	0	1	0	0	0	0	1
	W	0	0	0	0	0	1	3	7	1	0	0	0	12
	WNW	0	0	0	0	0	0	4	7	2	0	0	0	13
	NW	0	0	0	0	0	0	0	1	4	0	0	0	5
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	2	6	26	31	17	3	0	0	85
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							85						
	Total Hours for the Period							2040						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	2	6	19	23	13	2	0	0	66
	NNE	0	0	1	0	3	11	15	13	6	0	0	0	49
	NE	0	0	0	2	2	4	16	17	1	0	0	0	42
	ENE	0	0	0	0	1	2	17	7	0	0	0	0	27
	E	0	0	0	1	2	2	14	4	0	0	0	0	23
	ESE	0	0	1	0	1	4	17	7	0	0	0	0	30
	SE	0	0	0	0	0	3	20	6	0	0	0	0	29
	SSE	0	0	0	1	0	3	5	19	5	3	0	0	36
	S	0	0	0	2	1	3	2	3	9	0	0	0	20
	SSW	0	0	1	2	5	7	5	5	8	0	0	0	33
	SW	0	0	0	2	3	11	22	9	8	3	0	0	58
	WSW	0	0	0	1	2	5	3	5	3	0	0	0	19
	W	0	0	0	0	1	10	16	17	5	2	0	0	51
	WNW	0	0	0	0	0	5	22	35	14	3	0	0	79
	NW	0	0	0	0	0	7	34	33	25	6	0	0	105
	NNW	0	0	0	1	2	12	24	10	1	0	0	0	50
	Totals	0	0	3	13	25	95	251	213	98	19	0	0	717
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							717						
	Total Hours for the Period							2040						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	2	8	11	23	5	2	0	0	52
	NNE	0	0	0	1	0	2	18	16	2	0	0	0	39
	NE	1	0	0	3	1	6	56	4	0	0	0	0	71
	ENE	0	0	0	3	0	3	13	7	0	0	0	0	26
	E	0	0	0	0	1	6	25	11	0	0	0	0	43
	ESE	0	0	0	0	0	3	20	14	1	0	0	0	38
	SE	0	0	0	1	1	1	10	39	15	0	0	0	67
	SSE	0	0	0	1	0	0	7	43	11	0	0	0	62
	S	1	0	1	2	1	2	9	29	30	2	0	0	77
	SSW	0	0	0	0	1	4	7	13	28	0	0	0	53
	SW	0	0	0	2	0	2	19	28	10	1	0	0	62
	WSW	0	1	0	0	0	10	17	16	7	1	0	0	52
	W	0	0	1	1	1	6	19	18	15	0	0	0	61
	WNW	0	1	1	0	1	4	21	26	15	0	0	0	69
	NW	0	0	0	0	2	5	35	49	13	0	0	0	104
	NNW	0	0	0	0	1	6	18	28	7	0	0	0	60
	Totals	2	2	3	15	12	68	305	364	159	6	0	0	936
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							936						
	Total Hours for the Period							2040						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

(Page 6 of 8)

60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	0	1	2	1	0	0	0	0	5
	NNE	0	0	0	0	0	1	3	0	0	0	0	0	4
	NE	0	0	0	0	0	2	6	2	0	0	0	0	10
	ENE	0	0	0	0	0	0	1	3	0	0	0	0	4
	E	0	0	0	0	0	1	4	0	0	0	0	0	5
	ESE	0	0	0	0	0	3	6	2	0	0	0	0	11
	SE	0	0	1	0	0	0	2	0	0	0	0	0	3
	SSE	0	0	0	0	0	1	3	8	1	0	0	0	13
	S	0	0	0	0	1	2	8	11	2	0	0	0	24
	SSW	0	0	0	0	0	1	2	17	0	0	0	0	20
	SW	0	0	0	0	0	2	3	15	17	0	0	0	37
	WSW	0	0	0	0	0	2	4	17	5	0	0	0	28
	W	0	0	0	0	0	0	1	2	0	0	0	0	3
	WNW	0	0	0	0	0	2	3	7	4	0	0	0	16
	NW	0	0	0	0	0	2	1	3	0	0	0	0	6
	NNW	0	0	0	0	0	1	1	2	1	0	0	0	5
	Totals	0	0	1	1	1	21	50	90	30	0	0	0	194
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							194						
	Total Hours for the Period							2040						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	1	0	0	0	0	0	1
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	1	0	0	0	0	0	1
	S	0	0	0	0	0	0	1	0	0	0	0	0	1
	SSW	0	0	0	0	0	0	0	1	1	0	0	0	2
	SW	0	0	0	0	0	0	0	0	1	0	0	0	1
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	3	1	2	0	0	0	6
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							6						
	Total Hours for the Period							2040						

Table 2.3-27— {Callaway Plant Joint Frequency Distribution - February}

(Page 8 of 8)

60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 February												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	3	4	15	33	50	18	4	0	0	127
	NNE	0	0	1	1	3	14	36	29	8	0	0	0	92
	NE	1	0	0	5	3	12	78	23	1	0	0	0	123
	ENE	0	0	0	3	1	5	32	17	0	0	0	0	58
	E	0	0	0	1	3	9	45	15	0	0	0	0	73
	ESE	0	0	1	0	1	10	43	23	1	0	0	0	79
	SE	0	0	1	1	2	5	36	45	15	0	0	0	105
	SSE	0	0	0	2	1	4	19	72	18	4	0	0	120
	S	1	0	1	4	3	8	22	46	41	3	0	0	129
	SSW	0	0	1	2	6	15	20	37	40	0	0	0	121
	SW	0	0	0	4	3	15	49	60	43	5	0	0	179
	WSW	0	1	0	1	2	17	24	39	17	1	0	0	102
	W	0	0	1	1	2	17	39	44	21	2	0	0	127
	WNW	0	1	1	0	1	11	50	75	35	3	0	0	177
	NW	0	0	0	0	2	14	70	86	42	6	0	0	220
	NNW	0	0	0	1	3	19	43	40	9	0	0	0	115
	Totals	2	2	7	29	40	190	639	701	309	28	0	0	1947
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							93						
	Number of Valid Hours for this Table							1947						
	Total Hours for the Period							2040						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

(Page 1 of 8)

60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	1	0	0	0	1
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	1	0	0	0	0	1
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	1	1	0	0	0	2
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							2						
	Total Hours for the Period							2232						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	4	1	1	0	0	0	6
	SSE	0	0	0	0	0	1	5	1	3	0	0	0	10
	S	0	0	0	0	0	0	1	0	4	1	0	0	6
	SSW	0	0	0	0	0	0	1	1	1	0	0	0	3
	SW	0	0	0	0	0	0	1	3	1	0	0	0	5
	WSW	0	0	0	0	0	0	2	0	0	0	0	0	2
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	4	2	0	0	0	6
	NW	0	0	0	0	0	0	0	1	3	0	0	0	4
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	1	14	11	15	1	0	0	42
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							42						
	Total Hours for the Period							2232						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	2	0	0	0	0	0	3
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	1	0	0	0	0	0	0	1
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	1	0	0	0	1
	SE	0	0	0	0	0	2	7	5	3	0	0	0	17
	SSE	0	0	0	0	0	0	6	4	3	0	0	0	13
	S	0	0	0	0	0	1	1	1	7	1	0	0	11
	SSW	0	0	0	0	0	1	3	2	6	1	0	0	13
	SW	0	0	0	0	0	0	0	3	4	0	0	0	7
	WSW	0	0	0	0	0	0	1	0	0	0	0	0	1
	W	0	0	0	0	0	1	4	1	1	4	0	0	11
	WNW	0	0	0	0	0	0	3	5	6	10	0	0	24
	NW	0	0	0	0	0	0	2	7	4	0	0	0	13
	NNW	0	0	0	0	0	0	2	5	4	0	0	0	11
	Totals	0	0	0	0	0	7	31	33	39	16	0	0	126
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							126						
	Total Hours for the Period							2232						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	0	2	31	17	8	0	0	0	59
	NNE	0	0	0	0	2	4	27	17	1	0	0	0	51
	NE	0	0	0	1	0	4	4	8	0	0	0	0	17
	ENE	0	0	0	0	3	5	10	6	3	0	0	0	27
	E	0	0	0	1	0	1	9	17	13	9	0	0	50
	ESE	0	0	0	0	0	4	15	12	4	0	0	0	35
	SE	0	0	0	0	0	4	11	24	9	0	0	0	48
	SSE	0	0	1	0	0	2	7	14	11	2	0	0	37
	S	0	0	0	0	0	3	6	12	13	2	0	0	36
	SSW	0	0	0	0	0	2	3	5	9	2	3	0	24
	SW	0	0	0	0	0	1	0	7	4	1	8	0	21
	WSW	0	0	0	0	0	2	1	1	7	6	2	0	19
	W	0	0	0	0	1	2	7	8	14	9	0	0	41
	WNW	0	0	0	0	0	1	16	17	18	16	0	0	68
	NW	0	0	0	1	1	0	24	22	25	5	0	0	78
	NNW	0	0	0	0	2	9	28	35	9	2	0	0	85
	Totals	0	0	1	4	9	46	199	222	148	54	13	0	696
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							696						
	Total Hours for the Period							2232						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	2	6	27	21	1	0	0	0	59
	NNE	0	0	0	1	0	4	27	13	0	0	0	0	45
	NE	0	0	0	1	0	2	19	10	0	0	0	0	32
	ENE	0	0	0	0	0	6	18	15	6	0	0	0	45
	E	0	0	1	1	0	4	22	23	8	0	0	0	59
	ESE	0	0	0	0	0	1	19	20	1	0	0	0	41
	SE	0	0	0	0	0	2	8	52	19	0	0	0	81
	SSE	0	0	0	0	0	0	9	26	28	6	0	0	69
	S	0	0	0	0	0	0	5	35	38	5	0	0	83
	SSW	0	0	0	0	1	1	9	19	19	2	0	0	51
	SW	0	0	0	0	0	4	3	14	15	3	0	0	39
	WSW	0	1	0	1	1	1	5	6	10	4	2	0	31
	W	0	0	0	0	1	1	6	15	17	2	0	0	42
	WNW	0	0	0	0	1	1	21	34	25	2	0	0	84
	NW	0	0	1	0	3	1	30	37	33	5	1	0	111
	NNW	0	0	0	1	1	3	25	34	20	3	0	0	87
	Totals	0	1	2	7	10	37	253	374	240	32	3	0	959
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							959						
	Total Hours for the Period							2232						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	1	0	0	0	0	0	2
	NNE	0	0	0	0	0	1	1	0	0	0	0	0	2
	NE	0	0	0	1	0	1	4	0	0	0	0	0	6
	ENE	0	0	0	0	0	0	3	4	0	0	0	0	7
	E	0	0	0	0	0	1	1	2	0	0	0	0	4
	ESE	0	0	0	0	0	1	1	1	0	0	0	0	3
	SE	0	0	0	0	0	0	4	3	1	0	0	0	8
	SSE	0	0	0	0	0	0	4	2	1	0	0	0	7
	S	0	0	0	0	0	0	3	9	1	0	0	0	13
	SSW	0	0	0	0	0	0	2	7	2	0	0	0	11
	SW	0	0	0	0	0	1	5	9	8	0	0	0	23
	WSW	0	0	0	0	0	1	5	3	1	0	0	0	10
	W	0	0	0	0	1	0	3	2	0	0	0	0	6
	WNW	0	0	0	0	0	1	6	6	2	0	0	0	15
	NW	0	0	0	0	0	0	3	2	1	0	0	0	6
	NNW	0	0	0	0	0	0	0	5	2	0	0	0	7
	Totals	0	0	0	1	1	8	46	55	19	0	0	0	130
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							130						
	Total Hours for the Period							2232						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	1	0	0	0	0	1
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	2	4	0	0	0	0	6
	SSW	0	0	0	0	0	0	1	2	0	0	0	0	3
	SW	0	0	0	0	0	0	0	2	0	0	0	0	2
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	3	9	0	0	0	0	12
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							12						
	Total Hours for the Period							2232						

Table 2.3-28—{Callaway Plant Joint Frequency Distribution - March}

(Page 8 of 8)

60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 March												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	3	2	10	61	38	9	0	0	0	123
	NNE	0	0	0	1	2	9	55	30	1	0	0	0	98
	NE	0	0	0	3	0	7	27	18	0	0	0	0	55
	ENE	0	0	0	0	3	12	31	25	9	0	0	0	80
	E	0	0	1	2	0	6	32	42	21	9	0	0	113
	ESE	0	0	0	0	0	6	35	33	6	0	0	0	80
	SE	0	0	0	0	0	8	34	86	33	0	0	0	161
	SSE	0	0	1	0	0	3	31	47	46	8	0	0	136
	S	0	0	0	0	0	4	18	61	64	9	0	0	156
	SSW	0	0	0	0	1	4	19	36	37	5	3	0	105
	SW	0	0	0	0	0	6	9	39	32	4	8	0	98
	WSW	0	1	0	1	1	4	14	10	18	10	4	0	63
	W	0	0	0	0	3	4	20	26	32	15	0	0	100
	WNW	0	0	0	0	1	3	46	66	53	28	0	0	197
	NW	0	0	1	1	4	1	59	69	66	10	1	0	212
	NNW	0	0	0	1	3	12	55	79	35	5	0	0	190
	Totals	0	1	3	12	20	99	546	705	462	103	16	0	1967
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							265						
	Number of Valid Hours for this Table							1967						
	Total Hours for the Period							2232						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

(Page 1 of 8)

60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	2	0	0	0	0	0	2
	SSE	0	0	0	0	0	0	1	0	0	0	0	0	1
	S	0	0	0	0	0	0	0	2	1	0	0	0	3
	SSW	0	0	0	0	0	0	3	1	0	0	0	0	4
	SW	0	0	0	0	0	0	4	1	0	0	0	0	5
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	1	0	0	0	1
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	10	4	2	0	0	0	16
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							16						
	Total Hours for the Period							2160						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	1	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	1	0	0	0	0	0	1
	SE	0	0	0	0	0	0	4	1	0	0	0	0	5
	SSE	0	0	0	0	0	1	4	5	5	0	0	0	15
	S	0	0	0	0	0	0	7	7	8	0	0	0	22
	SSW	0	0	0	0	0	0	7	6	2	0	0	0	15
	SW	0	0	0	0	0	1	6	3	1	0	0	0	11
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	1	0	0	0	0	0	1
	WNW	0	0	0	0	0	0	0	0	2	0	0	0	2
	NW	0	0	0	0	0	0	0	0	6	0	0	0	6
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	2	31	22	24	0	0	0	79
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							79						
	Total Hours for the Period							2160						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	2	0	0	0	0	2
	NNE	0	0	0	0	0	0	4	0	1	0	0	0	5
	NE	0	0	0	0	0	0	1	1	0	0	0	0	2
	ENE	0	0	0	0	0	0	5	0	0	0	0	0	5
	E	0	0	0	0	0	1	1	0	0	0	0	0	2
	ESE	0	0	0	0	0	2	3	3	2	0	0	0	10
	SE	0	0	0	0	0	1	1	1	2	0	0	0	5
	SSE	0	0	0	0	0	1	6	0	3	0	0	0	10
	S	0	0	0	0	1	1	3	9	4	1	0	0	19
	SSW	0	0	0	1	1	1	4	3	3	0	0	0	13
	SW	0	0	0	0	0	1	4	2	1	2	0	0	10
	WSW	0	0	0	0	0	0	4	0	1	2	0	0	7
	W	0	0	0	0	0	5	4	5	0	0	0	0	14
	WNW	0	0	0	0	2	2	12	8	5	0	0	0	29
	NW	0	0	0	0	0	1	7	1	10	0	0	0	19
	NNW	0	0	0	0	0	0	2	2	11	0	0	0	15
	Totals	0	0	0	1	4	16	61	37	43	5	0	0	167
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							167						
	Total Hours for the Period							2160						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	9	16	17	1	0	0	44
	NNE	0	0	0	0	1	6	27	14	8	1	0	0	57
	NE	0	0	0	0	1	5	14	9	2	0	0	0	31
	ENE	0	0	1	1	1	2	9	4	0	0	0	0	18
	E	0	0	0	0	0	2	5	6	1	0	0	0	14
	ESE	0	0	0	1	0	1	6	0	5	0	0	0	13
	SE	0	0	0	1	2	1	8	5	4	1	0	0	22
	SSE	0	0	0	1	3	2	8	17	6	0	0	0	37
	S	0	0	0	0	0	1	9	13	25	1	0	0	49
	SSW	0	0	0	0	0	1	9	4	16	15	1	0	46
	SW	0	0	0	0	1	2	5	5	14	1	0	0	28
	WSW	0	0	0	1	1	1	7	2	6	1	0	0	19
	W	0	0	0	0	0	8	7	11	10	0	0	0	36
	WNW	0	0	0	1	0	1	11	10	11	5	1	0	40
	NW	0	0	0	0	1	2	10	6	16	8	0	0	43
	NNW	0	0	0	0	1	2	10	12	13	7	0	0	45
	Totals	0	0	1	6	12	38	154	134	154	41	2	0	542
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							542						
	Total Hours for the Period							2160						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	19	28	4	2	0	0	56
	NNE	0	0	0	1	0	2	18	12	1	0	0	0	34
	NE	0	1	0	0	0	2	13	12	0	0	0	0	28
	ENE	0	0	0	0	0	3	10	4	1	0	0	0	18
	E	0	0	0	2	0	6	8	10	1	0	0	0	27
	ESE	0	0	0	0	2	0	7	27	4	0	0	0	40
	SE	0	0	0	1	0	1	16	32	16	2	0	0	68
	SSE	0	0	0	0	1	5	7	40	25	2	0	0	80
	S	0	0	0	0	1	5	8	47	44	2	0	0	107
	SSW	0	0	0	0	0	1	8	23	28	2	0	0	62
	SW	0	0	0	0	1	2	9	18	10	0	0	0	40
	WSW	0	0	0	0	0	0	3	8	6	0	0	0	17
	W	0	0	0	0	1	1	9	8	4	3	2	0	28
	WNW	0	0	0	0	2	1	8	13	1	0	0	0	25
	NW	0	0	0	1	0	0	12	29	14	1	0	0	57
	NNW	0	0	0	0	1	1	12	23	3	0	0	0	40
	Totals	0	1	0	5	9	33	167	334	162	14	2	0	727
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							727						
	Total Hours for the Period							2160						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	0	2	4	2	0	0	0	9
	NNE	0	0	0	0	2	1	1	6	0	0	0	0	10
	NE	0	0	0	1	1	2	2	0	0	0	0	0	6
	ENE	0	0	0	0	0	1	5	2	0	0	0	0	8
	E	0	0	0	0	0	0	2	2	0	0	0	0	4
	ESE	0	0	0	0	0	4	2	3	0	0	0	0	9
	SE	0	0	0	0	1	1	4	4	0	0	0	0	10
	SSE	0	0	0	1	0	0	6	13	2	0	0	0	22
	S	0	0	0	0	0	0	12	12	3	0	0	0	27
	SSW	0	0	0	0	0	0	4	4	0	0	0	0	8
	SW	0	0	0	0	0	2	5	5	2	0	0	0	14
	WSW	0	0	0	0	0	0	6	1	2	0	0	0	9
	W	0	0	0	0	0	0	8	7	3	0	0	0	18
	WNW	0	0	0	0	0	1	6	9	3	0	0	0	19
	NW	0	0	0	0	0	0	2	8	1	0	0	0	11
	NNW	0	0	0	0	0	0	1	7	1	0	0	0	9
	Totals	0	0	0	2	5	12	68	87	19	0	0	0	193
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							193						
	Total Hours for the Period							2160						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	0	0	0	0	0	0	1
	NNE	0	0	1	0	1	1	0	0	0	0	0	0	3
	NE	0	0	0	0	0	1	0	0	0	0	0	0	1
	ENE	0	0	0	0	0	0	4	1	0	0	0	0	5
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	1	0	0	0	0	0	0	0	0	0	1
	SE	0	0	0	0	1	0	0	1	0	0	0	0	2
	SSE	0	0	1	0	0	0	1	5	0	0	0	0	7
	S	0	0	0	1	0	1	3	2	1	0	0	0	8
	SSW	0	0	0	0	0	2	3	0	1	0	0	0	6
	SW	0	0	0	0	0	0	2	0	0	0	0	0	2
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	2	1	0	0	0	0	3
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	1	0	0	0	0	1
	NNW	0	0	0	0	0	1	0	0	0	0	0	0	1
	Totals	0	0	3	1	2	7	15	11	2	0	0	0	41
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							41						
	Total Hours for the Period							2160						

Table 2.3-29—{Callaway Plant Joint Frequency Distribution - April}

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60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 April												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	5	30	50	23	3	0	0	112
	NNE	0	0	1	1	4	10	50	32	10	1	0	0	109
	NE	0	1	0	1	2	10	30	22	2	0	0	0	68
	ENE	0	0	1	1	1	6	33	11	1	0	0	0	54
	E	0	0	0	2	0	9	17	18	2	0	0	0	48
	ESE	0	0	1	1	2	7	19	33	11	0	0	0	74
	SE	0	0	0	2	4	4	35	44	22	3	0	0	114
	SSE	0	0	1	2	4	9	33	80	41	2	0	0	172
	S	0	0	0	1	2	8	42	92	86	4	0	0	235
	SSW	0	0	0	1	1	5	38	41	50	17	1	0	154
	SW	0	0	0	0	2	8	35	34	28	3	0	0	110
	WSW	0	0	0	1	1	1	20	11	15	3	0	0	52
	W	0	0	0	0	1	14	31	32	17	3	2	0	100
	WNW	0	0	0	1	4	5	37	40	22	5	1	0	115
	NW	0	0	0	1	1	3	31	45	48	9	0	0	138
	NNW	0	0	0	0	2	4	25	44	28	7	0	0	110
	Totals	0	1	4	15	32	108	506	629	406	60	4	0	1765
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							395						
	Number of Valid Hours for this Table							1765						
	Total Hours for the Period							2160						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	2	0	0	0	0	0	2
	S	0	0	0	0	0	1	3	4	0	0	0	0	8
	SSW	0	0	0	0	0	0	6	3	0	0	0	0	9
	SW	0	0	0	0	0	0	1	2	0	0	0	0	3
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	1	12	9	0	0	0	0	22
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							22						
	Total Hours for the Period							2232						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

(Page 2 of 8)

60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	2	0	0	0	0	0	2
	SE	0	0	0	0	0	2	4	3	0	0	0	0	9
	SSE	0	0	0	0	1	3	5	0	0	0	0	0	9
	S	0	0	0	0	1	2	9	12	4	0	0	0	28
	SSW	0	0	0	0	0	0	9	8	5	0	0	0	22
	SW	0	0	0	0	0	3	10	8	1	0	0	0	22
	WSW	0	0	0	1	0	0	0	0	0	0	0	0	1
	W	0	0	0	0	0	0	0	0	1	1	0	0	2
	WNW	0	0	0	0	0	0	0	1	4	0	0	0	5
	NW	0	0	0	0	0	0	0	0	1	0	0	0	1
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	1	2	10	39	32	16	1	0	0	101
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							101						
	Total Hours for the Period							2232						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	0	0	0	0	0	0	1
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	1	0	0	0	0	0	0	1
	ENE	0	0	0	0	1	2	1	0	0	0	0	0	4
	E	0	0	0	0	1	0	3	2	0	0	0	0	6
	ESE	0	0	0	0	0	0	6	4	0	0	0	0	10
	SE	0	0	0	0	0	2	7	8	1	0	0	0	18
	SSE	0	0	0	0	1	1	3	4	3	0	0	0	12
	S	0	0	0	2	1	1	4	10	4	0	0	0	22
	SSW	0	0	0	0	0	1	1	9	10	0	0	0	21
	SW	0	0	0	1	0	2	6	7	6	0	0	0	22
	WSW	0	0	0	0	0	1	0	1	4	0	0	0	6
	W	0	0	0	1	0	2	1	4	0	3	0	0	11
	WNW	0	0	0	1	0	1	6	6	4	1	0	0	19
	NW	0	0	0	0	0	1	1	0	1	0	0	0	3
	NNW	0	0	0	0	0	0	0	3	0	0	0	0	3
	Totals	0	0	0	5	4	16	39	58	33	4	0	0	159
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							159						
	Total Hours for the Period							2232						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	2	3	4	2	0	0	0	0	11
	NNE	0	0	0	1	1	4	2	0	0	0	0	0	8
	NE	0	0	0	3	0	6	3	0	0	0	0	0	12
	ENE	0	0	1	0	1	5	4	0	0	0	0	0	11
	E	0	0	0	1	0	4	6	2	0	0	0	0	13
	ESE	0	0	0	1	0	4	5	0	0	0	0	0	10
	SE	0	0	0	1	0	3	6	10	1	0	0	0	21
	SSE	0	0	0	0	2	3	14	11	10	0	0	0	40
	S	0	0	1	0	0	1	13	17	10	1	0	0	43
	SSW	0	0	0	0	1	4	7	23	8	0	0	0	43
	SW	0	0	0	0	2	4	9	15	1	0	0	0	31
	WSW	0	0	0	0	0	1	4	10	6	0	0	0	21
	W	0	0	0	0	5	2	3	7	11	1	0	0	29
	WNW	0	0	0	0	0	2	13	7	18	2	0	0	42
	NW	0	0	0	0	1	4	20	22	11	0	0	0	58
	NNW	0	0	0	0	1	3	9	11	6	0	0	0	30
	Totals	0	0	2	7	16	53	122	137	82	4	0	0	423
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							423						
	Total Hours for the Period							2232						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	14	13	2	0	0	0	30
	NNE	0	0	0	0	0	0	9	6	0	0	0	0	15
	NE	0	0	1	0	0	4	9	0	0	0	0	0	14
	ENE	0	0	0	0	1	2	5	4	0	0	0	0	12
	E	0	0	0	0	0	0	11	4	0	0	0	0	15
	ESE	0	0	0	0	0	3	12	7	0	0	0	0	22
	SE	0	0	0	1	1	2	13	25	2	0	0	0	44
	SSE	0	0	0	0	2	3	21	59	10	0	0	0	95
	S	0	0	0	1	0	1	21	56	18	0	0	0	97
	SSW	0	0	0	0	1	2	14	45	8	0	0	0	70
	SW	0	0	0	1	0	2	7	15	6	0	0	0	31
	WSW	0	0	0	1	1	3	3	8	4	0	0	0	20
	W	0	0	0	1	0	6	8	14	5	0	0	0	34
	WNW	0	0	0	0	1	5	14	21	12	0	0	0	53
	NW	0	0	0	0	3	2	22	30	2	0	0	0	59
	NNW	0	0	0	0	0	2	13	16	2	1	0	0	34
	Totals	0	0	1	5	10	38	196	323	71	1	0	0	645
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							645						
	Total Hours for the Period							2232						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	1	3	0	0	0	0	5
	NNE	0	0	0	0	0	1	1	8	0	0	0	0	10
	NE	0	0	0	0	0	1	1	1	0	0	0	0	3
	ENE	0	0	0	1	2	0	1	2	0	0	0	0	6
	E	0	0	0	0	0	0	2	4	0	0	0	0	6
	ESE	0	0	0	0	0	2	2	11	0	0	0	0	15
	SE	0	0	0	0	0	1	6	11	0	0	0	0	18
	SSE	0	0	0	0	0	0	3	6	1	0	0	0	10
	S	0	0	0	0	0	5	6	17	0	0	0	0	28
	SSW	0	0	0	0	0	2	10	25	4	0	0	0	41
	SW	0	0	0	0	0	1	0	3	3	0	0	0	7
	WSW	0	0	0	0	0	0	3	0	1	0	0	0	4
	W	0	1	0	0	0	0	4	5	3	0	0	0	13
	WNW	0	0	0	0	1	1	2	16	1	0	0	0	21
	NW	0	0	0	1	0	1	12	16	0	0	0	0	30
	NNW	0	0	0	0	0	2	1	6	0	0	0	0	9
	Totals	0	1	0	2	3	18	55	134	13	0	0	0	226
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							226						
	Total Hours for the Period							2232						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	0	1	0	0	0	0	2
	NNE	0	0	1	1	1	1	0	0	0	0	0	0	4
	NE	0	0	0	0	0	0	0	1	0	0	0	0	1
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	1	0	0	0	0	0	1
	SE	0	0	0	0	0	0	1	0	0	0	0	0	1
	SSE	0	0	0	0	0	2	0	0	0	0	0	0	2
	S	0	0	1	0	0	0	2	0	0	0	0	0	3
	SSW	0	0	0	0	0	1	5	2	0	0	0	0	8
	SW	0	0	0	0	0	0	0	1	0	0	0	0	1
	WSW	0	0	0	1	0	0	2	1	0	0	0	0	4
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	1	0	0	0	0	0	0	1
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	1	0	0	0	0	0	1
	Totals	0	0	2	2	1	6	12	6	0	0	0	0	29
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							29						
	Total Hours for the Period							2232						

Table 2.3-30—{Callaway Plant Joint Frequency Distribution - May}

(Page 8 of 8)

60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 May												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	2	7	19	19	2	0	0	0	49
	NNE	0	0	1	2	2	6	12	14	0	0	0	0	37
	NE	0	0	1	3	0	12	13	2	0	0	0	0	31
	ENE	0	0	1	1	5	9	11	6	0	0	0	0	33
	E	0	0	0	1	1	4	22	12	0	0	0	0	40
	ESE	0	0	0	1	0	9	28	22	0	0	0	0	60
	SE	0	0	0	2	1	10	37	57	4	0	0	0	111
	SSE	0	0	0	0	6	12	48	80	24	0	0	0	170
	S	0	0	2	3	2	11	58	116	36	1	0	0	229
	SSW	0	0	0	0	2	10	52	115	35	0	0	0	214
	SW	0	0	0	2	2	12	33	51	17	0	0	0	117
	WSW	0	0	0	3	1	5	12	20	15	0	0	0	56
	W	0	1	0	2	5	10	16	30	20	5	0	0	89
	WNW	0	0	0	1	2	10	35	51	39	3	0	0	141
	NW	0	0	0	1	4	8	55	68	15	0	0	0	151
	NNW	0	0	0	0	1	7	24	36	8	1	0	0	77
	Totals	0	1	5	22	36	142	475	699	215	10	0	0	1605
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							627						
	Number of Valid Hours for this Table							1605						
	Total Hours for the Period							2232						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	3	1	0	0	0	0	0	4
	SSE	0	0	0	0	0	4	12	2	0	0	0	0	18
	S	0	0	0	0	0	5	2	5	4	0	0	0	16
	SSW	0	0	0	0	1	4	4	1	0	0	0	0	10
	SW	0	0	0	1	0	1	1	0	0	0	0	0	3
	WSW	0	0	0	0	1	1	0	0	0	0	0	0	2
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	1	2	18	20	8	4	0	0	0	53
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							53						
	Total Hours for the Period							2160						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	0	0	0	0	0	0	0	1
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	1	0	0	0	0	0	0	0	0	1
	ENE	0	0	0	0	0	0	1	0	0	0	0	0	1
	E	0	0	0	0	0	2	1	0	0	0	0	0	3
	ESE	0	0	0	0	1	2	3	0	0	0	0	0	6
	SE	0	0	0	0	4	2	14	0	0	0	0	0	20
	SSE	0	0	0	1	2	3	7	5	1	0	0	0	19
	S	0	0	0	0	2	6	4	7	1	0	0	0	20
	SSW	0	0	0	0	1	2	11	7	0	0	0	0	21
	SW	0	0	0	0	0	6	4	0	0	0	0	0	10
	WSW	0	0	0	0	1	0	1	0	0	0	0	0	2
	W	0	0	0	0	0	1	0	0	0	0	0	0	1
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	1	0	0	0	0	0	0	1
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	2	12	25	46	19	2	0	0	0	106
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							106						
	Total Hours for the Period							2160						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

(Page 3 of 8)

60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	2	2	0	0	0	0	0	4
	NNE	0	0	0	0	0	1	2	0	0	0	0	0	3
	NE	0	0	0	0	0	4	0	0	0	0	0	0	4
	ENE	0	0	0	0	3	4	4	0	0	0	0	0	11
	E	0	0	0	1	0	3	0	0	0	0	0	0	4
	ESE	0	0	0	0	1	2	1	0	0	0	0	0	4
	SE	0	0	0	0	1	3	15	1	0	0	0	0	20
	SSE	0	0	0	0	0	5	6	3	2	0	0	0	16
	S	0	0	0	1	1	2	3	2	1	0	0	0	10
	SSW	0	0	0	2	0	4	8	6	2	0	0	0	22
	SW	0	0	0	2	2	2	5	2	1	1	0	0	15
	WSW	0	0	0	0	1	0	2	2	1	0	0	0	6
	W	0	0	0	0	0	1	4	1	1	0	0	0	7
	WNW	0	0	0	1	0	1	3	2	4	0	0	0	11
	NW	0	0	0	0	1	1	0	0	1	0	0	0	3
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	7	10	35	55	19	13	1	0	0	140
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							140						
	Total Hours for the Period							2160						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	2	7	23	13	2	0	0	0	47
	NNE	0	0	0	1	3	16	24	11	1	0	0	0	56
	NE	0	0	1	3	2	13	12	4	0	0	0	0	35
	ENE	0	0	0	2	1	4	9	2	0	0	0	0	18
	E	0	0	0	2	1	5	5	1	0	0	0	0	14
	ESE	0	0	0	1	1	3	8	2	0	0	0	0	15
	SE	0	0	0	2	2	8	16	2	0	0	0	0	30
	SSE	0	0	0	0	2	11	28	26	3	0	0	0	70
	S	0	0	0	1	3	9	19	14	10	0	0	0	56
	SSW	0	0	1	0	0	6	15	13	4	0	0	0	39
	SW	0	0	0	1	2	6	17	11	6	0	0	0	43
	WSW	0	0	0	2	3	6	8	6	4	0	0	0	29
	W	0	0	0	0	1	0	3	4	16	0	0	0	24
	WNW	0	0	0	4	0	3	6	12	2	0	0	0	27
	NW	0	0	0	0	4	9	14	10	5	0	0	0	42
	NNW	0	0	2	0	1	9	35	12	1	0	0	0	60
	Totals	0	0	4	19	28	115	242	143	54	0	0	0	605
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							605						
	Total Hours for the Period							2160						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	0	0	1	8	22	13	1	0	0	0	46
	NNE	0	0	2	1	1	3	21	11	2	0	0	0	41
	NE	0	0	0	0	2	6	3	0	1	0	0	0	12
	ENE	0	0	0	1	1	2	9	2	0	0	0	0	15
	E	0	0	0	1	0	5	11	0	0	0	0	0	17
	ESE	0	0	0	0	0	8	27	2	0	0	0	0	37
	SE	0	0	0	0	0	1	24	30	2	0	0	0	57
	SSE	0	0	0	0	2	1	34	72	5	0	0	0	114
	S	0	0	0	1	1	1	24	31	1	0	0	0	59
	SSW	0	0	0	1	0	4	22	32	8	0	0	0	67
	SW	0	0	0	1	0	5	21	12	5	0	0	0	44
	WSW	0	0	0	0	1	1	4	6	0	0	0	0	12
	W	0	0	0	0	2	0	8	13	7	0	0	0	30
	WNW	0	0	0	1	1	1	7	9	0	0	0	0	19
	NW	0	0	1	0	0	1	13	9	1	0	0	0	25
	NNW	0	0	0	1	0	2	15	17	0	0	0	0	35
	Totals	0	1	3	8	12	49	265	259	33	0	0	0	630
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							630						
	Total Hours for the Period							2160						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	0	2	3	0	0	0	0	6
	NNE	0	0	0	0	1	1	7	17	0	0	0	0	26
	NE	0	0	0	3	2	6	22	4	0	0	0	0	37
	ENE	0	0	1	0	0	2	8	8	0	0	0	0	19
	E	0	0	1	1	1	3	12	9	0	0	0	0	27
	ESE	0	0	0	1	0	2	13	10	0	0	0	0	26
	SE	0	0	0	0	1	2	22	7	0	0	0	0	32
	SSE	0	0	0	0	1	4	16	15	0	0	0	0	36
	S	1	0	0	0	0	3	27	21	0	0	0	0	52
	SSW	0	0	0	0	0	2	17	12	3	0	0	0	34
	SW	0	0	0	0	2	5	16	24	1	0	0	0	48
	WSW	0	0	0	0	1	0	8	7	1	0	0	0	17
	W	0	0	0	0	0	0	4	5	0	0	0	0	9
	WNW	0	0	0	0	0	0	3	3	2	0	0	0	8
	NW	0	0	0	0	0	0	7	2	0	0	0	0	9
	NNW	0	0	0	0	1	3	4	8	0	0	0	0	16
	Totals	1	0	2	5	11	33	188	155	7	0	0	0	402
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							402						
	Total Hours for the Period							2160						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

(Page 7 of 8)

60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	4	1	0	0	0	0	6
	NNE	0	0	0	0	0	0	5	3	0	0	0	0	8
	NE	0	0	0	0	0	0	7	0	0	0	0	0	7
	ENE	0	0	0	0	0	0	6	7	0	0	0	0	13
	E	0	0	0	1	1	0	0	0	0	0	0	0	2
	ESE	0	0	1	1	0	2	0	0	0	0	0	0	4
	SE	0	0	0	1	0	0	0	0	0	0	0	0	1
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	1	0	0	4	0	0	0	0	0	5
	SSW	0	0	0	1	0	0	1	3	0	0	0	0	5
	SW	0	0	0	0	0	0	2	1	0	0	0	0	3
	WSW	0	0	0	1	0	0	1	0	0	0	0	0	2
	W	0	0	0	0	2	0	1	1	0	0	0	0	4
	WNW	0	0	0	0	0	0	0	4	0	0	0	0	4
	NW	0	0	0	0	0	0	0	2	0	0	0	0	2
	NNW	0	0	0	0	0	3	1	1	0	0	0	0	5
	Totals	0	0	1	6	3	6	32	23	0	0	0	0	71
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							71						
	Total Hours for the Period							2160						

Table 2.3-31— {Callaway Plant Joint Frequency Distribution - June}

(Page 8 of 8)

60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 June												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	1	0	0	5	18	53	30	3	0	0	0	110
	NNE	0	0	2	2	5	21	59	42	3	0	0	0	134
	NE	0	0	1	7	6	29	44	8	1	0	0	0	96
	ENE	0	0	1	3	5	12	37	19	0	0	0	0	77
	E	0	0	1	6	3	18	29	10	0	0	0	0	67
	ESE	0	0	1	3	3	19	52	14	0	0	0	0	92
	SE	0	0	0	3	8	19	92	40	2	0	0	0	164
	SSE	0	0	0	1	7	28	103	123	11	0	0	0	273
	S	1	0	0	4	7	26	83	80	17	0	0	0	218
	SSW	0	0	1	4	2	22	78	74	17	0	0	0	198
	SW	0	0	0	5	6	25	66	50	13	1	0	0	166
	WSW	0	0	0	3	8	8	24	21	6	0	0	0	70
	W	0	0	0	0	5	2	20	24	24	0	0	0	75
	WNW	0	0	0	6	1	5	19	30	8	0	0	0	69
	NW	0	0	1	0	5	12	34	23	7	0	0	0	82
	NNW	0	0	2	1	2	17	55	38	1	0	0	0	116
	Totals	1	1	10	48	78	281	848	626	113	1	0	0	2007
	Number of Calm Hours for this Table							1						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							152						
	Number of Valid Hours for this Table							2007						
	Total Hours for the Period							2160						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

(Page 1 of 8)

60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	2	1	0	0	0	0	3
	ESE	0	0	0	0	0	2	0	3	0	0	0	0	5
	SE	0	0	0	0	0	1	2	2	0	0	0	0	5
	SSE	0	0	0	0	0	3	3	3	0	0	0	0	9
	S	0	0	0	0	0	0	8	5	0	0	0	0	13
	SSW	0	0	0	0	0	1	7	7	1	0	0	0	16
	SW	0	0	0	0	0	0	3	4	3	0	0	0	10
	WSW	0	0	0	1	0	0	1	0	0	0	0	0	2
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	1	0	7	26	25	4	0	0	0	63
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							63						
	Total Hours for the Period							2232						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	1	2	0	0	0	0	4
	NNE	0	0	0	0	1	3	2	0	0	0	0	0	6
	NE	0	0	0	0	1	0	1	1	0	0	0	0	3
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	1	0	1	2	0	0	0	0	4
	ESE	0	0	0	0	0	3	3	0	0	0	0	0	6
	SE	0	0	0	0	0	3	3	0	0	0	0	0	6
	SSE	0	0	0	0	0	1	5	2	0	0	0	0	8
	S	0	0	0	0	0	4	1	1	0	0	0	0	6
	SSW	0	0	0	0	0	2	9	1	2	0	0	0	14
	SW	0	0	0	0	0	0	8	1	1	0	0	0	10
	WSW	0	0	0	0	0	0	4	2	0	0	0	0	6
	W	0	0	0	0	0	1	0	0	0	0	0	0	1
	WNW	0	0	0	0	1	1	0	0	0	0	0	0	2
	NW	0	0	0	0	1	0	3	0	0	0	0	0	4
	NNW	0	0	0	0	0	1	3	1	0	0	0	0	5
	Totals	0	0	0	0	5	20	44	13	3	0	0	0	85
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							85						
	Total Hours for the Period							2232						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	10	2	0	0	0	0	13
	NNE	0	0	0	0	0	1	6	0	0	0	0	0	7
	NE	0	0	0	0	0	3	8	1	0	0	0	0	12
	ENE	0	0	0	0	1	1	0	0	0	0	0	0	2
	E	0	0	0	1	0	2	0	1	0	0	0	0	4
	ESE	0	0	0	1	1	0	1	2	0	0	0	0	5
	SE	0	0	0	0	2	2	5	1	1	0	0	0	11
	SSE	0	0	0	0	0	2	2	1	0	0	0	0	5
	S	0	0	0	0	0	0	1	1	0	0	0	0	2
	SSW	0	0	0	0	0	0	10	0	1	0	0	0	11
	SW	0	0	0	0	1	1	6	3	0	0	0	0	11
	WSW	0	0	0	0	0	2	2	2	0	0	0	0	6
	W	0	0	0	0	2	1	1	1	1	0	0	0	6
	WNW	0	0	0	0	1	1	0	2	0	0	0	0	4
	NW	0	0	0	1	0	1	2	2	0	0	0	0	6
	NNW	0	0	0	0	1	3	1	3	0	0	0	0	8
	Totals	0	0	0	3	9	21	55	22	3	0	0	0	113
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							113						
	Total Hours for the Period							2232						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	3	9	38	7	3	0	0	0	60
	NNE	0	0	1	1	2	5	19	2	1	0	0	0	31
	NE	0	0	0	0	4	2	33	5	0	0	0	0	44
	ENE	0	1	1	1	1	5	9	1	0	0	0	0	19
	E	0	0	0	0	2	3	6	3	0	0	0	0	14
	ESE	0	0	0	0	2	7	8	4	0	0	0	0	21
	SE	0	0	0	0	1	5	9	1	0	0	0	0	16
	SSE	0	0	0	2	2	10	17	4	0	0	0	0	35
	S	0	0	0	1	3	14	22	9	1	0	0	0	50
	SSW	0	0	0	2	4	8	25	23	4	0	0	0	66
	SW	0	0	0	0	2	8	43	24	10	0	0	0	87
	WSW	0	0	0	1	5	7	17	10	0	0	0	0	40
	W	0	0	1	1	3	7	7	9	0	0	0	0	28
	WNW	0	0	1	1	4	5	10	1	1	0	0	0	23
	NW	0	0	0	1	4	6	18	2	1	1	0	0	33
	NNW	0	0	1	1	1	10	26	7	2	0	0	0	48
	Totals	0	1	5	12	43	111	307	112	23	1	0	0	615
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							615						
	Total Hours for the Period							2232						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	27	29	2	0	0	0	61
	NNE	0	0	1	0	0	1	19	9	0	0	0	0	30
	NE	0	0	0	0	0	4	17	10	1	0	0	0	32
	ENE	0	0	0	1	0	1	11	10	0	0	0	0	23
	E	0	0	0	0	0	5	13	9	0	0	0	0	27
	ESE	0	0	0	1	0	4	21	10	1	0	0	0	37
	SE	0	0	0	0	1	3	20	22	1	0	0	0	47
	SSE	0	0	0	0	0	6	26	11	0	0	0	0	43
	S	0	0	0	0	0	5	37	44	3	0	0	0	89
	SSW	0	0	0	0	3	7	35	63	6	0	0	0	114
	SW	0	0	0	1	2	10	36	16	2	0	0	0	67
	WSW	0	0	0	1	1	2	14	9	1	0	0	0	28
	W	0	0	0	2	1	3	11	4	1	0	0	0	22
	WNW	0	0	0	2	2	6	11	10	0	0	0	0	31
	NW	0	0	0	0	0	6	14	14	1	0	0	0	35
	NNW	0	0	0	1	1	4	14	25	5	0	0	0	50
	Totals	0	0	1	9	11	70	326	295	24	0	0	0	736
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							736						
	Total Hours for the Period							2232						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	11	8	0	0	0	0	22
	NNE	0	0	0	0	1	1	4	4	0	0	0	0	10
	NE	0	0	0	1	1	2	20	6	0	0	0	0	30
	ENE	0	0	0	0	1	2	10	3	0	0	0	0	16
	E	0	0	0	0	0	0	15	4	0	0	0	0	19
	ESE	0	0	0	0	0	2	14	3	0	0	0	0	19
	SE	0	0	0	0	0	1	14	12	0	0	0	0	27
	SSE	0	0	0	1	0	5	17	13	0	0	0	0	36
	S	0	0	0	1	1	6	17	17	2	0	0	0	44
	SSW	0	0	0	0	2	1	17	30	2	0	0	0	52
	SW	0	0	0	0	0	2	5	6	2	0	0	0	15
	WSW	0	0	0	1	1	1	5	0	0	0	0	0	8
	W	0	0	0	0	1	3	5	0	0	0	0	0	9
	WNW	0	0	0	1	0	3	4	1	0	0	0	0	9
	NW	0	0	1	1	0	1	5	3	0	0	0	0	11
	NNW	0	0	1	0	1	0	6	5	0	0	0	0	13
	Totals	0	0	2	6	9	33	169	115	6	0	0	0	340
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							340						
	Total Hours for the Period							2232						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	1	1	0	0	0	0	3
	NNE	0	0	0	1	0	2	2	1	0	0	0	0	6
	NE	0	0	0	1	0	2	4	3	0	0	0	0	10
	ENE	0	0	0	0	0	1	7	2	0	0	0	0	10
	E	0	0	0	1	0	2	1	2	0	0	0	0	6
	ESE	0	0	0	0	0	3	1	0	0	0	0	0	4
	SE	0	0	0	0	1	1	0	0	0	0	0	0	2
	SSE	0	0	0	0	1	2	2	0	0	0	0	0	5
	S	0	0	0	0	1	3	1	0	0	0	0	0	5
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	1	0	0	0	0	0	0	0	0	1
	WNW	0	0	0	0	0	0	1	0	0	0	0	0	1
	NW	0	0	0	0	0	0	0	3	0	0	0	0	3
	NNW	0	1	0	0	0	1	1	1	0	0	0	0	4
	Totals	0	1	0	4	3	18	21	13	0	0	0	0	60
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							60						
	Total Hours for the Period							2232						

Table 2.3-32—{Callaway Plant Joint Frequency Distribution - July}

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60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 July												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	3	18	88	49	5	0	0	0	163
	NNE	0	0	2	2	4	13	52	16	1	0	0	0	90
	NE	0	0	0	2	6	13	83	26	1	0	0	0	131
	ENE	0	1	1	2	3	10	37	16	0	0	0	0	70
	E	0	0	0	2	3	12	38	22	0	0	0	0	77
	ESE	0	0	0	2	3	21	48	22	1	0	0	0	97
	SE	0	0	0	0	5	16	53	38	2	0	0	0	114
	SSE	0	0	0	3	3	29	72	34	0	0	0	0	141
	S	0	0	0	2	5	32	87	77	6	0	0	0	209
	SSW	0	0	0	2	9	19	103	124	16	0	0	0	273
	SW	0	0	0	1	5	21	101	54	18	0	0	0	200
	WSW	0	0	0	4	7	12	43	23	1	0	0	0	90
	W	0	0	1	4	7	15	24	14	2	0	0	0	67
	WNW	0	0	1	4	8	16	26	14	1	0	0	0	70
	NW	0	0	1	3	5	14	42	24	2	1	0	0	92
	NNW	0	1	2	2	4	19	51	42	7	0	0	0	128
	Totals	0	2	8	35	80	280	948	595	63	1	0	0	2012
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							220						
	Number of Valid Hours for this Table							2012						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	1	0	0	0	0	0	0	1
	SE	0	0	0	0	0	2	4	0	0	0	0	0	6
	SSE	0	0	0	0	0	5	4	1	0	0	0	0	10
	S	0	0	0	0	0	0	14	1	0	0	0	0	15
	SSW	0	0	0	0	0	1	7	2	0	0	0	0	10
	SW	0	0	0	0	0	1	3	2	0	0	0	0	6
	WSW	0	0	0	0	0	0	1	0	0	0	0	0	1
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	10	33	6	0	0	0	0	49
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							49						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	1	0	0	0	0	0	1
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	1	0	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	1	0	0	0	0	0	1
	SE	0	0	0	1	1	7	2	1	0	0	0	0	12
	SSE	0	0	0	0	1	5	6	1	0	0	0	0	13
	S	0	0	0	0	0	3	4	1	0	0	0	0	8
	SSW	0	0	0	0	0	3	4	2	0	0	0	0	9
	SW	0	0	0	0	0	1	2	4	1	0	0	0	8
	WSW	0	0	0	0	0	0	1	1	0	0	0	0	2
	W	0	0	0	0	0	0	1	0	0	0	0	0	1
	WNW	0	0	0	0	0	0	1	0	0	0	0	0	1
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	1	2	20	23	10	1	0	0	0	57
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							57						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	1	4	1	0	0	0	0	0	6
	E	0	0	0	0	0	1	2	2	0	0	0	0	5
	ESE	0	0	0	0	1	3	0	1	0	0	0	0	5
	SE	0	0	0	0	1	4	3	1	0	0	0	0	9
	SSE	0	0	0	0	0	2	2	1	0	0	0	0	5
	S	0	0	0	0	1	1	5	0	0	0	0	0	7
	SSW	0	0	0	0	1	3	3	1	0	0	0	0	8
	SW	0	0	0	0	0	3	4	1	1	0	0	0	9
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	3	1	0	0	0	0	4
	WNW	0	0	0	0	0	0	3	1	0	0	0	0	4
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	5	21	26	9	1	0	0	0	62
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							62						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	12	19	7	2	0	0	0	40
	NNE	0	0	0	0	2	14	27	5	2	0	0	0	50
	NE	0	0	0	2	7	21	47	6	1	0	0	0	84
	ENE	0	0	0	2	4	6	31	1	0	0	0	0	44
	E	0	0	0	2	1	5	32	1	0	0	0	0	41
	ESE	0	0	1	1	1	3	12	3	0	0	0	0	21
	SE	0	0	0	0	4	5	23	8	0	0	0	0	40
	SSE	0	0	0	4	3	8	25	6	0	0	0	0	46
	S	0	0	0	0	2	8	13	11	0	0	0	0	34
	SSW	0	0	1	1	3	6	13	8	0	0	0	0	32
	SW	0	0	0	0	1	4	8	23	1	0	0	0	37
	WSW	0	0	0	0	3	4	4	3	1	0	0	0	15
	W	0	0	0	1	2	1	6	1	0	0	0	0	11
	WNW	0	0	0	1	2	7	6	8	0	0	0	0	24
	NW	0	0	0	1	2	10	15	6	0	0	0	0	34
	NNW	0	0	0	1	1	7	23	3	1	0	0	0	36
	Totals	0	0	2	16	38	121	304	100	8	0	0	0	589
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							589						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	2	3	16	27	6	0	0	0	56
	NNE	0	0	0	1	2	4	40	24	3	0	0	0	74
	NE	0	0	2	3	2	10	40	10	0	0	0	0	67
	ENE	0	0	0	0	0	9	29	3	0	0	0	0	41
	E	0	2	0	1	1	6	35	4	0	0	0	0	49
	ESE	0	0	0	1	4	1	24	17	0	0	0	0	47
	SE	0	0	0	1	1	8	36	27	1	0	0	0	74
	SSE	0	0	0	0	0	5	21	40	2	0	0	0	68
	S	0	0	0	0	1	2	21	49	5	0	0	0	78
	SSW	0	0	0	1	2	4	18	43	0	0	0	0	68
	SW	0	0	1	1	0	5	10	11	2	0	0	0	30
	WSW	0	0	1	1	1	1	7	2	0	0	0	0	13
	W	0	0	1	1	1	6	5	7	1	0	0	0	22
	WNW	0	0	1	0	3	2	6	4	0	0	0	0	16
	NW	0	0	0	0	1	4	8	3	0	0	0	0	16
	NNW	0	0	0	0	0	5	9	8	1	0	0	0	23
	Totals	0	2	6	13	21	75	325	279	21	0	0	0	742
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							742						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

(Page 6 of 8)

60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	0	6	4	0	0	0	0	11
	NNE	0	0	0	1	0	2	9	3	0	0	0	0	15
	NE	0	0	1	1	0	5	12	8	0	0	0	0	27
	ENE	0	0	0	2	2	1	7	11	0	0	0	0	23
	E	0	1	0	0	1	4	13	9	0	0	0	0	28
	ESE	0	0	0	0	1	1	14	8	0	0	0	0	24
	SE	0	0	0	0	1	2	15	14	0	0	0	0	32
	SSE	0	0	0	0	0	3	10	21	0	0	0	0	34
	S	0	0	0	0	0	3	24	18	0	0	0	0	45
	SSW	0	0	0	0	0	2	12	16	1	0	0	0	31
	SW	0	0	0	0	2	4	9	5	3	0	0	0	23
	WSW	0	0	0	1	3	4	4	2	0	0	0	0	14
	W	0	0	0	1	4	9	9	1	0	0	0	0	24
	WNW	0	0	0	1	2	4	3	3	0	0	0	0	13
	NW	0	0	0	0	3	4	10	1	0	0	0	0	18
	NNW	0	0	0	0	0	1	6	3	0	0	0	0	10
	Totals	0	1	1	7	20	49	163	127	4	0	0	0	372
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							372						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

(Page 7 of 8)

60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	2	2	0	0	0	0	0	5
	NNE	0	0	0	0	0	0	1	3	0	0	0	0	4
	NE	0	0	0	0	1	0	1	1	0	0	0	0	3
	ENE	0	0	0	0	1	0	0	2	0	0	0	0	3
	E	0	0	0	0	1	1	0	0	0	0	0	0	2
	ESE	0	0	0	0	0	0	4	1	0	0	0	0	5
	SE	0	0	0	0	0	2	2	0	0	0	0	0	4
	SSE	0	0	0	0	1	0	2	1	0	0	0	0	4
	S	0	0	0	0	0	0	0	1	0	0	0	0	1
	SSW	0	0	0	0	0	1	2	0	0	0	0	0	3
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	1	0	0	0	0	0	1
	W	0	0	0	0	0	0	1	0	0	0	0	0	1
	WNW	0	0	0	1	0	0	1	0	0	0	0	0	2
	NW	0	0	0	1	0	1	0	0	0	0	0	0	2
	NNW	0	0	0	1	1	2	4	0	0	0	0	0	8
	Totals	0	0	0	3	6	9	21	9	0	0	0	0	48
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							48						
	Total Hours for the Period							2232						

Table 2.3-33—{Callaway Plant Joint Frequency Distribution - August}

(Page 8 of 8)

60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 August												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	4	17	43	38	8	0	0	0	112
	NNE	0	0	0	2	4	20	77	35	5	0	0	0	143
	NE	0	0	3	6	10	36	101	25	1	0	0	0	182
	ENE	0	0	0	4	8	20	68	17	0	0	0	0	117
	E	0	3	0	3	4	18	82	16	0	0	0	0	126
	ESE	0	0	1	2	7	9	55	30	0	0	0	0	104
	SE	0	0	0	2	8	30	85	51	1	0	0	0	177
	SSE	0	0	0	4	5	28	70	71	2	0	0	0	180
	S	0	0	0	0	4	17	81	81	5	0	0	0	188
	SSW	0	0	1	2	6	20	59	72	1	0	0	0	161
	SW	0	0	1	1	3	18	36	46	8	0	0	0	113
	WSW	0	0	1	2	7	9	18	8	1	0	0	0	46
	W	0	0	1	3	7	16	25	10	1	0	0	0	63
	WNW	0	0	1	3	7	13	20	16	0	0	0	0	60
	NW	0	0	0	2	6	19	33	10	0	0	0	0	70
	NNW	0	0	0	2	2	15	42	14	2	0	0	0	77
	Totals	0	3	9	40	92	305	895	540	35	0	0	0	1919
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							313						
	Number of Valid Hours for this Table							1919						
	Total Hours for the Period							2232						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

(Page 1 of 8)

60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	1	0	0	0	0	0	1
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	1	0	0	0	0	0	1
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							1						
	Total Hours for the Period							2160						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	1	4	0	0	0	0	0	5
	SSE	0	0	0	0	0	1	9	0	0	0	0	0	10
	S	0	0	0	0	0	3	14	7	0	0	0	0	24
	SSW	0	0	0	0	1	5	2	1	0	0	0	0	9
	SW	0	0	0	0	0	4	6	2	0	0	0	0	12
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	1	14	35	10	0	0	0	0	60
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							60						
	Total Hours for the Period							2160						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	1	0	0	0	0	0	0	0	1
	E	0	0	0	0	1	2	1	0	0	0	0	0	4
	ESE	0	0	0	0	0	1	2	0	0	0	0	0	3
	SE	0	0	0	0	3	5	15	3	0	0	0	0	26
	SSE	0	0	0	0	0	6	18	5	3	0	0	0	32
	S	0	0	0	1	0	6	6	5	0	0	0	0	18
	SSW	0	0	0	1	2	4	3	5	1	0	0	0	16
	SW	0	0	0	2	1	1	1	1	1	0	0	0	7
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	4	8	25	46	19	5	0	0	0	107
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							107						
	Total Hours for the Period							2160						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	0	13	20	14	3	0	0	0	52
	NNE	0	0	0	2	3	12	35	18	3	0	0	0	73
	NE	0	0	0	2	2	12	7	1	0	0	0	0	24
	ENE	0	0	0	2	6	9	8	3	1	0	0	0	29
	E	0	0	1	1	5	4	4	2	1	0	0	0	18
	ESE	0	0	0	1	3	8	14	1	2	0	0	0	29
	SE	0	0	0	1	4	15	12	5	4	0	0	0	41
	SSE	0	0	0	1	4	7	35	28	7	0	0	0	82
	S	0	0	0	0	2	12	17	11	4	0	0	0	46
	SSW	0	0	1	2	5	5	11	6	6	0	0	0	36
	SW	0	0	0	2	2	7	5	5	2	0	0	0	23
	WSW	0	0	0	2	4	6	6	1	0	0	0	0	19
	W	0	0	0	0	1	1	5	9	5	0	0	0	21
	WNW	0	0	0	0	2	0	13	13	5	0	0	0	33
	NW	0	0	0	0	1	4	13	22	6	0	0	0	46
	NNW	0	1	0	0	3	7	23	7	1	0	0	0	42
	Totals	0	1	2	18	47	122	228	146	50	0	0	0	614
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							614						
	Total Hours for the Period							2160						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	1	2	6	17	16	1	0	0	0	43
	NNE	0	0	0	0	1	6	28	22	0	0	0	0	57
	NE	0	1	1	2	1	5	16	2	0	0	0	0	28
	ENE	0	1	1	1	1	4	10	4	0	0	0	0	22
	E	0	0	1	3	1	1	7	5	0	0	0	0	18
	ESE	0	0	0	1	0	2	17	10	3	0	0	0	33
	SE	0	1	0	0	0	2	19	66	19	2	0	0	109
	SSE	0	0	0	0	0	6	17	62	19	0	0	0	104
	S	0	0	0	0	2	7	13	17	8	0	0	0	47
	SSW	0	1	1	2	0	9	3	11	2	0	0	0	29
	SW	0	0	0	0	1	5	11	1	0	0	0	0	18
	WSW	0	0	0	0	3	6	8	2	2	0	0	0	21
	W	0	0	0	2	0	1	6	10	7	0	0	0	26
	WNW	1	0	0	1	0	3	7	16	2	0	0	0	30
	NW	0	0	1	0	0	4	15	19	0	0	0	0	39
	NNW	0	0	0	0	0	3	21	19	4	2	0	0	49
	Totals	1	4	5	13	12	70	215	282	67	4	0	0	673
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							673						
	Total Hours for the Period							2160						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	0	0	1	4	10	5	0	0	0	21
	NNE	0	0	0	1	1	1	6	8	5	0	0	0	22
	NE	0	0	0	1	3	3	9	8	0	0	0	0	24
	ENE	0	0	0	0	0	3	7	3	0	0	0	0	13
	E	0	2	0	0	1	2	8	7	0	0	0	0	20
	ESE	0	0	0	0	1	5	12	7	1	0	0	0	26
	SE	0	0	0	2	0	3	29	38	0	0	0	0	72
	SSE	0	0	0	0	0	2	32	52	2	0	0	0	88
	S	0	0	0	0	0	5	29	19	4	0	0	0	57
	SSW	0	0	0	0	1	3	21	5	0	0	0	0	30
	SW	0	0	0	1	1	3	8	4	6	0	0	0	23
	WSW	0	0	0	0	0	3	10	2	1	0	0	0	16
	W	0	0	0	0	0	3	7	5	1	0	0	0	16
	WNW	0	0	1	0	0	4	5	0	0	0	0	0	10
	NW	0	0	0	0	0	1	4	4	0	0	0	0	9
	NNW	1	0	0	0	0	1	5	2	6	0	0	0	15
	Totals	2	2	1	5	8	43	196	174	31	0	0	0	462
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							462						
	Total Hours for the Period							2160						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	2	8	0	0	0	0	10
	NNE	0	0	0	0	0	1	4	1	0	0	0	0	6
	NE	0	0	0	0	1	1	5	1	0	0	0	0	8
	ENE	0	0	0	0	1	2	10	3	0	0	0	0	16
	E	0	0	0	1	0	0	6	0	0	0	0	0	7
	ESE	0	0	0	1	1	1	0	1	0	0	0	0	4
	SE	0	0	0	1	0	1	2	4	0	0	0	0	8
	SSE	0	0	1	1	0	4	8	3	0	0	0	0	17
	S	0	0	0	2	0	6	14	0	0	0	0	0	22
	SSW	0	0	1	0	0	1	12	1	1	0	0	0	16
	SW	0	0	0	1	0	0	1	2	0	0	0	0	4
	WSW	0	0	0	0	1	1	1	0	0	0	0	0	3
	W	0	0	0	0	0	3	1	0	0	0	0	0	4
	WNW	0	0	0	0	0	2	2	2	0	0	0	0	6
	NW	0	0	0	0	0	0	2	2	0	0	0	0	4
	NNW	0	0	0	0	2	0	2	2	1	0	0	0	7
	Totals	0	0	2	7	6	23	72	30	2	0	0	0	142
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							142						
	Total Hours for the Period							2160						

Table 2.3-34—{Callaway Plant Joint Frequency Distribution - September}

(Page 8 of 8)

60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 September												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	1	0	0	3	2	20	43	48	9	0	0	0	126
	NNE	0	0	0	3	5	20	73	49	8	0	0	0	158
	NE	0	1	1	5	7	21	37	12	0	0	0	0	84
	ENE	0	1	1	3	9	18	35	13	1	0	0	0	81
	E	0	2	2	5	8	9	26	14	1	0	0	0	67
	ESE	0	0	0	3	5	17	45	19	6	0	0	0	95
	SE	0	1	0	4	7	27	81	116	23	2	0	0	261
	SSE	0	0	1	2	4	26	119	150	31	0	0	0	333
	S	0	0	0	3	4	39	93	59	16	0	0	0	214
	SSW	0	1	3	5	9	27	52	29	10	0	0	0	136
	SW	0	0	0	6	5	20	33	15	9	0	0	0	88
	WSW	0	0	0	2	8	16	25	5	3	0	0	0	59
	W	0	0	0	2	1	8	19	24	13	0	0	0	67
	WNW	1	0	1	1	2	9	27	31	7	0	0	0	79
	NW	0	0	1	0	1	9	34	47	6	0	0	0	98
	NNW	1	1	0	0	5	11	51	30	12	2	0	0	113
	Totals	3	7	10	47	82	297	793	661	155	4	0	0	2059
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							101						
	Number of Valid Hours for this Table							2059						
	Total Hours for the Period							2160						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

(Page 1 of 8)

60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2232						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	1	0	0	0	0	0	0	1
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	1	0	0	0	0	1
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	1	0	0	0	1
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	1	0	1	1	0	0	0	3
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							3						
	Total Hours for the Period							2232						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	1	0	0	0	0	0	1
	ESE	0	0	0	0	0	0	2	0	0	0	0	0	2
	SE	0	0	0	0	0	2	6	2	0	0	0	0	10
	SSE	0	0	0	0	0	4	3	0	0	0	0	0	7
	S	0	0	0	0	0	2	6	6	0	0	0	0	14
	SSW	0	0	0	0	0	1	0	3	0	0	0	0	4
	SW	0	0	0	0	0	1	6	5	0	0	0	0	12
	WSW	0	0	0	0	1	0	0	0	0	0	0	0	1
	W	0	0	0	0	0	0	1	0	6	0	0	0	7
	WNW	0	0	0	0	0	0	0	2	7	1	0	0	10
	NW	0	0	0	0	0	0	0	4	1	0	0	0	5
	NNW	0	0	0	0	0	0	1	0	0	0	0	0	1
	Totals	0	0	0	0	1	10	26	22	14	1	0	0	74
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							74						
	Total Hours for the Period							2232						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	0	11	36	25	4	0	0	0	78
	NNE	0	0	0	1	5	9	30	6	0	0	0	0	51
	NE	0	0	0	0	7	12	12	2	0	0	0	0	33
	ENE	0	0	0	2	4	11	24	4	2	0	0	0	47
	E	0	0	0	0	1	6	18	4	0	0	0	0	29
	ESE	0	0	0	0	1	3	8	12	0	0	0	0	24
	SE	0	0	0	1	1	12	18	21	1	0	0	0	54
	SSE	0	0	0	0	1	7	29	13	1	0	0	0	51
	S	0	0	0	1	2	6	20	15	13	0	0	0	57
	SSW	0	0	0	1	1	5	15	6	14	3	0	0	45
	SW	0	0	0	0	4	1	18	4	4	0	0	0	31
	WSW	0	0	0	0	1	3	1	6	9	4	0	0	24
	W	0	0	0	0	2	4	6	8	16	0	0	0	36
	WNW	0	0	0	1	2	1	13	19	21	1	0	0	58
	NW	0	0	0	0	1	0	10	26	11	3	0	0	51
	NNW	0	0	0	0	1	7	20	36	12	1	0	0	77
	Totals	0	0	0	9	34	98	278	207	108	12	0	0	746
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							746						
	Total Hours for the Period							2232						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	17	15	1	1	0	0	37
	NNE	0	0	0	0	0	2	16	13	2	0	0	0	33
	NE	0	0	0	0	3	4	21	14	0	0	0	0	42
	ENE	0	0	0	1	0	5	16	17	1	0	0	0	40
	E	0	0	0	0	0	4	22	8	1	0	0	0	35
	ESE	0	0	1	0	1	5	28	20	3	0	0	0	58
	SE	0	1	0	0	0	10	33	63	6	0	0	0	113
	SSE	0	0	0	0	0	1	21	68	7	0	0	0	97
	S	0	0	0	1	1	0	24	44	22	0	0	0	92
	SSW	0	0	0	0	0	1	9	26	20	1	0	0	57
	SW	0	0	0	1	2	3	13	8	10	1	0	0	38
	WSW	0	0	0	0	1	1	11	11	10	1	0	0	35
	W	0	0	0	0	1	4	10	35	16	0	0	0	66
	WNW	0	0	0	0	1	2	15	31	11	1	0	0	61
	NW	0	0	0	0	1	5	27	26	11	0	0	0	70
	NNW	0	0	0	0	0	3	17	27	8	0	0	0	55
	Totals	0	1	1	3	11	53	300	426	129	5	0	0	929
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							929						
	Total Hours for the Period							2232						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	3	10	5	0	0	0	18
	NNE	0	0	0	0	0	1	2	9	1	0	0	0	13
	NE	0	0	0	1	0	2	7	4	0	0	0	0	14
	ENE	0	0	0	1	0	1	10	19	0	0	0	0	31
	E	0	0	0	0	0	0	7	4	0	0	0	0	11
	ESE	0	0	0	0	1	6	9	9	0	0	0	0	25
	SE	0	0	0	0	1	6	11	25	2	0	0	0	45
	SSE	0	0	0	0	1	1	9	35	6	0	0	0	52
	S	0	0	0	0	0	2	11	21	0	0	0	0	34
	SSW	0	0	0	0	1	0	12	8	3	0	0	0	24
	SW	0	0	0	0	0	0	3	7	5	0	0	0	15
	WSW	0	0	0	1	0	1	2	8	3	0	0	0	15
	W	0	0	0	0	0	2	7	12	1	0	0	0	22
	WNW	0	0	0	0	0	1	4	9	3	0	0	0	17
	NW	0	0	0	0	0	2	3	6	0	0	0	0	11
	NNW	0	0	0	0	0	0	2	7	0	0	0	0	9
	Totals	0	0	0	3	4	25	102	193	29	0	0	0	356
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							356						
	Total Hours for the Period							2232						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	4	2	0	0	0	0	6
	NE	0	0	0	0	0	1	4	2	0	0	0	0	7
	ENE	0	0	0	1	1	1	7	0	0	0	0	0	10
	E	0	0	0	0	1	2	1	0	0	0	0	0	4
	ESE	0	0	0	1	1	1	2	0	0	0	0	0	5
	SE	0	0	0	0	0	0	3	1	0	0	0	0	4
	SSE	0	0	1	0	0	0	0	2	0	0	0	0	3
	S	0	0	0	0	0	0	5	6	0	0	0	0	11
	SSW	0	0	0	0	1	1	7	1	0	0	0	0	10
	SW	0	0	0	0	0	1	2	9	0	0	0	0	12
	WSW	0	0	0	0	1	2	0	3	0	0	0	0	6
	W	0	0	0	1	1	2	0	0	0	0	0	0	4
	WNW	0	0	0	1	1	2	0	1	0	0	0	0	5
	NW	0	0	0	1	0	0	2	0	0	0	0	0	3
	NNW	0	0	0	0	1	0	0	0	0	0	0	0	1
	Totals	0	0	1	5	8	13	37	27	0	0	0	0	91
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							91						
	Total Hours for the Period							2232						

Table 2.3-35—{Callaway Plant Joint Frequency Distribution - October}

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60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 October												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	0	14	56	50	10	1	0	0	133
	NNE	0	0	0	1	5	12	52	30	3	0	0	0	103
	NE	0	0	0	1	10	19	44	22	0	0	0	0	96
	ENE	0	0	0	5	5	18	57	40	3	0	0	0	128
	E	0	0	0	0	2	12	49	16	1	0	0	0	80
	ESE	0	0	1	1	4	15	49	41	3	0	0	0	114
	SE	0	1	0	1	2	30	71	112	9	0	0	0	226
	SSE	0	0	1	0	2	14	62	118	14	0	0	0	211
	S	0	0	0	2	3	10	66	92	35	0	0	0	208
	SSW	0	0	0	1	3	8	43	45	37	4	0	0	141
	SW	0	0	0	1	6	6	42	33	19	1	0	0	108
	WSW	0	0	0	1	4	7	14	28	22	5	0	0	81
	W	0	0	0	1	4	12	24	55	40	0	0	0	136
	WNW	0	0	0	2	4	6	32	62	42	3	0	0	151
	NW	0	0	0	1	2	7	42	62	23	3	0	0	140
	NNW	0	0	0	0	2	10	40	70	20	1	0	0	143
	Totals	0	1	2	20	58	200	743	876	281	18	0	0	2199
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							33						
	Number of Valid Hours for this Table							2199						
	Total Hours for the Period							2232						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2160						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2160						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	1	2	2	0	0	0	0	5
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	3	0	0	0	0	0	3
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	1	0	1	0	0	2
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	1	5	3	0	1	0	0	10
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							10						
	Total Hours for the Period							2160						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	1	1	9	10	9	4	0	0	34
	NNE	0	0	0	3	1	4	28	11	3	1	0	0	51
	NE	0	0	0	1	3	10	7	3	0	0	0	0	24
	ENE	0	0	0	1	1	4	10	13	0	0	0	0	29
	E	0	0	1	0	1	6	7	3	1	0	0	0	19
	ESE	0	0	0	2	2	8	3	2	0	0	0	0	17
	SE	0	0	1	2	8	10	10	10	2	0	0	0	43
	SSE	0	0	0	1	0	7	36	27	2	0	0	0	73
	S	0	0	0	1	0	6	21	32	20	2	0	0	82
	SSW	0	0	0	0	3	7	18	12	9	0	0	0	49
	SW	0	0	0	2	0	3	11	14	7	10	0	0	47
	WSW	0	0	0	1	2	5	8	3	4	3	0	0	26
	W	0	0	0	0	3	2	10	10	13	4	0	0	42
	WNW	0	0	0	1	2	5	18	12	19	16	2	0	75
	NW	0	0	0	2	1	3	16	20	11	1	0	0	54
	NNW	0	0	0	1	4	2	11	28	24	3	0	0	73
	Totals	0	0	2	18	32	83	223	210	124	44	2	0	738
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							738						
	Total Hours for the Period							2160						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	2	3	9	6	1	10	0	0	33
	NNE	0	0	0	0	1	3	16	21	19	3	0	0	63
	NE	0	0	1	2	1	5	29	17	2	0	0	0	57
	ENE	0	0	0	0	1	10	25	6	0	0	0	0	42
	E	0	0	0	1	3	5	25	13	0	0	0	0	47
	ESE	0	0	0	0	3	3	20	16	2	1	0	0	45
	SE	0	0	0	2	1	3	30	37	11	0	0	0	84
	SSE	0	0	2	1	1	3	33	79	47	0	0	0	166
	S	0	0	0	2	3	4	25	71	66	1	0	0	172
	SSW	0	0	0	1	2	6	19	33	39	3	0	0	103
	SW	0	0	0	1	0	1	5	17	17	0	0	0	41
	WSW	0	0	0	0	1	1	5	7	2	0	0	0	16
	W	0	0	0	0	1	5	10	19	7	1	0	0	43
	WNW	0	0	0	0	0	9	21	25	14	3	0	0	72
	NW	0	0	0	1	4	3	14	41	19	0	0	0	82
	NNW	0	0	0	1	1	6	21	19	8	1	0	0	57
	Totals	0	0	3	14	25	70	307	427	254	23	0	0	1123
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							1123						
	Total Hours for the Period							2160						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	0	0	0	1	3	1	0	0	0	6
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	1	0	2	0	0	0	0	0	3
	SE	0	0	0	0	0	0	1	1	0	0	0	0	2
	SSE	0	0	0	0	0	0	7	23	17	0	0	0	47
	S	0	0	0	0	0	1	17	18	4	0	0	0	40
	SSW	0	0	0	0	0	0	4	7	6	0	0	0	17
	SW	0	0	0	0	0	0	2	7	11	0	0	0	20
	WSW	0	0	0	0	0	1	2	5	1	0	0	0	9
	W	0	0	0	0	0	1	2	1	0	0	0	0	4
	WNW	0	0	0	0	0	0	4	5	2	0	0	0	11
	NW	0	0	0	0	0	1	3	11	0	0	0	0	15
	NNW	0	0	0	0	0	3	4	9	0	0	0	0	16
	Totals	0	0	1	0	1	7	49	90	42	0	0	0	190
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							190						
	Total Hours for the Period							2160						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	6	3	0	0	0	0	9
	SSW	0	0	0	1	1	0	3	10	1	0	0	0	16
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	1	0	1	0	0	0	0	2
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	1	1	1	9	14	1	0	0	0	27
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							27						
	Total Hours for the Period							2160						

Table 2.3-36—{Callaway Plant Joint Frequency Distribution - November}

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60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 November												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	1	2	3	4	19	19	11	14	0	0	73
	NNE	0	0	0	3	2	7	44	32	22	4	0	0	114
	NE	0	0	1	3	4	15	36	20	2	0	0	0	81
	ENE	0	0	0	1	2	14	35	19	0	0	0	0	71
	E	0	0	1	1	4	11	32	16	1	0	0	0	66
	ESE	0	0	0	2	6	11	25	18	2	1	0	0	65
	SE	0	0	1	4	9	13	41	48	13	0	0	0	129
	SSE	0	0	2	2	1	11	78	131	66	0	0	0	291
	S	0	0	0	3	3	11	69	124	90	3	0	0	303
	SSW	0	0	0	2	6	13	44	62	55	3	0	0	185
	SW	0	0	0	3	0	4	21	38	35	10	0	0	111
	WSW	0	0	0	1	3	8	15	16	7	3	0	0	53
	W	0	0	0	0	4	8	22	30	20	5	0	0	89
	WNW	0	0	0	1	2	14	43	43	35	20	2	0	160
	NW	0	0	0	3	5	7	33	72	30	1	0	0	151
	NNW	0	0	0	2	5	11	36	56	32	4	0	0	146
	Totals	0	0	6	33	59	162	593	744	421	68	2	0	2088
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							72						
	Number of Valid Hours for this Table							2088						
	Total Hours for the Period							2160						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

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60m, A Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	A			Delta Temperature Extremely Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2232						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

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60m, B Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	B			Delta Temperature Moderately Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							0						
	Total Hours for the Period							2232						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

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60m, C Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	C			Delta Temperature Slightly Unstable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	1	0	0	0	0	0	1
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSW	0	0	0	0	0	1	3	0	0	0	0	0	4
	SW	0	0	0	0	0	0	2	1	0	0	0	0	3
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	1	6	1	0	0	0	0	8
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							8						
	Total Hours for the Period							2232						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

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60m, D Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	D			Delta Temperature Neutral										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	1	3	16	22	6	0	0	0	50
	NNE	0	0	0	1	2	5	32	13	0	0	0	0	53
	NE	0	0	0	1	0	10	14	0	0	0	0	0	25
	ENE	0	0	0	1	2	6	5	3	0	0	0	0	17
	E	0	0	1	1	1	3	4	2	0	0	0	0	12
	ESE	0	0	0	0	0	0	3	9	2	0	0	0	14
	SE	0	0	0	1	1	5	13	21	1	0	0	0	42
	SSE	0	0	1	1	2	3	13	13	4	1	0	0	38
	S	0	0	0	0	3	4	17	17	9	2	0	0	52
	SSW	0	0	0	0	0	4	10	20	8	3	0	0	45
	SW	0	0	0	0	4	9	10	32	21	0	0	0	76
	WSW	0	0	0	0	2	6	18	15	12	1	0	0	54
	W	0	0	0	1	4	5	17	27	28	3	0	0	85
	WNW	0	0	0	0	0	13	24	23	27	0	0	0	87
	NW	0	0	0	0	0	6	20	37	31	6	0	0	100
	NNW	0	0	1	1	2	8	23	38	20	3	0	0	96
	Totals	0	0	3	10	24	90	239	292	169	19	0	0	846
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							846						
	Total Hours for the Period							2232						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

(Page 5 of 8)

60m, E Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	E			Delta Temperature Slightly Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	3	13	11	0	0	0	0	27
	NNE	0	0	0	0	0	2	18	3	0	0	0	0	23
	NE	0	0	0	1	1	3	6	0	0	0	0	0	11
	ENE	0	0	0	0	0	3	4	1	0	0	0	0	8
	E	0	0	0	0	0	0	12	9	1	0	0	0	22
	ESE	0	0	0	0	0	5	22	45	5	0	0	0	77
	SE	0	0	0	1	1	2	14	40	27	1	0	0	86
	SSE	0	0	0	0	0	3	8	50	37	0	0	0	98
	S	0	0	0	0	1	3	13	61	33	0	0	0	111
	SSW	0	0	0	1	0	5	8	49	56	3	0	0	122
	SW	0	0	0	0	2	1	27	35	24	0	0	0	89
	WSW	0	0	0	0	2	3	27	34	10	0	0	0	76
	W	0	0	0	0	0	6	24	80	33	1	0	0	144
	WNW	0	0	0	0	2	6	13	34	31	1	0	0	87
	NW	0	0	1	0	0	5	27	19	24	4	0	0	80
	NNW	0	0	0	0	0	4	23	30	29	1	0	0	87
	Totals	0	0	1	3	9	54	259	501	310	11	0	0	1148
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							1148						
	Total Hours for the Period							2232						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

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60m, F Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	F			Delta Temperature Moderately Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	1	1	1	0	0	0	0	3
	NNE	0	0	0	0	0	0	1	0	0	0	0	0	1
	NE	0	0	0	1	1	1	1	0	0	0	0	0	4
	ENE	0	0	0	0	1	0	0	0	0	0	0	0	1
	E	0	0	0	0	0	0	0	1	0	0	0	0	1
	ESE	0	0	0	0	0	0	3	1	0	0	0	0	4
	SE	0	0	0	0	0	0	0	3	0	0	0	0	3
	SSE	0	0	0	0	0	1	8	7	6	0	0	0	22
	S	0	0	1	0	1	1	6	18	4	0	0	0	31
	SSW	0	0	0	0	0	0	8	15	5	0	0	0	28
	SW	0	0	0	0	0	0	7	11	12	0	0	0	30
	WSW	0	1	0	0	2	2	5	11	2	0	0	0	23
	W	0	0	0	0	1	0	0	0	0	0	0	0	1
	WNW	0	0	0	0	1	1	0	3	1	0	0	0	6
	NW	0	0	0	0	1	0	0	1	0	0	0	0	2
	NNW	0	0	0	0	0	0	2	3	0	0	0	0	5
	Totals	0	1	1	1	8	7	42	75	30	0	0	0	165
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							165						
	Total Hours for the Period							2232						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

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60m, G Stability														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Stability Class	G			Delta Temperature Extremely Stable										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
	NE	0	0	0	0	0	0	0	0	0	0	0	0	0
	ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	0	0	0	0	0	0	0	0	0
	ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SE	0	0	0	0	0	0	0	0	0	0	0	0	0
	SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	0	0	0	0	0	0	2	0	0	0	0	0	2
	SSW	0	0	0	0	0	0	3	1	0	0	0	0	4
	SW	0	0	0	0	0	0	0	0	0	0	0	0	0
	WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
	W	0	0	0	0	0	0	0	0	0	0	0	0	0
	WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NW	0	0	0	0	0	0	0	0	0	0	0	0	0
	NNW	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	0	0	0	0	0	0	5	1	0	0	0	0	6
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							6						
	Total Hours for the Period							2232						

Table 2.3-37—{Callaway Plant Joint Frequency Distribution - December}

(Page 8 of 8)

60m, All Stabilities														
Joint Frequency Distribution														
Hours at Each Wind Speed and Direction														
Period of Record =		01/01/04 0:00 - 12/31/06 23:00 December												
Elevation:		**Speed:**		SPD60M		**Direction:**		DIR60M		**Lapse:**		DT60M		
Summary of All Stability Classes				Delta Temperature										
		Wind Speed (m/s)												
Wind Direction (from)		0.22 - 0.50	5.10 - 0.75	0.76 - 1.0	1.1 - 1.5	1.6 - 2.0	2.1 - 3.0	3.1 - 5.0	5.1 - 7.0	7.1 - 10.0	10.1 - 13.0	13.1 - 18.0	> 18.0	**Total**
	N	0	0	0	2	1	7	30	34	6	0	0	0	80
	NNE	0	0	0	1	2	7	51	16	0	0	0	0	77
	NE	0	0	0	3	2	14	21	0	0	0	0	0	40
	ENE	0	0	0	1	3	9	9	4	0	0	0	0	26
	E	0	0	1	1	1	3	16	12	1	0	0	0	35
	ESE	0	0	0	0	0	5	28	55	7	0	0	0	95
	SE	0	0	0	2	2	7	28	64	28	1	0	0	132
	SSE	0	0	1	1	2	7	29	70	47	1	0	0	158
	S	0	0	1	0	5	8	38	96	46	2	0	0	196
	SSW	0	0	0	1	0	10	32	85	69	6	0	0	203
	SW	0	0	0	0	6	10	46	79	57	0	0	0	198
	WSW	0	1	0	0	6	11	50	60	24	1	0	0	153
	W	0	0	0	1	5	11	41	107	61	4	0	0	230
	WNW	0	0	0	0	3	20	37	60	59	1	0	0	180
	NW	0	0	1	0	1	11	47	57	55	10	0	0	182
	NNW	0	0	1	1	2	12	48	71	49	4	0	0	188
	Totals	0	1	5	14	41	152	551	870	509	30	0	0	2173
	Number of Calm Hours for this Table							0						
	Number of Variable Direction Hours for this Table							0						
	Number of Invalid Hours							59						
	Number of Valid Hours for this Table							2173						
	Total Hours for the Period							2232						

Table 2.3-38—{Callaway Plant Meteorological Persistence (2004), 10 m, 1 sector}

Number of Sectors Included:1 Width in Degrees: 22.5																
Measurement Height, m:10 Speed Sensor:1 Direction Sensor: 1																
Speed Greater than or Equal to: 5.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	428	326	238	156	105	179	494	711	688	470	309	201	281	326	315	401
2	260	191	137	83	49	94	285	426	441	263	161	108	138	186	176	249
4	110	83	66	32	15	33	107	194	218	98	46	47	48	79	70	128
8	22	22	24	6	2	7	13	49	75	21	5	13	7	20	9	57
12	0	8	6	0	0	0	3	8	18	4	0	5	1	9	0	31
18	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	9
Speed Greater than or Equal to: 10.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	122	71	30	29	8	25	60	150	195	139	57	57	54	114	94	174
2	73	39	13	14	4	12	35	80	109	81	31	38	23	66	48	114
4	27	16	1	3	1	5	16	30	40	37	8	18	6	26	12	56
8	3	5	0	0	0	0	5	4	10	9	0	4	0	5	0	16
12	0	1	0	0	0	0	1	0	2	0	0	0	0	1	0	7
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Speed Greater than or Equal to: 15.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	11	5	0	0	0	1	1	21	23	26	10	10	2	15	5	17
2	5	2	0	0	0	0	0	10	8	14	5	4	0	11	1	7
4	2	0	0	0	0	0	0	3	1	6	1	0	0	6	0	1
8	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 20.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	1	0	0	0	0	0	0	0	0	4	2	1	0	0	0	0
2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 25.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**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
Speed Greater than or Equal to: 30.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**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

Table 2.3-39—{Callaway Plant Meteorological Persistence (2005), 10 m, 1 sector}

Number of Sectors Included:1 Width in Degrees: 22.5																
Measurement Height, m:10 Speed Sensor: 1 Direction Sensor: 1																
Speed Greater than or Equal to: 5.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	371	254	174	174	196	177	481	682	531	301	300	162	316	331	381	437
2	226	130	79	85	114	85	267	372	312	134	159	72	188	190	217	263
4	99	51	30	29	47	20	107	134	137	34	53	18	88	71	87	124
8	22	6	3	9	8	2	35	33	39	2	6	0	35	13	17	34
12	5	0	0	5	0	0	12	8	16	0	0	0	10	5	2	8
18	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	1
24	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 10.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	76	23	1	15	31	17	66	100	142	61	82	38	109	119	126	142
2	41	12	0	10	19	4	29	44	86	25	43	21	64	68	78	87
4	16	3	0	4	8	0	10	12	35	7	15	7	29	28	40	39
8	3	0	0	0	3	0	0	2	9	0	4	0	5	4	10	8
12	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 15.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	10	0	0	0	3	2	0	13	19	5	17	8	8	10	20	19
2	6	0	0	0	0	0	0	7	9	3	13	4	4	1	13	12
4	3	0	0	0	0	0	0	3	0	0	8	2	1	0	5	5
8	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 20.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	1	0	0	0	0	0	0	0	0	1	5	2	0	0	3	0
2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0
4	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 25.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**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
Speed Greater than or Equal to: 30.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**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

Table 2.3-40—{Callaway Plant Meteorological Persistence (2006), 10 m, 1 sector}

Number of Sectors Included: 1 Width in Degrees: 22.5																
Measurement Height, m: 10 Speed Sensor: 1 Direction Sensor: 1																
Speed Greater than or Equal to: 5.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	321	205	102	105	168	215	702	680	643	348	318	173	309	320	511	405
2	185	114	50	42	91	121	455	393	411	174	170	68	177	180	323	236
4	77	39	17	8	44	59	240	155	206	58	62	12	72	72	156	109
8	17	10	4	0	16	19	81	29	68	11	16	0	10	6	49	27
12	2	0	0	0	9	2	34	6	27	4	8	0	2	0	20	10
18	0	0	0	0	3	0	8	0	5	0	2	0	0	0	7	1
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Speed Greater than or Equal to: 10.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	74	43	1	3	40	35	110	135	185	94	66	48	92	67	179	102
2	44	28	0	0	27	17	56	71	108	45	28	21	56	36	113	47
4	20	12	0	0	17	9	19	21	44	12	12	5	20	11	57	12
8	3	2	0	0	10	0	4	0	10	0	4	0	0	0	19	1
12	0	0	0	0	6	0	0	0	4	0	0	0	0	0	11	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 15.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	15	1	0	0	11	0	8	11	24	8	8	7	12	11	14	24
2	7	0	0	0	9	0	2	4	13	2	4	3	6	7	5	14
4	0	0	0	0	7	0	0	1	3	0	0	1	1	2	0	7
8	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 20.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	4	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3
2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 25.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**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
Speed Greater than or Equal to: 30.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**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

Table 2.3-41—{Callaway Plant Meteorological Persistence (2004-2006), 10 m, 1 sector}

Site Name: Callaway Plant
Start Date: 1/1/2004 00:00End Date:12/31/2006 23:00
Number of Sectors Included: 1 Width in Degrees: 22.5
Measurement Height, m: 10 Speed Sensor: 1 Direction Sensor: 1

Speed Greater than or Equal to: 5.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	1120	785	514	435	469	571	1677	2073	1862	1119	927	536	906	977	1207	1243
2	671	435	266	210	254	300	1008	1191	1164	571	490	248	503	556	716	748
4	286	173	113	69	106	112	456	483	561	190	161	77	208	222	313	361
8	61	38	31	15	26	28	131	111	182	34	27	13	52	39	75	118
12	7	8	6	5	9	2	49	22	61	8	8	5	13	14	22	49
18	0	0	0	0	3	0	8	0	14	0	2	0	0	3	7	11
24	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed Greater than or Equal to: 10.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	272	137	32	47	79	77	236	385	522	294	205	143	255	300	399	418
2	158	79	13	24	50	33	120	195	303	151	102	80	143	170	239	248
4	63	31	1	7	26	14	45	63	119	56	35	30	55	65	109	107
8	9	7	0	0	13	0	9	6	29	9	8	4	5	9	29	25
12	0	1	0	0	6	0	1	0	9	0	0	0	0	1	12	8
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed Greater than or Equal to: 15.00 Mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	36	6	0	0	14	3	9	45	66	39	35	25	22	36	39	60
2	18	2	0	0	9	0	2	21	30	19	22	11	10	19	19	33
4	5	0	0	0	7	0	0	7	4	6	9	3	2	8	5	13
8	0	0	0	0	3	0	0	0	0	2	2	0	0	1	0	2
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed Greater than or Equal to: 20.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	6	0	0	0	0	0	0	1	0	5	7	3	0	1	3	3
2	2	0	0	0	0	0	0	0	0	2	4	0	0	0	2	0
4	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed Greater than or Equal to: 25.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	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

Speed Greater than or Equal to: 30.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	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

Table 2.3-42—{Callaway Plant Meteorological Persistence (2004), 60 m, 1 sector}

Number of Sectors Included: 1 Width in Degrees: 22.5																
Measurement Height, m: 60 Speed Sensor: 2 Direction Sensor: 2																
Speed Greater than or Equal to: 5.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	538	457	438	307	212	339	598	771	881	730	510	315	403	467	489	489
2	364	290	275	167	100	186	366	479	551	430	289	153	222	269	283	307
4	186	133	126	69	30	72	163	214	261	191	97	61	92	111	119	147
8	47	43	40	17	2	11	31	61	86	56	17	16	30	29	30	58
12	11	16	17	4	0	0	4	18	31	11	7	9	11	6	7	30
18	0	6	8	0	0	0	0	5	4	0	0	3	0	0	0	8
24	0	0	2	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
Speed Greater than or Equal to: 10.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	359	273	211	165	85	182	394	564	653	551	347	210	296	359	366	339
2	243	177	129	100	32	96	239	360	437	348	199	113	173	212	224	219
4	123	101	58	42	5	32	103	168	217	160	67	50	79	93	100	109
8	33	42	14	15	0	9	24	40	75	52	17	13	25	23	24	48
12	7	15	6	3	0	0	4	6	28	10	7	9	9	5	7	27
18	0	6	0	0	0	0	0	0	1	0	0	3	0	0	0	6
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 15.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	84	62	13	16	7	18	67	166	231	242	116	90	108	162	141	134
2	46	38	5	3	1	9	23	98	135	150	66	48	47	89	67	78
4	15	20	0	0	0	2	2	39	58	69	18	22	10	39	20	37
8	0	8	0	0	0	0	0	5	21	24	4	5	0	10	1	10
12	0	4	0	0	0	0	0	0	7	6	0	1	0	1	0	5
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 20.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	6	10	0	0	0	0	1	20	37	60	26	30	14	49	41	26
2	4	6	0	0	0	0	0	11	17	41	16	22	6	30	21	9
4	1	1	0	0	0	0	0	5	4	20	3	11	2	14	6	1
8	0	0	0	0	0	0	0	0	0	5	0	3	0	3	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 25.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	1	2	0	0	0	0	1	4	4	11	9	3	1	11	1	1
2	0	1	0	0	0	0	0	2	0	5	5	1	0	8	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0
Speed Greater than or Equal to: 30.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.3-43— {Callaway Plant Meteorological Persistence (2005), 60 m, 1 sector}

Number of Sectors Included:1 Width in Degrees: 22.5																
Measurement Height, m: 60 Speed Sensor: 2 Direction Sensor: 2																
Speed Greater than or Equal to:5.00mph																
Direction																
Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	445	418	411	367	360	334	612	818	760	624	533	291	452	494	604	623
2	262	244	241	202	201	165	368	510	450	347	312	129	255	283	394	409
4	108	103	102	72	86	47	162	230	172	139	129	34	107	117	194	207
8	21	16	19	17	19	3	40	53	34	28	22	2	26	28	69	53
12	1	0	5	6	0	0	13	14	11	6	4	0	2	5	21	10
18	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	1
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 10.00 mph																
Direction																
Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	238	187	111	155	201	200	394	584	553	437	361	185	331	359	445	407
2	131	95	56	78	112	96	252	375	331	264	208	86	198	207	295	272
4	62	41	14	22	47	19	118	180	132	119	85	26	90	88	159	147
8	13	5	0	4	9	2	30	48	30	25	17	1	23	23	54	39
12	0	0	0	0	0	0	11	12	11	3	4	0	1	5	16	8
18	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	1
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 15.00 mph																
Direction																
Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	43	16	0	16	19	10	78	132	173	142	124	65	164	176	169	120
2	23	4	0	9	11	1	31	66	110	69	66	28	96	95	111	66
4	12	1	0	5	7	0	5	19	56	19	24	10	44	35	67	30
8	2	0	0	0	3	0	0	3	24	3	3	0	10	7	22	8
12	0	0	0	0	0	0	0	0	11	0	0	0	0	2	1	1
18	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 20.00 mph																
Direction																
Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	7	1	0	2	4	1	1	17	26	12	26	19	38	50	49	23
2	5	0	0	1	0	0	0	9	14	6	15	10	12	30	28	14
4	3	0	0	0	0	0	0	4	2	1	9	4	3	17	14	9
8	0	0	0	0	0	0	0	0	0	0	3	0	0	5	2	5
12	0	0	0	0	0	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
Speed Greater than or Equal to: 25.00 mph																
Direction																
Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	1	0	0	0	0	1	0	0	0	4	13	6	7	9	11	1
2	0	0	0	0	0	0	0	0	0	2	10	4	3	4	8	0
4	0	0	0	0	0	0	0	0	0	0	6	2	0	2	4	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 30.00 mph																
Direction																
Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	1	5	4	0	2	5	0
2	0	0	0	0	0	0	0	0	0	0	4	3	0	0	3	0
4	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.3-44—{Callaway Plant Meteorological Persistence (2006), 60 m, 1 sector}

Number of Sectors Included: 1 Width in Degrees: 22.5																
Measurement Height, m: 60 Speed Sensor: 2 Direction Sensor: 2																
Speed Greater than or Equal to: 5.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	412	385	239	235	282	356	643	828	874	673	562	309	403	576	710	570
2	245	243	123	113	143	189	402	534	542	378	339	137	223	358	473	367
4	110	117	47	30	51	88	183	251	263	141	157	42	93	149	239	191
8	27	28	7	3	16	36	52	83	81	34	46	4	14	42	72	65
12	6	9	0	0	9	21	13	40	24	13	13	0	3	17	36	24
18	0	1	0	0	3	12	2	7	5	1	0	0	0	3	13	8
24	0	0	0	0	0	6	0	0	0	0	0	0	0	0	5	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 10.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	255	197	75	104	130	213	454	641	674	477	405	206	302	438	551	404
2	147	111	37	47	61	125	290	435	452	287	261	94	182	278	373	261
4	61	50	13	9	27	58	138	214	222	117	127	31	77	120	180	136
8	15	6	4	0	13	27	37	64	59	34	39	4	12	38	61	52
12	5	2	0	0	9	17	11	27	13	13	12	0	3	17	31	23
18	0	0	0	0	3	8	2	0	0	1	0	0	0	3	13	8
24	0	0	0	0	0	2	0	0	0	0	0	0	0	0	5	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 5.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	61	24	1	3	22	30	129	224	268	197	191	92	150	164	208	99
2	38	11	0	0	16	18	75	129	162	108	112	35	86	98	141	58
4	18	3	0	0	13	10	35	50	68	37	47	6	32	31	78	32
8	7	0	0	0	9	2	7	6	13	3	10	0	0	2	29	13
12	3	0	0	0	5	0	1	1	4	0	2	0	0	0	15	3
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 20.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	23	1	1	0	11	1	20	15	33	18	30	30	45	39	53	33
2	18	0	0	0	9	0	12	7	15	4	11	15	26	21	31	19
4	12	0	0	0	7	0	5	1	2	0	2	4	7	4	17	9
8	7	0	0	0	3	0	0	0	0	0	0	0	0	0	7	0
12	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Speed Greater than or Equal to: 25.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	14	0	0	0	1	0	3	3	1	1	2	7	11	11	12	2
2	11	0	0	0	0	0	1	2	0	0	0	1	3	7	5	0
4	8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
8	4	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
Speed Greater than or Equal to: 30.00 mph																
Direction																
Hours	**N**	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**WSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**
1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	1	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.3-45—{Callaway Plant Meteorological Persistence (2004-2006), 60 m, 1 sector}

Site Name: Callaway Plant
Start Date: 1/1/2004 00:00End Date:12/31/2006 23:00
Number of Sectors Included: 1 Width in Degrees: 22.5
Measurement Height, m: 60 Speed Sensor: 2 Direction Sensor: 2

Speed Greater than or Equal to: 5.00mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	1395	1260	1088	909	854	1029	1853	2417	2515	2027	1605	915	1258	1537	1803	1682
2	871	777	639	482	444	540	1137	1523	1543	1155	940	419	700	910	1150	1083
4	404	353	275	171	167	207	510	695	696	471	383	137	292	377	552	545
8	95	87	66	37	37	50	125	197	201	118	85	22	70	99	171	176
12	18	25	22	10	9	21	32	72	66	30	24	9	16	28	64	64
18	0	7	8	0	3	12	2	12	11	1	0	3	0	3	17	17
24	0	0	2	0	0	6	0	0	0	0	0	0	0	0	5	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed Greater than or Equal to: 10.00mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	852	657	397	424	416	595	1242	1789	1880	1465	1113	601	929	1156	1362	1150
2	521	383	222	225	205	317	782	1170	1220	899	668	293	553	697	892	752
4	246	192	85	73	79	109	361	562	571	396	279	107	246	301	439	392
8	61	53	18	19	22	38	93	152	164	111	73	18	60	84	139	139
12	12	17	6	3	9	17	28	45	52	26	23	9	13	27	54	58
18	0	6	0	0	3	8	2	0	3	1	0	3	0	3	17	15
24	0	0	0	0	0	2	0	0	0	0	0	0	0	0	5	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed Greater than or Equal to: 15.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	188	102	14	35	48	58	274	522	672	581	431	247	422	502	518	353
2	107	53	5	12	28	28	129	293	407	327	244	111	229	282	319	202
4	45	24	0	5	20	12	42	108	182	125	89	38	86	105	165	99
8	9	8	0	0	12	2	7	14	58	30	17	5	10	19	52	31
12	3	4	0	0	5	0	1	1	22	6	2	1	0	3	16	9
18	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Speed Greater than or Equal to: 20.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	36	12	1	2	15	2	22	52	96	90	82	79	97	138	143	82
2	27	6	0	1	9	0	12	27	46	51	42	47	44	81	80	42
4	16	1	0	0	7	0	5	10	8	21	14	19	12	35	37	19
8	7	0	0	0	3	0	0	0	0	5	3	3	0	8	9	5
12	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	16	2	0	0	1	1	4	7	5	16	24	16	19	31	24	4
2	11	1	0	0	0	0	1	4	0	7	15	6	6	19	13	0
4	8	0	0	0	0	0	0	0	0	0	6	2	0	8	5	0
8	4	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

Speed Greater than or Equal to: 30.00 mph

Direction

Hours	N	NNE	NE	ENE	E	ESE	SE	SSE	S	WSW	SW	WSW	W	WNW	NW	NNW
1	0	0	0	0	0	0	0	0	0	4	8	4	1	6	6	0
2	0	0	0	0	0	0	0	0	0	1	6	3	0	2	3	0
4	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.3-46—{Callaway Plant Monthly Mean Temperatures (degrees F) (2004-2006)}

	WET BULB			DRY BULB			DEW POINT			RELATIVE HUMIDITY		
	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.	Min.	Max.	Ave.
JANUARY	23.5	35.7	29.6	25.8	41.1	33.1	19.5	30.3	24.7	57.3	86.8	72.0
FEBURARY	24.3	36.4	30.9	27.0	43.9	35.3	18.9	28.9	24.2	47.6	82.4	64.1
MARCH	32.8	44.4	38.9	36.3	53.9	45.0	26.5	37.3	31.4	44.6	80.7	60.9
APRIL	44.9	55.2	50.4	48.8	67.4	58.3	38.0	49.0	43.4	42.6	80.9	60.1
MAY	52.0	61.9	57.3	55.5	73.3	64.5	48.8	57.1	52.9	50.8	87.1	68.3
JUNE	59.8	68.7	64.6	63.3	81.2	72.2	57.4	64.7	61.1	51.8	88.3	69.9
JULY	63.7	71.6	67.9	67.6	85.8	76.5	60.7	67.7	64.4	49.1	87.7	68.5
AUGUST	62.7	70.6	66.9	65.7	83.2	74.2	60.2	66.8	63.6	52.6	88.2	70.5
SEPTEMBER	55.3	64.8	60.5	58.5	76.7	67.5	52.9	60.8	57.0	52.7	88.5	71.3
OCTOBER	43.7	54.1	49.1	47.3	64.1	55.5	39.1	48.8	44.2	50.2	86.0	68.6
NOVEMBER	35.1	46.7	41.1	38.8	54.8	46.6	29.8	40.5	35.2	51.0	81.6	66.3
DECEMBER	25.4	36.4	31.1	28.0	42.3	35.0	20.7	30.2	25.5	53.0	82.2	67.8
TOTAL	43.1	53.5	48.6	47.0	64.0	55.4	38.9	48.1	43.5	50.3	84.9	67.3

Table 2.3-47—{Callaway Plant Mean Monthly Diurnal Temperature Range (2004 – 2006)}

	Deg C	Deg F
JANUARY	8.6	15.1
FEBRUARY	9.4	17.1
MARCH	9.7	18.0
APRIL	10.2	18.9
MAY	9.9	18.2
JUNE	9.9	18.2
JULY	10.1	19.2
AUGUST	9.6	17.5
SEPTEMBER	10.0	17.8
OCTOBER	9.4	17.4
NOVEMBER	8.8	16.9
DECEMBER	7.9	13.9
ANNUAL	9.5	17.3

Table 2.3-48—{Callaway Plant Monthly Mean Daily Maximum Temperatures (2004-2006)}

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
°F	41.1	43.9	53.9	67.4	73.3	81.2	85.8	83.2	76.7	64.1	54.8	42.3	64.0
°C	5.1	6.6	12.7	19.7	22.9	27.3	29.9	28.4	24.8	17.8	12.7	5.7	17.8

Table 2.3-49—{Callaway Plant Monthly Mean Daily Minimum Temperatures (2004-2006)}

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
°F	25.8	27.0	36.3	48.8	55.5	63.3	67.6	65.7	58.5	47.3	38.8	28.0	47.0
°C	-3.4	-2.8	2.4	9.3	13.1	17.4	19.8	18.7	14.7	8.5	3.8	-2.2	8.3

Table 2.3-50—{Callaway Plant Maximum Hourly Temperatures (2004-2006)}

	Maximum	
	deg C	deg F
JANUARY	20.8	69.4
FEBURARY	21.4	70.5
MARCH	25.5	77.9
APRIL	31.0	87.8
MAY	31.7	89.1
JUNE	34.8	94.6
JULY	39.0	102.2
AUGUST	37.0	98.6
SEPTEMBER	31.6	88.9
OCTOBER	32.9	91.2
NOVEMBER	27.0	80.6
DECEMBER	19.6	67.3
ANNUAL	39.0	102.2

Table 2.3-51—{Callaway Plant Minimum Hourly Temperatures (2004-2006)}

	Minimum	
	deg C	deg F
JANUARY	-18.6	-1.5
FEBRUARY	-17.0	1.4
MARCH	-5.6	21.9
APRIL	0.5	32.9
MAY	2.0	35.6
JUNE	11.3	52.3
JULY	13.0	55.4
AUGUST	10.0	50.0
SEPTEMBER	5.1	41.2
OCTOBER	-3.2	26.2
NOVEMBER	-8.4	16.9
DECEMBER	-16.4	2.5
ANNUAL	-18.6	-1.5

Table 2.3-52—{Callaway Plant Number of Hourly Temperature Values Greater Than or Less Than Indicated Value (2004-2006)}

Value	Number of Hours of Occurrence	Percent Frequency of Occurrence
≥ 95.0°F	97	0.37%
≥ 90.0°F	340	1.30%
≤ 32.0°F	2999	11.43%
≤ 00.0°F	5	0.02%

Table 2.3-53—{Monthly Mean Temperatures at Sites Around Callaway Plant}

SITE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	°F	27.8	33.7	44	54.4	63.7	72.7	77.4	75.7	67.3	56	43.2	32	54
	°C	-2.3	0.9	6.7	12.4	17.6	22.6	25.2	24.3	19.6	13.3	6.2	0.0	12.2
St. Louis, MO	°F	29.6	35.4	45.8	56.6	66.5	75.6	80.2	78.2	70.2	58.3	45.3	33.9	56.3
	°C	-1.3	1.9	7.7	13.7	19.2	24.2	26.8	25.7	21.2	14.6	7.4	1.1	13.5
Kansas City, MO	°F	26.9	33	43.8	54.4	64.3	73.6	78.5	76.6	68.1	56.8	42.7	31.3	54.2
	°C	-2.8	0.6	6.6	12.4	17.9	23.1	25.8	24.8	20.1	13.8	5.9	-0.4	12.3
Jefferson City, MO	°F	34.8	36.1	46.6	58.6	66.4	73.8	78.3	75.8	68.4	56.9	48.3	36.1	56.8
	°C	1.6	2.3	8.1	14.8	19.1	23.2	25.7	24.3	20.2	13.8	9.1	2.3	13.8
Vichy-Rolla, MO	°F	35	35.9	45.6	58	65.5	73	77	75.3	67.7	56.1	47.2	32.6	55.9
	°C	1.7	2.2	7.6	14.4	18.6	22.8	25.0	24.1	19.8	13.4	8.4	0.3	13.3

Table 2.3-54— {Monthly Mean Maximum Temperatures at Sites Around Callaway Plant}

SITE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	°F	37.4	43.9	55.1	65.9	74.6	83.6	88.6	87.3	79.1	68.0	53.4	41.5	64.9
	°C	3.0	6.6	12.8	18.8	23.7	28.7	31.4	30.7	26.2	20.0	11.9	5.3	18.3
St. Louis, MO	°F	37.9	44.3	55.4	66.7	76.5	85.3	89.8	87.9	80.1	68.3	53.8	42.0	65.7
	°C	3.3	6.8	13.0	19.3	24.7	29.6	32.1	31.1	26.7	20.2	12.1	5.6	18.7
Kansas City, MO	°F	36.0	42.6	54.4	65.2	74.6	83.9	88.8	87.1	79.0	67.6	52.0	40.0	64.3
	°C	2.2	5.9	12.4	18.4	23.7	28.8	31.6	30.6	26.1	19.8	11.1	4.4	17.9
Jefferson City, MO	°F	45.5	47.7	58.0	71.0	77.5	85.1	89.2	86.4	80.0	68.1	58.4	45.8	67.8
	°C	7.5	8.7	14.4	21.7	25.3	29.5	31.8	30.2	26.7	20.1	14.7	7.7	19.9
Vichy Rolla, MO	°F	45.8	46.9	56.6	69.4	75.8	84.5	88.6	86.2	78.5	66.2	56.8	42.5	66.6
	°C	7.7	8.3	13.7	20.8	24.3	29.2	31.4	30.1	25.8	19.0	13.8	5.8	19.2

Table 2.3-55—{Monthly Mean Minimum Temperatures at Sites Around Callaway Plant}

SITE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	°F	18.2	23.4	33	42.9	52.8	61.8	66.3	64	55.4	44.1	33	22.5	43.1
	°C	-7.7	-4.8	0.6	6.1	11.6	16.6	19.1	17.8	13.0	6.7	0.6	-5.3	6.2
St. Louis, MO	°F	21.2	26.5	36.2	46.5	56.6	65.6	70.6	68.6	60.3	48.2	36.7	25.8	46.9
	°C	-6.0	-3.1	2.3	8.1	13.7	18.7	21.4	20.3	15.7	9.0	2.6	-3.4	8.3
Kansas City, MO	°F	17.8	23.3	33.2	44.5	53.9	63.2	68.2	66.1	57.2	45.8	33.9	23.1	44.3
	°C	-7.9	-4.8	0.7	6.9	12.2	17.3	20.1	18.9	14.0	7.7	1.1	-4.9	6.8
Jefferson City, MO	°F	26.3	26.4	37.2	45.6	56.2	61	68.9	66.6	57.9	48	39.9	28.6	47
	°C	-3.2	-3.1	2.9	7.6	13.4	16.1	20.5	19.2	14.4	8.9	4.4	-1.9	8.3
Vichy Rolla, MO	°F	26.8	27.5	37.3	47.1	55.4	63.1	66.1	65.8	58.1	46.6	39.6	26.2	46.7
	°C	-2.9	-2.5	2.9	8.4	13.0	17.3	18.9	18.8	14.5	8.1	4.2	-3.2	8.2

Table 2.3-56—{Monthly Mean Wet Bulb Temperatures (1984-2006) at Sites Around Callaway Plant}

SITE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	°F	27.1	30.9	38.6	48.6	58.3	66.4	70.2	68.7	60.7	50.3	39.5	30.1	49.1
	°C	-2.7	-0.6	3.7	9.2	14.6	19.1	21.2	20.4	15.9	10.2	4.2	-1.1	9.5
St. Louis, MO	°F	29.1	32.7	40.1	50.2	59.4	67.3	71.2	70.1	62.4	52.0	41.5	32.0	50.7
	°C	-1.6	0.4	4.5	10.1	15.2	19.6	21.8	21.2	16.9	11.1	5.3	0.0	10.4
Kansas City, MO	°F	26.3	30.0	38.2	48.2	58.1	66.4	70.6	69.1	61.1	50.2	38.6	29.3	48.8
	°C	-3.2	-1.1	3.4	9.0	14.5	19.1	21.4	20.6	16.2	10.1	3.7	-1.5	9.3

Table 2.3-57—{Monthly Mean Dew Point Temperatures (1984-2006) at Sites Around Callaway Plant}

SITE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	°F	22.5	25.9	32.5	42.8	54.4	63.3	67.2	65.7	57.0	45.7	34.7	25.6	44.8
	°C	-4.7	-3.8	-1.1	4.6	10.8	16.4	18.8	18.2	14.7	8.4	1.3	-3.7	6.7
St. Louis, MO	°F	23.8	27.1	33.4	43.7	54.1	63.0	67.3	66.3	57.7	46.4	35.7	26.8	45.4
	°C	-0.6	0.3	2.9	7.6	12.8	18.1	18.8	20.4	15.4	11.4	6.1	1.4	9.6
Kansas City, MO	°F	21.3	24.9	31.7	42.0	53.6	62.9	67.4	65.8	57.2	45.3	33.5	24.6	44.2
	°C	-2.6	-1.7	1.1	6.3	12.4	17.3	20.0	17.3	15.6	9.4	3.7	-1.2	8.2

Table 2.3-58—{Number of Days with Maximum Hourly Temperature Value Greater Than or Equal to 90°F at Sites Around Callaway Plant}

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	0.0	0.0	0.0	0.1	0.3	4.8	14.1	12.0	4.2	0.1	0.0	0.0	35.6
St. Louis, MO	0.0	0.0	0.0	0.3	1.3	8.6	15.8	12.2	4.5	0.1	0.0	0.0	42.8
Kansas City, MO	0.0	0.0	0.0	0.3	0.4	5.6	14.5	11.7	3.7	0.1	0.0	0.0	36.3

Table 2.3-59—{Number of Days with Maximum Hourly Temperature Value Less Than or Equal to 32°F at Sites Around Callaway Plant}

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	12.0	6.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	7.4	29.0
St. Louis, MO	11.0	6.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	6.3	25.7
Kansas City, MO	12.1	7.3	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.9	8.0	31.2

Table 2.3-60—{Number of Days with Minimum Hourly Temperature Value Less Than or Equal to 32°F at Sites Around Callaway Plant}

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia	27.1	21.0	14.6	3.3	*	0.0	0.0	0.0	*	2.5	13.7	24.9	107.1
St. Louis, MO	25.6	19.2	12.2	2.5	*	0.0	0.0	0.0	0.0	1.3	10.2	22.1	93.1
Kansas City, MO	27.9	21.2	14.9	3.7	*	0.0	0.0	0.0	*	2.3	13.8	26.0	109.8

Note:

* Denotes value is between 0.00 and 0.05

Table 2.3-61—{Number of Days with Minimum Hourly Temperature Value Less Than or Equal to 0°F at Sites Around Callaway Plant}

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	2.7	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	1.4	5.6
St. Louis, MO	1.8	0.6	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	3.2
Kansas City, MO	3.6	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	7.6

Note:

* Denotes value is between 0.00 and 0.05

Table 2.3-62—{Monthly Mean Relative Humidity at Sites Around Callaway Plant}

SITE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	%	74	72	67	66	72	73	72	73	72	70	72	75	72
St. Louis, MO	%	75	73	68	64	67	67	68	70	70	69	72	76	70
Kansas City, MO	%	71	70	66	64	69	71	70	72	71	68	71	73	70

Table 2.3-63— {Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperature Values for Columbia, Missouri (1972-2001)}

%	Jan		Feb		Mar		Apr		May		Jun	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19a	*19b*	*19c*	*19d*	*19e*	*19f*	*19g*	*19h*	*19i*	*19j*	*19k*	*19l*
0.4%	55.4°F	59.5°F	59.0°F	65.0°F	64.1°F	74.3°F	68.5°F	79.3°F	75.5°F	83.9°F	79.1°F	88.8°F
	13.0°C	15.3°C	15.0°C	18.3°C	17.8°C	23.5°C	20.3°C	26.3°C	24.2°C	28.8°C	26.2°C	31.6°C
1%	52.8°F	56.2°F	56.5°F	62.6°F	62.5°F	72.0°F	67.4°F	77.7°F	74.3°F	82.5°F	78.1°F	87.9°F
	11.6°C	13.4°C	13.6°C	17.0°C	16.9°C	22.2°C	19.7°C	25.4°C	23.5°C	28.1°C	25.6°C	31.1°C
2%	49.8°F	53.8°F	54.1°F	60.5°F	60.7°F	69.7°F	66.1°F	76.5°F	72.9°F	80.9°F	77.2°F	86.9°F
	9.9°C	12.1°C	12.3°C	15.8°C	15.9°C	20.9°C	18.9°C	24.7°C	22.7°C	27.2°C	25.1°C	30.5°C
%	Jul		Aug		Sep		Oct		Nov		Dec	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19m	*19n*	*19o*	*19p*	*19q*	*19r*	*19s*	*19t*	*19u*	*19v*	*19w*	*19x*
0.4%	81.2°F	90.3°F	80.7°F	90.7°F	77.3°F	88.3°F	69.8°F	78.1°F	64.4°F	70.8°F	60.6°F	65.0°F
	27.3°C	32.4°C	27.1°C	32.6°C	25.2°C	31.3°C	21.0°C	25.6°C	18.0°C	21.6°C	15.9°C	18.3°C
1%	80.2°F	90.0°F	79.7°F	90.1°F	76.0°F	86.8°F	68.4°F	76.2°F	62.7°F	68.3°F	57.8°F	62.2°F
	26.8°C	32.2°C	26.5°C	32.3°C	24.4°C	30.4°C	20.2°C	24.6°C	17.1°C	20.2°C	14.3°C	16.8°C
2%	79.3°F	89.7°F	78.5°F	88.9°F	75.0°F	85.2°F	67.2°F	74.4°F	61.3°F	66.4°F	55.1°F	58.8°F
	26.3°C	32.1°C	25.8°C	31.6°C	23.9°C	29.6°C	19.6°C	23.6°C	16.3°C	19.1°C	12.8°C	14.9°C

Note:

WB = wet bulb

MCDB = mean coincident dry bulb

Table 2.3-64—{Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperature Values for St. Louis, Missouri (1972-2001)}

%	Jan		Feb		Mar		Apr		May		Jun	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19a	*19b*	*19c*	*19d*	*19e*	*19f*	*19g*	*19h*	*19i*	*19j*	*19k*	*19l*
0.4%	58.2°F	61.8°F	61.1°F	67.7°F	65.8°F	76.2°F	69.8°F	81.0°F	75.5°F	85.5°F	79.3°F	89.9°F
	14.6°C	16.6°C	16.2°C	19.8°C	18.8°C	24.6°C	21.0°C	27.2°C	24.2°C	29.7°C	26.3°C	32.2°C
1%	55.8°F	58.4°F	58.7°F	64.6°F	64.3°F	73.1°F	68.5°F	78.7°F	74.4°F	84.1°F	78.3°F	88.7°F
	13.2°C	14.7°C	14.8°C	18.1°C	17.9°C	22.8°C	20.3°C	25.9°C	23.6°C	28.9°C	25.7°C	31.5°C
2%	52.9°F	56.4°F	56.4°F	62.6°F	62.7°F	70.7°F	67.4°F	76.8°F	73.2°F	82.5°F	77.4°F	87.8°F
	11.6°C	13.6°C	13.6°C	17.0°C	17.1°C	21.5°C	19.7°C	24.9°C	22.9°C	28.1°C	25.2°C	31.0°C
%	Jul		Aug		Sep		Oct		Nov		Dec	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19m	*19n*	*19o*	*19p*	*19q*	*19r*	*19s*	*19t*	*19u*	*19v*	*19w*	*19x*
0.4%	81.4°F	93.0°F	80.6°F	91.9°F	78.8°F	89.0°F	71.4°F	78.2°F	65.7°F	71.7°F	62.7°F	67.4°F
	27.4°C	33.9°C	27.0°C	33.3°C	26.0°C	31.7°C	21.9°C	25.7°C	18.7°C	22.1°C	17.1°C	19.7°C
1%	80.4°F	92.0°F	79.9°F	91.1°F	77.4°F	87.6°F	70.2°F	76.7°F	64.4°F	69.6°F	60.5°F	64.0°F
	26.9°C	33.3°C	26.6°C	32.8°C	25.2°C	30.9°C	21.2°C	24.8°C	18.0°C	20.9°C	15.8°C	17.8°C
2%	79.8	91.4°F	79.0°F	90.0°F	76.2°F	85.7°F	69.0°F	75.2°F	63.1°F	67.5°F	57.5°F	60.7°F
	26.6°C	33.0°C	26.1°C	32.2°C	24.6°C	29.8°C	20.6°C	24.0°C	17.3°C	19.7°C	14.2°C	15.9°C

Note:

WB = wet bulb

MCDB = mean coincident dry bulb

Table 2.3-65—{Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperature Values for Kansas City, Missouri (1972-2001)}

%	Jan		Feb		Mar		Apr		May		Jun	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19a	*19b*	*19c*	*19d*	*19e*	*19f*	*19g*	*19h*	*19i*	*19j*	*19k*	*19l*
0.4%	54.9°F	59.3°F	58.2°F	66.2°F	63.9°F	72.1°F	69.4°F	81.2°F	75.6°F	84.7°F	79.0°F	89.4°F
	12.7°C	15.2°C	14.6°C	19.0°C	17.7°C	22.3°C	20.8°C	27.3°C	24.2°C	29.3°C	26.1°C	31.9°C
1%	51.0	55.5°F	54.8°F	61.9°F	62.2°F	70.7°F	68.2°F	78.5°F	73.9°F	82.4°F	78.0°F	88.4°F
	10.6°C	13.1°C	12.7°C	16.6°C	16.8°C	21.5°C	20.1°C	25.8°C	23.3°C	28.0°C	25.6°C	31.3°C
2%	47.3	52.8°F	51.9°F	59.1°F	60.4°F	68.8°F	66.6°F	75.9°F	72.3°F	80.8°F	77.2°F	87.5°F
	8.5°C	11.6°C	11.1°C	15.1°C	15.8°C	20.4°C	19.2°C	24.4°C	22.4°C	27.1°C	25.1°C	30.8°C
%	Jul		Aug		Sep		Oct		Nov		Dec	
	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB	WB	MCDB
	19m	*19n*	*19o*	*19p*	*19q*	*19r*	*19s*	*19t*	*19u*	*19v*	*19w*	*19x*
0.4%	81.5°F	91.4°F	80.8°F	90.2°F	77.4°F	89.2°F	69.7°F	79.2°F	63.7°F	69.6°F	59.2°F	62.7°F
	27.5°C	33.0°C	27.1°C	32.3°C	25.2°C	31.8°C	20. 9°C	26.2°C	17.6°C	20.9°C	15.1°C	17.1°C
1%	80.4	90.6°F	79.9°F	89.8°F	76.5°F	87.7°F	68.4°F	77.0°F	62.3°F	68.0°F	56.5°F	60.5°F
	26.9°C	32.6°C	26.6°C	32.1°C	24.7°C	30.9°C	20.2°C	25.0°C	16.8°C	20.0°C	13.6°C	15.8°C
2%	79.5	90.0°F	78.8°F	89.1°F	75.4°F	85.9°F	67.4°F	75.1°F	60.5°F	65.9°F	53.1°F	57.0°F
	26.4°C	32.2°C	26.0°C	31.7°C	24.1°C	29.9°C	19.7°C	23.9°C	15.8°C	18.8°C	11.7°C	13.9°C

Note:

WB = wet bulb

MCDB = mean coincident dry bulb

Table 2.3-66—{Callaway Nuclear Plant Monthly and Annual Precipitation Summaries (2004 - 2006)}

	Average Precipitation	
	mm	in
JAN	87.17	3.43
FEB	24.07	0.95
MAR	87.63	3.45
APR	52.73	2.08
MAY	68.03	2.68
JUN	35.93	1.41
JUL	68.77	2.71
AUG	115.1	4.53
SEP	67.47	2.66
OCT	80.33	3.16
NOV	93.83	3.69
DEC	26.93	1.06
ANNUAL	808	31.81

Table 2.3-67—{Callaway Nuclear Plant Monthly and Annual Percent Frequency of Precipitation Occurrence (2004 - 2006)}

	Average Percent Frequency of Precipitation Occurrence (Hourly)
JAN	7.80%
FEB	3.58%
MAR	6.18%
APR	5.97%
MAY	4.84%
JUN	3.29%
JUL	4.30%
AUG	6.05%
SEP	2.96%
OCT	6.54%
NOV	8.33%
DEC	3.67%
ANNUAL	5.29%

Table 2.3-68—{Callaway Nuclear Plant Rainfall Rate Distribution (2004-2006)}

Rainfall Rate in/hr (mm/hr)	Number of hours
0.0 (0.0)	24340
0.0-0.1 (0.0-2.5)	1119
0.1-0.2 (2.5-5.1)	164
0.2-0.3 (5.1-7.6)	36
0.3-0.4 (7.6-10.2)	17
0.4-0.5 (10.2-12.7)	9
0.5-0.6 (12.7-15.2)	5
0.6-0.7 (15.2-17.8)	7
0.7-0.8 (17.8-20.3)	1
0.8-0.9 (20.3-22.9)	3
0.9-1.0 (22.9-25.4)	1
1.0-2.0 (25.4-50.8)	3
2.0-3.0 (50.8-76.2)	0
Missing Data	598

Table 2.3-69—{Callaway Nuclear Plant Measured Extreme Precipitation Hourly Values (2004-2006) }

Rainfall Amount (in (mm))	1.47 (37.3)	1.24 (31.5)	1.01 (25.7)
Date Occurred	8/27/2004	9/15/2005	9/15/2004

Table 2.3-70—{Mean Monthly and Annual Precipitation At Sites Around Callaway Plant}

SITE (a)		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	in	1.73	2.20	3.21	4.16	4.87	4.02	3.80	3.75	3.42	3.18	3.47	2.47	40.28
	mm	88.14	76.71	99.82	76.20	98.81	87.12	97.79	95.00	101.09	80.26	79.25	85.09	1065.28
St. Louis, MO	in	2.14	2.28	3.60	3.69	4.11	3.76	3.90	2.98	2.96	2.76	3.71	2.86	38.75
	mm	88.65	74.93	105.92	84.84	112.27	90.42	101.09	102.62	107.95	90.42	84.58	93.73	1137.41
Kansas City, MO	in	1.15	1.31	2.44	3.38	5.39	4.44	4.42	3.54	4.64	3.33	2.30	1.64	37.98
	mm	104.39	79.50	112.78	81.79	105.66	82.04	109.73	116.59	98.30	77.98	87.12	92.71	1148.59
Jefferson City, MO+	in	2.80	0.76	2.44	2.68	2.53	1.73	2.61	5.82	2.51	2.09	2.73	1.17	29.87
	mm	71.12	19.30	61.89	68.16	64.26	43.94	66.21	147.74	63.84	53.09	69.43	29.80	758.78
Vichy Rolla, MO+	in	3.46	0.82	2.89	3.03	5.67	3.46	2.50	3.92	3.25	2.34	3.30	0.71	35.34
	mm	87.80	20.83	73.41	77.05	143.93	87.80	63.42	99.65	82.47	59.35	83.90	17.95	897.55

Notes:

(1) Columbia, MO, St. Louis, MO, and Kansas City, MO data period 1971-2000
Jefferson City, MO and Vichy Rolla, MO data period 2004-2006 .

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Table 2.3-71—{Mean Monthly and Annual Snowfall (1971-2000) Around Callaway Plant}

SITE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	in	7.3	7.3	3.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.6	25.7
	mm	177.80	162.56	60.96	2.54	0.00	0.00	0.00	0.00	0.00	0.00	15.24	43.18	462.28
St. Louis, MO	in	7.4	4.8	3.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.5	4.9	22.5
	mm	66.04	96.52	33.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.16	205.74
Kansas City, MO	in	5.8	5.0	2.6	0.8	0.0	0.0	0.0	0.0	0.0	0.3	1.3	4.3	20.1
	mm	109.22	121.92	35.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.62	40.64	314.96

Table 2.3-72—{Monthly Mean Number of Days with Precipitation (1971-2000) Around Callaway Plant}

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	7.9	8.5	10.8	11.1	12.1	9.1	8.5	8.1	8.4	8.9	9.6	8.9	111.9
St. Louis, MO	9.4	8.2	11.1	11.4	11.3	9.6	8.3	8.1	7.5	8.5	10.1	9.4	112.9
Kansas City, MO	7.3	7.1	10.0	11.0	11.5	10.5	8.6	8.5	8.4	7.4	7.9	7.5	105.7

Table 2.3-73—{Monthly Mean Number of Days with Heavy Fog (1971-2000) Around Callaway Plant}

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Columbia, MO	3.0	2.5	2.0	1.3	1.7	1.0	1.5	1.9	2.0	1.8	1.6	3.2	23.5
St. Louis, MO	2.2	1.6	1.2	0.6	0.6	0.3	0.2	0.4	0.5	0.7	0.9	1.8	11.0
Kansas City, MO	2.7	2.5	1.8	1.0	1.1	0.8	0.5	1.2	1.0	1.7	1.9	2.9	19.1

Note:

Columbia period 1965-2000, St. Louis period 1959-2000, Kansas City period 1968-2002

Table 2.3-74—{Callaway Plant 33 ft (10m) Annual Stability Persistence Summary for Year 2004}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**TOTAL**
A	88	35	38	33	36	30	26	27	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	333
	26	36	48	58	69	78	85	93	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	280	54	12	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	350
	80	95	98	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	285	37	9	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	339
	84	94	97	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	380	158	73	42	23	21	12	12	10	6	7	2	2	1	4	1	4	2	4	4	1	1	0	0	13	783
	48	68	78	83	86	89	90	92	93	94	95	95	95	95	96	96	96	97	97	98	98	98	98	98	100	
E	310	131	60	51	26	24	20	9	14	6	13	7	9	4	5	2	0	1	0	0	0	0	0	0	0	692
	44	63	72	79	83	86	89	91	93	94	95	96	98	98	99	99	99	100	100	100	100	100	100	100	100	
F	182	68	46	36	19	16	11	12	8	7	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	414
	43	60	71	80	84	88	91	94	96	97	98	99	100	100	100	100	100	100	100	100	100	100	100	100	100	
G	30	21	18	11	9	5	7	6	3	8	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	127
	23	40	54	62	70	74	79	84	86	92	96	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	1555	504	256	182	114	97	76	67	50	32	28	17	13	5	9	3	4	3	4	4	1	1	0	0	13	3038

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Table 2.3-75—{Callaway Plant 33 ft (10m) Annual Stability Persistence Summary for Year 2005}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**TOTAL**
A	53	31	38	22	31	32	33	29	26	19	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	324
	16	25	37	44	54	63	74	83	91	96	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	224	43	11	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	286
	78	93	97	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	224	41	14	9	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290
	77	91	96	99	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	345	88	61	20	26	11	10	4	11	8	3	8	3	3	1	4	5	2	4	2	2	3	2	2	12	640
	53	67	77	80	84	86	87	88	90	91	91	92	93	93	94	94	95	95	96	96	97	97	97	98	100	
E	265	106	63	39	32	21	17	18	11	12	6	7	7	6	1	1	0	1	0	0	0	0	0	0	0	613
	43	60	70	77	82	85	88	91	93	95	96	97	98	99	99	99	99	100	100	100	100	100	100	100	100	
F	152	89	46	28	24	20	15	5	8	7	5	4	2	1	1	0	0	0	0	0	0	0	0	0	0	407
	37	59	70	77	83	88	91	93	95	96	98	99	99	99	100	100	100	100	100	100	100	100	100	100	100	
G	48	14	19	14	11	6	8	2	6	4	6	4	4	0	0	0	0	0	0	0	0	0	0	0	0	146
	32	42	55	65	72	76	82	83	87	90	94	97	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	1311	412	252	138	125	91	84	58	63	50	30	23	16	10	3	5	5	3	4	2	2	3	2	2	12	2706

Table 2.3-76—{Callaway Plant 33 ft (10m) Annual Stability Persistence Summary for Year 2006}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**TOTAL**
A	67	44	22	19	28	33	13	14	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248
	27	44	53	61	72	85	91	96	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	226	52	19	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	309
	73	89	96	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	297	64	21	8	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	395
	75	91	96	98	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	331	160	69	43	26	18	13	12	11	5	2	7	3	3	4	2	1	7	2	2	0	1	1	0	13	736
	44	66	76	81	85	87	89	91	92	93	93	94	95	95	96	96	96	97	97	97	97	98	98	98	100	
E	250	130	50	44	41	37	17	13	19	20	12	8	7	12	1	2	2	1	0	0	0	0	0	0	0	666
	37	57	64	71	77	82	85	87	90	93	95	96	97	99	99	99	99	100	100	100	100	100	100	100	100	
F	144	93	59	39	18	17	10	8	5	6	11	1	2	0	0	0	0	0	0	0	0	0	0	0	0	413
	34	57	71	81	85	89	92	93	95	96	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	
G	36	20	15	9	10	6	2	7	5	9	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	127
	28	44	55	62	70	75	77	82	86	93	97	99	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	1351	563	255	170	129	112	57	54	47	41	30	18	13	15	5	4	3	8	2	2	0	1	1	0	13	2894

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Table 2.3-77—{Callaway Plant 33 ft (10m) Annual Stability Persistence Summary for Years 2004-2006}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**TOTAL**
A	208	110	98	74	95	95	72	70	48	25	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	905
	22	35	45	54	64	75	83	90	96	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	730	149	42	17	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	945
	77	93	97	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	806	142	44	23	3	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1024
	78	92	96	99	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	1056	406	203	105	75	50	35	28	32	19	12	17	8	7	9	7	10	11	10	8	3	5	3	2	38	2159
	48	67	77	81	85	87	89	90	92	93	93	94	94	95	95	95	96	96	97	97	97	98	98	98	100	
E	825	367	173	134	99	82	54	40	44	38	31	22	23	22	7	5	2	3	0	0	0	0	0	0	0	1971
	41	60	69	76	81	85	87	90	92	94	95	96	98	99	99	99	99	100	100	100	100	100	100	100	100	
F	477	250	151	103	60	54	36	25	21	20	20	8	6	1	1	0	0	0	0	0	0	0	0	0	0	1233
	38	58	71	79	84	88	91	93	95	97	98	99	99	99	100	100	100	100	100	100	100	100	100	100	100	
G	114	55	52	34	30	17	17	15	14	21	15	11	5	0	0	0	0	0	0	0	0	0	0	0	0	400
	28	42	55	63	71	75	79	83	87	92	96	98	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	4216	1479	763	490	367	301	217	179	160	123	88	58	42	30	17	12	12	14	10	8	3	5	3	2	38	8637

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Table 2.3-78—{Callaway Plant 197 ft (60m) Annual Stability Persistence Summary for Year 2004}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**Total**
A	82	35	40	32	32	29	23	26	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	319
	25	36	49	59	69	78	85	93	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	270	51	12	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	337
	80	95	98	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	273	37	9	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	327
	83	94	97	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	363	151	73	39	22	21	10	11	10	6	7	2	2	1	3	1	4	2	4	4	1	1	0	0	13	751
	48	68	78	83	86	89	90	91	93	94	94	95	95	95	96	96	96	96	97	98	98	98	98	98	100	
E	302	125	57	48	26	24	19	9	14	5	13	7	9	4	5	2	0	1	0	0	0	0	0	0	0	670
	45	63	72	79	83	86	89	91	93	93	95	96	98	98	99	99	99	100	100	100	100	100	100	100	100	
F	175	64	45	34	17	16	11	11	7	7	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	396
	44	60	71	80	84	88	91	94	95	97	98	99	100	100	100	100	100	100	100	100	100	100	100	100	100	
G	27	20	18	11	10	5	7	6	2	7	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	122
	22	38	53	62	70	74	80	85	86	92	95	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	1492	483	254	173	108	96	70	64	48	30	28	17	13	5	8	3	4	3	4	4	1	1	0	0	13	2922

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Table 2.3-79— {Callaway Plant 197 ft (60m) Annual Stability Persistence Summary for Year 2005}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**Total**
A	53	31	38	24	30	31	34	28	26	19	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	324
	16	25	37	45	54	63	74	83	91	96	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	223	43	11	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285
	78	93	97	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	223	41	13	9	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288
	77	91	96	99	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	345	88	59	20	26	11	10	4	11	8	3	8	3	3	1	4	5	2	4	2	2	3	2	2	12	638
	54	67	77	80	84	86	87	88	89	91	91	92	93	93	94	94	95	95	96	96	97	97	97	98	100	
E	264	106	63	39	32	21	17	18	11	12	6	7	7	6	1	1	0	1	0	0	0	0	0	0	0	612
	43	60	70	77	82	85	88	91	93	95	96	97	98	99	99	99	99	100	100	100	100	100	100	100	100	
F	152	90	46	27	24	20	15	5	8	7	5	4	2	1	1	0	0	0	0	0	0	0	0	0	0	407
	37	59	70	77	83	88	91	93	95	96	98	99	99	99	100	100	100	100	100	100	100	100	100	100	100	
G	48	14	19	14	11	6	8	2	6	4	6	4	4	0	0	0	0	0	0	0	0	0	0	0	0	146
	32	42	55	65	72	76	82	83	87	90	94	97	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	1308	413	249	139	124	90	85	57	63	50	30	23	16	10	3	5	5	3	4	2	2	3	2	2	12	2700

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Table 2.3-80—{Callaway Plant 197 ft (60m) Annual Stability Persistence Summary for Year 2006}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**Total**
A	68	43	21	19	28	33	13	15	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	247
	27	44	53	61	72	85	91	97	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	225	52	19	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308
	73	89	96	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	291	64	20	8	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	388
	75	91	96	98	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	327	154	67	42	26	16	13	12	11	5	2	7	3	3	5	2	0	7	1	2	0	1	1	0	13	720
	45	66	76	81	85	87	89	91	92	93	93	94	95	95	96	96	96	97	97	97	97	98	98	98	100	
E	246	127	48	43	41	37	18	14	18	20	12	8	6	11	1	2	2	1	0	0	0	0	0	0	0	655
	37	56	64	70	77	82	85	87	90	93	95	96	97	99	99	99	99	100	100	100	100	100	100	100	100	
F	143	93	59	39	18	17	9	7	5	6	11	1	2	0	0	0	0	0	0	0	0	0	0	0	0	410
	34	57	71	81	85	90	92	93	95	96	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	
G	36	20	15	9	10	6	2	7	5	9	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	127
	28	44	55	62	70	75	77	82	86	93	97	99	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	1336	553	249	168	129	110	57	55	45	41	30	18	12	14	6	4	2	8	1	2	0	1	1	0	13	2855

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Table 2.3-81—{Callaway Plant 197 ft (60m) Annual Stability Persistence Summary for Years 2004-2006}

STABILITY PERSISTENCE (HOURS)/PERCENT																										
STABILITY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**GT.24**	**Total**
A	203	109	99	75	90	93	70	69	47	25	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	890
	22	35	46	54	64	75	83	90	96	98	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
B	718	146	42	17	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	930
	77	92	97	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
C	787	142	42	23	3	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1003
	78	92	96	99	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
D	1035	393	199	101	74	48	33	27	32	19	12	17	8	7	9	7	9	11	9	8	3	5	3	2	38	2109
	49	67	77	81	85	87	89	90	92	92	93	94	94	95	95	95	96	96	97	97	97	97	98	98	100	
E	812	358	168	130	99	82	54	41	43	37	31	22	22	21	7	5	2	3	0	0	0	0	0	0	0	1937
	41	60	69	75	80	85	87	90	92	94	95	96	98	99	99	99	99	100	100	100	100	100	100	100	100	
F	469	247	150	100	58	54	35	23	20	20	20	8	6	1	1	0	0	0	0	0	0	0	0	0	0	1212
	38	59	71	79	84	88	91	93	95	97	98	99	99	99	100	100	100	100	100	100	100	100	100	100	100	
G	111	54	52	34	31	17	17	15	13	20	15	11	5	0	0	0	0	0	0	0	0	0	0	0	0	395
	28	41	54	63	71	75	80	83	87	92	95	98	100	100	100	100	100	100	100	100	100	100	100	100	100	
TOTAL	4135	1449	752	480	360	297	212	176	156	121	88	58	41	29	17	12	11	14	9	8	3	5	3	2	38	8476

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Table 2.3-82—{Monthly and Annual Average Mixing Height Values}

MONTH	YEAR										Monthly Average	Annual Average
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
	height (meters)											
JAN	388	661	432	492	504	450	447	372	645	587	498	1086
FEB	676	1118	1381	810	519	840	589	810	1099	1162	901	
MAR	996	1163	827	944	1232	687	1074	986	1376	994	1028	
APR	1366	1512	1354	1789	1386	960	1689	1344	1451	1568	1442	
MAY	1661	1165	1141	1013	2083	946	1176	1320	1570	2015	1409	
JUN	1471	1328	1423	1242	1332	2004	1196	1475	1375	1555	1440	
JUL	1848	1627	1687	1344	937	1792	1302	1559	1286	1734	1512	
AUG	933	1351	1329	1078	1707	1699	1551	1351	1950	1596	1454	
SEP	1132	1748	1205	1451	1190	1693	1498	1162	1228	1202	1351	
OCT	1475	740	723	1062	795	1104	598	1252	527	1225	950	
NOV	899	522	407	507	508	712	349	856	754	536	605	
DEC	618	242	391	448	389	293	696	554	514	258	440	

MONTH	YEAR										Monthly Average	Annual Average
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
	height (feet)											
JAN	1273	2167	1419	1615	1652	1477	1467	1219	2116	1925	1633	3562
FEB	2217	3669	4531	2659	1704	2756	1933	2658	3607	3812	2955	
MAR	3267	3816	2715	3098	4042	2254	3525	3233	4516	3261	3373	
APR	4481	4961	4443	5868	4546	3149	5542	4409	4762	5146	4731	
MAY	5451	3823	3745	3322	6833	3104	3858	4331	5152	6611	4623	
JUN	4826	4357	4670	4075	4371	6575	3924	4840	4510	5103	4725	
JUL	6062	5337	5534	4409	3075	5878	4271	5116	4219	5688	4959	
AUG	3060	4434	4359	3537	5599	5575	5087	4433	6396	5235	4771	
SEP	3715	5736	3953	4762	3903	5556	4915	3811	4030	3942	4432	
OCT	4838	2428	2372	3485	2609	3623	1962	4108	1729	4020	3117	
NOV	2948	1712	1337	1665	1666	2335	1143	2809	2473	1757	1985	
DEC	2026	794	1284	1471	1275	960	2285	1818	1685	846	1444	

Table 2.3-83—{Temperature Inversion Frequency and Persistence, Year 2004}

DURATION (HOURS)	NUMBER OF OBSERVATIONS	PERCENT PROBABILITY
1	94	29.19
2	41	41.93
3	17	47.20
4	22	54.04
5	17	59.32
6	9	62.11
7	10	65.22
8	13	69.25
9	11	72.67
10	17	77.95
11	21	84.47
12	21	90.99
13	19	96.89
14	7	99.07
15	2	99.69
16	1	100.00

Notes:

THE LONGEST INVERSION LASTED 16 HOURS
OF THE LONGEST INVERSIONS
NUMBER 1 STARTED 11 HOURS INTO DAY 339
THIRD COLUMN DEFINES THE PERCENT PROBABILITY
THAT IF AN INVERSION OCCURS, IT'S DURATION
WILL BE LESS THAN THE NUMBER OF HOURS SPECIFIED

Table 2.3-84—{Temperature Inversion Frequency and Persistence, Year 2005}

DURATION (HOURS)	NUMBER OF OBSERVATIONS	PERCENT PROBABILITY
1	55	18.71
2	41	32.65
3	26	41.50
4	16	46.94
5	14	51.70
6	11	55.44
7	12	59.52
8	6	61.56
9	11	65.31
10	19	71.77
11	25	80.27
12	17	86.05
13	20	92.86
14	13	97.28
15	7	99.66
16	1	100.00

Notes:

THE LONGEST INVERSION LASTED 16 HOURS
OF THE LONGEST INVERSIONS
NUMBER 1 STARTED 12 HOURS INTO DAY 288
THIRD COLUMN DEFINES THE PERCENT PROBABILITY
THAT IF AN INVERSION OCCURS, IT'S DURATION
WILL BE LESS THAN THE NUMBER OF HOURS SPECIFIED

Table 2.3-85—{Temperature Inversion Frequency and Persistence, Year 2006}

DURATION (HOURS)	NUMBER OF OBSERVATIONS	PERCENT PROBABILITY
1	65	20.12
2	43	33.44
3	40	45.82
4	24	53.25
5	17	58.51
6	18	64.09
7	14	68.42
8	9	71.21
9	8	73.68
10	17	78.95
11	24	86.38
12	17	91.64
13	19	97.52
14	7	99.69
15	1	100.00

Notes:

THE LONGEST INVERSION LASTED 15 HOURS
OF THE LONGEST INVERSIONS
NUMBER 1 STARTED 11 HOURS INTO DAY 25
THIRD COLUMN DEFINES THE PERCENT PROBABILITY
THAT IF AN INVERSION OCCURS, IT'S DURATION
WILL BE LESS THAN THE NUMBER OF HOURS SPECIFIED

Table 2.3-86—{National Ambient Air Quality Standards}

Pollutant	Primary Stds.	Averaging Times	Secondary Stds.
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour(1)	None
	35 ppm (40 mg/m^3)	1-hour(1)	None
Lead	1.5 µg/m^3	Quarterly Average	Same as Primary
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary
Particulate Matter (PM_{10})	Revoked(2)	Annual(2) (Arith. Mean)	-------
	150 µg/m^3	24-hour(3)	-------
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual(4) (Arith. Mean)	Same as Primary
	35 µg/m^3	24-hour(5)	
Ozone	0.08 ppm	8-hour(6)	Same as Primary
	0.12 ppm	1-hour(7) (Applies only in limited areas)	Same as Primary
Sulfur Oxides	0.03 ppm	Annual (Arith. Mean)	-------
	0.14 ppm	24-hour(1)	-------
	-------	3-hour(1)	0.5 ppm (1300 µg/m^3)

Notes:

(1) Not to be exceeded more than once per year.
(2) Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual PM10 standard in 2006 (effective December 17, 2006).
(3) Not to be exceeded more than once per year on average over 3 years.
(4) To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
(5) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).
(6) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(7) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1, as determined by appendix H.
As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the fourteen 8-hour ozone nonattainment Early Action Compact (EAC) Area.

Table 2.3-87—{Tower Instrument Specifications and Accuracies for Meteorological Monitoring Program (Pre-application, Preoperational, and Operational)}

Characteristics	Requirements[2] [SG 23 requirements, if different]	Specifications	
		Operational	Pre-Application[1]
Wind Speed Sensor			
Accuracy	±0.2 m/s (±0.45 mph) OR ±5% of observed wind speed threshold <0.45 m/s (1 mph)	±1% or 0.15 mph (.07 m/s)	±0.07 m/s (0.16 mph)
Resolution	0.1 m/s OR 0.1 mph	0.1 mph (0.04 m/s)	0.01 m/s (0.02 mph)
Wind Direction Sensor			
Accuracy	±5 degrees	±3.0 degrees	±2.0 degrees
Resolution	1.0 degree	1.0 degree	0.1 degrees
Temperature Sensors			
Accuracy (ambient)	±0.5°C (±0.9°F)	±0.1°C (±0.18°F)	±0.24°C (±0.43°F)
Resolution (ambient)	0.1°C OR 0.1°F	0.1°C (0.18°F)	0.01°C (±0.018°F)
Accuracy (vertical temperature difference)	±0.1°C (±0.18°F)	±0.05°C (±0.09°F)	±0.025°C (±0.045°F)
Resolution (vertical temperature difference)	0.01°C OR 0.01°F	0.01°C (0.018°F)	0.001°C (0.0018°F)
Precipitation Sensor			
Accuracy	±10% for a volume equivalent to 2.54 mm (0.1 in) of precipitation at a rate < 50 mm/hr (< 2 in/hr)	±1%	±1%
Resolution	0.25 mm OR 0.01 in	0.01 in.	0.01 in.
Time			
Accuracy	± 5 min	± 1 sec	NA
Resolution	1 min	1 sec	NA

Note:

(1) Instruments replaced in October 2007 following completion of the pre-application monitoring period with new instruments meeting the Regulatory Guide 1.23, Revision 1 specifications.

(2) Accuracy and resolution criteria from Regulatory Guide 1.23, Revision 1 [Resolution not specified in SG 23]

Table 2.3-88—{AEOLUS3 and ARCON96 Input}

Parameter	Value(s)
Wind speed group upper limits for AEOLUS3	0.268, 0.75, 1.0, 1.5, 2.0, 3.0, 5.0, 6.0, 8.0, 10.0, 50.0 meters/second
AEOLUS3 wind speed assigned to calms	0.3 miles per hour
Anemometer starting speed for the AEOLUS3 runs	0.6 miles per hour
Temperature sensor separation	60m – 10m or 50 meters
Wind instrument heights	10m, 60m
The annual average mixing layer height	845 meters
Meteorological channel units of measure	Wind speed: miles per hour Wind direction: degrees from True North Delta-Temperature: degrees Fahrenheit between sensors (50 m)
Distance from closest point on Callaway Plant Unit 2 Reactor Building to Callaway Plant Unit 1 control room air intake	1490 feet or 454 meters
Wind Directions to EPR Control Room air intake location from release points	Stack 45 degrees Steam line silencers (all) 45 degrees Canopy Pt 1 45 degrees Canopy Pt 2 23 degrees Depressurization Shaft 45 degrees Equipment Hatch 45 degrees
Minimum wind speed value for ARCON96	0.5 m/sec
Surface roughness for ARCON96	0.2
Sector averaging constant for ARCON96	4.3
Wind direction window for ARCON96	90 degrees
Control Room air intake location employed in analysis (for all release points shown in Figure 4-1)	Intake closest to stack.
Control Room air intake elevation	32.1 meters (Mid-point of intake)
Control Room air intake horizontal distance to stack base	69.0 meters (scaled)
Control Room air intake horizontal distance to Main Steam Relief Train, via Silencer (referred to as the Silencer release point in the present application):	
SG-4 Silencer to MCR Div. 3 Air Intake (AI)	53.0 meters
SG-3 Silencer to MCR Div. 3 AI	46.0 meters
SG-1 Silencer to MCR Div. 3 AI	78.0 meters
SG-2 Silencer to MCR Div. 3 AI	71.0 meters
Control Room air intake horizontal distances to Canopy exhausts (referred to as the Canopy release point in the present application)	
1) Near depressurization shaft (Safeguard Building Div. 4)	30.1 meters (scaled)
2) Southeast side of SAB Div. 4	65.3 meters (scaled)
Control Room air intake horizontal distance to Material Lock (for the Equipment Hatch release)	97.5 meters (scaled)
Control Room air intake horizontal distance to the depressurization shaft of Safeguard Building Div. 4 (referred to as the depressurization shaft release point in the present application)	31.4 meters (scaled)
Release heights used in ARCON96	Silencer – 33.9 meters Stack – 32.1 meters Canopy Pt. 1 – 15.5 meters Canopy Pt. 2 – 11.5 meters elevation Material Lock (for Equipment Hatch release) – 23.2 meters (release height employed in analysis = 32.1 meters, conservative) Depressurization Shaft – 7 meters

Table 2.3-89—{EAB/LPZ Accident χ/Q Values for Ground Level Release Using Callaway 2003-2007 Meteorological Data}

Distance Downwind (miles)	0-2 hour χ/Q (sec/m^3)	2-8 hour χ/Q (sec/m^3)	8-24 hour χ/Q (sec/m^3)	1-4 days χ/Q (sec/m^3)	4-30 days χ/Q (sec/m^3)
0.25	1.098E-03	6.837E-04	4.480E-04	2.343E-04	9.240E-05
0.38	5.428E-04	3.360E-04	2.190E-04	1.136E-04	4.425E-05
0.40	4.952E-04	3.066E-04	1.998E-04	1.037E-04	4.040E-05
0.43	4.401E-04	2.721E-04	1.772E-04	9.173E-05	3.565E-05
0.5	3.409E-04	2.104E-04	1.368E-04	7.064E-05	2.736E-05
0.53	3.266E-04	2.000E-04	1.291E-04	6.596E-05	2.516E-05
0.83 (EAB(1))	2.212E-04	1.314E-04	8.256E-05	4.048E-05	1.455E-05
1.0	1.695E-04	9.792E-05	5.999E-05	2.830E-05	9.625E-06
1.5	1.227E-04	6.798E-05	4.014E-05	1.789E-05	5.607E-06
2.0	9.461E-05	5.125E-05	2.964E-05	1.281E-05	3.837E-06
2.6 (LPZ(2))	7.853E-05	4.176E-05	2.376E-05	1.001E-05	2.891E-06
3.0	6.597E-05	3.467E-05	1.952E-05	8.092E-06	2.285E-06
4.0	5.254E-05	2.697E-05	1.487E-05	5.968E-06	1.609E-06
5.0	4.277E-05	2.166E-05	1.180E-05	4.646E-06	1.219E-06

(1) The EAB is defined as a radius from the midpoint between the reactor for Callaway Plant Unit 1 and the reactor for Callaway Plant Unit 2. For Callaway, the analytical distance for the atmospheric dispersion factor calculation is 0.75 mile from each release point of Unit 2 and the site EAB of 0.83 mile encompass the analytical distance.

(2) Similarly to the EAB, the LPZ analytical distance corresponds to 2.5 miles and the site LPZ distance of 2.6 miles encompass the analytical distance.

Note that the 0-2 hour value for the EAB is bounded by the value presented in Table 2.1-1 in AREVA NP Document Number 124-9057635-000, "U.S. EPR Final Safety Analysis Report". All LPZ values in this table are bounded by the values presented in AREVA NP Document Number 124-9057635-000, "U.S. EPR Final Safety Analysis Report".

Table 2.3-90—{Control Room/TSC χ/Q Values for Stack Release Using Callaway 2003-2007 Meteorological Data}

Stack Release	Wind Direction = 45 (NE)
Time Period	χ/Q (sec/m^3)
0 to 2 hours	1.36E-03
2 to 8 hours	1.08E-03
8 to 24 hours	4.37E-04
1 to 4 days	2.88E-04
4 to 30 days	1.89E-04

Notes
No credit taken for stack release height
all values in this table are bounded by the values presented in AREVA NP Document Number 124-9057635-000, "U.S. EPR Final Safety Analysis Report".

Table 2.3-91—{Control Room/TSC χ/Q Values for Silencer Release Using Callaway 2003-2007 Meteorological Data}

Silencer Release	SG-4 to Div. 3 Air Intake Wind Direction = 45 (NE)	SG-1 to Div. 3 Air Intake Wind Direction = 45 (NE)	SG-3 to Div. 3 Air Intake Wind Direction = 45 (NE)	SG-2 to Div. 3 Air Intake Wind Direction = 45 (NE)
Time Period	χ/Q (sec/m^3)	χ/Q (sec/m^3)	χ/Q (sec/m^3)	χ/Q (sec/m^3)
0 to 2 hours	2.20E-03	1.06E-03	2.90E-03	1.27E-03
2 to 8 hours	1.80E-03	8.73E-04	2.35E-03	1.04E-03
8 to 24 hours	7.23E-04	3.50E-04	9.41E-04	4.17E-04
1 to 4 days	4.72E-04	2.31E-04	6.19E-04	2.74E-04
4 to 30 days	3.11E-04	1.51E-04	4.07E-04	1.80E-04

Note

all values in this table are bounded by the values presented in AREVA NP Document Number 124-9057635-000, "U.S. EPR Final Safety Analysis Report".

Table 2.3-92—{Control Room/TSC χ/Q Values for Canopy Release Using Callaway 2003-2007 Meteorological Data}

Canopy Release	Pt. 1 Wind Direction = 45 (NE)	Pt. 2 Wind Direction = 23 (NNE)
Time Period	χ/Q (sec/m^3)	χ/Q (sec/m^3)
0 to 2 hours	4.81E-03	1.33E-03
2 to 8 hours	3.60E-03	1.07E-03
8 to 24 hours	1.52E-03	4.64E-04
1 to 4 days	9.80E-04	2.90E-04
4 to 30 days	6.40E-04	1.93E-04

Note that all values in this table are bounded by the values presented in AREVA NP Document Number 124-9057635-000, "U.S. EPR Final Safety Analysis Report".

Table 2.3-93—{Control Room/TSC χ/Q Values for Equipment Hatch Release Using Callaway 2003-2007 Meteorological Data}

Equip. Hatch Release	Wind Direction = 45 (NE)
Time Period	χ/Q (sec/m^3)
0 to 2 hours	7.10E-04
2 to 8 hours	5.67E-04
8 to 24 hours	2.29E-04
1 to 4 days	1.52E-04
4 to 30 days	9.95E-05

Note that all values in this table are bounded by the values presented in AREVA NP Document Number 124-9057635-000, "U.S. EPR Final Safety Analysis Report".

Table 2.3-94—{Control Room/TSC χ/Q Values for Depressurization Shaft Release Using Callaway 2003-2007 Meteorological Data}

Shaft Release	Wind Direction = 45 (NE)
Time Period	χ/Q (sec/m^3)
0 to 2 hours	3.38E-03
2 to 8 hours	2.53E-03
8 to 24 hours	1.07E-03
1 to 4 days	6.92E-04
4 to 30 days	4.50E-04

Note that all values in this table are bounded by the values presented in AREVA NP Document Number 124-9057635-000, "U.S. EPR Final Safety Analysis Report".

Table 2.3-95—{50th Percentile Accident Atmospheric Dispersion Factors (sec/m^3)}

Time Period	0-2 hrs	2-8 hrs	8-24 hrs	1-4 days	4-30 days	annual average
0.43 mile	8.332E-05					
EAB (0.83 mile)	3.718E-05					
1.5 miles	1.524E-05	1.110E-05	8.364E-06	5.419E-06	2.906E-06	1.356E-06
LPZ (2.6 miles)	8.902E-06	6.297E-06	4.623E-06	2.878E-06	1.458E-06	6.342E-07

The EAB analytical distance for the atmospheric dispersion factor corresponds to 0.75 mile and is bounding for the Callaway site EAB distance of 0.83 miles. Similarly, the LPZ analytical distance corresponds to 2.5 miles and is bounding for the site LPZ distance of 2.6 miles

Table 2.3-96—{Normal Effluent Annual Average, Undecayed, Undepleted c/Q Values for Mixed Mode Release Using 242,458 cfm Flow Rate for Grid Receptors}

Downwind Sector	χ/Q (sec/m³) 0.5 miles	χ/Q (sec/m³) 1.5 miles	χ/Q (sec/m³) 2.5 mile	χ/Q (sec/m³) 3.5 miles	χ/Q (sec/m³) 4.5 miles	χ/Q (sec/m³) 7.5 miles	χ/Q (sec/m³) 15 miles	χ/Q (sec/m³) 25 miles	χ/Q (sec/m³) 35 miles	χ/Q (sec/m³) 45 miles
N	7.55E-07	1.66E-07	9.21E-08	6.18E-08	4.61E-08	2.56E-08	1.13E-08	6.16E-09	4.15E-09	3.08E-09
NNE	5.41E-07	1.13E-07	6.19E-08	4.17E-08	3.11E-08	1.73E-08	7.69E-09	4.21E-09	2.85E-09	2.12E-09
NE	4.74E-07	1.01E-07	5.62E-08	3.79E-08	2.84E-08	1.59E-08	7.11E-09	3.90E-09	2.63E-09	1.96E-09
ENE	2.87E-07	6.45E-08	3.66E-08	2.49E-08	1.87E-08	1.28E-08	5.45E-09	2.86E-09	1.88E-09	1.38E-09
E	4.76E-07	1.05E-07	6.28E-08	4.20E-08	3.13E-08	1.95E-08	8.19E-09	4.27E-09	2.80E-09	2.06E-09
ESE	5.04E-07	1.10E-07	6.04E-08	4.03E-08	2.99E-08	1.98E-08	8.42E-09	4.43E-09	2.91E-09	2.14E-09
SE	5.37E-07	1.26E-07	7.05E-08	4.71E-08	3.49E-08	1.90E-08	8.10E-09	5.01E-09	3.27E-09	2.38E-09
SSE	4.55E-07	1.14E-07	6.59E-08	4.46E-08	3.31E-08	1.79E-08	7.58E-09	5.39E-09	3.44E-09	2.48E-09
S	4.18E-07	1.06E-07	6.26E-08	4.29E-08	3.21E-08	2.01E-08	8.62E-09	4.61E-09	3.66E-09	2.65E-09
SSW	3.71E-07	9.31E-08	5.56E-08	3.85E-08	2.88E-08	1.59E-08	6.84E-09	4.26E-09	2.79E-09	2.03E-09
SW	3.66E-07	8.94E-08	5.39E-08	3.76E-08	2.84E-08	1.58E-08	6.85E-09	3.68E-09	2.46E-09	1.81E-09
WSW	2.41E-07	6.11E-08	3.70E-08	2.58E-08	1.95E-08	1.32E-08	5.56E-09	2.91E-09	1.91E-09	1.39E-09
W	2.35E-07	5.87E-08	3.51E-08	2.43E-08	1.83E-08	1.08E-08	4.62E-09	2.46E-09	1.63E-09	1.19E-09
WNW	3.08E-07	7.43E-08	4.38E-08	3.03E-08	2.28E-08	1.47E-08	6.39E-09	3.42E-09	2.27E-09	1.67E-09
NW	7.72E-07	1.71E-07	9.66E-08	6.59E-08	4.96E-08	3.21E-08	1.42E-08	8.28E-09	5.46E-09	4.02E-09
NNW	1.03E-06	2.15E-07	1.19E-07	8.09E-08	6.09E-08	3.46E-08	1.58E-08	8.85E-09	6.04E-09	4.53E-09

Table 2.3-97—{Normal Effluent Annual Average, Undecayed Undepleted χ/Q Values for Mixed Mode Release Using 242,458 cfm Flow Rate for Special Receptors}

Downwind Sector	χ/Q (sec/m^3) Site Boundary	χ/Q (sec/m^3) Nearest Residents	χ/Q (sec/m^3) Nearest Gardens	χ/Q (sec/m^3) Nearest Meat Animal	χ/Q (sec/m^3) Nearest Milk Cow
N	2.20E-07	7.21E-08	2.63E-08	2.63E-08	0.00E+00
NNE	2.14E-07	6.44E-08	5.79E-08	5.82E-08	0.00E+00
NE	1.39E-07	5.93E-08	3.24E-08	4.43E-08	0.00E+00
ENE	1.40E-07	5.30E-08	3.19E-08	2.42E-08	0.00E+00
E	1.06E-07	2.42E-08	0.00E+00	2.49E-08	0.00E+00
ESE	1.35E-07	5.19E-08	2.34E-08	5.19E-08	0.00E+00
SE	1.99E-07	1.10E-07	4.77E-08	1.10E-07	0.00E+00
SSE	2.08E-07	1.19E-07	1.17E-07	9.06E-08	9.06E-08
S	2.17E-07	8.47E-08	1.01E-07	1.01E-07	0.00E+00
SSW	2.11E-07	6.56E-08	5.39E-08	5.39E-08	0.00E+00
SW	1.45E-07	5.28E-08	4.37E-08	5.89E-08	0.00E+00
WSW	1.08E-07	8.75E-08	2.75E-08	6.83E-08	0.00E+00
W	1.07E-07	1.01E-07	6.92E-08	7.79E-08	3.57E-08
WNW	1.04E-07	8.19E-08	8.19E-08	6.40E-08	6.40E-08
NW	2.50E-07	8.73E-08	5.32E-08	8.06E-08	6.60E-08
NNW	2.79E-07	9.28E-08	4.48E-08	5.73E-08	0.00E+00

Table 2.3-98—{Normal Effluent Annual Average, Depleted χ/Q Values for Mixed Mode Release Using 242,458 cfm Flow Rate for Grid Receptors}

Downwind Sector	χ/Q (sec/m^3) **0.5 miles**	χ/Q (sec/m^3) **1.5 miles**	χ/Q (sec/m^3) **2.5 mile**	χ/Q (sec/m^3) **3.5 miles**	χ/Q (sec/m^3) **4.5 miles**	χ/Q (sec/m^3) **7.5 miles**	χ/Q (sec/m^3) **15 miles**	χ/Q (sec/m^3) **25 miles**	χ/Q (sec/m^3) **35 miles**	χ/Q (sec/m^3) **45 miles**
N	6.94E-07	1.45E-07	7.88E-08	5.21E-08	3.84E-08	2.08E-08	8.83E-09	4.63E-09	3.02E-09	2.18E-09
NNE	4.98E-07	9.78E-08	5.27E-08	3.48E-08	2.56E-08	1.38E-08	5.88E-09	3.09E-09	2.02E-09	1.46E-09
NE	4.36E-07	8.82E-08	4.81E-08	3.19E-08	2.36E-08	1.28E-08	5.51E-09	2.91E-09	1.90E-09	1.38E-09
ENE	2.64E-07	5.64E-08	3.16E-08	2.13E-08	1.58E-08	1.09E-08	4.41E-09	2.19E-09	1.38E-09	9.66E-10
E	4.37E-07	9.18E-08	5.44E-08	3.59E-08	2.64E-08	1.63E-08	6.50E-09	3.19E-09	1.99E-09	1.37E-09
ESE	4.62E-07	9.60E-08	5.18E-08	3.40E-08	2.49E-08	1.64E-08	6.65E-09	3.31E-09	2.08E-09	1.46E-09
SE	4.93E-07	1.10E-07	6.11E-08	4.02E-08	2.94E-08	1.56E-08	6.37E-09	3.73E-09	2.31E-09	1.60E-09
SSE	4.18E-07	1.01E-07	5.79E-08	3.86E-08	2.83E-08	1.49E-08	6.03E-09	3.49E-09	2.01E-09	1.33E-09
S	3.84E-07	9.44E-08	5.52E-08	3.73E-08	2.75E-08	1.71E-08	7.06E-09	3.65E-09	2.16E-09	1.43E-09
SSW	3.42E-07	8.28E-08	4.91E-08	3.35E-08	2.48E-08	1.33E-08	5.47E-09	3.29E-09	2.07E-09	1.45E-09
SW	3.36E-07	7.92E-08	4.74E-08	3.27E-08	2.44E-08	1.32E-08	5.48E-09	2.83E-09	1.83E-09	1.31E-09
WSW	2.22E-07	5.44E-08	3.27E-08	2.26E-08	1.68E-08	1.13E-08	4.56E-09	2.27E-09	1.43E-09	1.00E-09
W	2.17E-07	5.21E-08	3.09E-08	2.12E-08	1.57E-08	9.11E-09	3.77E-09	1.93E-09	1.24E-09	8.86E-10
WNW	2.83E-07	6.55E-08	3.83E-08	2.62E-08	1.95E-08	1.25E-08	5.27E-09	2.73E-09	1.77E-09	1.26E-09
NW	7.09E-07	1.49E-07	8.31E-08	5.58E-08	4.15E-08	2.69E-08	1.15E-08	6.16E-09	3.83E-09	2.68E-09
NNW	9.48E-07	1.87E-07	1.01E-07	6.76E-08	5.03E-08	2.78E-08	1.23E-08	6.68E-09	4.45E-09	3.25E-09

Table 2.3-99—{Normal Effluent Annual Average, Depleted χ/Q Values for Mixed Mode Release Using 242,458 cfm Flow Rate for Special Receptors}

Downwind Sector	χ/Q (sec/m^3) Site Boundary	χ/Q (sec/m^3) Nearest Residents	χ/Q (sec/m^3) Nearest Gardens	χ/Q (sec/m^3) Nearest Meat Animal	χ/Q (sec/m^3) Nearest Milk Cow
N	1.93E-07	6.37E-08	2.25E-08	2.25E-08	0.00E+00
NNE	1.88E-07	5.70E-08	5.12E-08	5.14E-08	0.00E+00
NE	1.23E-07	5.23E-08	2.80E-08	3.88E-08	0.00E+00
ENE	1.23E-07	4.70E-08	2.81E-08	2.12E-08	0.00E+00
E	9.24E-08	2.11E-08	0.00E+00	2.17E-08	0.00E+00
ESE	1.19E-07	4.55E-08	2.00E-08	4.55E-08	0.00E+00
SE	1.78E-07	9.51E-08	3.99E-08	9.51E-08	0.00E+00
SSE	1.88E-07	1.01E-07	9.98E-08	7.61E-08	7.61E-08
S	1.96E-07	7.23E-08	8.54E-08	8.54E-08	0.00E+00
SSW	1.90E-07	5.60E-08	4.57E-08	4.57E-08	0.00E+00
SW	1.30E-07	4.50E-08	3.70E-08	5.05E-08	0.00E+00
WSW	9.71E-08	7.72E-08	2.35E-08	5.98E-08	0.00E+00
W	9.64E-08	8.82E-08	6.00E-08	6.77E-08	3.03E-08
WNW	9.40E-08	7.08E-08	7.08E-08	5.50E-08	5.50E-08
NW	2.21E-07	7.60E-08	4.57E-08	7.01E-08	5.70E-08
NNW	2.45E-07	8.20E-08	3.88E-08	5.01E-08	0.00E+00

Table 2.3-100—{Normal Effluent Annual Average, D/Q Values for Mixed Mode Release Using 242,458 cfm Flow Rate for Grid Receptors}

Downwind Sector	D/Q ($1/m^2$) 0.5 miles	D/Q ($1/m^2$) 1.5 miles	D/Q ($1/m^2$) 2.5 mile	D/Q ($1/m^2$) 3.5 miles	D/Q ($1/m^2$) 4.5 miles	D/Q ($1/m^2$) 7.5 miles	D/Q ($1/m^2$) 15 miles	D/Q ($1/m^2$) 25 miles	D/Q ($1/m^2$) 35 miles	D/Q ($1/m^2$) 45 miles
N	7.69E-09	1.44E-09	6.65E-10	3.67E-10	2.41E-10	1.05E-10	3.62E-11	1.49E-11	8.73E-12	5.79E-12
NNE	5.53E-09	1.06E-09	4.85E-10	2.69E-10	1.77E-10	7.78E-11	2.71E-11	1.14E-11	6.73E-12	4.50E-12
NE	4.79E-09	9.24E-10	4.25E-10	2.36E-10	1.56E-10	6.85E-11	2.39E-11	9.99E-12	5.91E-12	3.94E-12
ENE	2.79E-09	5.35E-10	2.48E-10	1.37E-10	9.05E-11	4.06E-11	1.39E-11	5.82E-12	3.58E-12	2.55E-12
E	4.61E-09	8.78E-10	4.18E-10	2.31E-10	1.51E-10	6.64E-11	2.25E-11	9.33E-12	5.67E-12	4.08E-12
ESE	4.91E-09	9.59E-10	4.51E-10	2.52E-10	1.66E-10	7.41E-11	2.50E-11	1.02E-11	6.12E-12	4.28E-12
SE	5.63E-09	1.14E-09	5.40E-10	3.04E-10	2.01E-10	8.80E-11	3.00E-11	1.24E-11	7.50E-12	5.24E-12
SSE	4.69E-09	1.05E-09	5.17E-10	2.98E-10	1.99E-10	8.75E-11	2.99E-11	1.82E-11	9.80E-12	6.21E-12
S	3.73E-09	8.89E-10	4.41E-10	2.57E-10	1.73E-10	7.96E-11	2.66E-11	1.05E-11	9.22E-12	5.84E-12
SSW	2.79E-09	6.97E-10	3.48E-10	2.05E-10	1.38E-10	6.18E-11	2.14E-11	8.75E-12	5.24E-12	3.64E-12
SW	2.08E-09	5.40E-10	2.72E-10	1.62E-10	1.10E-10	4.93E-11	1.73E-11	7.23E-12	4.24E-12	2.79E-12
WSW	1.80E-09	4.61E-10	2.28E-10	1.35E-10	9.10E-11	4.30E-11	1.45E-11	5.97E-12	3.62E-12	2.53E-12
W	1.86E-09	4.46E-10	2.19E-10	1.28E-10	8.58E-11	3.89E-11	1.33E-11	5.43E-12	3.16E-12	2.08E-12
WNW	2.23E-09	5.15E-10	2.50E-10	1.45E-10	9.70E-11	4.45E-11	1.50E-11	6.04E-12	3.55E-12	2.41E-12
NW	5.95E-09	1.20E-09	5.65E-10	3.17E-10	2.10E-10	9.44E-11	3.21E-11	1.46E-11	9.28E-12	6.75E-12
NNW	7.47E-09	1.43E-09	6.64E-10	3.68E-10	2.42E-10	1.06E-10	3.64E-11	1.49E-11	8.70E-12	5.75E-12

Table 2.3-101—{Normal Effluent Annual Average, D/Q Values for Mixed Mode Release Using 242,458 cfm Flow Rate for Special Receptors}

Downwind Sector	D/Q ($1/m^2$) Site Boundary	D/Q ($1/m^2$) Nearest Residents	D/Q ($1/m^2$) Nearest Gardens	D/Q ($1/m^2$) Nearest Meat Animal	D/Q ($1/m^2$) Nearest Milk Cow
N	1.97E-09	5.33E-10	1.24E-10	1.24E-10	0.00E+00
NNE	1.91E-09	4.25E-10	3.68E-10	3.70E-10	0.00E+00
NE	1.30E-09	3.09E-10	1.31E-10	2.05E-10	0.00E+00
ENE	1.31E-09	3.87E-10	1.84E-10	1.23E-10	0.00E+00
E	8.84E-10	1.27E-10	0.00E+00	1.32E-10	0.00E+00
ESE	1.16E-09	3.16E-10	1.01E-10	3.16E-10	0.00E+00
SE	1.89E-09	6.74E-10	1.95E-10	6.74E-10	0.00E+00
SSE	1.80E-09	6.59E-10	6.50E-10	4.38E-10	4.38E-10
S	1.88E-09	5.87E-10	5.18E-10	5.18E-10	0.00E+00
SSW	1.82E-09	5.23E-10	3.95E-10	3.95E-10	0.00E+00
SW	8.59E-10	3.87E-10	2.92E-10	4.53E-10	0.00E+00
WSW	8.08E-10	7.49E-10	1.60E-10	5.70E-10	0.00E+00
W	8.27E-10	8.30E-10	4.81E-10	5.70E-10	1.83E-10
WNW	8.06E-10	6.61E-10	6.61E-10	4.85E-10	4.85E-10
NW	1.80E-09	7.11E-10	3.62E-10	6.42E-10	4.92E-10
NNW	1.88E-09	8.05E-10	2.99E-10	4.24E-10	0.00E+00

Table 2.3-102—{Specific Locations of Receptors of Interest}

(Page 1 of 2)

Receptor	Distance Downwind m (ft)	Sector
Site Boundary	1,971 (6,464)	N
Site Boundary	2,009 (6,589)	NNE
Site Boundary	1,927 (6,320)	NE
Site Boundary	1,918 (6,291)	ENE
Site Boundary	2,404 (7,885)	E
Site Boundary	2,012 (6,599)	ESE
Site Boundary	1,703 (5,585)	SE
Site Boundary	1,406 (4,611)	SSE
Site Boundary	1,363 (4,470)	S
Site Boundary	1,394 (4,572)	SSW
Site Boundary	1,655 (5,428)	SW
Site Boundary	1,536 (5,038)	WSW
Site Boundary	1,502 (4,926)	W
Site Boundary	1,532 (5,024)	WNW
Site Boundary	1,831 (6,005)	NW
Site Boundary	2,013 (6,602)	NNW
Nearest Resident	3,508 (11,506)	N
Nearest Resident	3,476 (11,401)	NNE
Nearest Resident	3,653 (11,981)	NE
Nearest Resident	2,672 (8,764)	ENE
Nearest Resident	5,649 (18,528)	E
Nearest Resident	3,412 (11,191)	ESE
Nearest Resident	3,573 (13,247)	SE
Nearest Resident	4,039 (13,247)	SSE
Nearest Resident	4,313 (14,146)	S
Nearest Resident	3,830 (12,562)	SSW
Nearest Resident	4,249 (13,936)	SW
Nearest Resident	1,931 (6,333)	WSW
Nearest Resident	2,511 (8,236)	W
Nearest Resident	3,106 (10,187)	WNW
Nearest Resident	3,331 (10,925)	NW
Nearest Resident	2,929 (9,607)	NNW
Nearest Garden	8,996 (29,506)	N
Nearest Garden	3,862 (12,667)	NNE
Nearest Garden	6,437 (21,113)	NE
Nearest Garden	4,619 (15,15)	ENE
Nearest Garden	N/A	E
Nearest Garden	7,081 (23,225)	ESE
Nearest Garden	7,580 (24,862)	SE
Nearest Garden	4,072 (13,356)	SSE
Nearest Garden	4,635 (15,202)	S
Nearest Garden	4,522 (14,832)	SSW
Nearest Garden	4,989 (16,363)	SW
Nearest Garden	5,166 (16,944)	WSW
Nearest Garden	3,653 (11,981)	W
Nearest Garden	3,106 (10,187)	WNW
Nearest Garden	5,086 (16,682)	NW
Nearest Garden	5,617 (18,423)	NNW
Nearest Meat Animal	8,996 (29,506)	N

Table 2.3-102—{Specific Locations of Receptors of Interest}

(Page 2 of 2)

Receptor	Distance Downwind m (ft)	Sector
Nearest Meat Animal	3,846 (12,614)	NNE
Nearest Meat Animal	4,828 (15,835)	NE
Nearest Meat Animal	5,955 (19,532)	ENE
Nearest Meat Animal	5,504 (18,053)	E
Nearest Meat Animal	3,412 (11,191)	ESE
Nearest Meat Animal	3,573 (11,719)	SE
Nearest Meat Animal	5,102 (16,734)	SSE
Nearest Meat Animal	4,635 (15,202)	S
Nearest Meat Animal	4,522 (14,832)	SSW
Nearest Meat Animal	3,862 (12,667)	SW
Nearest Meat Animal	2,317 (7,599)	WSW
Nearest Meat Animal	3,251 (10,663)	W
Nearest Meat Animal	3,830 (12,562)	WNW
Nearest Meat Animal	3,573 (11,719)	NW
Nearest Meat Animal	4,538 (14,884)	NNW
Nearest Milk Cow	N/A	N
Nearest Milk Cow	N/A	NNE
Nearest Milk Cow	N/A	NE
Nearest Milk Cow	N/A	ENE
Nearest Milk Cow	N/A	E
Nearest Milk Cow	N/A	ESE
Nearest Milk Cow	N/A	SE
Nearest Milk Cow	5,102 (16,734)	SSE
Nearest Milk Cow	N/A	S
Nearest Milk Cow	N/A	SSW
Nearest Milk Cow	N/A	SW
Nearest Milk Cow	N/A	WSW
Nearest Milk Cow	6,470 (21,221)	W
Nearest Milk Cow	3,830 (12,562)	WNW
Nearest Milk Cow	4,249 (13,936)	NW
Nearest Milk Cow	0 N/A	NNW

Table 2.3-103—{Meteorological Data for Maximum Evaporation Conditions for ESWEMS Retention Pond}

Date	DB Temp (F)	WB Temp (F)	Saturated Vapor Pressure (mb)	Wetbulb Vapor Pressure (mb)	Actual Vapor Pressure (mb)	Relative Humidity
7/2/1954	82.7	72.5	38.18	27.25	23.36	61.17%
7/3/1954	86.6	71.7	43.28	26.52	20.84	48.15%
7/4/1954	89.2	72.5	47.00	27.25	20.88	44.42%
7/5/1954	85.6	73.2	41.92	27.90	23.17	55.27%
7/6/1954	86.0	69.9	42.46	24.94	18.81	44.31%
7/7/1954	86.5	71.4	43.14	26.25	20.49	47.51%
7/8/1954	75.6	59.6	30.23	17.41	11.36	37.56%
7/9/1954	77.1	61.4	31.78	18.56	12.61	39.69%
7/10/1954	76.4	64.1	31.05	20.41	15.74	50.70%
7/11/1954	85.6	69.2	41.92	24.35	18.11	43.21%
7/12/1954	93.2	72.1	53.26	26.88	18.83	35.36%
7/13/1954	91.5	71.5	50.52	26.34	18.72	37.05%
7/14/1954	96.1	72.6	58.25	27.34	18.37	31.54%
7/15/1954	83.1	65.1	38.68	21.14	14.30	36.98%
7/16/1954	81.5	63.4	36.72	19.92	13.05	35.54%
7/17/1954	90.2	68.2	48.50	23.53	15.16	31.26%
7/18/1954	95.7	72.1	57.54	26.88	17.88	31.08%
7/19/1954	92.2	70.7	51.63	25.63	17.44	33.78%
7/20/1954	89.6	72.1	47.59	26.88	20.21	42.46%
7/21/1954	83.4	73.5	39.05	28.18	24.40	62.48%
7/22/1954	83.2	74.4	38.80	29.04	25.68	66.19%
7/23/1954	80.1	68.4	35.08	23.69	19.24	54.85%
7/24/1954	75.6	67.6	30.23	23.05	20.01	66.18%
7/25/1954	79.9	63.6	34.85	20.06	13.87	39.81%
7/26/1954	79.7	62.0	34.62	18.96	12.25	35.38%
7/27/1954	82.2	62.6	37.57	19.36	11.93	31.77%
7/28/1954	86.2	69.7	42.73	24.77	18.49	43.27%
7/29/1954	87.2	68.6	44.11	23.86	16.78	38.04%
7/30/1954	88.5	70.1	45.97	25.11	18.11	39.39%
7/31/1954	86.0	71.7	42.46	26.52	21.07	49.62%

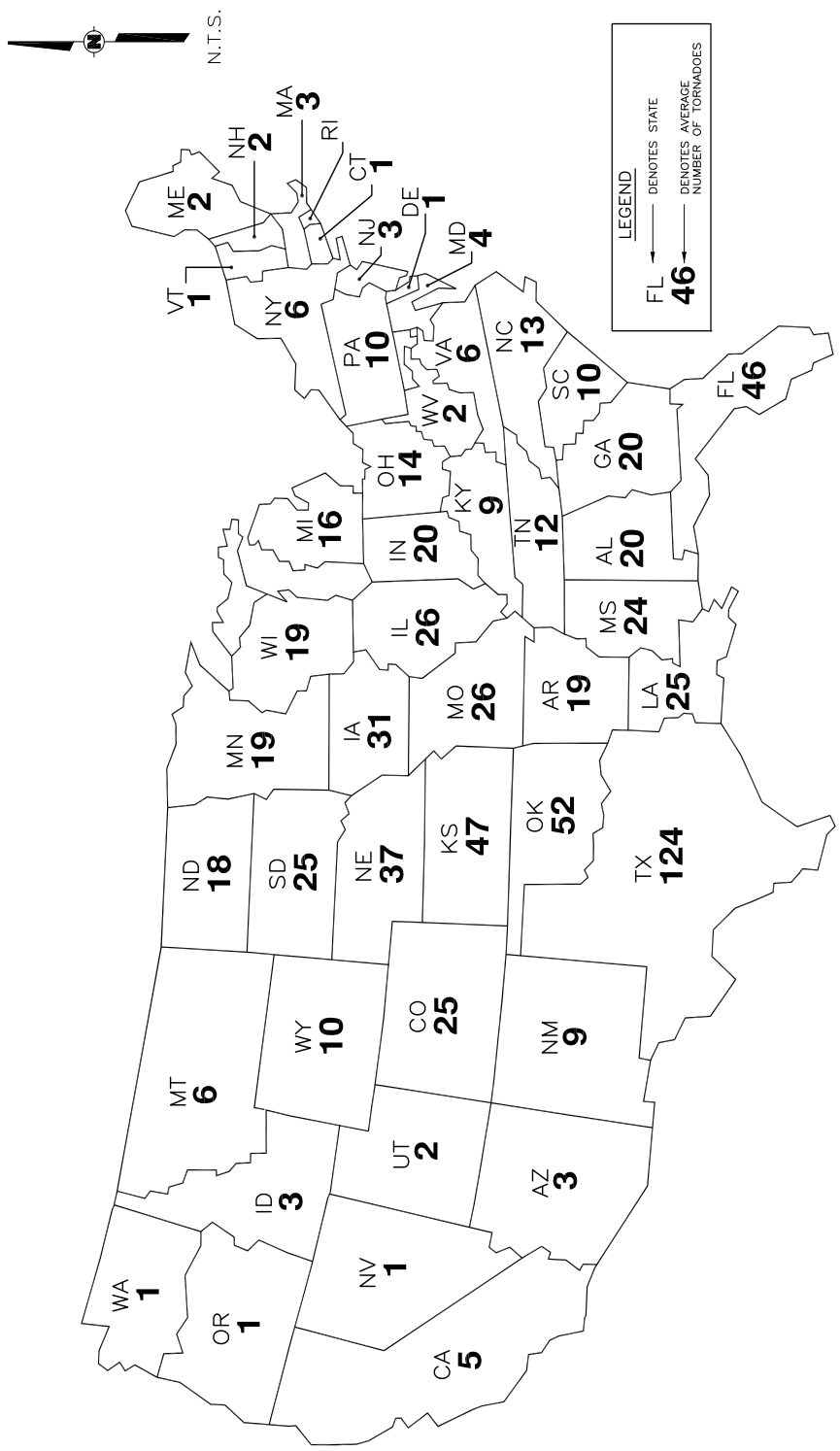


Figure 2.3-1—Annual Average Number of Tornadoes 1950-1995

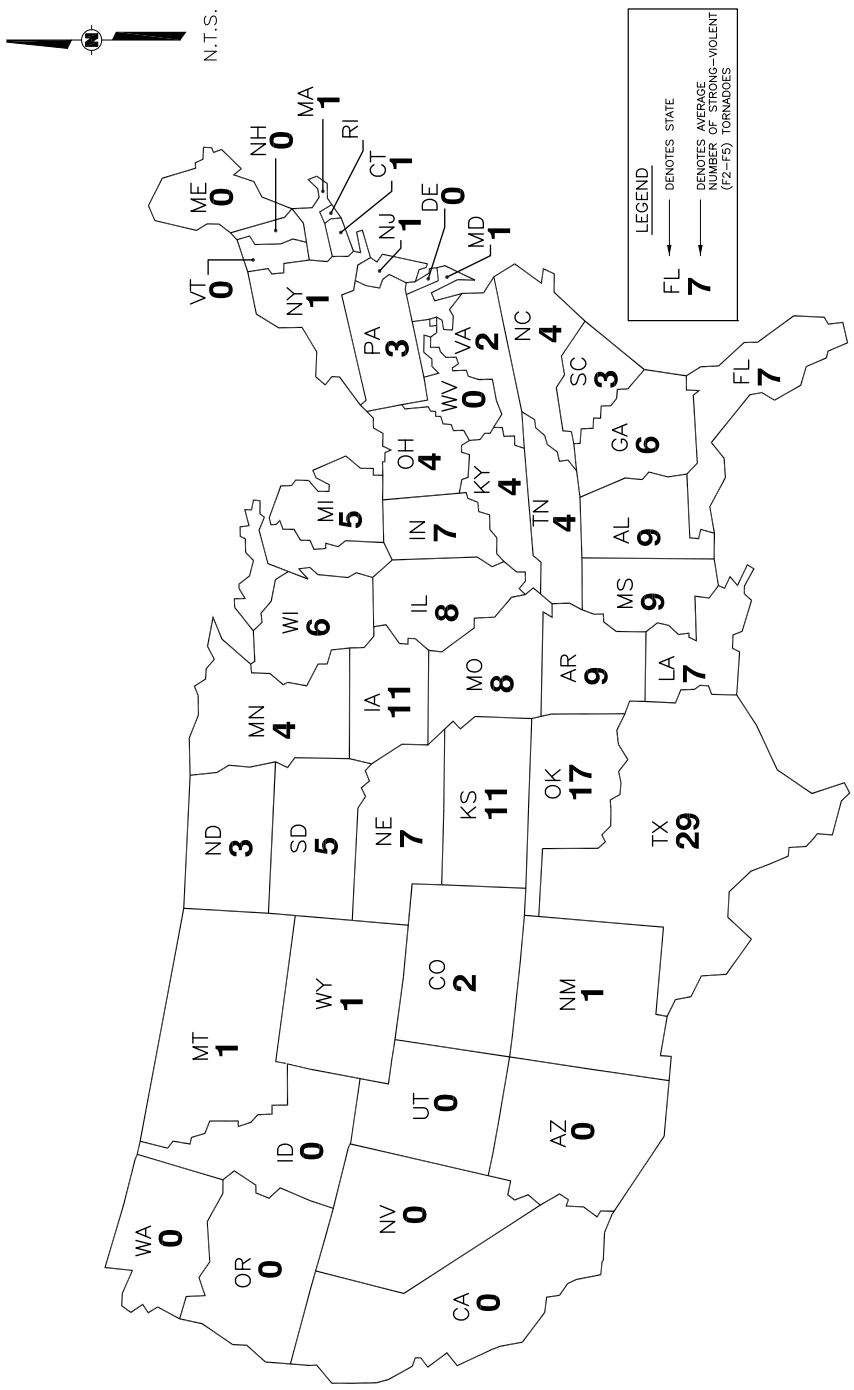


Figure 2.3-2—Average Number of Strong Violent (F2-F5) Tornadoes, 1950-1995

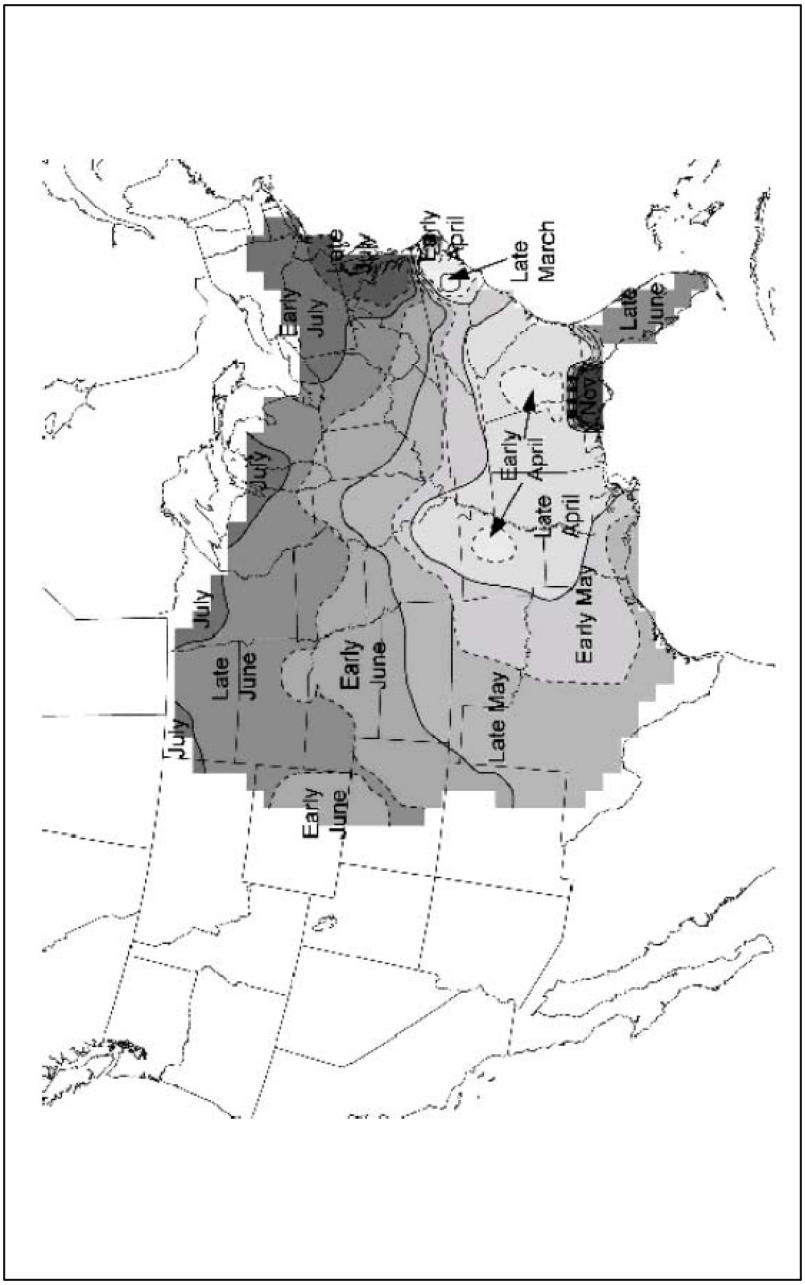


Figure 2.3-3—Date of Maximum Tornado Threat

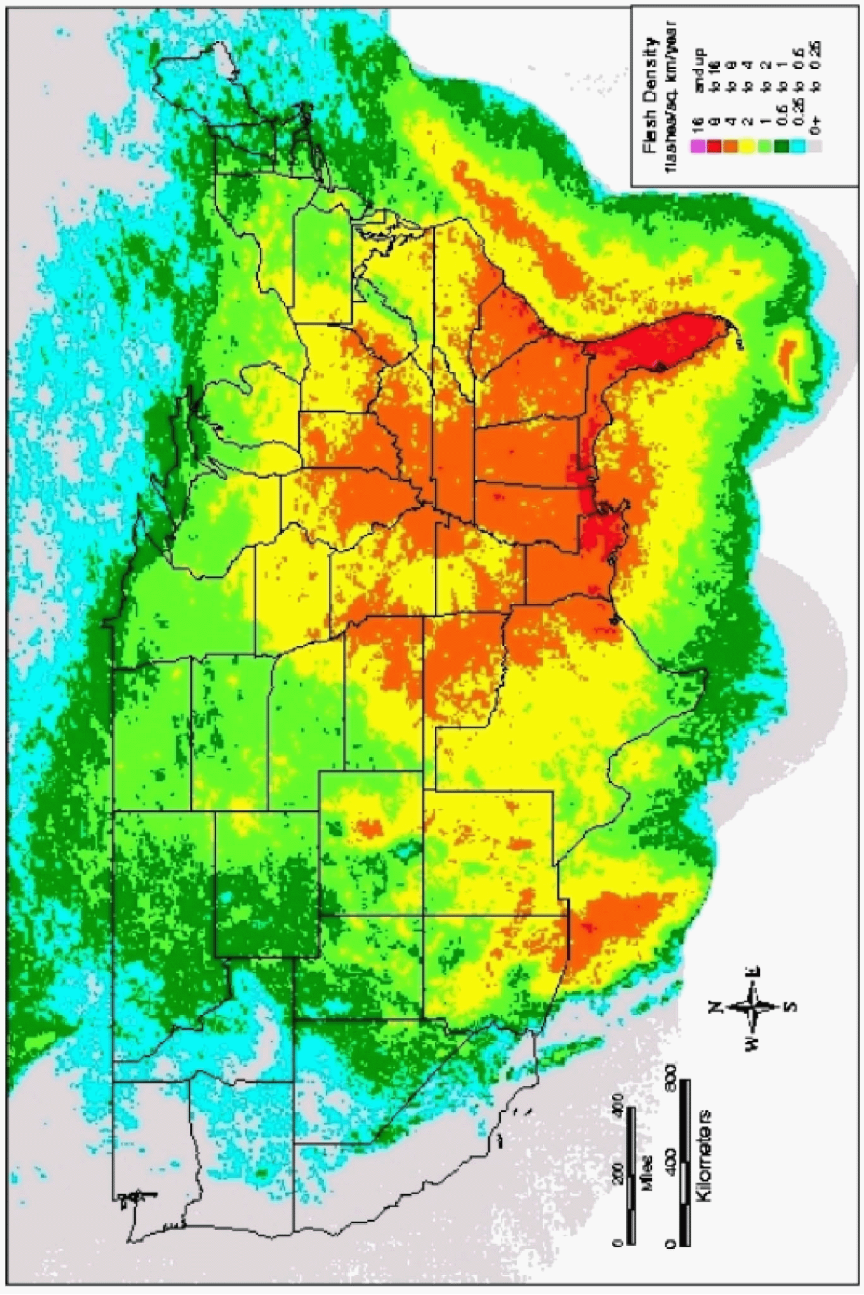


Figure 2.3-4—Five-Year Lighting Flash Density Map

Figure 2.3-5—{Callaway Plant Wind Rose - 2004-2006, 10 m}

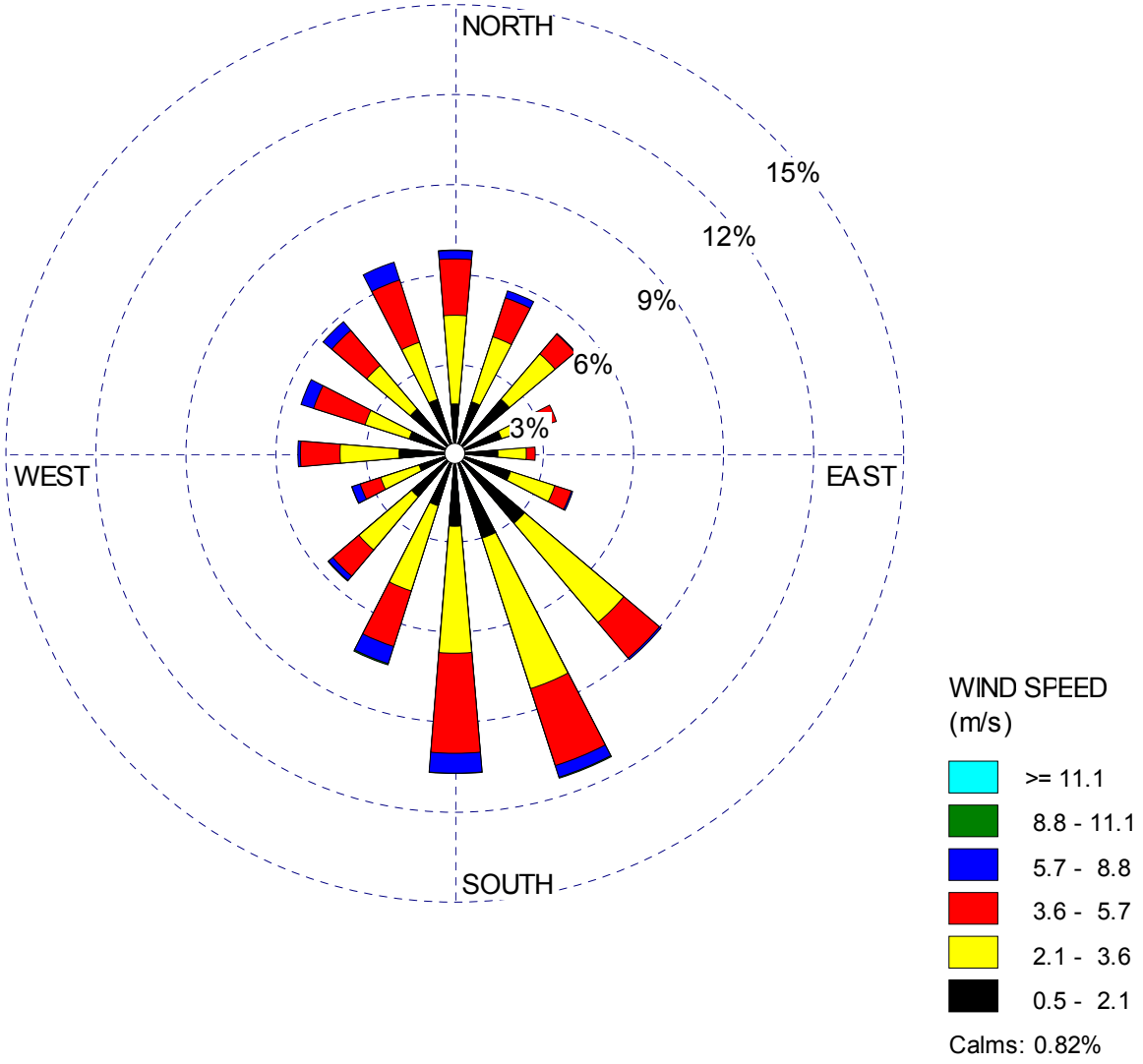


Figure 2.3-6—{Callaway Plant Wind Rose - 2004-2006, 60 m}

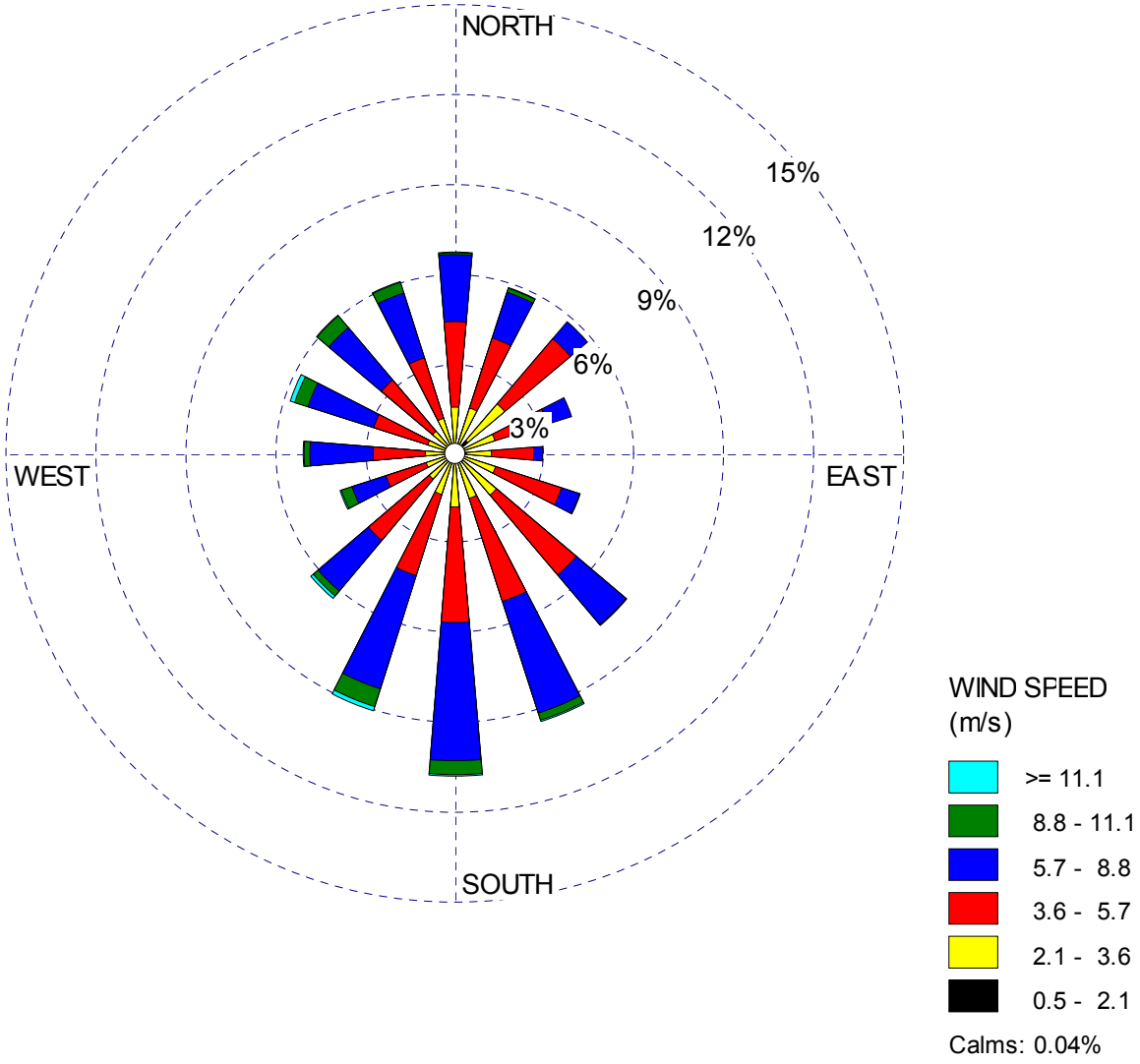


Figure 2.3-7—{Callaway Plant Wind Rose - 2004, 10 m}

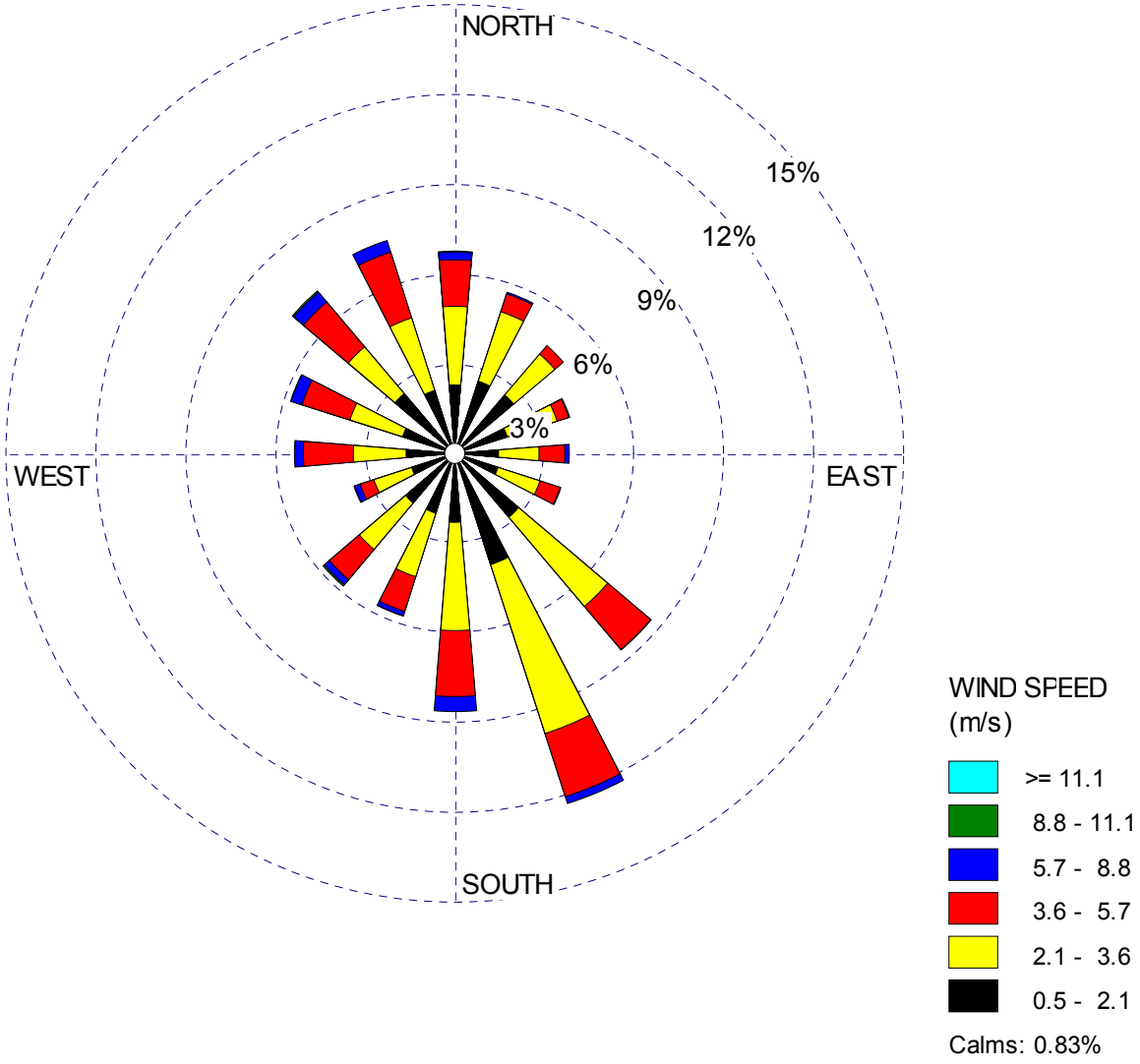


Figure 2.3-8—{Callaway Plant Wind Rose - 2004, 60 m}

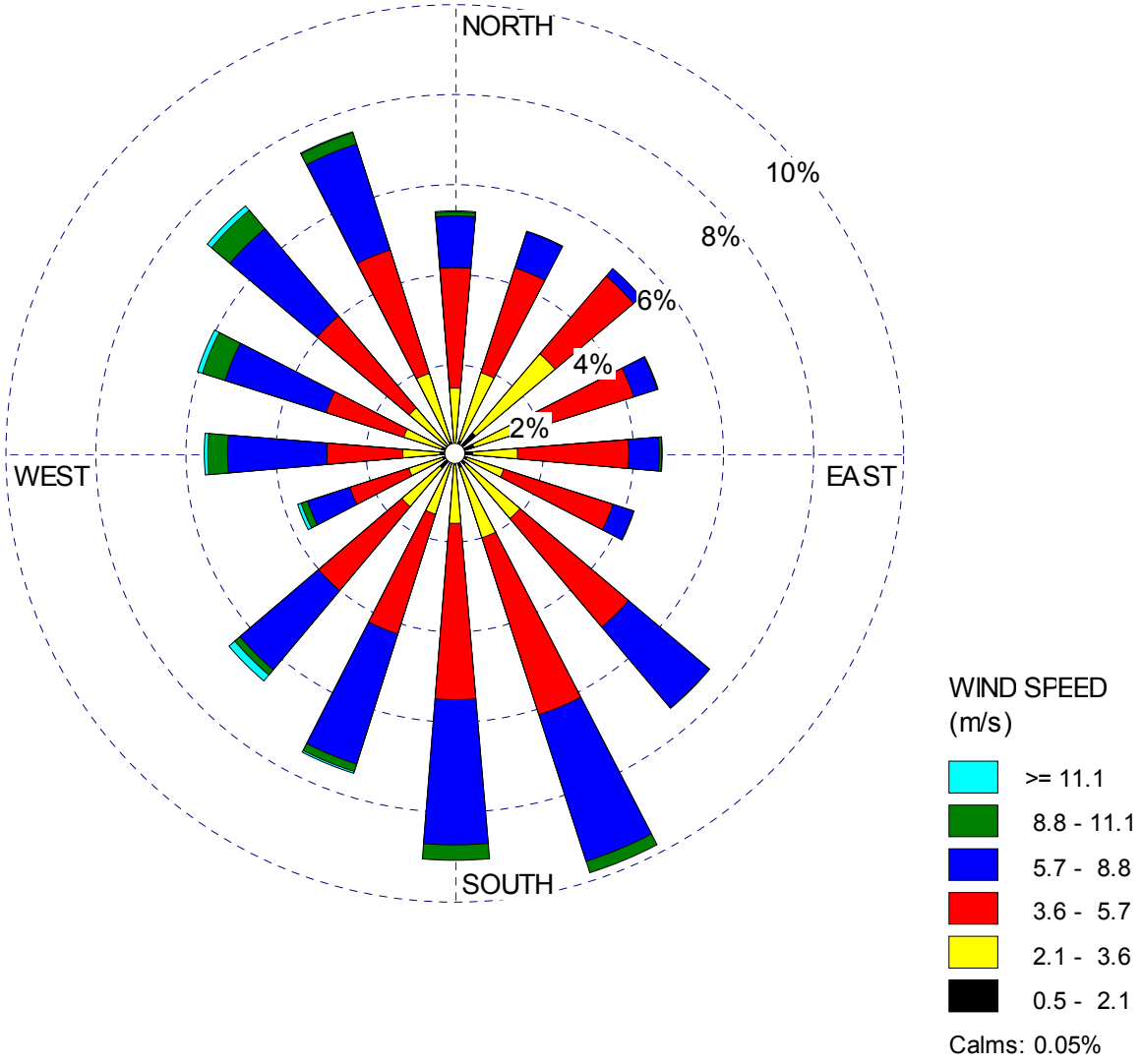


Figure 2.3-9—{Callaway Plant Wind Rose - 2005, 10 m}

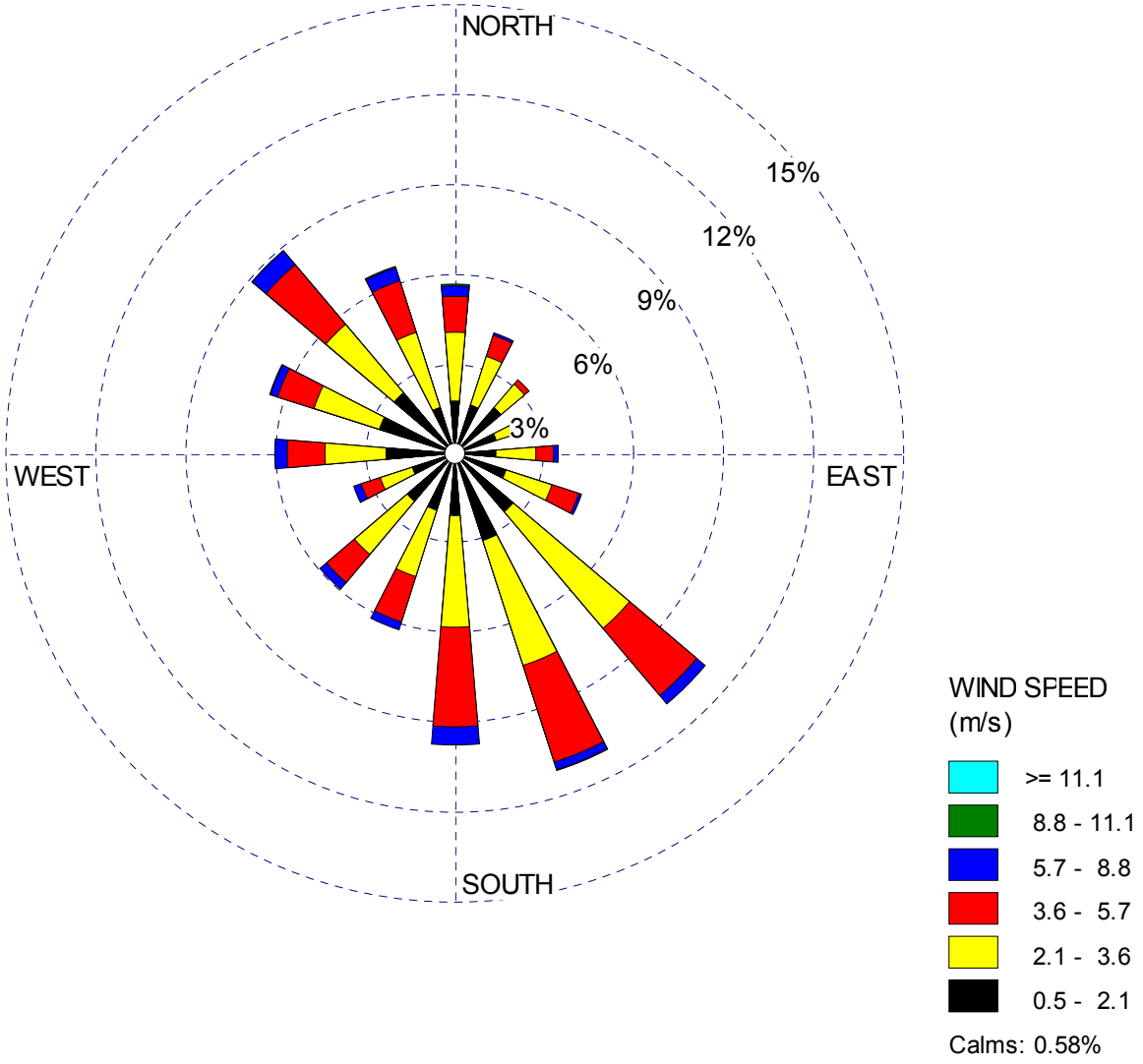


Figure 2.3-10—{Callaway Plant Wind Rose - 2005, 60 m}

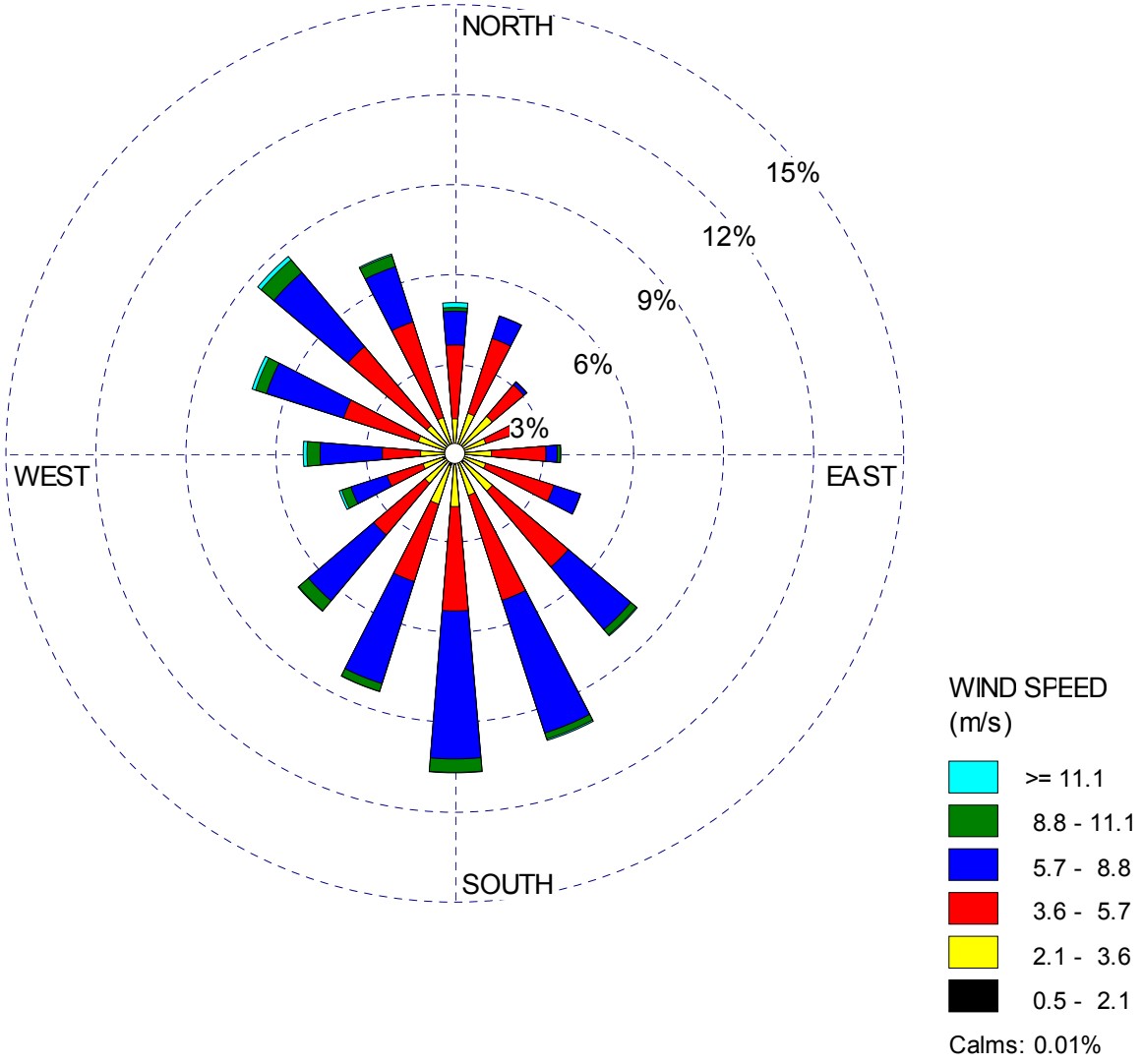


Figure 2.3-11—{Callaway Plant Wind Rose - 2006, 10 m}

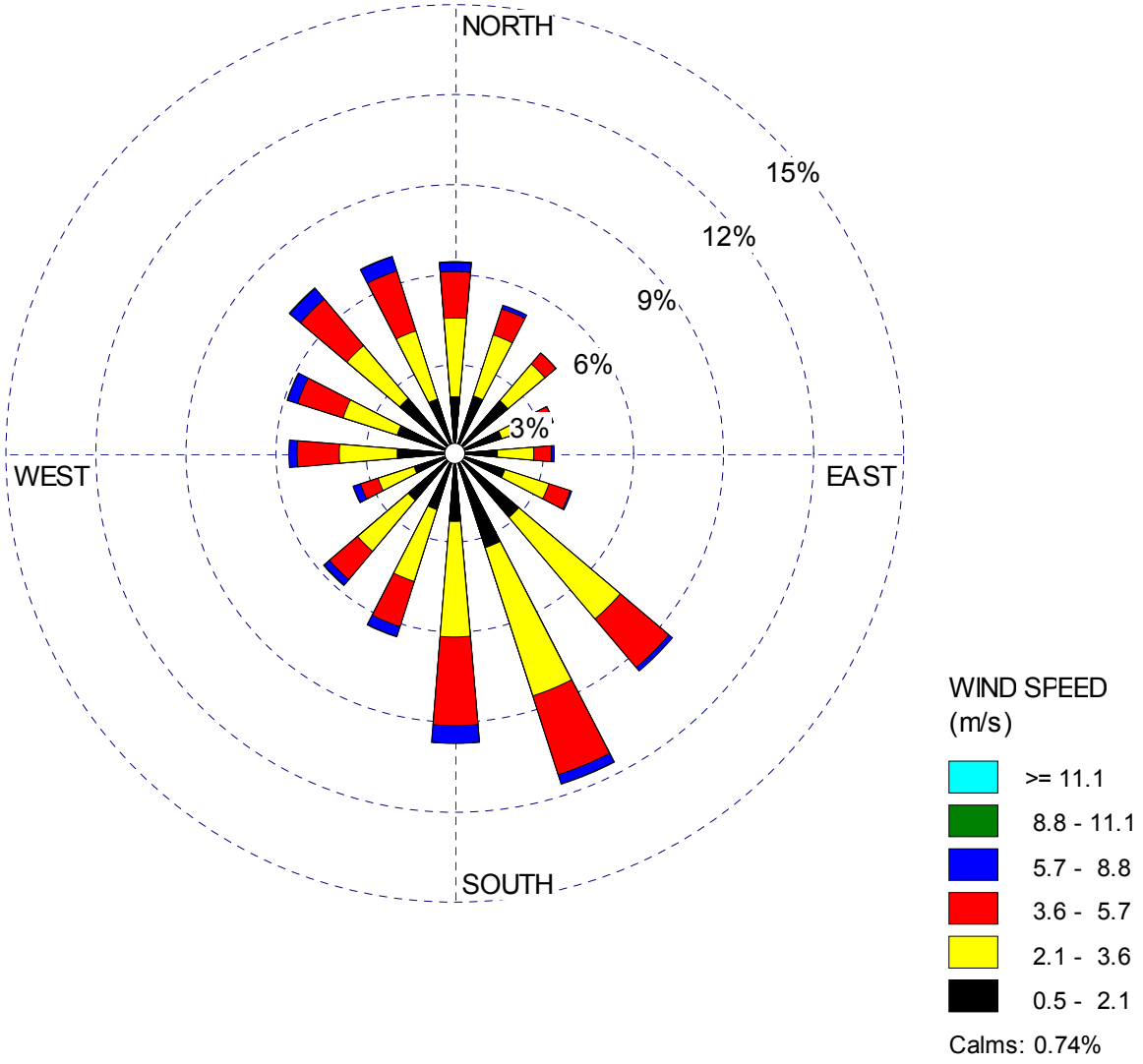


Figure 2.3-12—{Callaway Plant Wind Rose - 2006, 60 m}

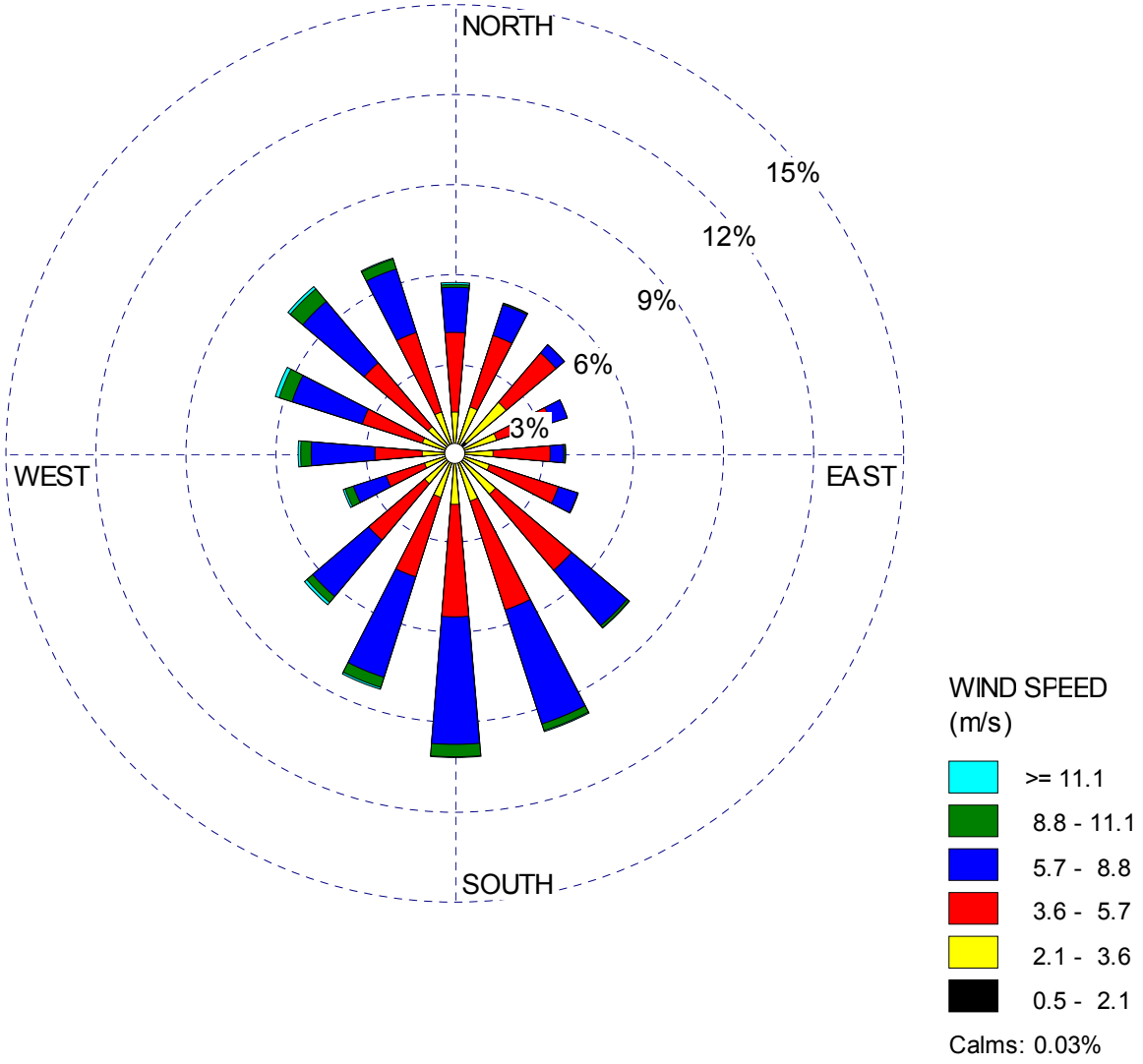


Figure 2.3-13—{Callaway Plant Wind Rose - January - 2004-2006, 10 m}

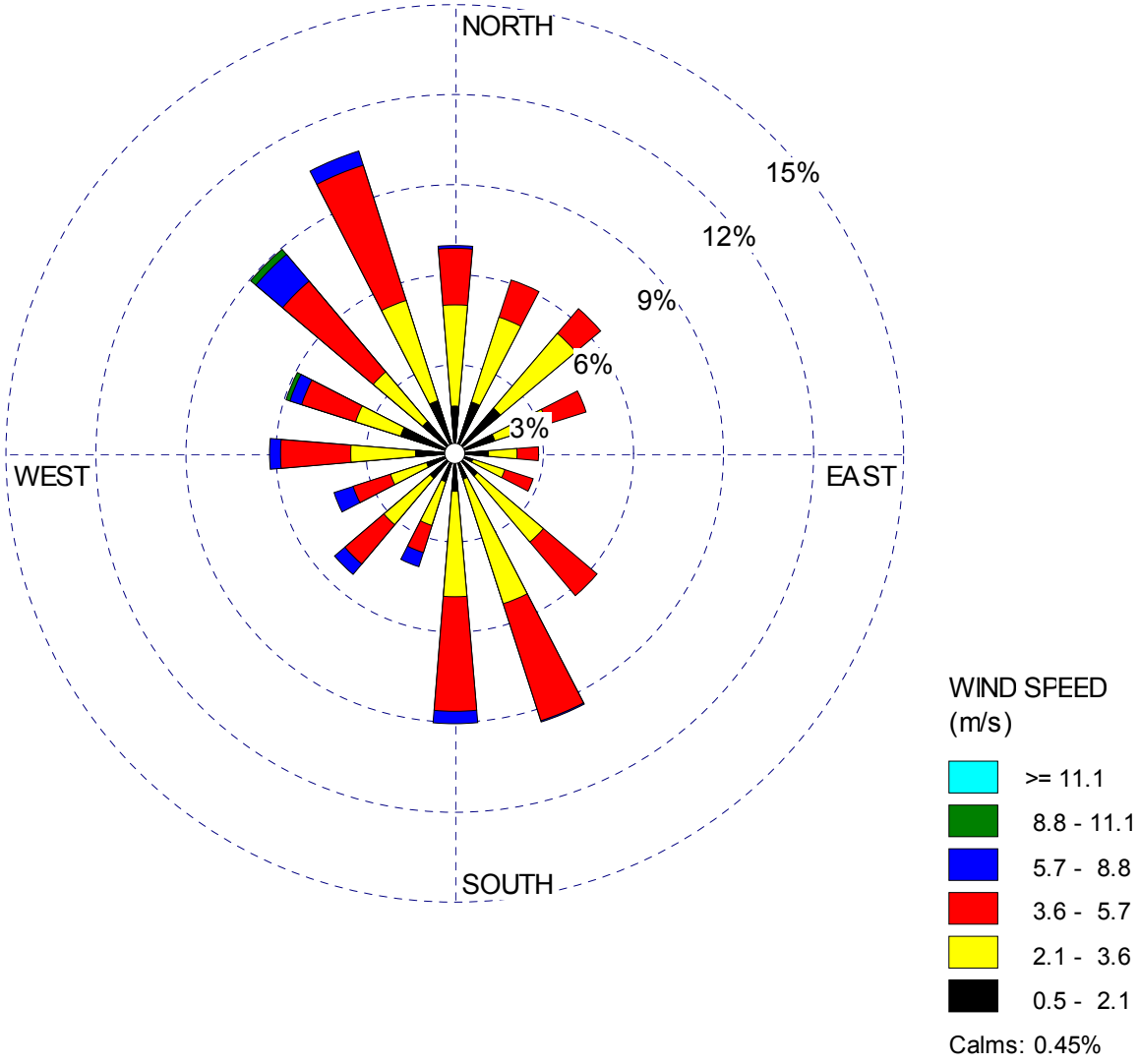


Figure 2.3-14—{Callaway Plant Wind Rose - February - 2004-2006, 10 m}

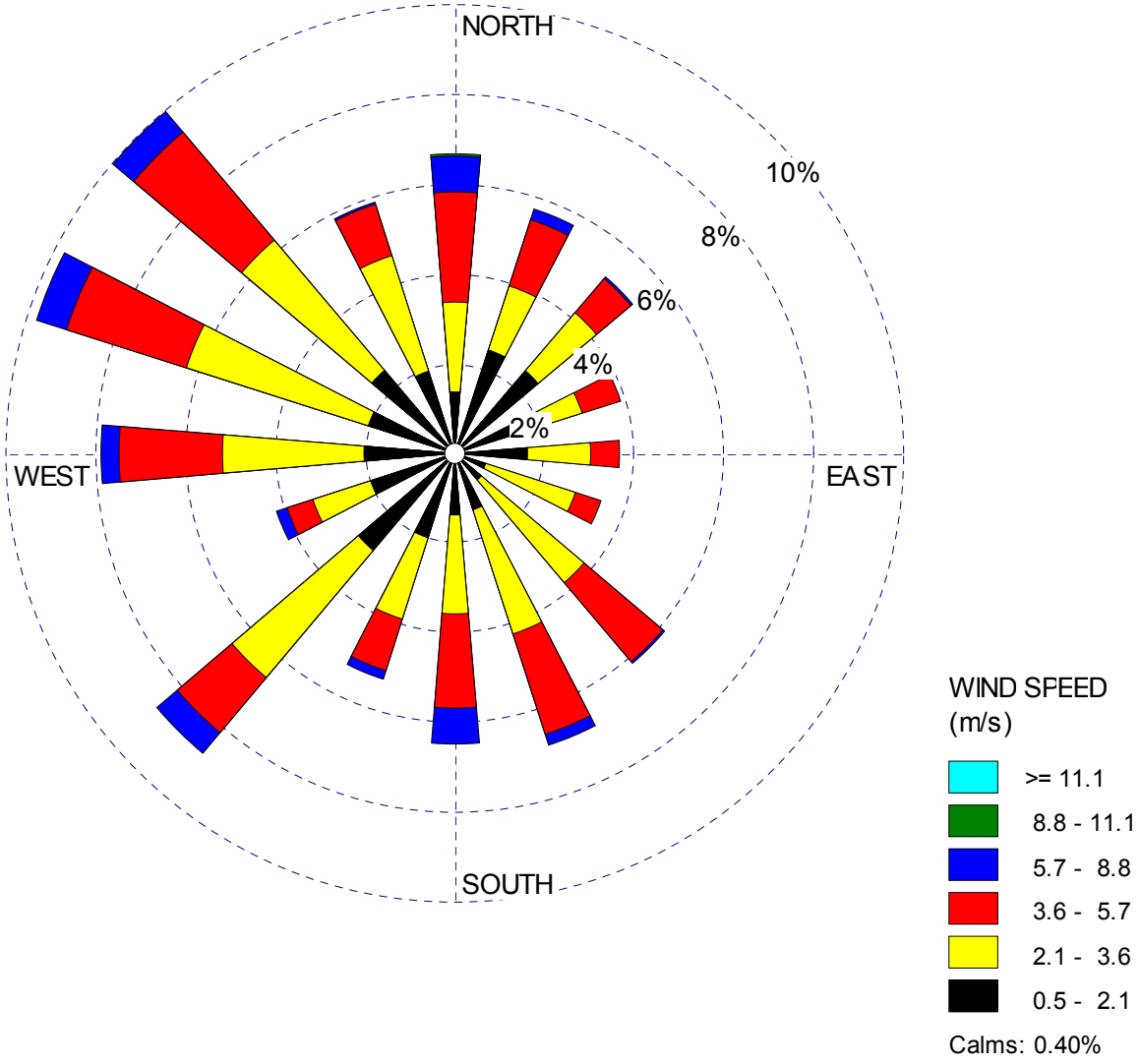


Figure 2.3-15—{Callaway Plant Wind Rose - March - 2004-2006, 10 m}

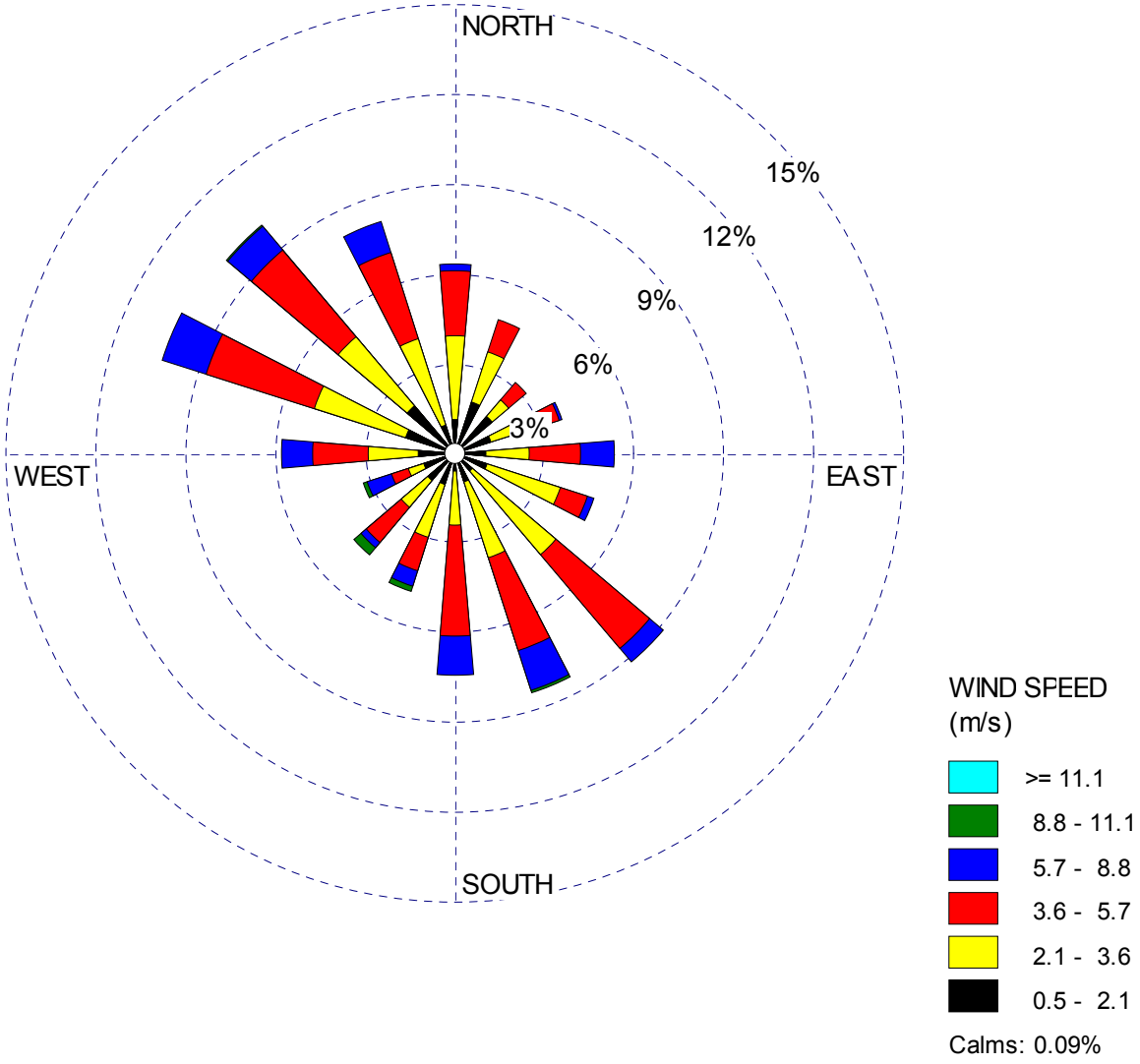


Figure 2.3-16—{Callaway Plant Wind Rose - April - 2004-2006, 10 m}

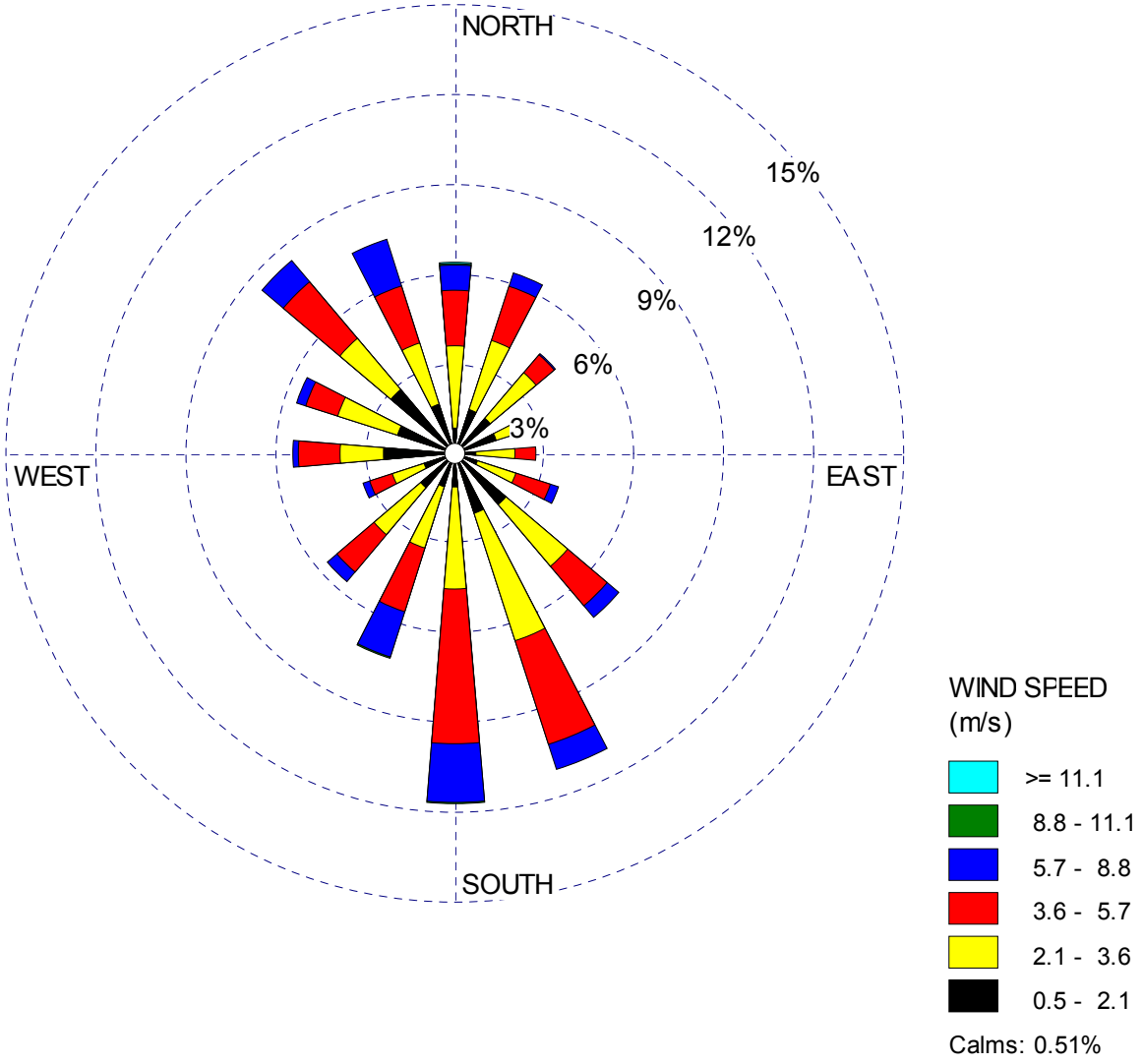


Figure 2.3-17—{Callaway Plant Wind Rose - May - 2004-2006, 10 m}

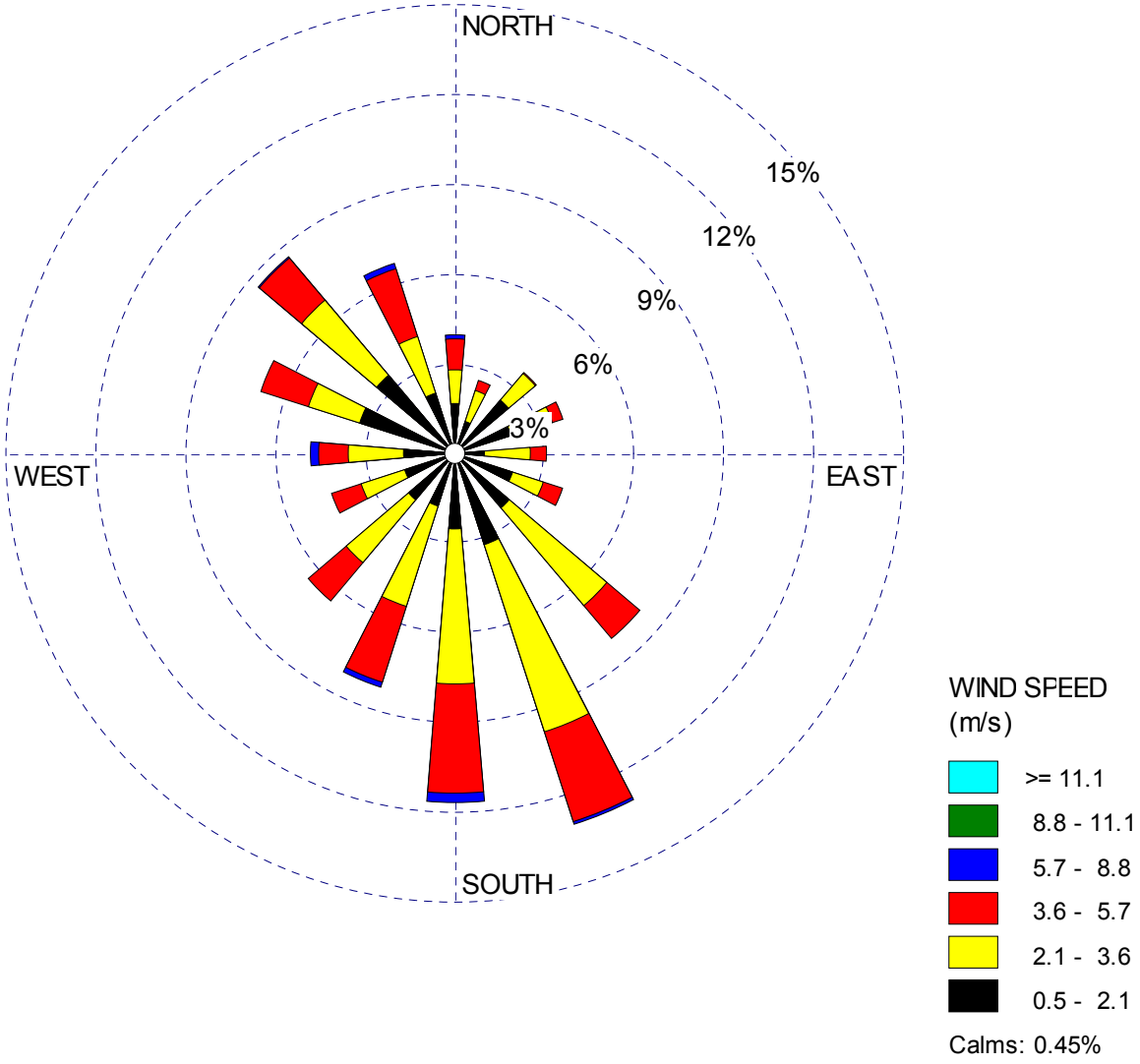


Figure 2.3-18—{Callaway Plant Wind Rose - June - 2004-2006, 10 m}

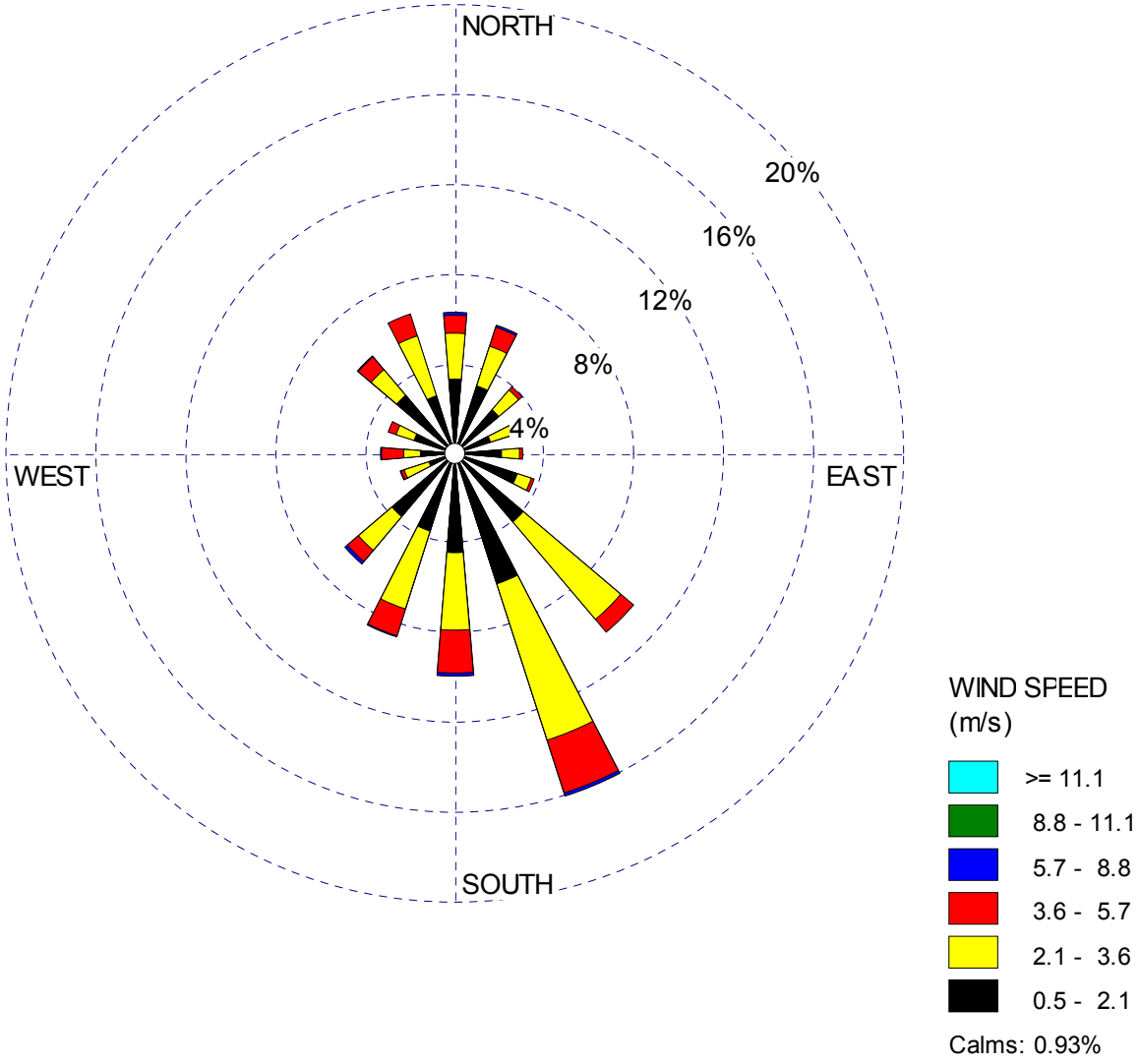


Figure 2.3-19—{Callaway Plant Wind Rose - July - 2004-2006, 10 m}

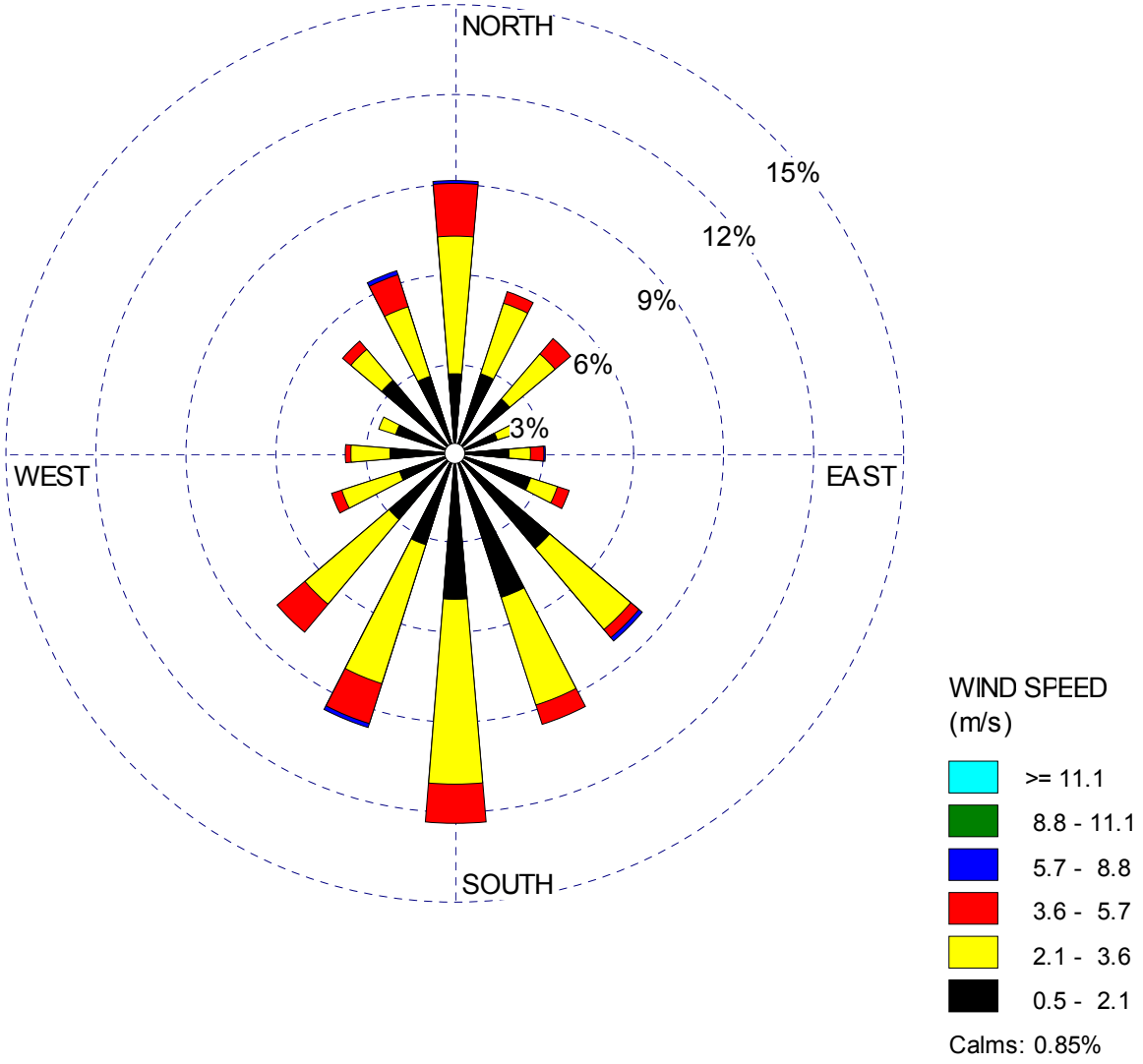


Figure 2.3-20—{Callaway Plant Wind Rose - August - 2004-2006, 10 m}

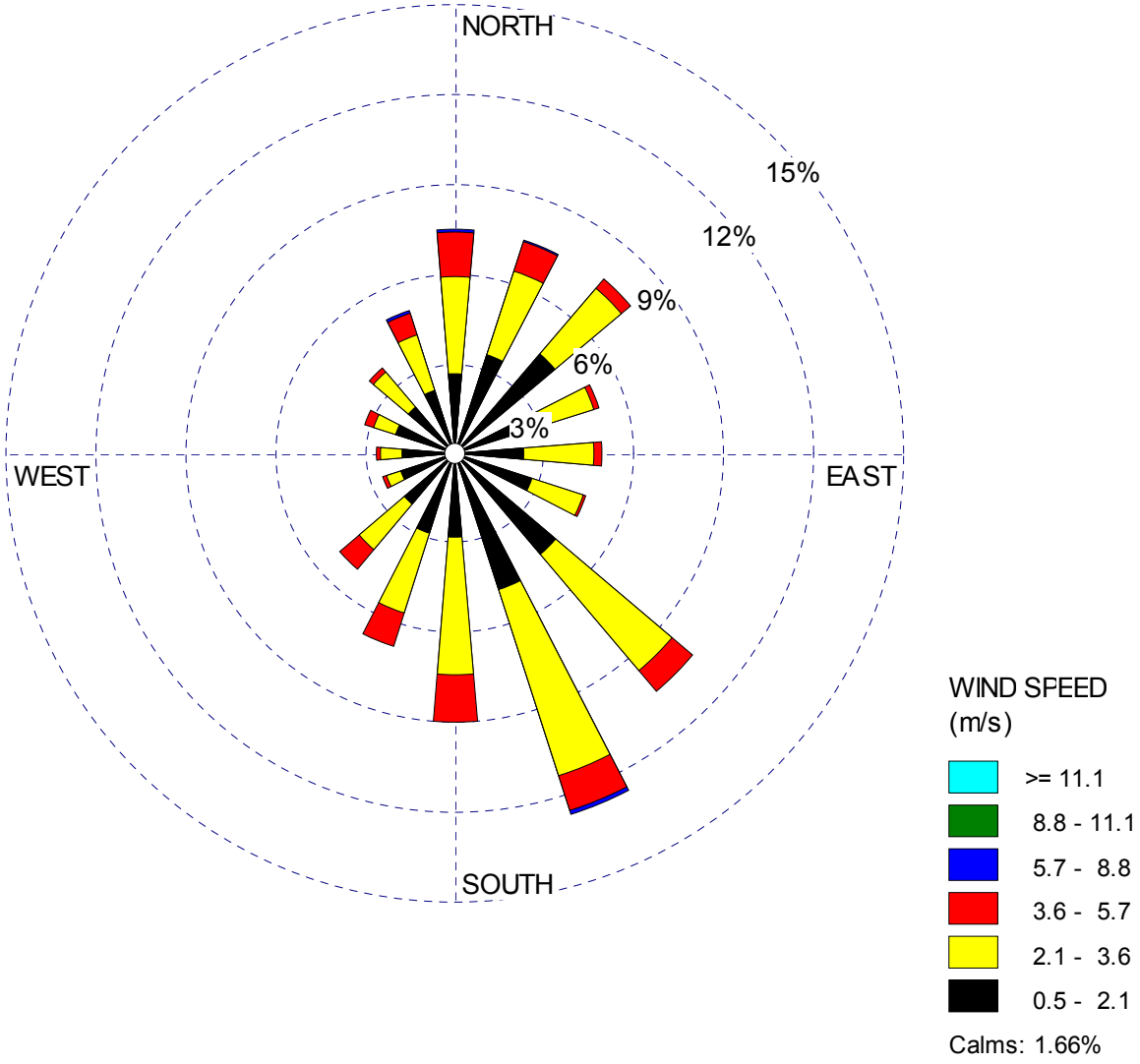


Figure 2.3-21—{Callaway Plant Wind Rose - September - 2004-2006, 10 m}

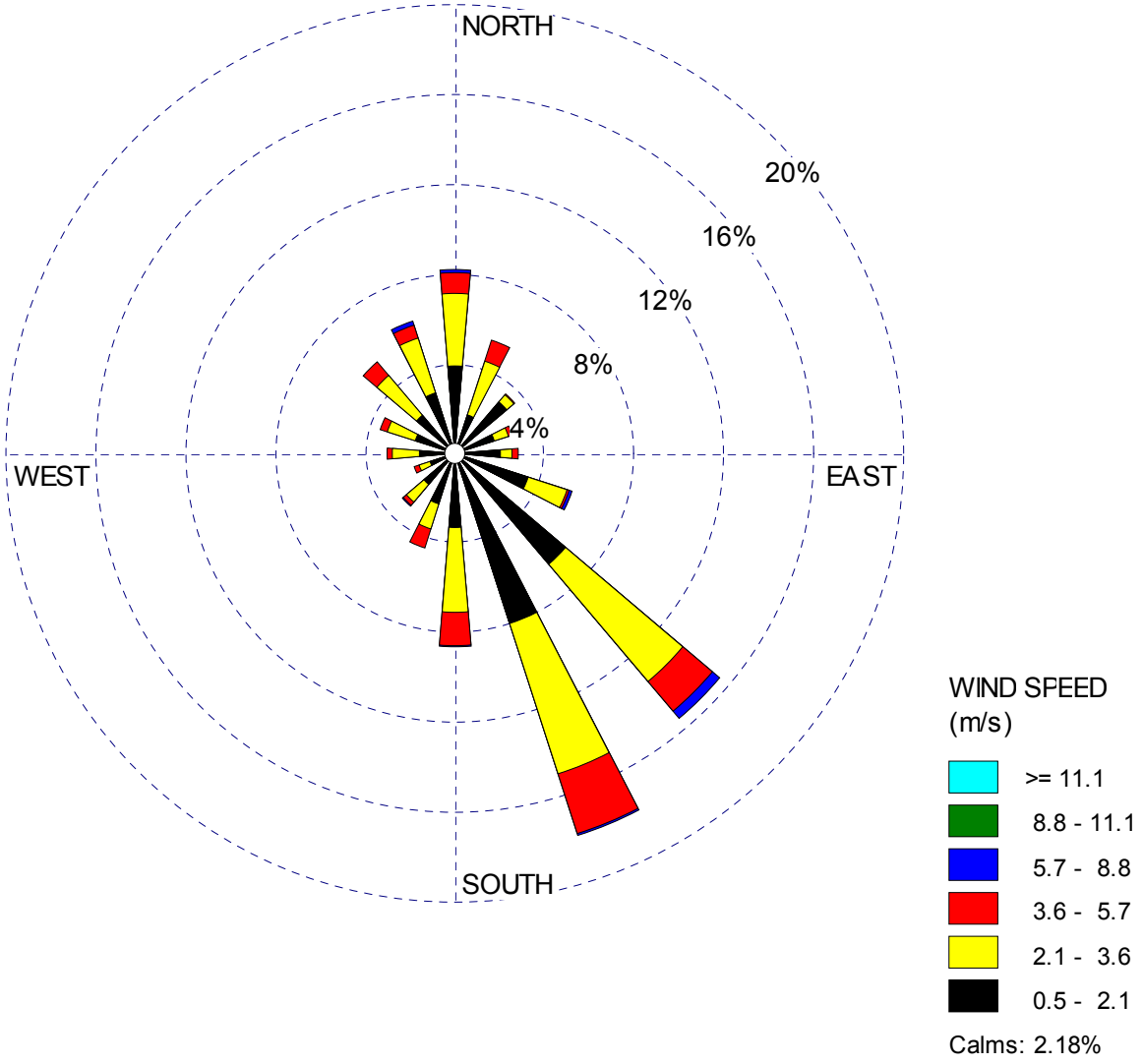


Figure 2.3-22—{Callaway Plant Wind Rose - October - 2004-2006, 10 m}

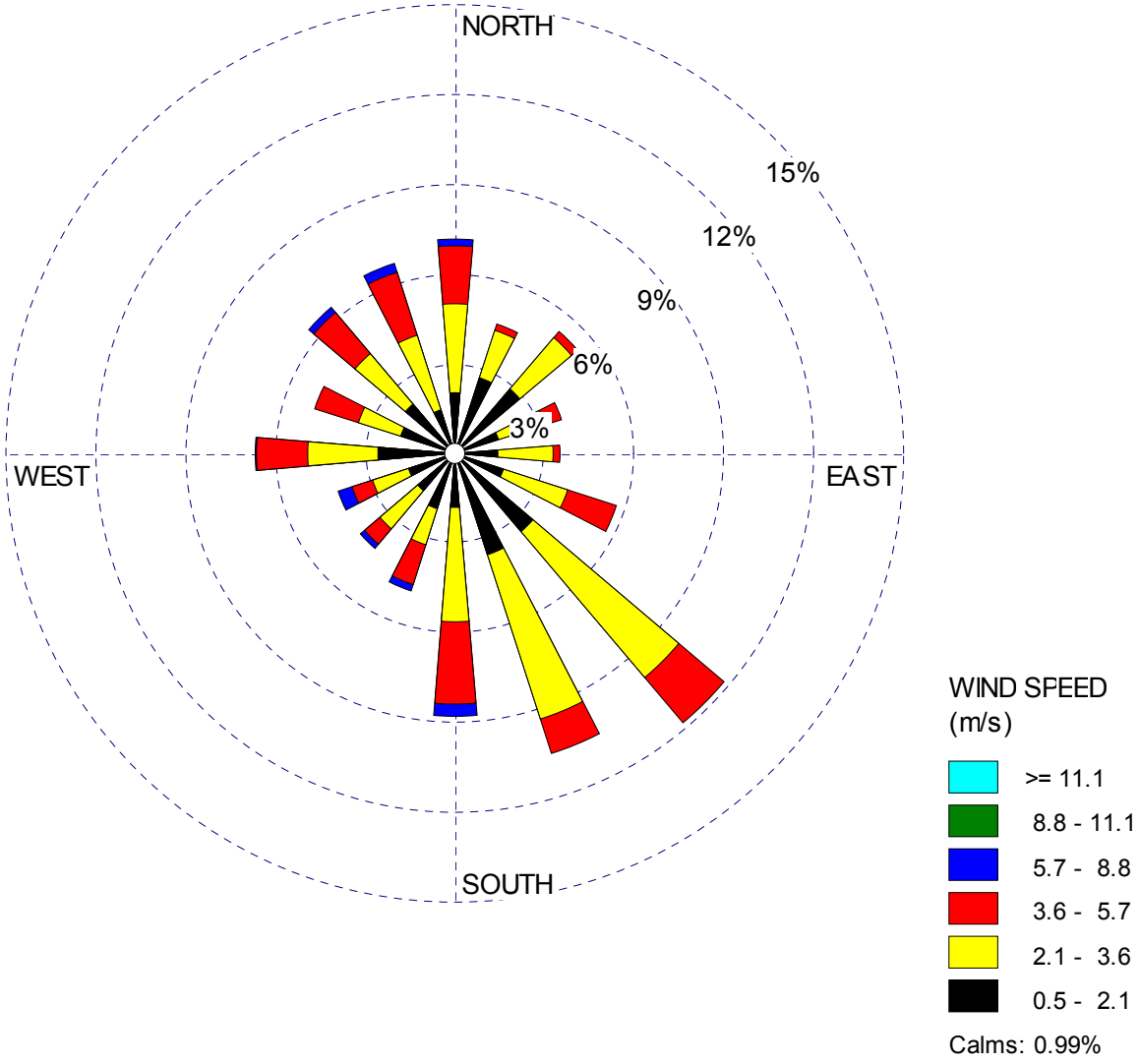


Figure 2.3-23—{Callaway Plant Wind Rose - November - 2004-2006, 10 m}

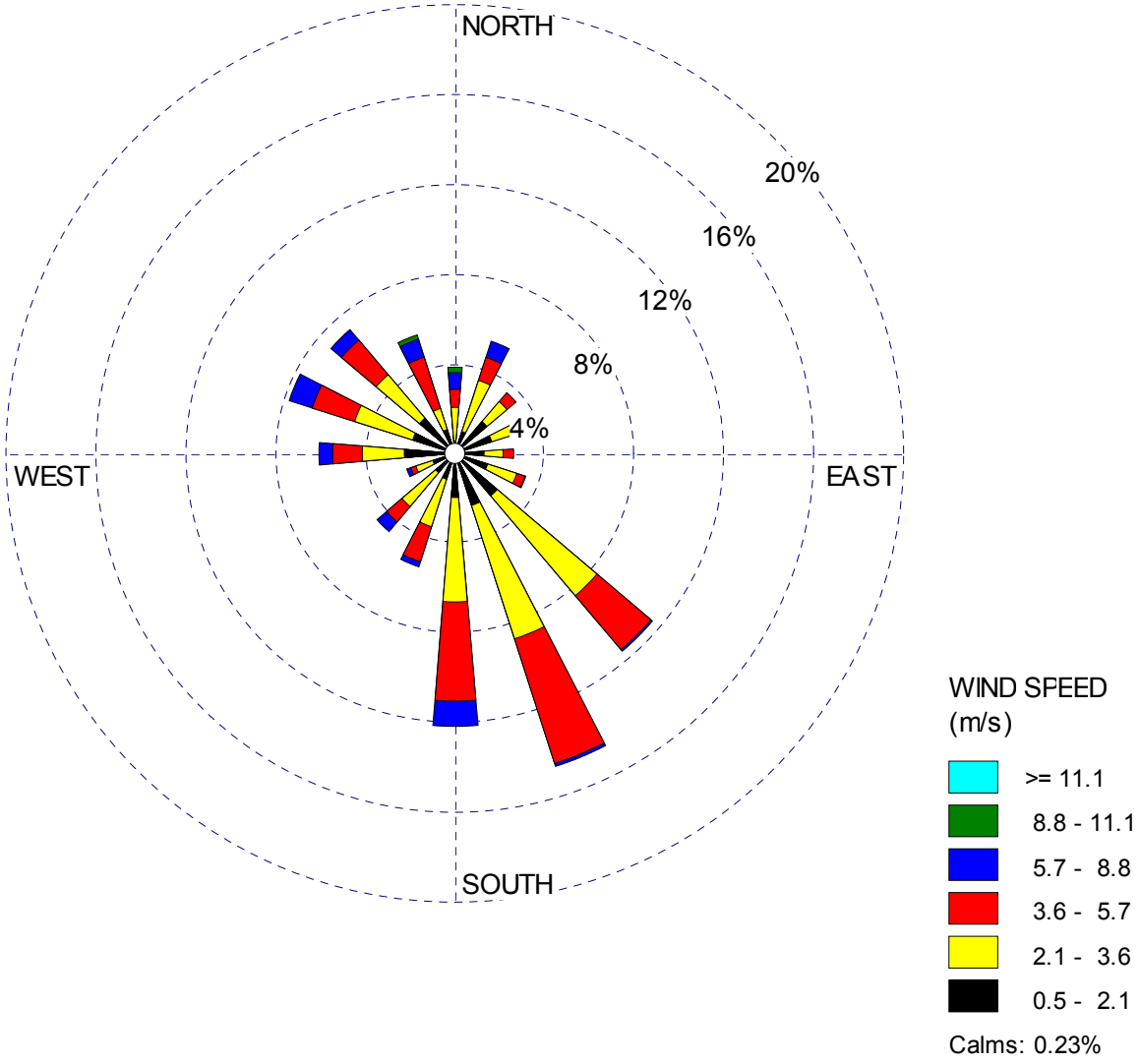


Figure 2.3-24—{Callaway Plant Wind Rose - December - 2004-2006, 10 m}

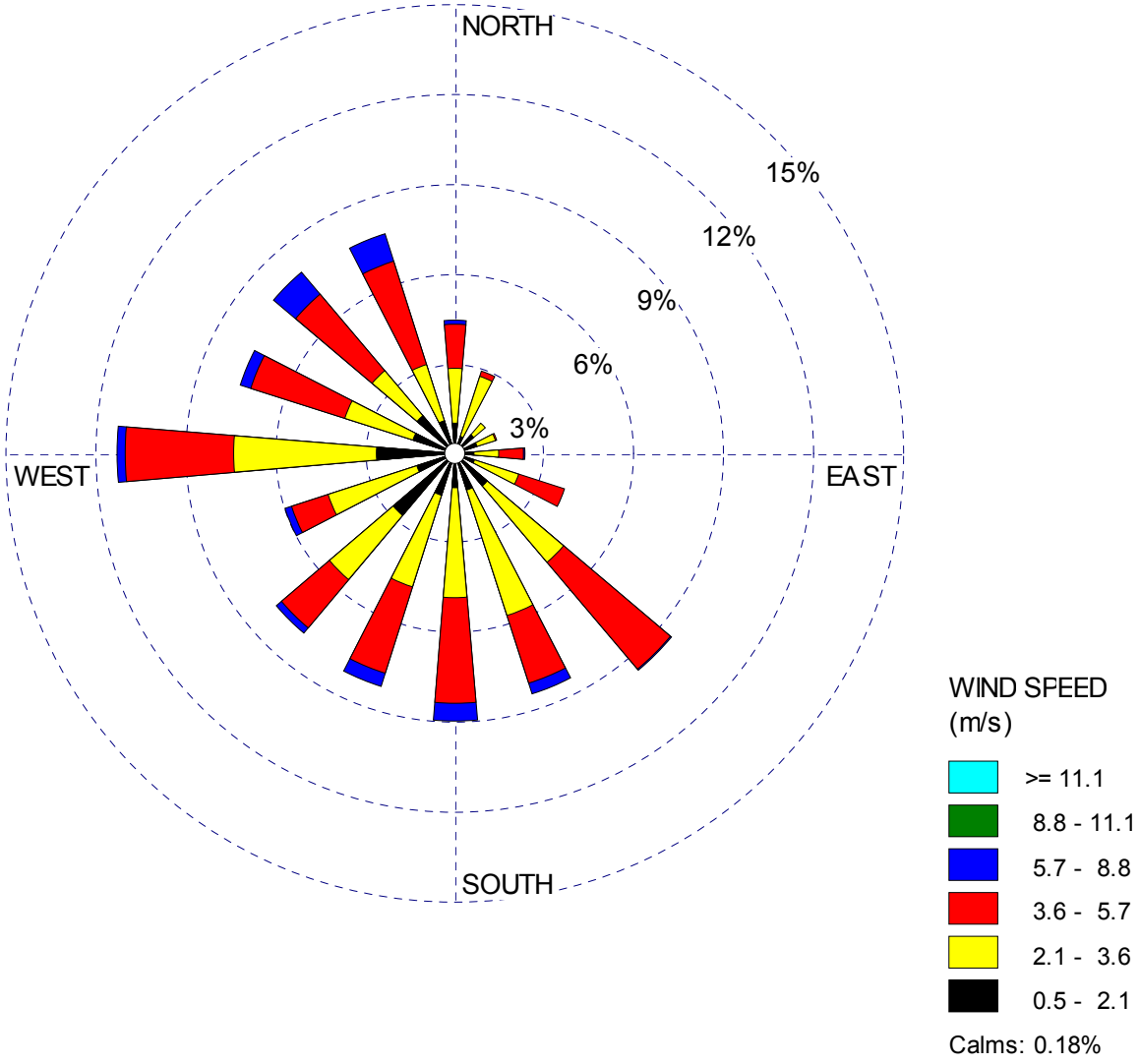


Figure 2.3-25—{Callaway Plant Wind Rose - January - 2004-2006, 60 m}

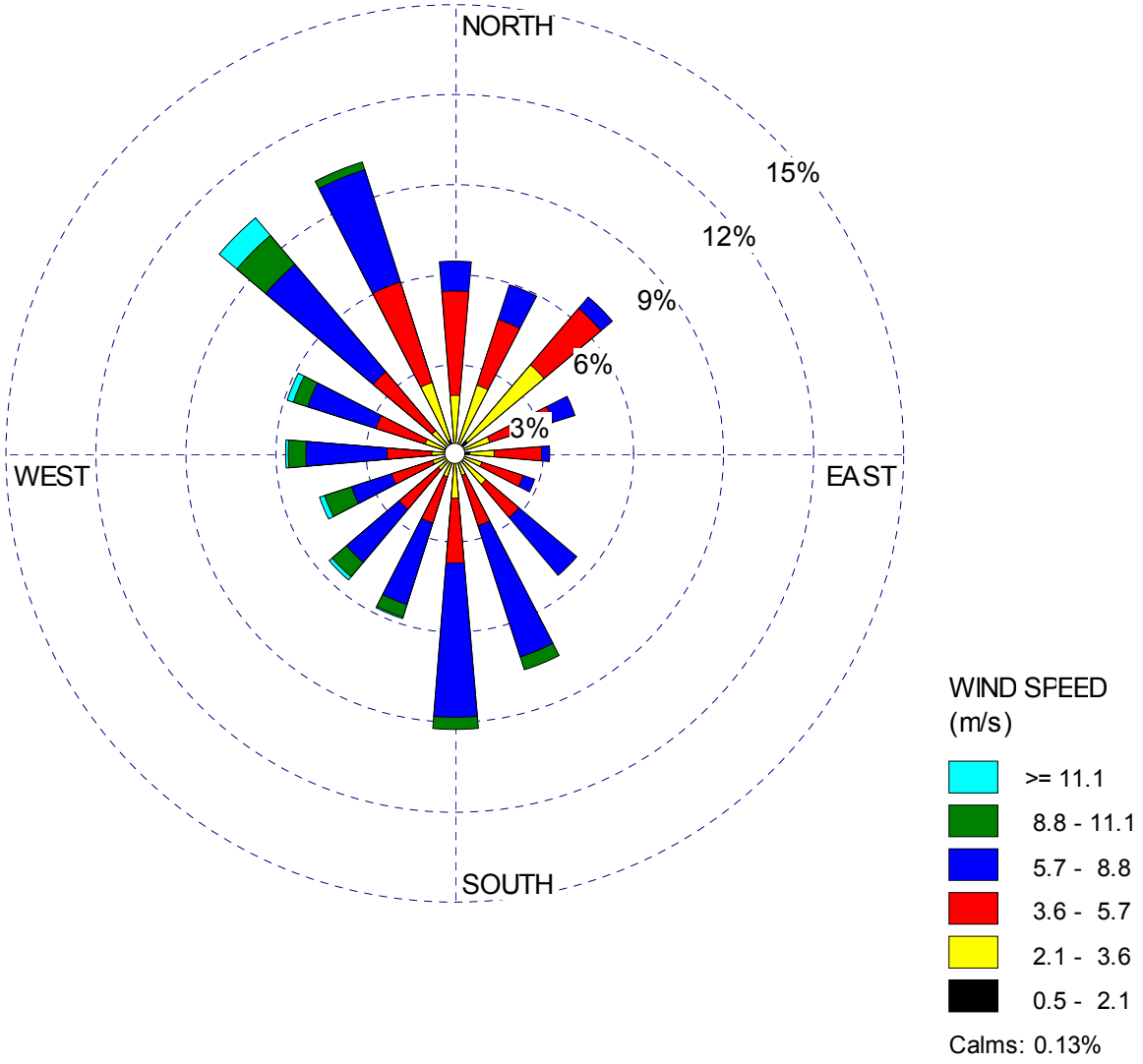


Figure 2.3-26—{Callaway Plant Wind Rose - February - 2004-2006, 60 m}

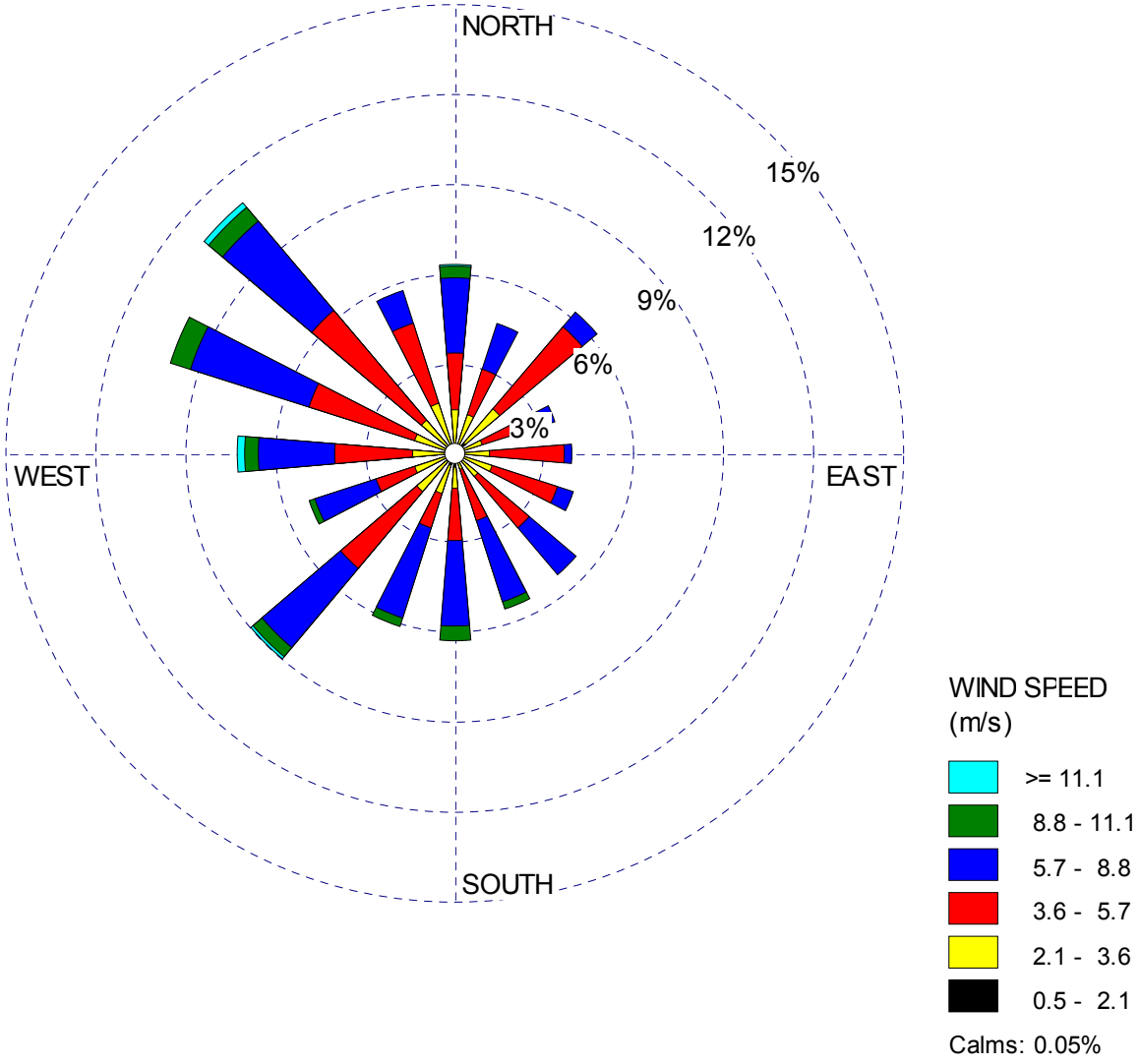


Figure 2.3-27—{Callaway Plant Wind Rose - March - 2004-2006, 60 m}

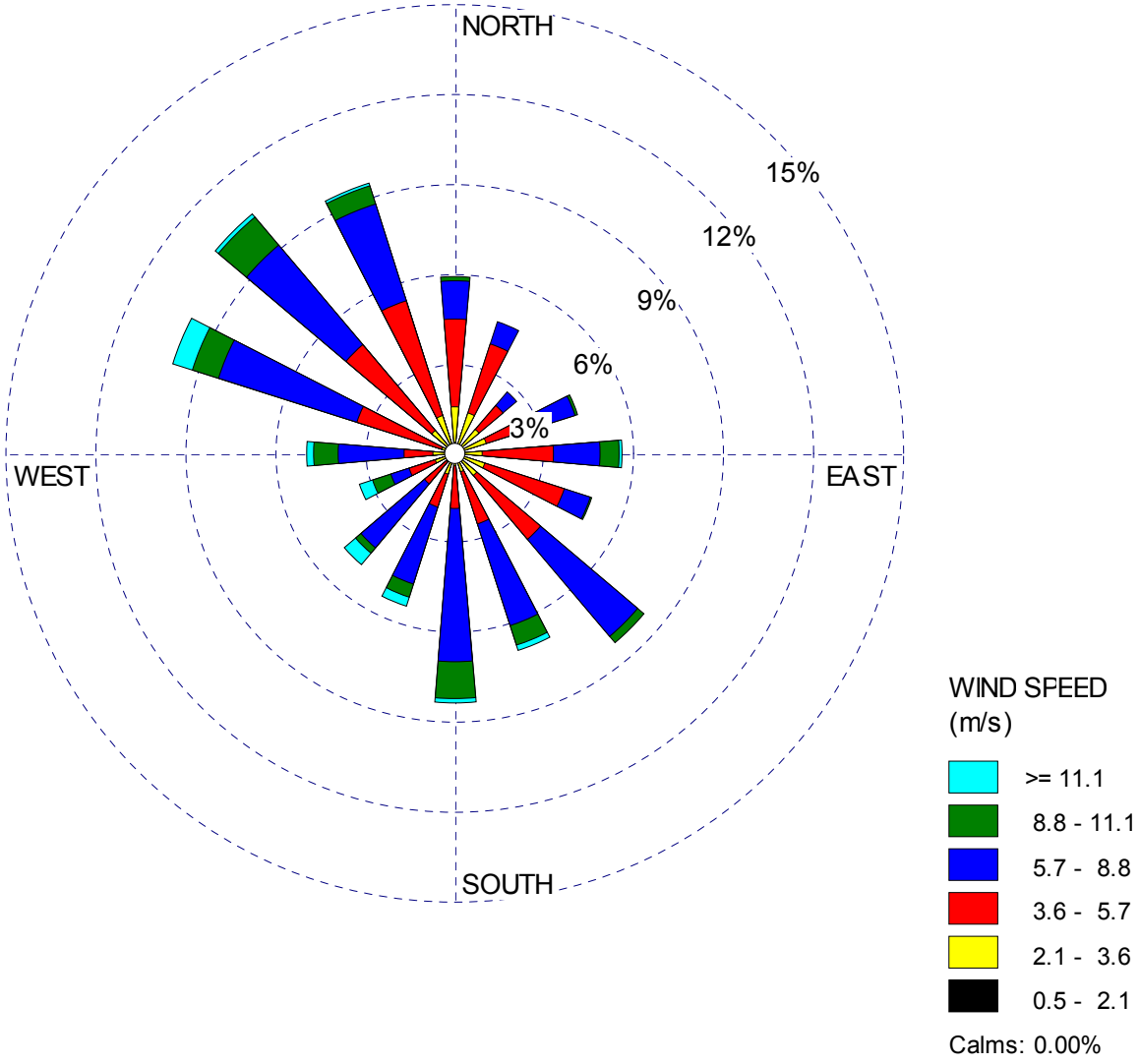


Figure 2.3-28—{Callaway Plant Wind Rose - April - 2004-2006, 60 m}

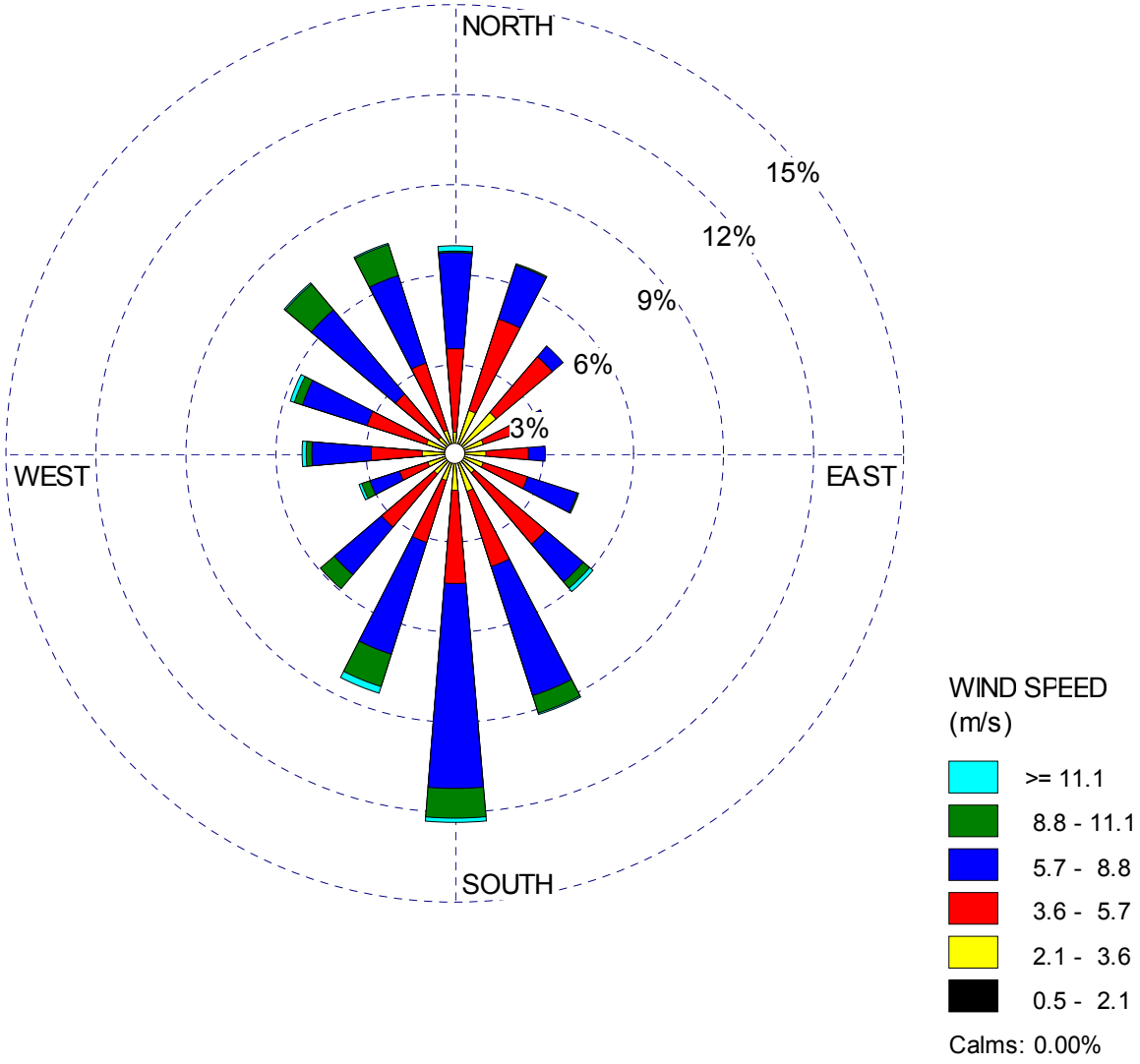


Figure 2.3-29—{Callaway Plant Wind Rose - May - 2004-2006, 60 m}

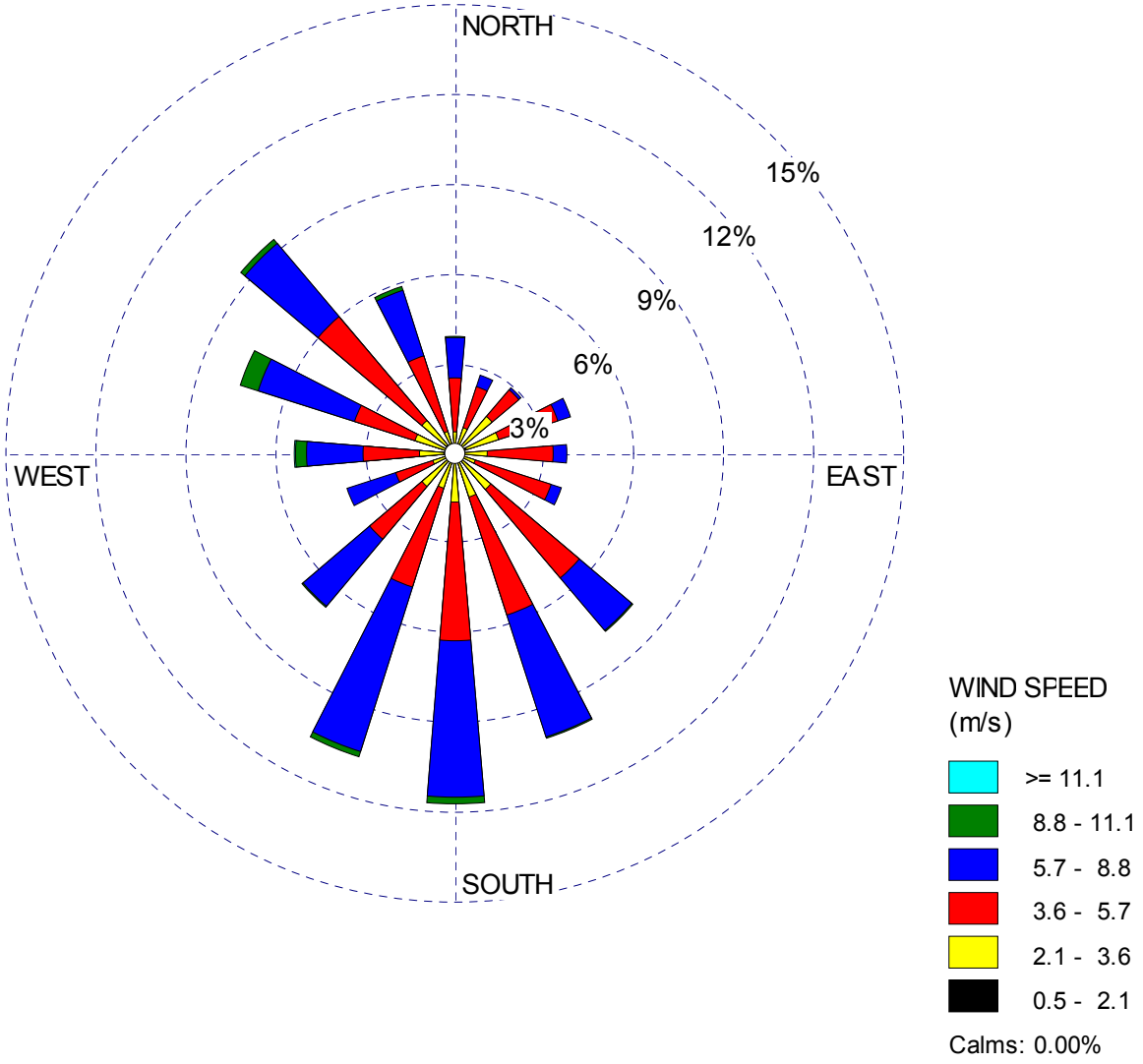


Figure 2.3-30—{Callaway Plant Wind Rose - June - 2004-2006, 60 m}

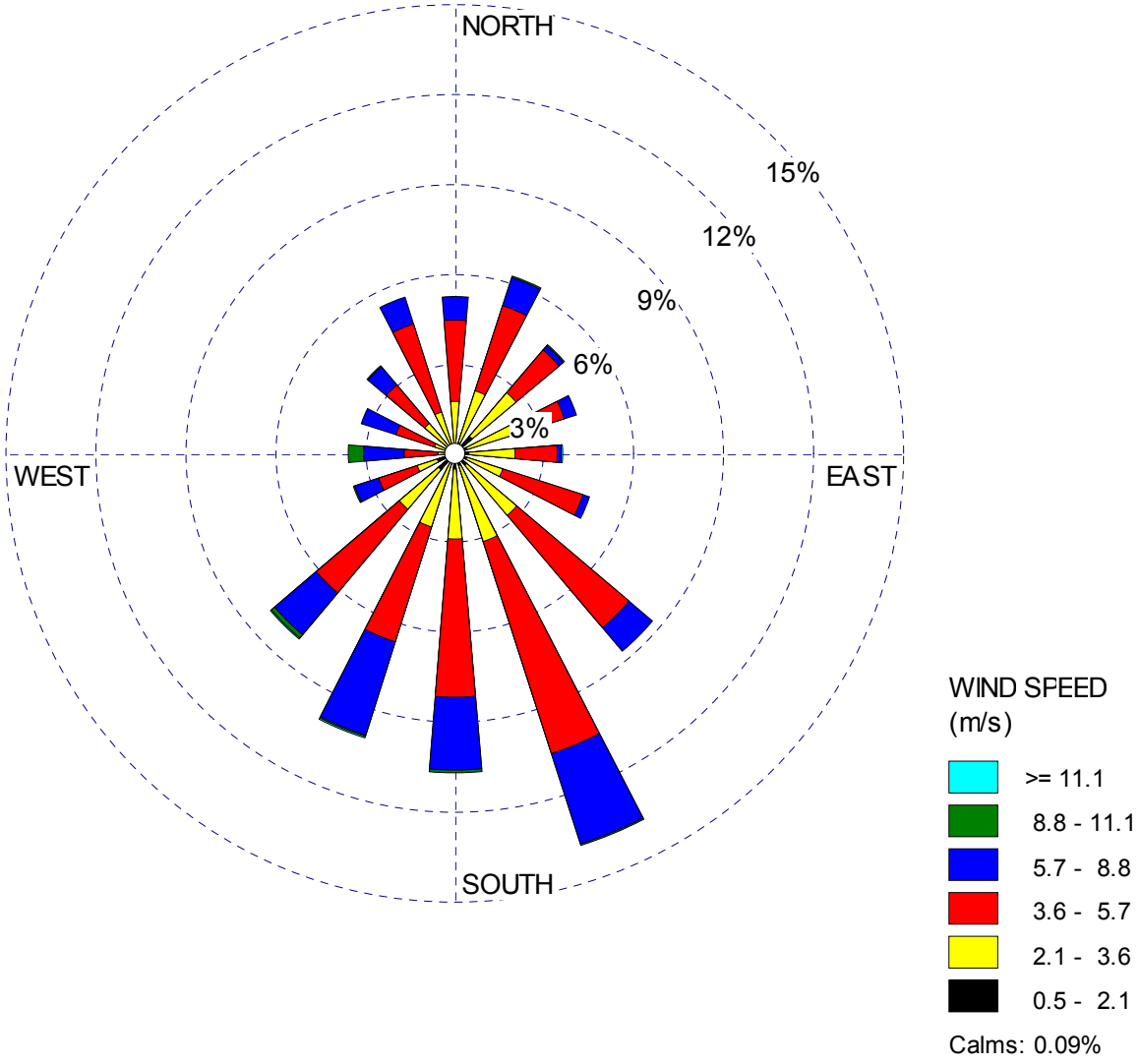


Figure 2.3-31—{Callaway Plant Wind Rose - July - 2004-2006, 60 m}

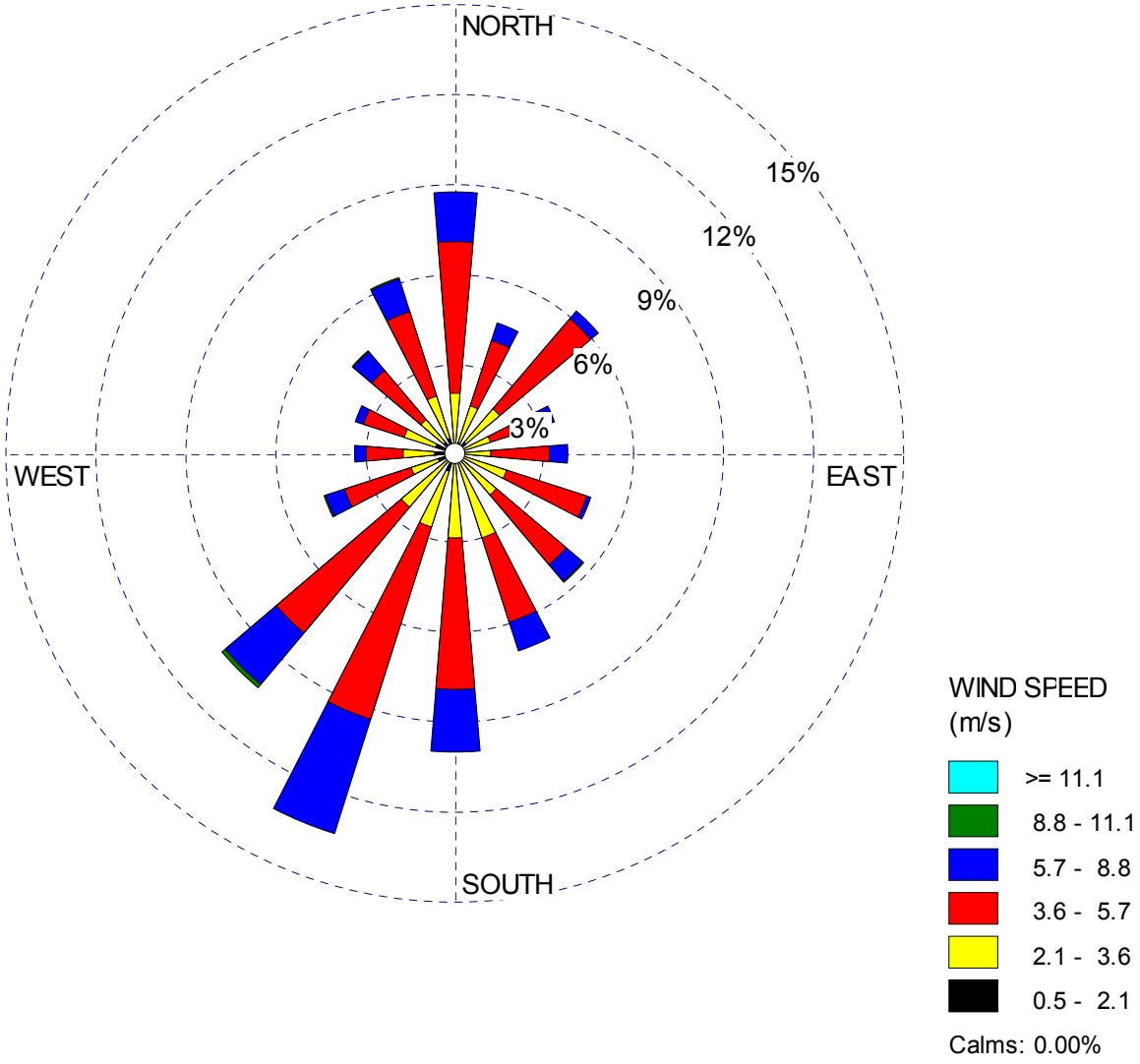


Figure 2.3-32—{Callaway Plant Wind Rose - August - 2004-2006, 60 m}

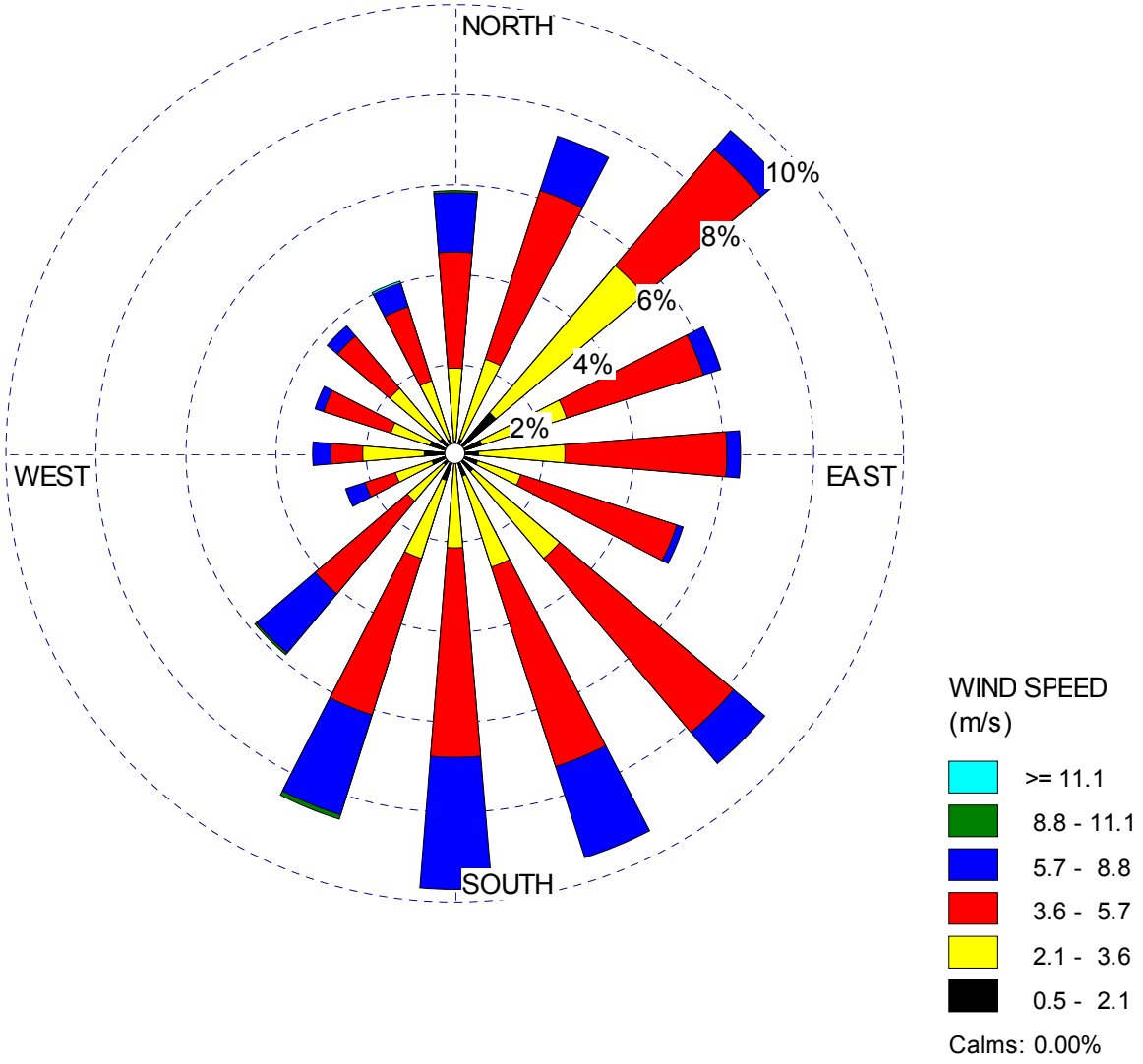


Figure 2.3-33—{Callaway Plant Wind Rose - September - 2004-2006, 60 m}

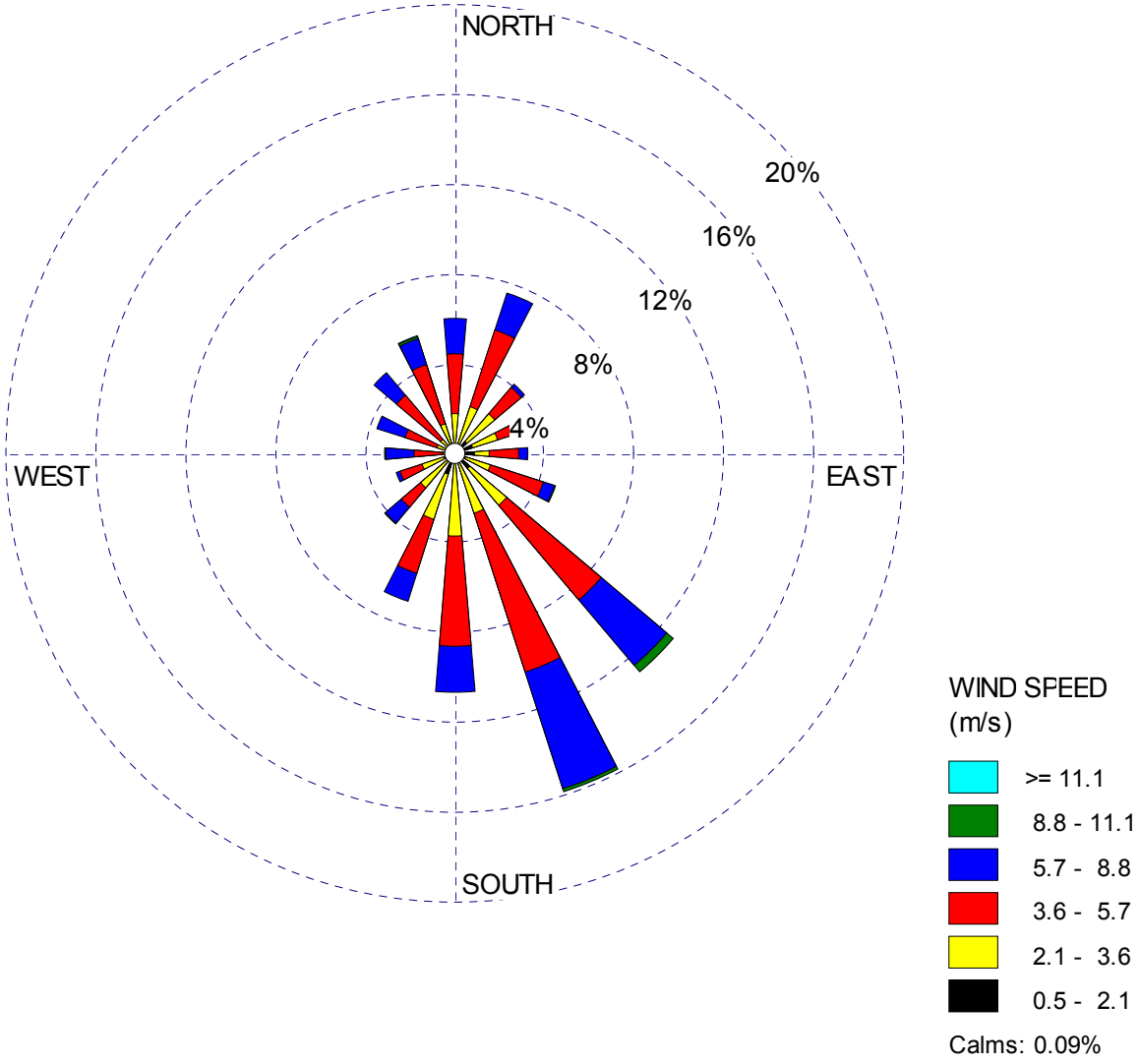


Figure 2.3-34—{Callaway Plant Wind Rose - October - 2004-2006, 60 m}

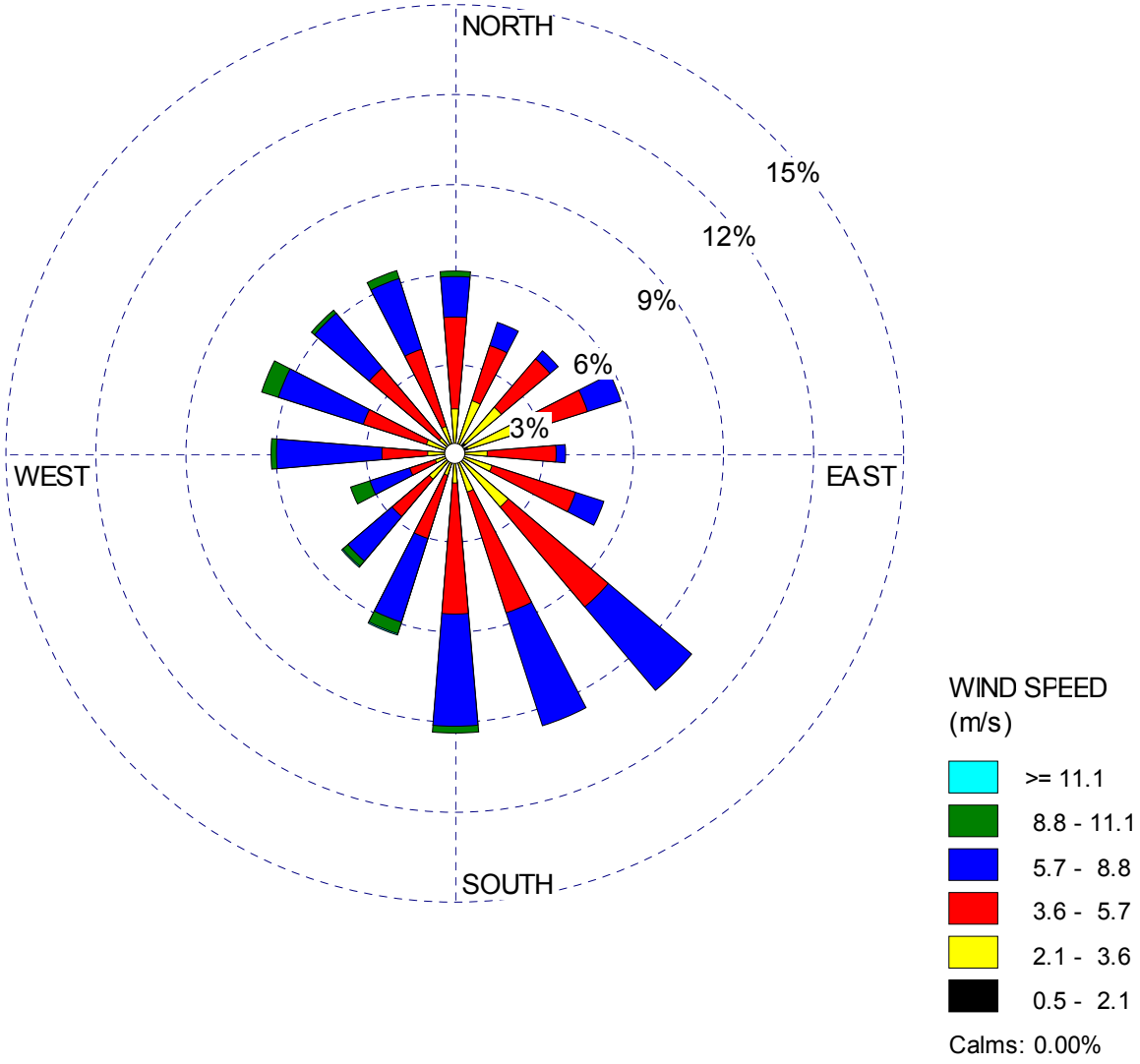


Figure 2.3-35—{Callaway Plant Wind Rose - November - 2004-2006, 60 m}

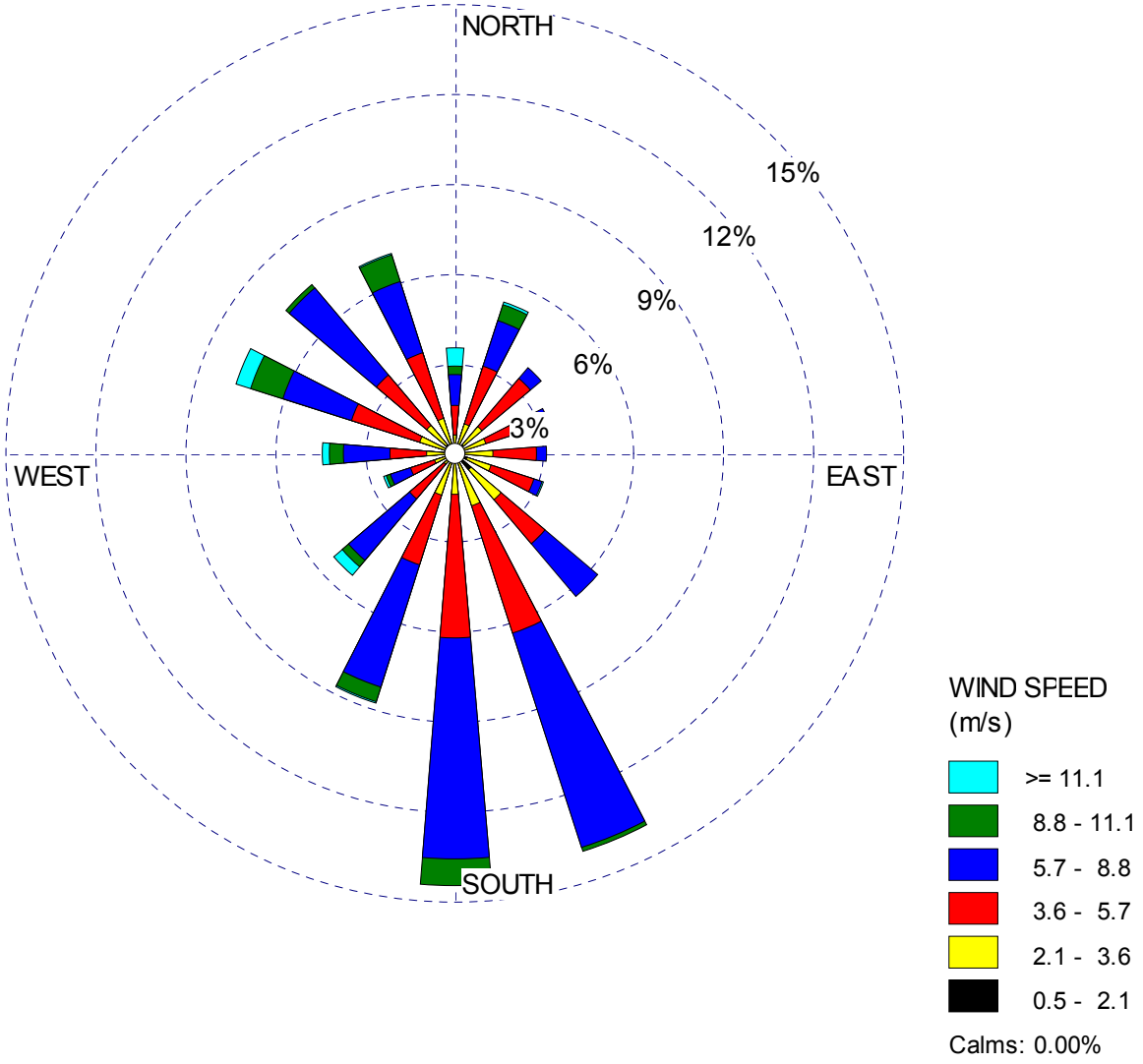


Figure 2.3-36—{Callaway Plant Wind Rose - December - 2004-2006, 60 m}

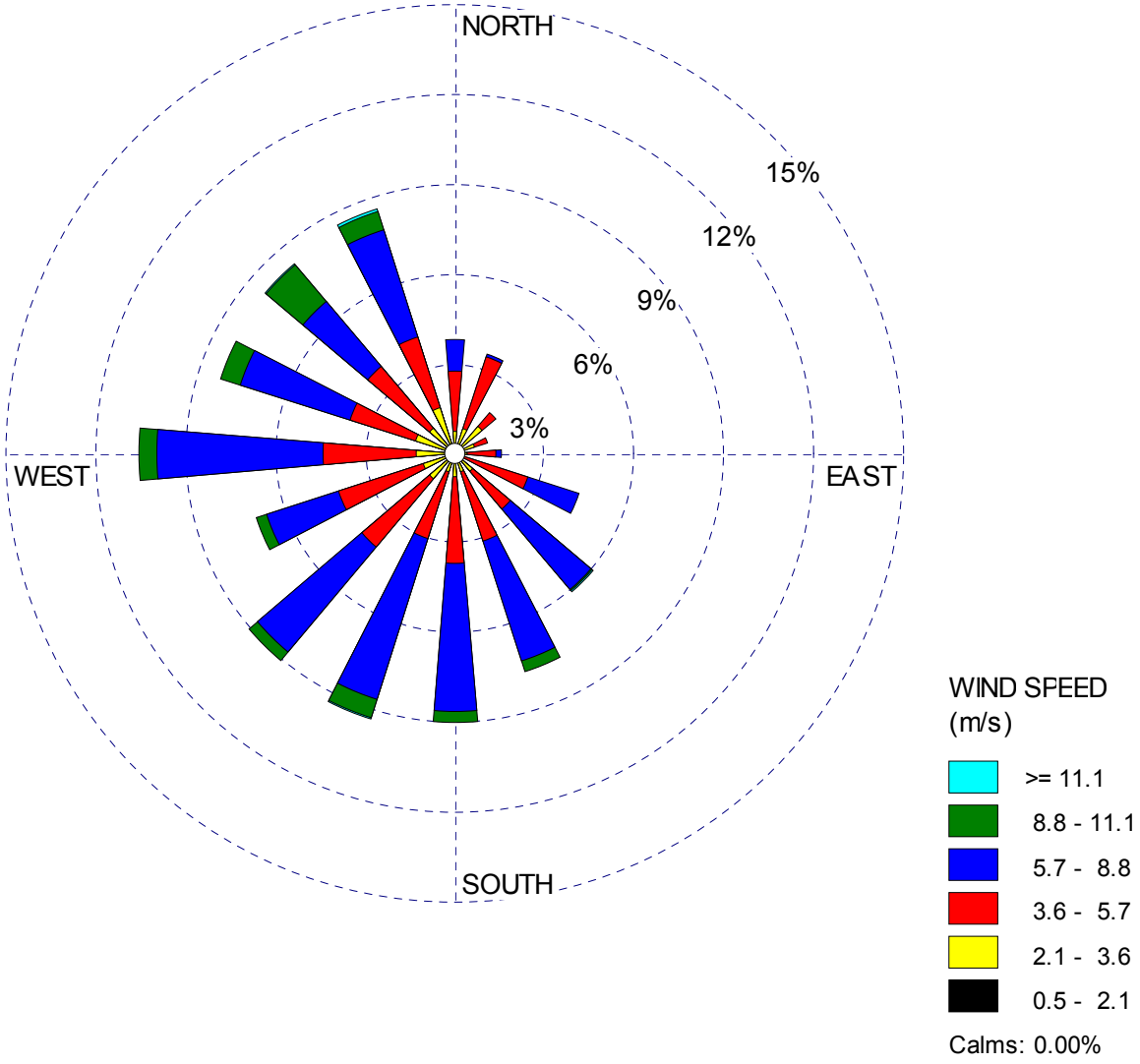


Figure 2.3-37—{Columbia, MO Wind Rose - 2004-2006}

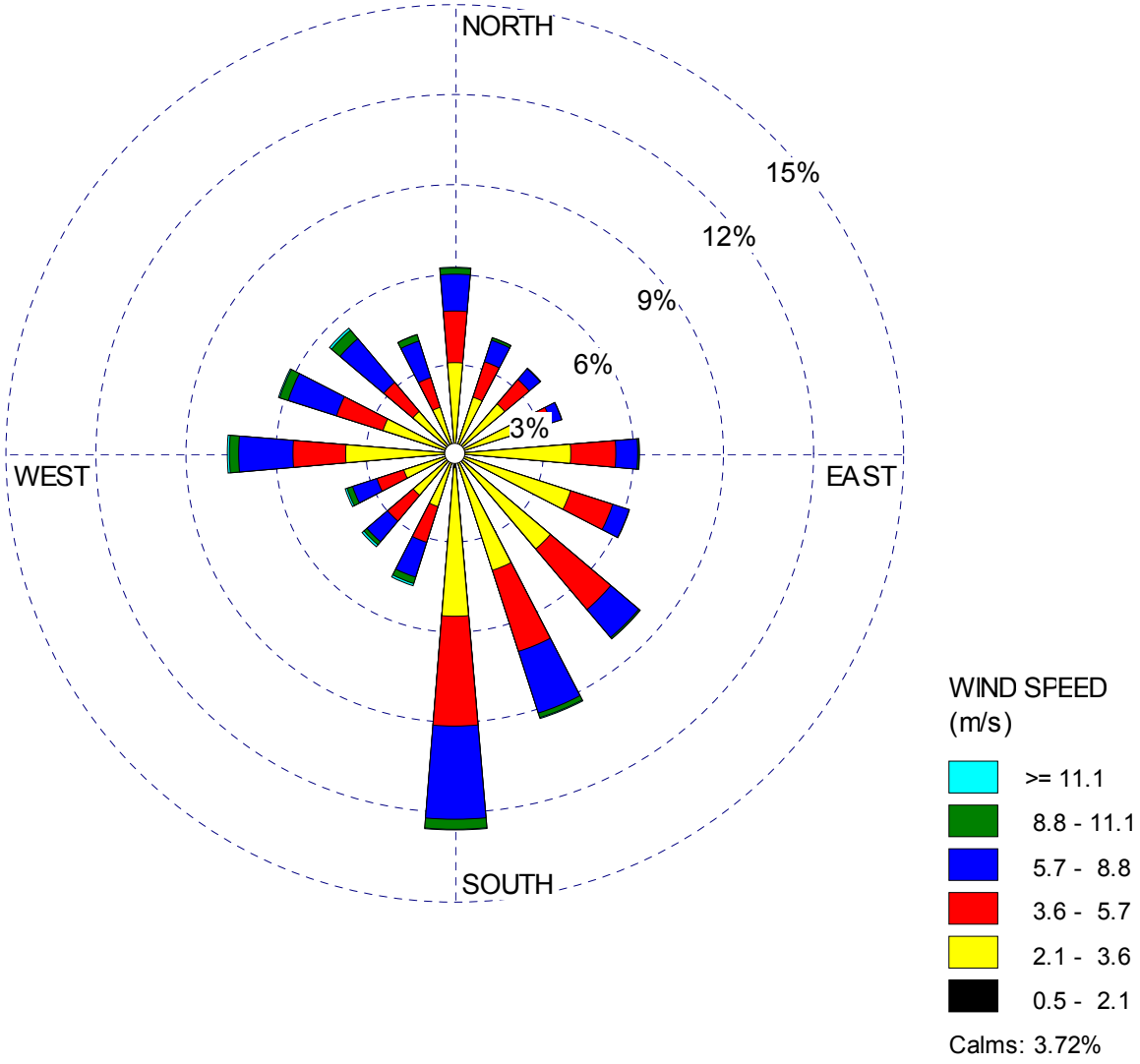


Figure 2.3-38—{St. Louis, MO Wind Rose - 2004-2006}

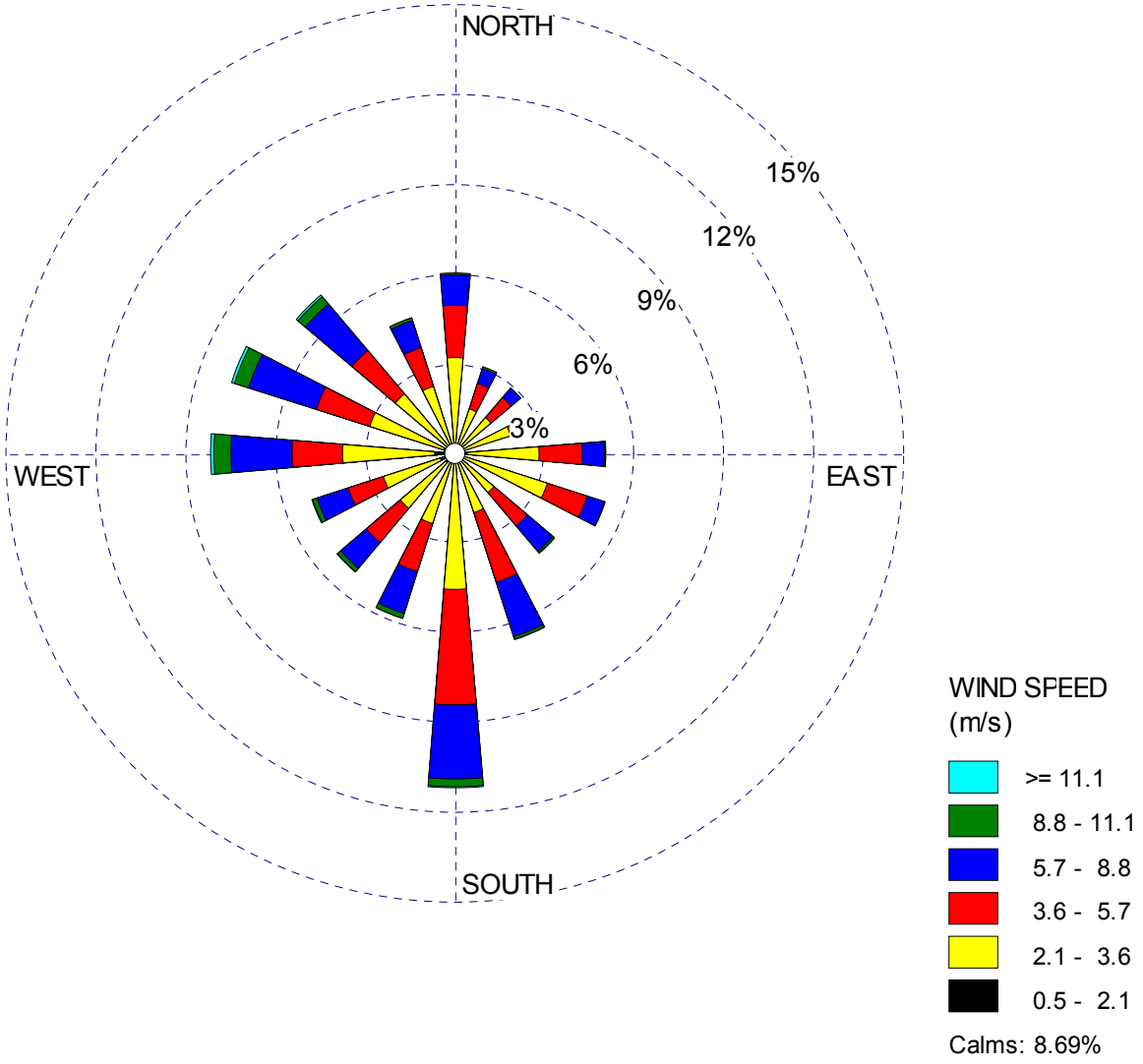


Figure 2.3-39—{Kansas City, MO Wind Rose - 2004-2006}

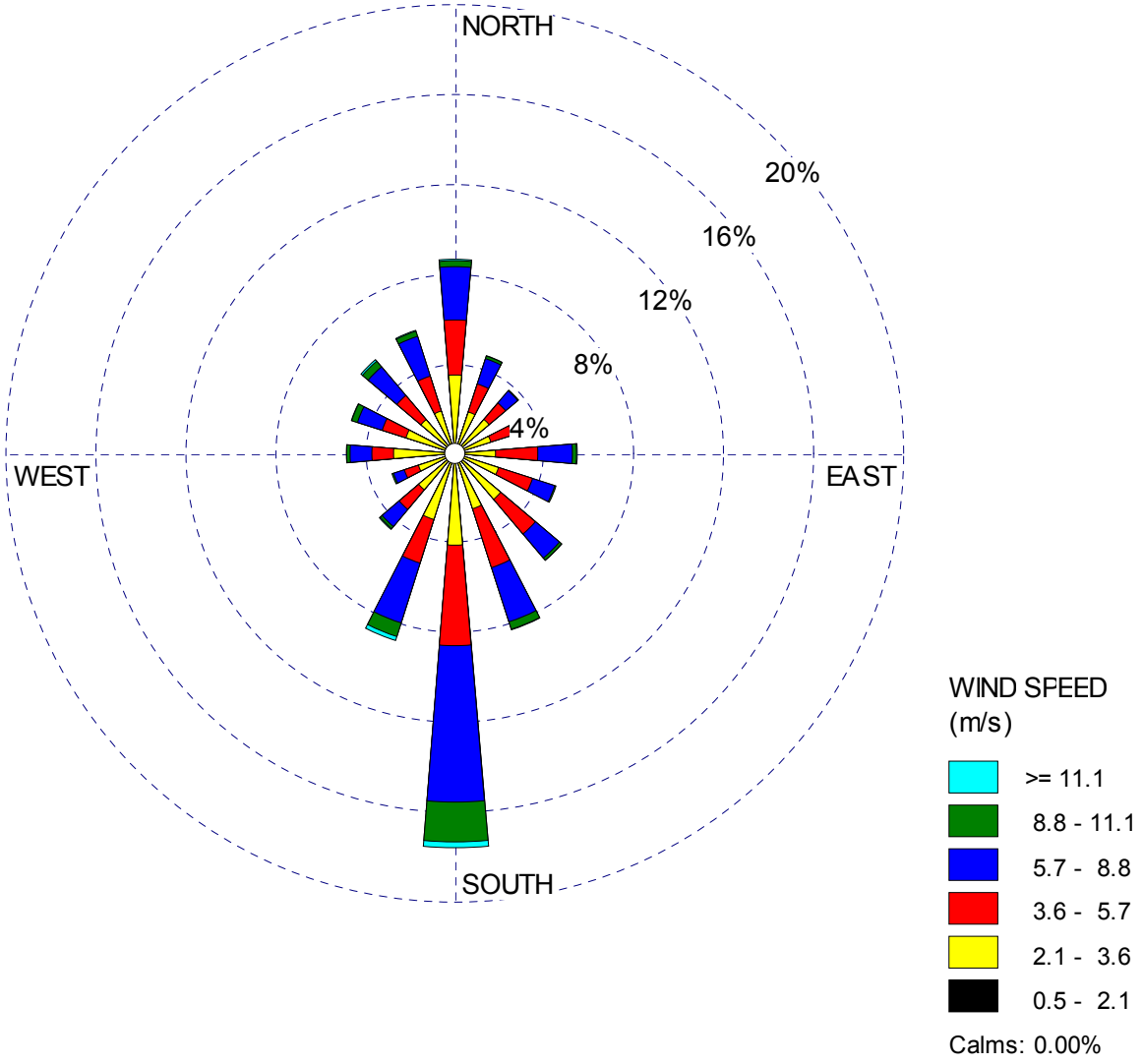


Figure 2.3-40—{Jefferson City, MO Wind Rose - 2004-2006}

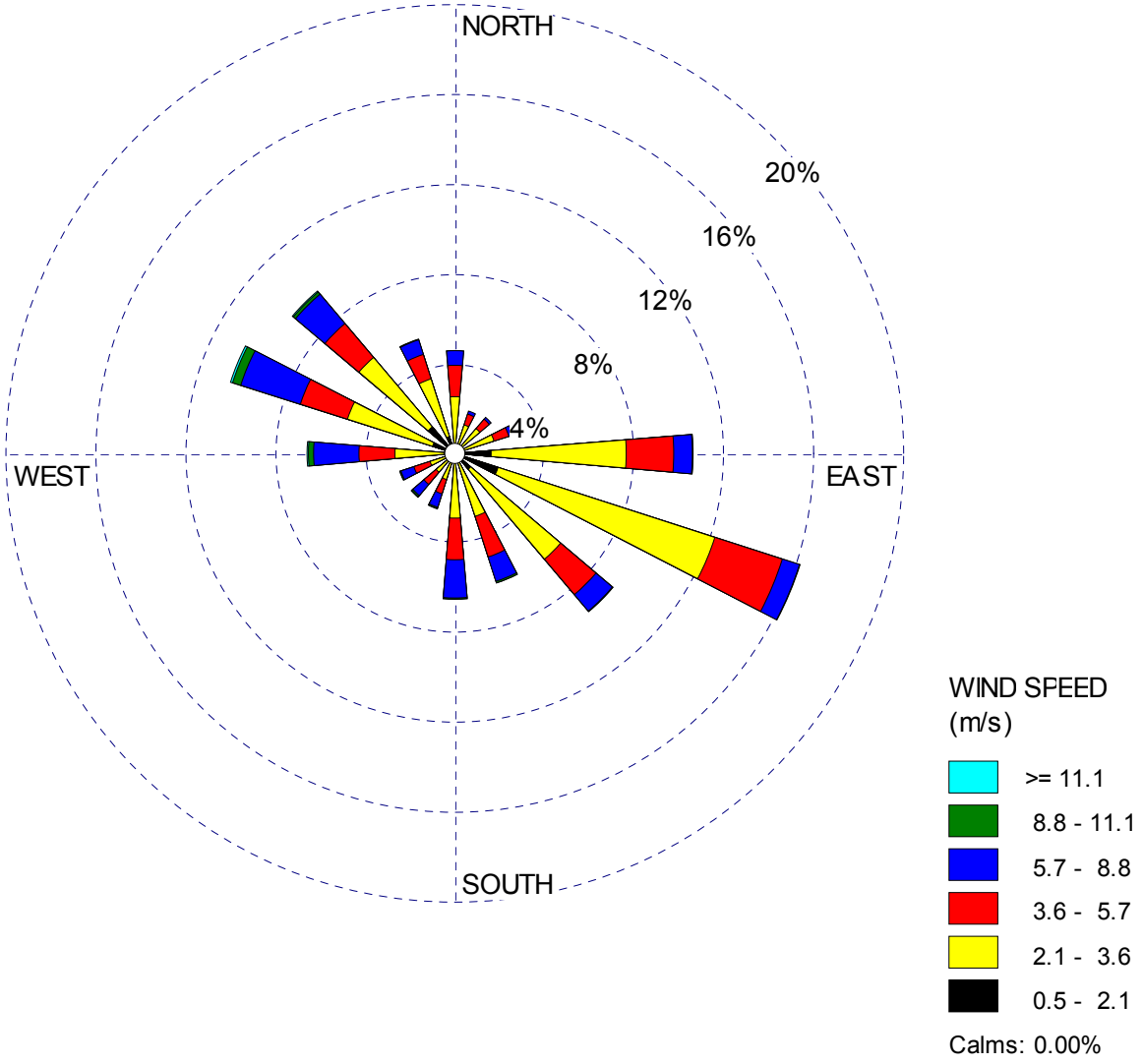


Figure 2.3-41—{Vichy Rolla, MO Wind Rose - 2004-2006}

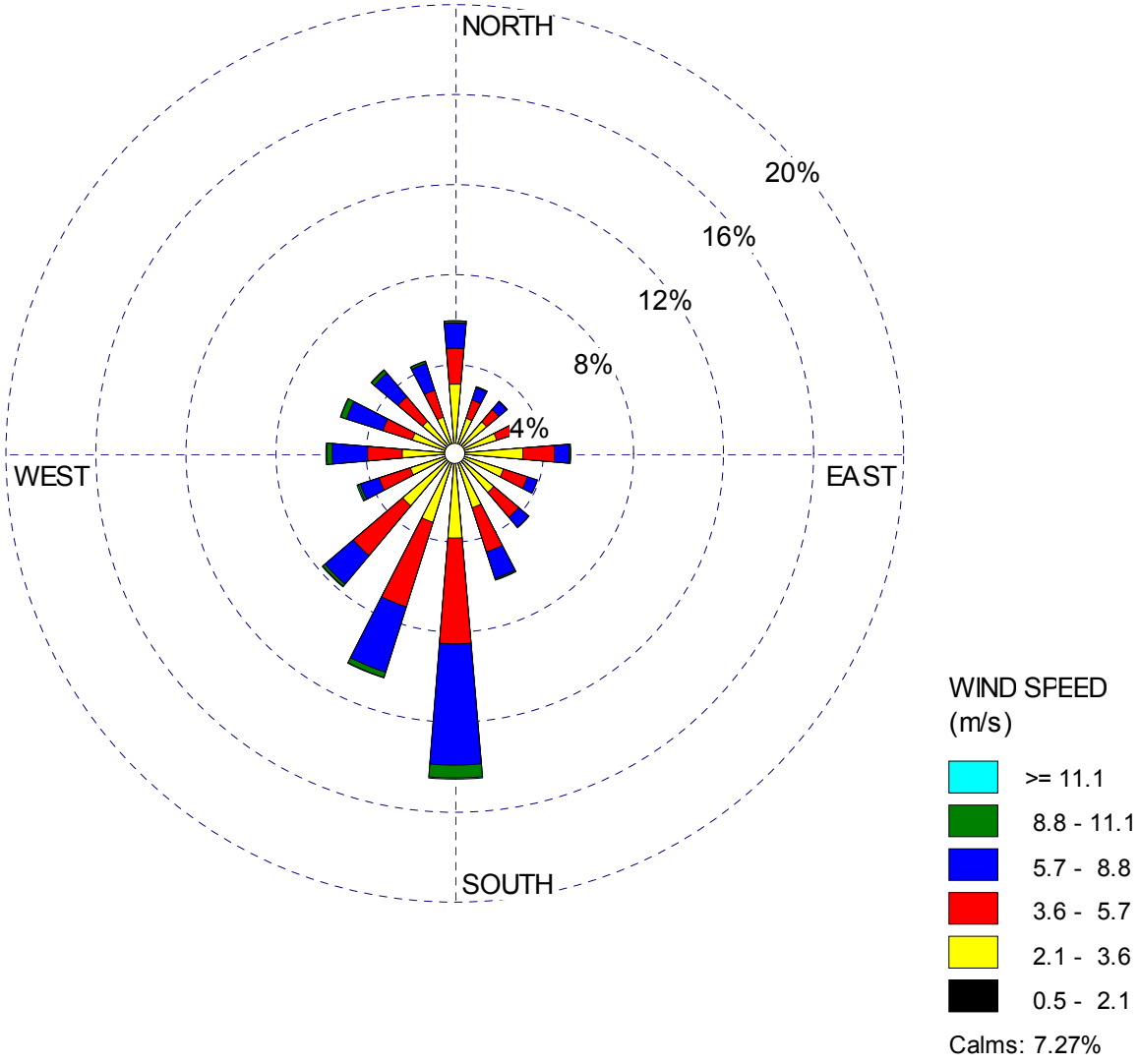


Figure 2.3-42—{Callaway Plant Precipitation Wind Rose - 2004, 10 m}

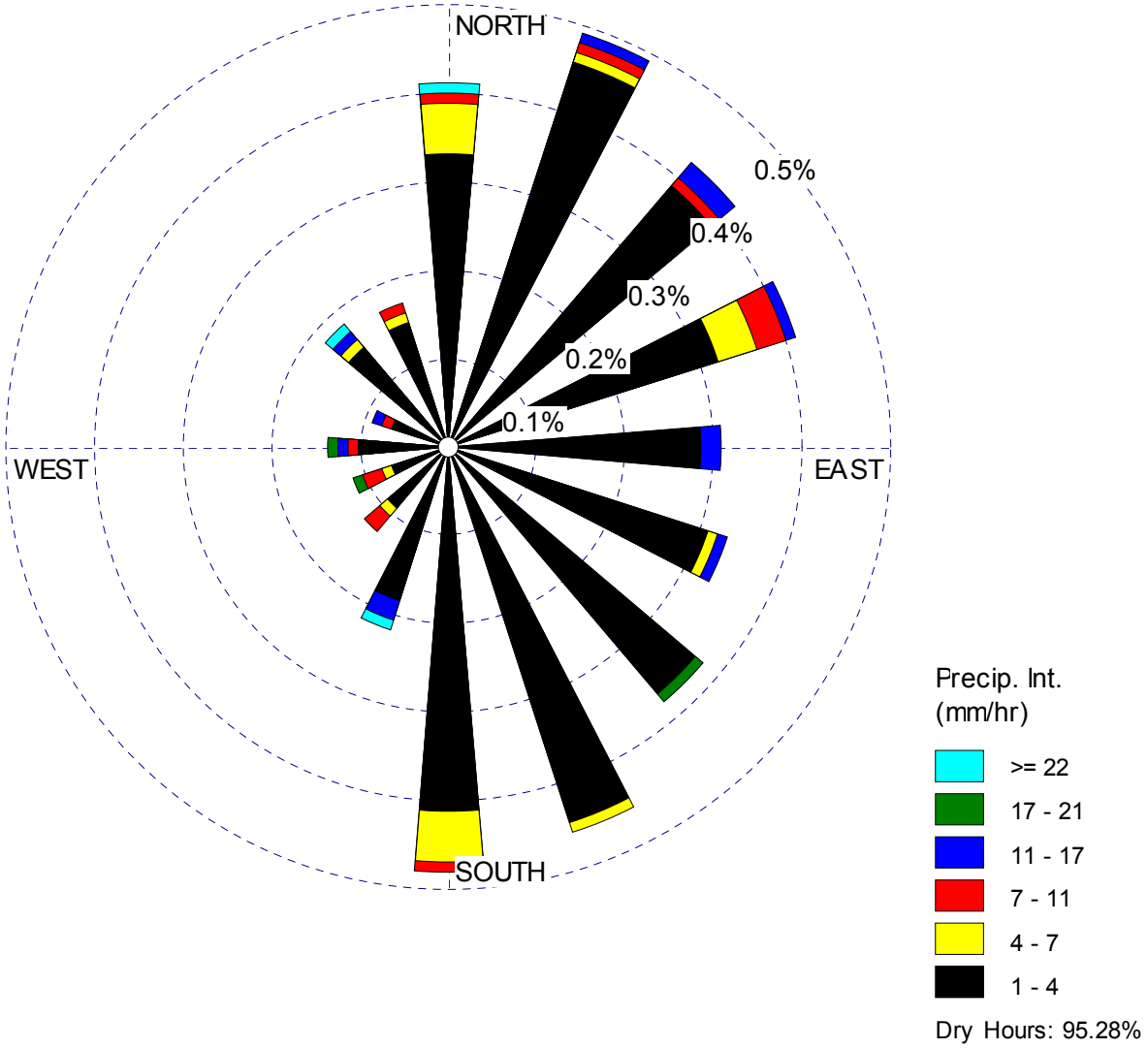


Figure 2.3-43—{Callaway Plant Precipitation Wind Rose - 2004, 60 m}

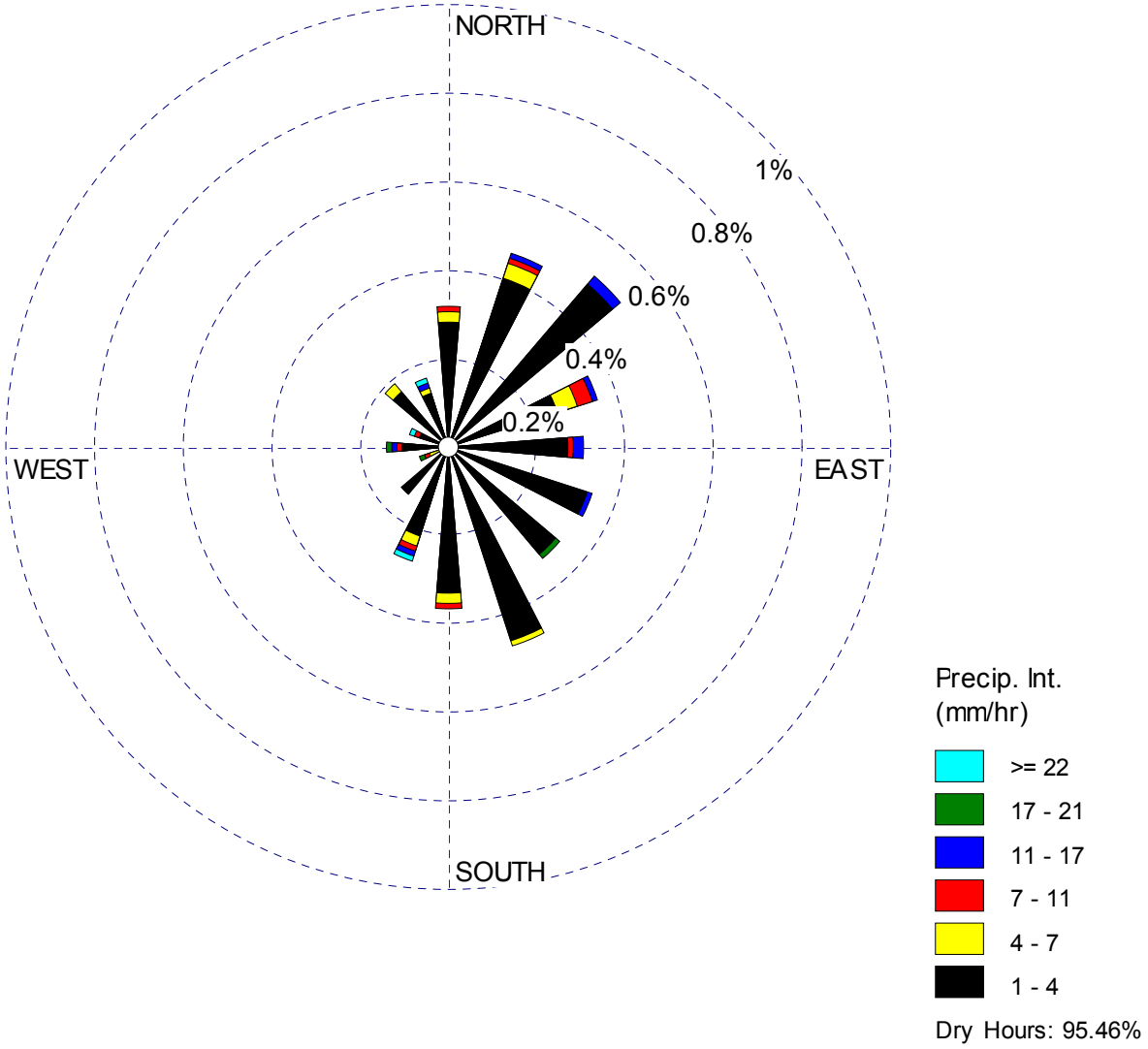


Figure 2.3-44—{Callaway Plant Precipitation Wind Rose - 2005, 10 m}

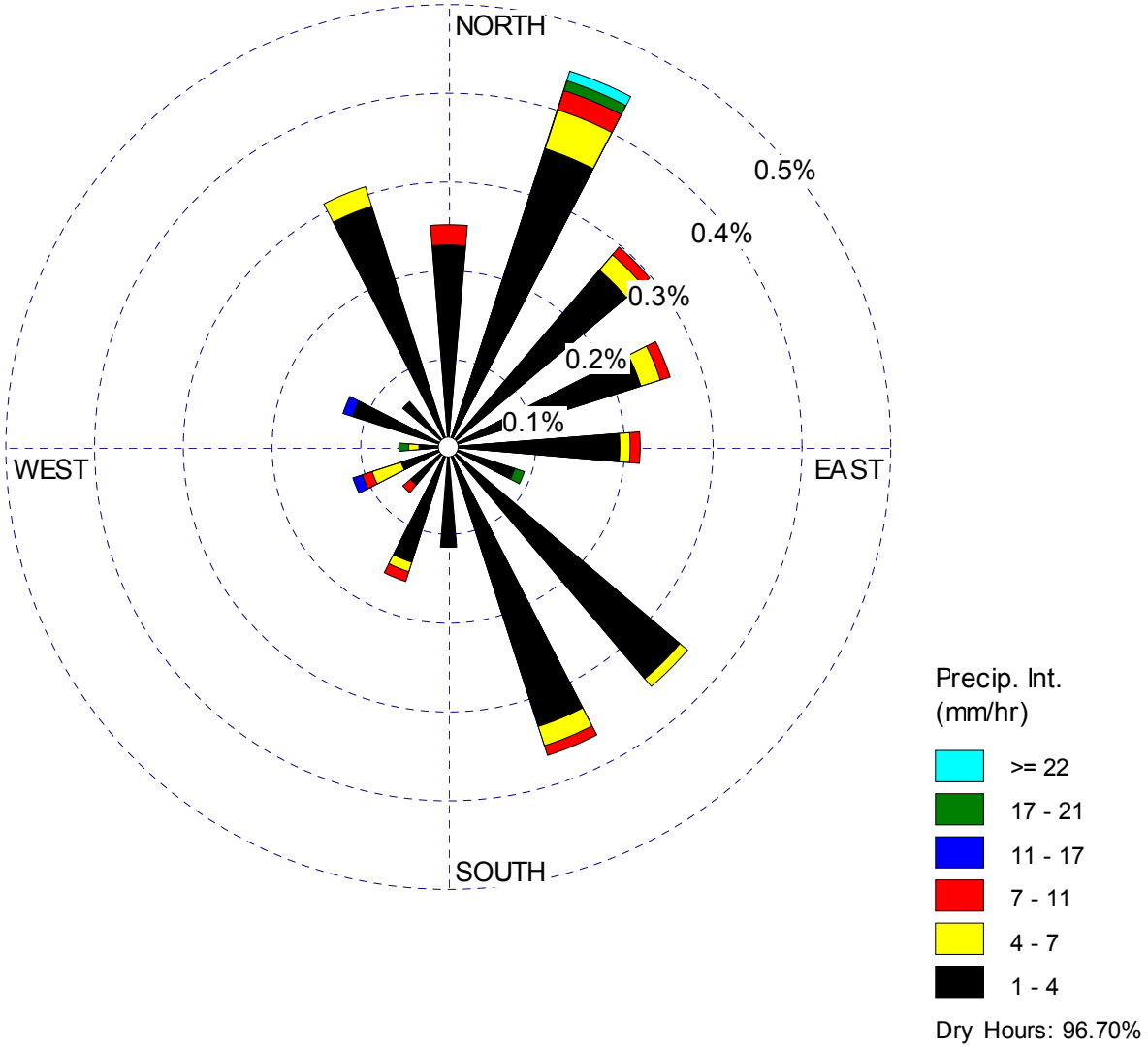


Figure 2.3-45—{Callaway Plant Precipitation Wind Rose - 2005, 60 m}

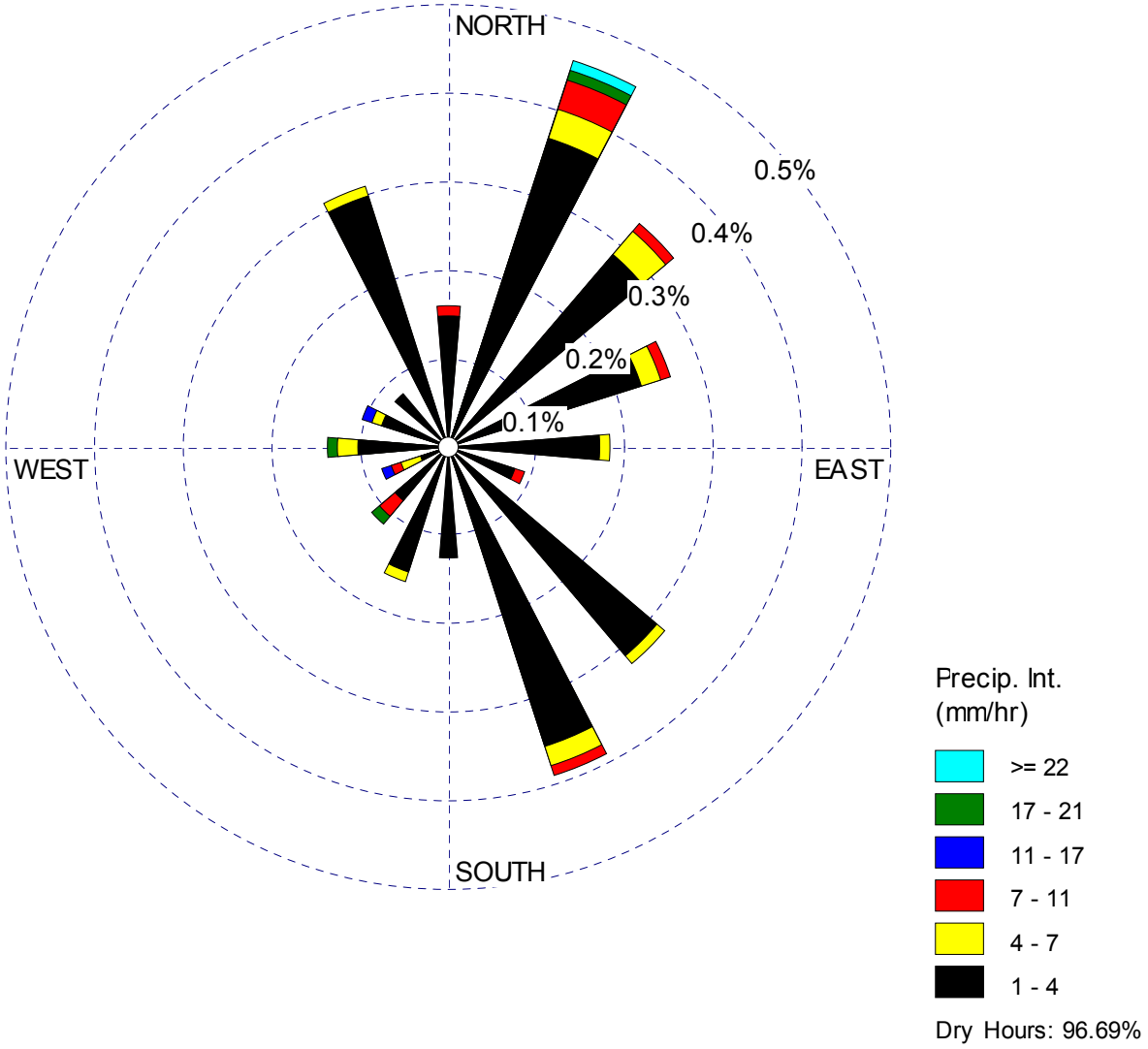


Figure 2.3-46—{Callaway Plant Precipitation Wind Rose - 2006, 10 m}

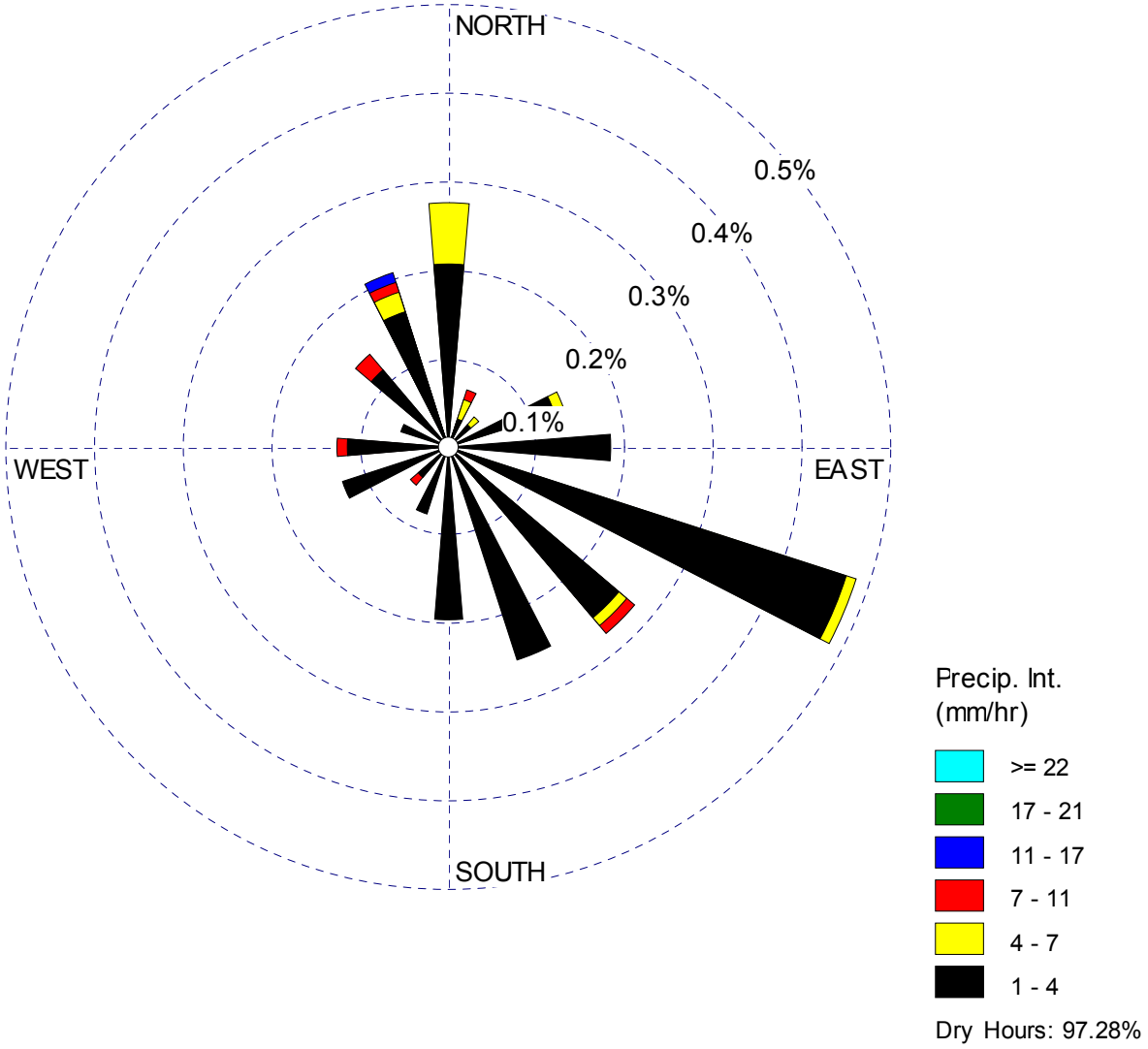


Figure 2.3-47—{Callaway Plant Precipitation Wind Rose - 2006, 60 m}

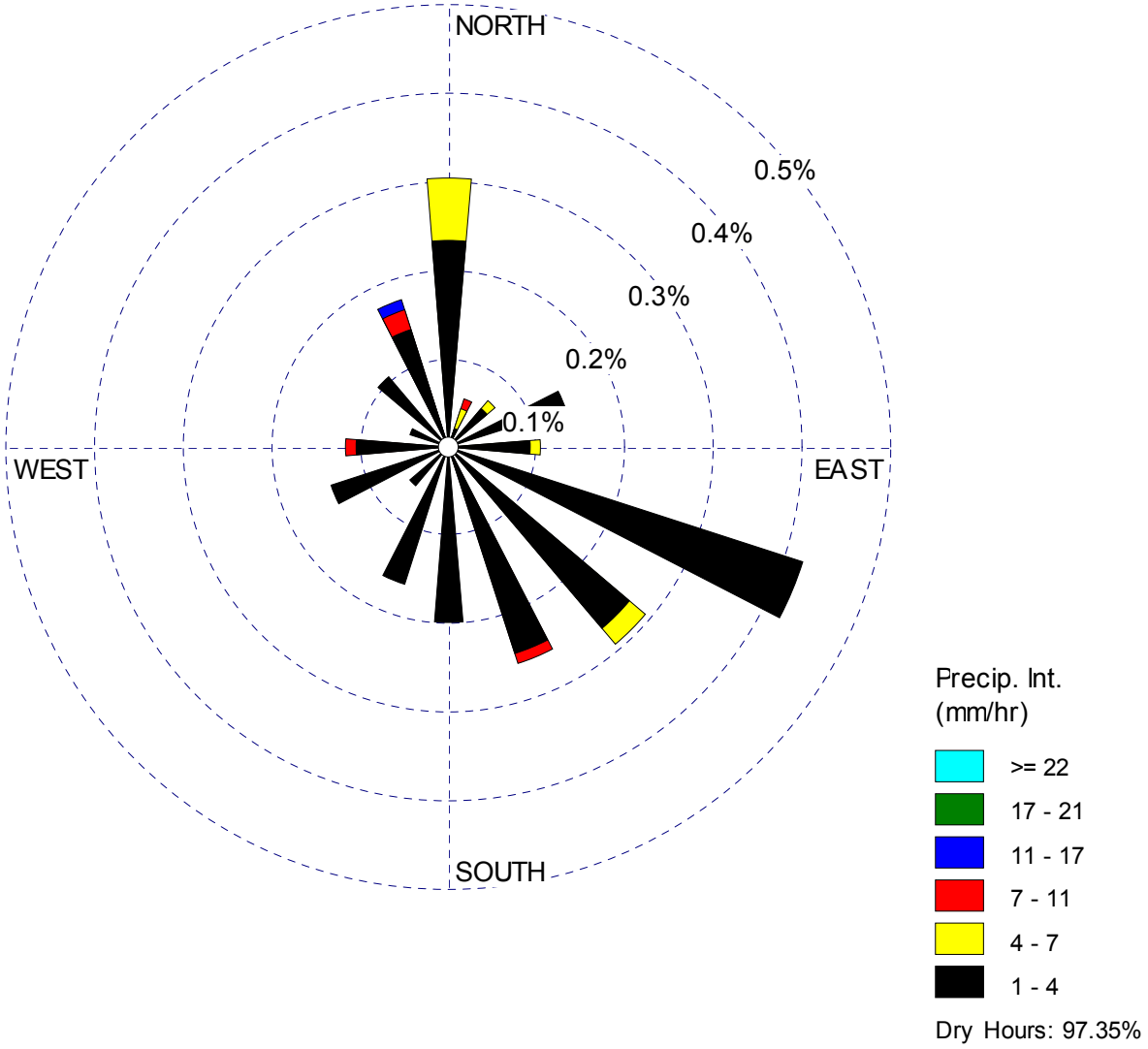


Figure 2.3-48—{Callaway Plant Precipitation Wind Rose - 2004-2006, 10 m, All Precipitation Hours}

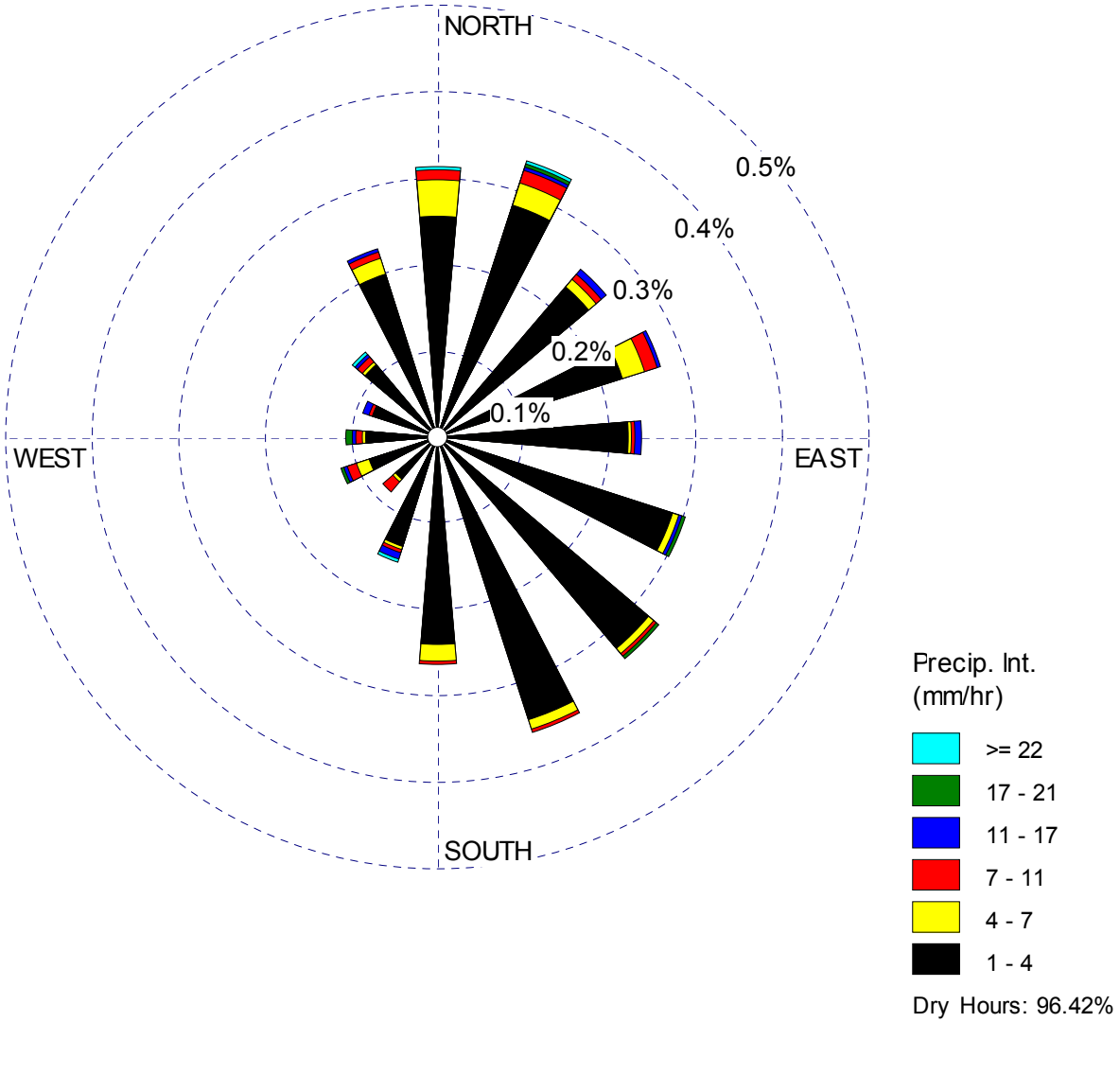


Figure 2.3-49—{Callaway Plant Precipitation Wind Rose - 2004-2006, 60 m, All Precipitation Hours}

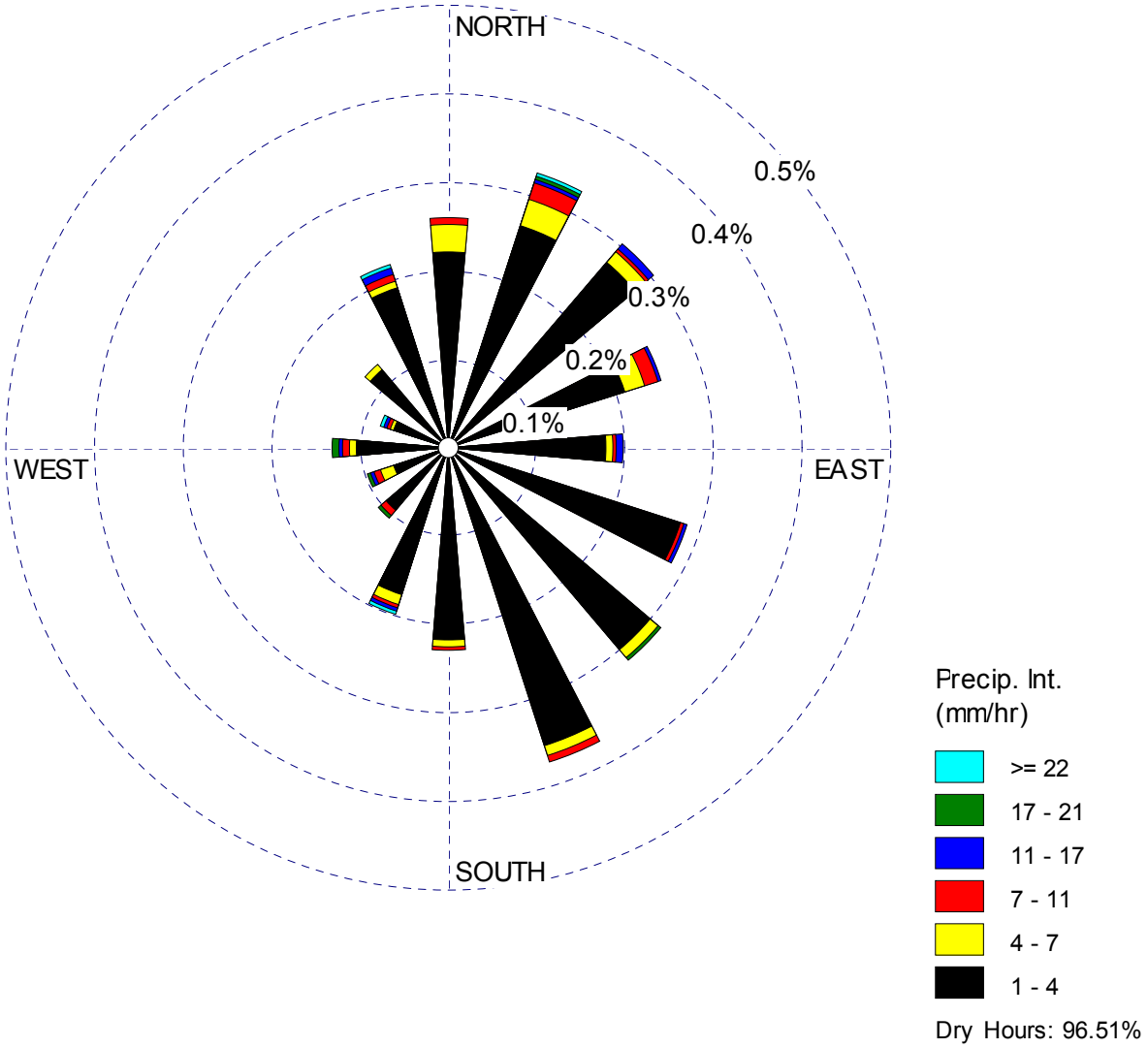


Figure 2.3-50—{Callaway Plant Precipitation Wind Rose - January 2004-2006, 10 m, All Precipitation Hours}

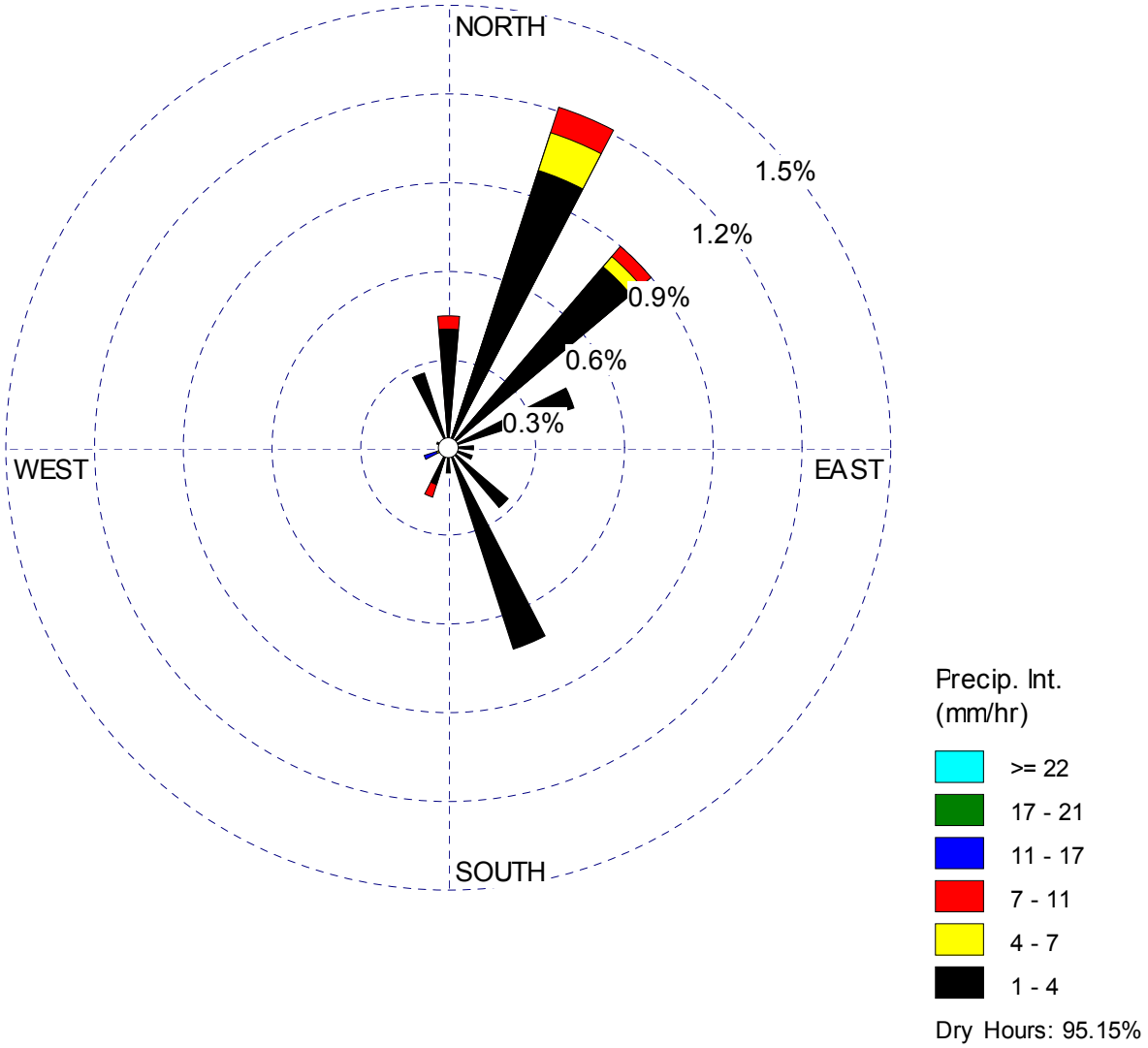


Figure 2.3-51—{Callaway Plant Precipitation Wind Rose - February 2004-2006, 10 m, All Precipitation Hours}

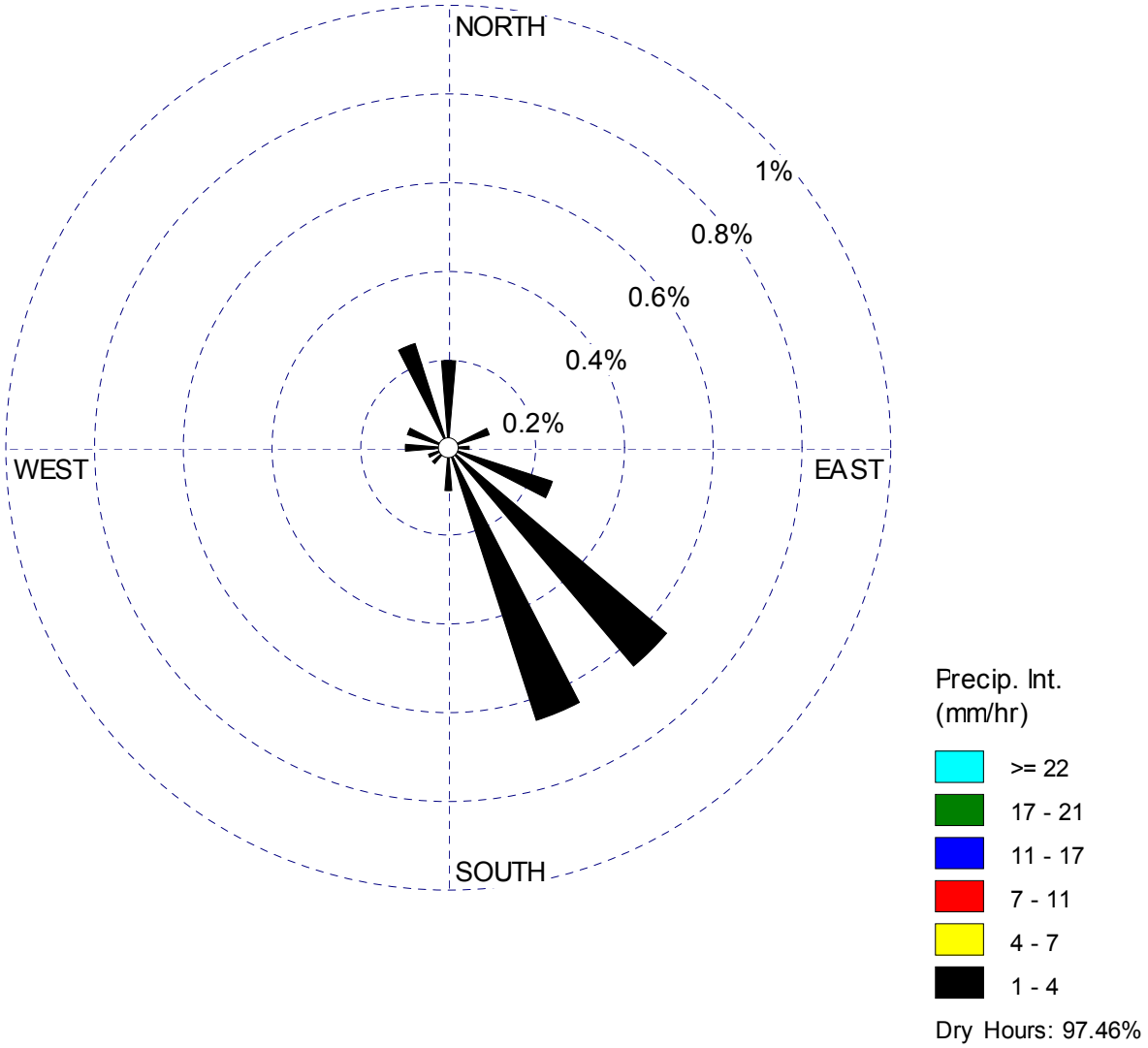


Figure 2.3-52—{Callaway Plant Precipitation Wind Rose - March 2004-2006, 10 m, All Precipitation Hours}

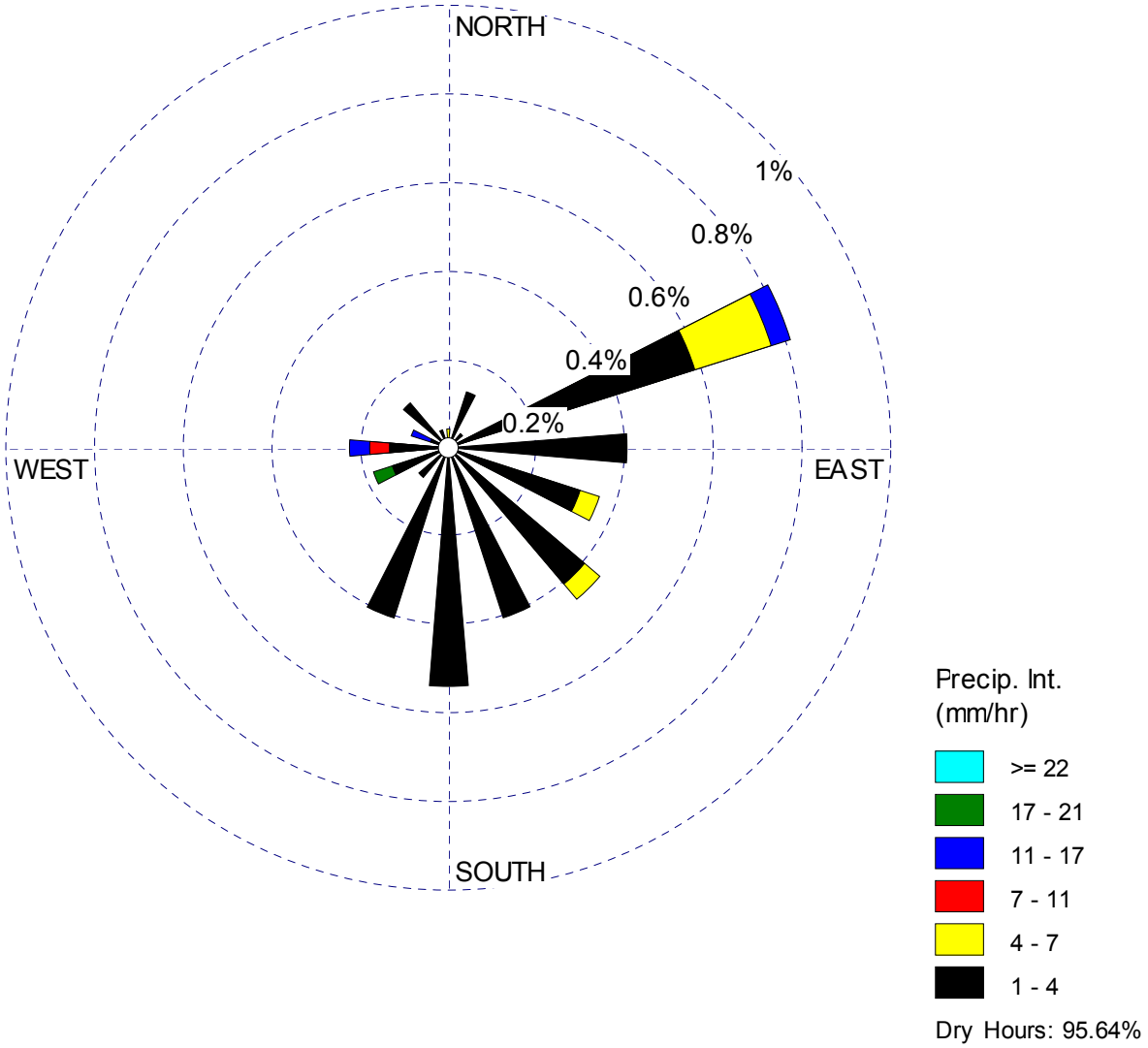


Figure 2.3-53—{Callaway Plant Precipitation Wind Rose - April 2004-2006, 10 m, All Precipitation Hours}

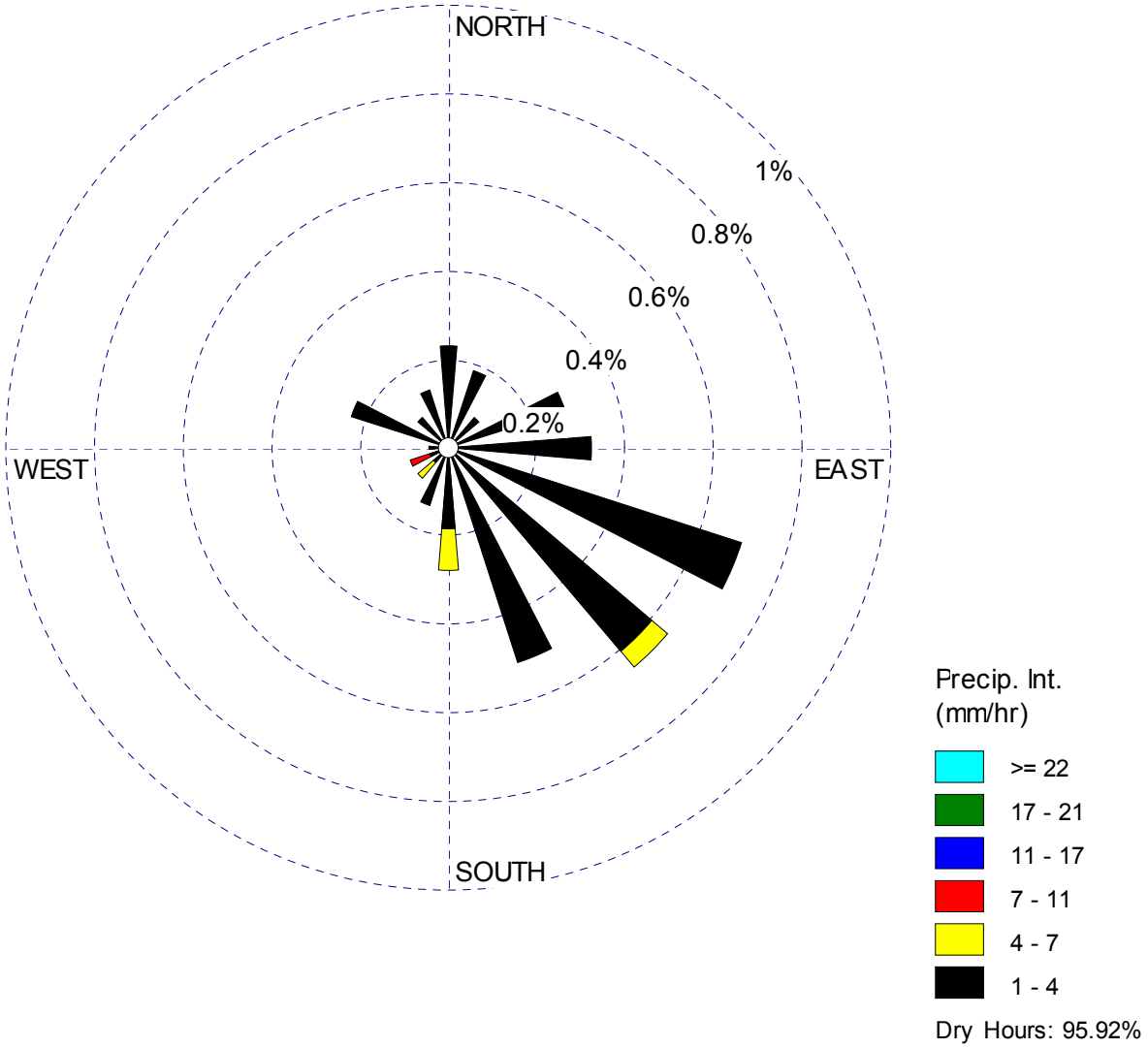


Figure 2.3-54—{Callaway Plant Precipitation Wind Rose - May 2004-2006, 10 m, All Precipitation Hours}

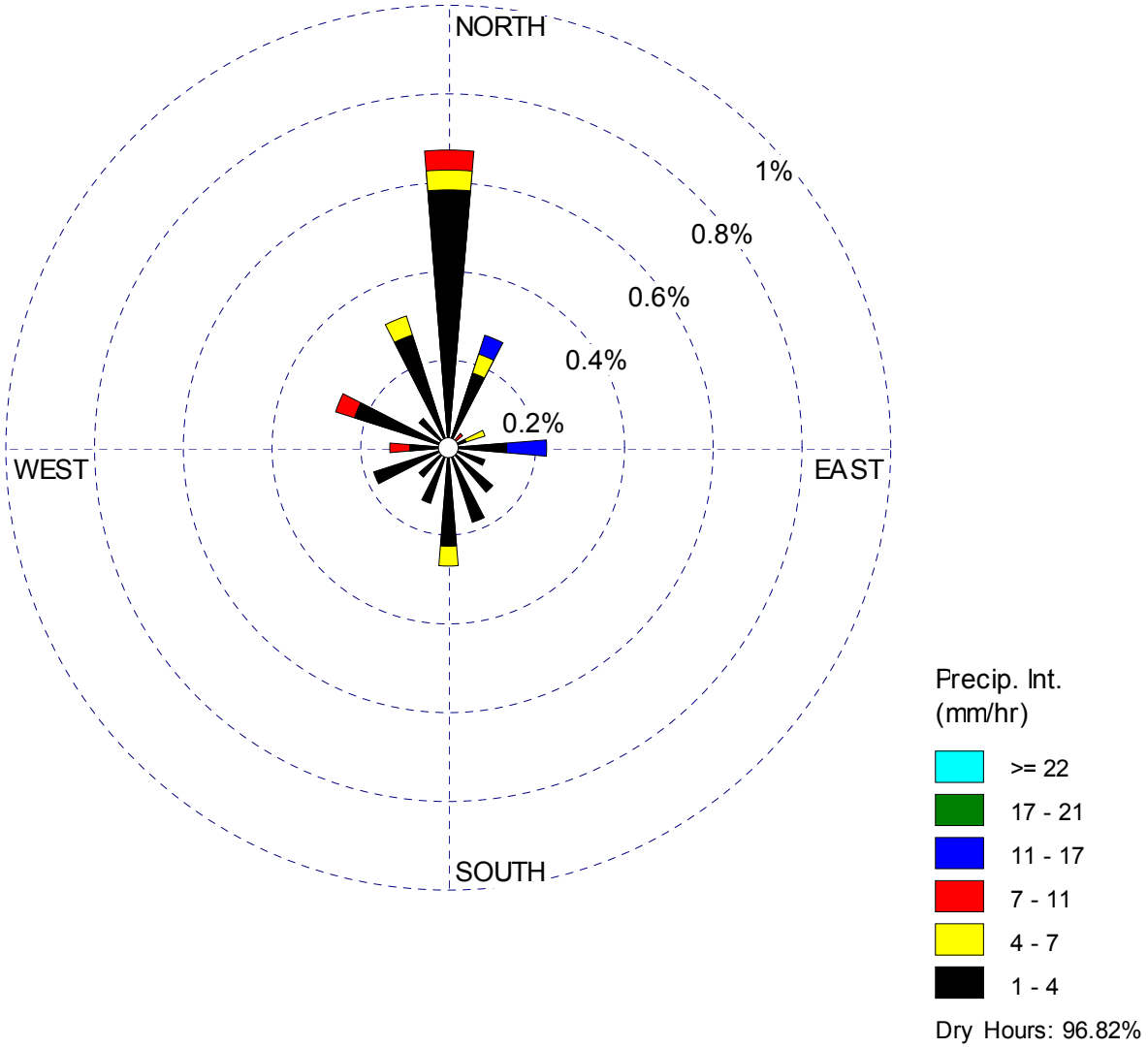


Figure 2.3-55—{Callaway Plant Precipitation Wind Rose - June 2004-2006, 10 m, All Precipitation Hours}

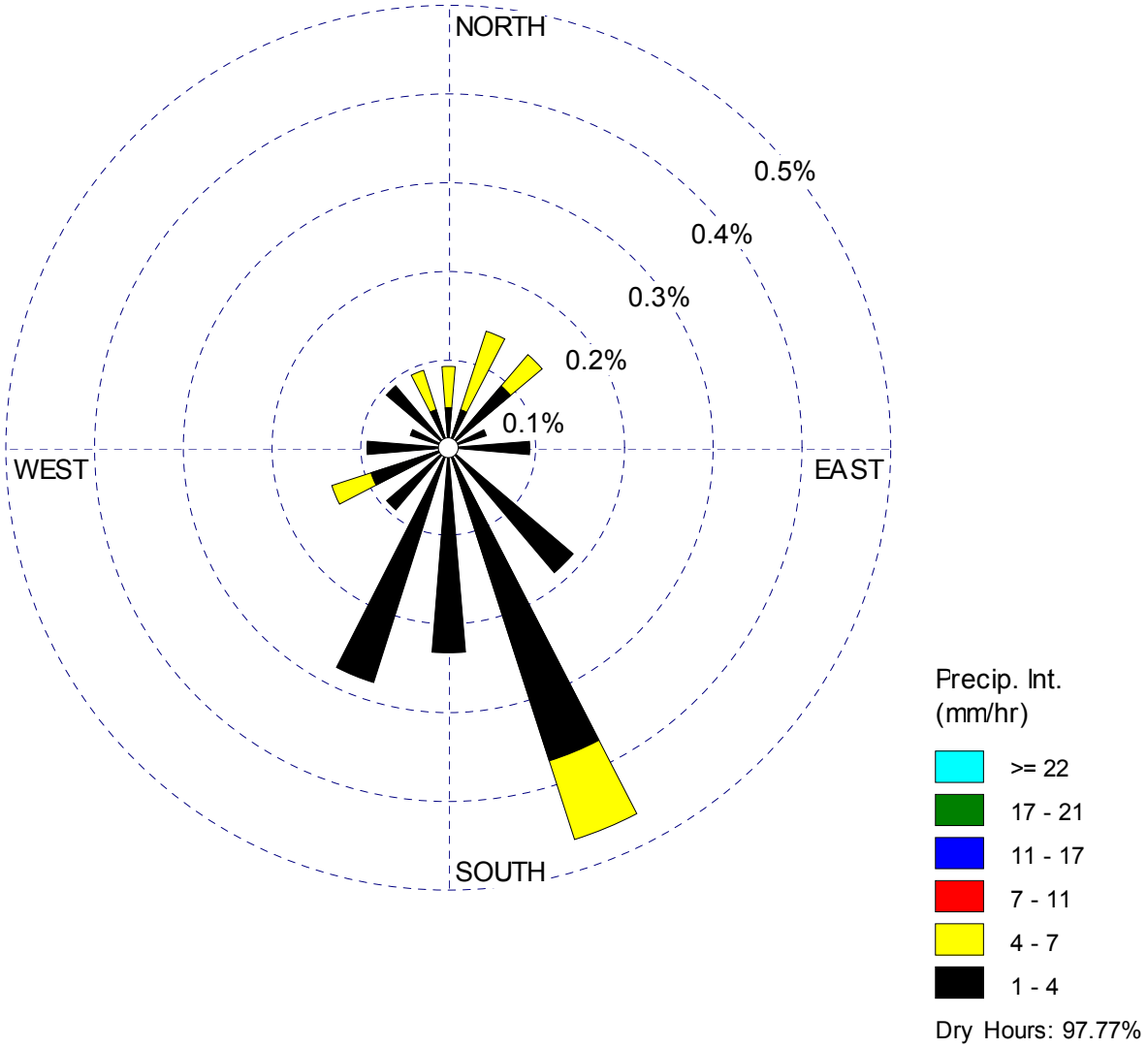


Figure 2.3-56—{Callaway Plant Precipitation Wind Rose - July 2004-2006, 10 m, All Precipitation Hours}

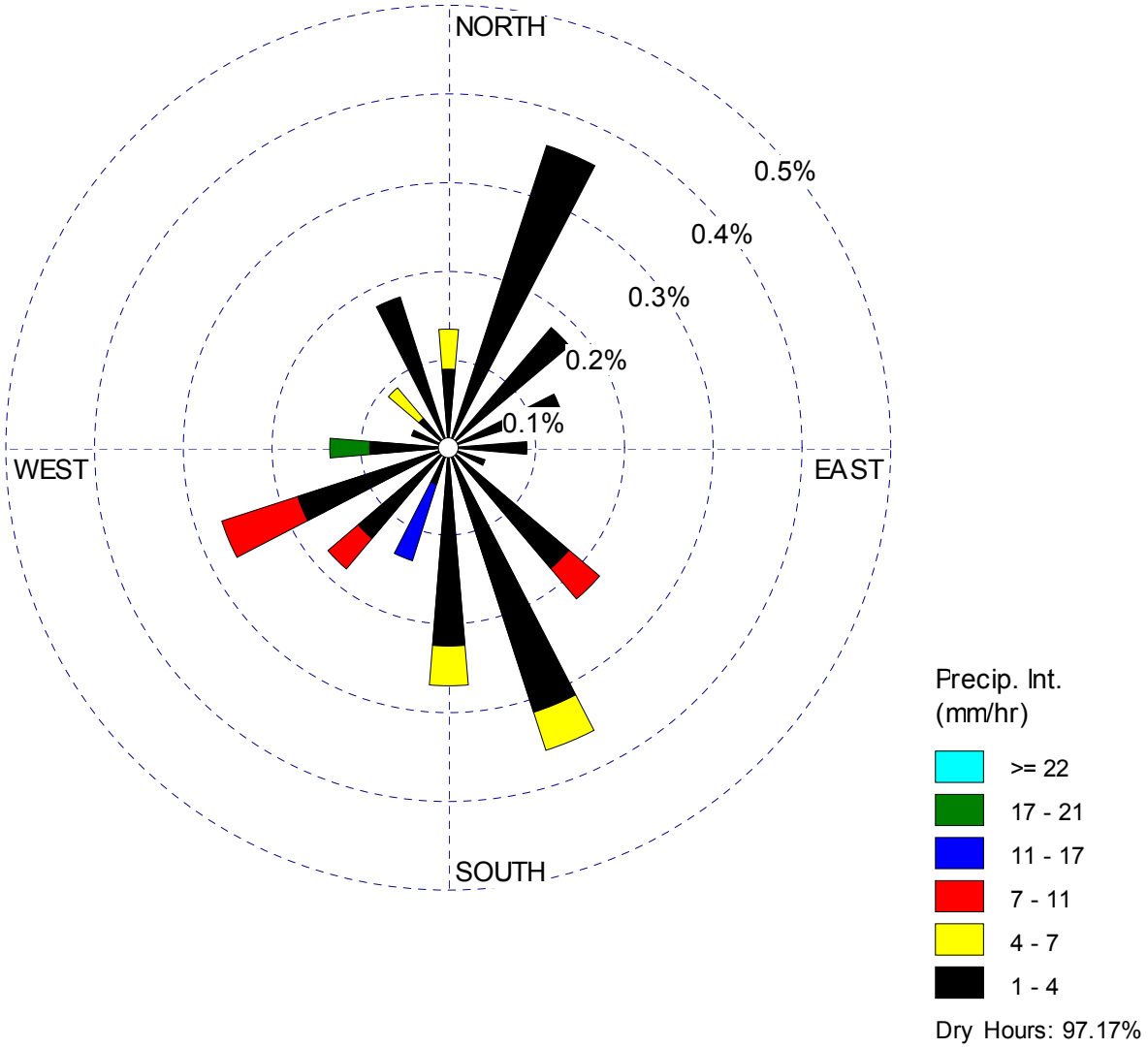


Figure 2.3-57—{Callaway Plant Precipitation Wind Rose - August 2004-2006, 10 m, All Precipitation Hours}

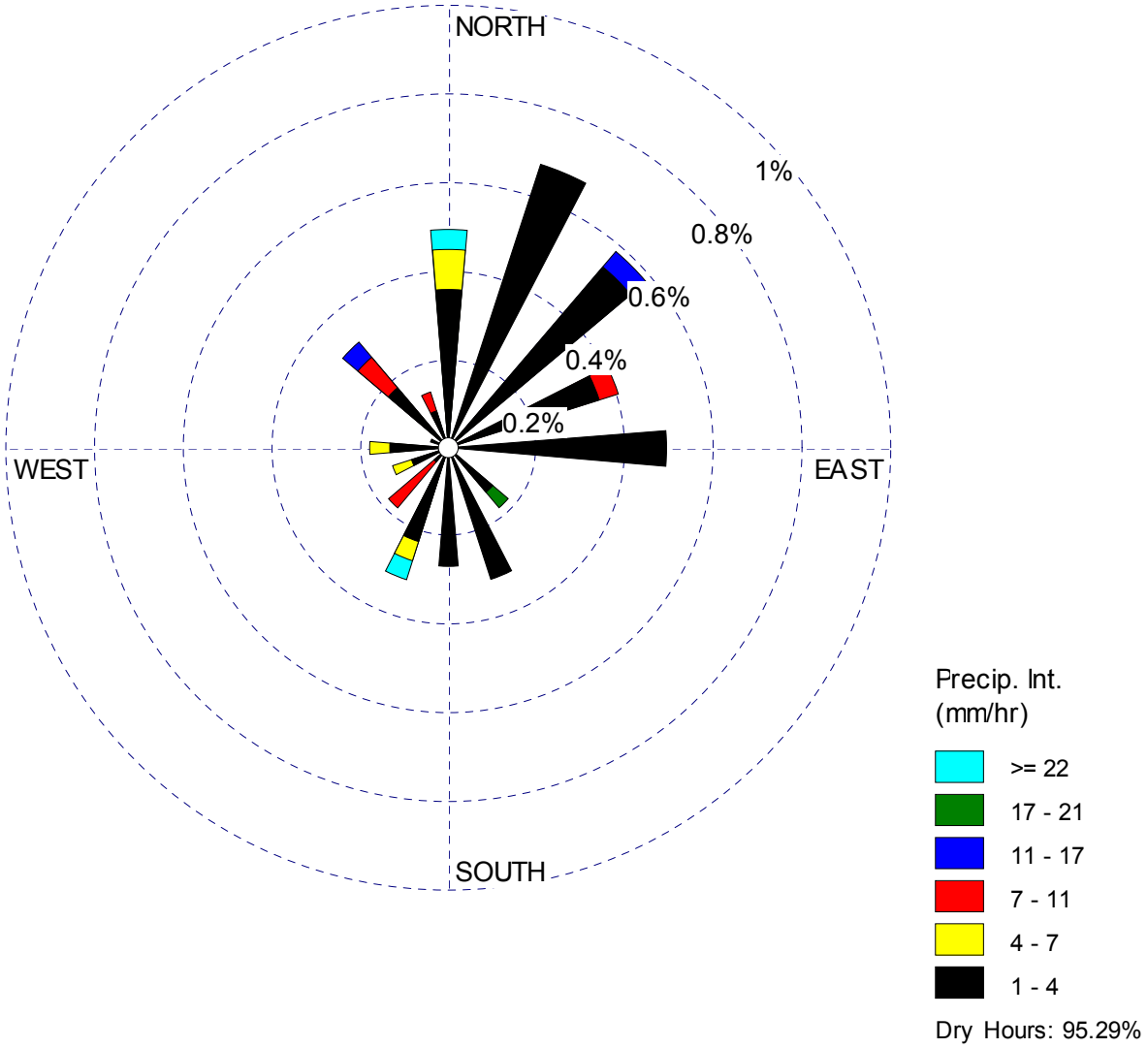


Figure 2.3-58—{Callaway Plant Precipitation Wind Rose - September 2004-2006, 10 m, All Precipitation Hours}

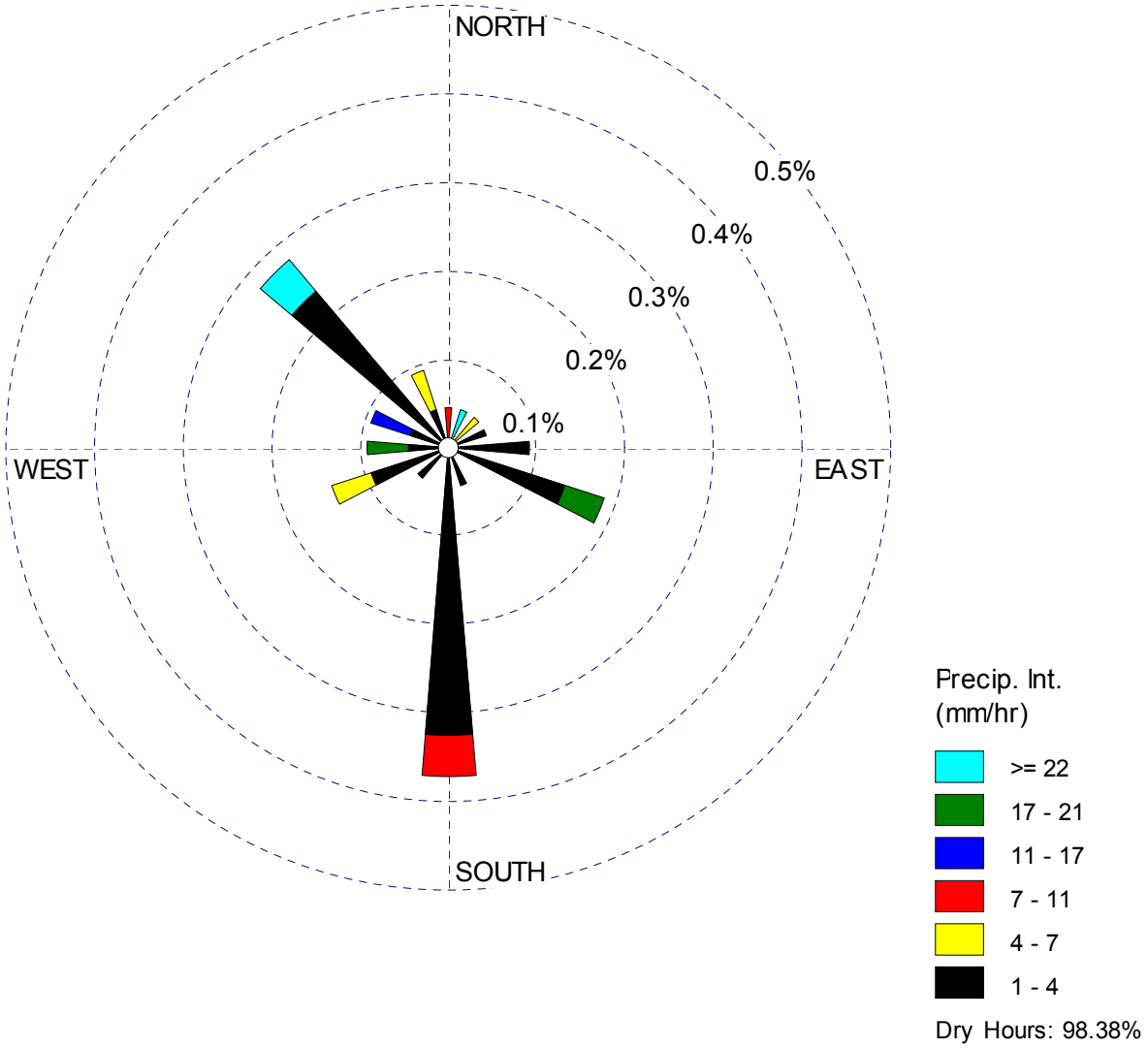


Figure 2.3-59—{Callaway Plant Precipitation Wind Rose - October 2004-2006, 10 m, All Precipitation Hours}

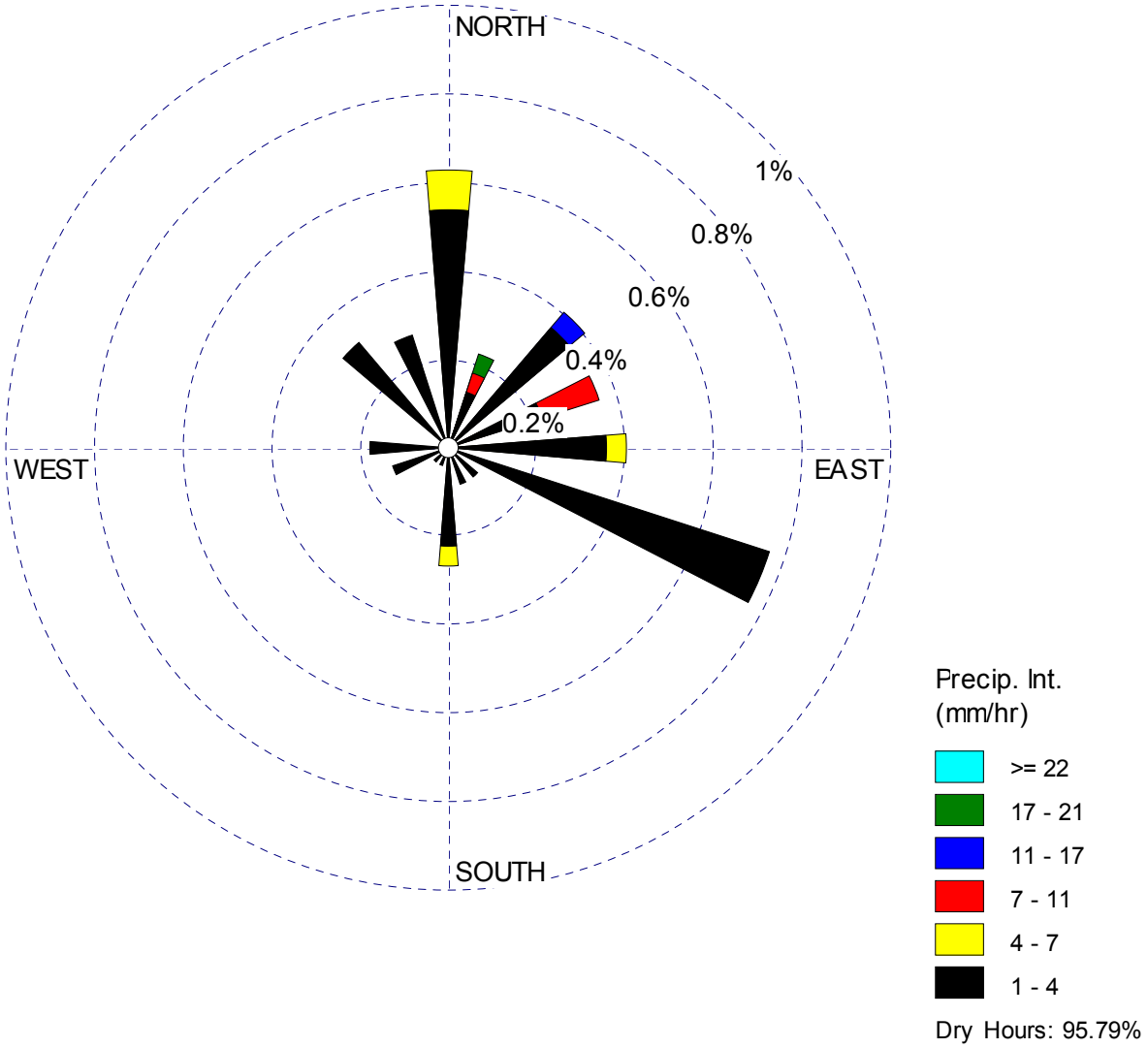


Figure 2.3-60—{Callaway Plant Precipitation Wind Rose - November 2004-2006, 10 m, All Precipitation Hours}

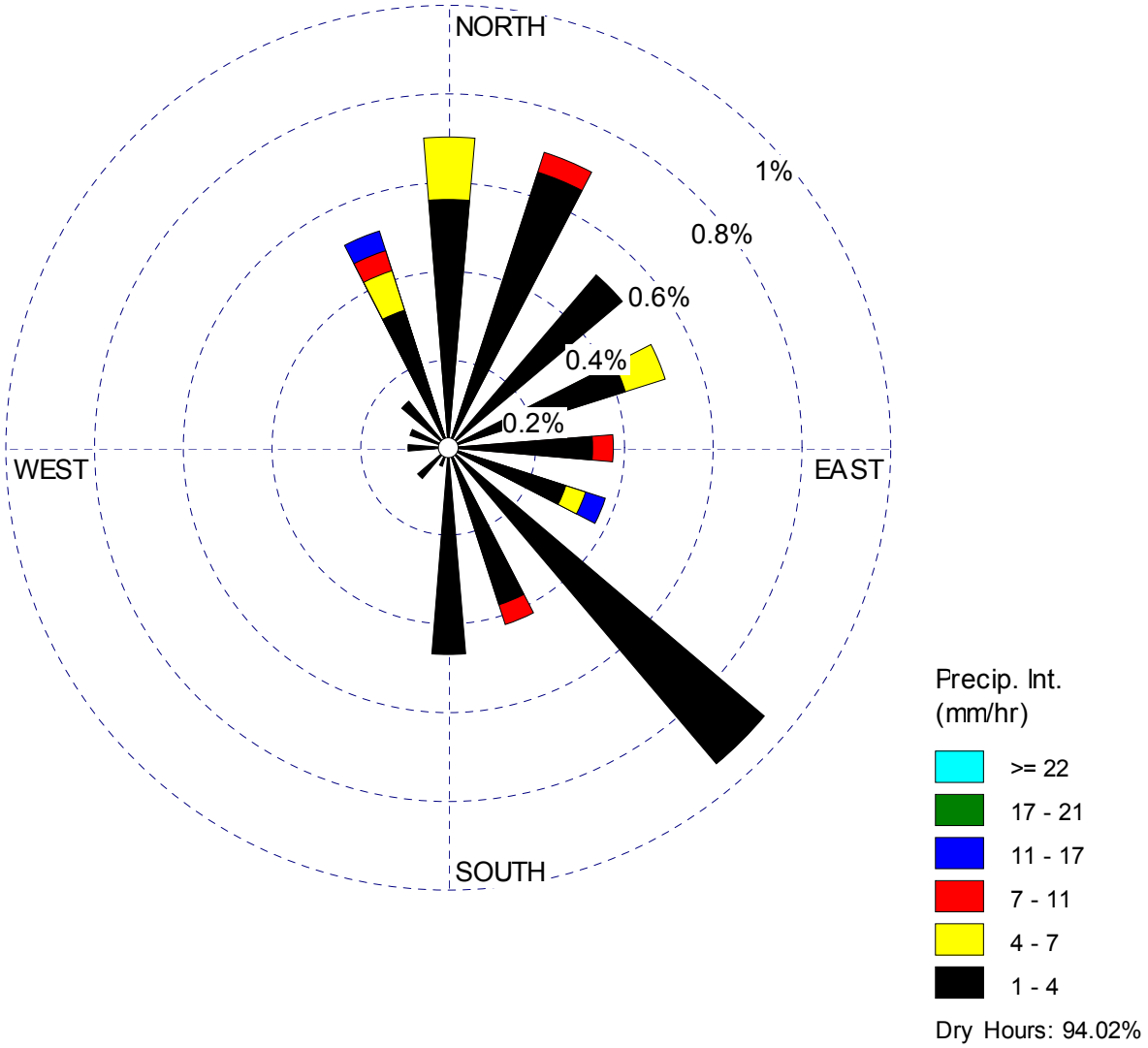


Figure 2.3-61—{Callaway Plant Precipitation Wind Rose - December 2004-2006, 10 m, All Precipitation Hours}

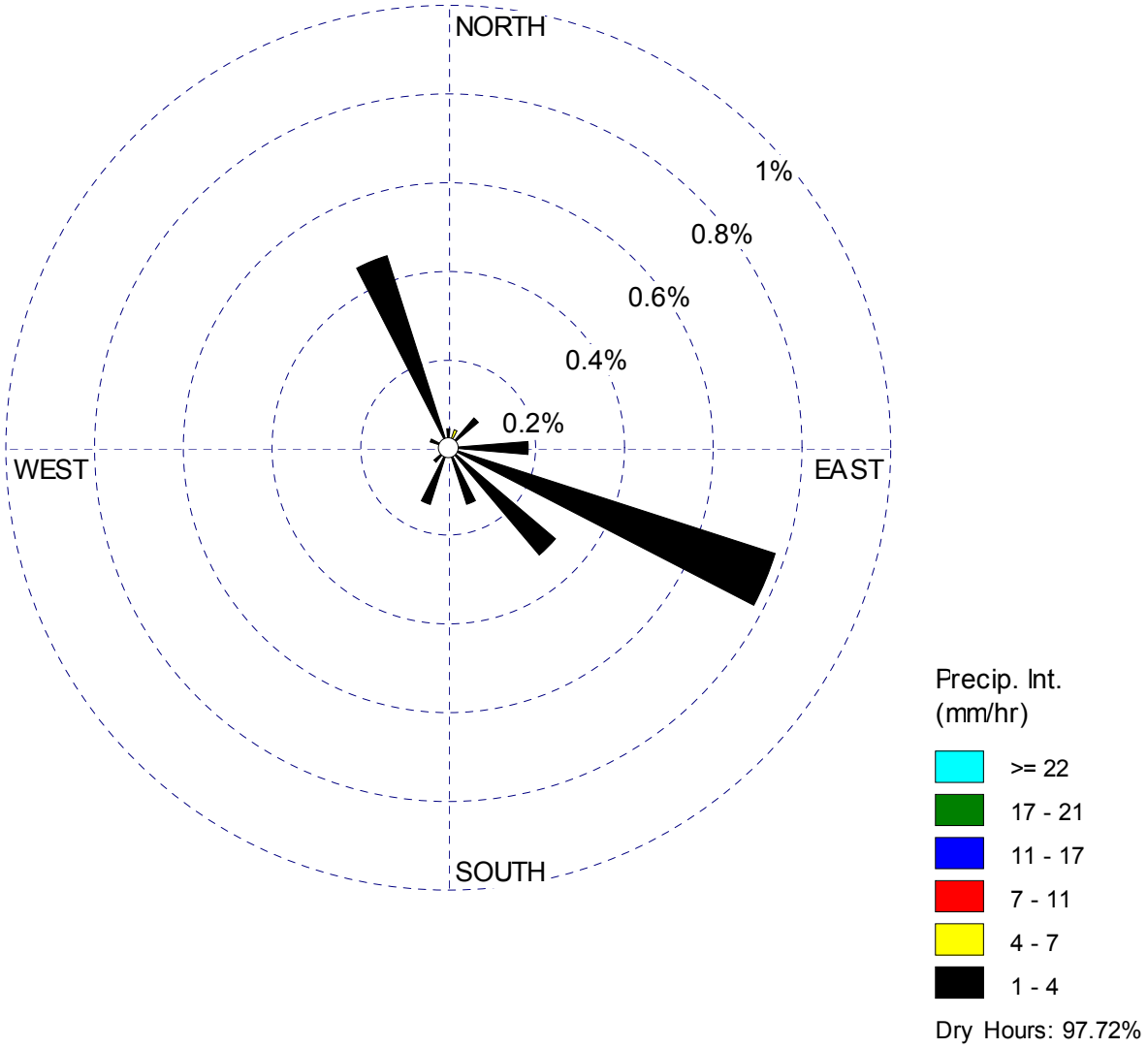


Figure 2.3-62—{Callaway Plant Precipitation Wind Rose - January 2004-2006, 60 m, All Precipitation Hours}

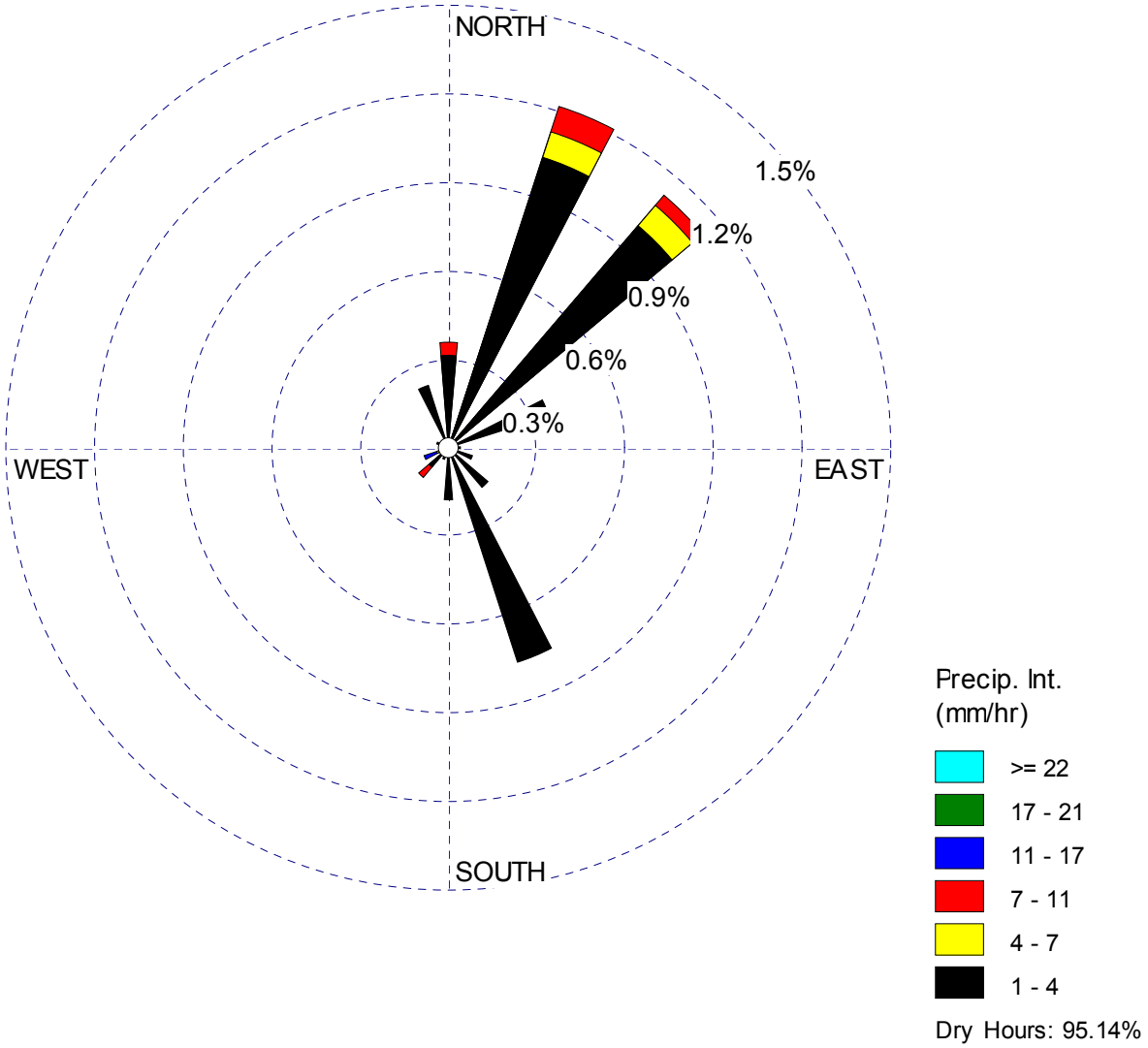


Figure 2.3-63—{Callaway Plant Precipitation Wind Rose - February 2004-2006, 60 m, All Precipitation Hours}

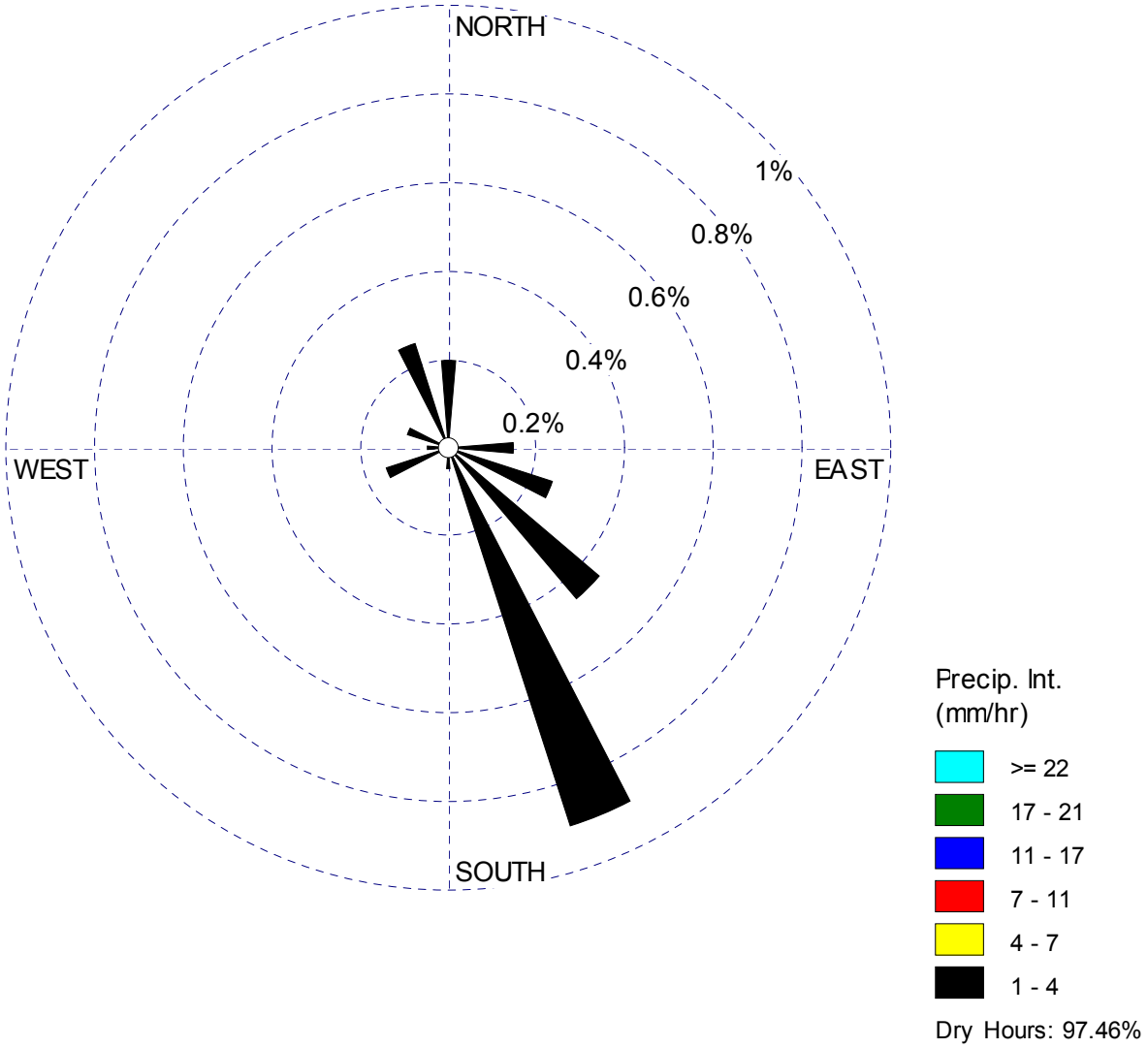


Figure 2.3-64—{Callaway Plant Precipitation Wind Rose - March 2004-2006, 60 m, All Precipitation Hours}

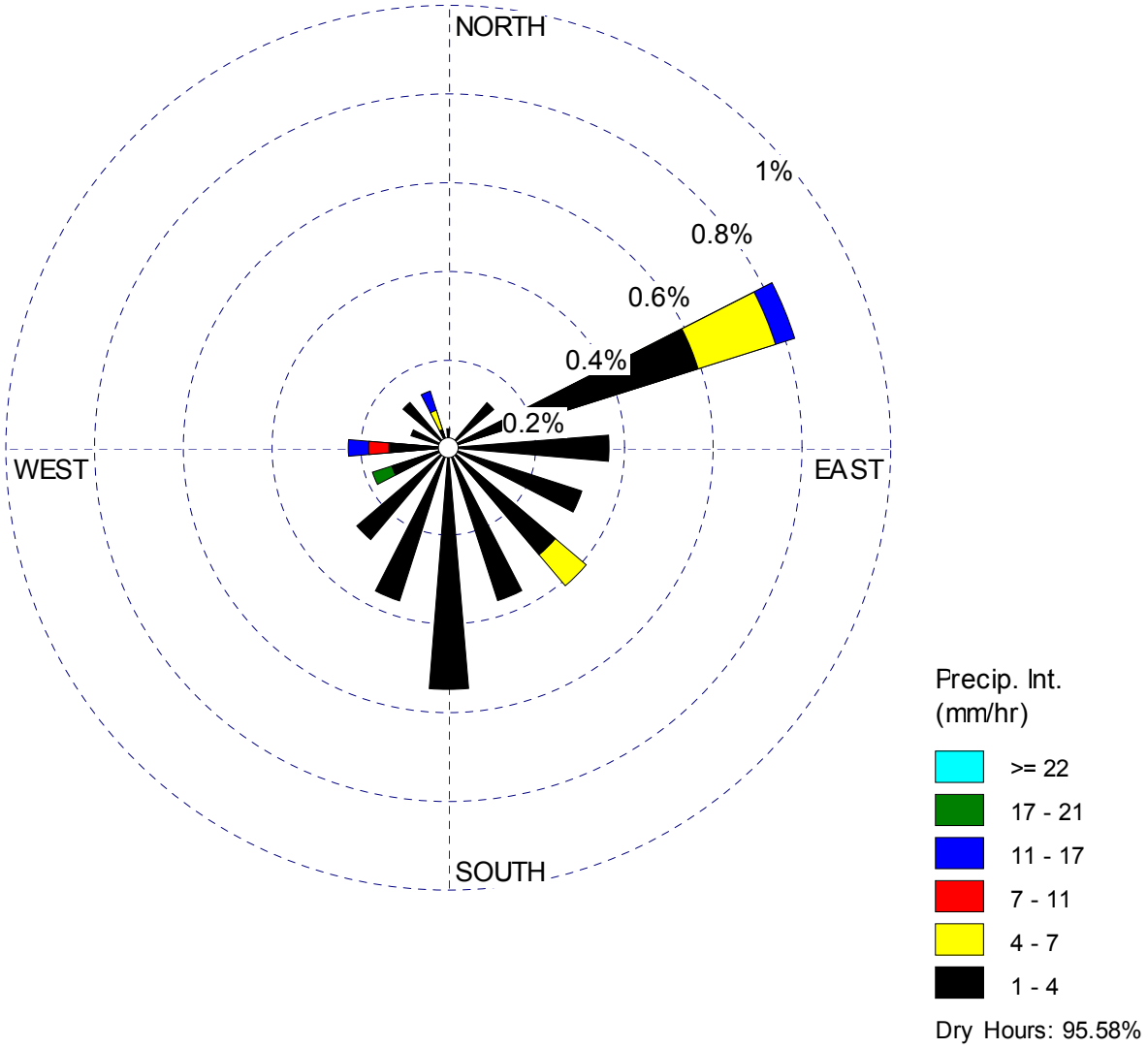


Figure 2.3-65—{Callaway Plant Precipitation Wind Rose - April 2004-2006, 60 m, All Precipitation Hours}

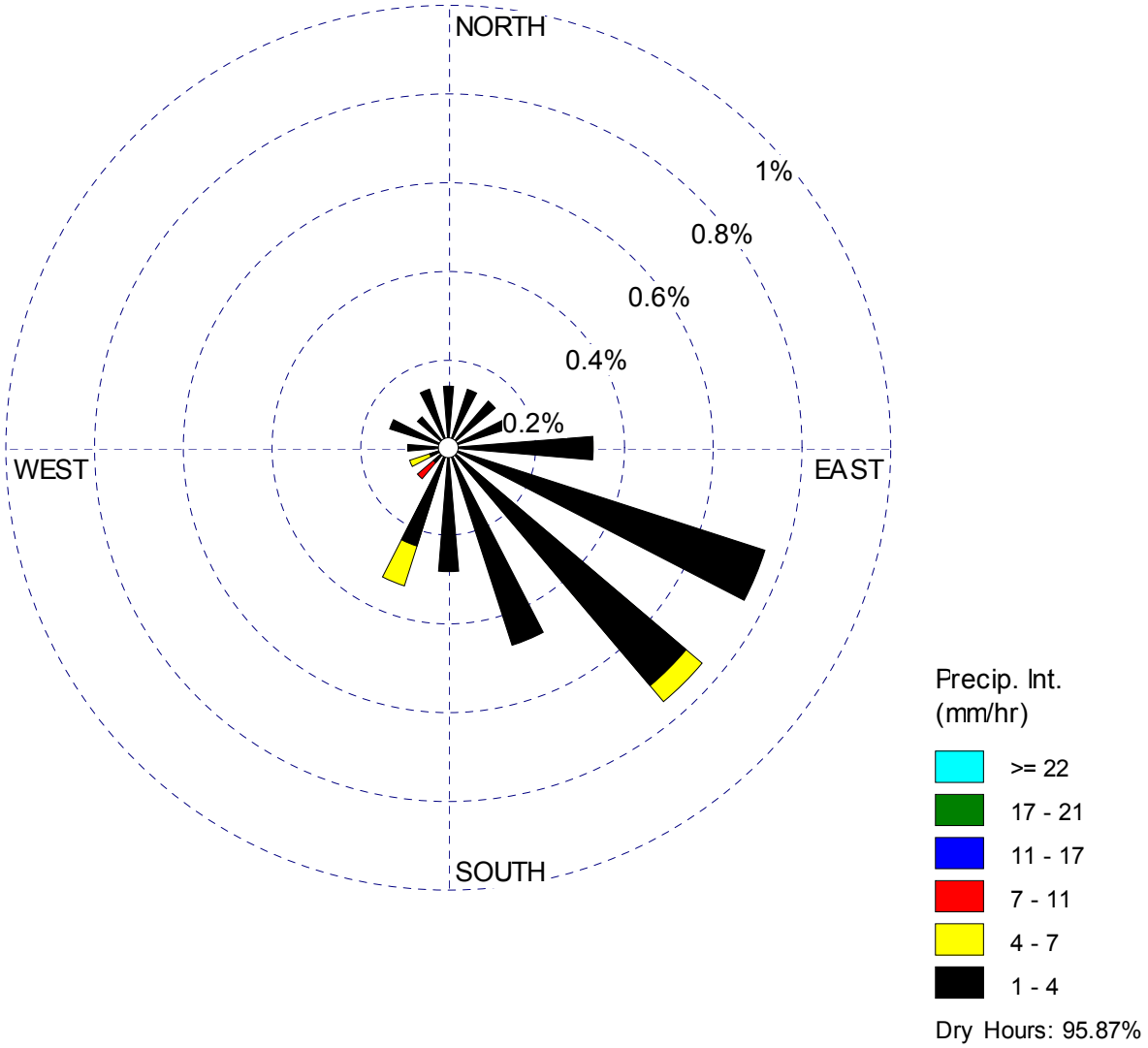


Figure 2.3-66—{Callaway Plant Precipitation Wind Rose - May 2004-2006, 60 m, All Precipitation Hours}

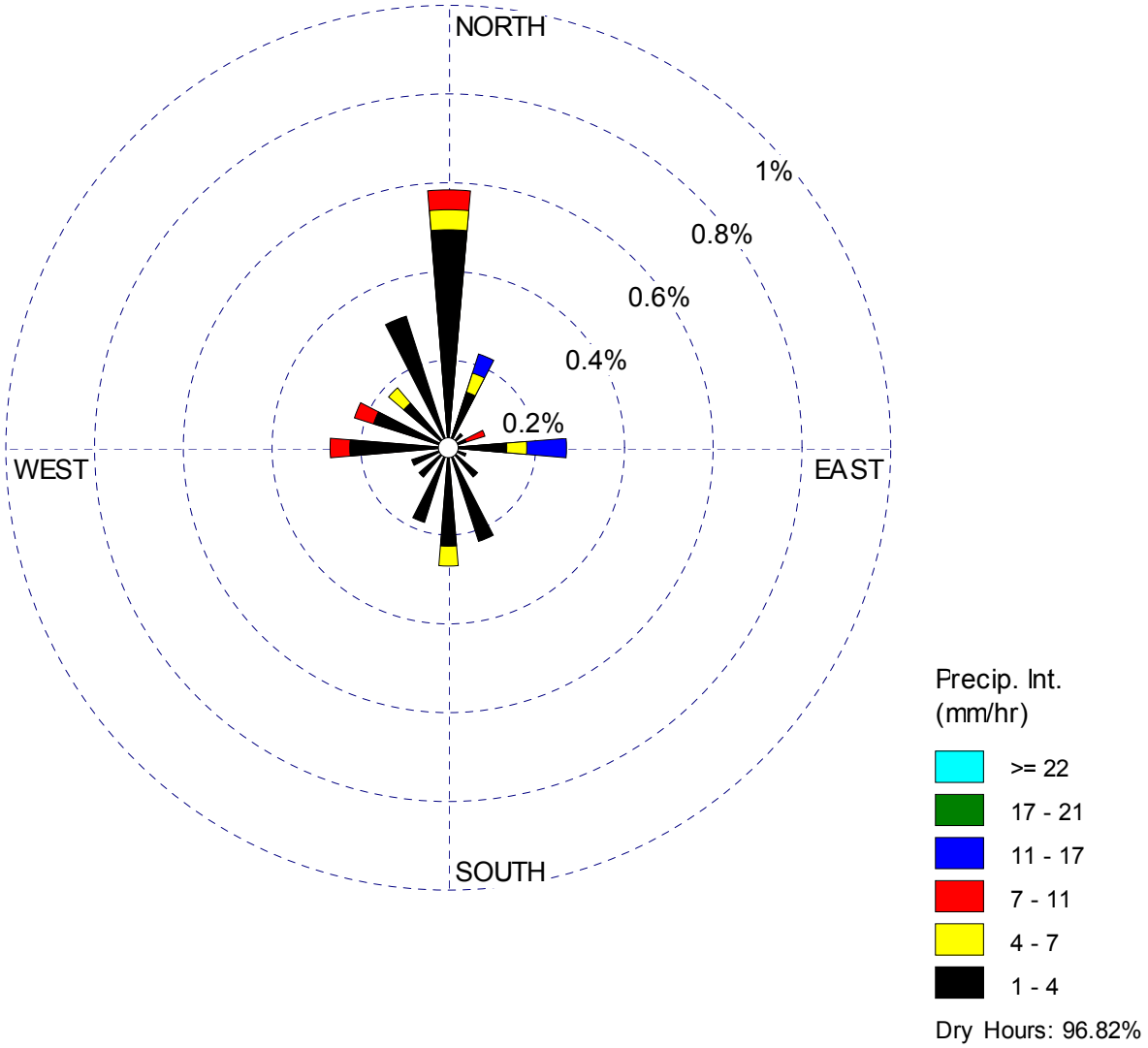


Figure 2.3-67—{Callaway Plant Precipitation Wind Rose - June 2004-2006, 60 m, All Precipitation Hours}

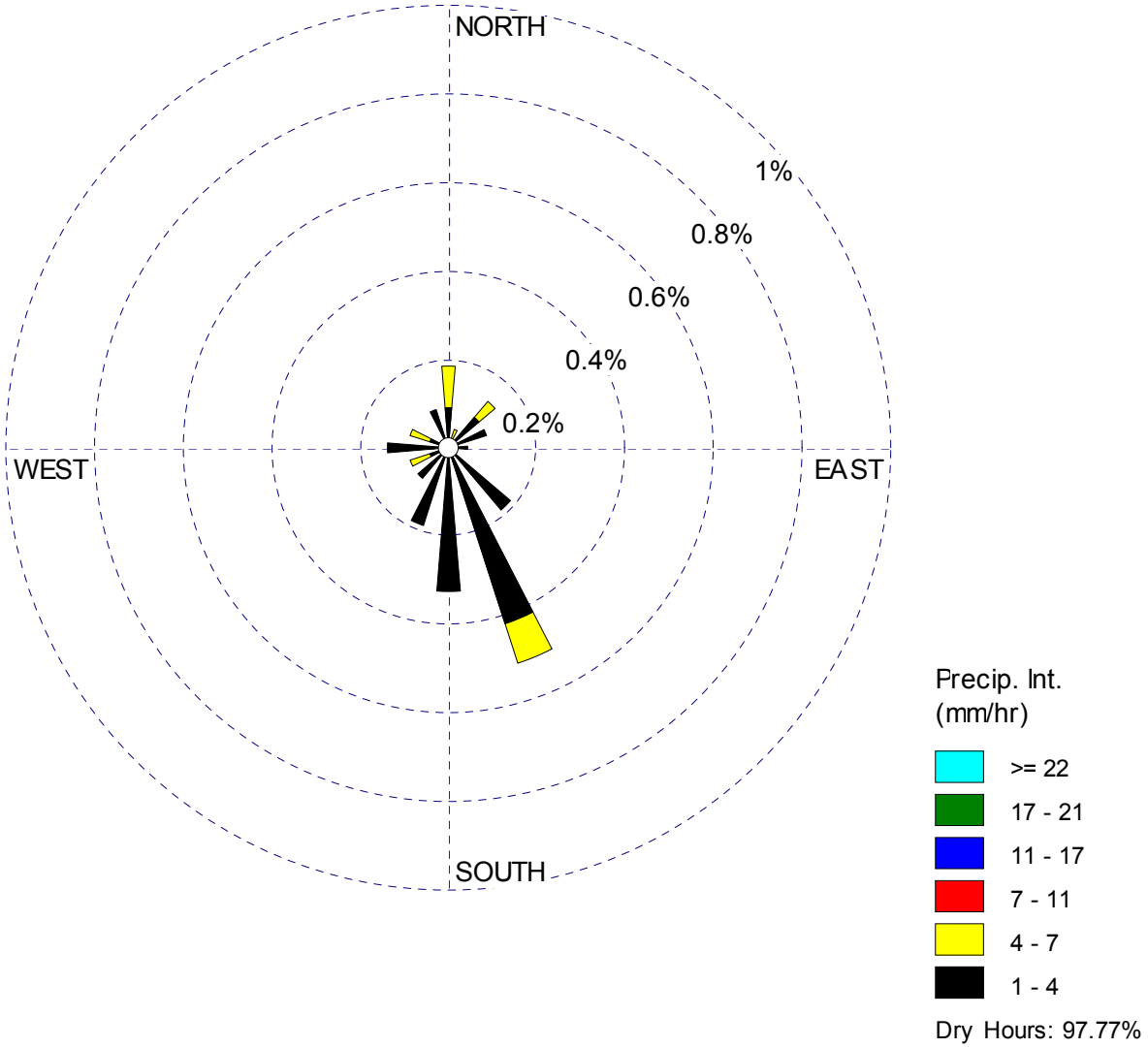


Figure 2.3-68—{Callaway Plant Precipitation Wind Rose - July 2004-2006, 60 m, All Precipitation Hours}

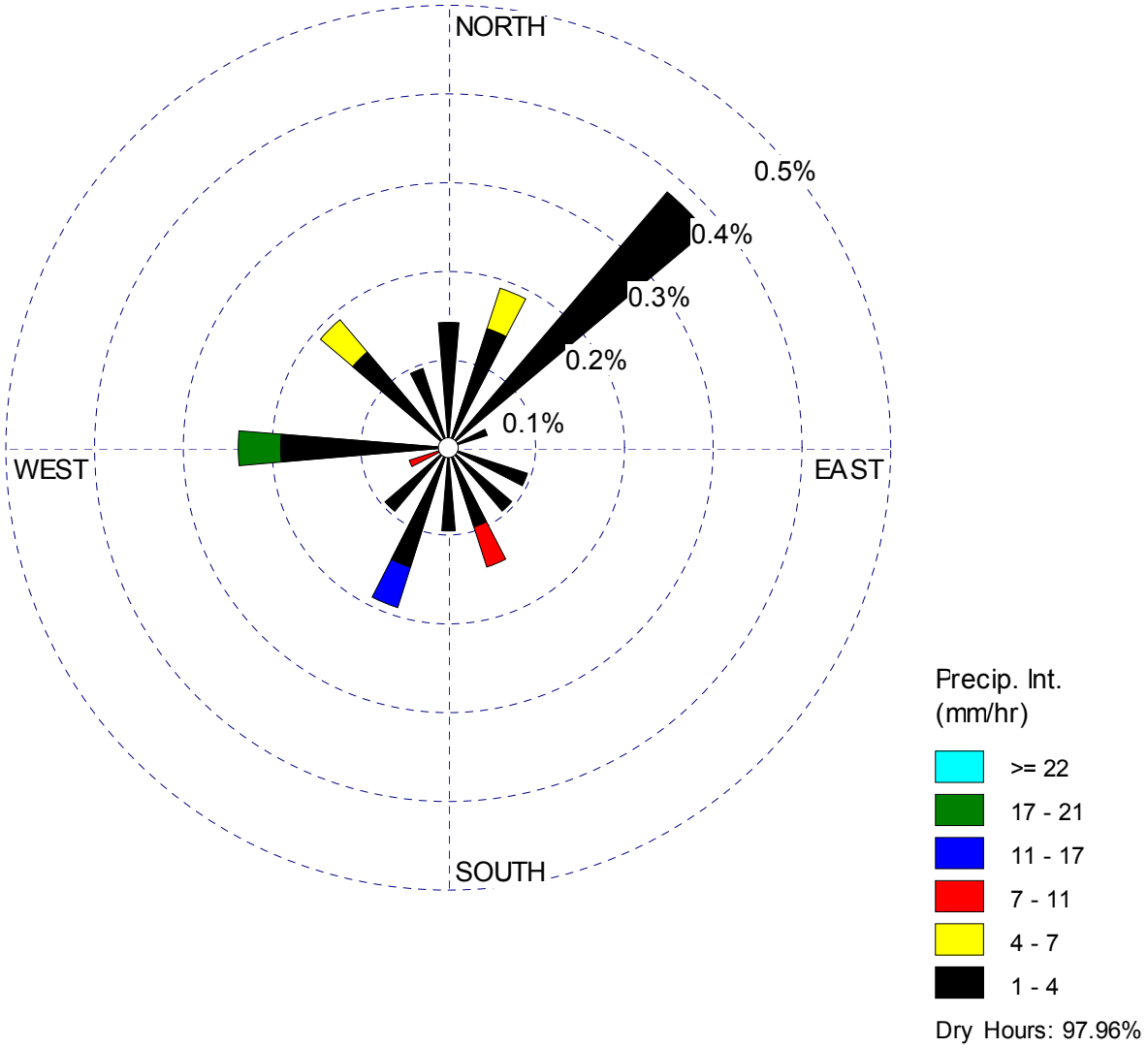


Figure 2.3-69—{Callaway Plant Precipitation Wind Rose - August 2004-2006, 60 m, All Precipitation Hours}

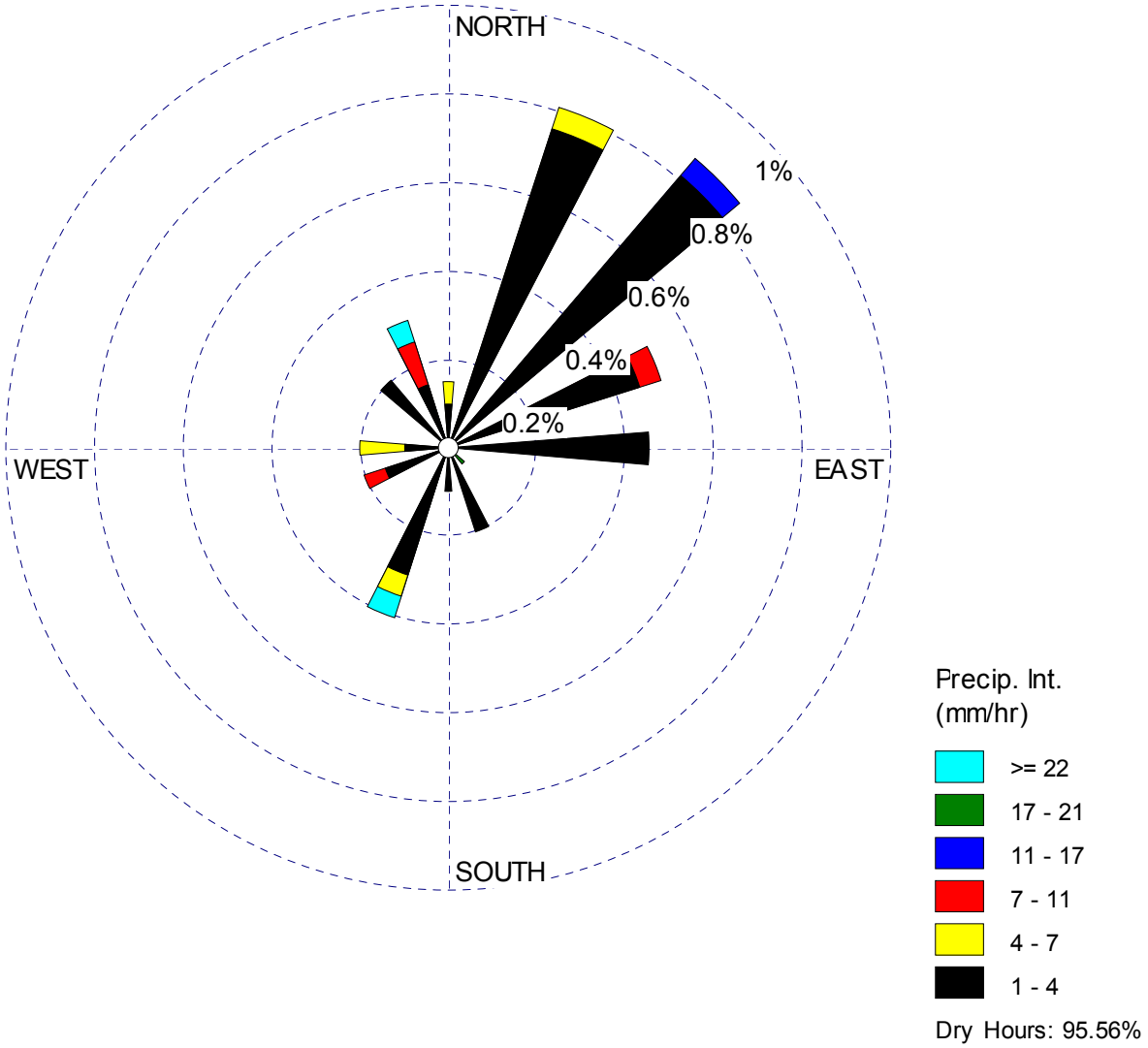


Figure 2.3-70—{Callaway Plant Precipitation Wind Rose - September 2004-2006, 60 m, All Precipitation Hours}

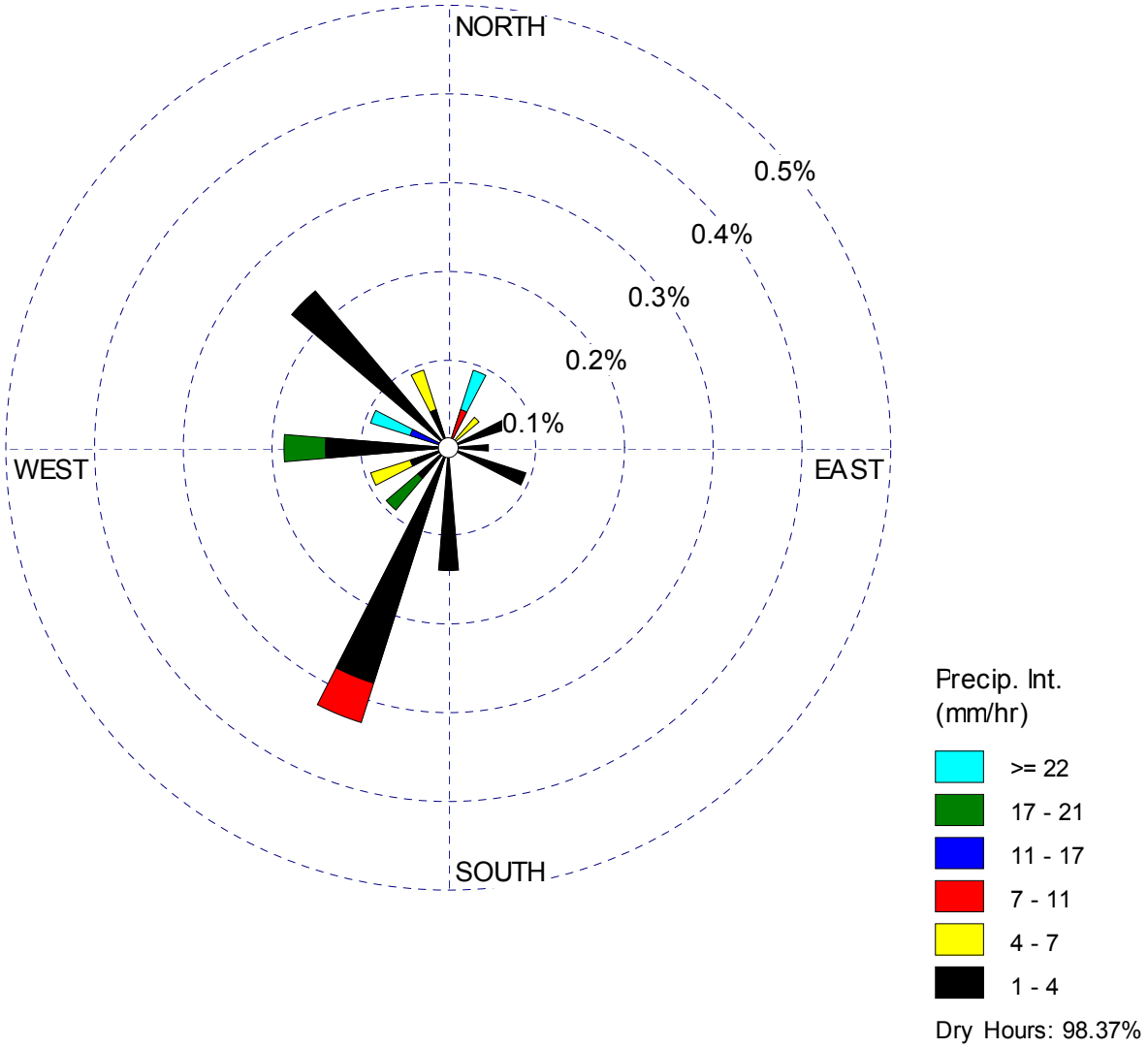


Figure 2.3-71—{Callaway Plant Precipitation Wind Rose - October 2004-2006, 60 m, All Precipitation Hours}

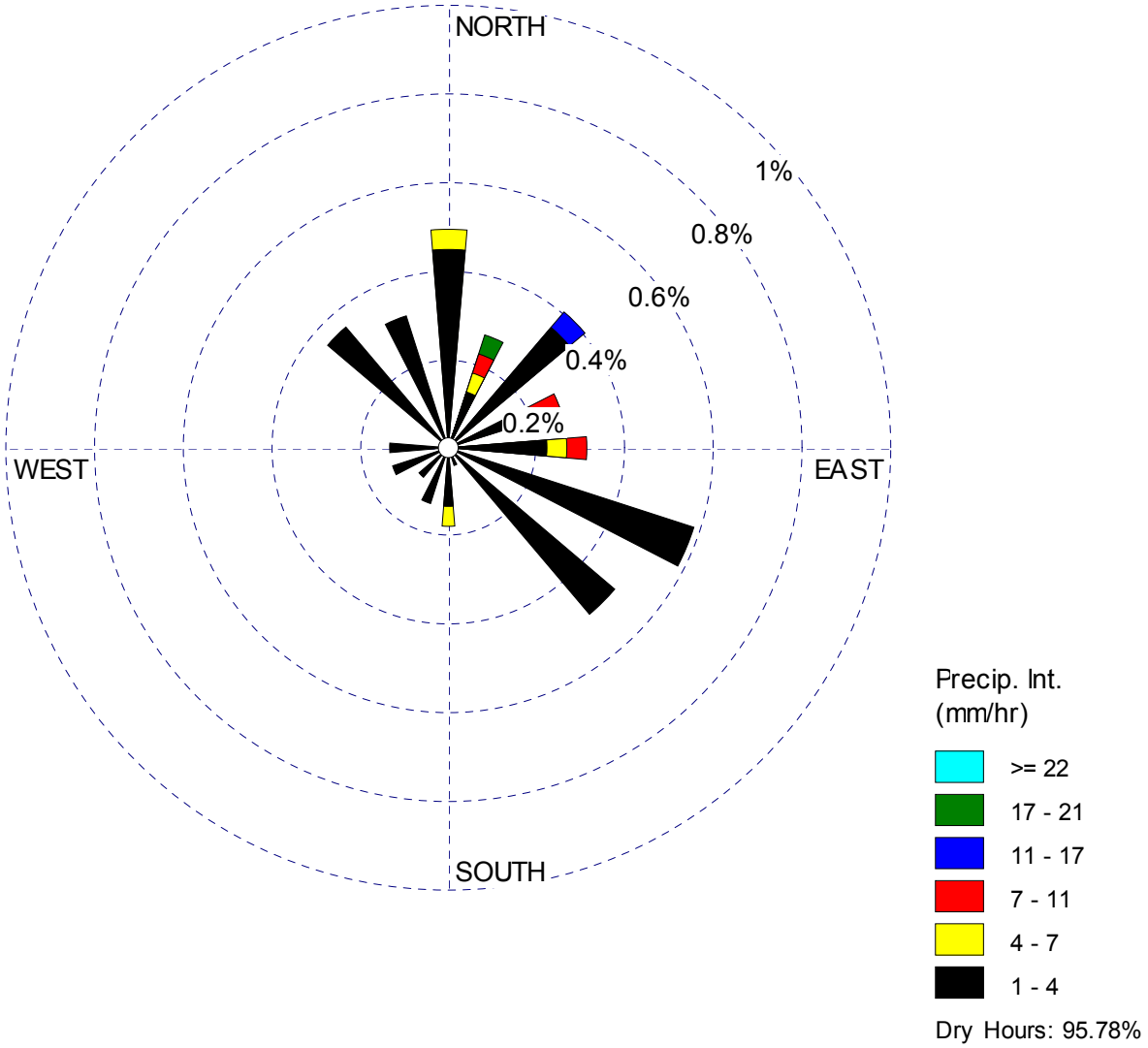


Figure 2.3-72—{Callaway Plant Precipitation Wind Rose - November 2004-2006, 60 m, All Precipitation Hours}

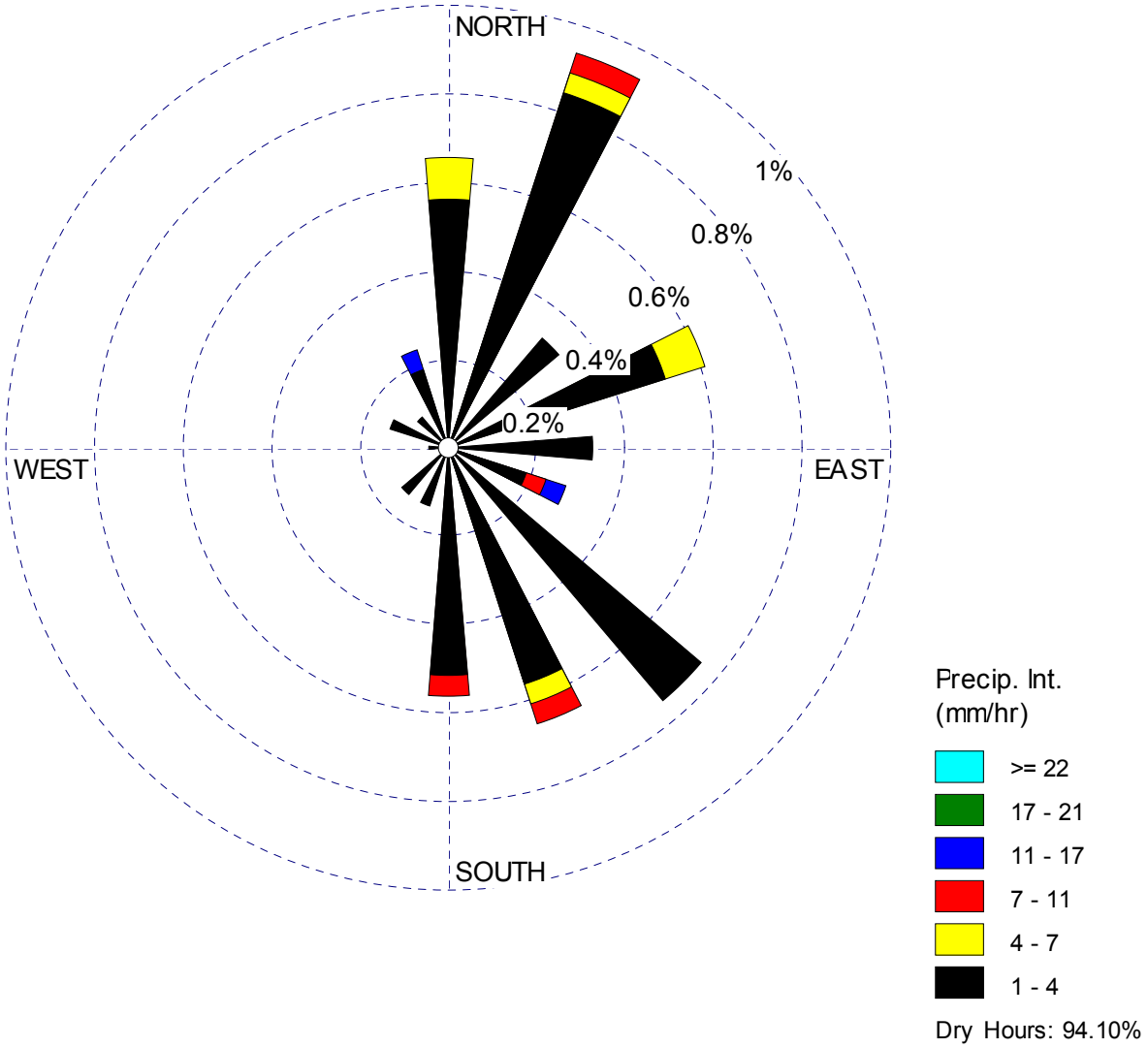
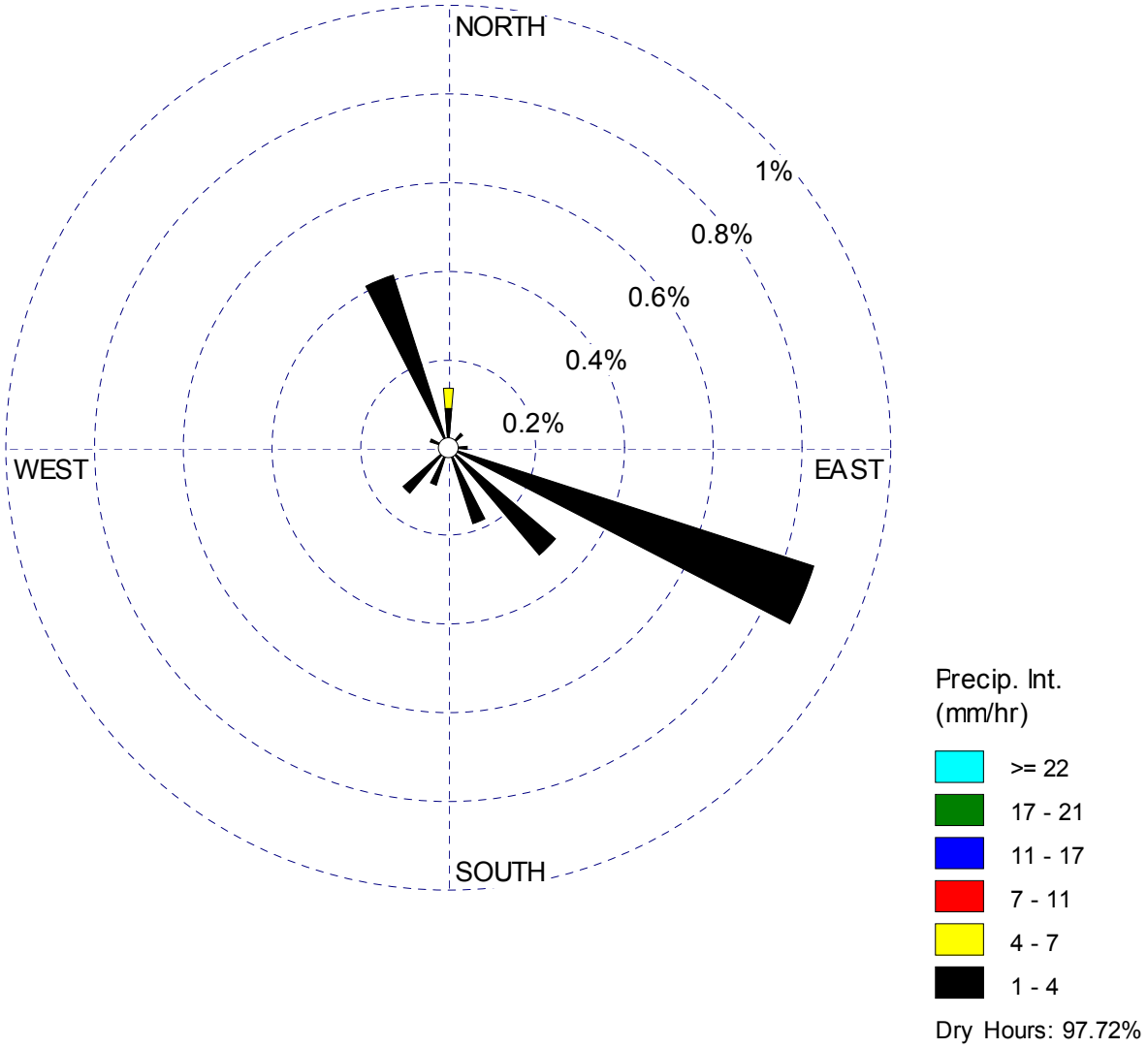


Figure 2.3-73—{Callaway Plant Precipitation Wind Rose - December 2004-2006, 60 m, All Precipitation Hours}



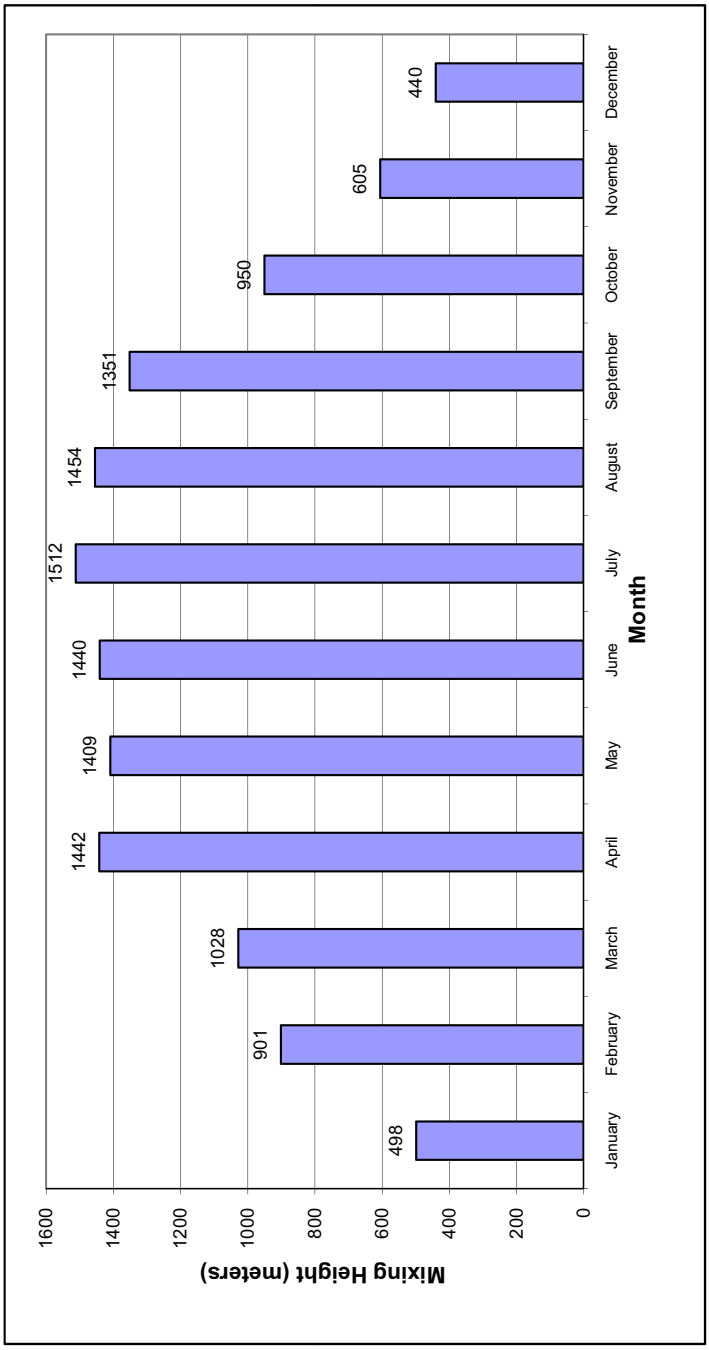
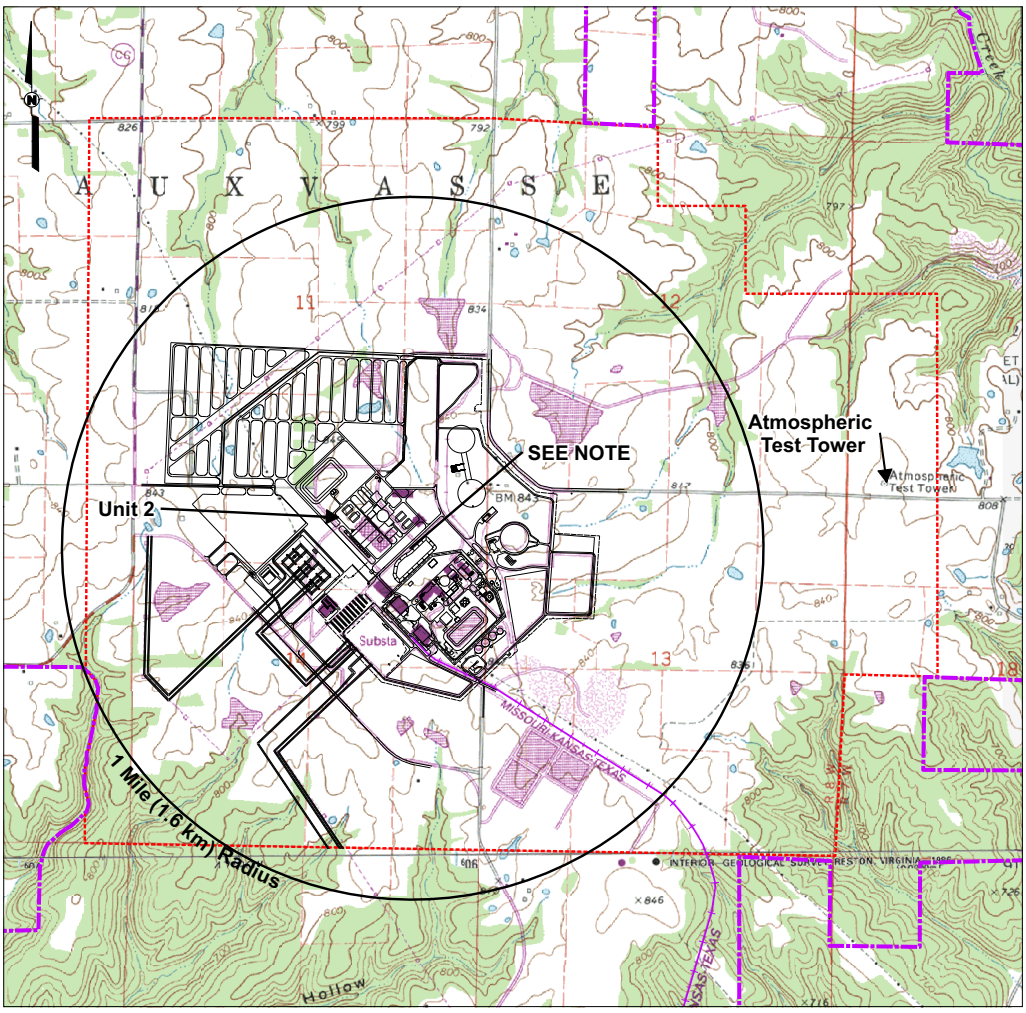


Figure 2.3-74—Monthly Average Mixing Height Values (Springfield, MO)

Figure 2.3-75—{Topography Within 1 Mile of the Callaway Plant Site}



LEGEND:

- Callaway Plant Site Area
- Ameren Property Boundary
- Railroad - NOT IN USE (MISSOURI-KANSAS-TEXAS RAILROAD)

0 1,100 2,200 4,400 Feet

NOTE:

REFERENCE CENTER POINT OF PLANT SITE IS DEFINED AS THE MIDPOINT BETWEEN EXISTING REACTOR FOR CALLAWAY PLANT UNIT 1 AND REACTOR FOR CALLAWAY PLANT UNIT 2.

REFERENCE:

Railroad not in use digitized from USGS 1:24K Topographic Maps. USGS Missouri Topological Quadrangles: Mokane East, Morrison, Readsville, and Reform. Photo revised 1985.

Figure 2.3-76—{Topography Within 5 Miles of the Callaway Plant Site}

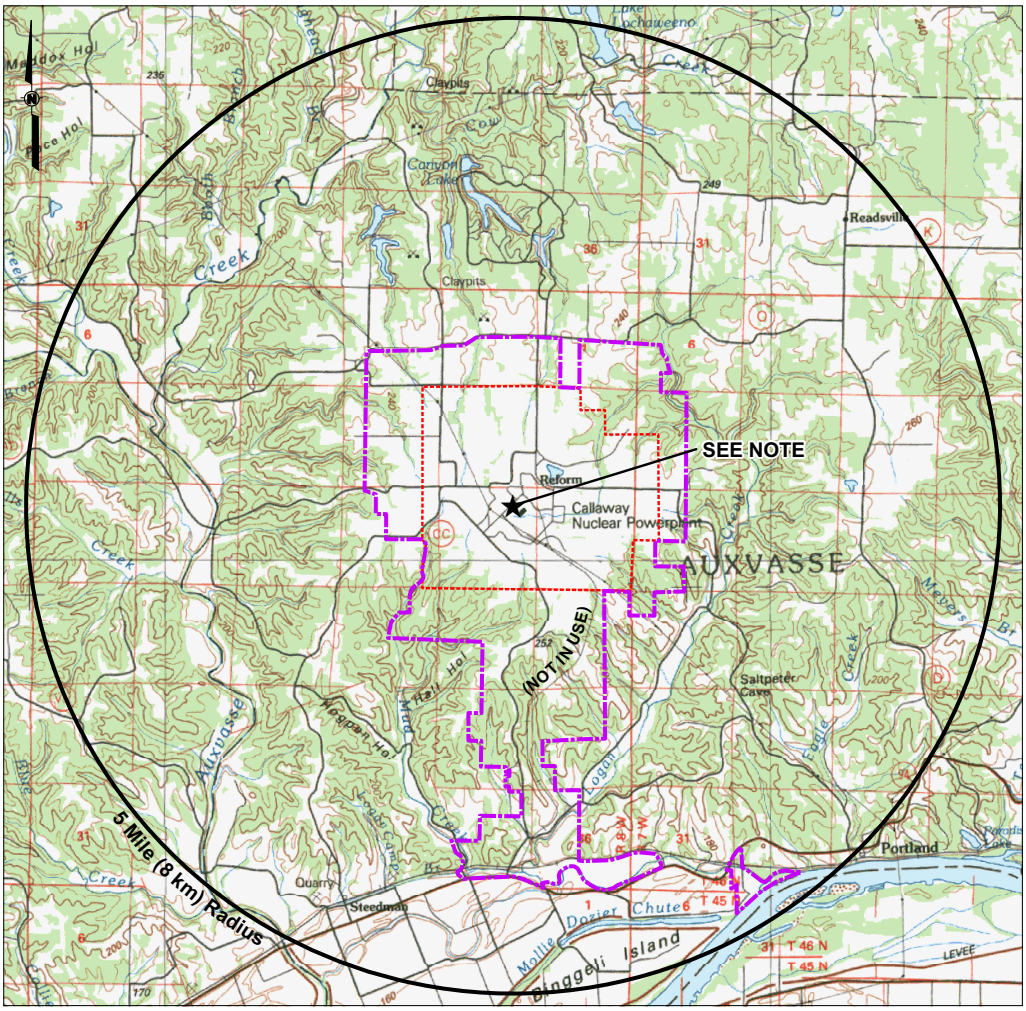
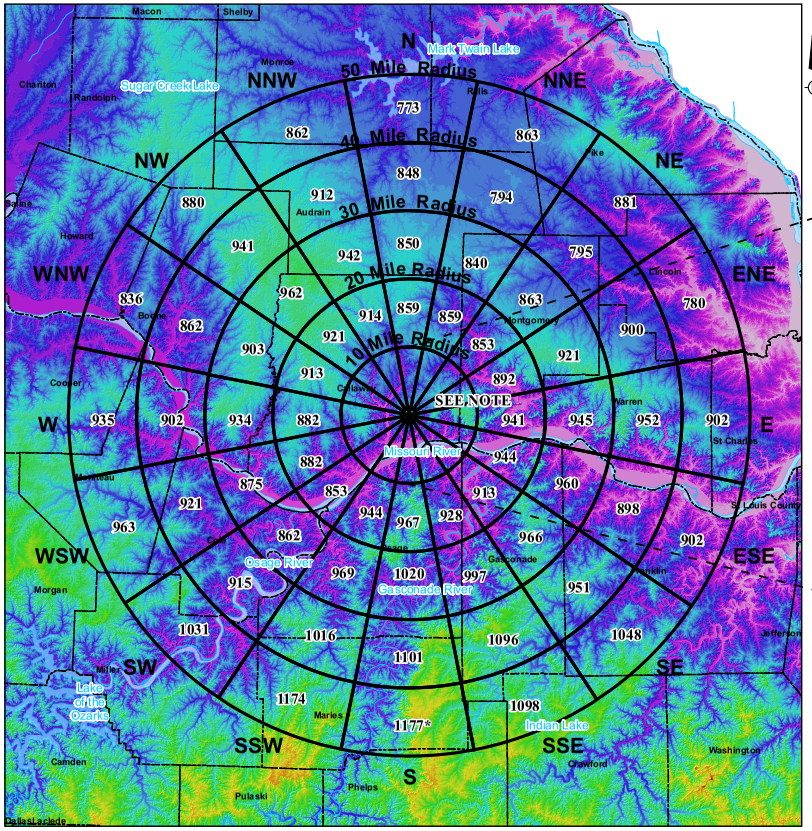
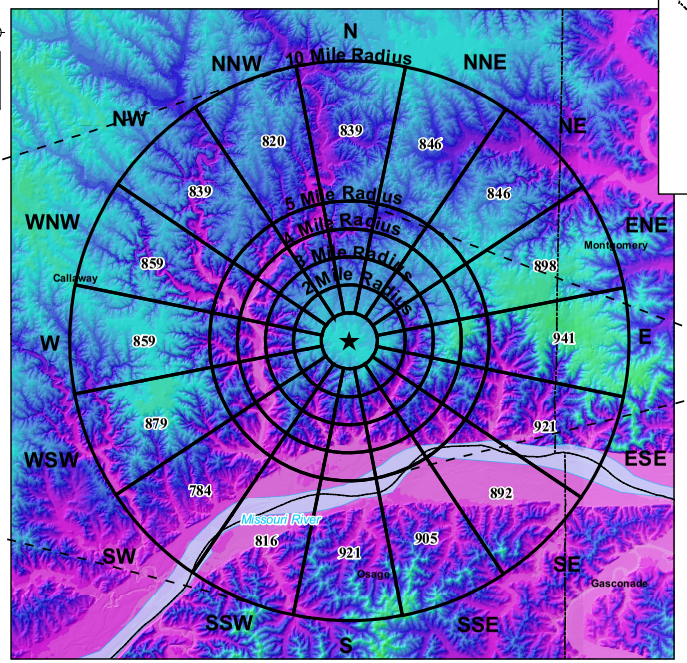
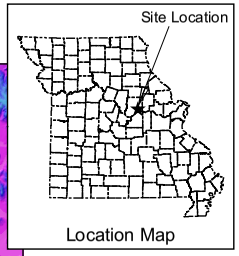


Figure 2.3-77—{Topography Within 50 Miles of the Callaway Plant Site}

Figure 2.3-78—{Maximum Elevation Versus Distance Within 50 Miles of the Callaway Plant Site}







See Table (below) for Maximum Elevation (ft msl) within Sectors.

LEGEND

State Boundary | Waterbody | County Boundary

0 16 32 Miles

Terrain Height Range Color Association (ft msl)

375-400	500-525	675-700	800-825	925-950	1050-1075	1175-1200	1300-1325
400-425	525-550	700-725	825-850	950-975	1075-1100	1200-1225	1325-1350
425-450	550-575	725-750	850-875	975-1000	1100-1125	1225-1250	1350-1375
450-475	575-600	750-775	875-900	1000-1025	1125-1150	1250-1275	1375-1400
475-500	600-675	775-800	900-925	1025-1050	1150-1175	1275-1300	1400-1425

* 1177 = Maximum Elevation within Sector (ft msl) from USGS 30m DEM

NOTE:
REFERENCE CENTER POINT OF PLANT SITE IS DEFINED AS THE MIDPOINT BETWEEN EXISTING REACTOR FOR CALLAWAY PLANT UNIT 1 AND REACTOR FOR CALLAWAY PLANT UNIT 2.

Table of Numerical Maximum Elevation by Sector

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1-2	823	820	810	820	839	839	843	843	826	807	807	833	843	836	826	823
2-3	800	803	803	810	820	813	774	774	767	780	803	803	767	793	800	800
3-4	784	826	826	843	898	872	800	725	702	784	787	748	744	754	764	764
4-5	784	823	846	862	902	846	725	629	534	725	721	800	797	767	784	751

REFERENCE:
USGS 30M DEM from Missouri Spatial Data Information Service (MSDIS) web site. http://www.msdis.missouri.edu. Downloaded January 2008.
ESRI StreetMap Pro [CD-ROM], 2007, County Boundary & Waterbody.

FSAR: Section 2.3

Figure 2.3-79—{Callaway Site Map with Meteorological Tower Location}

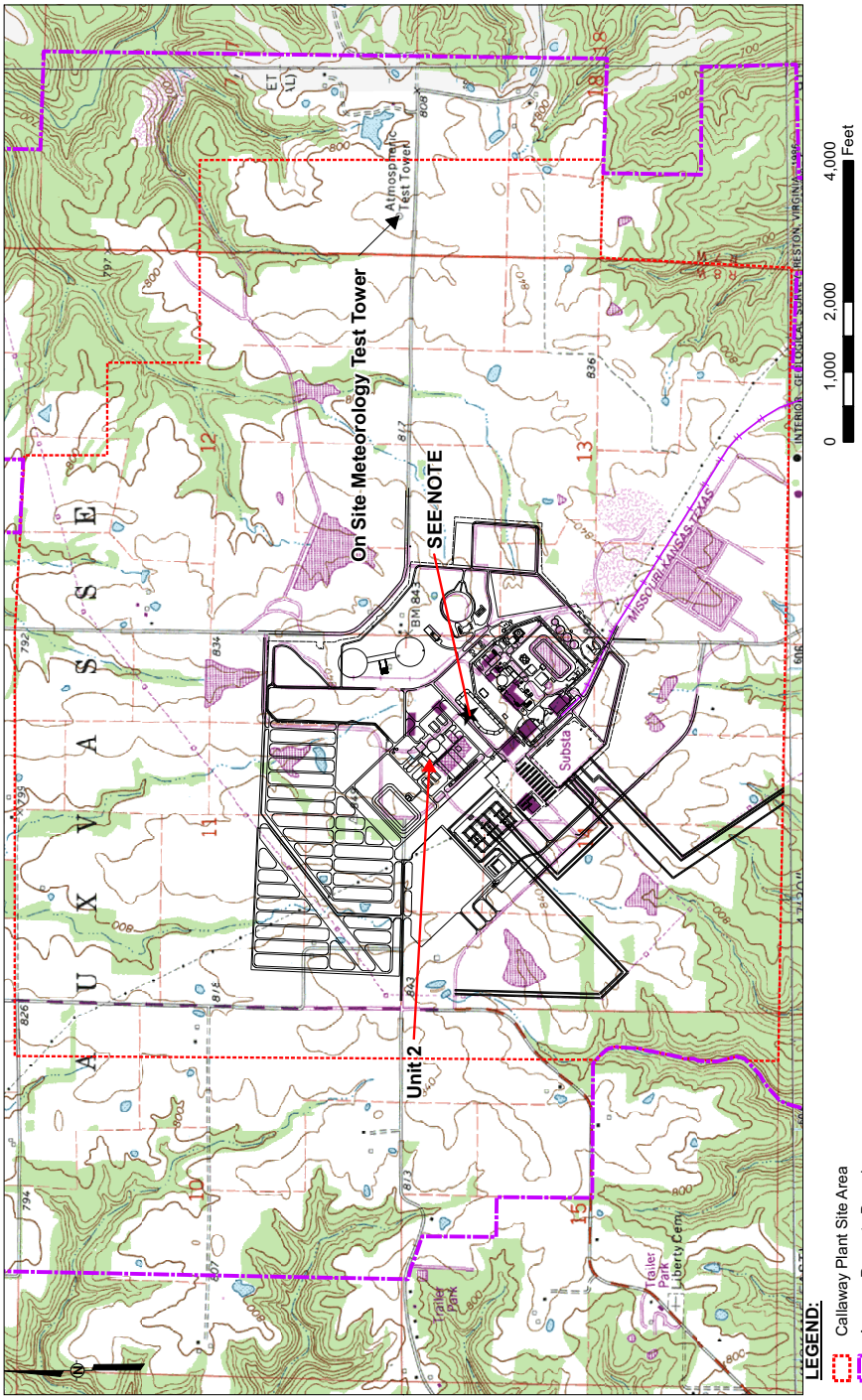
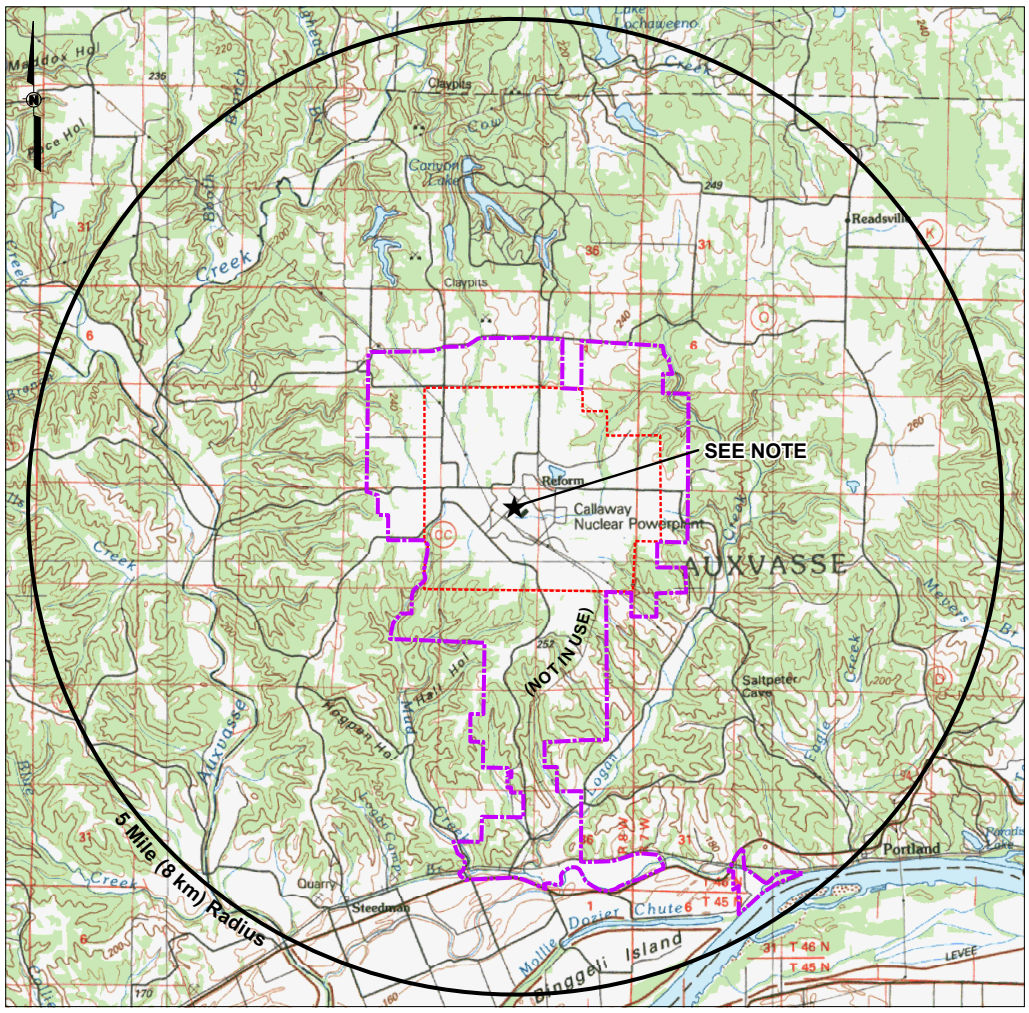


Figure 2.3-80—{Detailed Topography within 8 km (5 mi)}



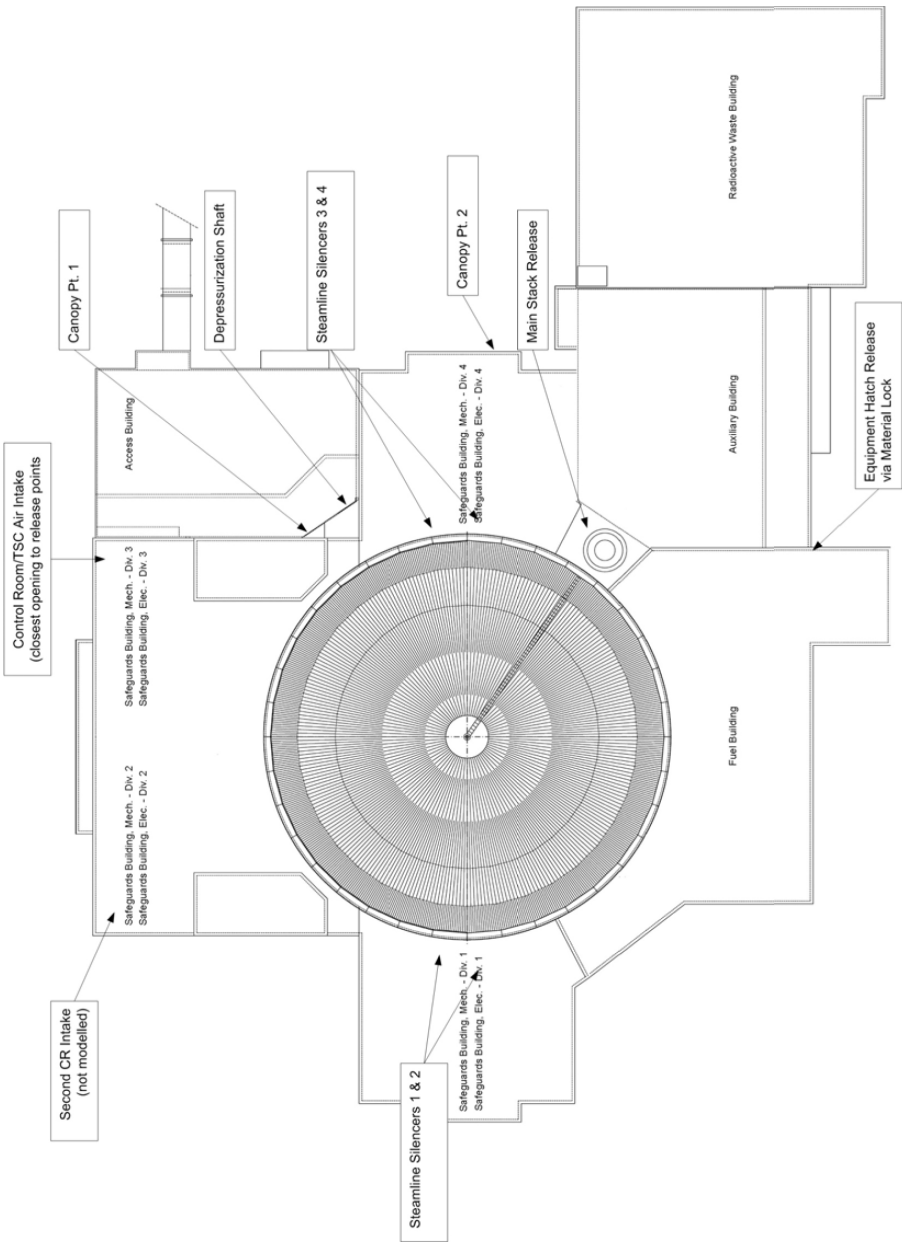


Figure 2.3-81—{Callaway Site Plan and Control Room Location}