Attachment 1
NRC3-10-0015

Response to RAI Letter No. 21
(eRAI Tracking No. 4125)

RAI Question No. 02.03.04-3

NRC RAI 02.03.04-3

FSAR Section 2.3.4.1 states the PAVAN computer code (NUREG/CR-2858) was used to generate the offsite (EAB and LPZ) short-term (accident) atmospheric dispersion (CHI/Q) estimates. FSAR Tables 2.3-292 through 2.3-299 present the 2002-2007 joint frequency distribution (JFD) of wind direction and wind speed by atmospheric stability class used by the applicant to execute PAVAN. Copies of the applicant's PAVAN input and output files were also provided in response to environmental RAI AQ2.7-4 dated September 30, 2009.

The staff performed an independent evaluation of the applicant's PAVAN results by generating a JFD from the 2002-2007 hourly onsite meteorological database provided in response to environmental RAI AQ2.7-3 dated October 30, 2009 and rerunning the PAVAN computer code. The staff's JFD was based on the wind speed classes presented in Table 3 of Revision 1 to RG 1.23 (i.e., calm, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0, 8.0, 10.0 and > 10.0 m/s). The staff's results were more conservative (i.e., higher) than those generated by the applicant's PAVAN run. The staff believes it's more conservative results are primarily due to the difference in the frequency of calm winds between the applicant's JFD and the staff's JFD

The staff agrees with the applicant's results in that the ESE sector has the maximum sector CHI/Q values that also bound the 5 percent overall site CHI/Q values. FSAR Tables 2.3-292 through 2.3-299 show a total of 212 hours of calm wind were recorded during 2002-2007, with a total of 9 of the 212 hours of calm winds being assigned to the WNW sector (which is the upwind sector to the ESE sector). On the other hand, the staff's analysis of the 2002-2007 hourly database identified a total of 464 hours of calm wind, with approximately 82 of the 464 hours calm winds being assigned to the WNW sector based on the RG 1.145 criterion that wind directions during calm conditions should be assigned in proportion to the directional distribution of non-calm winds with speeds less than 1.5 meters per second.

a. *Please explain why there are differences in the number of hours of calm winds presented in FSAR Tables 2.3-292 through 2.3-299 versus the number of hours of calm winds reported during 2002- 2007 in the hourly database provided in response to environmental RAI AQ2.7-3.*
b. *Please explain how the calm winds were assigned to wind direction sectors in FSAR Tables 2.3-292 through 2.3-299 and justify any deviations from the methodologies presented in RG 1.23 and RG 1.145.*

Supplemental Response

The original response to RAI 02.03.04-3 was submitted in Detroit Edison Letter NRC3-10-0003 (ML100500930), dated February 8, 2010. As stated in this response, as a result of the assessment performed for the initial response to this RAI, Detroit Edison would determine new short term and long term X/Qs based on the following:

- A starting wind speed threshold of 1.0 miles per hour will be used, consistent with the starting thresholds for wind speed and wind direction in Reg Guide 1.23, Rev. 1, Table 2 (refer to the response to RAI 02.03.03-3 in Detroit Edison Letter NRC3-10-0003 (ML100500930), dated February 8, 2010 for further discussion).
- Wind directions during calm conditions will be assigned consistent with Reg Guide 1.145 as discussed in this response.

- Determination of long term X/Qs will be based on distances from the source to the receptors using a circle that encompasses possible release locations (refer to the response to RAI 02.03.05-2 in Detroit Edison Letter NRC3-10-0003 (ML100500930), dated February 8, 2010 for further discussion).
- Analyses that use the site-specific X/Q values as input parameters will be updated, as necessary, based on the results.

Detroit Edison is supplementing the response to this RAI and providing updates to affected information in the Fermi 3 COLA.

The Fermi meteorological tower data submitted in response to ER RAI AQ2.7-3 in Detroit Edison Letter NRC3-09-0015 (ML093090165), dated October 30, 2009 was reviewed to confirm the validity of the data. This review included evaluating the maximum and minimum values of each parameter to consider if they are realistic:

- Examining hours where the 10 to 60 meter wind speed ratio exceeded four during Class A and B Pasquill stability categories and ten during Class C, D, E, F, and G Pasquill stability categories.
- Reviewing the hourly data for cases when the lapse rate of temperature exceeded -3.4°C per 100 meters.
- Identifying instances where the meteorological data remained unchanged for several hours.
- Examining the data for instances when the upper level wind speed is less than the lower level wind speed.

As indicated above, the meteorological data was examined for occurrences when the 10 meter to 60 meter wind speed ratio exceeded four during Class A and B stabilities and ten during Class C, D, E, F, and G stabilities. This examination also considered if the higher wind speed ratios occurred during day or night. Typically, wind speed ratios can be higher at night with stable stability categories. The examination of the data included comparing surrounding hourly measurements to determine if the recorded wind speed was improbable. Review of the hourly data from the Fermi 3 meteorological tower identified 460 occurrences where the 10 meter or 60 meter measurements were improbable.

The meteorological data was also examined during occurrences when the lapse rate of temperature exceeded -3.4 °C per 100 meters. Such a lapse rate is considered autoconvective and occurs infrequently in the atmosphere without rapid heating or cooling at the surface or a layer just above the surface. Review of the hourly data from the Fermi meteorological tower identified 2,401 occurrences where the lapse rate of temperature is equal to or exceeds -3.4°C per 100 meters. 1,774 of these 2,401 occurrences (74 %) coincided with the condition where the wind direction was onshore from Lake Erie, i.e. between 50 and 190 degrees. Such wind directions can occur during a lake breeze, or during onshore gradient flow, when the large scale weather pattern leads to winds from lake towards land and thus these occurrences were considered probable. The remaining 627 occurrences (26 %) required further evaluation.

A total of 590 hourly measurements were identified as improbable and removed from the analysis. The annual data recovery rate for data from the Fermi meteorological tower for the

period 2002 through 2007 remains greater than 90%. The revised Fermi meteorological tower data is provided on a CD as detailed in Enclosure 1 to ER RAI AC7.1-1 in Attachment 5.

Using this refined Fermi meteorological tower data for the period 2002 through 2007, new joint frequency distributions (JFDs) were determined based on the following:

1. A starting threshold of 1.0 mile per hour was used, consistent with the starting thresholds for wind speed and wind direction in Reg Guide 1.23, Rev. 1, Table 2, and
2. Wind directions during calm conditions were assigned consistent with Reg Guide 1.145.

These new JFDs are provided in Tables 2.3-292 through 2.3-299 in Enclosure 2.

This refined Fermi meteorological tower data and the associated new JFDs, as applicable, were then directly utilized to update the following analyses:

- Short-Term (Accident) Diffusion Estimates, PAVAN [1], FSAR Section 2.3.4
- Long-Term (Routine) Diffusion Estimates – XOQDOQ [2], FSAR Section 2.3.5
- Atmospheric Dispersion Factors for On-Site Doses - ARCON96, FSAR Section 2.3.4
- Severe Accidents - MACCS2, ER Section 7.2

Notes:
1. The short term, accident, diffusion estimates were computed using the distance from the outer edge of a circle, centered on the reactor building, encompassing all possible release points to the exclusion area boundary (EAB) or Dose Calculation EAB and the low population zone (LPZ) or Dose Calculation LPZ as discussed in the response to ER RAI AQ2.7-5 submitted in Detroit Edison letter NRC3-09-0013 (ML092400475), dated August 25, 2009.
2. The long term, routine, diffusion estimates were computed using the distance from the outer edge of a circle, centered on the reactor building, which encompasses all possible release to the receptors as discussed in the response to RAI 02.03.05-1 submitted in Detroit Edison letter NRC3-09-0036 (ML093130117), dated November 4, 2009.

Fermi meteorological tower data from instrumentation at the 60 meter elevation is an input to the SACTI computer model (ERPI CS-3403-CCM, 1984) used to analyze of the cooling tower plume. The meteorology data at the 60 meter elevation was not impacted sufficiently by the refinements to the meteorology data to impact the SACTI results.

The analysis of chemical hazards includes determination of concentrations of carbon dioxide and nitrogen in the Control Room using the HABIT suite of computer codes (NUREG 6210). For the HABIT analysis, a number of sensitivity cases (more than 3000) are run. As part of these sensitivity cases, wind speed is varied between minimum and maximum wind speed in selected increments, and stability class is varied for each of the sensitivity cases. These sensitivity cases are intended to represent possible meteorological conditions and to ensure that the reported results are more conservative. Thus the HABIT results are not impacted by the refinements to the Fermi meteorological tower data.

Proposed COLA Revision

A summary of the impacts to the Final Safety Analysis Report (FSAR) Rev. 2, submitted in Detroit Edison letter NRC3-10-0013, dated March 24, 2010 is provided in Enclosure 1.

The proposed markup to the FSAR is provided in Enclosure 2. This markup is shown on pages of the most recent submittal of the Fermi 3 FSAR, Revision 2 dated March 2010, which reflects those changes indentified in Detroit Edison's responses to NRC RAI Letter No. 3 through Letter No. 21.

A summary of the impacts to the ER (ER) Rev. 1, submitted in Detroit Edison letter NRC3-10-0013, dated March 24, 2010 is provided in Enclosure 3.

The proposed markup to the ER is provided in Enclosure 4. This markup is shown on pages of the most recent submittal of the Fermi 3 ER, Revision 1 dated March 2010, which reflects those changes identified in Detroit Edison's response to NRC RAIs related to the environmental review from June 2009 through February 2010.

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Enclosure 1

Summary of Fermi 3 Final Safety Analysis Report Changes

Summary of Fermi 3 FSAR Changes

A review of the Fermi 3 FSAR was conducted to determine the impacts to the FSAR from the changes to the meteorological data. These impacts are summarized in the table below.

FSAR Chapter	Sections Impacted	Topics	Comments
1	1.9.2	Table 1.9-202	Updated evaluation of SRP Section 2.3.3 to provide pointer to Section 2.3.3.1.6 for discussion of potential impact of obstructions to the Fermi meteorological tower.
2	2.0	Table 2.0-201 (Sheets 13 & 14) Table 2.0-201 (Sheet 14 - 22) Table 2.0-201 (Sheet 22 - 28)	Short-term (Accident) X/Qs updated (PAVAN) On-Site (Control Room and TSC) X/Qs updated (ARCON96) Long-term (Routine) X/Qs updated (XOQDOQ)
	2.2.3.1.4	Toxic Chemicals	Calculation to support revised, no change to the FSAR.
	2.3.2	Local Meteorology	Evaluated, no change to FSAR.
	2.3.2.1.5	Wind Direction and Wind Speeds	Updated the 10-m median wind speed and description of calms.
	2.3.2.1.6	Wind Persistence	Updated summary information presented based upon revised meteorological data.
	2.3.2.1.8	Inversions	Update summary statistics for the revised meteorological data.
	2.3.2.1.9	Atmospheric Stability	Updated the descriptive information for the revised meteorological data.
	2.3.2.2.1	Cooling Tower Plumes	Added evaluation of potential impact of obstructions to the Fermi meteorological tower.
	2.3.3	Meteorological Monitoring	Updated to provide pointer to discussion of potential impact of obstructions to the Fermi meteorological tower.
	2.3.3.1.1	Tower and Instrument Siting	Updated to provide pointer to discussion of potential impact of obstructions to the Fermi meteorological tower.
	2.3.3.1.2	Instrumentation and Their Accuracies and Thresholds	Added summary of review of directional information relative to threshold for the wind vane.
	2.3.3.1.4	Instrument Service and Maintenance	Provided summary of how threshold for wind direction instrument was established. Corrected site visit periodicity to six months.

FSAR Chapter	Sections Impacted	Topics	Comments
2 (cont.)	2.3.3.1.6	Data Acquisition and Processing	Summarized the potential impact of obstructions to the Fermi meteorological tower on the SACTI, PAVAN, XOQDOQ, and ARCON96 models.
	2.3.4.1	DBA Calculation Methodology	Evaluated, no change to FSAR.
	2.3.4.2	DBA Calculation Results	Summarized the potential impact of obstructions to the Fermi meteorological tower on the PAVAN model and updated the X/Qs presented.
	2.3.4.3	Atmospheric Dispersion Factors for On-Site Doses	Added discussion of the analysis of the alternate five year period of 1985 – 1989 in evaluating the potential impact of obstructions to the Fermi meteorological tower on the ARCON96 model.
	2.3.5.1	Long Term Dispersion – Calculation Methodology and Assumptions	Updated the number of wind speed categories used in the analysis. Updated description of distances to the circle that encompasses the possible release points.
	2.3.5.2	Long Term Dispersion – Results	Summarized the potential impact of obstructions to the Fermi meteorological tower on the XOQDOQ model.
		Table 2.3-217	Monthly and Annual Wind Speeds updated based upon revised meteorological data.
		Table 2.3-218 through 241	Wind Direction Persistence Summaries updated to reflect revised meteorological data.
		Table 2.3-255 through 267	Temperature Inversion Frequency & Persistence updated to reflect revised meteorological data
		Table 2.3-268	Updated to reflect revised meteorological data.
		Table 2.3-269 through 284	Updated to reflect revised meteorological data.
		Table 2.3-291	Updated to reflect revised meteorological data.
		Table 2.3-292 through 299	Updated to reflect revised meteorological data.
		Table 2.3-300	Updated to reflect the results of the XOQDOQ analysis
		Table 2.3-303 and 304	Updated to reflect the results of the ARCON96 analysis

FSAR Chapter	Sections Impacted	Topics	Comments
2 (cont.)		Tables 2.3 -305 and 306	Updated to reflect distances to Site Boundary from the outer edge of the circle, with the Reactor Building at its center, which encompasses all postulated design basis accident release locations.
		Table 2.3-307 through 327	Updated X/Q and D/Q results - XOQDOQ
		Table 2.3-328 through 339	Updated X/Q and D/Q results - XOQDOQ
		Figures 2.3-231 through 255	Updated to reflect revised meteorological data.
App 2A	2A.2.4	Confirmation of the ESBWR X/Q Values	Removed commitment satisfied with this response.
	2.A.2.5	Confirmation of the Reactor Building X/Q Values	Updated text on administrative control of doors or personnel air locks to reflect ESBWR DCD Rev. 6
		Table 2A4R	Updated Receptor to Source Directions to reflect ESBWR DCD Rev. 6. Removed commitment, satisfied with this response.
6	6.4.5	Design Evaluations	Calculation to support was revised, no change to the FSAR.
11	11.2.1	Liquid Waste Management - Design Basis	Updated the dollar threshold for person-rem per year thyroid.
	11.3.1	Gaseous Management System – Design Basis	Updated the dose from gaseous effluents based upon the GASPAR results. Updated the Total Annual Cost (TAC) thresholds.
12	12.2.2.1	Airborne Releases Offsite	Removed, now unnecessary assumption, of a single, conservative distance for each vent stack as the distance is measured from the outer edge of the circle, with the Reactor Building at its center, which encompasses all postulated design basis accident release locations.
	12.2.2.2	Airborne Releases Offsite	Update discussion to reflect GASPAR results.
	12.2.2.4.4	Compliance with 10 CFR 20.1301 and 20.1302	Added point of reference for the distance from Fermi 3 to the site boundary.
		Table 12.2-15R	Updated to reflect updated GASPAR analysis and ESBWR DCD Rev. 6.
		Table 12.2-17R	Updated to reflect updated GASPAR analysis and ESBWR DCD Rev. 6.
		Table 12.2-18bR	Updated to reflect updated GASPAR analysis and ESBWR DCD Rev. 6.

FSAR Chapter	Sections Impacted	Topics	Comments
12 (cont.)		Table 12.2-201	Updated to reflect updated GASPAR analysis and ESBWR DCD Rev. 6.
		Table 12.2-203	Updated to reflect updated GASPAR analysis and ESBWR DCD Rev. 6.
		Table 12.2-204	Updated to reflect updated GASPAR analysis and ESBWR DCD Rev. 6.

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Enclosure 2

Markup of Detroit Edison FSAR

(following 326 page(s))

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 FSAR. This markup is shown on pages of the most recent submittal of the Fermi 3 FSAR, Revision 2 dated March 2010. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

Table 1.9-201 Conformance with Standard Review Plan (Sheet 1 of 45)

[EF3 COL 1.9-3-A]

SRP Section	Title	Rev	Date	Specific Acceptance Criteria	Evaluation
1	Introduction and Interfaces	Initial Issuance	Mar-07	No Specific Acceptance Criteria	Conforms
2.0	Site Characteristics and Site Parameters	Initial Issuance	Mar-07	II.1, II.2, II.3, II.5	Not applicable
				II.4	Conforms
2.1.1	Site Location and Description	Rev. 3	Mar-07	II.1, II.2	Conforms
2.1.2	Exclusion Area Authority and Control	Rev. 3	Mar-07	II.1, II.2, II.3	Conforms
2.1.3	Population Distribution	Rev. 3	Mar-07	II.1, II.2, II.3, II.4, II.5	Conforms
2.2.1 - 2.2.2	Identification of Potential Hazards in Site Vicinity	Rev. 3	Mar-07	II.1, II.2, II.3	Conforms
2.2.3	Evaluation of Potential Accidents	Rev. 3	Mar-07	II.1, II.2	Conforms
2.3.1	Regional Climatology	Rev. 3	Mar-07	II.1, II.2, II.3, II.4, II.5, II.6, II.7, II.8, II.9	Conforms
2.3.2	Local Meteorology	Rev. 3	Mar-07	II.1, II.2, II.3, II.4	Conforms
2.3.3	Onsite Meteorological Measurements Programs	Rev. 3	Mar-07	II.1, II.2, II.3	Conforms with exception of proximity of trees to meteorological tower. Impacts from trees is addressed in Section 2.3.3.1.6.
2.3.4	Short Term Atmospheric Dispersion Estimates for Accident Releases	Rev. 3	Mar-07	II.1, II.2, II.3, II.4, II.5, II.6	Conforms
2.3.5	Long-Term Atmospheric Dispersion Estimates for Routine Releases	Rev. 3	Mar-07	II.1, II.2, II.3, II.4, II.5, II.6	Conforms
2.4.1	Hydrologic Description	Rev. 3	Mar-07	II.1, II.2, II.3, II.4, II.5, II.6	Conforms
2.4.2	Floods	Rev. 4	Mar-07	II.1, II.2, II.3, II.4, II.5, II.6, II.7, II.8, II.9, II.10	Conforms

Table 1.9-202 Conformance with Regulatory Guides (Sheet 3 of 25)

[EF3 COL 1.9-3-A]

RG Number	Title	Revision	Date	RG Position	Evaluation
1.21	Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants	Rev. 1	Jun-74	General	Conforms. Subsection 11.4.2.3 (NEI 07-10) and Subsection 11.5.4.5 (NEI 07-09) provide descriptions of the PCP and ODCM, respectively. Implementation milestones are provided in Section 13.4.
1.22	Periodic Testing of Protection System Actuation Functions	Rev. 0	Feb-72	General	Conforms. Operational program implementation is described in Section 13.4.
1.23	Meteorological Monitoring Programs For Nuclear Power Plants	Rev. 1	Mar-07	General	Exception: The RG in part requires that sensors should be located … at a distance of at least 10 times the height of any nearby obstruction if the height of the obstruction exceeds one-half the height of the wind measurement. This criterion is not met for the existing meteorological tower at Fermi 2 and relocation of the tower would be required for construction of Fermi 3 (Refer to Subsection 2.3.3.1.1). Calibration of wind direction sensor does not include test for starting threshold. Refer to Subsection 2.3.3.1.3 for discussion.
1.24	Assumptions Used for Evaluating the Potential Radiological Consequences of a Pressurized Water Reactor Radioactive Gas Storage Tank Failure	Rev. 0	Mar-72	All	Not applicable

In addition, the proximity of trees to the existing meteorological tower does not meet this criterion. This is addressed in Section 2.3.3.1.6.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Maximum Settlement Values for Seismic Category I Buildings (continued)			
Maximum Differential Displacement between Reactor/Fuel Buildings and Control Building			
	85 mm (3.3 inches)	9.4 mm (0.37 in)	The Fermi 3 site characteristic value for the maximum differential displacement between the RB/FB foundation and the CB foundation is provided in Table 2.5.4-232 which, as shown, falls within (is less than) the DCD site parameter value.
Meteorological Dispersion (X/Q)[11]			
EAB X/Q			
0–2 hours	2.00E-03 s/m^3	~~3.66E-04~~ s/m^3 3.95E-04	The site characteristic value for short-term (accident release) atmospheric dispersion for 0–2 hr X/Q value at the EAB is defined as the 0–2 hour atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the EAB. The site characteristic value falls within (is lower than) the DCD site parameter value.
LPZ X/Q			
0–8 hours	1.90E-04 s/m^3	~~3.23E-05~~ s/m^3 3.46E-05	The site characteristic value for short-term (accident release) atmospheric dispersion for 0–8 hr X/Q value at the LPZ is defined as the 0–8 hour atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value falls within (is lower than) the DCD site parameter value.
8–24 hours	1.40E-04 s/m^3	~~2.23E-05~~ s/m^3 2.37E-05	The site characteristic value for short-term (accident release) atmospheric dispersion for 8–24 hr X/Q value at the LPZ is defined as the 8–24 hour atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value falls within (is lower than) the DCD site parameter value
1–4 days	7.50E-05 s/m^3	~~9.95E-06~~ s/m^3 1.05E-05	The site characteristic value for short-term (accident release) atmospheric dispersion for 1–4 day X/Q value at the LPZ is defined as the 1–4 day atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value falls within (is lower than) the DCD site parameter value.

Table 2.0-201 Evaluation of Site/Design Parameters and Characteristics (Sheet 14 of 28) [EF3 COL 2.0-1-A]

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
4–30 days	3.00E-05 s/m^3	~~3.13E-06~~ s/m^3 3.22E-06	The site characteristic value for short-term (accident release) atmospheric dispersion for 4–30 day X/Q value at the LPZ is defined as the 4–30 day atmospheric dispersion factor to be used to estimate dose consequences of accidental airborne releases at the LPZ. The site characteristic value falls within (is lower than) the DCD site parameter value.
Control Room X/Q *[17] * First value is for unfiltered inleakage. Second value is for air intakes (emergency and normal).			Control Room X/Q values shown on the same row in DCD Table 2.0-1 are in sets below: first a set for unfiltered inleakage, followed by a set for air intakes (emergency and normal).
Reactor Building			
Unfiltered inleakage			
0–2 hours	1.90E-03 s/m^3	~~1.09E-03~~ s/m^3 1.7E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value
2–8 hours	1.30E-03 s/m^3	~~1.19E-03~~ s/m^3 1.1E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	5.90E-04 s/m^3	~~4.56E-04~~ s/m^3 4.3E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	5.00E-04 s/m^3	~~3.57E-04~~ s/m^3 3.3E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	4.40E-04 s/m^3	~~2.70E-04~~ s/m^3 2.5E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Air intakes (maximum of emergency and normal)			
0–2 hours	1.50E-03 s/m^3	~~1.22E-03~~ s/m^3 1.1E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	1.10E-03 s/m^3	~~8.03E-04~~ s/m^3 7.9E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Control Room X/Q[17] (continued)			
Reactor Building – (continued)			
Air intakes (maximum of emergency and normal) (continued)			
8–24 hours	5.00E-04 s/m^3	~~3.46E-04~~ s/m^3 3.0E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	4.20E-04 s/m^3	~~2.75E-04~~ s/m^3 2.4E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	3.80E-04 s/m^3	~~2.20E-04~~ s/m^3 1.9E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Passive Containment Cooling System/Reactor Building Roof			
Unfiltered inleakage			
0–2 hours	3.40E-03 s/m^3	~~1.83E-03~~ s/m^3 1.7E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	2.70E-03 s/m^3	~~1.29E-03~~ s/m^3 1.2E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	1.40E-03 s/m^3	~~4.48E-04~~ s/m^3 4.1E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	1.10E-03 s/m^3	~~3.11E-04~~ s/m^3 2.8E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	7.90E-04 s/m^3	~~2.00E-04~~ s/m^3 2.1E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Air intakes (maximum of emergency and normal)			
0–2 hours	3.00E-03 s/m^3	~~1.45E-03~~ s/m^3 1.4E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Control Room X/Q[17] (continued)			
Passive Containment Cooling System/Reactor Building Roof (continued)			
Air intakes (maximum of emergency and normal) (continued)			
2–8 hours	2.50E-03 s/m^3	~~1.14E-03~~ s/m^3 9.9E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	1.20E-03 s/m^3	~~4.06E-04~~ s/m^3 3.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	9.00E-04 s/m^3	~~3.11E-04~~ s/m^3 2.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	7.00E-04 s/m^3	~~2.04E-04~~ s/m^3 2.0E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Blowout Panels/Reactor Building Roof			
Unfiltered inleakage			
0–2 hours	7.00E-03 s/m^3	~~2.37E-03~~ s/m^3 2.2E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	5.00E-03 s/m^3	~~1.89E-03~~ s/m^3 1.7E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 days	2.10E-03 s/m^3	~~7.13E-04~~ s/m^3 6.2E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	1.70E-03 s/m^3	~~6.54E-04~~ s/m^3 5.3E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	1.50E-03 s/m^3	~~5.87E-04~~ s/m^3 4.4E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Control Room X/Q[17] (continued)			
Blowout Panels/Reactor Building Roof (continued)			
Air intakes (maximum of emergency and normal)			
0–2 hours	5.90E-03 s/m^3	~~2.27E-03~~ s/m^3 2.1E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	4.70E-03 s/m^3	~~1.77E-03~~ s/m^3 1.6E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 days	1.50E-03 s/m^3	~~6.30E-04~~ s/m^3 5.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	1.10E-03 s/m^3	~~5.47E-04~~ s/m^3 4.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	1.00E-03 s/m^3	~~5.46E-04~~ s/m^3 3.7E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Turbine Building			
Unfiltered inleakage			
0–2 hours	1.20E-03 s/m^3	~~5.99E-04~~ s/m^3 6.8E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	9.80E-04 s/m^3	~~3.27E-04~~ s/m^3 4.0E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	3.90E-04 s/m^3	~~4.35E-04~~ s/m^3 1.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	3.80E-04 s/m^3	~~9.62E-05~~ s/m^3 1.2E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	3.20E-04 s/m^3	~~8.94E-05~~ s/m^3 8.9E-05	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Control Room X/Q[17] (continued)			
Turbine Building (continued)			
Air intakes (maximum of emergency and normal)			
0–2 hours	1.20E-03 s/m^3	~~7.43E-04~~ s/m^3 7.2E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	9.80E-04 s/m^3	~~4.05E-04~~ s/m^3 4.2E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	3.90E-04 s/m^3	~~4.65E-04~~ s/m^3 1.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	3.80E-04 s/m^3	~~1.18E-04~~ s/m^3 1.2E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	3.20E-04 s/m^3	~~9.87E-05~~ s/m3 9.7E-05	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Fuel Building			
Unfiltered inleakage			
0–2 hours	2.80E-03 s/m^3	~~2.70E-03~~ s/m^3 2.2E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value
2–8 hours	2.50E-03 s/m^3	~~2.20E-03~~ s/m^3 1.6E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	1.25E-03 s/m^3	~~9.11E-04~~ s/m^3 6.4E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Control Room X/Q (continued)			
Fuel Building (continued)			
Unfiltered inleakage (continued)			
1–4 days	1.10E-03 s/m^3	~~8.20E-04~~ s/m^3 5.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	1.00E-03 s/m^3	~~7.18E-04~~ s/m^3 4.5E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Air intakes (maximum of normal and emergency)			
0–2 hours	2.80E-03 s/m^3	~~2.23E-03~~ s/m^3 2.0E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value
2–8 hours	2.50E-03 s/m^3	~~1.88E-03~~ s/m^3 1.6E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	1.25E-03 s/m^3	~~7.48E-04~~ s/m^3 6.1E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	1.10E-03 s/m^3	~~6.22E-04~~ s/m^3 4.8E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	1.00E-03 s/m^3	~~5.59E-04~~ s/m^3 4.0E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Radwaste Building Unfiltered inleakage			
			The PCCS vent X/Q values are assumed to bound the X/Q values for any release from the RW Building based on distance and direction to the CR receptors, and the PCCS vent X/Q values are used to evaluate releases from the RW Building in the DCD (Section 15.3.16). The PCCS X/Q values are compared to the RW Building X/Q results.
0–2 hours	3.40E-03 s/m^3	~~4.83E-03~~ s/m^3 1.7E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Control Room X/Q (continued) Radwaste Building (continued) Unfiltered inleakage (continued)			
2–8 hours	2.70E-03 s/m^3	~~4.20E-03~~ s/m^3 1.2E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	1.40E-03 s/m^3	~~4.48E-04~~ s/m^3 4.1E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	1.10E-03 s/m^3	~~3.44E-04~~ s/m^3 2.8E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	7.90E-04 s/m^3	~~2.68E-04~~ s/m^3 2.1E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Air Intakes (maximum of normal and emergency)			
0–2 hours	3.00E-03 s/m^3	~~1.45E-03~~ s/m^3 1.4E-03	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	2.50E-03 s/m^3	~~1.14E-03~~ s/m^3 9.9E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	1.20E-04 s/m^3	~~4.06E-04~~ s/m^3 3.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	9.00E-04 s/m^3	~~3.44E-04~~ s/m^3 2.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	7.00E-04 s/m^3	~~2.04E-04~~ s/m^3 2.0E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Table 2.0-201 Evaluation of Site/Design Parameters and Characteristics (Sheet 21 of 28) [EF3 COL 2.0-1-A]

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Reactor Building[17]			
TSC Unfiltered Inleakage and TSC Air Intakes (emergency and normal)			
0–2 hours	1.00E-03 s/m^3	~~2.73E-04~~ s/m^3 2.4E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	6.00E-04 s/m^3	~~2.28E-04~~ s/m^3 2.0E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	3.00E-04 s/m^3	~~9.48E-05~~ s/m^3 8.2E-05	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	2.00E-04 s/m^3	~~8.06E-05~~ s/m^3 6.8E-05	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	1.00E-04 s/m^3	~~6.78E-05~~ s/m^3 5.8E-05	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Turbine Building[17]			
TSC Unfiltered Inleakage and TSC Air Intakes (emergency and normal)			
0–2 hours	2.00E-03 s/m^3	~~4.65E-03~~ s/m^3 6.9E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	1.50E-03 s/m^3	~~4.09E-03~~ s/m^3 4.4E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	8.00E-04 s/m^3	~~4.35E-04~~ s/m^3 1.8E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	6.00E-04 s/m^3	~~3.84E-04~~ s/m^3 1.5E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	5.00E-04 s/m^3	~~3.46E-04~~ s/m^3 1.2E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Meteorological Dispersion (X/Q) (continued)			
Passive Containment Cooling System/Reactor Building Roof[17]			
TSC Unfiltered Inleakage and TSC Air Intakes (emergency and normal)			
0–2 hours	2.00E-03 s/m^3	~~4.65E-04~~ s/m^3 3.6E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
2–8 hours	1.10E-03 s/m^3	~~9.50E-04~~ s/m^3 2.7E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
8–24 hours	5.00E-04 s/m^3	~~1.40E-04~~ s/m^3 1.0E-04	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
1–4 days	4.00E-04 s/m^3	~~1.10E-04~~ s/m^3 8.8E-05	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
4–30 days	3.00E-04 s/m^3	~~1.00E-04~~ s/m^3 7.3E-05	The Fermi 3 site characteristic value is provided in Table 2.3-303 and falls within (is less than) the DCD site parameter value.
Long Term Dispersion Estimates[12]			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	The site characteristic values for long term (routine release) atmospheric dispersion estimates are based on the maximally exposed individual (MEI) for each pathway.	The site characteristic values for long term (routine release) atmospheric dispersion estimates are defined based on type of sensitive receptor (MEI) and decay time. Each of these values is compared with the appropriate DCD site parameter value, X/Q or D/Q, below. Each site characteristic value that is equal to or less than the DCD site parameter value results in a lower estimated dose for the same source term, and conversely, a higher X/Q or D/Q results in a higher estimated dose.

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Long Term Dispersion Estimates (continued)			
D/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 1.0E-08 m^{-2} 6.0E-09 m^{-2} 3.0E-08 m^{-2}	The characteristic values assume conservatively, that each sensitive receptor (meat animal, vegetable garden, residence) is at the location of the closest receptor.	As shown below, every site characteristic value does not fall within (some are greater than) the DCD site parameter value. Per Note (12) of DCD Table 2.0-1, if a site-specific X/Q value exceeds the site parameter value, the release concentrations in DCD Table 12.2-17 must be adjusted proportionate to the change in X/Q values using the stack release information in DCD Table 12.2-16 to show the 10 CFR 20 limits are met; and the annual average doses in DCD Table 12.2-18b must be changed to show the 10 CFR 50 Appendix I doses are met. Per DCD COL Item 12.2-2-A, calculation bases in DCD Tables 12.2-15 and 12.2-18a are replaced with site-specific values for calculation of airborne concentrations and doses. Table 12.2-15R and identify the replacement DCD information. This table identifies that there are Fermi 3 site characteristic values that do not fall within (are greater than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
Site Boundary Annual Average			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 ~~5.0 x 10~~$^{-7}$ s/m^3 ~~5.5 x 10~~$^{-7}$ s/m^3 ~~9.3 x 10~~$^{-6}$ s/m^3 undepleted/no decay	The site characteristic value for this long term dispersion estimate is defined as the maximum annual average site boundary undepleted/no decay X/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3-307, Table 2.3-308 and Table 2.3-309. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.

6.6×10^{-7}
7.2×10^{-7}
1.1×10^{-5}

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Long Term Dispersion Estimates (continued)			
Site Boundary Annual Average (continued)			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3 6.6 x 10^{-7} 7.2 x 10^{-7} 1.1 x 10^{-5}	 ~~5.0 x 10^{-7}~~ s/m^3 ~~5.5 x 10^{-7}~~ s/m^3 ~~9.3 x 10^{-6}~~ s/m^3 undepleted/2.26-day	The site characteristic value for this long term dispersion estimate is defined as the maximum annual average site boundary undepleted/2.26-day decay X/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3-307, Table 2.3-308 and Table 2.3-309. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3 6.2 x 10^{-7} 6.7 x 10^{-7} 1.0 x 10^{-5}	 ~~4.7 x 10^{-7}~~ s/m^3 ~~5.1 x 10^{-7}~~ s/m^3 ~~8.3 x 10^{-6}~~ s/m^3 depleted/8.00-day decay	The site characteristic value for this long term dispersion estimate is defined as the maximum annual average site boundary depleted/8.00-day decay X/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3-307, Table 2.3-308 and Table 2.3-309. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
D/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 1.0E-08 m^{-2} 6.0E-09 m^{-2} 3.0E-08 m^{-2} 1.7 x 10^{-8} 1.5 x 10^{-8} 4.6 x 10^{-8}	 ~~1.4 x 10^{-8}~~ 1/m^2 ~~1.3 x 10^{-8}~~ 1/m^2 ~~3.5 x 10^{-8}~~ 1/m^2	The site characteristic value for this long term dispersion estimate is defined as the maximum annual average site boundary D/Q value for use in determining gaseous pathway doses to the maximally exposed individual. The site characteristic value is provided in Table 2.3-307, Table 2.3-308 and Table 2.3-309. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
Annual Average Nearest Residence			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 ~~3.8 x 10^{-7}~~ s/m^3 ~~4.0 x 10^{-7}~~ s/m^3 ~~4.9 x 10^{-6}~~ s/m^3 undepleted/no decay	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-310, Table 2.3-311 and Table 2.3-312. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.

4.7 x 10^{-7}
5.1 x 10^{-7}
6.1 x 10^{-6}

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Long Term Dispersion Estimates (continued)			
Annual Average Nearest Residence (continued)			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 ~~3.9×10^{-7}~~ s/m^3 ~~4.9×10^{-7}~~ s/m^3 ~~4.9×10^{-6}~~ s/m^3 undepleted/2.26-day decay	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-310, Table 2.3-311 and Table 2.3-312. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 ~~3.6×10^{-7}~~ s/m^3 ~~3.7×10^{-7}~~ s/m^3 ~~4.3×10^{-6}~~ s/m^3 depleted/8.00-day decay,	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-310, Table 2.3-311 and Table 2.3-312. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
D/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 1.0E-08 m^{-2} 6.0E-09 m^{-2} 3.0E-08 m^{-2}	 ~~1.1×10^{-8}~~ 1/m^2 ~~9.9×10^{-9}~~ 1/m^2 ~~2.5×10^{-8}~~ 1/m^2	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-310, Table 2.3-311 and Table 2.3-312. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
~~Annual Average~~ Nearest Meat Animal			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 4.8×10^{-8} s/m^3 4.1×10^{-8} s/m^3 1.9×10^{-7} s/m^3 undepleted/no decay	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-322, Table 2.3-323 and Table 2.3-324. The Fermi 3 site characteristic values fall within (is less than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 ~~4.7×10^{-8}~~ s/m^3 ~~4.1×10^{-8}~~ s/m^3 ~~1.9×10^{-7}~~ s/m^3 undepleted/2.26-day decay	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-322, Table 2.3-323 and Table 2.3-324. The Fermi 3 site characteristic values fall within (is less than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.

4.7×10^{-7}
5.1×10^{-7}
6.1×10^{-6}

4.4×10^{-7}
4.7×10^{-7}
5.4×10^{-6}

1.2×10^{-8}
1.2×10^{-8}
3.1×10^{-8}

4.7×10^{-8}
4.0×10^{-8}
1.8×10^{-7}

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Long Term Dispersion Estimates (continued)			
Annual Average Nearest Meat Animal (continued)			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 4.3×10^{-8} s/m^3 3.6×10^{-8} s/m^3 1.4×10^{-7} s/m^3 depleted/8.00-day decay	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-322, Table 2.3-323 and Table 2.3-324. The Fermi 3 site characteristic values fall within (is less than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
D/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 1.0E-08 m^{-2} 6.0E-09 m^{-2} 3.0E-08 m^{-2}	 ~~3.0×10^{-10}~~ 1/m^2 ~~2.9×10^{-10}~~ 1/m^2 ~~6.0×10^{-10}~~ 1/m^2	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-322, Table 2.3-323 and Table 2.3-324. The Fermi 3 site characteristic values fall within (is less than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
Annual Average Nearest Garden			
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 ~~3.0×10^{-7}~~ s/m^3 ~~4.0×10^{-7}~~ s/m^3 ~~4.6×10^{-6}~~ s/m^3 undepleted/no decay	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-313, Table 2.3-314 and Table 2.3-315. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
X/Q RB/FB Vent Stack TB Vent Stack RWB Vent Stack	 3.0E-07 s/m^3 2.0E-07 s/m^3 2.0E-05 s/m^3	 ~~3.0×10^{-7}~~ s/m^3 ~~4.0×10^{-7}~~ s/m^3 ~~4.6×10^{-6}~~ s/m^3 undepleted/2.26-day decay	The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-313, Table 2.3-314 and Table 2.3-315. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.

3.1×10^{-10}
3.1×10^{-10}
6.4×10^{-10}

4.7 x 10-7
5.0 x 10-7
5.3 x 10-6

4.7 x 10-7
5.0 x 10-7
5.3 x 10-6

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Long Term Dispersion Estimates (continued)			
Annual Average Nearest Garden (continued)			
X/Q			The Fermi 3 site characteristic value for this long term dispersion estimate is provided in Table 2.3-313, Table 2.3-314 and Table 2.3-315. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	3.0E-07 s/m^3	~~3.6×10^{-7}~~ s/m^3	
TB Vent Stack	2.0E-07 s/m^3	~~3.7×10^{-7}~~ s/m^3	
RWB Vent Stack	2.0E-05 s/m^3	~~4.1×10^{-6}~~ s/m^3	
		depleted/8.00-day decay	
D/Q			The Fermi 3 site characteristic value for this long term dispersion estimate taken is provided in Table 2.3-313, Table 2.3-314 and Table 2.3-315. The Fermi 3 site characteristic values do not fall within (is greater than) all of the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	1.0E-08 m^{-2}	~~1.1×10^{-8}~~ 1/m^2	
TB Vent Stack	6.0E-09 m^{-2}	~~9.8×10^{-9}~~ 1/m^2	
RWB Vent Stack	3.0E-08 m^{-2}	~~2.5×10^{-8}~~ 1/m^2	
Annual Average Nearest Milk Cow			
X/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-325, Table 2.3-326 and Table 2.3-327. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	3.0E-07 s/m^3	~~6.7×10^{-8}~~ s/m^3	
TB Vent Stack	2.0E-07 s/m^3	~~5.8×10^{-8}~~ s/m^3	
RWB Vent Stack	2.0E-05 s/m^3	~~3.0×10^{-7}~~ s/m^3	
		undepleted/no decay	
X/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-325, Table 2.3-326 and Table 2.3-327. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	3.0E-07 s/m^3	~~6.6×10^{-8}~~ s/m^3	
TB Vent Stack	2.0E-07 s/m^3	~~5.8×10^{-8}~~ s/m^3	
RWB Vent Stack	2.0E-05 s/m^3	~~2.9×10^{-7}~~ s/m^3	
		undepleted/2.26-day decay	
X/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-325, Table 2.3-326 and Table 2.3-327. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	3.0E-07 s/m^3	~~6.1×10^{-8}~~ s/m^3	
TB Vent Stack	2.0E-07 s/m^3	~~5.3×10^{-8}~~ s/m^3	
RWB Vent Stack	2.0E-05 s/m^3	~~2.4×10^{-7}~~ s/m^3	
		depleted/8.00-day decay	

4.4×10^{-7}
4.7×10^{-7}
4.8×10^{-6}

1.2×10^{-8}
1.1×10^{-8}
3.1×10^{-8}

7.2×10^{-8}
6.2×10^{-8}
3.1×10^{-7}

7.2×10^{-8}
6.2×10^{-8}
3.1×10^{-7}

6.6×10^{-8}
5.6×10^{-8}
2.5×10^{-7}

Subject [16]	DCD Site Parameter Value[1][16]	Fermi 3 Site Characteristic	Evaluation
Long Term Dispersion Estimates (continued)			
Annual Average Nearest Milk Cow (continued)			
D/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-325, Table 2.3-326 and Table 2.3-327. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	1.0E-08 m^{-2}	~~8.7×10^{-10}~~ 9.5×10^{-10} $1/m^2$	
TB Vent Stack	6.0E-09 m^{-2}	~~8.3×10^{-10}~~ 8.9×10^{-10} $1/m^2$	
RWB Vent Stack	3.0E-08 m^{-2}	~~1.5×10^{-9}~~ 1.7×10^{-9} $1/m^2$	
Annual Average Nearest Milk Goat			
X/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-319, Table 2.3-320 and Table 2.3-321. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	3.0E-07 s/m^3	~~6.4×10^{-8}~~ 6.6×10^{-8} s/m^3	
TB Vent Stack	2.0E-07 s/m^3	~~5.4×10^{-8}~~ 5.7×10^{-8} s/m^3	
RWB Vent Stack	2.0E-05 s/m^3	~~2.6×10^{-7}~~ 2.7×10^{-7} s/m^3	
		undepleted/no decay	
X/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-319, Table 2.3-320 and Table 2.3-321. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	3.0E-07 s/m^3	~~6.4×10^{-8}~~ 6.6×10^{-8} s/m^3	
TB Vent Stack	2.0E-07 s/m^3	~~5.3×10^{-8}~~ 5.7×10^{-8} s/m^3	
RWB Vent Stack	2.0E-05 s/m^3	~~2.6×10^{-7}~~ 2.7×10^{-7} s/m^3	
		undepleted/2.26-day decay	
X/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-319, Table 2.3-320 and Table 2.3-321. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	3.0E-07 s/m^3	~~5.6×10^{-8}~~ 6.0×10^{-8} s/m^3	
TB Vent Stack	2.0E-07 s/m^3	~~4.8×10^{-8}~~ 5.1×10^{-8} s/m^3	
RWB Vent Stack	2.0E-05 s/m	~~2.2×10^{-7}~~ 2.2×10^{-7} s/m^3	
		depleted/8.00-day decay	
D/Q			The Fermi 3 site characteristic values for this long term dispersion estimate is provided in Table 2.3-319, Table 2.3-320 and Table 2.3-321. The Fermi 3 site characteristic values fall within (is smaller than) the DCD site parameter values. See Section 12.2 for the site-specific concentration and dose analysis inputs and results.
RB/FB Vent Stack	1.0E-08 m^{-2}	~~7.7×10^{-10}~~ 8.4×10^{-10} $1/m^2$	
TB Vent Stack	6.0E-09 m-2	~~7.4×10^{-10}~~ 7.9×10^{-10} $1/m^2$	
RWB Vent Stack	3.0E-08 m^{-2}	~~1.4×10^{-9}~~ 1.5×10^{-9} $1/m^2$	

Meso and micro scale features better represent the general wind characteristics of the Fermi site and surrounding region. Meso-scale features typically cover areas of 1 km^2 to 100 km^2 and are influenced by such things as local vegetation and river valleys. Micro-scale features are spatially one km^2 or less and include the proximity of the Fermi onsite meteorological tower to the Fermi 3 cooling tower, Lake Erie, and general site specific land use characteristics of the immediate location.

The influence of these smaller scale features may be seen by evaluating local wind data both at the Fermi site and the nearby Detroit Metropolitan Airport. Table 2.3-217 presents the mean monthly and annual wind speeds at the Fermi site and Detroit Metropolitan Airport. The mean annual wind speed for the 10- and 60-m level at the Fermi site is 10.6 km/hr (~~6.56~~ 6.57 mph) and 20.5 km/hr (12.74 mph), respectively. The mean annual wind speed at Detroit Metropolitan Airport is 14.1 km/hr (8.75 mph) at the 10-m level (Reference 2.3-229). The difference in the wind speeds between Detroit Metropolitan Airport and the 10-m level at the Fermi site can be explained by the macro and micro-scale features such as the land use characteristics of the site. Detroit Metropolitan Airport lies in a suburban area of Detroit that is relatively flat and provides a broad sample of prevailing wind direction and speed of the region. The Fermi site is located along the western shoreline of Lake Erie and is affected by onshore and offshore lake breezes, which can have the effect of increasing wind speeds at the Fermi site when inland stations are reporting very light wind speeds. Furthermore, Add Insert #1 here ~~the averaging schemes used to calculate the mean annual wind speeds are different between the Fermi site and the Detroit Metropolitan Airport. The Fermi site wind speeds are reported as hourly averages, while wind speeds from the Detroit Metropolitan Airport represent two-minute averages. This difference in averaging schemes explains the small difference between the two stations at the 10-m level.~~ Wind speeds at the 60-m level are considerably higher than wind speeds at the 10-m level for the Fermi site and Detroit Metropolitan Airport. This can be attributed to the higher exposure height of the instrument which measures wind speeds that are less reduced by the frictional effect of the earth's surface.

Wind Roses-Detroit Metropolitan Airport

Figure 2.3-217 through Figure 2.3-229 contain the 10-m annual and monthly wind roses presenting the distribution of wind speed at 22.5 degree intervals for Detroit Metropolitan Airport during the 5-year period

Insert 1)

the meteorological tower is located east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.23. The potential impact of the trees, for upwind sectors (i.e., west-southwest clockwise to north-northwest sectors), is to reduce the indicated wind speed at the 10 meter elevation, especially when the frequency of winds from upwind sectors is the highest. This occurs during late fall, winter, and early spring months when the jet stream is located over southeastern Michigan, which coincides with the largest difference of wind speeds at the 10 meter elevation between the Fermi site and Detroit Metropolitan Airport.

The wind roses for the Fermi site consider calm hours as those with

partially

difference forms along the shoreline and a wind circulation develops that produces easterly through southeasterly winds at the Fermi site. Onshore lake breezes can also increase wind speeds along the shoreline, while inland stations are experiencing lighter winds. Also noticeable on the annual wind rose for the Fermi 10-m level are the high occurrence of winds less than ~~four knots. Calm hours are counted when~~ wind speeds ~~are~~ less than one knot ~~at the Fermi site,~~ explaining the large drop in percentage when compared to annual calm hours at Detroit Metropolitan Airport. Figure 2.3-230 through Figure 2.3-242 present the monthly wind roses for the 10-m level at the Fermi site. In general, the dominant wind patterns for each month at the Fermi site are very similar to those for the Detroit Metropolitan Airport. However, the figures for March through September at the Fermi site 10—m level show the increase in easterly through southeasterly wind directions that are a result of onshore lake breezes.

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Wind Roses-Fermi 60-m Level

Figure 2.3-243 presents the annual wind rose at the 60-m level for the Fermi site. Apparent is the similarity of the Fermi site 60-m annual wind rose for the Detroit Metropolitan Airport 10-m level. East through southeast winds remain higher at the Fermi site in comparison to Detroit Metropolitan Airport due to the occurrence of the onshore lake breeze. The wind speeds, as expected, are somewhat higher at all directions as compared to the lower 10-m tower since the higher level can capture wind speeds that are less affected by the frictional effects of the earth's surface. Monthly wind roses for the 60-m level are represented by Figure 2.3-244 through Figure 2.3-255. As expected, wind speeds become somewhat lighter during from May to September, as the Bermuda High over the southeast United States influences the region and the synoptic scale pressure gradient weakens. During the late spring through early fall months, the onshore lake breezes produce the easterly through southeasterly winds. As the normal daytime temperatures begin to become cooler during September and October, the waters of Lake Erie remain relatively warm, creating a strong temperature gradient along the coastline. As explained earlier, a wind circulation develops; however, since the air above Lake Erie is warmer, winds blow from the land towards the water. The monthly wind roses for September and October indicate the presence of the offshore winds with a higher frequency of west and west-northwest winds. By mid-December the temperatures of

Insert 2)

Furthermore, the meteorological tower is located east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.23. The potential impact of the trees, for upwind sectors (i.e., west-southwest clockwise to north-northwest sectors), is to reduce the indicated wind speed at the 10 meter elevation.

the lake reach freezing temperatures and ice forms, ending the possibility of lake-induced offshore winds. The minor differences of the wind direction and speed due to the land and lake breezes shown in the 10- and 60-m wind roses and the similarity of the dominant wind directions across the region indicate that the wind conditions described in this section accurately depict the diffusion conditions for the Fermi site.

2.3.2.1.6 Wind Persistence

Persistence of wind direction is a measurement of the duration of the transport of air from a specific direction to locations downwind. It reflects the possible amount of time that radioactive contamination or any other type of pollution may travel in the same or a similar direction. The dilution potential of the pollutant as it moves downstream of its source is directly proportional to wind speed. Higher wind speeds lead to increased dilution while lower wind speeds create less dilution.

Table 2.3-218 through Table 2.3-241 show the persistence of wind direction and speed at both the 10-m and 60-m tower levels, respectively, for 22.5 degree (single) and 67.5 degree (three adjoining) wind sector widths for various wind speeds at the Fermi site during the 5—year period of 2003 through 2007. The longest recorded single sector persistence was from the south-southwest (39 hours) for the 10-m level and from the west-southwest direction (41 hours) for the 60-m level. For three adjoining sectors, the 10-m level and 60-m level recorded the longest persistence from the west-southwest (158 hours). Tables containing summaries of wind persistence for all wind speeds and at both the 10- and 60-m levels indicate that winds are most likely to be persistent from the southwest direction for single sector widths and from the west-southwest for three adjoining sector widths. In addition, the final row in the tables displays the average persistent hours for each wind direction and provides a method for determining which direction winds are most likely to persist longer. For the 10-m level, the wind is most likely to persist longer from the south-southwest and southwest directions for single and three adjoining sector widths, respectively. A persistent wind is most likely to last longer at the 60-m level for west-southwest and southwest wind directions for single sector and three adjoining sector widths, respectively.

north and

31

36

Table 2.3-242 through Table 2.3-253 present the persistence of wind direction and speed at the 10—m level for the single sector and three

used by the NCDC in conjunction with the weather balloon data to create daily mixing heights for the region. The calculated mean monthly and annual mixing heights for White Lake during 2003-2007 are presented in Table 2.3-254. The values shown in the table follow the same trends found by Holzworth (Reference 2.3-251).

2.3.2.1.8 Inversions

The frequency and persistence of temperature inversions may also indicate periods where air stagnation is highest. Frequency and persistence of inversions were calculated annually and monthly utilizing the difference in temperature (ΔT) between the 10- and 60-m levels obtained from the Fermi onsite meteorological tower data during the period 2003 through 2007. The presence of an inversion was defined as anytime ΔT>0 for the hour. A summary of the frequency and persistence of inversion conditions is presented in Table 2.3-255 which shows for ~~>43,824~~ 42,800 hours analyzed during the 5-year period an inversion was present ~~a total of >13,107~~ 13,098 hours, equivalent of ~~29.9~~ 30.6 percent of the total hours. Many of the inversions were short-lived as 48.5 percent of all inversions that occurred lasted six hours or less. Almost all the inversions lasted less then 24 hours with only 1.3 percent of all the inversions lasting longer then 24 hours. In the five years of data used, the longest inversion lasted 76 hours. Table 2.3-256 through Table 2.3-267 present the persistence of inversions tallied for each month. These tables show that the inversions are more common during March through October, however, are most prominent during the summer months of June, July, and August. This corresponds well with the findings by Wang & Angell that the number of days with air stagnation is highest during July through September (Reference 2.3-246). The increase in the number of inversions and air stagnation is a result of the jet stream retreating to the north of the Fermi site during the summer months, which in return creates the warmest temperatures and lowest wind speeds (Reference 2.3-209).

2.3.2.1.9 Atmospheric Stability

Atmospheric diffusion, independent of the effects of wind speed, is proportional to the stability of the atmosphere and has a large impact on potential vertical and horizontal dispersion of radioactive contamination or any other type of pollutant in the ambient air. Atmospheric stability can generally be classified as unstable, neutral, and stable. During stable conditions, diffusion is at its lowest levels while under unstable conditions

diffusion is at its highest levels. Pasquill-Gifford developed seven categories measuring atmospheric stability that are accepted and used by the NRC. The various categories can be determined by the ΔT between two temperature measurement levels normalized to 100 m. As defined in Regulatory Guide 1.23, the following categories of atmospheric stability reflect the ΔT in degrees Celsius per 100 m.

Class A	Extremely Unstable	$\Delta T/\Delta Z \leq -1.9$
Class B	Moderately Unstable	$-1.9 < \Delta T/\Delta Z \leq -1.7$
Class C	Slightly Unstable	$-1.7 < \Delta T/\Delta Z \leq -1.5$
Class D	Neutral Stability	$-1.5 < \Delta T/\Delta Z \leq -0.5$
Class E	Slightly Stable	$-0.5 < \Delta T/\Delta Z \leq +1.5$
Class F	Moderately Stable	$+1.5 < \Delta T/\Delta Z \leq +4.0$
Class G	Extremely Stable	$+4.0 < \Delta T/\Delta Z$

Table 2.3-268 presents mean annual and monthly wind speeds for the 60-m level at the Fermi site for each of the Pasquill-Gifford stability categories. Annually the mean wind speeds are highest when the stability at the Fermi site is neutral, while mean wind speeds are the lowest under extremely stable conditions, characteristic of high pressure systems. Table 2.3-268 also contains the annual and monthly distribution of stability ~~summaries~~. The Fermi site experienced neutral and slightly stable ~~conditions~~ ~~55.6~~ percent of the total number of hours during the 5—year period. Unstable conditions (Classes A, B, and C combined) occurred 30 percent of the total hours.

categories

approximately 56

approximately

Table 2.3-269 through Table 2.3-284 present the annual Joint Frequency Distributions (JFD) of wind speed and direction by stability category at the 10- and 60-m levels of the Fermi onsite meteorological tower for the 2003 through 2007 time period. It is noticeable from the JFD for the 10-m level that for stable conditions (Classes E, F, and G) the observations with wind speeds less than 6.4 km/hr (4 mph) occur most frequently, implying that stable conditions generally are associated with light winds. Tables for the 60-m level suggest that for stable conditions wind speeds are most frequently 12.9-20.9 km/hr (8-13 mph), which can be explained by the fact that the 60-m level wind speeds are less affected by the friction of the earth's surface. For unstable conditions (Classes A, B, and C), there is more variance in the wind speeds categories at both the 10- and 60-m levels, inferring that unstable conditions are associated with

Plumes emitted from cooling towers can also affect the local climate. Fermi 3 will include a NDCT as the main cooling method and two multi-cell MDCTs as the auxiliary cooling method. The predominant wind direction at the Fermi site is southwesterly at the 10- and 60-m levels. This indicates that the cooling tower plumes will most frequently extend over the Fermi site and towards Lake Erie. A more detailed explanation of the effects of the cooling tower plumes on the local meteorology is provided in the following sub-section.

2.3.2.2.1 Cooling Tower Plumes

Cooling systems depend on evaporation of water to dissipate heat created from the energy production process. In this cooling process the cooling towers often create visible plumes that can produce effects on the local environment. The visible plumes can produce shadows on surfaces such as trees, vegetation and nearby buildings. Cooling tower plumes can also create or enhance ground level fogging or icing, as well as increase salt deposition. An assessment of cooling tower plumes emitted during the operation of a new power production facility at the Fermi site on the local environment and atmosphere was performed. The investigation was performed using the Electric Power Research Institute's Seasonal/Annual Cooling Tower Impact Prediction Code (SACTI), a model endorsed by Section 5.3.3.1 of NUREG-1555 (Reference 2.3-254). The model used meteorological data from the current onsite meteorological tower for the available five-year period of 2003 through 2007 compiled into the CD-144 format. The onsite data contains wind direction, wind speed, dew-point temperature, and dry-bulb temperature measurements at 10- and 60-m heights. Since the current onsite meteorological tower does not record atmospheric pressure, ceiling height, or cloud cover, data commensurate with the onsite data, was taken from Detroit Metropolitan Airport. Using the dry-bulb and dew-point temperature from the Fermi site, as well as the station pressure from Detroit Metropolitan Airport, the required wet-bulb temperature and relative humidity values were calculated (Reference 2.3-240). When CD-144 format is used as the meteorological input to SACTI, the model determines stability class based on measured wind speed, ceiling height, cloud cover, solar elevation angle, and time of day. Mean monthly mixing height values calculated in Subsection 2.3.2.1.7 were also used as inputs for the SACTI cooling tower model analysis.

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Insert 3)

As mentioned in Subsection 2.3.2.1.5, the meteorological tower is located east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.23. The potential impact of the trees, for upwind sectors, is to reduce the indicated wind speed at the 10 meter elevation. Very little impact to the wind speed has been observed at the 60 meter elevation. Because the cooling tower proposed is a 600 foot natural draft tower, the 60 meter meteorological measurements are the most representative of the release height and as such, were utilized in the SACTI modeling analysis. Thus, the SACTI modeling analysis is not impacted by the presence of the trees.

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2.3.3 Meteorological Monitoring

The current Fermi onsite meteorological monitoring program has been in place since it was implemented for Fermi 2 pre-operational meteorological assessment beginning in June 1975. Starting in June 1975, the onsite meteorological monitoring program has met the requirements of the proposed Revision 1 to Regulatory Guide 1.23 (September 1980) (Reference 2.3-262). Since June 1975, some of the meteorological monitoring program components have been upgraded. Subsection 2.3.3.1 describes the current state of the onsite meteorological measurement program. The Fermi 2 meteorological monitoring program provides the basis for the Fermi 3 preapplication meteorological monitoring program. In addition, data from the onsite meteorological tower is used as the sole input for models that describe the shortand long-term atmospheric transport and diffusion characteristics of the site, as provided for in NRC Regulatory Guides 1.145 and 1.111, respectively. A description of the model used to analyze the short- and long-term atmospheric transport and diffusion conditions of the site is described in Subsection 2.3.4 and Subsection 2.3.5.

except as described in Subsection 2.3.3.1.1 regarding the proximity of tres to the meteorological tower,

The NDCT for Fermi 3 will be built in the approximate location of the current onsite meteorological tower. Thus, a new meteorological tower will be erected in the southeast corner of the Fermi site as displayed in Figure 2.1-204. Subsection 2.3.3.2 describes the site preparation and construction, pre-operational, and operational meteorological monitoring program proposed for Fermi 3.

The purpose of this section is to identify that the onsite meteorological measurements program and other data-collection programs used by Fermi 3 are adequate to: (1) describe local and regional atmospheric transport and diffusion characteristics within 50 mi (80 km) of the plant, (2) ensure environmental protection, and (3) provide an adequate meteorological database for evaluation of the effects of plant operation. This discussion includes an analysis of the following meteorological monitoring system elements:

- The location of the meteorological tower and instrument siting
- Meteorological parameters measured
- Meteorological sensors
- Instrument surveillance

Potential impact of the trees on the analysis is described in Subsection 2.3.3.1.6.

onsite meteorological tower. The tower is situated in an area east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.23. ~~However, based on analysis of historic wind data collected from the meteorological tower it has been determined that the trees do not impact the wind measurements.~~ The tower is located sufficiently close to the shoreline of Lake Erie such that it can measure the dynamic onshore flow conditions that could affect gaseous effluent releases. This effect on the dispersion conditions is representative of the site since the facility itself is located along the western shoreline of Lake Erie.

2.3.3.1.2 Instrumentation and Their Accuracies and Thresholds

Meteorological Sensors

The instrumentation on the meteorological tower consists of the following: wind speed and wind direction sensors at the 10- and 60-m levels, a 10-m air temperature sensor, a 10- to 60-m vertical air temperature difference system (ΔT), and a dewpoint temperature sensor at the 10-m level. In addition, a heated tipping bucket rain gauge monitors precipitation at ground level at the base of the meteorological tower. Table 2.3-288 provides a listing of the meteorological parameters monitored on the Fermi onsite meteorological tower, the sampling height(s), as well as the sensing technique for the primary and secondary systems.

To minimize data loss due to ice storms, external heaters are installed on the primary wind sensors. The heaters are thermostatically controlled and are of the slip-on/slip-off design for easy attachment. The wind sensor specifications are not affected by these heaters. A windscreen is mounted around the precipitation gage to minimize the amount of windblown snow and debris deposited in the gage.

The accuracies and thresholds for the meteorological sensors located on the meteorological tower are presented in Table 2.3-289. The accuracies and thresholds for each sensor are within the limitations specified in the proposed Revision 1 to Regulatory Guide 1.23 (September 1980).

Data Recording Equipment

After the data are collected by the sensors the output is routed through signal conditioning equipment and then directed to digital data recorders. The signal conditioning equipment and digital recorders are located at

The dew point sensor is calibrated by comparing the result reported by the dew point sensor against the dew point measured by a calibrated, portable dew point hygrometer at the aspirator inlet.

The precipitation sensor is calibrated by comparing the result reported by the precipitation sensor to a known volume of liquid.

The calibration of the wind speed sensors is performed in a wind tunnel by an outside vendor using calibrated measurement equipment and a NIST Traceable Wind Tunnel Anemometer. In the wind tunnel the wind velocity is calibrated at specific points and the starting threshold is determined. The calibrated wind speed sensor is then used to replace the existing sensor installed on the meteorological tower.

The calibration of the wind direction sensor is performed by an outside vendor using calibrated measurement equipment. The calibration does not include a specific test of the starting threshold for wind direction. The starting threshold of the calibrated wind direction sensor is assessed at the time of installation by rotating the wind direction sensor body with the shaft in the horizontal plane and observing that the vane remains stationary. A new bearing is installed in the wind direction sensor if required. After installation of the new wind direction sensor, the directional alignment of the wind direction sensor is checked by sighting a known alignment point and comparing the result reported by the wind direction sensor to a known response. The records documenting results of calibrations, drift from calibrations, and corrective action taken for the digital instrumentation are kept and filed onsite.

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2.3.3.1.4 Instrument Service and Maintenance

periodially

~~Visits are made twice a week~~ to the 60-m tower to make a visual inspection of the sensors, as well as the data output and recording equipment in the instrument shelter, to see if they are damaged and need maintenance. In the event the sensors or monitoring equipment is found damaged or malfunctioning, the equipment is replaced or corrected in a timely fashion. A stock of spare parts and equipment is maintained to minimize and shorten the periods of outages. Using the same precision test equipment used for calibration, the instrumentation is checked to ensure reliable operation. Records documenting results of major causes of instrument sensor outages and other malfunctions of the meteorological monitoring system are kept and filed onsite. A similar

Insert 1

Examination of the 2003-2007 meteorological data indicates that there is variability in the wind direction measurements during periods when the wind speed is less than 1 mph, providing assurance that the starting threshold for the wind direction sensor is equal to or less than 1 mph.

After the validation process is completed, the processed data are archived and permanently stored electronically.

The objective for the meteorological monitoring program is to maintain annual data recovery rates of at least 90 percent on an annual basis for all meteorological parameters in order to assess the relative concentrations and doses resulting from accidental or routine releases. Table 2.3-291 provides recovery rates for the meteorological parameters monitored on the onsite meteorological tower. The recovery rates for each parameter, including the joint data recovery of wind speed, wind direction, and ΔT, exceed the 90 percent guidance criteria in accordance with Regulatory Guide 1.23. In addition, the onsite meteorological data are considered adequate to represent onsite meteorological conditions as required by 10 CFR 100.10 and 10 CFR 100.20, as well as to make estimates of atmospheric dispersion for design basis accident and routine releases from the reactor.

Therefore,

Insert 2 here

Meteorological data are available in five different formats: instantaneous values, 1-minute blocked averages, 15-minute rolling averages, 15-minute blocked averages, and 1-hour blocked averages. Routine data summaries are generated for each day, calendar month, and calendar year and then archived on the IPCS computers. In addition, joint frequency distributions of wind speed and wind direction for each Pasquill stability category are created from the 1-hour blocked averages. The format of the annual onsite meteorological data summaries and joint frequency distribution tables conforms to the recommended format found in Regulatory Guide 1.23.

2.3.3.2 Fermi 3 Site Preparation and Construction, Pre-Operational, and Operational Onsite Meteorological Monitoring Program

As described in Section 2.3.3 of NUREG-0800, the current meteorological program establishes a baseline for identifying and assessing the environmental impacts during preapplication meteorological monitoring. The NDCT for Fermi 3 will be built in the approximate location of the current onsite meteorological tower. A new meteorological tower will be erected in the southeast corner of the Fermi site. **[START COM FSAR-2.3-003]**.The new meteorological tower will be operational for at least one year prior to the decommissioning of the existing onsite meteorological tower. The meteorological data recorded concurrently from the current and new onsite meteorological towers will

Insert 2

The meteorological tower is located east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.2 3. The impact of the trees, for upwind sectors, is to reduce the indicated wind speed at the 10 meter elevation. Very little impact to the wind speed has been observed at the 60 meter elevation. The SACTI analysis (Section 2.3.2) uses the data from the 60 meter elevation and, thus, is not impacted by the presence of the trees. For determination of the atmospheric dispersion factors used in the analysis of off-site design basis accident (PAVAN) and routine releases (XOQDOQ) using the lower indicated wind speed provides conservative results. For determination of control room atmospheric dispersion factors (ARCON96), the analyses were run using both the current data and data from 1985 through 1989. X/Q results from ARCON96 using both sets of data are bounded by the D CD limiting values in DCD Table 2.0-1.

distances. Because the ground-level release scenario provides a bounding case, stack releases were not evaluated.

The PAVAN program computes X/Q values at the Dose Calculation EAB and Dose Calculation LPZ for each combination of wind speed and atmospheric stability class for each of 16 downwind direction sectors. The X/Q values calculated for each direction sector are then ranked in descending order, and an associated cumulative frequency distribution is derived based on the frequency distribution of wind speeds and stabilities for the complementary upwind direction sector. The X/Q value that is equaled or exceeded 0.5 percent of the total time becomes the maximum sector-dependent X/Q value.

The calculated X/Q values are also ranked independently of wind direction into a cumulative frequency distribution for the entire site. The PAVAN program then selects the X/Qs that are equaled or exceeded 5 percent of the total time.

In accordance with Regulatory Guide 1.145, the larger of the two values (i.e., the maximum sector-dependent 0.5 percent X/Q or the overall site 5 percent X/Q value) is used to represent the X/Q value for a 0-2 hour time period. To determine X/Q values for longer time periods, the program calculates an annual average X/Q value using the procedure described in Regulatory Guide 1.111. The program then uses logarithmic interpolation between the 0-2 hour X/Q values for each sector and the corresponding annual average X/Q values to calculate the values for intermediate time periods (i.e., 0-8 hours, 8-24 hours, 1-4 days, and 4-30 days).

The meteorological tower is located east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.23. The impact of the trees, for upwind sectors, is to reduce the indicated wind speed at the 10 meter elevation. For determination of the atmospheric dispersion factors used in the analysis of off-site design basis accident (PAVAN) using the lower indicated wind speed provides conservative results.

2.3.4.2 Calculations and Results

PAVAN requires the meteorological data in the form of joint frequency distributions of wind direction and wind speed by atmospheric stability class. These analyses were completed using data from the Fermi site meteorological instrumentation collected between 2002 and 2007.

The stability classes were based on the classification system given in Table 2 of Regulatory Guide 1.23. Joint frequency distribution tables were developed from the meteorological data.

Building area is defined as the smallest vertical-plane cross-sectional area of the Reactor Building, in square meters. The area used in the PAVAN input was zero, thereby conservatively neglecting the building

wake credit. The building height entered was also zero to conservatively neglect the building wake credit.

The tower height is the height at which the wind speed was measured. Based on the lower measurement location, the tower height used was 10 m.

As described in Regulatory Guide 1.145, a ground-level release includes all release points that are effectively lower than two and one-half times the height of adjacent solid structures. Therefore, as stated above, a ground-level release was assumed.

Table 2.3-300 provides the offsite atmospheric dispersion factors. The PAVAN modeling results for the maximum sector X/Q values at the Dose Calculation EAB and the Dose Calculation LPZ relative to the 0-2-hour time period, ~~the annual average time period~~, and other intermediate time intervals evaluated by the PAVAN model are presented as follows:

Fermi 3 Maximum X/Q Values (sec/m^3)

	0-2 hours	0-8 hours	8-24 hours	1-4 days	4-30 days
Dose Calculation EAB	~~3.66E-04~~ 3.95E-04				
Dose Calculation LPZ	N/A	~~3.23E-05~~ 3.46E-05	~~2.23E-05~~ 2.37E-05	~~9.95E-06~~ 1.05E-05	~~3.13E-06~~ 3.22E-06

2.3.4.3 Atmospheric Dispersion Factors for On-Site Doses

Onsite X/Q values for use in evaluating potential doses from Fermi 3 postulated release locations (sources) to on-site receptor locations are based on the Fermi 3 layout shown in DCD Figure 2A-1. The values were determined based on hourly meteorological data from the years 2001 through 2007. The X/Q values for the control room and technical support center were calculated using the ARCON96 computer code in accodance with guidance as documented in RG 1.194. The source and receptor combinations are shown in Table 2.3-303. DCD Figure 2A-1 shows the locations of postulated accidental releases from Fermi 3 and the Fermi 3 receptor locations. Results from the ARCON96 computer code for each of the source and receoptor combinations are provided in Table ~~2.3-303.~~

The meteorological tower is located east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.23. The impact of the trees, for upwind sectors, is to reduce the indicated wind speed at the 10 meter elevation. On-site atmospheric dispersion factors were determined based on meteorological data from 2001 through 2007 and 1985 through 1989. Both time periods were used in the analysis to consider potential impacts from the trees. X/Q results from ARCON96 using both sets of data are bounded by the DCD limiting values in DCD Table 2.0-1.

The dose consequences to operators at other units must be determined in addition to the unit with the accident. The intent is to ensure that an accident in the adjacent unit will not prevent the safe shutdown of the "other" unit. As such, dispersion factors are required so that these doses may be calculated. The cross-unit X/Q values are conservatively based on a simple point source model. A distance of 350 m (1150 ft) between

For this analysis, both ground-level and mixed-mode releases were considered. A ground-level release was considered for releases from the Radwaste Building, while mixed-mode releases were considered for releases from the Reactor Building/Fuel Building Stack and the Turbine Building Stack based on the criteria set forth in Regulatory Guide 1.111. At ground-level locations beyond several miles from the plant, the annual average concentration of effluents are essentially independent of release mode; however, for ground-level concentrations within a few miles, the release mode is important. Gaseous effluents released from tall stacks generally produce peak ground-level air concentrations near or beyond the site boundary. Near ground-level releases usually produce concentrations that decrease from the release point to locations downwind. Guidance for selection of the release mode is provided in Regulatory Guide 1.111.

The following input data and assumptions are used in the analysis:

- Meteorological data: 6-year (2002-2007) composite onsite joint frequency distributions of wind speed, wind direction, and atmospheric stability
- Type of release: Ground-level (Radwaste Building Stack); mixed-mode (Reactor Building/Fuel Building and Turbine Building Stacks)
- Wind sensor height: 10 m
- Vertical temperature difference: between 10 m to 60 m
- Number of wind speed categories: ~~9~~ 14
- Release height: 10 m (default height) for ground-level release; 52.62 m for Reactor Building/Fuel Building Stack (mixed-mode); 71.30 m for Turbine Building Stack (mixed-mode)
- Building area: 350 m^2 for ground-level release, conservatively set to zero to neglect the building wake credit for the mixed-mode releases
- Adjacent building height: N/A for ground-level release; 48.05 m for Reactor Building/Fuel Building Stack (mixed-mode); 52.0 m for Turbine Building Stack (mixed-mode)
- Average Vent Velocity: N/A for ground-level release; 17.78 m/s for Reactor Building/Fuel Building Stack (mixed-mode); 17.78 m/s for Turbine Building Stack (mixed-mode)

- Inside Vent Diameter: N/A for ground-level release; 2.40 m for Reactor Building/Fuel Building Stack (mixed-mode); 1.95 m for Turbine Building Stack (mixed-mode)
- Distances from release point to site boundary, nearest residence, nearest garden, neatest sheep, nearest goat, nearest meat cow, and nearest milk cow for all downwind sectors. The distances are determined from the ~~centerline of the Reactor Building~~ a circle that encompasses the possible release points.
- Dry deposition is considered for all releases
- Continuous release is assumed
- Site and regional topography are included

Consistent with Regulatory Guide 1.111 guidance regarding radiological impact evaluations, radioactive decay and deposition were considered. Terrain recirculation was considered consistent with Regulatory Guide 1.111 by employing the default terrain correction option.

2.3.5.2 Results

Receptor locations for Fermi were evaluated. Values of X/Q and D/Q were determined at the site boundary, at points of maximum individual exposure, and at points within a radial grid of sixteen 22.5 degree sectors (centered on true north, north-northeast, northeast, etc.) and extending to a distance of 80 km (50 mi) from the station. Receptor locations included in the evaluation are given in Table 2.3-305 and Table 2.3-306. A set of data points were located within each sector at increments of 402 m (0.25 mi). to a distance of 1609 m (1 mile) from the plant, at increments of 805 m (0.5 mile) from a distance of 1609 m to 8000 m (1 mile to 5 mi), at increments of 4023 m (2.5 mi) from a distance of 8 km to 16 km (5 mile to 10 mile), and at increments of 16 km (5 mi) thereafter to a distance of 80 km (50 mi). Table 2.3-328 through Table 2.3-339 summarize annual average X/Q values (no decay and undepleted; 2.26 day decayed and undepleted; 8 day decayed and depleted) and D/Q values at each of these grid points. The results of the analysis, based on meteorological data collected onsite from 2002 through 2007, are presented in Table 2.3-307 through Table 2.3-327.

The meteorological tower is located east of a grove of trees that is located less than ten times the obstruction height recommended in Regulatory Guide 1.23. The impact of the trees, for upwind sectors, is to reduce the indicated wind speed at the 10 meter elevation. For determination of the atmospheric dispersion factors used in the analysis of off-site routine releases (XOQDOQ) using the lower indicated wind speed provides conservative results.

2.3.6 References

2.3-201 National Climatic Data Center, "2006 Local Climatological Data Annual Summary with Comparative Data for Detroit Metropolitan Airport," January 2007.

Table 2.3-211 Monthly and Annual Temperature Data (°F) for Detroit Metropolitan Airport and Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Period		Upper Level – 60-m Fermi Site	Lower Level – 10-m Fermi Site	Single Level – 10-m Detroit Metropolitan Airport (A)
January	Mean	25.7	26.2	26.2
	Maximum	57.8	55.6	58.0
	Minimum	-0.6	-3.8	-4.0
February	Mean	25.2	25.8	25.9
	Maximum	53.5	53.3	57.0
	Minimum	-4.1	-3.5	-3.0
March	Mean	35.8	35.9	37.2
	Maximum	76.9	78.5	81.0
	Minimum	-2.9	-2.9	-2.0
April	Mean	~~47.9~~ 48.2	48.4	49.7
	Maximum	86.9	85.5	86.0
	Minimum	19.8	20.5	21.0
May	Mean	57.9	58.4	59.3
	Maximum	85.0	88.0	91.0
	Minimum	34.3	33.6	32.0
June	Mean	68.7	69.2	69.7
	Maximum	91.8	94.2	95.0
	Minimum	44.5	42.3	40.0
July	Mean	~~72.5~~ 72.4	~~73.1~~ 72.9	73.5
	Maximum	91.9	94.3	95.0
	Minimum	52.3	52.2	50.0
August	Mean	71.8	72.2	72.5
	Maximum	92.0	93.7	97.0
	Minimum	51.9	51.7	52.0
September	Mean	65.4	65.6	65.3
	Maximum	83.7	85.8	90.0
	Minimum	~~37.2~~ 41.9	39.1	39.0
October	Mean	53.8	53.9	53.4
	Maximum	85.7	87.4	90.0
	Minimum	31.8	32.0	31.0
November	Mean	42.3	42.6	42.5
	Maximum	72.4	72.1	75.0
	Minimum	12.4	13.5	13.0
December	Mean	30.6	31.0	31.1
	Maximum	56.8	57.5	59.0
	Minimum	-2.0	-2.4	-2.0
Annual	Mean	50.0	50.3	50.7
	Maximum	92.0	94.3	97.0
	Minimum	-4.1	-3.8	-4.0

Source A: Reference 2.3-229

Table 2.3-217 Monthly and Annual Mean Wind Speeds (mph) for Detroit Metropolitan Airport and Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Period	Upper Level – 60-m Fermi Site	Lower Level – 10-m Fermi Site	Single Level – 10-m Detroit Metropolitan Airport (A)
January	14.33	7.45	10.30
February	13.61	7.23	9.83
March	14.13	~~7.46~~ 7.47	9.66
April	14.65	8.21	10.25
May	12.36	~~6.68~~ 6.72	8.19
June	10.85	~~5.57~~ 5.70	7.50
July	~~10.38~~ 10.29	5.12	7.56
August	10.10	5.01	6.83
September	11.38	5.68	7.02
October	13.03	6.06	8.49
November	13.86	7.02	9.36
December	14.37	7.28	10.12
Annual	12.74	~~6.56~~ 6.57	8.75

Source A: Reference 2.3-229

Add Insert #1 here

Table 2.3-218 **Wind Direction Persistence Summaries - Fermi Site 10-m Level** [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

All Wind Speeds

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	189	148	130	148	156	174	167	179	195	236	268	263	254	253	234	183	44.80%
3	82	54	60	77	59	84	93	87	98	128	135	134	110	119	106	82	21.26%
4	43	34	37	36	41	57	58	36	39	87	71	73	63	63	70	40	11.96%
5	20	19	18	19	21	35	36	27	38	42	54	35	27	48	27	32	7.02%
6	7	11	23	10	10	23	23	12	14	27	23	33	18	36	18	12	4.23%
7	5	7	11	7	7	19	20	9	13	27	23	23	13	19	11	10	3.16%
8	7	3	8	5	13	10	9	10	4	24	18	11	7	12	5	7	2.16%
9	3	4	4	4	6	5	5	4	3	14	15	6	4	4	6	11	1.38%
10	5	2	5	2	2	1	4	1	2	11	13	6	3	5	1	4	0.94%
11	0	0	2	2	2	5	1	2	2	12	5	0	5	6	2	5	0.72%
12	2	0	3	1	3	3	2	0	1	5	10	2	0	3	2	1	0.54%
13	2	0	0	0	4	6	1	0	0	2	2	3	1	2	0	1	0.34%
14	0	0	1	0	1	0	0	0	2	3	2	2	2	2	0	2	0.24%
15	1	0	2	2	1	0	0	0	0	6	6	0	1	1	1	1	0.31%
16	0	1	0	0	3	1	0	0	0	4	0	1	1	1	0	0	0.17%
17	0	0	0	0	1	1	0	0	0	4	2	1	1	0	0	2	0.17%
18	0	0	1	0	0	0	0	0	0	1	1	1	1	0	0	1	0.08%
19	0	0	1	0	0	0	0	0	0	0	4	2	0	0	0	0	0.10%
20	0	0	0	1	1	0	0	0	0	1	2	3	0	0	1	0	0.13%
21	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0.04%
22	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.01%
23	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0.03%
24	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.01%
25	1	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0.07%
26	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.03%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0.04%
31	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0.04%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.01%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	5.20%	3.99%	4.31%	4.43%	4.67%	5.98%	5.91%	5.17%	5.80%	9.04%	9.33%	8.46%	7.21%	8.11%	6.84%	5.56%	
AVE PERSISTENT HOURS	3.40	3.18	3.86	3.36	3.83	3.80	3.60	3.22	3.27	4.54	4.38	3.70	3.34	3.64	3.28	3.66	

*THE LONGEST PERSISTENT WIND WAS FROM THE SOUTH BY SOUTHWEST AND LASTED 39 HOURS

Insert 1)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	222	181	160	180	189	209	203	227	247	292	320	328	309	322	287	225	**44.37%**
3	100	70	74	91	74	100	117	111	125	160	175	166	134	149	133	104	**21.42%**
4	50	46	47	47	49	69	65	51	49	106	99	91	81	79	85	52	**12.13%**
5	30	22	19	24	24	47	41	35	46	58	64	49	27	63	34	40	**7.09%**
6	8	13	26	12	12	31	30	13	20	38	30	41	20	39	27	16	**4.28%**
7	8	10	14	7	10	20	23	11	18	32	30	30	17	23	15	15	**3.22%**
8	8	6	10	7	17	11	10	10	4	34	21	15	7	12	10	11	**2.20%**
9	6	4	5	5	8	5	5	5	6	17	18	7	4	5	7	16	**1.40%**
10	5	2	5	3	4	1	4	1	2	14	17	8	3	5	1	7	**0.93%**
11	0	0	4	4	3	6	1	2	2	17	5	1	5	7	2	5	**0.73%**
12	3	0	3	1	3	4	2	0	1	8	12	3	0	4	2	1	**0.53%**
13	2	0	0	0	4	6	2	0	0	2	2	4	2	2	0	2	**0.32%**
14	0	0	1	0	1	1	0	0	2	3	2	2	2	2	0	3	**0.22%**
15	1	0	2	2	1	0	0	0	1	6	6	0	2	1	1	1	**0.27%**
16	0	1	0	0	3	1	0	0	0	4	0	2	2	1	0	0	**0.16%**
17	0	0	1	0	1	1	0	0	0	4	2	1	1	0	0	2	**0.15%**
18	0	0	1	0	0	0	0	0	0	2	1	1	1	0	0	1	**0.08%**
19	1	0	1	1	0	0	0	0	0	0	4	1	0	1	0	0	**0.10%**
20	1	0	0	2	2	0	0	0	0	1	2	3	0	0	1	0	**0.14%**
21	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	**0.06%**
22	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**0.01%**
23	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	**0.03%**
24	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**0.01%**
25	1	0	0	0	0	0	0	0	0	2	1	2	0	0	0	0	**0.07%**
26	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**0.02%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	**0.03%**
31	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	**0.03%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**5.10%**	**4.04%**	**4.24%**	**4.39%**	**4.61%**	**5.82%**	**5.72%**	**5.30%**	**5.95%**	**9.17%**	**9.30%**	**8.59%**	**7.02%**	**8.14%**	**6.90%**	**5.70%**	
AVE PERSISTENT HOURS	**3.49**	**3.19**	**3.84**	**3.47**	**3.85**	**3.78**	**3.56**	**3.17**	**3.30**	**4.49**	**4.27**	**3.72**	**3.32**	**3.57**	**3.34**	**3.74**	

THE LONGEST PERSISTENT WIND WAS FROM THE NORTH AND SOUTHWEST AND LASTED 31 HOURS

Add Insert #2 here

Table 2.3-219 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

0-5 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	93	87	29	20	35	61	50	86	99	116	171	231	212	219	198	145	62.55%
3	28	31	8	7	7	14	19	16	27	40	63	92	73	94	77	41	21.51%
4	9	7	3	0	2	8	3	1	14	16	23	42	29	39	29	17	8.17%
5	5	4	0	1	1	1	5	3	4	6	15	16	5	31	13	8	3.99%
6	1	1	0	0	0	0	1	0	3	4	5	11	2	11	3	1	1.45%
7	2	0	0	0	0	2	0	0	1	3	2	9	1	8	4	5	1.25%
8	1	0	0	0	0	0	0	0	0	1	1	3	2	3	1	1	0.44%
9	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0.14%
10	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0.10%
11	0	0	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0.17%
12	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.03%
13	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.10%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.03%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.03%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	4.80%	4.39%	1.38%	0.98%	1.52%	2.94%	2.63%	3.58%	5.00%	6.35%	9.52%	13.71%	10.98%	13.85%	10.98%	7.40%	

Insert 2)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	93	87	27	20	35	62	49	84	98	114	169	230	212	217	198	144	**62.74%**
3	28	31	8	7	7	11	19	16	26	40	63	92	73	94	77	41	**21.60%**
4	9	7	3	0	2	8	3	1	14	14	21	41	29	39	29	17	**8.09%**
5	5	4	0	0	1	1	4	3	4	5	15	16	5	31	13	8	**3.92%**
6	1	1	0	0	0	0	1	0	3	4	5	10	2	11	3	1	**1.43%**
7	2	0	0	0	0	2	0	0	1	3	2	9	1	8	4	5	**1.26%**
8	1	0	0	0	0	0	0	0	0	1	0	3	1	3	1	1	**0.38%**
9	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	**0.14%**
10	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	**0.10%**
11	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	**0.14%**
12	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.03%**
13	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	**0.10%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.03%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**0.03%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**4.84%**	**4.44%**	**1.33%**	**0.96%**	**1.54%**	**2.90%**	**2.59%**	**3.55%**	**4.98%**	**6.18%**	**9.45%**	**13.75%**	**11.05%**	**13.92%**	**11.09%**	**7.44%**	

Add Insert #3 here

Table 2.3-220 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

5-10 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	92	86	103	132	120	168	167	171	159	208	215	150	102	113	120	121	47.09%
3	49	39	58	64	45	73	71	73	68	113	102	70	61	60	51	50	22.14%
4	20	14	38	26	28	35	57	36	35	67	44	41	39	31	32	32	12.16%
5	20	9	17	16	9	30	31	19	24	44	19	24	19	27	15	26	7.38%
6	6	2	18	5	5	14	23	9	9	16	14	15	8	12	14	13	3.87%
7	6	2	6	0	3	10	12	9	11	27	11	12	5	6	3	6	2.73%
8	4	0	8	2	5	7	3	4	0	21	8	6	4	5	6	6	1.88%
9	1	0	4	1	0	3	5	1	2	6	6	3	3	1	4	3	0.91%
10	1	1	3	1	2	0	1	1	1	4	5	3	2	3	1	2	0.66%
11	0	0	3	1	0	1	1	0	1	3	4	2	1	0	0	0	0.36%
12	0	0	2	0	0	3	2	0	0	2	0	0	1	2	1	0	0.27%
13	0	0	0	0	1	3	1	0	0	1	0	2	2	0	0	0	0.21%
14	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.04%
15	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0.06%
16	1	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0.08%
17	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0.06%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0.04%
20	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.02%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.02%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	4.23%	3.24%	5.50%	5.24%	4.61%	7.36%	7.91%	6.83%	6.58%	10.93%	9.07%	7.06%	5.22%	5.50%	5.24%	5.48%	

Insert 3)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	92	86	103	132	120	168	167	171	159	208	215	149	102	113	120	121	**47.07%**
3	49	39	58	64	45	73	71	73	68	113	102	70	61	60	51	50	**22.14%**
4	20	14	38	26	28	35	57	36	35	67	44	41	39	31	32	32	**12.16%**
5	20	9	17	16	9	30	31	19	24	44	19	24	19	27	15	26	**7.38%**
6	6	2	18	5	5	14	23	9	9	16	14	16	8	12	14	13	**3.89%**
7	6	2	6	0	3	10	12	9	11	27	11	12	5	6	3	6	**2.73%**
8	4	0	8	2	5	7	3	4	0	21	8	6	4	5	6	6	**1.88%**
9	1	0	4	1	0	3	5	1	2	6	6	3	3	1	4	3	**0.91%**
10	1	1	3	1	2	0	1	1	1	4	5	3	2	3	1	2	**0.66%**
11	0	0	3	1	0	1	1	0	1	3	4	2	1	0	0	0	**0.36%**
12	0	0	2	0	0	3	2	0	0	2	0	1	1	2	1	0	**0.30%**
13	0	0	0	0	1	3	1	0	0	1	0	2	2	0	0	0	**0.21%**
14	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	**0.04%**
15	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	**0.06%**
16	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	**0.06%**
17	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	**0.06%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	**0.04%**
20	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.02%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0.02%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**4.23%**	**3.24%**	**5.50%**	**5.24%**	**4.61%**	**7.36%**	**7.91%**	**6.83%**	**6.58%**	**10.93%**	**9.07%**	**7.06%**	**5.22%**	**5.50%**	**5.24%**	**5.48%**	

Add Insert #4 here

Table 2.3-221 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

10-15 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	27	24	25	43	55	38	14	21	24	66	75	28	14	22	14	16	43.32%
3	11	9	7	19	36	24	8	5	11	40	42	8	8	8	7	12	21.83%
4	11	10	5	7	12	17	2	2	8	20	19	5	3	11	6	6	12.33%
5	6	3	6	4	11	2	2	3	1	21	13	8	3	5	5	6	8.48%
6	2	3	4	2	3	5	3	1	0	11	8	1	1	4	1	2	4.37%
7	0	3	1	2	6	2	0	0	1	7	8	0	1	0	1	1	2.83%
8	1	0	0	4	1	0	0	0	1	2	7	2	3	1	0	2	2.05%
9	0	1	0	3	2	0	0	0	1	4	4	0	0	2	0	0	1.46%
10	2	0	0	1	0	0	0	0	0	4	1	1	2	1	0	0	1.03%
11	0	0	1	0	1	0	0	0	0	3	2	0	0	1	0	0	0.68%
12	1	0	0	0	1	1	0	0	1	0	0	0	1	0	1	0	0.51%
13	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0.17%
14	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0.26%
15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0.17%
16	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.17%
17	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0.17%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0.17%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	5.31%	4.54%	4.37%	7.45%	11.04%	7.62%	2.48%	2.74%	4.20%	15.33%	15.67%	4.54%	3.08%	4.71%	3.08%	3.85%	

Insert 4)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	27	24	25	43	55	38	14	21	24	66	75	28	14	22	14	16	**43.32%**
3	11	9	7	19	36	24	8	5	11	40	42	8	8	8	7	12	**21.83%**
4	11	10	5	7	12	17	2	2	8	20	19	5	3	11	6	6	**12.33%**
5	6	3	6	4	11	2	2	3	1	21	13	8	3	5	5	6	**8.48%**
6	2	3	4	2	3	5	3	1	0	11	8	1	1	4	1	2	**4.37%**
7	0	3	1	2	6	2	0	0	1	7	8	0	1	0	1	1	**2.83%**
8	1	0	0	4	1	0	0	0	1	2	7	2	3	1	0	2	**2.05%**
9	0	1	0	3	2	0	0	0	1	4	4	0	0	2	0	0	**1.46%**
10	2	0	0	1	0	0	0	0	0	4	1	1	2	1	0	0	**1.03%**
11	0	0	1	0	1	0	0	0	0	3	2	0	0	1	0	0	**0.68%**
12	1	0	0	0	1	1	0	0	1	0	0	0	1	0	1	0	**0.51%**
13	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	**0.17%**
14	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	**0.26%**
15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	**0.17%**
16	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**0.17%**
17	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	**0.17%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	**0.17%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**5.31%**	**4.54%**	**4.37%**	**7.45%**	**11.04%**	**7.62%**	**2.48%**	**2.74%**	**4.20%**	**15.33%**	**15.67%**	**4.54%**	**3.08%**	**4.71%**	**3.08%**	**3.85%**	

Add Insert #5 here

Table 2.3-222 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

15-20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	4	3	1	9	17	3	0	3	1	11	15	2	2	1	1	3	49.03%
3	3	0	0	2	10	1	0	0	0	7	10	1	0	1	1	2	24.52%
4	1	2	0	1	6	1	1	0	0	0	6	0	0	0	0	1	12.26%
5	2	2	0	0	1	1	0	0	0	0	3	0	0	0	0	0	5.81%
6	0	0	0	0	1	0	0	0	0	1	6	0	0	0	0	0	5.16%
7	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1.94%
8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.65%
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.65%
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	6.45%	5.81%	0.65%	8.39%	22.58%	3.87%	0.65%	1.94%	0.65%	12.90%	26.45%	1.94%	1.29%	1.29%	1.29%	3.87%	

Insert 5)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	4	3	1	9	17	3	0	3	1	11	15	2	2	1	1	3	**49.03%**
3	3	0	0	2	10	1	0	0	0	7	10	1	0	1	1	2	**24.52%**
4	1	2	0	1	6	1	1	0	0	0	6	0	0	0	0	1	**12.26%**
5	2	2	0	0	1	1	0	0	0	0	3	0	0	0	0	0	**5.81%**
6	0	0	0	0	1	0	0	0	0	1	6	0	0	0	0	0	**5.16%**
7	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	**1.94%**
8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.65%**
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
12	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**0.65%**
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**6.45%**	**5.81%**	**0.65%**	**8.39%**	**22.58%**	**3.87%**	**0.65%**	**1.94%**	**0.65%**	**12.90%**	**26.45%**	**1.94%**	**1.29%**	**1.29%**	**1.29%**	**3.87%**	

Add Insert #6 here

Table 2.3-223 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction
2003-2007
>20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	0	0	0	1	2	0	0	0	0	0	3	0	0	0	0	0	60.00%
3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	20.00%
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	10.00%
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
9	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	10.00%
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	0.00%	0.00%	0.00%	10.00%	30.00%	0.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

Insert 6)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	0	0	0	1	2	0	0	0	0	0	3	0	0	0	0	0	**60.00%**
3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	**20.00%**
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**10.00%**
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
9	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**10.00%**
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**0.00%**	**0.00%**	**0.00%**	**10.00%**	**30.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**60.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	

Add Insert #7 here

Table 2.3-224 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction
2003-2007
All Wind Speeds

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	123	98	81	117	101	96	84	113	144	151	139	183	187	153	139	131	20.86%
3	87	57	65	81	83	80	80	92	108	107	100	110	113	119	88	88	14.91%
4	54	39	44	50	40	52	84	79	69	73	76	89	95	97	84	70	11.20%
5	46	35	30	35	31	53	56	58	48	52	55	61	62	66	51	49	8.06%
6	31	33	32	20	24	37	44	65	45	47	46	57	47	50	39	36	6.68%
7	27	18	23	26	19	43	31	34	39	39	40	27	35	41	38	30	5.21%
8	21	25	20	25	21	20	38	31	26	28	30	28	29	46	35	24	4.57%
9	18	15	11	9	15	21	35	29	13	26	32	32	35	32	24	19	3.74%
10	13	17	11	11	15	24	22	17	21	26	21	29	19	19	21	21	3.14%
11	18	9	14	9	10	13	23	17	26	20	22	26	22	26	14	8	2.83%
12	11	10	17	9	14	20	18	19	19	21	16	11	16	22	21	9	2.59%
13	4	6	7	6	8	16	13	15	16	20	9	19	15	14	13	16	2.01%
14	6	9	4	7	12	14	16	10	15	12	7	14	9	16	12	7	1.74%
15	9	7	9	5	4	15	11	4	6	9	27	12	11	10	10	7	1.59%
16	4	6	7	10	6	9	11	3	8	11	9	4	10	10	7	16	1.34%
17	1	5	4	4	6	10	7	5	8	11	14	8	5	7	9	5	1.11%
18	2	5	3	3	5	5	1	1	11	16	8	5	12	6	10	4	0.99%
19	2	3	5	3	1	6	4	2	10	8	7	4	8	4	4	5	0.78%
20	4	5	4	6	2	2	2	6	2	8	5	3	6	6	3	7	0.73%
21	4	4	4	1	2	1	1	0	3	8	3	8	7	3	4	8	0.62%
22	3	0	0	5	7	1	0	1	5	8	2	3	0	5	3	3	0.47%
23	5	2	0	1	3	0	1	1	2	8	5	6	1	3	5	1	0.45%
24	0	2	5	3	1	1	1	1	3	5	9	2	1	1	4	1	0.41%
25	0	1	2	3	3	1	3	0	1	7	4	5	1	1	4	2	0.39%
26	0	1	0	2	1	3	0	0	4	7	8	5	3	2	3	3	0.43%
27	1	0	1	1	2	1	1	0	3	5	7	5	6	1	3	5	0.43%
28	1	2	0	1	4	0	0	0	1	3	5	3	5	1	4	2	0.33%
29	0	1	0	2	0	0	0	0	0	3	7	4	4	3	2	5	0.32%
30	1	1	3	0	0	1	1	0	2	4	1	5	0	3	4	0	0.27%
31	0	0	0	1	0	2	1	0	1	1	7	1	0	2	1	1	0.18%
32	1	0	0	0	0	2	0	0	1	2	4	4	2	1	1	1	0.19%
33	0	0	2	1	2	0	0	0	0	2	7	2	0	2	2	0	0.20%
34	0	0	3	0	0	1	0	0	2	1	4	1	0	2	2	0	0.16%
35	0	1	0	1	1	1	0	0	1	1	1	0	0	1	2	0	0.10%
36	0	0	1	2	0	1	0	0	0	3	1	3	2	2	0	0	0.15%
37	0	0	0	0	1	0	1	0	0	2	0	4	1	3	1	0	0.13%
38	0	1	2	1	1	1	1	0	1	0	0	0	0	0	0	0	0.08%
39	0	0	0	2	2	0	0	0	0	0	3	2	0	0	2	0	0.11%
40	0	0	1	1	1	0	0	0	0	1	3	0	2	1	0	0	0.10%
41	0	2	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0.06%
42	0	0	0	0	1	0	0	0	0	1	2	1	1	0	1	0	0.07%
43	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0.03%
44	0	0	1	0	0	0	0	0	0	0	2	1	1	0	0	0	0.05%
45	1	0	0	0	0	0	0	0	0	0	2	2	1	2	0	0	0.08%
46	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0.02%
47	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.03%
48	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0.04%
% of PERSISTENT DIRECTION	5.10%	4.29%	4.25%	4.76%	4.61%	5.65%	6.04%	6.17%	6.79%	7.78%	7.71%	8.09%	7.92%	8.01%	6.85%	5.97%	
AVE PERSISTENT HOURS	6.21	7.10	7.67	7.18	7.63	7.38	6.95	5.98	7.10	8.61	9.31	7.81	7.05	7.22	7.68	7.04	

THE LONGEST PERSISTENT WIND WAS FROM THE WEST BY SOUTHWEST AND LASTED 158 HOURS

Insert 7)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	125	98	83	118	102	97	84	114	145	151	139	182	187	152	140	130	**20.83%**
3	89	57	65	81	83	79	81	93	105	107	101	110	113	119	87	88	**14.84%**
4	55	39	44	51	39	52	84	77	69	73	78	91	95	96	84	70	**11.16%**
5	46	35	30	35	31	53	56	58	47	53	58	61	62	66	51	49	**8.05%**
6	31	33	32	20	24	37	43	65	44	47	47	57	47	50	39	36	**6.63%**
7	27	18	23	26	19	43	31	34	40	39	41	27	35	41	38	30	**5.21%**
8	22	25	20	25	21	20	38	31	26	29	28	28	29	46	35	24	**4.55%**
9	18	15	11	9	15	20	34	29	13	26	32	32	34	31	24	19	**3.68%**
10	13	17	11	11	15	24	22	17	21	26	21	28	19	19	21	21	**3.11%**
11	18	9	14	9	10	13	23	17	26	20	22	26	22	26	14	8	**2.82%**
12	11	10	17	9	14	20	18	18	18	21	16	10	16	22	21	9	**2.54%**
13	4	6	7	6	8	16	13	15	16	19	9	19	15	14	13	16	**1.99%**
14	6	9	3	7	12	14	16	10	15	12	7	14	9	16	12	7	**1.72%**
15	9	7	9	5	4	15	11	4	6	9	27	13	11	10	10	7	**1.60%**
16	4	6	7	10	6	9	11	3	8	11	10	4	10	10	7	16	**1.34%**
17	1	5	4	3	6	10	7	5	8	11	14	8	5	7	9	5	**1.10%**
18	2	5	3	3	5	5	1	1	11	16	8	5	13	6	10	4	**1.00%**
19	2	3	5	3	1	6	4	2	10	8	7	4	8	4	4	5	**0.77%**
20	4	5	4	6	2	2	2	6	2	8	5	3	6	6	3	7	**0.72%**
21	4	4	4	1	2	1	1	0	3	8	2	8	7	3	4	8	**0.61%**
22	3	0	0	5	7	1	0	1	5	8	2	4	0	5	3	3	**0.48%**
23	5	2	0	1	3	0	1	1	2	8	5	6	1	3	5	1	**0.45%**
24	0	2	5	3	1	1	1	1	3	5	9	2	1	1	4	1	**0.41%**
25	0	1	2	3	3	1	3	0	1	7	4	5	1	1	4	2	**0.39%**
26	0	1	0	2	1	3	0	0	4	7	8	3	2	2	3	3	**0.40%**
27	1	0	1	1	2	1	1	0	3	5	7	5	6	1	3	5	**0.43%**
28	1	2	0	1	4	0	0	0	1	3	5	3	5	1	4	2	**0.33%**
29	0	1	0	2	0	0	0	0	0	3	6	4	4	3	2	5	**0.31%**
30	1	1	3	0	0	1	1	0	2	4	1	5	0	3	4	0	**0.26%**
31	0	0	0	1	0	2	1	0	1	1	6	1	0	2	1	1	**0.17%**
32	1	0	0	0	0	2	0	0	1	2	4	4	2	1	1	1	**0.19%**
33	0	0	2	1	2	0	0	0	0	2	7	2	0	2	2	0	**0.20%**
34	0	0	3	0	0	1	0	0	2	1	4	1	0	2	2	0	**0.16%**
35	0	1	0	1	1	1	0	0	1	0	1	0	0	1	2	0	**0.09%**
36	0	0	1	2	0	1	0	0	0	3	1	3	2	2	0	0	**0.15%**
37	0	0	0	0	1	0	1	0	0	2	0	4	1	3	1	0	**0.13%**
38	0	1	2	1	1	1	1	0	1	0	0	0	0	0	0	0	**0.08%**
39	0	0	0	2	2	0	0	0	0	0	3	2	0	0	2	0	**0.11%**
40	0	0	1	1	1	0	0	0	0	1	3	0	2	1	0	0	**0.10%**
41	0	2	0	1	0	0	0	0	0	0	2	0	1	0	0	0	**0.06%**
42	0	0	0	0	1	0	0	0	0	1	2	1	1	0	1	0	**0.07%**
43	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	**0.03%**
44	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	**0.04%**
45	1	0	0	0	0	0	0	0	0	0	2	2	1	2	0	0	**0.08%**
46	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	**0.02%**
47	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**0.02%**
48+	2	1	3	3	3	0	0	0	2	10	13	9	5	2	1	0	**0.55%**
% of PERSISTENT DIRECTION	**5.16%**	**4.28%**	**4.27%**	**4.77%**	**4.61%**	**5.62%**	**6.00%**	**6.13%**	**6.74%**	**7.82%**	**7.83%**	**8.12%**	**7.93%**	**7.96%**	**6.83%**	**5.93%**	
AVE PERSISTENT HOURS	**6.34**	**7.20**	**7.91**	**7.31**	**7.80**	**7.38**	**6.94**	**5.96**	**7.23**	**8.98**	**9.82**	**8.19**	**7.30**	**7.33**	**7.74**	**7.05**	

THE LONGEST PERSISTENT WIND WAS FROM THE WEST-SOUTHWEST AND LASTED 158 HOURS

Add Insert #8 here

Table 2.3-225 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction
2003-2007
0-5 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	105	120	55	36	49	72	75	98	131	145	182	208	197	174	183	152	39.34%
3	53	48	32	17	21	29	25	40	57	67	95	119	126	131	97	88	20.74%
4	35	27	18	5	3	15	26	25	40	38	59	88	76	84	71	47	13.04%
5	19	23	8	3	4	9	6	14	13	18	47	60	49	54	59	36	8.38%
6	12	14	3	0	3	5	8	8	12	18	29	26	43	38	29	24	5.40%
7	12	6	0	1	3	0	3	2	9	10	16	23	22	26	25	13	3.39%
8	6	4	2	2	3	1	4	1	1	7	11	24	14	32	18	4	2.66%
9	1	0	0	1	1	4	2	1	2	3	13	19	18	26	13	6	2.18%
10	4	2	2	0	0	0	3	1	2	4	7	6	7	12	10	4	1.27%
11	2	0	1	2	0	1	0	0	2	1	4	12	6	16	7	2	1.11%
12	1	0	0	0	1	0	0	1	1	3	4	6	10	8	10	1	0.91%
13	0	0	0	0	0	0	0	0	0	0	1	5	7	7	3	0	0.46%
14	2	0	0	0	0	0	1	0	0	0	1	4	5	2	2	0	0.34%
15	0	1	0	0	0	1	0	0	0	0	2	2	3	3	0	1	0.26%
16	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	0.14%
17	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0.08%
18	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.06%
19	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0.04%
20	0	0	0	1	0	1	0	0	0	1	0	0	0	3	0	0	0.12%
21	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.04%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.02%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.02%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	5.02%	4.86%	2.40%	1.35%	1.75%	2.74%	3.04%	3.79%	5.36%	6.27%	9.37%	11.99%	11.71%	12.27%	10.54%	7.54%	

Insert 8)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	105	119	55	36	49	73	75	99	131	145	179	206	197	172	184	151	**39.48%**
3	53	48	32	17	21	28	25	41	55	67	95	119	126	131	96	88	**20.82%**
4	35	27	18	5	3	15	26	23	40	38	59	88	76	83	71	47	**13.07%**
5	19	23	8	3	4	9	6	14	12	17	47	60	49	54	59	36	**8.39%**
6	12	14	3	0	3	5	7	8	11	17	28	26	44	38	29	24	**5.37%**
7	12	6	0	1	3	0	3	2	9	10	16	23	22	26	25	13	**3.42%**
8	6	4	2	2	3	1	4	1	1	7	10	24	14	32	18	4	**2.66%**
9	1	0	0	0	1	3	1	1	2	3	12	19	17	25	13	6	**2.08%**
10	4	2	1	0	0	0	3	1	2	3	7	5	7	12	10	4	**1.22%**
11	2	0	1	2	0	1	0	0	1	1	4	12	6	16	7	2	**1.10%**
12	1	0	0	0	1	0	0	0	1	3	4	6	10	8	10	1	**0.90%**
13	0	0	0	0	0	0	0	0	0	0	1	5	7	7	3	0	**0.46%**
14	2	0	0	0	0	0	1	0	0	0	1	4	4	2	2	0	**0.32%**
15	0	1	0	0	0	1	0	0	0	0	2	1	3	3	0	1	**0.24%**
16	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	**0.14%**
17	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	**0.08%**
18	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	**0.06%**
19	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	**0.04%**
20	0	0	0	1	0	1	0	0	0	0	0	0	0	3	0	0	**0.10%**
21	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	**0.04%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0.02%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**5.05%**	**4.88%**	**2.40%**	**1.34%**	**1.76%**	**2.74%**	**3.02%**	**3.80%**	**5.29%**	**6.21%**	**9.31%**	**11.99%**	**11.77%**	**12.27%**	**10.61%**	**7.57%**	

Add Insert #9 here

Table 2.3-226 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction

2003-2007

5-10 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	80	64	78	116	103	120	102	119	103	152	127	88	67	65	62	88	25.86%
3	61	47	54	65	89	70	96	76	82	95	87	59	62	53	44	61	18.20%
4	35	24	47	38	48	53	84	58	64	72	75	60	43	51	37	46	13.80%
5	22	12	32	26	23	56	46	55	41	54	54	38	36	42	28	30	9.84%
6	19	22	19	32	27	25	34	44	27	34	36	27	20	24	25	28	7.19%
7	12	9	26	21	17	23	28	26	24	37	34	19	28	27	21	21	6.17%
8	12	9	14	10	13	17	26	24	11	30	20	16	13	18	16	18	4.41%
9	5	6	8	6	11	7	25	9	19	17	19	17	17	8	14	10	3.26%
10	3	6	7	7	5	16	9	6	4	14	20	11	5	6	13	7	2.30%
11	5	5	10	5	4	7	16	11	5	17	11	13	7	6	9	8	2.30%
12	3	3	8	5	5	8	9	2	8	11	6	9	1	7	4	6	1.57%
13	3	0	4	6	1	6	5	6	8	9	4	5	5	2	3	3	1.16%
14	0	2	4	3	2	6	3	0	7	5	5	5	0	0	3	3	0.79%
15	0	1	3	2	0	6	3	0	2	2	4	3	1	2	1	0	0.50%
16	1	1	3	2	0	2	4	1	2	4	4	3	2	2	2	1	0.56%
17	0	1	2	1	3	4	1	1	3	3	2	1	4	3	2	0	0.51%
18	0	1	1	2	2	3	0	1	3	3	4	1	1	2	0	1	0.41%
19	0	0	1	1	0	0	1	0	2	3	1	0	2	0	0	1	0.20%
20	0	0	1	0	0	1	0	2	0	0	2	3	0	0	1	0	0.17%
21	1	0	2	0	0	0	0	0	3	0	1	1	1	1	1	1	0.20%
22	0	0	1	1	0	0	0	0	1	3	1	0	2	0	0	0	0.15%
23	0	0	1	0	0	0	0	0	1	0	0	1	1	0	1	0	0.08%
24	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0.05%
25	0	0	1	0	0	1	1	0	1	0	1	1	0	0	0	1	0.12%
26	0	0	0	0	0	0	0	0	1	0	0	2	2	1	0	0	0.10%
27	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0.07%
28	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0.05%
29	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0.07%
30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
31	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.03%
32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
33	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.03%
34	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.03%
35	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
36	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0.07%
37	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
38	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
39	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
40	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
41	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.03%
42	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
43	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
44	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
46	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
47	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
48	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02%
% of PERSISTENT DIRECTION	4.33%	3.85%	5.41%	5.75%	5.85%	7.14%	8.20%	7.29%	6.98%	9.39%	8.60%	6.41%	5.32%	5.31%	4.78%	5.39%	

Insert 9)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	80	64	78	116	103	120	102	119	103	152	127	89	67	65	62	88	**25.45%**
3	61	47	54	65	89	70	96	76	82	95	88	59	62	53	44	61	**18.27%**
4	35	24	47	38	48	53	84	58	64	72	74	61	43	51	37	46	**13.84%**
5	22	12	32	26	23	56	46	55	41	54	54	37	36	42	28	30	**9.85%**
6	19	22	19	32	27	25	34	44	27	34	36	27	20	24	25	20	**7.21%**
7	12	9	26	21	17	23	28	26	24	37	34	19	28	27	21	21	**6.18%**
8	12	9	14	10	13	17	26	24	11	30	20	16	13	18	16	18	**4.43%**
9	5	6	8	5	11	7	25	9	19	17	19	17	17	8	14	10	**3.27%**
10	3	6	7	7	5	16	9	6	4	14	20	11	5	6	13	7	**2.30%**
11	5	5	10	5	4	7	16	11	5	17	11	14	7	6	9	8	**2.32%**
12	3	3	8	5	5	8	9	2	8	11	6	8	1	7	4	6	**1.56%**
13	3	0	4	6	1	6	5	6	8	9	5	5	5	2	3	3	**1.18%**
14	0	2	4	3	2	6	3	0	7	5	5	5	0	0	3	3	**0.80%**
15	0	1	3	2	0	6	3	0	2	2	4	3	1	2	1	0	**0.50%**
16	1	1	3	2	0	2	4	1	2	4	4	3	2	2	2	1	**0.56%**
17	0	1	2	1	3	4	1	1	3	3	2	1	4	3	2	0	**0.51%**
18	0	1	1	2	2	3	0	1	3	3	3	1	1	2	0	1	**0.40%**
19	0	0	1	1	0	0	1	0	2	3	1	0	2	0	0	1	**0.20%**
20	0	0	1	0	0	1	0	2	0	0	2	3	0	0	1	0	**0.17%**
21	1	0	2	0	0	0	0	0	3	0	1	1	1	1	1	1	**0.20%**
22	0	0	1	1	0	0	0	0	1	3	1	0	2	0	0	0	**0.15%**
23	0	0	1	0	0	0	0	0	1	0	0	1	1	0	1	0	**0.08%**
24	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	**0.05%**
25	0	0	1	0	0	1	1	0	1	0	1	1	0	0	0	1	**0.12%**
26	0	0	0	0	0	0	0	0	1	0	0	2	2	1	0	0	**0.10%**
27	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	**0.07%**
28	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	**0.05%**
29	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	**0.07%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.02%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.02%**
34	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	**0.03%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	**0.05%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.02%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**4.34%**	**3.55%**	**5.42%**	**5.77%**	**5.87%**	**7.16%**	**8.22%**	**7.31%**	**7.01%**	**9.42%**	**8.62%**	**6.45%**	**5.34%**	**5.32%**	**4.79%**	**5.40%**	

Add Insert #10 here

Table 2.3-227 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction
2003-2007
10-15 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	19	14	16	26	38	39	20	21	10	51	48	22	14	18	12	17	27.94%
3	14	12	13	17	31	26	6	8	17	45	43	16	9	12	8	12	20.97%
4	8	7	5	12	27	20	5	3	16	20	28	8	6	8	7	6	13.50%
5	5	8	6	9	17	10	3	5	5	29	17	7	8	5	5	7	10.60%
6	5	7	1	3	9	9	1	3	5	12	17	6	2	6	3	2	6.60%
7	2	2	0	4	10	6	2	1	4	10	12	3	1	1	3	3	4.64%
8	2	1	1	9	2	0	1	0	2	5	7	4	1	2	1	2	2.90%
9	0	2	2	1	3	2	0	0	1	6	10	3	1	4	1	1	2.69%
10	4	1	0	1	2	3	0	0	1	7	4	1	4	2	0	0	2.18%
11	1	1	0	4	2	0	0	0	1	4	0	2	2	0	0	0	1.23%
12	1	3	3	3	2	0	0	0	2	2	5	0	1	2	1	0	1.81%
13	1	2	3	2	2	0	0	0	0	2	0	0	2	0	0	1	1.09%
14	1	2	3	1	2	0	0	0	0	3	2	0	0	1	1	0	1.16%
15	0	0	1	2	1	1	0	0	0	0	1	1	0	0	0	0	0.51%
16	1	1	0	0	1	0	0	0	1	3	0	0	0	0	0	0	0.51%
17	1	0	2	2	0	1	0	0	1	1	1	1	0	0	1	0	0.80%
18	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0.15%
19	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07%
20	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0.15%
21	0	0	1	0	0	0	1	0	0	1	2	0	0	0	0	0	0.36%
22	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.07%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.07%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	4.72%	4.57%	4.21%	7.11%	10.81%	8.49%	2.83%	2.98%	4.79%	14.66%	14.30%	5.37%	3.85%	4.50%	3.12%	3.70%	

Insert 10)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	19	14	16	26	38	39	20	21	10	51	48	22	14	18	12	17	**27.92%**
3	14	12	13	17	31	26	6	8	17	45	43	16	9	12	8	12	**20.96%**
4	8	7	5	12	27	20	5	3	16	20	28	8	6	8	7	6	**13.49%**
5	5	8	6	9	17	10	3	5	5	29	17	7	8	5	5	7	**10.59%**
6	5	7	1	3	9	9	1	3	5	12	17	6	2	6	3	2	**6.60%**
7	2	2	0	4	10	6	2	1	4	10	12	3	1	1	3	3	**4.64%**
8	2	1	1	9	2	0	1	0	2	5	7	4	1	2	1	2	**2.90%**
9	0	2	2	1	3	2	0	0	1	6	10	3	1	4	1	1	**2.68%**
10	4	1	0	1	2	3	0	0	1	7	4	1	4	2	0	0	**2.18%**
11	1	1	0	4	2	0	0	0	1	4	0	2	2	0	0	0	**1.23%**
12	1	3	3	3	2	0	0	0	2	2	5	0	1	2	1	0	**1.81%**
13	1	2	3	2	2	0	0	0	0	2	0	0	2	0	0	1	**1.09%**
14	1	2	3	1	2	0	0	0	0	3	2	0	0	1	1	0	**1.16%**
15	0	0	1	2	1	1	0	0	0	0	1	1	0	0	0	0	**0.51%**
16	1	1	0	0	1	0	0	0	1	3	0	0	0	0	0	0	**0.51%**
17	1	0	2	2	0	1	0	0	1	1	1	1	0	0	1	0	**0.80%**
18	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	**0.15%**
19	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.07%**
20	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**0.15%**
21	0	0	1	0	0	0	1	0	0	1	2	0	0	0	0	0	**0.36%**
22	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**0.07%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**0.07%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**0.07%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**4.71%**	**4.57%**	**4.21%**	**7.11%**	**10.80%**	**8.48%**	**2.83%**	**2.97%**	**4.79%**	**14.65%**	**14.36%**	**5.37%**	**3.84%**	**4.50%**	**3.12%**	**3.70%**	

Add Insert #11 here

Table 2.3-228 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction
2003-2007
15-20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	4	3	1	7	17	7	0	2	2	10	12	2	2	3	1	3	40.21%
3	2	0	0	2	12	3	0	1	0	5	11	2	1	1	1	2	22.75%
4	1	0	0	1	6	1	1	0	0	6	8	0	0	0	0	2	13.76%
5	3	4	1	3	2	0	0	0	0	1	3	1	0	0	0	0	9.52%
6	0	1	0	0	2	1	0	0	0	1	6	0	0	0	0	0	5.82%
7	0	2	0	1	0	0	0	0	0	3	1	0	0	0	0	0	3.70%
8	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1.06%
9	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1.06%
10	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.53%
11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.53%
12	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1.06%
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	5.29%	5.82%	1.06%	8.47%	21.16%	6.35%	0.53%	1.59%	1.06%	14.29%	23.28%	2.65%	1.59%	2.12%	1.06%	3.70%	

Insert 11)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	4	3	1	7	17	7	0	2	2	10	12	2	2	3	1	3	**40.21%**
3	2	0	0	2	12	3	0	1	0	5	11	2	1	1	1	2	**22.75%**
4	1	0	0	1	6	1	1	0	0	6	8	0	0	0	0	2	**13.76%**
5	3	4	1	3	2	0	0	0	0	1	3	1	0	0	0	0	**9.52%**
6	0	1	0	0	2	1	0	0	0	1	6	0	0	0	0	0	**5.82%**
7	0	2	0	1	0	0	0	0	0	3	1	0	0	0	0	0	**3.70%**
8	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	**1.06%**
9	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1.06%**
10	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**0.53%**
11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**0.53%**
12	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	**1.06%**
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**5.29%**	**5.82%**	**1.06%**	**8.47%**	**21.16%**	**6.35%**	**0.53%**	**1.59%**	**1.06%**	**14.29%**	**23.28%**	**2.65%**	**1.59%**	**2.12%**	**1.06%**	**3.70%**	

Add Insert #12 here

Table 2.3-229 Wind Direction Persistence Summaries - Fermi Site 10-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction

2003-2007

>20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	0	0	0	1	2	0	0	0	0	1	3	0	1	0	0	0	61.54%
3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	15.38%
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	7.69%
6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	7.69%
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
9	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	7.69%
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	0.00%	0.00%	0.00%	7.69%	23.08%	0.00%	0.00%	0.00%	0.00%	15.38%	46.15%	0.00%	7.69%	0.00%	0.00%	0.00%	

Insert 12)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	0	0	0	1	2	0	0	0	0	1	3	0	1	0	0	0	**61.54%**
3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	**15.38%**
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**7.69%**
6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**7.69%**
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
9	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**7.69%**
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**0.00%**	**0.00%**	**0.00%**	**7.69%**	**23.08%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**15.38%**	**46.15%**	**0.00%**	**7.69%**	**0.00%**	**0.00%**	**0.00%**	

Add Insert #13 here

Table 2.3-230 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction
2003-2007
All Wind Speeds

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	138	158	174	202	209	201	192	217	242	267	320	264	290	283	212	163	40.29%
3	70	84	108	96	105	104	116	121	126	145	176	165	162	127	128	82	21.85%
4	38	38	60	59	44	59	41	62	86	107	87	88	112	87	54	48	12.21%
5	29	27	37	35	29	49	32	38	51	75	62	60	53	60	56	36	8.32%
6	6	13	21	22	25	36	22	14	19	46	46	38	32	38	24	21	4.83%
7	10	18	18	15	23	21	20	12	21	19	33	30	28	33	17	13	3.78%
8	8	12	10	11	16	13	8	5	11	23	29	29	18	18	15	12	2.72%
9	3	4	7	9	4	13	6	4	6	18	13	12	12	8	9	8	1.55%
10	3	1	8	4	6	5	2	6	4	17	12	14	4	12	4	2	1.19%
11	1	1	5	3	3	0	4	2	4	6	9	11	9	4	3	2	0.76%
12	4	0	2	6	4	2	2	0	2	9	4	6	2	4	2	6	0.63%
13	2	0	1	4	2	1	0	1	0	2	3	4	6	5	1	2	0.39%
14	0	0	2	1	1	4	1	0	2	4	2	1	3	2	1	2	0.30%
15	0	2	2	1	1	0	0	0	4	3	2	1	3	1	2	1	0.26%
16	0	0	2	1	0	0	0	0	1	1	2	4	2	1	1	2	0.19%
17	0	0	0	0	1	0	0	0	2	2	3	3	0	3	0	2	0.18%
18	0	0	1	0	1	1	0	0	0	2	2	1	0	0	0	0	0.09%
19	0	1	2	1	1	0	0	0	1	1	2	4	1	0	2	0	0.18%
20	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0.05%
21	0	0	0	2	1	0	0	0	0	0	1	1	0	1	0	0	0.07%
22	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0.05%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.01%
24	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0.02%
25	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.02%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.01%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0.02%
32	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.01%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.01%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.01%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.01%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	3.56%	4.10%	5.26%	5.38%	5.44%	5.81%	5.09%	5.50%	6.65%	8.54%	9.27%	8.46%	8.43%	7.86%	6.06%	4.59%	
AVE PERSISTENT HOURS	3.51	3.51	3.98	3.84	3.84	3.81	3.47	3.27	3.69	4.20	4.13	4.41	3.85	3.96	3.72	3.93	

THE LONGEST PERSISTENT WIND WAS FROM THE WEST BY SOUTHWEST AND LASTED 41 HOURS

Insert 13)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	145	146	179	199	193	199	202	213	234	263	304	279	291	297	226	195	**40.38%**
3	66	80	99	97	101	106	116	117	130	133	173	173	165	135	135	96	**21.77%**
4	37	39	59	63	40	50	49	59	71	121	87	89	106	93	60	56	**12.22%**
5	29	28	36	32	32	44	39	33	50	64	69	66	51	63	51	48	**8.33%**
6	6	12	20	22	24	34	26	12	19	40	46	42	33	39	24	25	**4.80%**
7	10	16	20	17	18	25	20	12	19	21	30	27	35	27	22	16	**3.79%**
8	11	7	13	10	18	14	7	4	9	26	26	29	19	19	16	13	**2.73%**
9	4	3	7	7	4	15	5	4	6	19	11	13	9	10	10	8	**1.53%**
10	1	3	8	3	7	4	3	6	2	16	12	15	5	10	6	3	**1.18%**
11	1	0	5	4	2	1	3	3	1	8	8	13	8	5	3	2	**0.76%**
12	3	1	2	3	7	2	1	1	1	9	5	5	2	3	3	6	**0.61%**
13	2	0	1	2	4	1	0	1	0	2	1	6	5	6	1	2	**0.39%**
14	1	0	2	1	1	3	2	0	1	3	3	2	1	4	1	2	**0.31%**
15	0	0	4	1	1	0	0	0	1	6	0	2	3	2	2	1	**0.26%**
16	0	0	2	1	0	0	0	0	0	2	2	2	3	2	1	2	**0.19%**
17	0	0	0	0	1	0	0	0	0	3	4	2	1	2	1	2	**0.18%**
18	0	0	1	0	0	2	0	0	0	1	3	1	0	0	0	0	**0.09%**
19	0	0	2	1	2	0	0	0	1	0	1	5	2	0	2	0	**0.18%**
20	0	0	0	0	0	0	0	0	0	1	0	3	1	0	0	0	**0.06%**
21	0	0	0	0	3	0	0	0	0	0	0	2	0	1	0	0	**0.07%**
22	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	**0.05%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**0.01%**
24	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	**0.02%**
25	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	**0.02%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**0.01%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	**0.02%**
32	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.01%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.01%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.01%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**3.58%**	**3.79%**	**5.22%**	**5.24%**	**5.20%**	**5.66%**	**5.36%**	**5.27%**	**6.17%**	**8.38%**	**8.93%**	**8.85%**	**8.39%**	**8.16%**	**6.39%**	**5.40%**	
AVE PERSISTENT HOURS	**3.51**	**3.39**	**4.06**	**3.66**	**4.06**	**3.86**	**3.47**	**3.27**	**3.41**	**4.29**	**4.03**	**4.45**	**3.87**	**3.95**	**3.77**	**3.86**	

THE LONGEST PERSISTENT WIND WAS FROM THE WEST-SOUTHWEST AND LASTED 36 HOURS

Add Insert #14 here

Table 2.3-231 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

0-5 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	10	22	20	13	12	15	10	18	16	10	15	12	5	21	5	16	81.48%
3	2	1	3	3	2	3	1	6	2	1	1	1	0	1	4	3	12.59%
4	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	1	1.85%
5	1	0	2	0	0	0	0	0	1	1	0	0	0	1	0	0	2.22%
6	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1.11%
7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.37%
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.37%
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	4.81%	8.52%	10.37%	6.67%	5.56%	7.04%	4.07%	8.89%	7.04%	4.81%	5.93%	4.81%	1.85%	8.89%	3.33%	7.41%	

Insert 14)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	10	22	20	13	12	15	10	18	16	10	15	12	5	21	5	16	**81.48%**
3	2	1	3	3	2	3	1	6	2	1	1	1	0	1	4	3	**12.59%**
4	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	1	**1.85%**
5	1	0	2	0	0	0	0	0	1	1	0	0	0	1	0	0	**2.22%**
6	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	**1.11%**
7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**0.37%**
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
10	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.37%**
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**4.81%**	**8.52%**	**10.37%**	**6.67%**	**5.56%**	**7.04%**	**4.07%**	**8.89%**	**7.04%**	**4.81%**	**5.93%**	**4.81%**	**1.85%**	**8.89%**	**3.33%**	**7.41%**	

Add Insert #15 here

Table 2.3-232 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

5-10 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	61	54	110	89	87	104	135	118	108	105	97	83	107	102	94	106	62.42%
3	13	24	52	31	21	39	48	55	50	27	30	29	40	36	27	39	22.45%
4	5	9	20	14	4	21	18	22	21	17	12	10	6	18	11	9	8.68%
5	4	6	11	8	5	11	13	12	5	3	4	2	5	0	5	6	4.00%
6	1	0	5	1	0	2	8	3	1	2	1	2	0	0	1	2	1.16%
7	0	0	0	0	0	4	2	1	1	2	1	0	1	0	2	1	0.60%
8	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0.12%
9	1	0	0	1	0	1	0	0	0	1	0	1	0	1	1	1	0.32%
10	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0.12%
11	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.08%
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
13	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.04%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	3.40%	5.76%	8.00%	5.76%	4.68%	7.28%	9.00%	8.48%	7.48%	6.28%	5.80%	5.12%	6.36%	6.32%	5.64%	6.60%	

Insert 15)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	61	54	110	89	87	104	135	118	108	105	97	83	107	102	94	106	**62.42%**
3	13	24	52	31	21	39	48	55	50	27	30	29	40	36	27	39	**22.45%**
4	5	9	20	14	4	21	18	22	21	17	12	10	6	18	11	9	**8.68%**
5	4	6	11	8	5	11	13	12	5	3	4	2	5	0	5	6	**4.00%**
6	1	0	5	1	0	2	8	3	1	2	1	2	0	0	1	2	**1.16%**
7	0	0	0	0	0	4	2	1	1	2	1	0	1	0	2	1	**0.60%**
8	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	**0.12%**
9	1	0	0	1	0	1	0	0	0	1	0	1	0	1	1	1	**0.32%**
10	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	**0.12%**
11	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	**0.08%**
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
13	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**0.04%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**3.40%**	**3.76%**	**8.00%**	**5.76%**	**4.68%**	**7.28%**	**9.00%**	**8.48%**	**7.48%**	**6.28%**	**5.80%**	**5.12%**	**6.36%**	**6.32%**	**5.64%**	**6.60%**	

Add Insert #16 here

Table 2.3-233 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

10-15 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	75	58	93	92	95	99	98	77	104	159	172	185	160	180	142	117	52.02%
3	33	32	40	34	36	41	30	32	35	69	92	104	82	67	66	61	23.31%
4	18	9	22	21	13	14	22	12	19	37	32	52	45	34	34	22	11.08%
5	6	7	15	13	7	6	6	9	10	20	28	20	20	31	18	24	6.55%
6	2	1	10	7	2	8	6	3	11	11	8	14	13	7	5	5	3.08%
7	2	2	3	1	2	7	3	2	0	7	4	9	5	3	6	5	1.66%
8	2	2	6	2	1	1	1	1	0	7	4	5	1	5	3	6	1.28%
9	0	0	1	0	0	0	0	0	1	1	2	1	2	1	2	0	0.30%
10	0	0	0	1	0	0	0	1	0	1	3	1	2	0	1	1	0.30%
11	0	0	1	0	0	0	0	0	0	0	1	2	1	1	0	0	0.16%
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.08%
13	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0.08%
14	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.03%
15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0.05%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	3.77%	3.03%	5.24%	4.67%	4.26%	4.80%	4.53%	3.74%	4.91%	8.54%	9.44%	10.78%	9.06%	9.03%	7.59%	6.60%	

Insert 16)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	75	58	93	92	95	99	98	77	104	159	172	185	160	180	142	117	**52.02%**
3	33	32	40	34	36	41	30	32	35	69	92	104	82	67	66	61	**23.31%**
4	18	9	22	21	13	14	22	12	19	37	32	52	45	34	34	22	**11.08%**
5	6	7	15	13	7	6	6	9	10	20	28	20	20	31	18	24	**6.55%**
6	2	1	10	7	2	8	6	3	11	11	8	14	13	7	5	5	**3.08%**
7	2	2	3	1	2	7	3	2	0	7	4	9	5	3	6	5	**1.66%**
8	2	2	6	2	1	1	1	1	0	7	4	5	1	5	3	6	**1.28%**
9	0	0	1	0	0	0	0	0	1	1	2	1	2	1	2	0	**0.30%**
10	0	0	0	1	0	0	0	1	0	1	3	1	2	0	1	1	**0.30%**
11	0	0	1	0	0	0	0	0	0	0	1	2	1	1	0	0	**0.16%**
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	**0.08%**
13	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	**0.08%**
14	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**0.03%**
15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	**0.05%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**3.77%**	**3.03%**	**5.24%**	**4.67%**	**4.26%**	**4.80%**	**4.53%**	**3.74%**	**4.91%**	**8.54%**	**9.44%**	**10.78%**	**9.06%**	**9.03%**	**7.59%**	**6.60%**	

Add Insert #17 here

Table 2.3-234 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction

2003-2007

15-20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	33	30	31	44	67	55	36	31	45	117	116	95	81	70	61	32	49.61%
3	11	18	17	18	26	26	15	17	29	53	53	63	44	39	24	5	24.07%
4	5	7	10	15	14	14	5	2	9	29	18	30	22	15	10	8	11.19%
5	1	6	8	1	9	9	4	2	7	18	16	22	9	18	5	4	7.30%
6	1	1	2	0	3	4	1	2	4	5	5	8	11	3	5	4	3.10%
7	2	0	3	2	3	2	0	0	1	6	6	8	1	2	2	1	2.05%
8	1	1	1	1	0	1	0	1	0	4	1	3	1	2	1	1	1.00%
9	0	0	0	0	0	0	0	0	0	2	1	1	3	4	0	2	0.68%
10	0	0	1	0	3	0	0	0	0	2	0	2	1	0	0	0	0.47%
11	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0.11%
12	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.05%
13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.05%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0.11%
16	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0.16%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.05%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	2.84%	3.31%	3.84%	4.26%	6.57%	5.83%	3.21%	2.89%	4.99%	12.45%	11.40%	12.51%	9.20%	8.04%	5.68%	3.00%	

Insert 17)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	33	30	31	44	67	55	36	31	45	117	116	96	81	70	61	32	**49.68%**
3	11	18	17	18	26	26	15	17	29	53	53	63	44	39	24	5	**24.08%**
4	5	7	10	15	14	14	5	2	9	29	18	30	22	15	10	8	**11.20%**
5	1	6	8	1	9	9	4	2	7	18	16	22	9	18	5	4	**7.31%**
6	1	1	2	0	3	4	1	2	4	5	5	8	11	3	5	4	**3.10%**
7	2	0	3	2	3	2	0	0	1	6	6	8	1	2	2	1	**2.05%**
8	1	1	1	1	0	1	0	1	0	4	1	3	1	2	1	1	**1.00%**
9	0	0	0	0	0	0	0	0	0	2	1	1	3	3	0	2	**0.63%**
10	0	0	1	0	3	0	0	0	0	2	0	2	1	0	0	0	**0.47%**
11	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	**0.11%**
12	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**0.05%**
13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**0.05%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	**0.11%**
16	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	**0.16%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**2.84%**	**3.31%**	**3.84%**	**4.26%**	**6.57%**	**5.84%**	**3.21%**	**2.89%**	**4.99%**	**12.46%**	**11.41%**	**12.51%**	**9.20%**	**7.99%**	**5.68%**	**3.00%**	

Add Insert #18 here

Table 2.3-235 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 22.5° Direction
2003-2007
>20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	7	7	9	14	37	20	9	9	16	47	48	36	34	33	14	10	49.86%
3	5	3	1	9	14	10	3	3	8	27	17	26	13	23	8	5	24.93%
4	2	2	2	2	9	1	3	0	6	12	11	5	10	3	6	5	11.25%
5	2	1	0	5	6	1	0	0	1	3	7	7	5	4	3	0	6.41%
6	1	0	0	0	3	1	0	0	0	3	5	2	1	0	2	1	2.71%
7	0	0	0	1	0	1	0	0	0	2	1	2	0	0	0	1	1.14%
8	0	0	0	1	1	0	0	0	0	3	2	2	0	3	1	1	1.99%
9	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0.28%
10	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0	0.57%
11	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0.43%
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
14	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0.28%
15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.14%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	2.42%	1.85%	1.85%	4.56%	9.97%	4.84%	2.14%	1.71%	4.56%	13.82%	13.53%	11.97%	8.97%	9.54%	4.99%	3.28%	

Insert 18)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	7	7	9	14	37	20	9	9	16	47	48	36	34	33	14	10	**49.86%**
3	5	3	1	9	14	10	3	3	8	27	17	26	13	23	8	5	**24.93%**
4	2	2	2	2	9	1	3	0	6	12	11	5	10	3	6	5	**11.25%**
5	2	1	0	5	6	1	0	0	1	3	7	7	5	4	3	0	**6.41%**
6	1	0	0	0	3	1	0	0	0	3	5	2	1	0	2	1	**2.71%**
7	0	0	0	1	0	1	0	0	0	2	1	2	0	0	0	1	**1.14%**
8	0	0	0	1	1	0	0	0	0	3	2	2	0	3	1	1	**1.99%**
9	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	**0.28%**
10	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0	**0.57%**
11	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	**0.43%**
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
14	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	**0.28%**
15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.14%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**2.42%**	**1.85%**	**1.85%**	**4.56%**	**9.97%**	**4.84%**	**2.14%**	**1.71%**	**4.56%**	**13.82%**	**13.53%**	**11.97%**	**8.97%**	**9.54%**	**4.99%**	**3.28%**	

Add Insert #19 here

Table 2.3-236 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction
2003-2007
All Wind Speeds

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	83	85	76	96	104	114	99	108	103	134	99	113	127	102	74	97	17.84%
3	58	54	59	83	73	75	86	89	94	90	77	106	82	68	73	70	13.67%
4	34	24	31	64	45	45	61	80	83	72	71	70	65	62	58	52	10.14%
5	40	39	40	42	33	43	47	57	59	67	59	60	50	65	40	38	8.61%
6	33	23	38	27	18	27	34	48	44	62	44	41	42	40	45	34	6.63%
7	23	25	23	26	27	30	26	33	37	37	43	40	41	29	38	30	5.62%
8	12	16	19	24	18	28	26	24	30	34	34	35	29	31	35	16	4.54%
9	13	16	24	14	25	34	24	32	21	22	22	23	26	29	25	19	4.08%
10	11	14	12	13	12	23	25	19	18	28	28	31	14	17	23	14	3.34%
11	21	12	20	18	17	10	18	16	21	19	20	17	25	18	15	9	3.05%
12	14	8	11	7	8	19	11	21	15	25	18	21	13	22	18	3	2.61%
13	10	6	13	12	13	11	11	11	19	16	12	26	17	16	11	15	2.42%
14	3	13	10	5	15	12	21	12	12	14	12	19	17	13	7	12	2.18%
15	4	4	3	6	8	7	13	9	8	11	16	11	9	13	11	12	1.60%
16	0	6	10	8	4	13	9	6	9	11	11	11	6	9	5	12	1.44%
17	3	9	5	9	8	10	5	6	5	13	6	10	12	14	11	3	1.43%
18	5	6	8	4	3	6	5	4	12	9	10	10	14	9	10	6	1.34%
19	0	5	3	8	3	4	3	2	9	7	6	4	8	9	6	11	0.97%
20	1	3	4	7	3	2	6	2	3	3	7	8	10	7	5	7	0.86%
21	1	3	2	1	6	2	3	2	3	8	8	9	10	1	4	5	0.75%
22	1	3	3	3	10	2	0	2	4	6	10	6	3	8	5	1	0.74%
23	0	2	0	2	4	1	1	2	5	11	4	6	7	3	4	5	0.63%
24	2	1	4	1	4	2	2	1	5	5	8	3	1	5	3	1	0.53%
25	0	0	2	2	1	1	1	1	2	3	6	3	9	2	4	3	0.44%
26	3	1	2	2	2	1	0	2	5	6	4	8	5	5	7	3	0.62%
27	0	1	2	1	3	1	0	1	0	1	6	5	7	4	7	3	0.46%
28	0	1	2	1	3	4	3	1	1	4	2	5	6	3	3	1	0.44%
29	0	2	3	2	2	1	0	0	1	1	2	2	1	4	2	2	0.28%
30	2	1	2	0	1	1	0	0	0	0	3	5	4	2	4	1	0.29%
31	1	0	1	3	3	0	0	1	0	2	5	2	3	3	2	1	0.30%
32	1	1	2	1	1	1	0	0	2	2	6	1	7	5	1	0	0.34%
33	0	0	0	1	1	1	0	0	1	3	3	4	2	6	2	0	0.27%
34	0	1	1	0	0	0	0	0	2	3	6	3	1	2	1	0	0.22%
35	0	0	0	0	0	1	0	0	1	1	0	0	1	2	0	0	0.07%
36	0	0	1	1	1	0	0	0	1	0	2	2	1	2	3	1	0.17%
37	0	0	0	1	0	2	0	0	1	1	0	3	2	2	0	0	0.13%
38	0	0	1	1	2	2	0	0	1	2	2	0	0	0	0	1	0.13%
39	0	0	0	3	0	0	0	0	0	1	2	3	1	2	1	1	0.15%
40	1	1	1	0	1	2	0	0	0	0	2	3	1	1	0	0	0.14%
41	0	1	1	2	0	0	0	0	0	1	2	0	0	1	0	0	0.09%
42	0	0	0	0	1	0	0	0	0	0	1	1	3	0	0	1	0.08%
43	0	0	1	1	1	0	0	0	0	0	1	4	0	0	0	0	0.09%
44	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0.04%
45	0	0	0	1	0	0	0	0	0	0	2	3	1	0	1	0	0.09%
46	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0.04%
47	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0.04%
48	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0.04%
% of PERSISTENT DIRECTION	4.21%	4.28%	4.88%	5.58%	5.36%	5.96%	5.97%	6.54%	7.05%	8.15%	7.55%	8.16%	7.59%	7.06%	6.23%	5.42%	
AVE PERSISTENT HOURS	6.64	7.55	8.39	7.85	8.28	7.64	6.84	6.45	7.60	8.26	9.64	9.29	9.22	9.34	8.86	7.83	

THE LONGEST PERSISTENT WIND WAS FROM THE WEST BY SOUTHWEST AND LASTED 158 HOURS

Insert 19)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	87	85	76	96	104	114	99	108	103	134	99	114	127	102	74	97	**17.75%**
3	59	54	59	83	73	75	86	89	94	90	77	106	82	68	73	70	**13.58%**
4	34	24	31	64	45	45	61	80	83	72	71	70	65	62	58	52	**10.06%**
5	39	39	40	43	33	43	47	57	59	67	59	60	50	65	40	38	**8.54%**
6	33	23	39	27	18	27	34	48	44	62	45	41	42	40	45	34	**6.60%**
7	24	25	23	26	27	30	26	33	37	37	43	40	41	29	38	30	**5.58%**
8	13	17	19	24	18	28	26	24	30	34	34	35	29	31	35	16	**4.53%**
9	13	16	24	14	25	34	24	32	21	22	22	23	26	28	25	19	**4.04%**
10	11	14	12	13	12	23	25	19	18	28	28	31	14	17	23	14	**3.31%**
11	21	12	20	18	17	10	18	16	21	19	20	17	25	18	15	9	**3.03%**
12	14	8	11	7	8	19	11	21	15	25	18	21	15	22	18	3	**2.59%**
13	10	6	13	12	13	11	11	11	19	16	12	26	17	16	11	15	**2.40%**
14	3	13	10	5	15	12	21	12	12	14	12	19	17	13	7	12	**2.16%**
15	4	4	3	6	8	7	13	9	8	11	16	11	9	13	11	12	**1.59%**
16	0	6	10	8	4	13	9	6	9	11	11	11	6	9	5	12	**1.43%**
17	3	9	5	9	8	10	5	6	5	12	6	10	12	14	11	3	**1.40%**
18	5	6	8	4	3	6	5	4	12	10	10	10	15	9	10	6	**1.35%**
19	0	5	3	8	3	4	3	2	9	7	6	4	8	9	6	11	**0.97%**
20	1	3	4	7	3	2	6	2	3	3	7	8	10	7	5	7	**0.86%**
21	1	3	2	1	6	2	3	2	3	8	8	9	10	1	4	5	**0.75%**
22	1	3	3	3	10	2	0	2	4	6	10	6	3	8	5	1	**0.73%**
23	0	2	0	2	4	1	1	2	5	11	4	6	7	3	4	5	**0.63%**
24	2	1	4	1	4	2	2	1	5	5	8	3	1	5	3	1	**0.53%**
25	0	0	2	2	1	1	1	1	2	3	6	3	9	2	4	3	**0.44%**
26	3	1	2	2	2	1	0	2	5	6	4	8	4	5	7	3	**0.60%**
27	0	1	2	1	3	1	0	1	0	1	6	5	7	4	7	3	**0.46%**
28	0	1	2	1	3	4	3	1	1	4	2	5	6	3	3	1	**0.44%**
29	0	2	3	2	2	1	0	0	1	1	2	2	1	4	2	2	**0.27%**
30	2	1	2	0	1	1	0	0	0	0	3	5	4	2	4	1	**0.29%**
31	1	0	1	3	3	0	0	1	0	2	5	2	3	3	2	1	**0.30%**
32	1	1	2	1	1	1	0	0	2	2	6	1	7	5	1	0	**0.34%**
33	0	0	0	1	1	1	0	0	1	3	3	4	2	6	2	0	**0.26%**
34	0	1	1	0	0	0	0	0	2	3	6	3	1	2	1	0	**0.22%**
35	0	0	0	0	0	1	0	0	1	1	0	0	1	2	0	0	**0.07%**
36	0	0	1	1	1	0	0	0	1	0	2	2	1	2	3	1	**0.16%**
37	0	0	0	1	0	2	0	0	1	1	0	3	2	2	0	0	**0.13%**
38	0	0	1	1	2	2	0	0	1	2	2	0	0	0	0	1	**0.13%**
39	0	0	0	3	0	0	0	0	0	1	2	3	1	2	1	1	**0.15%**
40	1	1	1	0	1	2	0	0	0	0	2	3	1	1	0	0	**0.14%**
41	0	1	1	2	0	0	0	0	0	1	2	0	0	1	0	0	**0.09%**
42	0	0	0	0	1	0	0	0	0	0	1	0	3	0	0	1	**0.07%**
43	0	0	1	1	1	0	0	0	0	0	1	4	0	0	0	0	**0.09%**
44	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	**0.04%**
45	0	0	0	1	0	0	0	0	0	0	1	3	1	0	1	0	**0.08%**
46	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	**0.04%**
47	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	**0.04%**
48+	3	2	5	4	3	0	1	0	1	7	15	12	11	3	2	0	**0.76%**
% of PERSISTENT DIRECTION	**4.27%**	**4.28%**	**4.90%**	**5.58%**	**5.35%**	**5.91%**	**5.93%**	**6.49%**	**7.01%**	**8.16%**	**7.65%**	**8.21%**	**7.64%**	**7.03%**	**6.21%**	**5.37%**	
AVE PERSISTENT HOURS	**6.80**	**7.76**	**8.82**	**8.08**	**8.53**	**7.64**	**6.92**	**6.45**	**7.66**	**8.64**	**10.41**	**9.81**	**9.77**	**9.53**	**8.99**	**7.83**	

THE LONGEST PERSISTENT WIND WAS FROM THE WEST-SOUTHWEST AND LASTED 158 HOURS

Add Insert #20 here

Table 2.3-237 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction
2003-2007
0-5 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	20	26	25	23	20	23	18	28	24	14	21	25	20	25	15	25	65.31%
3	7	12	12	5	3	6	6	7	9	5	7	4	4	5	10	10	20.78%
4	2	2	2	0	2	0	6	3	1	1	2	1	0	2	1	4	5.38%
5	1	2	3	2	0	1	1	1	1	2	2	1	2	3	2	0	4.45%
6	0	0	2	3	0	2	2	1	0	1	0	0	0	0	1	0	2.23%
7	0	0	2	1	1	1	0	0	0	0	0	0	0	0	1	0	1.11%
8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.19%
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
10	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.37%
11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.19%
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	5.57%	8.16%	8.72%	6.31%	4.82%	6.12%	6.12%	7.42%	6.49%	4.27%	5.94%	5.75%	4.82%	6.68%	5.57%	7.24%	

Insert 20)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	20	26	25	23	20	23	18	28	24	14	21	25	20	25	15	25	**65.31%**
3	7	12	12	5	3	6	6	7	9	5	7	4	4	5	10	10	**20.78%**
4	2	2	2	0	2	0	6	3	1	1	2	1	0	2	1	4	**5.38%**
5	1	2	3	2	0	1	1	1	1	2	2	1	2	3	2	0	**4.45%**
6	0	0	2	3	0	2	2	1	0	1	0	0	0	0	1	0	**2.23%**
7	0	0	2	1	1	1	0	0	0	0	0	0	0	0	1	0	**1.11%**
8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**0.19%**
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
10	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.37%**
11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.19%**
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**5.57%**	**8.16%**	**8.72%**	**6.31%**	**4.82%**	**6.12%**	**6.12%**	**7.42%**	**6.49%**	**4.27%**	**5.94%**	**5.75%**	**4.82%**	**6.68%**	**5.57%**	**7.24%**	

Add Insert #21 here

Table 2.3-238 **Wind Direction Persistence Summaries - Fermi Site 60-m Level** [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction

2003-2007

5-10 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	61	89	94	101	98	111	112	123	99	136	99	107	127	107	110	101	43.84%
3	37	45	72	51	51	53	80	65	77	55	68	49	55	57	49	65	24.31%
4	19	23	32	30	21	41	31	49	54	29	23	29	23	23	33	23	12.64%
5	9	13	30	16	23	21	21	23	18	19	18	23	14	14	18	14	7.69%
6	7	8	15	6	5	12	29	20	4	5	10	10	5	11	7	9	4.27%
7	0	1	6	6	2	12	10	10	10	5	4	3	7	9	5	6	2.51%
8	1	4	5	6	3	3	7	7	5	2	4	2	4	4	3	3	1.65%
9	2	1	3	2	0	5	5	4	1	1	1	2	2	1	3	2	0.92%
10	1	0	1	6	1	3	4	6	1	2	0	0	2	3	2	2	0.89%
11	0	1	3	0	1	2	3	0	1	0	0	1	1	1	1	3	0.47%
12	0	1	2	0	0	2	5	2	2	0	0	0	2	0	0	0	0.42%
13	0	0	0	0	0	1	1	0	1	0	0	0	0	2	1	0	0.16%
14	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0.08%
15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.03%
16	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0.05%
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
18	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.05%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	3.59%	4.89%	6.94%	5.86%	5.37%	6.96%	8.09%	8.11%	7.17%	6.67%	5.94%	5.94%	6.36%	6.07%	6.07%	5.97%	

Insert 21)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	61	89	94	101	98	111	112	123	99	136	99	107	127	107	110	101	**43.84%**
3	37	45	72	51	51	53	80	65	77	55	68	49	55	57	49	65	**24.31%**
4	19	23	32	30	21	41	31	49	54	29	23	29	23	23	33	23	**12.64%**
5	9	13	30	16	23	21	21	23	18	19	18	23	14	14	18	14	**7.69%**
6	7	8	15	6	5	12	29	20	4	5	10	10	5	11	7	9	**4.27%**
7	0	1	6	6	2	12	10	10	10	5	4	3	7	9	5	6	**2.51%**
8	1	4	5	6	3	3	7	7	5	2	4	2	4	4	3	3	**1.65%**
9	2	1	3	2	0	5	5	4	1	1	1	2	2	1	3	2	**0.92%**
10	1	0	1	6	1	3	4	6	1	2	0	0	2	3	2	2	**0.89%**
11	0	1	3	0	1	2	3	0	1	0	0	1	1	1	1	3	**0.47%**
12	0	1	2	0	0	2	5	2	2	0	0	0	2	0	0	0	**0.42%**
13	0	0	0	0	0	1	1	0	1	0	0	0	0	2	1	0	**0.16%**
14	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	**0.08%**
15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**0.03%**
16	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	**0.05%**
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
18	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	**0.05%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.03%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**3.59%**	**4.89%**	**6.94%**	**5.86%**	**5.37%**	**6.96%**	**8.09%**	**8.11%**	**7.17%**	**6.67%**	**5.94%**	**5.94%**	**6.36%**	**6.07%**	**6.07%**	**5.97%**	

Add Insert #22 here

Table 2.3-239 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction

2003-2007

10-15 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	44	51	80	92	90	91	79	78	99	146	150	154	147	140	112	99	35.81%
3	34	33	50	48	54	70	44	48	44	81	92	115	87	73	67	52	21.50%
4	22	28	31	34	29	24	33	25	45	47	63	67	56	63	41	38	13.77%
5	17	15	22	21	11	15	19	20	17	32	42	45	43	52	40	33	9.62%
6	10	6	13	8	8	10	11	11	17	25	22	25	30	28	32	16	5.90%
7	5	5	14	5	5	7	6	5	7	10	13	26	19	18	19	11	3.79%
8	7	2	6	6	3	5	6	5	7	15	15	17	10	16	10	12	3.08%
9	3	7	2	3	2	3	1	1	2	9	2	10	9	7	9	9	1.71%
10	0	0	4	3	1	2	2	2	5	6	18	9	11	11	4	6	1.82%
11	2	1	5	2	2	1	0	2	1	5	3	2	7	6	2	0	0.89%
12	0	1	0	0	0	3	1	1	3	3	1	3	4	2	2	5	0.63%
13	1	0	2	1	0	0	0	0	0	3	3	1	2	3	3	2	0.46%
14	1	0	0	1	0	0	0	0	1	1	0	1	0	0	1	2	0.17%
15	0	0	0	0	1	0	0	0	0	0	3	2	1	0	0	0	0.15%
16	0	0	0	0	0	0	0	0	1	1	2	0	1	0	1	0	0.13%
17	0	0	1	1	0	0	0	0	2	0	1	2	0	1	1	0	0.20%
18	0	1	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0.09%
19	0	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	0.09%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.02%
21	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0.07%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0.07%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.02%
32	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.02%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	3.16%	3.12%	5.03%	4.88%	4.47%	5.01%	4.38%	4.29%	5.46%	8.35%	9.39%	10.45%	9.28%	9.10%	7.52%	6.11%	

Insert 22)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	44	51	80	92	90	91	79	78	99	146	150	154	147	140	112	99	**35.80%**
3	34	33	50	48	54	70	44	48	44	81	92	115	87	73	67	52	**21.50%**
4	22	22	31	34	29	24	33	25	45	47	63	67	56	63	41	33	**13.76%**
5	17	15	22	22	11	15	19	20	17	32	42	45	43	52	40	33	**9.64%**
6	10	6	14	8	8	10	11	11	17	25	22	25	30	28	32	16	**5.92%**
7	5	5	14	5	5	7	6	5	7	10	13	26	19	18	19	11	**3.79%**
8	7	2	6	6	3	5	6	5	7	15	15	17	10	16	10	12	**3.08%**
9	3	7	2	3	2	3	1	1	2	9	2	10	9	7	9	9	**1.71%**
10	0	0	4	3	1	2	2	2	5	6	18	9	11	11	4	6	**1.82%**
11	2	1	5	2	2	1	0	2	1	5	3	2	7	6	2	0	**0.89%**
12	0	1	0	0	0	3	1	1	3	3	1	3	4	2	2	5	**0.63%**
13	1	0	2	1	0	0	0	0	0	3	3	1	2	3	3	2	**0.46%**
14	1	0	0	1	0	0	0	0	1	1	0	1	0	0	1	2	**0.17%**
15	0	0	0	0	1	0	0	0	0	0	3	2	1	0	0	0	**0.15%**
16	0	0	0	0	0	0	0	0	1	1	2	0	1	0	1	0	**0.13%**
17	0	0	1	1	0	0	0	0	2	0	1	2	0	1	1	0	**0.20%**
18	0	1	0	0	0	0	0	0	0	0	0	2	0	0	1	0	**0.09%**
19	0	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	**0.09%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0.02%**
21	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	**0.07%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	**0.07%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**0.02%**
32	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.02%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**3.16%**	**3.12%**	**5.05%**	**4.90%**	**4.46%**	**5.01%**	**4.38%**	**4.29%**	**5.46%**	**8.34%**	**9.38%**	**10.44%**	**9.27%**	**9.10%**	**7.52%**	**6.11%**	

Add Insert #23 here

Table 2.3-240 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction

2003-2007

15-20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	23	27	37	34	69	53	31	31	51	106	100	95	80	67	53	33	39.10%
3	15	16	20	32	30	28	21	22	26	62	53	57	49	42	27	9	22.36%
4	7	6	10	16	22	21	13	6	18	36	32	40	27	24	18	14	13.62%
5	3	7	9	5	14	14	7	4	12	26	26	19	16	19	9	9	8.74%
6	3	0	4	4	6	7	2	4	6	16	13	16	11	10	7	6	5.45%
7	3	2	3	6	4	5	0	0	5	11	11	12	10	2	6	0	3.51%
8	1	3	2	1	2	2	1	2	1	5	7	6	6	4	3	2	2.11%
9	5	0	0	0	2	1	0	0	4	1	2	3	4	4	1	2	1.27%
10	1	0	2	0	4	0	1	0	2	5	3	5	4	2	0	0	1.27%
11	0	1	0	0	0	1	0	0	1	3	1	4	1	2	1	0	0.66%
12	1	0	0	0	0	0	0	1	1	1	3	1	2	1	0	0	0.48%
13	0	0	0	0	0	0	0	0	1	0	3	1	0	0	0	0	0.22%
14	0	0	1	0	1	0	0	0	0	1	1	2	1	0	0	0	0.31%
15	0	0	0	1	0	0	0	0	0	1	1	3	0	0	0	1	0.31%
16	1	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0.22%
17	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0.13%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.09%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.04%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.04%
43	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.04%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	2.77%	3.16%	3.87%	4.35%	6.77%	5.80%	3.34%	3.08%	5.62%	12.13%	11.29%	11.82%	9.40%	7.78%	5.49%	3.34%	

Insert 23)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	23	27	37	34	69	53	31	31	51	106	100	96	80	67	53	33	**39.16%**
3	15	16	20	32	30	28	21	22	26	62	53	57	50	42	27	9	**22.42%**
4	7	6	10	16	22	21	13	6	18	36	33	40	27	24	18	14	**13.67%**
5	3	7	9	5	14	14	7	4	12	26	26	19	16	19	9	9	**8.75%**
6	3	9	4	4	6	7	2	4	6	16	13	16	11	10	7	6	**5.45%**
7	3	2	3	6	4	5	0	0	5	11	11	12	10	2	6	0	**3.52%**
8	1	3	2	1	2	2	1	2	1	5	7	6	6	4	3	2	**2.11%**
9	5	0	0	0	2	1	0	0	4	1	2	3	4	3	1	2	**1.23%**
10	1	0	2	0	4	0	1	0	2	5	3	5	4	2	0	0	**1.27%**
11	0	1	0	0	0	1	0	0	1	3	1	4	0	2	1	0	**0.62%**
12	1	0	0	0	0	0	0	1	1	1	3	1	2	1	0	0	**0.48%**
13	0	0	0	0	0	0	0	0	1	0	3	1	0	0	0	0	**0.22%**
14	0	0	1	0	1	0	0	0	0	1	1	2	1	0	0	0	**0.31%**
15	0	0	0	1	0	0	0	0	0	1	1	3	0	0	0	1	**0.31%**
16	1	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	**0.22%**
17	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	**0.13%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.09%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.04%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**2.77%**	**3.16%**	**3.87%**	**4.35%**	**6.77%**	**5.80%**	**3.34%**	**3.08%**	**5.63%**	**12.13%**	**11.30%**	**11.82%**	**9.41%**	**7.74%**	**5.49%**	**3.34%**	

Add Insert #24 here

Table 2.3-241 Wind Direction Persistence Summaries - Fermi Site 60-m Level [EF3 COL 2.0-8-A]

Number of Occurrences for Winds Blowing from the Same 67.5° Direction

2003-2007

>20 MPH

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	5	8	8	15	34	20	7	10	21	48	43	34	36	33	18	8	41.28%
3	5	3	2	9	17	16	3	3	8	32	28	29	25	27	8	5	26.10%
4	2	2	2	4	17	4	6	1	3	15	13	10	15	4	7	4	12.93%
5	3	1	0	5	8	2	0	2	3	6	16	6	5	5	3	3	8.07%
6	1	1	1	2	3	1	0	0	4	5	4	7	3	0	2	1	4.15%
7	1	0	0	1	2	0	0	1	1	1	3	4	0	1	1	2	2.14%
8	0	0	0	1	1	0	1	0	1	4	2	3	0	1	2	2	2.14%
9	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0.59%
10	0	0	0	0	0	0	0	0	1	1	2	0	0	1	1	0	0.71%
11	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0.47%
12	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0.47%
13	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0.36%
14	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0.24%
15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.12%
16	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.12%
17	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.12%
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
% of PERSISTENT DIRECTION	2.02%	1.78%	1.66%	4.39%	9.73%	5.22%	2.02%	2.02%	5.22%	13.64%	13.64%	11.63%	10.20%	8.78%	4.98%	3.08%	

Insert 24)

HOURS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	% of PERSISTENT WINDS
2	5	8	8	15	34	20	7	10	21	48	43	34	36	33	18	8	**41.28%**
3	5	3	2	9	17	16	3	3	8	32	28	29	25	27	8	5	**26.10%**
4	2	2	2	4	17	4	6	1	3	15	13	10	15	4	7	4	**12.93%**
5	3	1	0	5	8	2	0	2	3	6	16	6	5	5	3	3	**8.07%**
6	1	1	1	2	3	1	0	0	4	5	4	7	3	0	2	1	**4.15%**
7	1	0	0	1	2	0	0	1	1	1	3	4	0	1	1	2	**2.14%**
8	0	0	0	1	1	0	1	0	1	4	2	3	0	1	2	2	**2.14%**
9	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	**0.59%**
10	0	0	0	0	0	0	0	0	1	1	2	0	0	1	1	0	**0.71%**
11	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	**0.47%**
12	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	**0.47%**
13	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	**0.36%**
14	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	**0.24%**
15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0.12%**
16	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**0.12%**
17	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**0.12%**
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.00%**
% of PERSISTENT DIRECTION	**2.02%**	**1.78%**	**1.66%**	**4.39%**	**9.73%**	**5.22%**	**2.02%**	**2.02%**	**5.22%**	**13.64%**	**13.64%**	**11.63%**	**10.20%**	**8.78%**	**4.98%**	**3.08%**	

Table 2.3-255 **Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007)** [EF3 COL 2.0-8-A]

Add Insert #25 here

Duration (Hours)	Annual Number of Observations	Probability of Occurrence (%)
1	222	13.2
2	161	9.6
3	138	8.2
4	100	6.0
5	103	6.1
6	90	5.4
7	65	3.9
8	65	3.9
9	75	4.5
10	89	5.3
11	102	6.1
12	113	6.7
13	91	5.4
14	73	4.4
15	51	3.0
16	35	2.1
17	18	1.1
18	14	0.8
19	10	0.6
20	5	0.3
21	3	0.2
22	5	0.3
23	3	0.2
24	4	0.2
25+	21	1.3

Notes:

1. The longest inversion lasted 76 hours.
2. An inversion was present a total of 13,107 hours of a possible 43,824 hours during the 5-year period.
3. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 25)

Annual

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	222	13.3
2	159	9.5
3	137	8.2
4	101	6.0
5	103	6.1
6	90	5.4
7	66	3.9
8	65	3.9
9	75	4.5
10	89	5.3
11	101	6.0
12	114	6.8
13	91	5.4
14	73	4.4
15	50	3.0
16	35	2.1
17	18	1.1
18	14	0.8
19	10	0.6
20	5	0.3
21	3	0.2
22	5	0.3
23	2	0.1
24	5	0.3
25+	21	1.3

Notes:

1. The longest inversion lasted 76 hours.

2. An inversion was present a total of 13,098 hours of a possible 42,800 hours during the 5-year period.

3. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-256 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #26 here

January		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	10	10.1
2	6	6.1
3	11	11.1
4	4	4.0
5	11	11.1
6	7	7.1
7	6	6.1
8	3	3.0
9	4	4.0
10	6	6.1
11	2	2.0
12	2	2.0
13	3	3.0
14	0	0.0
15	5	5.1
16	2	2.0
17	0	0.0
18	1	1.0
19	1	1.0
20	1	1.0
21	0	0.0
22	0	0.0
23	0	0.0
24	2	2.0
25+	6	6.1

Notes:

1. The longest inversion lasted 74 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 26)

January

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	10	10.1
2	6	6.1
3	11	11.1
4	4	4.0
5	11	11.1
6	7	7.1
7	6	6.1
8	3	3.0
9	4	4.0
10	6	6.1
11	2	2.0
12	2	2.0
13	3	3.0
14	0	0.0
15	5	5.1
16	2	2.0
17	0	0.0
18	1	1.0
19	1	1.0
20	1	1.0
21	0	0.0
22	0	0.0
23	0	0.0
24	2	2.0
25+	6	6.1

Notes:

1. The longest inversion lasted 74 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-257 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #27 here

February		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	13	13.5
2	9	9.4
3	8	8.3
4	7	7.3
5	5	5.2
6	7	7.3
7	6	6.3
8	4	4.2
9	5	5.2
10	6	6.3
11	4	4.2
12	4	4.2
13	2	2.1
14	3	3.1
15	4	4.2
16	1	1.0
17	2	2.1
18	1	1.0
19	1	1.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	2	2.1

Notes:

1. The longest inversion lasted 76 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 27)

February

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	13	13.5
2	9	9.4
3	8	8.3
4	7	7.3
5	5	5.2
6	7	7.3
7	6	6.3
8	4	4.2
9	5	5.2
10	6	6.3
11	4	4.2
12	4	4.2
13	2	2.1
14	3	3.1
15	4	4.2
16	1	1.0
17	2	2.1
18	1	1.0
19	1	1.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	2	2.1

Notes:

1. The longest inversion lasted 76 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-258 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #28 here

March		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	23	15.2
2	14	9.3
3	15	9.9
4	6	4.0
5	5	3.3
6	12	7.9
7	7	4.6
8	5	3.3
9	5	3.3
10	3	2.0
11	6	4.0
12	3	2.0
13	7	4.6
14	9	6.0
15	6	4.0
16	5	3.3
17	2	1.3
18	3	2.0
19	2	1.3
20	1	0.7
21	0	0.0
22	1	0.7
23	3	2.0
24	0	0.0
25+	4	2.6

Notes:

1. The longest inversion lasted 51 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 28)

March

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	23	15.2
2	14	9.3
3	14	9.3
4	7	4.6
5	5	3.3
6	12	7.9
7	8	5.3
8	5	3.3
9	5	3.3
10	3	2.0
11	6	4.0
12	3	2.0
13	7	4.6
14	9	6.0
15	5	3.3
16	5	3.3
17	2	1.3
18	3	2.0
19	2	1.3
20	1	0.7
21	0	0.0
22	1	0.7
23	2	1.3
24	1	0.7
25+	4	2.6

Notes:

1. The longest inversion lasted 51 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-259 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #29 here

April		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	13	9.8
2	19	14.3
3	12	9.0
4	8	6.0
5	8	6.0
6	6	4.5
7	4	3.0
8	5	3.8
9	1	0.8
10	6	4.5
11	5	3.8
12	13	9.8
13	7	5.3
14	3	2.3
15	0	0.0
16	2	1.5
17	1	0.8
18	2	1.5
19	2	1.5
20	3	2.3
21	1	0.8
22	1	0.8
23	0	0.0
24	1	0.8
25+	5	3.8

Notes:

1. The longest inversion lasted 67 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 29)

April

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	13	9.9
2	17	13.0
3	12	9.2
4	8	6.1
5	8	6.1
6	6	4.6
7	4	3.1
8	5	3.8
9	1	0.8
10	6	4.6
11	5	3.8
12	13	9.9
13	7	5.3
14	3	2.3
15	0	0.0
16	2	1.5
17	1	0.8
18	2	1.5
19	2	1.5
20	3	2.3
21	1	0.8
22	1	0.8
23	0	0.0
24	1	0.8
25+	5	3.8

Notes:

1. The longest inversion lasted 67 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-260 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #30 here

May		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	27	17.5
2	15	9.7
3	8	5.2
4	13	8.4
5	10	6.5
6	9	5.8
7	9	5.8
8	10	6.5
9	6	3.9
10	9	5.8
11	12	7.8
12	14	9.1
13	7	4.5
14	1	0.6
15	1	0.6
16	1	0.6
17	1	0.6
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	1	0.6
25+	0	0.0

Notes:

1. The longest inversion lasted 24 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 30)

May

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	27	17.5
2	15	9.7
3	8	5.2
4	13	8.4
5	10	6.5
6	9	5.8
7	9	5.8
8	10	6.5
9	6	3.9
10	9	5.8
11	11	7.1
12	15	9.7
13	7	4.5
14	1	0.6
15	1	0.6
16	1	0.6
17	1	0.6
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	1	0.6
25+	0	0.0

Notes:

1. The longest inversion lasted 24 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-261 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #31 here

June		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	21	12.2
2	21	12.2
3	14	8.1
4	10	5.8
5	9	5.2
6	9	5.2
7	10	5.8
8	8	4.7
9	8	4.7
10	14	8.1
11	24	14.0
12	13	7.6
13	4	2.3
14	4	2.3
15	1	0.6
16	1	0.6
17	1	0.6
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 17 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 31)

June

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	21	12.2
2	21	12.2
3	14	8.1
4	10	5.8
5	9	5.2
6	9	5.2
7	10	5.8
8	8	4.7
9	8	4.7
10	14	8.1
11	24	14.0
12	13	7.6
13	4	2.3
14	4	2.3
15	1	0.6
16	1	0.6
17	1	0.6
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 17 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-262 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #32 here

	July	
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	26	15.1
2	16	9.3
3	16	9.3
4	7	4.1
5	20	11.6
6	11	6.4
7	2	1.2
8	5	2.9
9	10	5.8
10	15	8.7
11	17	9.9
12	19	11.0
13	8	4.7
14	0	0.0
15	0	0.0
16	0	0.0
17	0	0.0
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 13 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 32)

July

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	26	15.1
2	16	9.3
3	16	9.3
4	7	4.1
5	20	11.6
6	11	6.4
7	2	1.2
8	5	2.9
9	10	5.8
10	15	8.7
11	17	9.9
12	19	11.0
13	8	4.7
14	0	0.0
15	0	0.0
16	0	0.0
17	0	0.0
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 13 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-263 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #33 here

August		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	31	17.2
2	16	8.9
3	14	7.8
4	12	6.7
5	6	3.3
6	7	3.9
7	3	1.7
8	6	3.3
9	9	5.0
10	9	5.0
11	19	10.6
12	18	10.6
13	23	12.8
14	7	3.9
15	0	0.0
16	0	0.0
17	0	0.0
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 14 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 33)

August

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	31	17.2
2	16	8.9
3	14	7.8
4	12	6.7
5	6	3.3
6	7	3.9
7	3	1.7
8	6	3.3
9	9	5.0
10	9	5.0
11	19	10.6
12	18	10.0
13	23	12.8
14	7	3.9
15	0	0.0
16	0	0.0
17	0	0.0
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 14 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-264 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #34 here

September		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	8	5.6
2	9	6.3
3	9	6.3
4	7	4.9
5	10	7.0
6	8	5.6
7	2	1.4
8	5	3.5
9	7	4.9
10	5	3.5
11	5	3.5
12	17	11.9
13	18	12.6
14	25	17.5
15	7	4.9
16	1	0.7
17	0	0.0
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 16 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 34)

September

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	8	5.6
2	9	6.3
3	9	6.3
4	7	4.9
5	10	7.0
6	8	5.6
7	2	1.4
8	5	3.5
9	7	4.9
10	5	3.5
11	5	3.5
12	17	11.9
13	18	12.6
14	25	17.5
15	7	4.9
16	1	0.7
17	0	0.0
18	0	0.0
19	0	0.0
20	0	0.0
21	0	0.0
22	0	0.0
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 16 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-265 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #35 here

	October	
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	19	12.3
2	14	9.0
3	11	7.1
4	12	7.7
5	5	3.2
6	5	3.2
7	8	5.2
8	6	3.9
9	8	5.2
10	4	2.6
11	5	3.2
12	3	1.9
13	8	5.2
14	14	9.0
15	18	11.6
16	9	5.8
17	2	1.3
18	2	1.3
19	1	0.6
20	0	0.0
21	0	0.0
22	1	0.6
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 22 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 35)

October

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	19	12.3
2	14	9.0
3	11	7.1
4	12	7.7
5	5	3.2
6	5	3.2
7	8	5.2
8	6	3.9
9	8	5.2
10	4	2.6
11	5	3.2
12	3	1.9
13	8	5.2
14	14	9.0
15	18	11.6
16	9	5.8
17	2	1.3
18	2	1.3
19	1	0.6
20	0	0.0
21	0	0.0
22	1	0.6
23	0	0.0
24	0	0.0
25+	0	0.0

Notes:

1. The longest inversion lasted 22 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-266 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #36 here

November		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	19	16.0
2	8	6.7
3	6	5.0
4	9	7.6
5	11	9.2
6	3	2.5
7	3	2.5
8	6	5.0
9	10	8.4
10	7	5.9
11	3	2.5
12	5	4.2
13	1	0.8
14	3	2.5
15	5	4.2
16	6	5.0
17	5	4.2
18	3	2.5
19	2	1.7
20	0	0.0
21	2	1.7
22	0	0.0
23	0	0.0
24	0	0.0
25+	1	0.8

Notes:

1. The longest inversion lasted 48 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 36)

November

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	19	16.0
2	8	6.7
3	6	5.0
4	9	7.6
5	11	9.2
6	3	2.5
7	3	2.5
8	6	5.0
9	10	8.4
10	7	5.9
11	3	2.5
12	5	4.2
13	1	0.8
14	3	2.5
15	5	4.2
16	6	5.0
17	5	4.2
18	3	2.5
19	2	1.7
20	0	0.0
21	2	1.7
22	0	0.0
23	0	0.0
24	0	0.0
25+	1	0.8

Notes:

1. The longest inversion lasted 48 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Table 2.3-267 Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007) [EF3 COL 2.0-8-A]

Add Insert #37 here

December		
Duration (Hours)	**Number of Observations**	**Probability of Occurrence (%)**
1	12	11.7
2	14	13.6
3	14	13.6
4	5	4.9
5	3	2.9
6	6	5.8
7	5	4.9
8	2	1.9
9	2	1.9
10	5	4.9
11	0	0.0
12	2	1.9
13	3	2.9
14	4	3.9
15	4	3.9
16	7	6.8
17	4	3.9
18	2	1.9
19	1	1.0
20	0	0.0
21	0	0.0
22	2	1.9
23	0	0.0
24	0	0.0
25+	3	2.9

Notes:

1. The longest inversion lasted 47 hours.
2. Probability of occurrence represents that, if an inversion occurs, the probability of its duration will be equal to the number of hours specified.

Insert 37)

December

Duration (Hours)	Number of Observations	Probability of Occurrence (%)
1	12	11.7
2	14	13.6
3	14	13.6
4	5	4.9
5	3	2.9
6	6	5.8
7	5	4.9
8	2	1.9
9	2	1.9
10	5	4.9
11	0	0.0
12	2	1.9
13	3	2.9
14	4	3.9
15	4	3.9
16	7	6.8
17	4	3.9
18	2	1.9
19	1	1.0
20	0	0.0
21	0	0.0
22	2	1.9
23	0	0.0
24	0	0.0
25+	3	2.9

Notes:

1. The longest inversion lasted 47 hours.

2. Probability of occurrence represents that, if an inversions occurs, the probability of its duration will be equal to the number of hours specified.

Add Insert #38 here

Table 2.3-268 Monthly and Annual Vertical Stability Class and Mean 60-m Wind Speed Distributions for Fermi Site (2003 - 2007) (Sheet 1 of 2) [EF3 COL 2.0-8-A]

Period	Vertical Stability Categories						
	A	B	C	D	E	F	G
January							
Wind Speed (knots)	13.62	14.28	14.64	15.23	13.28	13.22	11.75
Frequency (%)	10.33	5.35	6.48	46.11	23.74	6.10	1.88
February							
Wind Speed (knots)	13.09	14.44	14.61	14.80	12.45	10.84	10.37
Frequency (%)	17.23	5.53	5.35	41.90	21.07	6.26	2.66
March							
Wind Speed (knots)	12.43	13.10	13.20	15.50	13.47	14.53	14.66
Frequency (%)	16.95	5.32	3.70	34.04	23.68	10.31	5.99
April							
Wind Speed (knots)	13.67	14.92	16.37	16.55	14.49	13.18	12.61
Frequency (%)	25.11	4.58	4.67	24.39	24.73	10.98	5.53
May							
Wind Speed (knots)	12.41	12.53	12.62	13.65	11.65	10.88	9.90
Frequency (%)	23.10	6.53	6.26	28.65	22.12	8.71	4.65
June							
Wind Speed (knots)	9.98	10.80	11.16	11.99	11.36	10.28	8.43
Frequency (%)	26.90	5.86	4.46	23.23	24.77	10.06	4.74
July							
Wind Speed (knots)	10.03	10.43	10.80	12.04	10.70	8.59	8.05
Frequency (%)	30.68	5.44	4.14	19.88	23.96	9.72	6.17
August							
Wind Speed (knots)	9.56	9.57	9.60	11.12	10.75	9.37	8.91
Frequency (%)	26.53	5.78	4.79	19.16	25.27	12.33	6.14
September							
Wind Speed (knots)	10.06	11.90	11.75	13.21	12.29	10.37	8.37
Frequency (%)	25.28	4.64	3.77	21.12	26.84	10.56	7.79
October							
Wind Speed (knots)	11.69	12.81	14.65	14.55	13.03	12.70	9.93
Frequency (%)	17.60	4.38	3.39	28.09	28.41	11.75	6.37
November							
Wind Speed (knots)	13.18	14.69	15.81	14.86	12.89	12.17	12.10
Frequency (%)	11.32	4.01	4.66	41.91	25.55	9.25	3.30

Table 2.3-268 Monthly and Annual Vertical Stability Class and Mean 60-m Wind Speed Distributions for Fermi Site (2003 - 2007) (Sheet 2 of 2) [EF3 COL 2.0-8-A]

	Vertical Stability Categories						
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**
December							
Wind Speed (knots)	12.45	14.39	16.21	15.12	13.69	12.86	12.80
Frequency (%)	8.90	5.05	5.56	48.55	22.26	8.12	1.56
Annual							
Wind Speed (knots)	11.47	12.70	13.53	14.37	12.49	11.52	10.32
Frequency (%)	20.00	5.22	4.78	31.42	24.35	9.51	4.73

Insert 38)

Period	Vertical Stability Categories						
	A	B	C	D	E	F	G
January							
Wind Speed (mph)	13.49	14.28	14.39	15.21	13.28	13.22	11.75
Frequency (%)	10.09	5.38	6.33	46.28	23.88	6.14	1.89
February							
Wind Speed (mph)	13.13	14.44	14.61	14.80	12.45	10.84	10.37
Frequency (%)	17.13	5.53	5.36	41.95	21.09	6.27	2.66
March							
Wind Speed (mph)	12.43	13.10	13.20	15.49	13.47	14.48	14.66
Frequency (%)	16.99	5.33	3.71	34.09	23.73	10.15	6.01
April							
Wind Speed (mph)	14.56	14.92	16.39	16.56	14.50	13.17	12.61
Frequency (%)	20.91	4.86	4.89	25.74	26.11	11.62	5.87
May							
Wind Speed (mph)	12.41	12.53	12.62	13.65	11.65	10.88	9.90
Frequency (%)	23.10	6.53	6.26	28.65	22.12	8.71	4.65
June							
Wind Speed (mph)	9.98	10.80	11.16	11.99	11.36	10.28	8.43
Frequency (%)	26.93	5.88	4.43	23.17	24.87	10.03	4.71
July							
Wind Speed (mph)	10.03	10.43	10.80	12.04	10.34	8.59	8.05
Frequency (%)	31.05	5.46	4.18	19.94	23.01	9.89	6.47
August							
Wind Speed (mph)	9.56	9.57	9.60	11.12	10.75	9.37	8.91
Frequency (%)	26.83	5.69	4.69	18.82	25.07	12.64	6.26
September							
Wind Speed (mph)	10.06	11.90	11.75	13.21	12.29	10.37	8.37
Frequency (%)	25.25	4.61	3.78	21.19	26.83	10.50	7.83
October							
Wind Speed (mph)	11.69	12.81	14.65	14.55	13.03	12.70	9.93
Frequency (%)	17.20	4.45	3.47	28.38	28.52	11.46	6.53
November							
Wind Speed (mph)	13.13	14.69	15.81	14.86	12.89	12.17	12.10
Frequency (%)	10.76	4.06	4.68	42.16	25.70	9.31	3.32
December							
Wind Speed (mph)	12.45	14.39	16.21	15.12	13.69	12.86	12.80
Frequency (%)	8.90	5.05	5.56	48.55	22.26	8.12	1.56
Annual							
Wind Speed (mph)	11.48	12.70	13.49	14.37	12.47	11.51	10.32
Frequency (%)	19.63	5.25	4.78	31.54	24.41	9.57	4.82

Add Insert #39 here

Table 2.3-269 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

All Pasquill Stability Classes

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	4	338	319	483	323	351	130	56	5	0	2009
NNE	1	252	327	433	225	240	127	41	10	0	1656
NE	9	144	157	538	554	415	116	4	2	0	1939
ENE	9	107	103	362	480	523	193	66	9	0	1852
E	10	70	129	375	436	515	322	146	33	4	2040
ESE	7	115	222	641	697	529	171	54	1	0	2437
SE	18	111	226	773	767	337	55	13	0	0	2300
SSE	11	166	224	657	587	293	48	6	3	0	1995
S	11	291	301	688	597	362	89	11	0	0	2350
SSW	21	397	371	997	1045	1035	366	120	7	0	4359
SW	19	631	552	826	782	878	459	205	41	1	4394
WSW	17	1015	652	867	648	462	90	27	2	0	3780
W	17	981	481	669	483	321	92	11	3	0	3058
WNW	8	1321	502	683	469	332	136	20	2	0	3473
NW	8	836	542	639	455	291	61	15	0	0	2847
NNW	5	478	453	734	455	277	99	28	0	0	2529
TOTAL	175	7253	5561	10365	9003	7161	2554	823	118	5	43018

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 39)

All Pasquill Stability Classes

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	6	3	32	60	115	128	309	549	350	250	133	82	5	0	0	2022
NNE	3	5	16	47	76	106	313	474	243	183	104	67	18	0	0	1655
NE	6	3	10	29	40	51	148	609	601	288	110	28	2	0	0	1925
ENE	4	1	8	15	21	35	94	415	525	407	159	122	12	0	0	1818
E	8	3	10	14	16	21	118	419	487	383	273	220	37	7	0	2016
ESE	3	2	12	17	25	55	198	751	695	390	161	98	3	0	0	2410
SE	10	2	4	30	21	53	201	898	739	241	52	24	3	0	0	2278
SSE	7	3	19	33	49	54	207	728	596	199	53	11	3	0	0	1962
S	4	3	29	68	93	94	282	779	601	259	88	32	0	0	0	2332
SSW	8	9	50	78	127	114	346	1089	1122	753	341	223	9	0	0	4269
SW	12	14	78	120	179	226	523	950	837	632	426	289	59	3	0	4348
WSW	19	15	108	216	324	339	627	944	687	318	96	46	2	0	0	3741
W	22	15	178	290	273	212	454	734	490	243	95	26	3	1	0	3036
WNW	10	3	43	106	163	155	434	808	436	216	96	47	0	0	0	2517
NW	15	9	91	207	253	272	516	710	455	206	69	29	0	0	0	2832
NNW	10	21	183	335	415	361	480	750	479	236	126	59	1	1	0	3457
TOTAL	147	111	871	1665	2190	2276	5250	11607	9343	5204	2382	1403	157	12	0	42618

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #40 here

Table 2.3-270 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

Class A Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	10	19	47	62	62	5	9	0	0	214
NNE	0	7	27	56	31	42	11	7	0	0	181
NE	5	20	30	86	96	80	15	1	0	0	333
ENE	3	36	24	96	113	108	33	10	0	0	423
E	5	8	36	99	118	159	97	28	2	1	553
ESE	1	12	41	233	276	188	49	8	0	0	808
SE	9	7	49	313	377	107	5	0	0	0	867
SSE	6	18	44	222	283	96	7	1	0	0	677
S	6	11	48	202	188	58	6	1	0	0	520
SSW	4	16	57	181	282	226	54	8	3	0	831
SW	4	14	42	111	138	148	53	9	0	0	519
WSW	2	24	57	136	165	122	13	1	0	0	520
W	3	31	68	159	138	98	27	0	0	0	524
WNW	0	40	73	198	189	111	23	5	0	0	639
NW	0	30	73	176	175	101	24	4	0	0	583
NNW	0	15	34	128	135	93	29	6	0	0	440
TOTAL	48	299	722	2443	2766	1799	451	98	5	1	8632

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 40)

Class A Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	1	0	3	6	18	56	69	45	5	10	0	0	0	213
NNE	0	0	0	0	3	4	25	61	38	31	9	10	0	0	0	181
NE	0	0	0	1	5	8	28	100	115	46	13	6	0	0	0	322
ENE	0	0	1	1	4	5	21	107	129	78	27	20	0	0	0	393
E	1	0	1	0	2	2	27	113	130	118	81	51	2	2	0	530
ESE	0	0	0	2	3	6	35	275	260	137	53	19	0	0	0	790
SE	5	0	0	0	0	5	39	376	349	73	5	0	0	0	0	852
SSE	1	0	0	2	5	6	40	251	275	61	8	1	0	0	0	650
S	0	0	0	1	5	3	44	226	181	36	7	2	0	0	0	505
SSW	1	0	1	0	4	4	54	214	294	157	53	16	4	0	0	802
SW	0	1	1	0	3	5	41	126	144	103	52	19	1	0	0	496
WSW	1	0	0	3	8	13	51	148	178	80	17	1	0	0	0	500
W	3	0	1	9	3	15	62	173	143	77	23	6	0	0	0	515
WNW	0	0	0	2	1	11	31	143	127	74	28	13	0	0	0	430
NW	0	1	1	1	8	19	66	199	171	70	22	10	0	0	0	568
NNW	0	0	3	4	10	20	67	216	197	70	26	14	0	0	0	627
TOTAL	12	2	10	26	67	132	649	2784	2800	1256	429	198	7	2	0	8374

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #41 here

Table 2.3-271 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

Class B Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	12	17	32	28	19	7	6	0	0	121
NNE	0	6	14	20	13	21	9	1	0	0	84
NE	0	1	9	24	16	11	4	0	0	0	65
ENE	1	5	10	15	19	26	13	2	0	0	91
E	0	1	5	15	22	33	16	5	0	0	97
ESE	1	4	10	29	30	20	13	1	0	0	108
SE	0	4	23	58	43	17	4	0	0	0	149
SSE	0	8	9	44	20	8	2	0	0	0	91
S	0	6	17	37	20	14	2	0	0	0	96
SSW	1	7	11	39	71	57	29	10	0	0	225
SW	0	10	16	42	45	67	44	23	4	1	252
WSW	0	10	21	47	68	28	12	2	0	0	188
W	0	15	23	70	48	31	6	0	0	0	193
WNW	0	19	24	58	38	20	13	1	0	0	173
NW	0	17	19	45	40	23	6	2	0	0	152
NNW	0	8	22	51	36	30	9	0	0	0	156
TOTAL	3	133	250	626	557	425	189	53	4	1	2241

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 41)

Class B Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	0	1	6	6	14	41	27	10	8	8	0	0	0	121
NNE	0	0	0	0	1	5	14	22	17	14	6	5	0	0	0	84
NE	0	0	0	1	0	0	9	27	14	10	3	1	0	0	0	65
ENE	0	0	0	0	1	4	9	16	24	18	11	7	0	0	0	90
E	0	0	0	0	0	1	5	16	24	26	16	9	0	0	0	97
ESE	0	0	0	0	2	2	9	38	25	17	6	8	0	0	0	107
SE	0	0	0	1	0	3	23	69	40	8	3	2	0	0	0	149
SSE	1	0	0	2	3	2	8	46	23	4	1	1	0	0	0	91
S	0	0	1	1	2	2	17	40	21	9	3	0	0	0	0	96
SSW	0	0	1	0	1	4	10	44	78	37	31	17	0	0	0	223
SW	0	0	1	1	1	5	16	50	54	42	42	29	8	1	0	250
WSW	0	0	0	1	3	7	19	48	77	17	12	4	0	0	0	188
W	0	0	0	2	7	4	22	77	49	23	6	1	0	0	0	191
WNW	0	0	0	1	2	5	21	55	40	22	7	3	0	0	0	156
NW	0	0	1	3	3	10	19	47	39	19	7	4	0	0	0	152
NNW	0	1	0	5	3	9	22	63	38	13	11	7	0	0	0	172
TOTAL	1	1	4	19	35	69	237	699	590	289	173	106	8	1	0	2232

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #42 here

Table 2.3-272 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

Class C Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	9	16	41	19	19	9	6	0	0	119
NNE	0	3	15	27	16	16	18	0	0	0	95
NE	0	8	6	23	23	25	6	0	0	0	91
ENE	0	5	3	8	21	42	15	6	2	0	102
E	0	3	2	17	12	22	12	9	1	0	78
ESE	1	2	9	29	20	27	9	2	0	0	99
SE	0	3	9	32	26	12	3	1	0	0	86
SSE	0	3	11	25	22	4	6	1	0	0	72
S	1	11	10	28	19	19	4	0	0	0	92
SSW	2	10	16	35	45	45	23	7	0	0	183
SW	1	15	21	35	58	56	31	38	6	0	261
WSW	0	15	22	50	37	46	15	6	0	0	191
W	0	19	29	41	39	22	15	0	0	0	165
WNW	0	22	26	46	19	21	18	2	0	0	154
NW	0	18	18	37	26	18	9	4	0	0	130
NNW	0	14	12	49	31	15	7	2	0	0	130
TOTAL	5	160	225	523	433	409	200	84	9	0	2048

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 42)

Class C Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	0	0	3	6	16	44	21	12	9	8	0	0	0	119
NNE	0	0	0	1	0	2	14	32	14	14	17	1	0	0	0	95
NE	0	0	0	2	3	3	6	25	27	18	6	1	0	0	0	91
ENE	0	0	2	2	0	1	3	9	24	35	14	9	3	0	0	102
E	0	0	0	1	1	1	2	18	13	18	9	13	2	0	0	78
ESE	0	0	0	0	0	2	9	33	23	19	8	4	0	0	0	98
SE	0	0	0	0	1	2	9	37	24	9	3	1	0	0	0	86
SSE	0	0	0	0	1	1	10	28	20	3	6	1	0	0	0	70
S	0	0	0	2	4	5	9	32	20	15	3	1	0	0	0	91
SSW	0	0	1	3	3	3	13	41	50	34	20	13	0	0	0	181
SW	0	0	0	2	2	11	20	48	56	44	21	43	10	1	0	258
WSW	0	0	0	2	2	7	22	52	44	28	15	10	0	0	0	182
W	0	0	1	3	8	7	29	49	35	15	16	2	0	0	0	165
WNW	0	0	2	3	4	5	12	55	31	8	6	4	0	0	0	130
NW	0	0	0	4	5	9	17	44	25	10	11	5	0	0	0	130
NNW	0	0	3	2	7	10	25	50	21	16	14	6	0	0	0	154
TOTAL	0	0	9	27	44	75	216	597	448	298	178	122	15	1	0	2030

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert $43 here

Table 2.3-273 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

Class D Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	1	73	66	120	121	196	95	30	4	0	706
NNE	0	68	96	153	115	127	83	32	10	0	684
NE	1	32	60	219	328	268	83	3	2	0	996
ENE	1	21	30	119	210	271	120	46	4	0	822
E	1	11	29	85	155	200	137	72	20	1	711
ESE	2	27	47	132	167	190	60	29	1	0	655
SE	6	26	35	145	136	88	23	9	0	0	468
SSE	1	22	42	89	83	65	15	2	2	0	321
S	2	36	50	118	134	111	32	4	0	0	487
SSW	6	41	54	171	226	288	146	70	1	0	1003
SW	7	70	106	305	394	499	297	125	28	0	1831
WSW	4	130	209	410	327	234	47	13	0	0	1374
W	4	129	171	252	202	157	40	8	0	0	963
WNW	3	146	114	234	165	143	75	11	0	0	891
NW	0	92	127	240	160	112	16	4	0	0	751
NNW	0	87	118	253	193	115	46	17	0	0	829
TOTAL	39	1011	1354	3045	3116	3064	1315	475	72	1	13492

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 43)

Class D Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	1	1	9	11	18	34	63	137	138	149	96	48	4	0	0	709
NNE	0	0	2	11	23	32	91	173	118	100	69	47	18	0	0	684
NE	0	0	2	9	6	13	56	256	357	194	78	20	2	0	0	993
ENE	0	0	2	3	8	6	28	141	231	216	97	82	5	0	0	819
E	1	0	2	1	5	3	29	96	181	146	121	101	23	2	0	711
ESE	0	1	1	3	6	15	42	151	186	142	55	47	1	0	0	650
SE	1	1	0	9	6	10	32	163	141	62	20	14	3	0	0	462
SSE	0	0	1	2	6	13	38	102	88	45	18	4	2	0	0	319
S	1	0	2	10	7	17	47	142	132	87	28	13	0	0	0	486
SSW	1	1	4	13	12	7	50	196	241	217	138	112	2	0	0	994
SW	0	1	10	12	18	29	97	356	441	361	278	178	37	1	0	1819
WSW	1	2	9	22	36	61	200	456	339	170	48	25	0	0	0	1369
W	4	2	17	23	42	45	165	278	209	116	46	14	1	0	0	962
WNW	0	0	5	15	28	39	114	279	187	91	47	24	0	0	0	829
NW	0	0	8	19	31	34	123	261	166	78	24	7	0	0	0	751
NNW	1	2	15	30	42	57	107	265	166	109	67	28	0	0	0	889
TOTAL	11	11	89	193	294	415	1282	3452	3321	2283	1230	764	98	3	0	13446

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #44 here

Table 2.3-274 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

Class E Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	2	105	89	143	80	47	13	5	1	0	485
NNE	0	95	135	138	41	31	6	1	0	0	447
NE	2	48	42	174	86	31	8	0	0	0	391
ENE	3	21	28	113	103	68	10	2	3	0	351
E	4	27	39	117	102	78	50	24	9	2	452
ESE	0	36	63	152	156	78	34	13	0	0	532
SE	2	35	52	135	130	75	10	2	0	0	441
SSE	1	52	66	165	108	81	10	0	1	0	484
S	1	106	116	230	187	118	30	4	0	0	792
SSW	7	124	136	420	325	343	102	21	2	0	1480
SW	3	239	249	294	130	94	31	10	3	0	1053
WSW	5	380	252	216	46	22	1	0	0	0	922
W	5	294	140	138	47	12	4	2	1	0	643
WNW	3	332	165	129	55	31	6	1	2	0	724
NW	4	261	228	125	47	35	6	1	0	0	707
NNW	2	121	158	187	55	18	8	3	0	0	552
TOTAL	44	2276	1958	2876	1698	1162	329	89	22	2	10456

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 44)

Class E Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	3	0	9	20	36	40	87	160	80	28	14	8	1	0	0	486
NNE	1	2	5	20	28	39	130	146	47	22	3	4	0	0	0	447
NE	4	1	2	10	16	17	40	188	83	20	10	0	0	0	0	391
ENE	3	0	2	6	3	10	25	130	103	53	8	4	4	0	0	351
E	5	2	4	8	5	6	37	132	108	59	38	36	8	3	0	451
ESE	1	1	4	5	4	20	54	176	157	54	36	16	2	0	0	530
SE	2	1	2	8	7	18	46	153	130	59	9	5	0	0	0	440
SSE	2	1	8	10	17	15	62	179	112	64	12	0	1	0	0	483
S	1	1	13	24	34	33	110	254	197	82	31	11	0	0	0	791
SSW	3	5	11	31	38	34	129	421	357	258	87	56	2	0	0	1432
SW	5	5	21	37	77	95	234	327	123	71	31	19	3	0	0	1048
WSW	7	1	39	65	136	133	245	232	42	17	1	0	0	0	0	918
W	9	6	38	69	103	73	133	148	45	11	4	2	1	0	0	642
WNW	4	0	10	28	35	44	150	206	47	15	8	3	0	0	0	550
NW	6	3	15	60	80	101	218	141	48	27	5	3	0	0	0	707
NNW	2	3	31	72	125	103	161	137	53	23	7	4	1	1	0	723
TOTAL	58	32	214	473	744	781	1861	3130	1732	863	304	171	23	4	0	10390

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #45 here

Table 2.3-275 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

Class F Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	1	88	84	85	11	8	1	0	0	0	278
NNE	1	55	35	29	9	3	0	0	0	0	132
NE	1	25	10	10	5	0	0	0	0	0	51
ENE	1	17	6	9	12	8	2	0	0	0	55
E	0	16	11	32	17	15	8	8	0	0	107
ESE	2	20	32	42	31	16	5	0	0	0	148
SE	1	17	32	55	34	18	7	1	0	0	165
SSE	2	49	39	82	47	26	6	2	0	0	253
S	1	97	51	55	41	37	15	2	0	0	299
SSW	1	150	73	124	82	63	11	4	1	0	509
SW	3	212	101	26	13	7	2	0	0	0	364
WSW	5	291	69	6	5	5	1	5	2	0	389
W	3	266	42	7	9	1	0	1	2	0	331
WNW	2	350	72	15	2	6	1	0	0	0	448
NW	2	218	65	15	6	2	0	0	0	0	308
NNW	3	135	69	47	5	6	0	0	0	0	265
TOTAL	29	2006	791	639	329	221	59	23	5	0	4102

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 45)

Class F Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	2	2	10	15	36	24	83	93	12	5	1	0	0	0	0	283
NNE	1	3	6	12	14	19	35	30	9	2	0	0	0	0	0	131
NE	1	2	2	6	8	7	9	11	5	0	0	0	0	0	0	51
ENE	1	1	1	3	5	7	6	9	13	7	2	0	0	0	0	55
E	1	1	3	3	2	6	11	33	21	9	7	9	1	0	0	107
ESE	2	0	2	5	6	7	30	50	28	13	2	3	0	0	0	148
SE	1	0	2	8	2	5	29	61	32	17	7	1	0	0	0	165
SSE	2	1	5	16	15	12	36	90	52	13	7	3	0	0	0	252
S	2	1	8	21	34	32	46	66	43	26	15	5	0	0	0	299
SSW	2	2	27	26	48	46	67	142	88	42	9	9	1	0	0	509
SW	5	6	26	52	62	63	98	30	15	4	1	1	0	0	0	363
WSW	6	6	22	79	100	83	68	6	6	2	2	6	2	0	0	388
W	3	4	54	89	71	46	35	7	9	1	0	1	1	1	0	322
WNW	5	3	17	29	52	32	66	51	4	6	0	0	0	0	0	265
NW	3	3	27	63	64	63	61	16	6	2	0	0	0	0	0	308
NNW	6	8	64	92	99	83	71	16	3	5	1	0	0	0	0	448
TOTAL	43	43	276	519	618	535	751	711	346	154	54	38	5	1	0	4094

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #46 here

Table 2.3-276 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

10-m Level

Class G Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	41	28	15	2	0	0	0	0	0	86
NNE	0	18	5	10	0	0	0	0	0	0	33
NE	0	10	0	2	0	0	0	0	0	0	12
ENE	0	2	2	2	2	0	0	0	0	0	8
E	0	4	7	10	10	8	2	0	1	0	42
ESE	0	14	20	24	17	10	1	1	0	0	87
SE	0	19	26	35	21	20	3	0	0	0	124
SSE	1	14	13	30	24	13	2	0	0	0	97
S	0	24	9	18	8	5	0	0	0	0	64
SSW	0	49	24	27	14	13	1	0	0	0	128
SW	1	71	17	13	4	7	1	0	0	0	114
WSW	1	165	22	2	0	5	1	0	0	0	196
W	2	227	8	2	0	0	0	0	0	0	239
WNW	0	412	28	3	1	0	0	0	0	0	444
NW	2	200	12	1	1	0	0	0	0	0	216
NNW	0	98	40	19	0	0	0	0	0	0	157
TOTAL	7	1368	261	213	104	81	11	1	1	0	2047

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 46)

Class G Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	3	13	13	12	28	18	3	1	0	0	0	0	0	91
NNE	1	0	3	3	7	5	4	10	0	0	0	0	0	0	0	33
NE	1	0	4	0	2	3	0	2	0	0	0	0	0	0	0	12
ENE	0	0	0	0	0	2	2	3	1	0	0	0	0	0	0	8
E	0	0	0	1	1	2	7	11	10	7	1	1	1	0	0	42
ESE	0	0	5	2	4	3	19	28	16	8	1	1	0	0	0	87
SE	1	0	0	4	5	10	23	39	23	13	5	1	0	0	0	124
SSE	1	1	5	1	2	5	13	32	26	9	1	1	0	0	0	97
S	0	1	5	9	7	2	9	19	7	4	1	0	0	0	0	64
SSW	1	1	5	5	21	16	23	31	14	8	3	0	0	0	0	128
SW	2	1	19	16	16	18	17	13	4	7	1	0	0	0	0	114
WSW	4	6	38	44	39	35	22	2	1	4	1	0	0	0	0	196
W	3	3	67	95	39	22	8	2	0	0	0	0	0	0	0	239
WNW	1	0	9	28	41	19	40	19	0	0	0	0	0	0	0	157
NW	6	2	39	57	62	36	12	2	0	0	0	0	0	0	0	216
NNW	1	7	67	130	129	79	27	3	1	0	0	0	0	0	0	444
TOTAL	22	22	269	408	388	269	254	234	106	61	14	4	1	0	0	2052

Notes:
Data from 10 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #47 here

Table 2.3-277 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

All Pasquill Stability Classes

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	48	84	161	183	371	350	231	91	26	1545
NNE	0	45	80	195	222	335	298	247	111	38	1571
NE	0	60	84	236	350	656	485	320	121	8	2320
ENE	2	56	64	185	282	519	485	342	199	61	2195
E	2	37	60	156	272	389	389	475	370	200	2350
ESE	2	40	70	237	383	510	431	432	216	65	2386
SE	2	39	57	264	430	570	359	255	84	44	2104
SSE	3	48	77	251	420	543	328	236	88	24	2018
S	0	43	58	245	337	607	470	385	197	81	2423
SSW	1	37	62	198	331	746	813	853	562	189	3792
SW	3	41	52	175	298	714	885	834	579	306	3887
WSW	1	61	51	169	258	789	1027	1092	533	254	4235
W	0	56	47	168	314	757	927	712	420	203	3604
WNW	0	65	83	162	268	721	869	695	369	257	3489
NW	1	57	54	180	254	702	681	419	253	115	2716
NNW	1	52	89	195	300	602	604	299	138	41	2321
TOTAL	18	785	1072	3177	4902	9531	9401	7827	4331	1912	42956

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 47)

All Pasquill Stability Classes

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	1	2	7	12	25	79	196	203	268	281	317	111	34	5	1541
NNE	0	0	2	8	11	23	77	217	255	247	230	324	122	34	19	1569
NE	0	0	1	14	15	21	80	273	420	462	408	449	155	9	3	2310
ENE	3	0	2	4	17	17	58	205	329	389	392	469	200	72	15	2172
E	3	0	4	6	11	10	56	180	298	288	317	543	369	166	86	2337
ESE	6	3	3	3	13	12	60	281	433	364	312	541	228	76	30	2365
SE	6	3	0	6	9	15	53	298	493	403	310	340	96	34	19	2085
SSE	8	1	2	9	14	17	72	283	482	382	289	302	103	22	10	1996
S	2	0	2	5	16	18	51	279	393	464	355	509	206	83	26	2409
SSW	1	0	1	5	9	20	57	222	386	573	606	1042	576	209	59	3766
SW	2	1	2	5	11	18	50	205	350	529	667	1058	581	267	124	3870
WSW	3	2	5	8	20	22	50	187	326	591	776	1297	550	211	123	4171
W	3	1	2	8	21	21	45	182	380	580	690	956	450	159	92	3590
WNW	2	0	4	5	19	23	88	226	343	445	497	455	144	52	10	2313
NW	1	0	4	5	21	27	48	203	312	526	574	569	266	100	44	2700
NNW	1	1	3	11	20	29	80	187	334	535	671	917	369	181	135	3474
TOTAL	41	13	39	109	239	318	1004	3624	5737	7046	7375	10088	4526	1709	800	42668

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #48 here

Table 2.3-278 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

Class A Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	4	8	25	29	41	33	12	4	4	160
NNE	0	4	8	23	26	38	31	22	10	4	166
NE	0	16	12	41	47	94	94	40	15	0	359
ENE	1	24	20	46	78	113	86	42	27	5	442
E	1	7	11	62	113	113	122	93	95	20	637
ESE	1	8	18	110	197	221	118	82	33	2	790
SE	1	7	18	108	237	222	65	12	3	0	673
SSE	0	6	16	91	212	217	61	11	5	0	619
S	0	9	8	85	146	225	73	35	6	0	587
SSW	0	6	14	61	98	228	183	121	42	8	761
SW	2	7	9	47	53	106	101	85	33	12	455
WSW	0	10	3	31	45	93	122	169	69	19	561
W	0	5	6	43	75	135	119	146	114	45	688
WNW	0	5	12	42	77	160	145	184	111	50	786
NW	0	6	9	34	68	138	128	117	70	28	598
NNW	0	6	6	32	44	86	79	32	21	4	310
TOTAL	6	130	178	881	1545	2230	1560	1203	658	201	8592

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 48)

Class A Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	0	0	0	3	7	33	25	33	24	24	1	7	0	157
NNE	0	0	0	0	1	2	8	27	28	28	22	31	10	7	0	164
NE	0	0	1	2	2	2	11	46	61	61	84	60	18	1	0	349
ENE	1	0	0	1	3	5	16	47	94	79	65	72	26	10	0	419
E	0	0	1	0	0	2	10	67	122	85	102	107	99	25	4	624
ESE	1	0	1	1	2	2	14	131	228	148	91	116	30	7	0	772
SE	2	0	0	0	1	3	16	127	260	154	70	20	3	0	0	656
SSE	2	0	0	2	0	2	16	104	232	156	65	16	5	0	0	600
S	0	0	1	1	2	5	6	90	177	173	64	47	10	0	0	576
SSW	0	0	0	1	0	3	12	68	125	167	135	171	45	7	1	735
SW	0	0	0	0	1	3	9	51	56	80	82	108	30	14	5	439
WSW	1	0	1	1	3	2	3	35	52	71	86	188	71	27	3	544
W	0	0	1	0	2	2	6	45	86	102	92	166	118	38	16	674
WNW	0	0	0	1	2	3	6	36	49	63	62	47	26	4	2	301
NW	0	0	1	0	2	3	9	38	83	102	112	123	73	22	14	582
NNW	0	0	0	1	2	2	11	49	91	121	113	205	118	40	26	779
TOTAL	7	0	7	11	23	44	160	994	1769	1623	1269	1501	683	209	71	8371

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #49 here

Table 2.3-279 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

Class B Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	2	9	14	11	15	12	4	4	3	74
NNE	0	2	3	14	8	8	15	14	6	0	70
NE	0	1	6	2	11	23	16	9	4	1	73
ENE	0	3	5	8	6	19	14	17	9	4	85
E	0	1	5	9	13	20	13	25	20	4	110
ESE	0	1	7	16	14	20	19	17	14	1	109
SE	0	3	4	22	25	22	17	6	1	1	101
SSE	0	4	6	21	27	23	14	3	1	0	99
S	0	3	3	14	24	34	16	10	4	0	108
SSW	0	1	6	22	23	35	41	43	23	7	201
SW	0	0	5	10	22	36	37	48	34	23	215
WSW	0	4	1	11	15	38	39	65	29	30	232
W	0	3	3	7	24	51	45	59	41	15	248
WNW	0	6	9	7	14	41	31	39	30	16	193
NW	0	6	4	9	14	43	34	23	36	6	175
NNW	0	3	5	18	26	42	24	18	12	1	149
TOTAL	0	43	81	204	277	470	387	400	268	112	2242

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 49)

Class B Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	0	0	0	2	9	17	11	10	10	8	4	3	0	74
NNE	0	0	0	0	1	1	2	15	10	6	12	16	7	0	0	70
NE	0	0	0	0	0	1	5	3	16	18	10	14	5	1	0	73
ENE	0	0	0	0	1	2	4	10	9	13	11	20	10	5	0	85
E	0	0	0	1	0	0	5	11	16	11	13	27	19	7	0	110
ESE	1	0	0	0	0	0	7	18	14	16	16	19	13	4	1	109
SE	0	0	0	0	2	1	4	24	26	16	17	8	2	1	0	101
SSE	0	0	0	1	1	2	6	21	33	16	13	5	1	0	0	99
S	0	0	0	1	2	0	3	16	27	28	8	18	5	0	0	108
SSW	0	0	0	1	0	0	5	25	23	25	36	49	29	7	1	201
SW	0	0	0	0	0	0	5	13	24	22	37	48	37	17	12	215
WSW	0	0	0	1	1	2	1	12	18	30	26	74	34	17	16	232
W	0	0	0	0	3	0	3	7	30	41	33	70	43	9	9	248
WNW	0	0	1	0	1	1	5	20	33	29	18	27	10	4	0	149
NW	0	0	1	0	1	4	4	10	19	35	26	33	31	8	3	175
NNW	0	0	0	0	2	4	8	8	21	28	30	45	23	14	10	193
TOTAL	1	0	2	5	15	20	76	230	330	344	316	481	273	97	52	2242

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #50 here

Table 2.3-280 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

Class C Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	3	6	15	14	20	12	14	7	5	96
NNE	0	2	5	8	13	18	14	13	7	0	80
NE	0	1	2	9	13	24	24	14	8	0	95
ENE	0	2	4	5	7	19	32	28	11	7	115
E	0	2	2	6	9	10	8	23	14	11	85
ESE	0	1	4	7	12	17	14	22	9	0	86
SE	0	0	1	15	17	16	14	7	3	0	73
SSE	0	2	6	14	17	15	12	6	7	1	80
S	0	1	4	15	17	18	21	14	3	0	93
SSW	0	2	5	4	10	42	31	36	21	4	155
SW	0	4	4	15	15	27	34	35	30	35	199
WSW	0	1	3	9	18	33	41	60	42	43	250
W	0	6	2	10	21	33	41	41	31	21	206
WNW	0	5	3	9	13	34	33	33	24	29	183
NW	0	4	2	10	15	30	23	16	15	13	128
NNW	0	3	7	10	15	36	31	15	11	1	129
TOTAL	0	39	60	161	226	392	385	377	243	170	2053

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 50)

Class C Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	0	0	2	1	6	18	13	14	14	12	10	5	1	96
NNE	0	0	0	1	0	1	5	9	13	17	3	22	8	1	0	80
NE	0	0	0	1	0	0	2	12	12	20	15	24	9	0	0	95
ENE	0	0	0	1	1	0	4	5	9	13	21	40	12	7	2	115
E	0	0	0	0	0	2	2	6	9	9	7	22	15	8	5	85
ESE	0	0	0	0	0	1	2	10	17	8	10	25	11	2	0	86
SE	0	0	0	0	0	0	1	18	16	13	11	11	3	0	0	73
SSE	0	0	0	1	0	1	5	16	18	12	8	10	7	1	0	79
S	0	0	0	0	0	1	4	18	17	13	16	18	5	0	0	92
SSW	0	0	0	0	1	1	4	5	17	32	24	38	25	7	1	155
SW	0	0	0	0	2	2	3	19	14	20	28	42	26	18	25	199
WSW	0	0	1	0	0	0	3	10	23	22	30	67	41	21	25	243
W	0	0	1	1	1	3	2	12	22	26	27	52	34	12	13	206
WNW	0	0	0	0	2	1	7	10	22	27	23	25	9	3	0	129
NW	0	0	0	0	2	2	2	14	14	24	16	22	19	4	9	128
NNW	0	0	0	0	2	3	3	10	17	24	28	38	25	15	18	183
TOTAL	0	0	2	5	13	19	55	192	253	294	281	468	259	104	99	2044

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #51 here

Table 2.3-281 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

Class D Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	13	24	44	53	88	107	128	59	12	528
NNE	0	15	23	74	81	113	101	133	83	34	657
NE	0	12	12	59	79	280	261	226	84	6	1019
ENE	1	3	7	38	56	177	239	213	124	43	901
E	0	10	16	24	47	98	127	186	168	105	781
ESE	1	7	18	32	67	133	138	155	72	19	642
SE	0	6	8	41	50	114	100	69	19	6	413
SSE	0	8	14	40	55	79	59	47	12	2	316
S	0	7	13	37	41	89	103	103	46	13	452
SSW	0	10	5	31	45	133	194	206	166	63	853
SW	0	7	9	19	63	155	273	387	349	185	1447
WSW	0	23	9	39	83	277	351	516	346	154	1798
W	0	16	10	35	60	219	271	250	187	103	1151
WNW	0	22	20	33	55	149	211	215	138	135	978
NW	0	13	15	35	57	171	182	155	94	45	767
NNW	0	8	23	40	85	181	196	148	81	30	792
TOTAL	2	180	226	621	977	2456	2913	3137	2028	955	13495

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 51)

Class D Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	1	0	3	4	5	21	54	64	60	76	142	78	16	3	527
NNE	0	0	1	3	3	8	22	77	96	84	78	150	91	25	19	657
NE	0	0	0	3	4	5	12	71	98	200	209	298	110	7	2	1019
ENE	1	0	1	0	1	1	6	43	74	131	191	269	124	47	12	901
E	2	0	3	1	0	4	14	31	48	75	95	220	158	85	45	781
ESE	3	1	1	0	2	1	17	37	77	105	99	187	75	30	6	641
SE	1	1	0	0	2	2	8	43	62	85	84	94	23	3	3	411
SSE	0	0	0	0	3	5	13	46	61	55	55	58	16	2	1	315
S	1	0	0	1	2	3	12	42	48	64	82	126	51	19	1	452
SSW	0	0	0	1	3	6	5	33	53	104	141	254	164	70	19	853
SW	1	0	0	1	2	3	9	22	74	117	180	455	352	162	67	1445
WSW	0	1	1	3	10	8	9	41	110	209	268	576	351	132	78	1797
W	1	1	0	0	8	6	9	38	87	163	190	321	197	88	42	1151
WNW	0	0	0	2	4	2	23	46	95	144	160	191	82	37	7	793
NW	0	0	1	1	5	6	12	41	68	129	151	193	105	41	14	767
NNW	1	0	2	6	4	9	19	39	72	104	162	267	139	81	72	977
TOTAL	11	5	10	25	57	74	211	704	1187	1829	2221	3801	2116	845	391	13487

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #52 here

Table 2.3-282 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

Class E Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	13	21	34	39	125	108	50	16	2	408
NNE	0	9	18	41	59	111	83	53	4	0	378
NE	0	10	20	70	115	180	67	27	10	1	500
ENE	0	10	13	40	67	148	101	35	25	2	441
E	0	7	9	29	65	124	93	126	62	42	557
ESE	0	7	10	27	72	98	117	99	52	24	506
SE	0	8	15	37	65	151	119	92	20	7	514
SSE	1	20	14	56	59	127	114	92	20	4	507
S	0	6	13	44	54	151	163	151	80	37	699
SSW	0	10	11	26	66	195	276	334	210	74	1202
SW	1	9	14	37	73	214	301	217	102	50	1018
WSW	0	11	12	38	56	234	341	240	36	6	974
W	0	9	12	34	76	199	279	155	40	11	815
WNW	0	10	17	37	59	187	205	152	62	24	753
NW	0	12	14	38	51	193	185	77	38	21	629
NNW	0	15	22	48	67	154	175	58	13	5	557
TOTAL	2	166	235	636	1043	2591	2727	1958	790	310	10458

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 52)

Class E Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	1	1	2	9	20	38	46	96	84	91	16	3	1	408
NNE	0	0	0	1	3	5	18	48	74	80	64	80	4	1	0	378
NE	0	0	0	4	3	3	19	78	145	121	72	41	13	0	1	500
ENE	1	0	1	0	4	4	13	48	71	119	92	59	25	3	1	441
E	0	0	0	2	4	1	9	34	79	89	83	136	66	34	20	557
ESE	1	1	0	0	1	4	9	36	75	73	80	137	58	18	11	504
SE	2	1	0	2	1	2	13	43	91	101	98	125	25	8	2	514
SSE	4	1	1	2	8	5	14	60	84	82	99	112	28	5	1	506
S	1	0	1	0	3	1	11	56	64	115	116	204	74	40	12	698
SSW	0	0	0	1	3	6	11	28	75	155	202	398	221	79	23	1202
SW	1	1	1	0	1	6	13	46	86	165	228	299	107	50	15	1019
WSW	0	0	0	2	4	5	12	41	76	170	258	315	41	11	0	935
W	0	0	0	3	3	3	11	35	95	153	213	233	52	10	4	815
WNW	0	0	1	1	6	7	21	54	79	111	146	109	17	4	1	557
NW	0	0	0	2	5	5	12	42	70	142	160	126	38	23	4	629
NNW	0	1	0	1	5	3	17	44	73	142	150	221	60	28	8	753
TOTAL	10	5	6	22	56	69	223	731	1283	1914	2145	2686	845	317	104	10416

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #53 here

Table 2.3-283 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

Class F Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	8	10	11	21	59	55	16	0	0	180
NNE	0	5	7	21	20	36	41	8	0	0	138
NE	0	6	16	35	66	43	19	3	0	0	188
ENE	0	6	9	32	51	31	10	6	3	0	148
E	1	6	11	15	17	17	17	19	8	13	124
ESE	0	7	8	28	18	16	22	43	16	13	171
SE	0	11	7	25	32	32	25	45	21	11	209
SSE	0	5	9	19	43	68	54	48	21	12	279
S	0	12	6	29	39	64	63	51	39	25	328
SSW	1	3	4	23	54	79	63	90	86	28	431
SW	0	4	4	24	47	137	93	46	18	0	373
WSW	0	9	11	20	25	70	100	35	5	0	275
W	0	11	6	17	26	74	117	48	7	8	314
WNW	0	7	12	19	31	102	182	58	4	3	418
NW	1	8	5	32	30	76	88	23	0	2	265
NNW	1	10	10	28	40	61	71	22	0	0	243
TOTAL	4	118	135	378	560	965	1020	561	228	115	4084

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 53)

Class F Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	0	3	3	2	10	16	26	39	50	30	1	0	0	180
NNE	0	0	0	1	2	2	6	25	21	24	38	18	1	0	0	138
NE	0	0	0	3	1	2	16	41	68	32	14	11	0	0	0	188
ENE	0	0	0	1	1	4	9	36	53	24	9	8	3	0	0	148
E	1	0	0	2	4	0	10	17	17	14	14	22	9	5	9	124
ESE	0	0	0	1	2	4	7	30	19	11	13	45	25	6	8	171
SE	0	1	0	4	2	4	7	27	34	23	15	56	23	10	3	209
SSE	0	0	1	2	0	2	8	24	47	51	39	65	25	11	4	279
S	0	0	0	1	5	6	6	34	40	55	45	65	41	19	10	327
SSW	1	0	0	1	1	1	4	29	56	65	47	102	79	31	14	431
SW	0	0	0	1	1	2	4	28	65	98	79	75	19	1	0	373
WSW	1	1	2	1	2	2	10	23	29	55	77	66	5	1	0	275
W	1	0	0	2	4	4	6	19	30	59	84	89	6	2	8	314
WNW	2	0	2	0	3	4	10	36	42	40	60	44	0	0	0	243
NW	1	0	1	2	3	2	4	36	33	54	75	52	0	2	0	265
NNW	0	0	1	1	3	2	12	20	41	80	132	111	4	3	1	411
TOTAL	7	2	7	26	37	43	129	441	621	724	791	859	241	91	57	4076

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #54 here

Table 2.3-284 Annual JFD of Wind Direction, Wind Speed, and Stability Class [EF3 COL 2.0-8-A]

Fermi Site

2003-2007

60-m Level

Class G Pasquill Stability Class

	Wind Speed (Miles/Hour)										
Direction	**<0.75**	**0.75-3.36**	**3.361-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**>23.51**	**Total**
N	0	5	6	18	16	23	23	7	1	0	99
NNE	0	8	16	14	15	11	13	4	1	0	82
NE	0	14	16	20	19	12	4	1	0	0	86
ENE	0	8	6	16	17	12	3	1	0	0	63
E	0	4	6	11	8	7	9	3	3	5	56
ESE	0	9	5	17	3	5	3	14	20	6	82
SE	1	4	4	16	4	13	19	24	17	19	121
SSE	2	3	12	10	7	14	14	29	22	5	118
S	0	5	11	21	16	26	31	21	19	6	156
SSW	0	5	17	31	35	34	25	23	14	5	189
SW	0	10	7	23	25	39	46	16	13	1	180
WSW	1	3	12	21	16	44	33	7	6	2	145
W	0	6	8	22	32	46	55	13	0	0	182
WNW	0	10	10	15	19	48	62	14	0	0	178
NW	0	8	5	22	19	51	41	8	0	0	154
NNW	0	7	16	19	23	42	28	6	0	0	141
TOTAL	4	109	157	296	274	427	409	191	116	49	2032

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 0.75 mph

Insert 54)

Class G Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**17.91- 22.37**	**22.371- 26.84**	**>26.84**	**Total**
N	0	0	1	0	1	3	6	20	18	16	23	10	1	0	0	99
NNE	0	0	1	2	1	4	16	16	13	8	13	7	1	0	0	82
NE	0	0	0	1	5	8	15	22	20	10	4	1	0	0	0	86
ENE	0	0	0	1	6	1	6	16	19	10	3	1	0	0	0	63
E	0	0	0	0	3	1	6	14	7	5	3	9	3	2	3	56
ESE	0	1	1	1	6	0	4	19	3	3	3	12	16	9	4	82
SE	1	0	0	0	1	3	4	16	4	11	15	26	17	12	11	121
SSE	2	0	0	1	2	0	10	12	7	10	10	36	21	3	4	118
S	0	0	0	1	2	2	9	23	20	16	24	31	20	5	3	156
SSW	0	0	1	0	1	3	16	34	37	25	21	30	13	8	0	189
SW	0	0	1	3	4	2	7	26	31	27	33	31	10	5	0	180
WSW	1	0	0	0	0	3	12	25	18	34	31	11	7	2	1	145
W	1	0	0	2	0	3	8	26	30	36	51	25	0	0	0	182
WNW	0	0	0	1	1	5	16	24	23	31	28	12	0	0	0	141
NW	0	0	0	0	3	5	5	22	25	40	34	20	0	0	0	154
NNW	0	0	0	2	2	6	10	17	19	36	56	30	0	0	0	178
TOTAL	5	1	5	15	38	49	150	332	294	318	352	292	109	46	26	2032

Notes:
Data from 60 meter level
Data from 2003-2007
Calm is defined as a wind speed less than 1 mph

Table 2.3-291 Data Recovery Percentages for the Fermi Onsite Meteorological Monitoring Instruments During the 2003-2007 Time Period [EF3 COL 2.0-9-A]

Recorded Parameter	Recovery Percentages	
Wind Speed		
10-m	99.98%	97.93%
60-m	99.98%	97.93%
Wind Direction		
10-m	99.98%	98.14%
60-m	99.98%	98.21%
Temperature		
10-m	99.99%	98.54%
10-m to 60-m Difference (ΔT)	99.98%	97.66%
Dewpoint		
10-m	99.96%	96.29%
Precipitation		
Ground Level	94.59%	94.57%

Add Insert #55 here

Table 2.3-292 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – Stability Class A [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	0	6	29	53	72	72	12	12	0	256
NNE	0	3	35	63	44	48	14	7	0	214
NE	5	10	46	108	131	79	15	1	0	395
ENE	3	24	42	102	145	129	39	7	0	491
E	5	3	42	106	141	181	116	37	2	633
ESE	1	4	56	279	326	211	57	9	0	943
SE	10	4	63	363	422	124	7	0	0	993
SSE	6	8	59	243	320	123	10	1	0	770
S	8	5	62	222	203	79	9	1	0	589
SSW	7	7	68	199	300	256	68	11	2	918
SW	5	10	58	137	174	200	79	18	1	682
WSW	2	10	100	158	199	163	20	5	0	657
W	3	22	97	188	146	122	42	3	0	623
WNW	0	17	133	221	208	127	33	5	0	744
NW	0	12	117	202	198	108	30	4	0	671
NNW	0	4	53	137	149	115	37	8	0	503
TOTAL	55	149	1060	2781	3178	2137	588	129	5	10082

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 55)

Class A Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	1	0	1	1	5	6	19	62	82	54	14	10	0	0	0	255
NNE	0	0	0	0	4	4	27	69	50	35	12	10	0	0	0	211
NE	1	0	0	1	6	8	30	122	147	47	13	6	0	0	0	381
ENE	0	0	1	1	4	6	24	118	158	90	35	25	0	0	0	462
E	0	0	1	0	2	3	27	126	156	135	91	71	2	2	0	616
ESE	0	0	0	2	4	6	38	325	312	160	62	21	0	0	0	930
SE	0	0	0	1	1	5	44	430	404	82	8	0	0	0	0	975
SSE	1	0	0	3	5	7	41	272	320	80	12	1	0	0	0	742
S	0	0	0	1	5	5	48	246	205	45	8	3	0	0	0	566
SSW	0	0	1	0	4	4	56	228	315	180	62	25	7	0	0	882
SW	1	1	2	0	5	7	45	146	193	128	69	31	2	0	0	630
WSW	2	0	0	4	12	22	60	179	220	98	28	7	0	0	0	632
W	2	0	1	10	11	19	84	212	168	90	38	13	0	0	0	648
WNW	2	0	3	5	12	27	90	254	236	86	38	16	0	0	0	769
NW	1	1	1	4	10	21	80	239	194	83	29	11	0	0	0	674
NNW	1	0	0	2	1	12	37	154	146	89	32	19	0	0	0	493
TOTAL	12	2	11	35	91	162	750	3182	3306	1482	551	269	11	2	0	9866

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #56 here

Table 2.3-293 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – Stability Class B [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	0	3	30	35	34	20	7	6	0	135
NNE	0	2	23	23	20	19	12	1	0	100
NE	0	2	12	30	19	15	3	2	0	83
ENE	1	1	18	19	28	28	12	4	0	111
E	0	0	7	18	25	35	17	7	0	109
ESE	1	1	17	40	37	22	13	1	0	132
SE	1	1	32	75	51	21	4	0	0	185
SSE	0	4	14	61	39	12	2	0	0	132
S	0	4	19	46	24	18	2	0	0	113
SSW	2	3	25	50	82	70	30	10	0	272
SW	0	5	28	57	58	84	43	25	4	304
WSW	0	4	38	58	71	28	13	2	0	214
W	0	15	38	78	51	36	11	1	0	230
WNW	0	9	45	70	43	25	14	2	0	208
NW	0	6	43	55	43	22	6	2	0	177
NNW	0	1	36	61	42	32	9	0	0	181
TOTAL	5	61	425	776	667	487	198	63	4	2686

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 56)

Class B Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	0	0	0	1	6	8	14	46	32	13	8	8	0	0	0	136
NNE	0	0	1	0	2	5	17	26	21	14	9	5	0	0	0	100
NE	0	0	0	2	0	0	11	34	17	13	4	3	0	0	0	84
ENE	0	0	1	0	1	5	11	20	33	21	12	10	0	0	0	114
E	0	0	0	0	1	1	6	21	28	27	17	11	0	0	0	112
ESE	0	0	0	0	2	3	12	50	34	17	8	8	0	0	0	134
SE	0	0	0	1	0	7	25	86	53	10	3	2	0	0	0	187
SSE	0	0	0	2	3	3	9	66	44	6	1	1	0	0	0	135
S	0	0	1	1	2	2	17	50	26	12	3	0	0	0	0	114
SSW	0	0	2	0	1	6	15	59	90	52	35	19	0	0	0	279
SW	0	0	1	1	1	6	19	67	72	59	53	33	8	1	0	321
WSW	0	0	0	1	5	10	25	67	92	19	13	4	0	0	0	236
W	1	1	2	5	11	6	26	90	57	29	9	4	0	0	0	241
WNW	0	1	1	7	7	9	28	84	45	17	12	8	0	0	0	219
NW	0	0	1	3	5	13	29	57	44	20	7	4	0	0	0	183
NNW	0	0	0	1	2	5	26	67	46	26	8	3	0	0	0	184
TOTAL	1	2	10	25	49	89	290	890	734	355	202	123	8	1	0	2779

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #57 here

Table 2.3-294 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – Stability Class C [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	0	2	27	42	29	30	10	6	0	146
NNE	0	5	24	30	23	21	22	0	0	125
NE	0	4	12	28	36	27	6	1	0	114
ENE	0	4	6	11	29	42	14	10	2	118
E	0	1	5	20	19	28	18	10	1	102
ESE	1	0	15	37	28	30	12	2	0	125
SE	0	1	14	46	34	14	5	1	0	115
SSE	0	0	15	39	32	6	7	1	0	100
S	1	5	22	39	27	20	5	0	0	119
SSW	2	7	29	50	56	74	35	8	0	261
SW	1	4	37	51	77	77	48	45	6	346
WSW	0	12	48	57	36	44	16	6	0	219
W	0	14	48	52	48	26	16	0	0	204
WNW	0	10	57	48	39	27	20	3	0	204
NW	0	6	44	36	31	22	9	5	0	153
NNW	0	12	27	60	41	13	8	2	0	163
TOTAL	5	87	430	646	585	501	251	100	9	2614

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 57)

Class C Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	0	0	0	0	3	6	20	47	32	21	11	8	0	0	0	148
NNE	0	0	2	3	1	5	17	37	19	19	22	2	0	0	0	127
NE	0	0	0	2	3	3	9	31	40	19	7	4	0	0	0	118
ENE	0	0	2	2	1	1	4	13	32	37	16	16	3	0	0	127
E	0	0	0	1	1	2	3	24	20	23	12	18	2	0	0	106
ESE	0	0	0	0	0	4	13	44	30	21	11	5	0	0	0	128
SE	0	0	0	0	1	2	11	53	31	11	5	1	0	0	0	115
SSE	0	0	0	0	1	2	11	42	30	5	7	1	0	0	0	99
S	0	0	0	3	6	5	13	43	28	15	4	2	0	0	0	119
SSW	0	0	1	3	6	4	20	57	69	58	35	17	0	0	0	270
SW	0	0	0	3	2	13	24	73	88	65	41	57	10	1	0	377
WSW	0	0	0	8	3	9	38	69	49	31	17	10	0	0	0	234
W	0	0	2	6	11	7	39	66	44	21	19	4	0	0	0	219
WNW	0	0	3	4	10	17	38	70	41	21	17	9	0	0	0	230
NW	0	0	0	6	8	12	24	53	39	12	11	6	0	0	0	171
NNW	0	0	2	6	5	7	17	70	42	8	7	5	0	0	0	169
TOTAL	0	0	12	47	62	99	301	792	634	387	242	165	15	1	0	2757

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #58 here

Table 2.3-295 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – Stability Class D [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	1	48	122	144	133	222	99	31	4	804
NNE	0	29	169	180	131	133	105	34	10	791
NE	1	26	90	251	380	330	84	4	2	1168
ENE	1	12	51	131	240	324	123	43	4	929
E	1	6	47	93	179	240	163	79	26	834
ESE	2	11	73	158	194	195	64	30	1	728
SE	6	11	55	162	173	102	23	9	1	542
SSE	2	8	60	93	103	92	18	2	2	380
S	3	11	77	133	161	126	36	3	0	550
SSW	8	31	74	194	256	392	171	76	1	1203
SW	7	36	186	391	483	585	346	125	28	2187
WSW	4	56	330	431	333	237	55	21	4	1471
W	4	77	260	290	216	160	38	6	0	1051
WNW	3	71	216	256	180	152	77	11	0	966
NW	0	55	213	271	178	115	20	2	0	854
NNW	0	42	189	290	223	128	48	15	0	935
TOTAL	43	530	2212	3468	3563	3533	1470	491	83	15393

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 58)

Class D Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	1	1	11	17	26	37	74	164	160	174	109	53	4	0	0	831
NNE	1	1	3	14	28	37	105	210	137	114	93	52	18	0	0	813
NE	1	0	5	13	13	14	64	298	424	251	104	23	2	0	0	1212
ENE	0	0	2	3	10	8	33	159	273	258	123	87	5	0	0	961
E	0	1	2	1	7	10	37	113	221	175	151	114	31	2	0	865
ESE	0	1	1	5	10	16	47	186	215	149	58	51	1	0	0	740
SE	0	1	1	9	7	13	37	188	178	74	20	14	4	0	0	546
SSE	0	0	1	3	8	16	41	121	107	68	23	4	2	0	0	394
S	1	0	2	10	7	17	59	170	166	107	32	13	0	0	0	584
SSW	1	1	7	15	15	8	58	240	293	300	177	128	3	0	0	1246
SW	1	1	12	15	26	35	130	474	548	461	347	221	40	1	0	2312
WSW	2	3	9	28	48	72	238	516	382	187	56	39	4	0	0	1584
W	2	2	23	29	55	55	190	333	242	131	51	15	1	0	0	1129
WNW	2	2	17	32	52	68	128	310	200	127	74	29	0	0	0	1041
NW	1	0	8	27	41	39	150	326	189	85	29	7	0	0	0	902
NNW	1	1	8	19	31	44	129	335	237	107	56	28	0	0	0	996
TOTAL	14	15	112	240	384	489	1520	4143	3972	2768	1503	878	115	3	0	16156

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #59 here

Table 2.3-296 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – Stability Class E [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	2	65	167	166	92	56	13	7	1	569
NNE	0	45	225	159	60	39	6	2	0	536
NE	3	32	74	210	117	35	9	0	0	480
ENE	3	17	48	132	126	67	13	3	3	412
E	4	20	54	131	123	91	55	26	10	514
ESE	0	18	98	185	182	82	35	14	0	614
SE	2	21	83	164	150	87	11	2	0	520
SSE	1	31	114	197	142	94	14	0	2	595
S	8	71	202	267	231	153	34	7	1	974
SSW	9	77	239	507	452	423	121	21	3	1852
SW	4	128	464	340	158	113	42	10	3	1262
WSW	6	212	525	228	57	23	2	0	0	1053
W	5	193	306	142	47	13	3	2	1	712
WNW	3	193	352	139	58	29	6	1	2	783
NW	4	140	408	131	47	36	6	1	0	773
NNW	2	74	258	211	59	23	8	3	0	638
TOTAL	56	1337	3617	3309	2101	1364	378	99	26	12287

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 59)

Class E Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	3	0	11	26	39	47	104	186	96	33	15	10	1	0	0	571
NNE	3	2	5	23	33	46	152	184	67	28	3	5	0	0	0	551
NE	1	1	4	14	20	21	41	230	115	21	10	0	0	0	0	478
ENE	1	0	3	10	7	13	32	149	126	54	10	6	4	0	0	415
E	1	2	6	8	7	8	43	152	131	69	44	39	9	3	0	522
ESE	1	2	6	9	5	22	62	217	189	59	36	17	3	0	0	628
SE	1	1	3	10	9	19	57	194	160	67	11	5	0	0	0	537
SSE	2	1	8	13	22	17	78	216	148	78	18	1	2	0	0	604
S	3	2	19	27	46	41	132	302	246	110	41	16	1	0	0	986
SSW	3	7	13	31	45	44	163	525	498	324	111	62	3	0	0	1829
SW	7	6	23	46	97	113	292	391	161	79	43	22	3	0	0	1283
WSW	11	2	47	78	165	154	294	259	55	19	2	0	0	0	0	1086
W	9	7	45	85	118	94	155	172	49	12	4	2	1	0	0	753
WNW	10	5	39	87	142	120	185	157	58	23	7	4	1	1	0	839
NW	8	5	16	70	100	120	245	159	48	29	5	3	0	0	0	808
NNW	4	0	14	33	45	54	169	235	57	19	8	3	0	0	0	641
TOTAL	68	43	262	570	900	933	2204	3728	2204	1024	368	195	28	4	0	12531

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #60 here

Table 2.3-297 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – Stability Class F [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	2	48	149	98	13	8	1	0	0	319
NNE	1	32	66	35	9	3	0	0	0	146
NE	1	15	24	11	5	0	0	0	0	56
ENE	1	10	14	10	12	8	2	0	0	57
E	0	12	18	32	20	16	8	8	0	114
ESE	2	13	42	47	36	16	5	0	0	161
SE	2	13	42	66	37	22	7	1	0	190
SSE	3	40	72	93	57	32	7	3	0	307
S	3	68	106	67	47	41	15	2	0	349
SSW	2	99	177	141	98	81	14	4	1	617
SW	3	134	221	26	14	9	2	0	0	409
WSW	5	203	215	6	5	5	1	5	2	447
W	4	221	122	7	9	1	0	1	2	367
WNW	3	265	212	14	2	6	1	0	0	503
NW	3	162	160	15	6	2	0	0	0	348
NNW	5	93	144	47	5	6	0	0	0	300
TOTAL	40	1428	1784	715	375	256	63	24	5	4690

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 60)

Class F Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	3	2	11	17	42	28	96	109	12	5	1	0	0	0	0	326
NNE	2	4	7	13	15	21	39	38	9	2	0	0	0	0	0	150
NE	1	2	3	7	8	7	11	12	5	0	0	0	0	0	0	56
ENE	0	1	2	3	5	7	6	10	13	7	2	0	0	0	0	56
E	0	1	3	5	2	6	12	34	25	9	7	9	1	0	0	114
ESE	1	0	2	7	6	7	32	56	33	13	2	3	0	0	0	162
SE	0	0	2	9	2	5	34	74	40	20	9	1	0	0	0	196
SSE	2	1	8	20	20	15	42	103	66	19	10	4	0	0	0	310
S	3	1	12	28	44	33	51	79	53	32	16	5	0	0	0	357
SSW	5	3	33	35	54	58	83	161	108	56	14	10	1	0	0	621
SW	6	7	28	66	76	70	109	32	18	4	1	1	0	0	0	418
WSW	9	9	31	95	126	91	71	6	6	2	2	6	2	0	0	456
W	8	4	64	105	80	51	38	7	9	1	0	1	1	1	0	370
WNW	11	12	77	107	119	95	79	17	3	5	1	0	0	0	0	526
NW	7	3	33	80	77	67	65	16	6	2	0	0	0	0	0	356
NNW	4	3	22	34	60	39	74	53	4	6	0	0	0	0	0	299
TOTAL	62	53	338	631	736	600	842	807	410	183	65	40	5	1	0	4773

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #61 here

Table 2.3-298 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – Stability Class G [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	0	23	63	20	4	1	0	0	0	111
NNE	0	14	12	10	0	0	0	0	0	36
NE	0	5	5	2	0	0	0	0	0	12
ENE	0	1	4	2	2	0	0	0	0	9
E	0	1	10	10	10	8	2	0	1	42
ESE	0	7	27	27	18	13	1	1	0	94
SE	0	9	37	37	22	20	3	0	0	128
SSE	1	7	21	31	24	18	5	0	0	107
S	0	21	17	18	9	5	0	0	0	70
SSW	0	23	60	29	15	16	0	0	0	143
SW	1	49	49	11	5	7	1	0	0	123
WSW	2	128	81	2	0	5	1	0	0	219
W	2	223	49	2	0	0	0	0	0	276
WNW	0	333	184	3	1	0	0	0	0	521
NW	2	151	87	1	1	0	0	0	0	242
NNW	0	77	91	19	0	0	0	0	0	187
TOTAL	8	1072	797	224	111	93	13	1	1	2320

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 61)

Class G Pasquill Stability Class

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	1	0	3	13	14	16	38	24	3	1	0	0	0	0	0	113
NNE	1	0	3	6	7	5	4	10	0	0	0	0	0	0	0	36
NE	0	0	4	0	2	3	0	2	0	0	0	0	0	0	0	11
ENE	0	0	0	1	0	2	2	3	1	0	0	0	0	0	0	9
E	0	0	0	1	1	2	7	11	10	7	1	1	1	0	0	42
ESE	0	0	5	2	4	3	19	31	18	10	1	1	0	0	0	94
SE	0	0	0	4	5	10	23	43	23	13	5	1	0	0	0	127
SSE	0	1	5	2	2	6	13	33	27	12	5	2	0	0	0	108
S	1	1	5	11	7	2	12	19	8	4	1	0	0	0	0	71
SSW	1	1	6	6	24	18	25	35	15	9	4	0	0	0	0	144
SW	2	2	20	17	18	19	19	13	5	7	1	0	0	0	0	123
WSW	3	8	40	49	45	38	22	2	1	4	1	0	0	0	0	213
W	5	5	74	112	47	24	9	2	0	0	0	0	0	0	0	278
WNW	9	8	80	152	149	91	36	3	1	0	0	0	0	0	0	529
NW	4	3	45	64	68	38	15	2	0	0	0	0	0	0	0	239
NNW	2	0	12	39	49	24	44	21	0	0	0	0	0	0	0	191
TOTAL	29	29	302	479	442	301	288	254	112	67	19	5	1	0	0	2328

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Add Insert #62 here

Table 2.3-299 Joint Frequency Distribution in Hours of Wind Speed and Direction by Atmospheric Stability Class – All Stability Classes [EF3 COL 2.0-10-A]

	Wind Speed (miles/hr)									
DIR	**<0.75**	**0.751-2.5**	**2.51-4.5**	**4.51-6.5**	**6.51-8.5**	**8.51-11.5**	**11.51-14.5**	**14.51-18.5**	**18.51-23.5**	**TOTAL**
N	5	195	587	558	377	409	142	62	5	2340
NNE	1	130	554	500	287	263	159	44	10	1948
NE	10	94	263	640	688	486	117	8	2	2308
ENE	9	69	183	407	582	598	203	67	9	2127
E	10	43	183	410	517	599	379	167	40	2348
ESE	7	54	328	773	821	569	187	57	1	2797
SE	21	60	326	913	889	390	60	13	1	2673
SSE	13	98	355	757	717	377	63	7	4	2391
S	23	185	505	792	702	442	101	13	1	2764
SSW	30	247	672	1170	1259	1312	439	130	7	5266
SW	21	366	1043	1013	969	1075	561	223	42	5313
WSW	19	625	1337	940	701	505	108	39	6	4280
W	18	765	920	759	517	358	110	13	3	3463
WNW	9	898	1199	751	531	366	151	22	2	3929
NW	9	532	1072	711	504	305	71	14	0	3218
NNW	7	303	798	825	519	317	110	28	0	2907
TOTAL	212	4664	10325	11919	10580	8371	2961	907	133	50072

Notes:
Data from 10 m Sensor
Data from 2002-2007
Calms already distributed into data

Insert 62)

All Pasquill Stability Classes

	Wind Speed (Miles/Hour)															
Direction	**<1.0**	**1.0-1.12**	**1.121 -1.68**	**1.681 -2.24**	**2.241 -2.80**	**2.801 -3.36**	**3.361 -4.47**	**4.471- 6.71**	**6.711- 8.95**	**8.951- 11.18**	**11.181 -13.42**	**13.421 -17.9**	**1.91- 22.37**	**22.371 -26.84**	**26.841 -38.03**	**Total**
N	9	3	37	75	135	148	365	638	417	301	158	89	5	0	0	2380
NNE	7	7	21	59	90	123	361	574	303	212	139	74	18	0	0	1988
NE	4	3	16	39	52	56	166	729	748	351	138	36	2	0	0	2340
ENE	2	1	11	20	28	42	112	472	636	467	198	144	12	0	0	2145
E	2	4	12	16	21	32	135	481	591	445	323	263	46	7	0	2378
ESE	3	3	14	25	31	61	223	909	831	429	178	106	4	0	0	2817
SE	3	2	6	34	25	61	231	1068	889	277	61	24	4	0	0	2685
SSE	4	3	22	43	61	66	235	853	742	268	76	14	4	0	0	2391
S	8	4	39	81	117	105	332	909	732	325	105	39	1	0	0	2797
SSW	10	12	63	90	149	142	420	1305	1388	979	438	261	14	0	0	5271
SW	16	17	86	148	225	263	638	1196	1085	803	555	365	63	3	0	5463
WSW	26	22	127	263	404	396	748	1098	805	360	119	66	6	0	0	4440
W	25	19	211	352	333	256	541	882	569	284	121	39	3	1	0	3636
WNW	34	28	220	394	491	427	584	895	584	279	149	66	1	1	0	4153
NW	21	12	104	254	309	310	608	852	520	231	81	31	0	0	0	3333
NNW	12	4	58	134	193	185	496	935	532	255	111	58	0	0	0	2973
TOTAL	186	144	1047	2027	2664	2673	6195	13796	11372	6266	2950	1675	183	12	0	51190

Notes:
Data from 10 meter level
Data from 2002-2007
Calm is defined as a wind speed less than 1 mph

Table 2.3-300 Fermi 3 Offsite Short-Term Atmospheric Dispersion Factors [EF3 COL 2.0-10-A]

Exclusion Area Boundary X/Q (sec/m^3)				
	Direction Dependent X/Q			Direction Independent X/Q
Time Period	0.5% Max Sector X/Q		Sector/Distance	5% Overall Site Limit	
0-2 hrs	~~3.66E-04~~	3.95E-04	ESE	~~2.54E-04~~	2.74E-04

Low Population Zone X/Q (sec/m^3)				
	Direction Dependent X/Q			Direction Independent X/Q
Time Period	0.5% Max Sector X/Q		Sector/Distance	5% Overall Site Limit	
0-8 hrs	~~3.23E-05~~	3.46E-05	ESE	~~2.20E-05~~	2.17E-05
8-24 hrs	~~2.23E-05~~	2.37E-05	ESE	~~1.57E-05~~	1.56E-05
1-4 days	~~9.95E-06~~	1.05E-05	ESE	~~7.64E-06~~	7.58E-06
4-30 days	~~3.13E-06~~	3.22E-06	ESE	~~2.70E-06~~	2.70E-06

Table 2.3-303 Onsite X/Q Factors from ARCON96 Runs (Sheet 1 of 4) [EF3 COL 2.0-10-A]

Release Location (Type)	Receptor Locations	0-2 hr X/Q (sec/m^3)	2-8 hr X/Q (sec/m^3)	8-24 hr X/Q (sec/m^3)	1-4 days X/Q (sec/m^3)	4-30 days X/Q (sec/m^3)
Reactor Building	Control Building Louvers	1.69E-03	1.19E-03	4.56E-04	3.57E-04	2.70E-04
Reactor Building	Emergency Intake North	1.14E-03	8.63E-04	3.34E-04	2.75E-04	2.20E-04
Reactor Building	Emergency Intake South	1.12E-03	8.28E-04	3.21E-04	2.41E-04	1.83E-04
Reactor Building	Normal Air Intake	1.22E-03	8.93E-04	3.46E-04	2.56E-04	1.92E-04
Reactor Building	TSC Intake East	2.44E-04	2.00E-04	8.44E-05	7.37E-05	6.19E-05
Reactor Building	TSC Intake West	2.73E-04	2.28E-04	9.48E-05	8.06E-05	6.78E-05
PCCS	Control Building Louvers	1.83E-03	1.29E-03	4.48E-04	3.11E-04	2.68E-04
PCCS	Emergency Intake North	1.45E-03	Insert Table 2.3-303	4.06E-04	3.11E-04	2.94E-04
PCCS	Emergency Intake South	1.17E-03	8.67E-04	2.95E-04	2.14E-04	1.86E-04
PCCS	Normal Air Intake	1.18E-03	8.59E-04	2.95E-04	2.08E-04	1.78E-04
PCCS	TSC Intake East	3.68E-04	2.97E-04	1.13E-04	1.02E-04	8.55E-05
PCCS	TSC Intake West	4.65E-04	3.58E-04	1.40E-04	1.19E-04	1.00E-04
Turbine Building	Control Building Louvers	5.99E-04	3.27E-04	1.35E-04	9.62E-05	8.34E-05
Turbine Building	Emergency Intake North	7.43E-04	4.05E-04	1.65E-04	1.18E-04	9.87E-05
Turbine Building	Emergency Intake South	5.67E-04	3.23E-04	1.34E-04	9.06E-05	7.70E-05
Turbine Building	Normal Air Intake	5.28E-04	2.95E-04	1.23E-04	8.35E-05	7.16E-05

Insert Table 2.3-303 Onsite X/Q Factors from ARCON96 Runs (Sheet 1 of 4)

Release Location (Type)	Receptor Locations	0-2 hr X/Q (sec/m^3)	2-8 hr X/Q (sec/m^3)	8-24 hr X/Q (sec/m^3)	1-4 days X/Q (sec/m^3)	4-30 days X/Q (sec/m^3)
Reactor Building	Control Building Louvers	1.7E-03	1.1E-03	4.3E-04	3.3E-04	2.5E-04
Reactor Building	Emergency Intake North	1.1E-03	7.9E-04	3.0E-04	2.4E-04	1.9E-04
Reactor Building	Emergency Intake South	1.1E-03	7.6E-04	2.9E-04	2.2E-04	1.6E-04
Reactor Building	Normal Air Intake	1.1E-03	7.8E-04	3.0E-04	2.2E-04	1.7E-04
Reactor Building	TSC Intake B	2.3E-04	1.9E-04	7.8E-05	6.6E-05	5.6E-05
Reactor Building	TSC Intake A	2.4E-04	2.0E-04	8.2E-05	6.8E-05	5.8E-05
PCCS	Control Building Louvers	1.7E-03	1.2E-03	4.1E-04	2.8E-04	2.1E-04
PCCS	Emergency Intake North	1.4E-03	9.9E-04	3.6E-04	2.6E-04	2.0E-04
PCCS	Emergency Intake South	1.1E-03	7.7E-04	2.7E-04	1.9E-04	1.4E-04
PCCS	Normal Air Intake	1.1E-03	7.8E-04	2.7E-04	1.9E-04	1.4E-04
PCCS	TSC Intake B	3.5E-04	2.6E-04	9.9E-05	8.4E-05	7.0E-05
PCCS	TSC Intake A	3.6E-04	2.7E-04	1.0E-04	8.8E-05	7.3E-05
Turbine Building	Control Building Louvers	6.8E-04	4.0E-04	1.6E-04	1.2E-04	8.9E-05
Turbine Building	Emergency Intake North	7.2E-04	4.2E-04	1.6E-04	1.2E-04	9.7E-05
Turbine Building	Emergency Intake South	5.7E-04	3.5E-04	1.4E-04	9.9E-05	7.8E-05
Turbine Building	Normal Air Intake	5.5E-04	3.3E-04	1.3E-04	9.6E-05	7.4E-05

Insert Table 2.3-303 Onsite X/Q Factors from ARCON96 Runs (Sheet 2 of 4)

Release Location (Type)	Receptor Locations	0-2 hr X/Q (sec/m^3)	2-8 hr X/Q (sec/m^3)	8-24 hr X/Q (sec/m^3)	1-4 days X/Q (sec/m^3)	4-30 days X/Q (sec/m^3)
Turbine Building	TSC Intake B	6.9E-04	4.4E-04	1.7E-04	1.5E-04	1.2E-04
Turbine Building	TSC Intake A	6.4E-04	4.4E-04	1.8E-04	1.5E-04	1.2E-04
TB-TD	Control Building Louvers	2.5E-04	1.8E-04	6.6E-05	4.5E-05	3.2E-05
TB-TD	Emergency Intake North	2.4E-04	1.8E-04	6.3E-05	4.2E-05	3.1E-05
TB-TD	TSC Intake B	5.7E-04	4.4E-04	1.8E-04	1.2E-04	1.0E-04
Fuel Building	Control Building Louvers	2.2E-03	1.6E-03	6.4E-04	5.6E-04	4.5E-04
Fuel Building	Emergency Intake North	1.1E-03	9.1E-04	3.6E-04	3.1E-04	2.6E-04
Fuel Building	Emergency Intake South	1.5E-03	1.3E-03	5.0E-04	4.0E-04	3.4E-04
Fuel Building	Normal Air Intake	2.0E-03	1.6E-03	6.1E-04	4.8E-04	4.0E-04
Radwaste Building	Normal Air Intake	4.5E-04	3.5E-04	1.4E-04	9.0E-05	6.7E-05
Reactor Building Vent Stack	Control Building Louvers	9.3E-04	6.9E-04	2.5E-04	2.1E-04	1.7E-04
Reactor Building Vent Stack	Emergency Intake South	6.8E-04	5.1E-04	1.8E-04	1.5E-04	1.2E-04
Reactor Building Vent Stack	Normal Air Intake	7.4E-04	5.5E-04	2.0E-04	1.6E-04	1.3E-04
Turbine Building Vent Stack	Control Building Louvers	3.1E-04	2.1E-04	7.5E-05	5.5E-05	3.8E-05
Turbine Building Vent Stack	Emergency Intake North	3.3E-04	2.2E-04	7.4E-05	5.3E-05	3.7E-05

Insert Table 2.3-303 Onsite X/Q Factors from ARCON96 Runs (Sheet 3 of 4)

Release Location (Type)	Receptor Locations	0-2 hr X/Q (sec/m^3)	2-8 hr X/Q (sec/m^3)	8-24 hr X/Q (sec/m^3)	1-4 days X/Q (sec/m^3)	4-30 days X/Q (sec/m^3)
Turbine Building Vent Stack	Normal Air Intake	2.6E-04	1.7E-04	5.9E-05	4.3E-05	3.0E-05
Radwaste Building Vent Stack	Control Building Louvers	6.1E-04	4.8E-04	1.8E-04	1.2E-04	9.0E-05
Radwaste Building Vent Stack	Emergency Intake North	4.7E-04	3.8E-04	1.4E-04	9.8E-05	7.7E-05
Radwaste Building Vent Stack	Normal Air Intake	4.2E-04	3.3E-04	1.2E-04	8.3E-05	6.1E-05
North Reactor Building Blowout Panel	Control Building Louvers	2.1E-03	1.4E-03	4.8E-04	3.3E-04	2.4E-04
North Reactor Building Blowout Panel	Emergency Intake North	1.9E-03	1.4E-03	4.9E-04	3.5E-04	2.7E-04
North Reactor Building Blowout Panel	Emergency Intake South	1.5E-03	1.1E-03	3.6E-04	2.6E-04	1.9E-04
North Reactor Building Blowout Panel	Normal Air Intake	1.4E-03	9.8E-04	3.4E-04	2.3E-04	1.7E-04
South Reactor Building Blowout Panel	Control Building Louvers	2.2E-03	1.7E-03	6.2E-04	5.3E-04	4.4E-04
South Reactor Building Blowout Panel	Emergency Intake North	1.6E-03	1.2E-03	4.3E-04	3.7E-04	3.1E-04

Insert Table 2.3-303 Onsite X/Q Factors from ARCON96 Runs (Sheet 4 of 4)

Release Location (Type)	Receptor Locations	0-2 hr X/Q (sec/m^3)	2-8 hr X/Q (sec/m^3)	8-24 hr X/Q (sec/m^3)	1-4 days X/Q (sec/m^3)	4-30 days X/Q (sec/m^3)
South Reactor Building Blowout Panel	Emergency Intake South	1.9E-03	1.4E-03	5.0E-04	4.1E-04	3.4E-04
South Reactor Building Blowout Panel	Normal Air Intake	2.1E-03	1.6E-03	5.6E-04	4.6E-04	3.7E-04
Fermi 3	Fermi 2	6.7E-05	5.5E-05	1.8E-05	1.3E-05	8.9E-06
Fermi 2	Fermi 3	7.5E-05	6.7E-05	3.0E-05	2.3E-05	2.0E-05

Table 2.3-304 Cross-Unit X/Q Factors~~(1)~~ [EF3 COL 2.0-10-A]

Release-Receptor Combination	Time Period	X/Q with Safety Factor = 1.5(sec/m^3)	
Fermi 3 to Fermi 2	0-2 hours	~~9.80E-05~~	1.0E-04
	2-8 hours	~~8.59E-05~~	8.2E-05
	8-24 hours	~~2.70E-05~~	2.8E-05
	1-4 days	~~2.09E-05~~	2.0E-05
	4-30 days	~~1.55E-05~~	1.3E-05
Fermi 2 to Fermi 3	0-2 hours	~~1.23E-04~~	1.1E-04
	2-8 hours	~~1.08E-04~~	1.0E-04
	8-24 hours	~~5.03E-05~~	4.4E-05
	1-4 days	~~4.10E-05~~	3.4E-05
	4-30 days	~~3.54E-05~~	3.1E-05

~~1. **[START COM 2.3-204]** The atmospheric dispersion factors (X/Qs) calculated for the Control Room and Technical Support Center using ARCON96 are currently under revision as part of the effort described in Detroit Edison letter NRC3-10-003, dated February 8, 2010. Detroit Edison will provide the COLA revision to reflect the new atmospheric dispersion factors (X/Qs) calculated for the Control Room and Technical Support Center under separate correspondence to the NRC by March 25, 2010. **[END COM 2.3-204]**~~

Table 2.3-305 Distances to Site Boundary, Nearest Residences, and Nearest Gardens [EF3 COL 2.0-11-A]

Downwind Sector	Distance to Site Boundary (m)	Distance to Nearest Residence (m)	Distance to Nearest Garden (m)
N	1059	N/A	3716
NNE	1531	2109	3477
NE	2054	2182	3602
ENE	N/A	N/A	N/A
E	N/A	N/A	N/A
ESE	N/A	N/A	N/A
SE	N/A	N/A	N/A
SSE	1131	78	N/A
S	1131	N/A	2067
SSW	1156	1442	N/A
SW	1447	1606	N/A
WSW	1281	1821	3445
W	943	1571	2422
WNW	919	N/A	N/A
NW	919	1107	1110
NNW	919	1920	1757

Insert Table 2.3-305

Note: There are no site boundary distances listed for the ENE, E, ESE, and SE sectors since they are directly towards Lake Erie.

Table 2.3-306 Distances to Nearest Sheep, Goat, Meat Cow, and Milk Cow Receptors [EF3 COL 2.0-11-A]

Downwind Sector	Distance to Nearest Sheep Receptor (m)	Distance to Nearest Goat Receptor (m)	Distance to Nearest Meat Cow Receptor (m)	Distance to Nearest Milk Cow Receptor (m)
NNE	7238	N/A	7239	N/A
WNW	N/A	Insert Table 2.3-306	N/A	3513
NW	N/A	N/A	N/A	5869
NNW	7173	4961	4904	N/A

Insert Table 2.3-305:

Downwind Sector	Distance to Site Boundary (m)	Distance to Nearest Residence (m)	Distance to Nearest Garden (m)
N	909	N/A	3566
NNE	1381	1959	3327
NE	1904	2032	3452
ENE	N/A	N/A	N/A
E	N/A	N/A	N/A
ESE	N/A	N/A	N/A
SE	N/A	N/A	N/A
SSE	981	1328	N/A
S	981	N/A	1917
SSW	1006	1292	N/A
SW	1297	1456	N/A
WSW	1131	1671	3295
W	793	1421	2272
WNW	769	N/A	N/A
NW	769	957	960
NNW	769	1770	1607

Insert Table 2.3-306:

Downwind Sector	Distance to Nearest Sheep (m)	Distance to Nearest Goat (m)	Distance to Nearest Meat Cow (m)	Distance to Nearest Milk Cow (m)
NNE	7088	N/A	7089	N/A
WNW	N/A	3554	N/A	3363
NW	N/A	N/A	N/A	5719
NNW	7023	4811	4754	N/A

Table 2.3-307 Site Boundary X/Q and D/Q Factors for Ground-Level Release [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	0.66	7.9E-06	7.9E-06	7.1E-06	2.8E-08
NNE	0.95	5.6E-06	5.6E-06	4.9E-06	2.3E-08
NE	1.28	3.0E-06	3.0E-06	2.6E-06	1.1E-08
SSE	0.70	9.3E-06	9.3E-06	8.3E-06	2.6E-08
S	0.70	6.7E-06	6.7E-06	6.0E-06	2.1E-08
SSW	0.72	4.6E-06	4.6E-06	4.1E-06	1.7E-08
SW	0.90	2.2E-06	2.2E-06	1.9E-06	1.2E-08
WSW	0.80	2.2E-06	2.2E-06	2.0E-06	1.5E-08
W	0.59	4.3E-06	4.3E-06	3.9E-06	2.8E-08
WNW	0.57	6.2E-06	6.2E-06	5.6E-06	3.5E-08
NW	0.57	6.5E-06	6.5E-06	5.9E-06	3.4E-08
NNW	0.57	7.2E-06	7.2E-06	6.5E-06	3.0E-08

Insert Table 2.3-307

Note: There are no values listed for the ENE, E, ESE and SE sectors because these sectors are directly towards Lake Erie.

Table 2.3-308 Site Boundary X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	0.66	4.3E-07	4.3E-07	3.9E-07	8.6E-09
NNE	0.95	4.9E-07	4.9E-07	4.5E-07	8.6E-09
NE	1.28	2.8E-07	2.8E-07	2.6E-07	4.8E-09
SSE	0.70	2.9E-07	2.9E-07	2.8E-07	7.7E-09
S	0.70	3.0E-07	3.0E-07	2.8E-07	6.2E-09
SSW	0.72	2.3E-07	Insert Table 2.3-308	2.1E-07	5.0E-09
SW	0.90	2.4E-07	2.4E-07	2.3E-07	4.9E-09
WSW	0.80	2.7E-07	2.7E-07	2.5E-07	6.7E-09
W	0.59	4.6E-07	4.6E-07	4.3E-07	1.2E-08
WNW	0.57	5.0E-07	5.0E-07	4.7E-07	1.4E-08
NW	0.57	4.9E-07	4.9E-07	4.6E-07	1.4E-08
NNW	0.57	4.5E-07	4.5E-07	4.2E-07	1.1E-08

Note: There are no values listed for the ENE, E, ESE and SE sectors because these sectors are directly towards Lake Erie.

Table 2.3-309 Site Boundary X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	0.66	4.9E-07	4.9E-07	4.5E-07	8.2E-09
NNE	0.95	5.1E-07	5.1E-07	4.6E-07	8.2E-09
NE	1.28	2.6E-07	2.6E-07	2.3E-07	4.1E-09
SSE	0.70	3.6E-07	3.6E-07	3.3E-07	7.0E-09
S	0.70	3.5E-07	Insert Table 2.3-309	3.2E-07	5.5E-09
SSW	0.72	2.6E-07	2.5E-07	2.3E-07	4.4E-09
SW	0.90	2.1E-07	2.1E-07	2.0E-07	4.0E-09
WSW	0.80	2.5E-07	2.5E-07	2.3E-07	5.8E-09
W	0.59	4.8E-07	4.8E-07	4.4E-07	1.1E-08
WNW	0.57	5.5E-07	5.5E-07	5.1E-07	1.3E-08
NW	0.57	5.4E-07	5.4E-07	5.0E-07	1.2E-08
NNW	0.57	5.2E-07	5.2E-07	4.8E-07	1.0E-08

Note: There are no values listed for the ENE, E, ESE and SE sectors because these sectors are directly towards Lake Erie.

Table 2.3-310 Nearest Residence X/Q and D/Q Factors for Ground-Level Release [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	1.31	2.5E-06	2.5E-06	2.2E-06	1.0E-08
NE	1.36	2.6E-06	2.6E-06	2.2E-06	9.4E-09
SSE	0.92	4.9E-06	4.9E-06	4.3E-06	1.4E-08
SSW	0.90	2.7E-06	2.7E-06	2.4E-06	9.9E-09
SW	1.00	1.7E-06	1.7E-06	1.5E-06	8.9E-09
WSW	1.13	9.0E-07	8.9E-07	7.8E-07	5.9E-09
W	0.98	1.4E-06	1.4E-06	1.2E-06	9.5E-09
NW	0.69	4.6E-06	4.6E-06	4.2E-06	2.5E-08
NNW	1.19	1.4E-06	1.4E-06	1.2E-06	5.8E-09

Insert Table 2.3-310

Table 2.3-311 Nearest Residence X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	1.32	2.8E-07	2.8E-07	2.6E-07	4.0E-09
NE	1.36	2.6E-07	2.6E-07	2.4E-07	4.2E-09
SSE	0.92	2.0E-07	2.0E-07	1.9E-07	4.7E-09
SSW	0.90	1.7E-07	1.7E-07	1.6E-07	3.3E-09
SW	1.00	2.1E-07	Insert Table 2.3-311	2.0E-07	3.9E-09
WSW	1.13	1.6E-07	1.6E-07	1.5E-07	3.1E-09
W	0.98	2.3E-07	2.2E-07	2.1E-07	4.8E-09
NW	0.69	3.8E-07	3.8E-07	3.6E-07	1.1E-08
NNW	1.19	1.4E-07	1.4E-07	1.3E-07	2.5E-09

Table 2.3-312 Nearest Residence X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	1.32	2.7E-07	2.7E-07	2.4E-07	3.7E-09
NE	1.36	2.3E-07	2.3E-07	2.1E-07	3.6E-09
SSE	0.92	2.2E-07	2.2E-07	2.0E-07	4.3E-09
SSW	0.90	1.7E-07	1.7E-07	1.6E-07	3.0E-09
SW	1.00	1.8E-07	1.8E-07	1.7E-07	3.3E-09
WSW	1.13	1.3E-07	1.3E-07	1.2E-07	2.7E-09
W	0.98	2.1E-07	2.1E-07	1.9E-07	4.8E-09
NW	0.69	4.0E-07	4.0E-07	3.7E-07	9.9E-09
NNW	1.19	1.4E-07	1.4E-07	1.2E-07	2.4E-09

Insert Table 2.3-312

Table 2.3-313 Nearest Garden X/Q and D/Q Factors for Ground-Level Release [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	2.31	4.4E-07	4.3E-07	3.5E-07	1.3E-09
NNE	2.16	8.2E-07	8.1E-07	6.7E-07	3.0E-09
NE	2.24	8.4E-07	8.3E-07	6.8E-07	2.8E-09
S	1.28	1.5E-06	1.5E-06	1.3E-06	4.7E-09
WSW	2.14	2.0E-07	Insert Table 2.3-313	1.7E-07	1.2E-09
W	1.50	4.9E-07	4.9E-07	4.2E-07	3.2E-09
NW	0.69	4.6E-06	4.6E-06	4.1E-06	2.5E-08
NNW	1.09	1.7E-06	1.7E-06	1.5E-06	7.3E-09

Table 2.3-314 Nearest Garden X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	2.31	6.9E-08	6.9E-08	6.4E-08	5.5E-10
NNE	2.16	1.3E-07	1.3E-07	1.2E-07	1.3E-09
NE	2.24	1.3E-07	1.3E-07	1.2E-07	1.4E-09
S	1.28	1.2E-07	1.2E-07	1.1E-07	1.8E-09
WSW	2.14	5.7E-08	Insert Table 2.3-314	5.2E-08	7.4E-10
W	1.50	1.1E-07	1.1E-07	1.0E-07	1.8E-09
NW	0.69	3.8E-07	3.8E-07	3.6E-07	1.1E-08
NNW	1.09	1.6E-07	1.6E-07	1.5E-07	3.1E-09

Table 2.3-315 Nearest Garden X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	2.31	5.9E-08	5.9E-08	5.3E-08	5.4E-10
NNE	2.16	1.2E-07	1.2E-07	1.1E-07	1.3E-09
NE	2.24	1.1E-07	1.1E-07	1.0E-07	1.3E-09
S	1.28	1.2E-07	1.2E-07	1.1E-07	1.6E-09
WSW	2.14	4.8E-08	Insert Table 2.3-315	4.4E-08	6.7E-10
W	1.50	9.7E-08	9.7E-08	8.7E-08	1.8E-09
NW	0.69	4.0E-07	4.0E-07	3.7E-07	9.8E-09
NNW	1.09	1.6E-07	1.6E-07	1.4E-07	3.0E-09

Insert Table 2.3-307 Site Boundary X/Q and D/Q Factors for Ground-Level Release

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	0.56	9.6E-06	9.5E-06	8.7E-06	3.5E-08
NNE	0.86	6.8E-06	6.8E-06	6.0E-06	2.9E-08
NE	1.18	3.5E-06	3.4E-06	3.0E-06	1.3E-08
SSE	0.61	1.1E-05	1.1E-05	1.0E-05	3.3E-08
S	0.61	8.2E-06	8.2E-06	7.4E-06	2.6E-08
SSW	0.63	5.8E-06	5.8E-06	5.2E-06	2.1E-08
SW	0.81	2.7E-06	2.7E-06	2.4E-06	1.5E-08
WSW	0.70	2.6E-06	2.6E-06	2.3E-06	1.9E-08
W	0.49	5.5E-06	5.5E-06	5.1E-06	3.7E-08
WNW	0.48	8.1E-06	8.1E-06	7.4E-06	4.6E-08
NW	0.48	7.9E-06	7.9E-06	7.2E-06	4.4E-08
NNW	0.48	9.2E-06	9.2E-06	8.4E-06	3.9E-08

Insert Table 2.3-308 Site Boundary X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	0.56	5.3E-07	5.3E-07	4.9E-07	1.0E-08
NNE	0.86	6.0E-07	6.0E-07	5.5E-07	1.1E-08
NE	1.18	3.3E-07	3.3E-07	3.1E-07	5.8E-09
SSE	0.61	3.8E-07	3.8E-07	3.5E-07	9.2E-09
S	0.61	3.8E-07	3.8E-07	3.5E-07	7.4E-09
SSW	0.63	2.8E-07	2.8E-07	2.6E-07	5.8E-09
SW	0.81	2.9E-07	2.9E-07	2.7E-07	6.0E-09
WSW	0.70	3.2E-07	3.2E-07	2.9E-07	8.1E-09
W	0.49	5.7E-07	5.7E-07	5.3E-07	1.5E-08
WNW	0.48	6.6E-07	6.6E-07	6.2E-07	1.7E-08
NW	0.48	6.4E-07	6.4E-07	6.1E-07	1.6E-08
NNW	0.48	6.0E-07	6.0E-07	5.6E-07	1.3E-08

Insert Table 2.3-309 Site Boundary X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	0.56	6.1E-07	6.1E-07	5.6E-07	9.6E-09
NNE	0.86	6.3E-07	6.3E-07	5.7E-07	1.0E-08
NE	1.18	2.9E-07	2.9E-07	2.7E-07	4.8E-09
SSE	0.61	4.3E-07	4.3E-07	3.9E-07	8.1E-09
S	0.61	4.2E-07	4.2E-07	3.9E-07	6.3E-09
SSW	0.63	3.0E-07	3.0E-07	2.8E-07	5.1E-09
SW	0.81	2.6E-07	2.6E-07	2.3E-07	5.0E-09
WSW	0.70	3.0E-07	3.0E-07	2.7E-07	7.0E-09
W	0.49	6.2E-07	6.2E-07	5.7E-07	1.4E-08
WNW	0.48	7.2E-07	7.2E-07	6.7E-07	1.5E-08
NW	0.48	7.1E-07	7.1E-07	6.6E-07	1.5E-08
NNW	0.48	6.8E-07	6.8E-07	6.3E-07	1.2E-08

Insert Table 2.3-310 Nearest Residence X/Q and D/Q Factors for Ground-Level Release

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	1.22	2.8E-06	2.8E-06	2.4E-06	1.2E-08
NE	1.26	3.0E-06	2.9E-06	2.5E-06	1.1E-08
SSE	0.83	6.1E-06	6.1E-06	5.4E-06	1.8E-08
SSW	0.80	3.5E-06	3.5E-06	3.1E-06	1.3E-08
SW	0.90	2.0E-06	2.0E-06	1.8E-06	1.1E-08
WSW	1.04	1.0E-06	1.0E-06	8.8E-07	7.3E-09
W	0.88	1.7E-06	1.7E-06	1.5E-06	1.2E-08
NW	0.59	5.3E-06	5.3E-06	4.8E-06	3.1E-08
NNW	1.10	1.5E-06	1.5E-06	1.3E-06	7.0E-09

Insert Table 2.3-311 Nearest Residence X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	1.22	3.3E-07	3.3E-07	3.0E-07	4.8E-09
NE	1.26	3.0E-07	3.0E-07	2.8E-07	5.0E-09
SSE	0.83	2.7E-07	2.7E-07	2.5E-07	5.9E-09
SSW	0.80	2.2E-07	2.2E-07	2.0E-07	4.1E-09
SW	0.90	2.4E-07	2.4E-07	2.3E-07	4.7E-09
WSW	1.04	1.8E-07	1.8E-07	1.7E-07	3.7E-09
W	0.88	2.7E-07	2.7E-07	2.5E-07	6.0E-09
NW	0.59	4.7E-07	4.7E-07	4.4E-07	1.2E-08
NNW	1.10	1.6E-07	1.6E-07	1.5E-07	2.9E-09

Insert Table 2.3-312 Nearest Residence X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	1.22	3.1E-07	3.1E-07	2.8E-07	4.5E-09
NE	1.26	2.6E-07	2.6E-07	2.4E-07	4.2E-09
SSE	0.83	2.7E-07	2.7E-07	2.5E-07	5.3E-09
SSW	0.80	2.2E-07	2.2E-07	2.0E-07	3.7E-09
SW	0.90	2.1E-07	2.1E-07	1.9E-07	4.0E-09
WSW	1.04	1.5E-07	1.5E-07	1.4E-07	3.2E-09
W	0.88	2.5E-07	2.5E-07	2.3E-07	5.9E-09
NW	0.59	5.1E-07	5.1E-07	4.7E-07	1.2E-08
NNW	1.10	1.6E-07	1.6E-07	1.4E-07	2.9E-09

Insert Table 2.3-313 Nearest Garden X/Q and D/Q Factors for Ground-Level Release

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	2.22	4.4E-07	4.3E-07	3.6E-07	1.5E-09
NNE	2.07	8.4E-07	8.4E-07	6.9E-07	3.2E-09
NE	2.14	8.9E-07	8.8E-07	7.3E-07	3.1E-09
S	1.19	1.8E-06	1.8E-06	1.5E-06	5.7E-09
WSW	2.05	2.0E-07	2.0E-07	1.7E-07	1.3E-09
W	1.41	5.4E-07	5.4E-07	4.6E-07	3.7E-09
NW	0.60	5.3E-06	5.3E-06	4.8E-06	3.1E-08
NNW	1.00	2.0E-06	2.0E-06	1.7E-06	9.0E-09

Insert Table 2.3-314 Nearest Garden X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	2.22	7.4E-08	7.3E-08	6.8E-08	6.0E-10
NNE	2.07	1.4E-07	1.4E-07	1.3E-07	1.4E-09
NE	2.14	1.4E-07	1.4E-07	1.3E-07	1.6E-09
S	1.19	1.4E-07	1.4E-07	1.3E-07	2.1E-09
WSW	2.05	6.0E-08	6.0E-08	5.6E-08	8.1E-10
W	1.41	1.2E-07	1.2E-07	1.1E-07	2.1E-09
NW	0.60	4.7E-07	4.7E-07	4.4E-07	1.2E-08
NNW	1.00	1.9E-07	1.9E-07	1.8E-07	3.7E-09

Insert Table 2.3-315 Nearest Garden X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
N	2.22	6.2E-08	6.2E-08	5.6E-08	5.9E-10
NNE	2.07	1.3E-07	1.3E-07	1.1E-07	1.4E-09
NE	2.14	1.2E-07	1.2E-07	1.1E-07	1.4E-09
S	1.19	1.4E-07	1.3E-07	1.2E-07	1.9E-09
WSW	2.05	5.1E-08	5.1E-08	4.6E-08	7.3E-10
W	1.41	1.1E-07	1.1E-07	9.8E-08	2.0E-09
NW	0.60	5.0E-07	5.0E-07	4.7E-07	1.1E-08
NNW	1.00	1.9E-07	1.9E-07	1.7E-07	3.7E-09

Table 2.3-316 Nearest Sheep X/Q and D/Q Factors for Ground-Level Release [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	~~4.50~~ 4.41	1.9E-07	~~1.9E-07~~ 1.8E-07	1.4E-07	~~5.6E-10~~ 5.7E-10
NNW	~~4.46~~ 4.36	~~8.5E-08~~ 8.1E-08	~~8.3E-08~~ 8.0E-08	~~6.4E-08~~ 6.1E-08	2.6E-10

Table 2.3-317 Nearest Sheep X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	~~4.50~~ 4.41	4.8E-08	4.7E-08	4.3E-08	~~2.7E-10~~ 2.8E-10
NNW	~~4.46~~ 4.36	2.0E-08	2.0E-08	1.8E-08	~~1.3E-10~~ 1.4E-10

Table 2.3-318 Nearest Sheep X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	~~4.50~~ 4.41	4.1E-08	~~4.1E-08~~ 4.0E-08	3.6E-08	~~2.7E-10~~ 2.8E-10
NNW	~~4.46~~ 4.36	1.7E-08	1.7E-08	1.5E-08	1.4E-10

Table 2.3-319 Nearest Goat X/Q and D/Q Factors for Ground-Level Release [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
WNW	~~2.30~~ 2.21	~~2.6E-07~~ 2.7E-07	~~2.6E-07~~ 2.7E-07	2.2E-07	~~1.4E-09~~ 1.5E-09
NNW	~~3.08~~ 2.99	1.7E-07	1.7E-07	1.3E-07	~~5.9E-10~~ 6.2E-10

Table 2.3-320 Nearest Goat X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
WNW	~~2.30~~ 2.21	~~6.1E-08~~ 6.6E-08	~~6.1E-08~~ 6.6E-08	~~5.6E-08~~ 6.0E-08	~~7.7E-10~~ 8.4E-10
NNW	~~3.08~~ 2.99	~~3.4E-08~~ 3.5E-08	~~3.3E-08~~ 3.5E-08	~~3.1E-08~~ 3.2E-08	~~2.0E-10~~ 3.0E-10

Table 2.3-321 Nearest Goat X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
WNW	~~2.30~~ 2.21	~~5.4E-08~~ 5.7E-08	~~5.3E-08~~ 5.7E-08	~~4.8E-08~~ 5.1E-08	~~7.4E-10~~ 7.9E-10
NNW	~~3.08~~ 2.99	~~2.9E-08~~ 3.0E-08	~~2.9E-08~~ 3.0E-08	~~2.6E-08~~ 2.7E-08	~~2.9E-10~~ 3.0E-10

Table 2.3-322 Nearest Meat Cow X/Q and D/Q Factors for Ground-Level Release [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	~~4.50~~ 4.41	1.9E-07	~~1.9E-07~~ 1.8E-07	1.4E-07	~~5.6E-10~~ 5.7E-10
NNW	~~3.05~~ 2.95	1.7E-07	1.7E-07	1.4E-07	~~6.0E-10~~ 6.4E-10

Table 2.3-323 Nearest Meat Cow X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	~~4.50~~ 4.41	~~4.80E-08~~ 4.8E-08	~~4.70E-08~~ 4.7E-08	~~4.30E-08~~ 4.3E-08	~~2.70E-10~~ 2.8E-10
NNW	~~3.05~~ 2.95	~~3.40E-08~~ 3.6E-08	~~3.40E-08~~ 3.6E-08	~~3.10E-08~~ 3.3E-08	~~3.00E-10~~ 3.1E-10

Table 2.3-324 Nearest Meat Cow X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
NNE	~~4.50~~ 4.41	~~4.10E-08~~ 4.1E-08	~~4.10E-08~~ 4.0E-08	~~3.60E-08~~ 3.6E-08	~~2.70E-10~~ 2.8E-10
NNW	~~3.05~~ 2.95	~~3.00E-08~~ 3.1E-08	~~2.00E-08~~ 3.1E-08	~~2.60E-08~~ 2.7E-08	~~2.90E-10~~ 3.1E-10

Table 2.3-325 Nearest Milk Cow X/Q and D/Q Factors for Ground-Level Release [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
WNW	~~2.18~~ 2.09	~~3.0E-07~~ 3.1E-07	~~2.0E-07~~ 3.1E-07	~~2.4E-07~~ 2.5E-07	~~1.5E-09~~ 1.7E-09
NW	~~3.65~~ 3.55	~~1.1E-07~~ 1.0E-07	~~1.1E-07~~ 1.0E-07	~~8.5E-08~~ 7.9E-08	~~1.5E-10~~ 4.7E-10

Table 2.3-326 Nearest Milk Cow X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
WNW	~~2.18~~ 2.09	~~6.70E-08~~ 7.2E-08	~~6.60E-08~~ 7.2E-08	~~6.10E-08~~ 6.6E-08	~~3.70E-10~~ 9.5E-10
NW	~~3.65~~ 3.55	~~2.70E-08~~ 2.8E-08	~~2.70E-08~~ 2.7E-08	~~2.40E-08~~ 2.5E-08	~~2.70E-10~~ 2.8E-10

Table 2.3-327 Nearest Milk Cow X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack [EF3 COL 2.0-11-A]

Sector	Distance (miles)	No Decay, Undepleted X/Q (sec/m^3)	2.26 Day Decay, Undepleted X/Q (sec/m^3)	8.0 Day Decay, Depleted X/Q (sec/m^3)	D/Q (m^{-2})
WNW	~~2.18~~ 2.09	~~5.80E-08~~ 6.2E-08	~~5.80E-08~~ 6.2E-08	~~5.30E-08~~ 5.6E-08	~~8.30E-10~~ 8.9E-10
NW	~~3.65~~ 3.55	~~2.40E-08~~ 2.4E-08	~~2.30E-08~~ 2.4E-08	~~2.10E-08~~ 2.1E-08	~~2.60E-10~~ 2.7E-10

Table 2.3-328 Annual Average X/Q Values (No Decay, Undepleted) for Ground Level Release (Sheet 1 of 3) [EF3 COL 2.0-11-A]

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	4.464E-05	1.291E-05	6.302E-06	3.000E-06	1.130E-06	5.929E-07	3.689E-07	2.544E-07	1.879E-07	1.456E-07	1.170E-07
NNE	7.320E-05	2.121E-05	1.036E-05	4.931E-06	1.854E-06	9.724E-07	6.046E-07	4.166E-07	3.074E-07	2.381E-07	1.912E-07
NE	8.036E-05	2.333E-05	1.140E-05	5.430E-06	2.038E-06	1.067E-06	6.621E-07	4.555E-07	3.356E-07	2.596E-07	2.082E-07
ENE	9.779E-05	2.840E-05	1.384E-05	6.605E-06	2.491E-06	1.309E-06	8.159E-07	5.625E-07	4.164E-07	3.230E-07	2.597E-07
E	9.458E-05	2.735E-05	1.326E-05	6.333E-06	2.396E-06	1.264E-06	7.898E-07	5.468E-07	4.051E-07	3.150E-07	2.538E-07
ESE	1.214E-04	3.511E-05	1.698E-05	8.117E-06	3.083E-06	1.632E-06	1.024E-06	7.107E-07	5.279E-07	4.113E-07	3.321E-07
SE	7.993E-05	2.313E-05	1.123E-05	Replace Tables 2.3-328 through 2.3-339 with attached new tables				28E-07	2.665E-07	2.147E-07	
SSE	5.915E-05	1.711E-05	8.318E-06	3.968E-06	1.497E-06	7.872E-07	4.908E-07	3.391E-07	2.507E-07	1.946E-07	1.566E-07
S	4.212E-05	1.224E-05	5.968E-06	2.845E-06	1.070E-06	5.615E-07	3.493E-07	2.408E-07	1.777E-07	1.377E-07	1.106E-07
SSW	2.990E-05	8.693E-06	4.257E-06	2.027E-06	7.586E-07	3.959E-07	2.451E-07	1.682E-07	1.237E-07	9.553E-08	7.650E-08
SW	2.490E-05	7.149E-06	3.497E-06	1.661E-06	6.193E-07	3.216E-07	1.982E-07	1.355E-07	9.926E-08	7.638E-08	6.096E-08
WSW	1.860E-05	5.285E-06	2.573E-06	1.220E-06	4.547E-07	2.362E-07	1.456E-07	9.955E-08	7.295E-08	5.616E-08	4.484E-08
W	2.015E-05	5.745E-06	2.796E-06	1.328E-06	4.974E-07	2.597E-07	1.608E-07	1.104E-07	8.116E-08	6.266E-08	5.018E-08
WNW	2.792E-05	7.916E-06	3.832E-06	1.820E-06	6.839E-07	3.582E-07	2.225E-07	1.532E-07	1.130E-07	8.746E-08	7.026E-08
NW	2.942E-05	8.268E-06	3.981E-06	1.889E-06	7.115E-07	3.736E-07	2.326E-07	1.605E-07	1.185E-07	9.191E-08	7.388E-08
NNW	3.201E-05	9.137E-06	4.425E-06	2.105E-06	7.945E-07	4.181E-07	2.607E-07	1.802E-07	1.333E-07	1.035E-07	8.324E-08

Insert Table 2.3-328 Annual Average X/Q Values (no Decay, Undepleted) for Ground Level Release (Sheet 1 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	4.096E-05	1.188E-05	5.798E-06	2.761E-06	1.040E-06	5.456E-07	3.395E-07	2.341E-07	1.728E-07	1.339E-07	1.076E-07
NNE	6.801E-05	1.974E-05	9.639E-06	4.591E-06	1.728E-06	9.064E-07	5.639E-07	3.888E-07	2.870E-07	2.224E-07	1.786E-07
NE	7.776E-05	2.260E-05	1.105E-05	5.262E-06	1.975E-06	1.034E-06	6.415E-07	4.414E-07	3.252E-07	2.516E-07	2.018E-07
ENE	9.413E-05	2.735E-05	1.333E-05	6.361E-06	2.398E-06	1.260E-06	7.849E-07	5.418E-07	4.003E-07	3.105E-07	2.496E-07
E	9.162E-05	2.650E-05	1.285E-05	6.136E-06	2.321E-06	1.224E-06	7.647E-07	5.293E-07	3.921E-07	3.048E-07	2.456E-07
ESE	1.219E-04	3.526E-05	1.706E-05	8.155E-06	3.096E-06	1.639E-06	1.027E-06	7.132E-07	5.297E-07	4.127E-07	3.331E-07
SE	7.710E-05	2.231E-05	1.083E-05	5.169E-06	1.955E-06	1.031E-06	6.440E-07	4.457E-07	3.301E-07	2.566E-07	2.067E-07
SSE	5.553E-05	1.606E-05	7.805E-06	3.723E-06	1.404E-06	7.381E-07	4.600E-07	3.177E-07	2.349E-07	1.822E-07	1.466E-07
S	4.017E-05	1.166E-05	5.688E-06	2.712E-06	1.020E-06	5.353E-07	3.330E-07	2.296E-07	1.694E-07	1.313E-07	1.055E-07
SSW	2.963E-05	8.618E-06	4.221E-06	2.010E-06	7.524E-07	3.927E-07	2.432E-07	1.670E-07	1.228E-07	9.482E-08	7.594E-08
SW	2.330E-05	6.709E-06	3.284E-06	1.561E-06	5.814E-07	3.017E-07	1.858E-07	1.270E-07	9.297E-08	7.150E-08	5.705E-08
WSW	1.680E-05	4.797E-06	2.340E-06	1.110E-06	4.131E-07	2.143E-07	1.319E-07	9.013E-08	6.598E-08	5.075E-08	4.049E-08
W	1.891E-05	5.406E-06	2.634E-06	1.251E-06	4.682E-07	2.441E-07	1.510E-07	1.036E-07	7.614E-08	5.876E-08	4.703E-08
WNW	2.642E-05	7.499E-06	3.633E-06	1.725E-06	6.486E-07	3.398E-07	2.111E-07	1.454E-07	1.072E-07	8.298E-08	6.661E-08
NW	2.587E-05	7.292E-06	3.515E-06	1.668E-06	6.280E-07	3.296E-07	2.051E-07	1.415E-07	1.045E-07	8.100E-08	6.510E-08
NNW	2.956E-05	8.461E-06	4.103E-06	1.952E-06	7.363E-07	3.872E-07	2.414E-07	1.667E-07	1.233E-07	9.567E-08	7.696E-08

Insert Table 2.3-328 Annual Average X/Q Values (no Decay, Undepleted) for Ground Level Release (Sheet 2 of 3)

Annual Average X/Q (sec/m^3)											
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	8.888E-08	4.550E-08	2.948E-08	1.695E-08	1.151E-08	8.550E-09	6.715E-09	5.480E-09	4.599E-09	3.943E-09	3.437E-09
NNE	1.476E-07	7.553E-08	4.894E-08	2.813E-08	1.911E-08	1.419E-08	1.115E-08	9.099E-09	7.636E-09	6.546E-09	5.706E-09
NE	1.664E-07	8.473E-08	5.468E-08	3.126E-08	2.115E-08	1.567E-08	1.228E-08	1.000E-08	8.381E-09	7.175E-09	6.246E-09
ENE	2.063E-07	1.059E-07	6.877E-08	3.966E-08	2.700E-08	2.009E-08	1.581E-08	1.292E-08	1.086E-08	9.317E-09	8.130E-09
E	2.034E-07	1.053E-07	6.876E-08	4.002E-08	2.742E-08	2.051E-08	1.621E-08	1.329E-08	1.121E-08	9.646E-09	8.438E-09
ESE	2.764E-07	1.440E-07	9.456E-08	5.542E-08	3.816E-08	2.865E-08	2.270E-08	1.867E-08	1.578E-08	1.360E-08	1.192E-08
SE	1.712E-07	8.850E-08	5.778E-08	3.359E-08	2.300E-08	1.719E-08	1.357E-08	1.113E-08	9.378E-09	8.068E-09	7.056E-09
SSE	1.212E-07	6.238E-08	4.057E-08	2.347E-08	1.602E-08	1.194E-08	9.414E-09	7.706E-09	6.485E-09	5.572E-09	4.868E-09
S	8.712E-08	4.461E-08	2.891E-08	1.663E-08	1.131E-08	8.403E-09	6.604E-09	5.393E-09	4.529E-09	3.885E-09	3.388E-09
SSW	6.256E-08	3.167E-08	2.036E-08	1.157E-08	7.796E-09	5.755E-09	4.498E-09	3.656E-09	3.057E-09	2.613E-09	2.271E-09
SW	4.684E-08	2.340E-08	1.488E-08	8.335E-09	5.559E-09	4.071E-09	3.160E-09	2.554E-09	2.126E-09	1.809E-09	1.567E-09
WSW	3.325E-08	1.663E-08	1.059E-08	5.943E-09	3.971E-09	2.912E-09	2.264E-09	1.832E-09	1.527E-09	1.300E-09	1.127E-09
W	3.872E-08	1.957E-08	1.257E-08	7.132E-09	4.803E-09	3.544E-09	2.769E-09	2.251E-09	1.882E-09	1.608E-09	1.398E-09
WNW	5.499E-08	2.810E-08	1.819E-08	1.045E-08	7.101E-09	5.277E-09	4.148E-09	3.387E-09	2.845E-09	2.441E-09	2.129E-09
NW	5.383E-08	2.768E-08	1.800E-08	1.041E-08	7.111E-09	5.305E-09	4.183E-09	3.426E-09	2.884E-09	2.480E-09	2.167E-09
NNW	6.366E-08	3.278E-08	2.134E-08	1.235E-08	8.427E-09	6.283E-09	4.952E-09	4.053E-09	3.410E-09	2.930E-09	2.559E-09

Insert Table 2.3-328 Annual Average X/Q Values (no Decay, Undepleted) for Ground Level Release (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	5.799E-06	1.203E-06	3.523E-07	1.755E-07	1.085E-07	4.802E-08	1.732E-08	8.606E-09	5.497E-09	3.950E-09
NNE	9.640E-06	1.999E-06	5.852E-07	2.914E-07	1.801E-07	7.972E-08	2.875E-08	1.429E-08	9.127E-09	6.558E-09
NE	1.104E-05	2.287E-06	6.660E-07	3.303E-07	2.034E-07	8.953E-08	3.197E-08	1.577E-08	1.003E-08	7.188E-09
ENE	1.335E-05	2.773E-06	8.144E-07	4.065E-07	2.516E-07	1.117E-07	4.050E-08	2.022E-08	1.296E-08	9.334E-09
E	1.290E-05	2.681E-06	7.930E-07	3.981E-07	2.475E-07	1.109E-07	4.081E-08	2.063E-08	1.333E-08	9.661E-09
ESE	1.715E-05	3.573E-06	1.065E-06	5.375E-07	3.357E-07	1.515E-07	5.644E-08	2.880E-08	1.872E-08	1.362E-08
SE	1.087E-05	2.259E-06	6.678E-07	3.351E-07	2.083E-07	9.322E-08	3.426E-08	1.729E-08	1.116E-08	8.081E-09
SSE	7.825E-06	1.623E-06	4.772E-07	2.385E-07	1.478E-07	6.577E-08	2.396E-08	1.202E-08	7.729E-09	5.582E-09
S	5.694E-06	1.181E-06	3.456E-07	1.721E-07	1.063E-07	4.708E-08	1.699E-08	8.457E-09	5.410E-09	3.892E-09
SSW	4.215E-06	8.719E-07	2.526E-07	1.248E-07	7.658E-08	3.351E-08	1.184E-08	5.797E-09	3.668E-09	2.618E-09
SW	3.279E-06	6.747E-07	1.932E-07	9.451E-08	5.755E-08	2.482E-08	8.557E-09	4.103E-09	2.564E-09	1.813E-09
WSW	2.339E-06	4.796E-07	1.372E-07	6.708E-08	4.085E-08	1.764E-08	6.099E-09	2.936E-09	1.839E-09	1.303E-09
W	2.635E-06	5.426E-07	1.569E-07	7.737E-08	4.743E-08	2.071E-08	7.305E-09	3.570E-09	2.258E-09	1.612E-09
WNW	3.644E-06	7.507E-07	2.191E-07	1.089E-07	6.716E-08	2.967E-08	1.068E-08	5.312E-09	3.398E-09	2.445E-09
NW	3.533E-06	7.265E-07	2.128E-07	1.061E-07	6.564E-08	2.919E-08	1.063E-08	5.338E-09	3.436E-09	2.484E-09
NNW	4.115E-06	8.513E-07	2.504E-07	1.252E-07	7.758E-08	3.456E-08	1.260E-08	6.322E-09	4.065E-09	2.934E-09

Insert Table 2.3-329 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Ground Level Release (Sheet 1 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	4.091E-05	1.185E-05	5.777E-06	2.748E-06	1.032E-06	5.403E-07	3.354E-07	2.307E-07	1.699E-07	1.313E-07	1.052E-07
NNE	6.794E-05	1.970E-05	9.608E-06	4.571E-06	1.716E-06	8.985E-07	5.578E-07	3.837E-07	2.826E-07	2.185E-07	1.751E-07
NE	7.766E-05	2.254E-05	1.100E-05	5.235E-06	1.960E-06	1.023E-06	6.331E-07	4.344E-07	3.192E-07	2.462E-07	1.969E-07
ENE	9.399E-05	2.726E-05	1.327E-05	6.320E-06	2.375E-06	1.244E-06	7.724E-07	5.314E-07	3.914E-07	3.026E-07	2.424E-07
E	9.146E-05	2.640E-05	1.279E-05	6.092E-06	2.296E-06	1.206E-06	7.510E-07	5.179E-07	3.823E-07	2.960E-07	2.376E-07
ESE	1.217E-04	3.514E-05	1.697E-05	8.096E-06	3.063E-06	1.615E-06	1.009E-06	6.979E-07	5.164E-07	4.009E-07	3.224E-07
SE	7.698E-05	2.223E-05	1.078E-05	5.135E-06	1.936E-06	1.017E-06	6.334E-07	4.369E-07	3.225E-07	2.498E-07	2.005E-07
SSE	5.546E-05	1.602E-05	7.773E-06	3.702E-06	1.392E-06	7.299E-07	4.537E-07	3.124E-07	2.303E-07	1.782E-07	1.429E-07
S	4.012E-05	1.164E-05	5.667E-06	2.698E-06	1.013E-06	5.300E-07	3.289E-07	2.262E-07	1.665E-07	1.287E-07	1.031E-07
SSW	2.960E-05	8.596E-06	4.205E-06	1.999E-06	7.467E-07	3.887E-07	2.401E-07	1.644E-07	1.206E-07	9.288E-08	7.419E-08
SW	2.328E-05	6.696E-06	3.275E-06	1.555E-06	5.781E-07	2.994E-07	1.841E-07	1.255E-07	9.172E-08	7.040E-08	5.606E-08
WSW	1.679E-05	4.789E-06	2.335E-06	1.107E-06	4.113E-07	2.130E-07	1.310E-07	8.932E-08	6.529E-08	5.014E-08	3.994E-08
W	1.890E-05	5.398E-06	2.628E-06	1.247E-06	4.661E-07	2.427E-07	1.499E-07	1.027E-07	7.533E-08	5.805E-08	4.639E-08
WNW	2.639E-05	7.486E-06	3.623E-06	1.720E-06	6.453E-07	3.375E-07	2.093E-07	1.439E-07	1.059E-07	8.184E-08	6.558E-08
NW	2.585E-05	7.280E-06	3.507E-06	1.663E-06	6.250E-07	3.275E-07	2.035E-07	1.402E-07	1.034E-07	8.001E-08	6.420E-08
NNW	2.953E-05	8.443E-06	4.090E-06	1.944E-06	7.316E-07	3.840E-07	2.389E-07	1.646E-07	1.215E-07	9.408E-08	7.552E-08

Insert Table 2.3-329 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Ground Level Release (Sheet 2 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	8.674E-08	4.387E-08	2.808E-08	1.576E-08	1.046E-08	7.590E-09	5.828E-09	4.652E-09	3.820E-09	3.205E-09	2.735E-09
NNE	1.443E-07	7.308E-08	4.683E-08	2.635E-08	1.752E-08	1.274E-08	9.806E-09	7.843E-09	6.453E-09	5.425E-09	4.639E-09
NE	1.620E-07	8.136E-08	5.179E-08	2.882E-08	1.899E-08	1.370E-08	1.046E-08	8.307E-09	6.788E-09	5.669E-09	4.817E-09
ENE	1.998E-07	1.009E-07	6.445E-08	3.599E-08	2.374E-08	1.712E-08	1.306E-08	1.035E-08	8.444E-09	7.036E-09	5.963E-09
E	1.961E-07	9.963E-08	6.390E-08	3.586E-08	2.371E-08	1.712E-08	1.306E-08	1.035E-08	8.434E-09	7.019E-09	5.940E-09
ESE	2.666E-07	1.364E-07	8.796E-08	4.975E-08	3.308E-08	2.399E-08	1.838E-08	1.462E-08	1.195E-08	9.976E-09	8.465E-09
SE	1.655E-07	8.416E-08	5.403E-08	3.039E-08	2.014E-08	1.458E-08	1.115E-08	8.864E-09	7.243E-09	6.045E-09	5.130E-09
SSE	1.179E-07	5.981E-08	3.837E-08	2.159E-08	1.434E-08	1.041E-08	7.988E-09	6.370E-09	5.224E-09	4.377E-09	3.728E-09
S	8.498E-08	4.297E-08	2.751E-08	1.544E-08	1.025E-08	7.441E-09	5.715E-09	4.562E-09	3.746E-09	3.143E-09	2.682E-09
SSW	6.095E-08	3.046E-08	1.932E-08	1.070E-08	7.031E-09	5.063E-09	3.861E-09	3.064E-09	2.502E-09	2.089E-09	1.775E-09
SW	4.594E-08	2.272E-08	1.431E-08	7.857E-09	5.138E-09	3.690E-09	2.810E-09	2.229E-09	1.820E-09	1.521E-09	1.293E-09
WSW	3.275E-08	1.625E-08	1.027E-08	5.678E-09	3.737E-09	2.700E-09	2.068E-09	1.649E-09	1.354E-09	1.137E-09	9.713E-10
W	3.814E-08	1.913E-08	1.219E-08	6.815E-09	4.521E-09	3.288E-09	2.532E-09	2.028E-09	1.672E-09	1.409E-09	1.208E-09
WNW	5.404E-08	2.738E-08	1.757E-08	9.924E-09	6.630E-09	4.846E-09	3.747E-09	3.011E-09	2.489E-09	2.101E-09	1.805E-09
NW	5.300E-08	2.705E-08	1.746E-08	9.947E-09	6.691E-09	4.918E-09	3.822E-09	3.085E-09	2.560E-09	2.169E-09	1.869E-09
NNW	6.234E-08	3.177E-08	2.046E-08	1.160E-08	7.763E-09	5.676E-09	4.388E-09	3.524E-09	2.910E-09	2.455E-09	2.106E-09

Insert Table 2.3-329 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Ground Level Release (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	5.780E-06	1.195E-06	3.481E-07	1.726E-07	1.061E-07	4.638E-08	1.614E-08	7.650E-09	4.671E-09	3.213E-09
NNE	9.611E-06	1.987E-06	5.790E-07	2.871E-07	1.766E-07	7.725E-08	2.698E-08	1.284E-08	7.875E-09	5.439E-09
NE	1.100E-05	2.271E-06	6.575E-07	3.243E-07	1.986E-07	8.614E-08	2.955E-08	1.381E-08	8.344E-09	5.685E-09
ENE	1.329E-05	2.749E-06	8.018E-07	3.976E-07	2.444E-07	1.067E-07	3.687E-08	1.726E-08	1.040E-08	7.056E-09
E	1.284E-05	2.655E-06	7.791E-07	3.882E-07	2.396E-07	1.052E-07	3.669E-08	1.725E-08	1.040E-08	7.039E-09
ESE	1.706E-05	3.538E-06	1.046E-06	5.243E-07	3.250E-07	1.438E-07	5.083E-08	2.417E-08	1.468E-08	1.000E-08
SE	1.082E-05	2.239E-06	6.571E-07	3.275E-07	2.022E-07	8.885E-08	3.109E-08	1.469E-08	8.900E-09	6.061E-09
SSE	7.796E-06	1.611E-06	4.709E-07	2.339E-07	1.441E-07	6.319E-08	2.209E-08	1.049E-08	6.396E-09	4.388E-09
S	5.674E-06	1.173E-06	3.414E-07	1.691E-07	1.040E-07	4.543E-08	1.582E-08	7.499E-09	4.581E-09	3.151E-09
SSW	4.201E-06	8.660E-07	2.494E-07	1.225E-07	7.482E-08	3.229E-08	1.099E-08	5.107E-09	3.078E-09	2.095E-09
SW	3.270E-06	6.713E-07	1.914E-07	9.325E-08	5.656E-08	2.414E-08	8.082E-09	3.724E-09	2.239E-09	1.525E-09
WSW	2.335E-06	4.777E-07	1.362E-07	6.639E-08	4.030E-08	1.726E-08	5.836E-09	2.724E-09	1.656E-09	1.140E-09
W	2.630E-06	5.404E-07	1.557E-07	7.656E-08	4.678E-08	2.027E-08	6.990E-09	3.314E-09	2.036E-09	1.412E-09
WNW	3.636E-06	7.472E-07	2.173E-07	1.076E-07	6.612E-08	2.894E-08	1.016E-08	4.882E-09	3.022E-09	2.106E-09
NW	3.526E-06	7.235E-07	2.113E-07	1.050E-07	6.474E-08	2.855E-08	1.017E-08	4.952E-09	3.095E-09	2.174E-09
NNW	4.103E-06	8.465E-07	2.479E-07	1.234E-07	7.614E-08	3.354E-08	1.186E-08	5.717E-09	3.537E-09	2.461E-09

Insert Table 2.3-330 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Ground Level Release (Sheet 1 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	3.875E-05	1.084E-05	5.162E-06	2.414E-06	8.810E-07	4.505E-07	2.740E-07	1.852E-07	1.342E-07	1.022E-07	8.084E-08
NNE	6.435E-05	1.802E-05	8.582E-06	4.014E-06	1.464E-06	7.487E-07	4.554E-07	3.077E-07	2.230E-07	1.698E-07	1.343E-07
NE	7.357E-05	2.062E-05	9.832E-06	4.600E-06	1.674E-06	8.534E-07	5.177E-07	3.490E-07	2.524E-07	1.919E-07	1.515E-07
ENE	8.905E-05	2.495E-05	1.187E-05	5.558E-06	2.031E-06	1.040E-06	6.329E-07	4.280E-07	3.104E-07	2.366E-07	1.872E-07
E	8.667E-05	2.417E-05	1.144E-05	5.361E-06	1.965E-06	1.009E-06	6.163E-07	4.179E-07	3.038E-07	2.321E-07	1.839E-07
ESE	1.154E-04	3.217E-05	1.518E-05	7.124E-06	2.621E-06	1.351E-06	8.280E-07	5.630E-07	4.104E-07	3.142E-07	2.496E-07
SE	7.294E-05	2.035E-05	9.638E-06	4.517E-06	1.656E-06	8.503E-07	5.192E-07	3.520E-07	2.559E-07	1.955E-07	1.549E-07
SSE	5.254E-05	1.465E-05	6.947E-06	3.253E-06	1.189E-06	6.092E-07	3.712E-07	2.512E-07	1.823E-07	1.390E-07	1.100E-07
S	3.801E-05	1.064E-05	5.064E-06	2.370E-06	8.647E-07	4.420E-07	2.688E-07	1.816E-07	1.316E-07	1.002E-07	7.923E-08
SSW	2.804E-05	7.864E-06	3.757E-06	1.757E-06	6.376E-07	3.243E-07	1.963E-07	1.320E-07	9.532E-08	7.236E-08	5.703E-08
SW	2.205E-05	6.123E-06	2.924E-06	1.365E-06	4.930E-07	2.493E-07	1.501E-07	1.005E-07	7.226E-08	5.465E-08	4.292E-08
WSW	1.590E-05	4.378E-06	2.084E-06	9.708E-07	3.504E-07	1.772E-07	1.067E-07	7.141E-08	5.133E-08	3.882E-08	3.050E-08
W	1.789E-05	4.935E-06	2.346E-06	1.094E-06	3.971E-07	2.018E-07	1.221E-07	8.208E-08	5.923E-08	4.495E-08	3.542E-08
WNW	2.500E-05	6.845E-06	3.235E-06	1.509E-06	5.500E-07	2.808E-07	1.706E-07	1.151E-07	8.336E-08	6.345E-08	5.014E-08
NW	2.448E-05	6.656E-06	3.130E-06	1.459E-06	5.326E-07	2.724E-07	1.658E-07	1.121E-07	8.128E-08	6.196E-08	4.903E-08
NNW	2.797E-05	7.722E-06	3.653E-06	1.707E-06	6.242E-07	3.199E-07	1.949E-07	1.320E-07	9.580E-08	7.309E-08	5.788E-08

Insert Table 2.3-330 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Ground Level Release (Sheet 2 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	6.579E-08	3.174E-08	1.953E-08	1.032E-08	6.537E-09	4.568E-09	3.396E-09	2.635E-09	2.109E-09	1.729E-09	1.445E-09
NNE	1.093E-07	5.275E-08	3.246E-08	1.716E-08	1.088E-08	7.608E-09	5.660E-09	4.395E-09	3.521E-09	2.888E-09	2.415E-09
NE	1.231E-07	5.904E-08	3.616E-08	1.899E-08	1.197E-08	8.333E-09	6.175E-09	4.777E-09	3.815E-09	3.120E-09	2.601E-09
ENE	1.524E-07	7.363E-08	4.535E-08	2.398E-08	1.519E-08	1.061E-08	7.880E-09	6.108E-09	4.884E-09	3.999E-09	3.337E-09
E	1.501E-07	7.305E-08	4.524E-08	2.411E-08	1.535E-08	1.077E-08	8.023E-09	6.235E-09	4.996E-09	4.098E-09	3.424E-09
ESE	2.039E-07	9.998E-08	6.223E-08	3.340E-08	2.138E-08	1.505E-08	1.125E-08	8.770E-09	7.044E-09	5.791E-09	4.848E-09
SE	1.264E-07	6.150E-08	3.808E-08	2.029E-08	1.292E-08	9.064E-09	6.757E-09	5.253E-09	4.211E-09	3.456E-09	2.889E-09
SSE	8.965E-08	4.345E-08	2.682E-08	1.425E-08	9.058E-09	6.348E-09	4.731E-09	3.677E-09	2.948E-09	2.421E-09	2.024E-09
S	6.448E-08	3.111E-08	1.915E-08	1.012E-08	6.416E-09	4.486E-09	3.337E-09	2.591E-09	2.075E-09	1.702E-09	1.422E-09
SSW	4.629E-08	2.208E-08	1.347E-08	7.033E-09	4.417E-09	3.066E-09	2.267E-09	1.750E-09	1.395E-09	1.140E-09	9.488E-10
SW	3.472E-08	1.635E-08	9.887E-09	5.095E-09	3.173E-09	2.189E-09	1.610E-09	1.239E-09	9.843E-10	8.019E-10	6.662E-10
WSW	2.468E-08	1.165E-08	7.053E-09	3.647E-09	2.279E-09	1.577E-09	1.163E-09	8.971E-10	7.147E-10	5.837E-10	4.861E-10
W	2.874E-08	1.371E-08	8.369E-09	4.378E-09	2.757E-09	1.919E-09	1.423E-09	1.102E-09	8.816E-10	7.224E-10	6.034E-10
WNW	4.079E-08	1.966E-08	1.210E-08	6.403E-09	4.065E-09	2.848E-09	2.123E-09	1.652E-09	1.326E-09	1.090E-09	9.134E-10
NW	3.995E-08	1.938E-08	1.199E-08	6.391E-09	4.081E-09	2.872E-09	2.150E-09	1.678E-09	1.351E-09	1.114E-09	9.355E-10
NNW	4.717E-08	2.290E-08	1.416E-08	7.541E-09	4.805E-09	3.375E-09	2.520E-09	1.963E-09	1.577E-09	1.297E-09	1.087E-09

Insert Table 2.3-330 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Ground Level Release (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	5.202E-06	1.030E-06	2.855E-07	1.366E-07	8.161E-08	3.388E-08	1.069E-08	4.624E-09	2.652E-09	1.736E-09
NNE	8.648E-06	1.713E-06	4.745E-07	2.269E-07	1.356E-07	5.630E-08	1.777E-08	7.702E-09	4.423E-09	2.900E-09
NE	9.904E-06	1.959E-06	5.397E-07	2.570E-07	1.530E-07	6.311E-08	1.968E-08	8.440E-09	4.810E-09	3.133E-09
ENE	1.197E-05	2.374E-06	6.594E-07	3.159E-07	1.889E-07	7.856E-08	2.482E-08	1.074E-08	6.148E-09	4.016E-09
E	1.157E-05	2.295E-06	6.417E-07	3.091E-07	1.857E-07	7.780E-08	2.491E-08	1.089E-08	6.274E-09	4.114E-09
ESE	1.537E-05	3.057E-06	8.616E-07	4.173E-07	2.518E-07	1.063E-07	3.446E-08	1.522E-08	8.822E-09	5.813E-09
SE	9.743E-06	1.934E-06	5.406E-07	2.603E-07	1.564E-07	6.551E-08	2.097E-08	9.170E-09	5.285E-09	3.470E-09
SSE	7.018E-06	1.390E-06	3.867E-07	1.855E-07	1.111E-07	4.633E-08	1.474E-08	6.424E-09	3.701E-09	2.430E-09
S	5.107E-06	1.011E-06	2.801E-07	1.339E-07	7.999E-08	3.321E-08	1.048E-08	4.541E-09	2.607E-09	1.709E-09
SSW	3.781E-06	7.470E-07	2.047E-07	9.706E-08	5.760E-08	2.363E-08	7.301E-09	3.107E-09	1.763E-09	1.145E-09
SW	2.942E-06	5.784E-07	1.567E-07	7.363E-08	4.336E-08	1.756E-08	5.306E-09	2.220E-09	1.248E-09	8.057E-10
WSW	2.099E-06	4.113E-07	1.114E-07	5.230E-08	3.081E-08	1.250E-08	3.796E-09	1.599E-09	9.037E-10	5.864E-10
W	2.365E-06	4.652E-07	1.273E-07	6.032E-08	3.577E-08	1.468E-08	4.544E-09	1.944E-09	1.110E-09	7.255E-10
WNW	3.270E-06	6.435E-07	1.778E-07	8.485E-08	5.062E-08	2.100E-08	6.630E-09	2.883E-09	1.663E-09	1.095E-09
NW	3.171E-06	6.228E-07	1.727E-07	8.272E-08	4.950E-08	2.067E-08	6.608E-09	2.906E-09	1.688E-09	1.118E-09
NNW	3.692E-06	7.295E-07	2.031E-07	9.748E-08	5.842E-08	2.441E-08	7.797E-09	3.414E-09	1.975E-09	1.302E-09

Insert Table 2.3-331 Annual Average D/Q Values for Ground Level Release (Sheet 1 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	1.265E-07	4.279E-08	2.197E-08	1.045E-08	3.752E-09	1.861E-09	1.096E-09	7.174E-10	5.048E-10	3.741E-10	2.883E-10
NNE	2.385E-07	8.064E-08	4.141E-08	1.969E-08	7.071E-09	3.507E-09	2.065E-09	1.352E-09	9.513E-10	7.050E-10	5.433E-10
NE	2.472E-07	8.360E-08	4.292E-08	2.041E-08	7.330E-09	3.635E-09	2.140E-09	1.402E-09	9.862E-10	7.308E-10	5.632E-10
ENE	2.009E-07	6.795E-08	3.489E-08	1.659E-08	5.958E-09	2.954E-09	1.740E-09	1.139E-09	8.015E-10	5.940E-10	4.578E-10
E	1.646E-07	5.566E-08	2.858E-08	1.359E-08	4.880E-09	2.420E-09	1.425E-09	9.331E-10	6.566E-10	4.866E-10	3.750E-10
ESE	1.879E-07	6.354E-08	3.262E-08	1.551E-08	5.571E-09	2.763E-09	1.627E-09	1.065E-09	7.495E-10	5.555E-10	4.281E-10
SE	1.508E-07	5.099E-08	2.618E-08	1.245E-08	4.471E-09	2.217E-09	1.306E-09	8.549E-10	6.016E-10	4.458E-10	3.435E-10
SSE	1.345E-07	4.549E-08	2.335E-08	1.110E-08	3.988E-09	1.978E-09	1.165E-09	7.626E-10	5.366E-10	3.977E-10	3.064E-10
S	1.077E-07	3.641E-08	1.870E-08	8.888E-09	3.193E-09	1.583E-09	9.323E-10	6.105E-10	4.296E-10	3.183E-10	2.453E-10
SSW	8.994E-08	3.042E-08	1.562E-08	7.424E-09	2.667E-09	1.323E-09	7.787E-10	5.099E-10	3.588E-10	2.659E-10	2.049E-10
SW	1.059E-07	3.580E-08	1.838E-08	8.739E-09	3.139E-09	1.557E-09	9.166E-10	6.002E-10	4.223E-10	3.130E-10	2.412E-10
WSW	9.700E-08	3.280E-08	1.684E-08	8.007E-09	2.876E-09	1.426E-09	8.399E-10	5.499E-10	3.870E-10	2.868E-10	2.210E-10
W	1.075E-07	3.637E-08	1.867E-08	8.877E-09	3.189E-09	1.581E-09	9.311E-10	6.097E-10	4.290E-10	3.179E-10	2.450E-10
WNW	1.274E-07	4.308E-08	2.212E-08	1.052E-08	3.778E-09	1.873E-09	1.103E-09	7.223E-10	5.082E-10	3.767E-10	2.903E-10
NW	1.214E-07	4.105E-08	2.108E-08	1.002E-08	3.599E-09	1.785E-09	1.051E-09	6.882E-10	4.842E-10	3.589E-10	2.765E-10
NNW	1.082E-07	3.660E-08	1.879E-08	8.933E-09	3.209E-09	1.591E-09	9.370E-10	6.135E-10	4.317E-10	3.199E-10	2.466E-10

Insert Table 2.3-331 Annual Average D/Q Values for Ground Level Release (Sheet 2 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	2.290E-10	1.017E-10	6.163E-11	3.115E-11	1.886E-11	1.264E-11	9.059E-12	6.802E-12	5.289E-12	4.225E-12	3.448E-12
NNE	4.316E-10	1.917E-10	1.161E-10	5.871E-11	3.553E-11	2.382E-11	1.707E-11	1.282E-11	9.967E-12	7.961E-12	6.498E-12
NE	4.474E-10	1.988E-10	1.204E-10	6.086E-11	3.683E-11	2.470E-11	1.770E-11	1.329E-11	1.033E-11	8.253E-12	6.736E-12
ENE	3.637E-10	1.616E-10	9.786E-11	4.946E-11	2.994E-11	2.007E-11	1.438E-11	1.080E-11	8.397E-12	6.708E-12	5.475E-12
E	2.979E-10	1.323E-10	8.017E-11	4.052E-11	2.452E-11	1.644E-11	1.178E-11	8.847E-12	6.879E-12	5.495E-12	4.485E-12
ESE	3.401E-10	1.511E-10	9.151E-11	4.626E-11	2.800E-11	1.877E-11	1.345E-11	1.010E-11	7.853E-12	6.273E-12	5.120E-12
SE	2.729E-10	1.212E-10	7.344E-11	3.712E-11	2.247E-11	1.506E-11	1.079E-11	8.106E-12	6.302E-12	5.034E-12	4.109E-12
SSE	2.434E-10	1.081E-10	6.551E-11	3.311E-11	2.004E-11	1.344E-11	9.629E-12	7.230E-12	5.622E-12	4.491E-12	3.665E-12
S	1.949E-10	8.658E-11	5.244E-11	2.651E-11	1.604E-11	1.076E-11	7.708E-12	5.788E-12	4.500E-12	3.595E-12	2.934E-12
SSW	1.628E-10	7.232E-11	4.381E-11	2.214E-11	1.340E-11	8.985E-12	6.438E-12	4.835E-12	3.759E-12	3.003E-12	2.451E-12
SW	1.916E-10	8.512E-11	5.156E-11	2.606E-11	1.577E-11	1.058E-11	7.578E-12	5.691E-12	4.425E-12	3.534E-12	2.885E-12
WSW	1.756E-10	7.799E-11	4.724E-11	2.388E-11	1.445E-11	9.690E-12	6.944E-12	5.214E-12	4.054E-12	3.238E-12	2.643E-12
W	1.946E-10	8.647E-11	5.238E-11	2.647E-11	1.602E-11	1.074E-11	7.698E-12	5.781E-12	4.495E-12	3.590E-12	2.930E-12
WNW	2.306E-10	1.024E-10	6.205E-11	3.136E-11	1.898E-11	1.273E-11	9.120E-12	6.848E-12	5.325E-12	4.253E-12	3.472E-12
NW	2.197E-10	9.760E-11	5.912E-11	2.988E-11	1.809E-11	1.213E-11	8.689E-12	6.525E-12	5.073E-12	4.052E-12	3.308E-12
NNW	1.959E-10	8.701E-11	5.271E-11	2.664E-11	1.612E-11	1.081E-11	7.747E-12	5.817E-12	4.523E-12	3.613E-12	2.949E-12

Insert Table 2.3-331 Annual Average D/Q Values for Ground Level Release (Sheet 3 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	2.148E-08	4.399E-09	1.148E-09	5.158E-10	2.918E-10	1.122E-10	3.246E-11	1.287E-11	6.870E-12	4.252E-12
NNE	4.047E-08	8.290E-09	2.164E-09	9.720E-10	5.499E-10	2.115E-10	6.117E-11	2.425E-11	1.295E-11	8.014E-12
NE	4.195E-08	8.594E-09	2.243E-09	1.008E-09	5.700E-10	2.192E-10	6.341E-11	2.513E-11	1.342E-11	8.307E-12
ENE	3.410E-08	6.985E-09	1.823E-09	8.189E-10	4.633E-10	1.782E-10	5.154E-11	2.043E-11	1.091E-11	6.752E-12
E	2.793E-08	5.722E-09	1.494E-09	6.708E-10	3.795E-10	1.459E-10	4.222E-11	1.673E-11	8.936E-12	5.531E-12
ESE	3.189E-08	6.532E-09	1.705E-09	7.658E-10	4.332E-10	1.666E-10	4.820E-11	1.910E-11	1.020E-11	6.314E-12
SE	2.559E-08	5.242E-09	1.368E-09	6.146E-10	3.477E-10	1.337E-10	3.868E-11	1.533E-11	8.187E-12	5.067E-12
SSE	2.283E-08	4.676E-09	1.221E-09	5.482E-10	3.101E-10	1.193E-10	3.450E-11	1.367E-11	7.303E-12	4.520E-12
S	1.827E-08	3.743E-09	9.772E-10	4.389E-10	2.483E-10	9.548E-11	2.762E-11	1.095E-11	5.846E-12	3.618E-12
SSW	1.526E-08	3.127E-09	8.162E-10	3.666E-10	2.074E-10	7.975E-11	2.307E-11	9.144E-12	4.883E-12	3.022E-12
SW	1.797E-08	3.680E-09	9.608E-10	4.315E-10	2.441E-10	9.387E-11	2.716E-11	1.076E-11	5.748E-12	3.558E-12
WSW	1.646E-08	3.372E-09	8.803E-10	3.954E-10	2.237E-10	8.601E-11	2.488E-11	9.862E-12	5.266E-12	3.260E-12
W	1.825E-08	3.738E-09	9.759E-10	4.383E-10	2.480E-10	9.536E-11	2.759E-11	1.093E-11	5.839E-12	3.614E-12
WNW	2.162E-08	4.429E-09	1.156E-09	5.193E-10	2.938E-10	1.130E-10	3.268E-11	1.295E-11	6.917E-12	4.281E-12
NW	2.060E-08	4.220E-09	1.102E-09	4.947E-10	2.799E-10	1.076E-10	3.114E-11	1.234E-11	6.590E-12	4.079E-12
NNW	1.837E-08	3.762E-09	9.821E-10	4.411E-10	2.495E-10	9.596E-11	2.776E-11	1.100E-11	5.875E-12	3.637E-12

Insert Table 2.3-332 Annual Average X/Q Values (no Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 1 of 3)

Annual Average X/Q (sec/m^3)											
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	1.844E-06	6.415E-07	3.903E-07	2.393E-07	1.303E-07	8.574E-08	6.191E-08	4.742E-08	3.786E-08	3.118E-08	2.647E-08
NNE	3.695E-06	1.308E-06	7.857E-07	4.577E-07	2.342E-07	1.492E-07	1.059E-07	8.022E-08	6.527E-08	5.477E-08	4.621E-08
NE	2.594E-06	1.020E-06	6.778E-07	4.267E-07	2.367E-07	1.561E-07	1.126E-07	8.607E-08	6.856E-08	5.632E-08	4.740E-08
ENE	1.540E-06	6.028E-07	4.059E-07	2.744E-07	1.740E-07	1.243E-07	9.431E-08	7.460E-08	6.093E-08	5.104E-08	4.362E-08
E	1.200E-06	4.803E-07	3.148E-07	2.076E-07	1.296E-07	9.264E-08	7.062E-08	5.621E-08	4.619E-08	3.892E-08	3.344E-08
ESE	1.358E-06	5.190E-07	3.300E-07	2.135E-07	1.322E-07	9.498E-08	7.299E-08	5.859E-08	4.855E-08	4.122E-08	3.567E-08
SE	1.189E-06	4.464E-07	2.833E-07	1.859E-07	1.169E-07	8.385E-08	6.396E-08	5.088E-08	4.178E-08	3.516E-08	3.018E-08
SSE	1.292E-06	4.890E-07	3.153E-07	2.012E-07	1.176E-07	8.041E-08	5.943E-08	4.622E-08	3.732E-08	3.099E-08	2.632E-08
S	1.264E-06	4.817E-07	3.084E-07	1.891E-07	1.036E-07	6.883E-08	5.019E-08	3.876E-08	3.116E-08	2.581E-08	2.187E-08
SSW	9.148E-07	3.611E-07	2.449E-07	1.605E-07	9.361E-08	6.339E-08	4.633E-08	3.566E-08	2.850E-08	2.345E-08	1.975E-08
SW	1.166E-06	4.530E-07	3.189E-07	2.122E-07	1.181E-07	7.604E-08	5.346E-08	3.992E-08	3.115E-08	2.514E-08	2.082E-08
WSW	1.208E-06	4.559E-07	3.032E-07	1.917E-07	1.003E-07	6.259E-08	4.317E-08	3.184E-08	2.462E-08	1.974E-08	1.645E-08
W	1.617E-06	5.701E-07	3.596E-07	2.196E-07	1.108E-07	6.826E-08	4.686E-08	3.452E-08	2.671E-08	2.144E-08	1.770E-08
WNW	1.898E-06	6.392E-07	3.873E-07	2.377E-07	1.234E-07	7.751E-08	5.396E-08	4.018E-08	3.137E-08	2.536E-08	2.107E-08
NW	1.888E-06	6.268E-07	3.599E-07	2.133E-07	1.097E-07	6.899E-08	4.823E-08	3.606E-08	2.827E-08	2.294E-08	1.922E-08
NNW	1.755E-06	5.790E-07	3.292E-07	1.927E-07	1.004E-07	6.459E-08	4.608E-08	3.505E-08	2.786E-08	2.288E-08	1.951E-08

Insert Table 2.3-332 Annual Average X/Q Values (no Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 2 of 3)

Annual Average X/Q (sec/m^3)											
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	2.290E-08	1.427E-08	1.045E-08	7.020E-09	5.245E-09	4.113E-09	3.299E-09	2.700E-09	2.266E-09	1.943E-09	1.693E-09
NNE	3.980E-08	2.307E-08	1.605E-08	1.003E-08	7.173E-09	5.524E-09	4.462E-09	3.725E-09	3.187E-09	2.778E-09	2.458E-09
NE	4.068E-08	2.378E-08	1.658E-08	1.039E-08	7.438E-09	5.737E-09	4.642E-09	3.883E-09	3.329E-09	2.908E-09	2.579E-09
ENE	3.791E-08	2.316E-08	1.659E-08	1.075E-08	7.885E-09	6.197E-09	5.094E-09	4.321E-09	3.751E-09	3.314E-09	2.968E-09
E	2.923E-08	1.798E-08	1.293E-08	8.404E-09	6.149E-09	4.809E-09	3.927E-09	3.305E-09	2.845E-09	2.492E-09	2.213E-09
ESE	3.138E-08	1.995E-08	1.472E-08	9.941E-09	7.490E-09	6.000E-09	5.003E-09	4.289E-09	3.755E-09	3.340E-09	3.008E-09
SE	2.635E-08	1.630E-08	1.178E-08	7.744E-09	5.732E-09	4.536E-09	3.748E-09	3.193E-09	2.781E-09	2.464E-09	2.213E-09
SSE	2.277E-08	1.413E-08	1.035E-08	7.042E-09	5.419E-09	4.446E-09	3.787E-09	3.297E-09	2.907E-09	2.582E-09	2.300E-09
S	1.889E-08	1.148E-08	8.230E-09	5.374E-09	3.975E-09	3.150E-09	2.608E-09	2.224E-09	1.938E-09	1.715E-09	1.535E-09
SSW	1.695E-08	9.909E-09	6.894E-09	4.294E-09	3.062E-09	2.354E-09	1.900E-09	1.585E-09	1.356E-09	1.181E-09	1.045E-09
SW	1.761E-08	9.739E-09	6.534E-09	3.877E-09	2.674E-09	2.003E-09	1.582E-09	1.296E-09	1.091E-09	9.379E-10	8.191E-10
WSW	1.400E-08	7.678E-09	5.136E-09	3.043E-09	2.099E-09	1.572E-09	1.241E-09	1.015E-09	8.518E-10	7.290E-10	6.335E-10
W	1.495E-08	8.584E-09	5.949E-09	3.707E-09	2.622E-09	1.967E-09	1.538E-09	1.249E-09	1.044E-09	8.918E-10	7.749E-10
WNW	1.790E-08	1.074E-08	7.728E-09	5.106E-09	3.710E-09	2.788E-09	2.191E-09	1.789E-09	1.502E-09	1.289E-09	1.124E-09
NW	1.646E-08	9.832E-09	7.051E-09	4.665E-09	3.475E-09	2.725E-09	2.188E-09	1.795E-09	1.511E-09	1.300E-09	1.136E-09
NNW	1.696E-08	1.075E-08	8.008E-09	5.508E-09	4.114E-09	3.155E-09	2.491E-09	2.040E-09	1.717E-09	1.475E-09	1.289E-09

Insert Table 2.3-332 Annual Average X/Q Values (no Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	3.790E-07	1.347E-07	6.247E-08	3.805E-08	2.654E-08	1.449E-08	6.992E-09	4.089E-09	2.706E-09	1.946E-09
NNE	7.559E-07	2.461E-07	1.072E-07	6.554E-08	4.637E-08	2.367E-08	1.010E-08	5.539E-09	3.731E-09	2.781E-09
NE	6.423E-07	2.431E-07	1.136E-07	6.890E-08	4.756E-08	2.434E-08	1.045E-08	5.753E-09	3.889E-09	2.911E-09
ENE	3.912E-07	1.742E-07	9.444E-08	6.107E-08	4.370E-08	2.352E-08	1.078E-08	6.206E-09	4.325E-09	3.315E-09
E	3.039E-07	1.305E-07	7.073E-08	4.628E-08	3.350E-08	1.824E-08	8.409E-09	4.813E-09	3.308E-09	2.493E-09
ESE	3.202E-07	1.337E-07	7.309E-08	4.863E-08	3.573E-08	2.016E-08	9.913E-09	5.999E-09	4.289E-09	3.340E-09
SE	2.763E-07	1.176E-07	6.403E-08	4.186E-08	3.024E-08	1.652E-08	7.748E-09	4.540E-09	3.195E-09	2.465E-09
SSE	3.032E-07	1.197E-07	5.974E-08	3.745E-08	2.639E-08	1.437E-08	7.055E-09	4.442E-09	3.288E-09	2.574E-09
S	2.939E-07	1.071E-07	5.059E-08	3.129E-08	2.194E-08	1.168E-08	5.387E-09	3.153E-09	2.225E-09	1.714E-09
SSW	2.332E-07	9.505E-08	4.661E-08	2.862E-08	1.981E-08	1.013E-08	4.324E-09	2.361E-09	1.588E-09	1.182E-09
SW	3.013E-07	1.203E-07	5.407E-08	3.137E-08	2.091E-08	1.006E-08	3.933E-09	2.013E-09	1.300E-09	9.394E-10
WSW	2.876E-07	1.039E-07	4.382E-08	2.482E-08	1.652E-08	7.954E-09	3.089E-09	1.580E-09	1.017E-09	7.300E-10
W	3.441E-07	1.161E-07	4.763E-08	2.694E-08	1.779E-08	8.828E-09	3.723E-09	1.970E-09	1.254E-09	8.937E-10
WNW	3.768E-07	1.284E-07	5.473E-08	3.160E-08	2.117E-08	1.099E-08	5.068E-09	2.795E-09	1.795E-09	1.291E-09
NW	3.540E-07	1.146E-07	4.890E-08	2.847E-08	1.930E-08	1.007E-08	4.666E-09	2.710E-09	1.799E-09	1.302E-09
NNW	3.241E-07	1.050E-07	4.660E-08	2.802E-08	1.957E-08	1.091E-08	5.444E-09	3.145E-09	2.046E-09	1.478E-09

Insert Table 2.3-333 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 1 of 3)

Annual Average X/Q (sec/m^3)

	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	1.844E-06	6.410E-07	3.898E-07	2.390E-07	1.300E-07	8.545E-08	6.165E-08	4.718E-08	3.764E-08	3.096E-08	2.626E-08
NNE	3.693E-06	1.307E-06	7.848E-07	4.570E-07	2.337E-07	1.488E-07	1.055E-07	7.986E-08	6.492E-08	5.442E-08	4.589E-08
NE	2.593E-06	1.020E-06	6.770E-07	4.260E-07	2.362E-07	1.557E-07	1.122E-07	8.565E-08	6.815E-08	5.593E-08	4.702E-08
ENE	1.539E-06	6.022E-07	4.054E-07	2.739E-07	1.735E-07	1.239E-07	9.384E-08	7.415E-08	6.049E-08	5.060E-08	4.319E-08
E	1.200E-06	4.798E-07	3.143E-07	2.072E-07	1.292E-07	9.226E-08	7.024E-08	5.583E-08	4.582E-08	3.855E-08	3.308E-08
ESE	1.357E-06	5.185E-07	3.295E-07	2.131E-07	1.318E-07	9.459E-08	7.260E-08	5.820E-08	4.816E-08	4.083E-08	3.529E-08
SE	1.188E-06	4.460E-07	2.829E-07	1.856E-07	1.166E-07	8.352E-08	6.363E-08	5.056E-08	4.147E-08	3.485E-08	2.988E-08
SSE	1.292E-06	4.885E-07	3.149E-07	2.009E-07	1.173E-07	8.012E-08	5.915E-08	4.596E-08	3.706E-08	3.075E-08	2.608E-08
S	1.264E-06	4.812E-07	3.080E-07	1.888E-07	1.033E-07	6.860E-08	4.997E-08	3.855E-08	3.096E-08	2.562E-08	2.169E-08
SSW	9.144E-07	3.607E-07	2.446E-07	1.603E-07	9.337E-08	6.317E-08	4.613E-08	3.546E-08	2.832E-08	2.328E-08	1.958E-08
SW	1.166E-06	4.526E-07	3.185E-07	2.119E-07	1.178E-07	7.582E-08	5.326E-08	3.974E-08	3.098E-08	2.498E-08	2.067E-08
WSW	1.208E-06	4.556E-07	3.029E-07	1.915E-07	1.001E-07	6.242E-08	4.302E-08	3.170E-08	2.450E-08	1.963E-08	1.635E-08
W	1.616E-06	5.697E-07	3.592E-07	2.193E-07	1.106E-07	6.808E-08	4.671E-08	3.438E-08	2.659E-08	2.132E-08	1.759E-08
WNW	1.897E-06	6.387E-07	3.869E-07	2.373E-07	1.231E-07	7.728E-08	5.376E-08	4.000E-08	3.120E-08	2.521E-08	2.093E-08
NW	1.887E-06	6.262E-07	3.595E-07	2.129E-07	1.094E-07	6.878E-08	4.804E-08	3.589E-08	2.811E-08	2.280E-08	1.909E-08
NNW	1.755E-06	5.785E-07	3.288E-07	1.924E-07	1.001E-07	6.438E-08	4.589E-08	3.487E-08	2.770E-08	2.273E-08	1.936E-08

Insert Table 2.3-333 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 2 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	2.269E-08	1.407E-08	1.025E-08	6.809E-09	5.028E-09	3.896E-09	3.089E-09	2.499E-09	2.075E-09	1.760E-09	1.517E-09
NNE	3.948E-08	2.279E-08	1.578E-08	9.768E-09	6.917E-09	5.276E-09	4.220E-09	3.490E-09	2.957E-09	2.553E-09	2.237E-09
NE	4.032E-08	2.344E-08	1.626E-08	1.007E-08	7.130E-09	5.437E-09	4.348E-09	3.595E-09	3.046E-09	2.630E-09	2.304E-09
ENE	3.750E-08	2.276E-08	1.620E-08	1.036E-08	7.493E-09	5.808E-09	4.709E-09	3.939E-09	3.372E-09	2.938E-09	2.595E-09
E	2.887E-08	1.764E-08	1.259E-08	8.063E-09	5.813E-09	4.478E-09	3.602E-09	2.987E-09	2.534E-09	2.187E-09	1.913E-09
ESE	3.100E-08	1.957E-08	1.433E-08	9.538E-09	7.081E-09	5.589E-09	4.591E-09	3.878E-09	3.345E-09	2.932E-09	2.602E-09
SE	2.605E-08	1.601E-08	1.150E-08	7.455E-09	5.443E-09	4.248E-09	3.462E-09	2.908E-09	2.498E-09	2.183E-09	1.934E-09
SSE	2.254E-08	1.391E-08	1.012E-08	6.805E-09	5.171E-09	4.189E-09	3.522E-09	3.027E-09	2.634E-09	2.309E-09	2.031E-09
S	1.871E-08	1.130E-08	8.062E-09	5.206E-09	3.807E-09	2.983E-09	2.442E-09	2.060E-09	1.775E-09	1.553E-09	1.374E-09
SSW	1.678E-08	9.761E-09	6.753E-09	4.159E-09	2.932E-09	2.228E-09	1.777E-09	1.465E-09	1.238E-09	1.066E-09	9.315E-10
SW	1.747E-08	9.618E-09	6.423E-09	3.776E-09	2.579E-09	1.913E-09	1.496E-09	1.214E-09	1.012E-09	8.613E-10	7.448E-10
WSW	1.390E-08	7.594E-09	5.060E-09	2.974E-09	2.035E-09	1.512E-09	1.184E-09	9.607E-10	8.000E-10	6.793E-10	5.856E-10
W	1.485E-08	8.491E-09	5.862E-09	3.624E-09	2.543E-09	1.893E-09	1.469E-09	1.184E-09	9.823E-10	8.328E-10	7.183E-10
WNW	1.776E-08	1.061E-08	7.604E-09	4.980E-09	3.586E-09	2.671E-09	2.082E-09	1.686E-09	1.404E-09	1.194E-09	1.033E-09
NW	1.633E-08	9.716E-09	6.941E-09	4.556E-09	3.367E-09	2.620E-09	2.088E-09	1.699E-09	1.420E-09	1.212E-09	1.051E-09
NNW	1.681E-08	1.060E-08	7.862E-09	5.355E-09	3.959E-09	3.005E-09	2.350E-09	1.906E-09	1.589E-09	1.353E-09	1.171E-09

Insert Table 2.3-333 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	3.786E-07	1.344E-07	6.221E-08	3.782E-08	2.633E-08	1.429E-08	6.782E-09	3.875E-09	2.506E-09	1.763E-09
NNE	7.551E-07	2.456E-07	1.068E-07	6.519E-08	4.604E-08	2.338E-08	9.837E-09	5.291E-09	3.496E-09	2.556E-09
NE	6.416E-07	2.426E-07	1.132E-07	6.850E-08	4.718E-08	2.400E-08	1.014E-08	5.453E-09	3.601E-09	2.633E-09
ENE	3.907E-07	1.738E-07	9.397E-08	6.063E-08	4.328E-08	2.312E-08	1.038E-08	5.818E-09	3.943E-09	2.939E-09
E	3.035E-07	1.301E-07	7.035E-08	4.591E-08	3.314E-08	1.789E-08	8.070E-09	4.484E-09	2.990E-09	2.188E-09
ESE	3.198E-07	1.333E-07	7.270E-08	4.824E-08	3.534E-08	1.978E-08	9.511E-09	5.587E-09	3.879E-09	2.932E-09
SE	2.759E-07	1.172E-07	6.371E-08	4.155E-08	2.993E-08	1.624E-08	7.460E-09	4.252E-09	2.910E-09	2.184E-09
SSE	3.028E-07	1.193E-07	5.947E-08	3.720E-08	2.615E-08	1.414E-08	6.816E-09	4.184E-09	3.019E-09	2.302E-09
S	2.935E-07	1.069E-07	5.037E-08	3.109E-08	2.175E-08	1.151E-08	5.219E-09	2.987E-09	2.060E-09	1.552E-09
SSW	2.329E-07	9.481E-08	4.640E-08	2.844E-08	1.964E-08	9.985E-09	4.190E-09	2.235E-09	1.468E-09	1.067E-09
SW	3.009E-07	1.201E-07	5.387E-08	3.120E-08	2.076E-08	9.944E-09	3.832E-09	1.924E-09	1.218E-09	8.628E-10
WSW	2.873E-07	1.037E-07	4.367E-08	2.470E-08	1.641E-08	7.869E-09	3.020E-09	1.520E-09	9.632E-10	6.804E-10
W	3.438E-07	1.159E-07	4.748E-08	2.681E-08	1.768E-08	8.734E-09	3.641E-09	1.897E-09	1.189E-09	8.347E-10
WNW	3.764E-07	1.281E-07	5.453E-08	3.143E-08	2.102E-08	1.086E-08	4.944E-09	2.680E-09	1.692E-09	1.196E-09
NW	3.536E-07	1.144E-07	4.871E-08	2.831E-08	1.917E-08	9.952E-09	4.558E-09	2.607E-09	1.704E-09	1.214E-09
NNW	3.237E-07	1.047E-07	4.641E-08	2.785E-08	1.941E-08	1.077E-08	5.292E-09	2.997E-09	1.912E-09	1.355E-09

Insert Table 2.3-334 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 1 of 3)

Annual Average X/Q (sec/m^3)

	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	1.765E-06	5.975E-07	3.592E-07	2.207E-07	1.206E-07	7.939E-08	5.726E-08	4.378E-08	3.488E-08	2.866E-08	2.429E-08
NNE	3.524E-06	1.213E-06	7.190E-07	4.179E-07	2.138E-07	1.361E-07	9.633E-08	7.282E-08	5.923E-08	4.968E-08	4.184E-08
NE	2.476E-06	9.515E-07	6.290E-07	3.971E-07	2.208E-07	1.454E-07	1.046E-07	7.968E-08	6.326E-08	5.181E-08	4.346E-08
ENE	1.479E-06	5.673E-07	3.804E-07	2.588E-07	1.652E-07	1.181E-07	8.946E-08	7.061E-08	5.752E-08	4.806E-08	4.097E-08
E	1.159E-06	4.557E-07	2.966E-07	1.963E-07	1.232E-07	8.808E-08	6.705E-08	5.326E-08	4.367E-08	3.670E-08	3.147E-08
ESE	1.312E-06	4.920E-07	3.103E-07	2.013E-07	1.254E-07	9.018E-08	6.928E-08	5.555E-08	4.596E-08	3.896E-08	3.366E-08
SE	1.148E-06	4.228E-07	2.661E-07	1.754E-07	1.110E-07	7.971E-08	6.074E-08	4.824E-08	3.953E-08	3.319E-08	2.843E-08
SSE	1.239E-06	4.591E-07	2.940E-07	1.882E-07	1.104E-07	7.549E-08	5.566E-08	4.317E-08	3.475E-08	2.877E-08	2.436E-08
S	1.205E-06	4.487E-07	2.851E-07	1.749E-07	9.603E-08	6.380E-08	4.643E-08	3.577E-08	2.868E-08	2.369E-08	2.002E-08
SSW	8.735E-07	3.371E-07	2.277E-07	1.501E-07	8.792E-08	5.951E-08	4.339E-08	3.329E-08	2.652E-08	2.175E-08	1.825E-08
SW	1.116E-06	4.235E-07	2.978E-07	1.992E-07	1.108E-07	7.103E-08	4.964E-08	3.684E-08	2.858E-08	2.293E-08	1.889E-08
WSW	1.158E-06	4.264E-07	2.824E-07	1.790E-07	9.340E-08	5.793E-08	3.970E-08	2.908E-08	2.235E-08	1.781E-08	1.478E-08
W	1.547E-06	5.310E-07	3.324E-07	2.030E-07	1.020E-07	6.241E-08	4.256E-08	3.115E-08	2.396E-08	1.912E-08	1.570E-08
WNW	1.825E-06	5.991E-07	3.595E-07	2.205E-07	1.141E-07	7.132E-08	4.938E-08	3.657E-08	2.840E-08	2.285E-08	1.890E-08
NW	1.820E-06	5.899E-07	3.344E-07	1.975E-07	1.012E-07	6.333E-08	4.403E-08	3.275E-08	2.554E-08	2.064E-08	1.722E-08
NNW	1.686E-06	5.418E-07	3.035E-07	1.774E-07	9.239E-08	5.935E-08	4.224E-08	3.204E-08	2.540E-08	2.080E-08	1.770E-08

Insert Table 2.3-334 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 2 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	2.097E-08	1.302E-08	9.493E-09	6.246E-09	4.393E-09	3.258E-09	2.516E-09	1.992E-09	1.622E-09	1.352E-09	1.147E-09
NNE	3.596E-08	2.065E-08	1.423E-08	8.770E-09	6.197E-09	4.725E-09	3.783E-09	3.130E-09	2.645E-09	2.279E-09	1.990E-09
NE	3.720E-08	2.150E-08	1.486E-08	9.170E-09	6.492E-09	4.960E-09	3.981E-09	3.303E-09	2.799E-09	2.420E-09	2.121E-09
ENE	3.553E-08	2.150E-08	1.529E-08	9.795E-09	7.115E-09	5.548E-09	4.530E-09	3.816E-09	3.277E-09	2.868E-09	2.541E-09
E	2.744E-08	1.672E-08	1.193E-08	7.654E-09	5.539E-09	4.289E-09	3.472E-09	2.897E-09	2.466E-09	2.139E-09	1.878E-09
ESE	2.957E-08	1.867E-08	1.370E-08	9.174E-09	6.858E-09	5.457E-09	4.521E-09	3.852E-09	3.336E-09	2.940E-09	2.619E-09
SE	2.477E-08	1.519E-08	1.091E-08	7.092E-09	5.201E-09	4.084E-09	3.352E-09	2.835E-09	2.443E-09	2.144E-09	1.904E-09
SSE	2.101E-08	1.293E-08	9.408E-09	6.353E-09	4.865E-09	3.961E-09	3.276E-09	2.751E-09	2.342E-09	2.014E-09	1.749E-09
S	1.725E-08	1.039E-08	7.395E-09	4.777E-09	3.505E-09	2.760E-09	2.271E-09	1.913E-09	1.626E-09	1.400E-09	1.219E-09
SSW	1.561E-08	9.012E-09	6.205E-09	3.802E-09	2.676E-09	2.035E-09	1.627E-09	1.345E-09	1.133E-09	9.677E-10	8.352E-10
SW	1.590E-08	8.607E-09	5.676E-09	3.278E-09	2.212E-09	1.627E-09	1.265E-09	1.020E-09	8.409E-10	7.061E-10	6.015E-10
WSW	1.252E-08	6.718E-09	4.415E-09	2.543E-09	1.704E-09	1.229E-09	9.317E-10	7.331E-10	5.936E-10	4.922E-10	4.160E-10
W	1.319E-08	7.458E-09	5.101E-09	3.046E-09	2.028E-09	1.455E-09	1.096E-09	8.601E-10	6.966E-10	5.779E-10	4.886E-10
WNW	1.598E-08	9.488E-09	6.763E-09	4.265E-09	2.921E-09	2.105E-09	1.594E-09	1.259E-09	1.025E-09	8.537E-10	7.246E-10
NW	1.469E-08	8.675E-09	6.163E-09	3.947E-09	2.766E-09	2.055E-09	1.589E-09	1.259E-09	1.028E-09	8.586E-10	7.303E-10
NNW	1.536E-08	9.702E-09	7.198E-09	4.754E-09	3.321E-09	2.436E-09	1.854E-09	1.468E-09	1.198E-09	1.000E-09	8.503E-10

Insert Table 2.3-334 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	3.506E-07	1.245E-07	5.777E-08	3.506E-08	2.436E-08	1.322E-08	6.144E-09	3.264E-09	2.001E-09	1.356E-09
NNE	6.949E-07	2.246E-07	9.752E-08	5.948E-08	4.198E-08	2.120E-08	8.841E-09	4.741E-09	3.132E-09	2.280E-09
NE	5.976E-07	2.265E-07	1.055E-07	6.359E-08	4.361E-08	2.203E-08	9.243E-09	4.977E-09	3.305E-09	2.421E-09
ENE	3.679E-07	1.651E-07	8.956E-08	5.766E-08	4.106E-08	2.186E-08	9.824E-09	5.559E-09	3.815E-09	2.868E-09
E	2.874E-07	1.238E-07	6.714E-08	4.376E-08	3.153E-08	1.698E-08	7.664E-09	4.295E-09	2.897E-09	2.139E-09
ESE	3.022E-07	1.266E-07	6.936E-08	4.603E-08	3.371E-08	1.889E-08	9.151E-09	5.456E-09	3.846E-09	2.939E-09
SE	2.606E-07	1.114E-07	6.080E-08	3.960E-08	2.849E-08	1.542E-08	7.101E-09	4.089E-09	2.833E-09	2.144E-09
SSE	2.837E-07	1.122E-07	5.596E-08	3.488E-08	2.442E-08	1.316E-08	6.370E-09	3.928E-09	2.745E-09	2.013E-09
S	2.725E-07	9.924E-08	4.680E-08	2.881E-08	2.008E-08	1.058E-08	4.793E-09	2.763E-09	1.906E-09	1.400E-09
SSW	2.175E-07	8.910E-08	4.365E-08	2.663E-08	1.831E-08	9.230E-09	3.835E-09	2.043E-09	1.345E-09	9.675E-10
SW	2.820E-07	1.128E-07	5.022E-08	2.879E-08	1.898E-08	8.924E-09	3.337E-09	1.639E-09	1.022E-09	7.073E-10
WSW	2.685E-07	9.667E-08	4.032E-08	2.255E-08	1.484E-08	6.983E-09	2.586E-09	1.237E-09	7.367E-10	4.940E-10
W	3.190E-07	1.068E-07	4.329E-08	2.417E-08	1.578E-08	7.685E-09	3.050E-09	1.464E-09	8.651E-10	5.800E-10
WNW	3.510E-07	1.187E-07	5.011E-08	2.862E-08	1.899E-08	9.719E-09	4.223E-09	2.118E-09	1.265E-09	8.565E-10
NW	3.303E-07	1.058E-07	4.466E-08	2.573E-08	1.730E-08	8.896E-09	3.915E-09	2.058E-09	1.265E-09	8.613E-10
NNW	3.004E-07	9.659E-08	4.272E-08	2.554E-08	1.775E-08	9.847E-09	4.660E-09	2.439E-09	1.475E-09	1.003E-09

Insert Table 2.3-335 Annual Average D/Q Values for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 1 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	2.362E-08	1.177E-08	7.033E-09	3.668E-09	1.419E-09	7.466E-10	4.584E-10	3.102E-10	2.241E-10	1.696E-10	1.330E-10
NNE	5.326E-08	2.513E-08	1.462E-08	7.551E-09	2.944E-09	1.538E-09	9.387E-10	6.321E-10	4.548E-10	3.432E-10	2.684E-10
NE	4.783E-08	2.450E-08	1.529E-08	8.306E-09	3.412E-09	1.824E-09	1.128E-09	7.656E-10	5.537E-10	4.190E-10	3.281E-10
ENE	2.822E-08	1.536E-08	9.719E-09	5.369E-09	2.225E-09	1.216E-09	7.647E-10	5.256E-10	3.833E-10	2.916E-10	2.292E-10
E	2.442E-08	1.359E-08	8.511E-09	4.622E-09	1.865E-09	1.010E-09	6.325E-10	4.337E-10	3.160E-10	2.405E-10	1.891E-10
ESE	2.666E-08	1.470E-08	9.086E-09	4.868E-09	1.934E-09	1.039E-09	6.471E-10	4.423E-10	3.216E-10	2.445E-10	1.923E-10
SE	2.219E-08	1.223E-08	7.556E-09	4.065E-09	1.622E-09	8.760E-10	5.478E-10	3.754E-10	2.735E-10	2.081E-10	1.637E-10
SSE	2.143E-08	1.149E-08	7.148E-09	3.885E-09	1.579E-09	8.551E-10	5.350E-10	3.665E-10	2.668E-10	2.028E-10	1.593E-10
S	1.788E-08	9.203E-09	5.753E-09	3.126E-09	1.275E-09	6.842E-10	4.247E-10	2.892E-10	2.096E-10	1.588E-10	1.245E-10
SSW	1.411E-08	7.393E-09	4.725E-09	2.620E-09	1.090E-09	5.930E-10	3.716E-10	2.546E-10	1.853E-10	1.407E-10	1.104E-10
SW	1.928E-08	1.057E-08	6.899E-09	3.843E-09	1.606E-09	8.671E-10	5.394E-10	3.678E-10	2.667E-10	2.022E-10	1.586E-10
WSW	2.337E-08	1.206E-08	7.418E-09	3.970E-09	1.605E-09	8.497E-10	5.220E-10	3.530E-10	2.547E-10	1.925E-10	1.540E-10
W	3.027E-08	1.463E-08	8.623E-09	4.626E-09	1.831E-09	9.536E-10	5.793E-10	3.886E-10	2.788E-10	2.100E-10	1.640E-10
WNW	3.188E-08	1.622E-08	9.545E-09	5.152E-09	2.008E-09	1.044E-09	6.343E-10	4.260E-10	3.060E-10	2.308E-10	1.805E-10
NW	2.934E-08	1.540E-08	9.071E-09	4.876E-09	1.874E-09	9.710E-10	5.895E-10	3.958E-10	2.844E-10	2.146E-10	1.679E-10
NNW	2.467E-08	1.246E-08	7.214E-09	3.673E-09	1.386E-09	7.221E-10	4.409E-10	2.975E-10	2.146E-10	1.624E-10	1.274E-10

Insert Table 2.3-335 Annual Average D/Q Values for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 2 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	1.072E-10	5.068E-11	3.196E-11	3.949E-11	2.841E-11	1.731E-11	1.203E-11	9.074E-12	7.070E-12	5.646E-12	4.609E-12
NNE	2.159E-10	9.926E-11	6.058E-11	3.163E-11	2.023E-11	1.454E-11	1.137E-11	9.225E-12	8.175E-12	8.176E-12	6.991E-12
NE	2.640E-10	1.211E-10	7.277E-11	3.759E-11	2.383E-11	1.690E-11	1.290E-11	1.034E-11	8.578E-12	7.374E-12	6.578E-12
ENE	1.848E-10	8.606E-11	5.231E-11	2.747E-11	1.761E-11	1.265E-11	9.773E-12	7.917E-12	6.649E-12	5.706E-12	5.035E-12
E	1.526E-10	7.150E-11	4.370E-11	2.318E-11	1.486E-11	1.088E-11	8.458E-12	6.842E-12	5.710E-12	4.852E-12	4.206E-12
ESE	1.552E-10	7.275E-11	4.453E-11	2.371E-11	1.527E-11	1.127E-11	8.865E-12	7.270E-12	6.160E-12	5.324E-12	4.658E-12
SE	1.322E-10	6.204E-11	3.803E-11	2.027E-11	1.305E-11	9.617E-12	7.453E-12	6.081E-12	5.141E-12	4.421E-12	3.881E-12
SSE	1.285E-10	5.991E-11	3.705E-11	1.933E-11	1.279E-11	1.439E-11	1.508E-11	1.146E-11	8.909E-12	6.752E-12	5.207E-12
S	1.003E-10	4.630E-11	2.797E-11	1.461E-11	9.299E-12	6.771E-12	6.214E-12	7.563E-12	7.376E-12	6.039E-12	4.952E-12
SSW	8.894E-11	4.120E-11	2.491E-11	1.301E-11	8.240E-12	5.893E-12	4.693E-12	4.198E-12	4.605E-12	4.662E-12	3.959E-12
SW	1.276E-10	5.875E-11	3.572E-11	1.821E-11	1.146E-11	8.169E-12	6.308E-12	5.608E-12	5.633E-12	4.876E-12	4.111E-12
WSW	1.238E-10	5.634E-11	3.369E-11	1.868E-11	1.394E-11	1.192E-11	8.921E-12	6.826E-12	5.320E-12	4.253E-12	3.503E-12
W	1.318E-10	6.027E-11	3.951E-11	3.012E-11	1.939E-11	1.321E-11	9.685E-12	7.285E-12	5.670E-12	4.530E-12	3.697E-12
WNW	1.452E-10	6.758E-11	5.187E-11	3.730E-11	2.311E-11	1.601E-11	1.157E-11	8.703E-12	6.771E-12	5.409E-12	4.416E-12
NW	1.353E-10	6.229E-11	4.099E-11	3.590E-11	2.398E-11	1.571E-11	1.102E-11	8.301E-12	6.448E-12	5.154E-12	4.211E-12
NNW	1.056E-10	4.864E-11	3.938E-11	3.505E-11	2.146E-11	1.392E-11	1.004E-11	7.564E-12	5.885E-12	4.700E-12	3.837E-12

Insert Table 2.3-335 Annual Average D/Q Values for Mixed-Mode Release from the Reactor Building/Fuel Building Stack (Sheet 3 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	6.591E-09	1.620E-09	4.760E-10	2.280E-10	1.343E-10	5.492E-11	3.289E-11	1.816E-11	9.155E-12	5.684E-12
NNE	1.381E-08	3.343E-09	9.760E-10	4.629E-10	2.711E-10	1.080E-10	3.299E-11	1.479E-11	9.437E-12	7.737E-12
NE	1.423E-08	3.794E-09	1.168E-09	5.629E-10	3.313E-10	1.314E-10	3.929E-11	1.715E-11	1.040E-11	7.436E-12
ENE	9.040E-09	2.475E-09	7.893E-10	3.890E-10	2.312E-10	9.299E-11	2.861E-11	1.282E-11	7.964E-12	5.737E-12
E	7.911E-09	2.098E-09	6.536E-10	3.208E-10	1.908E-10	7.717E-11	2.404E-11	1.097E-11	6.872E-12	4.867E-12
ESE	8.460E-09	2.188E-09	6.696E-10	3.267E-10	1.940E-10	7.853E-11	2.458E-11	1.137E-11	7.303E-12	5.325E-12
SE	7.042E-09	1.833E-09	5.664E-10	2.777E-10	1.652E-10	6.695E-11	2.100E-11	9.666E-12	6.115E-12	4.434E-12
SSE	6.662E-09	1.770E-09	5.530E-10	2.709E-10	1.608E-10	6.499E-11	2.036E-11	1.424E-11	1.152E-11	6.819E-12
S	5.352E-09	1.424E-09	4.397E-10	2.130E-10	1.257E-10	5.014E-11	1.522E-11	7.222E-12	7.106E-12	6.032E-12
SSW	4.382E-09	1.209E-09	3.838E-10	1.881E-10	1.115E-10	4.457E-11	1.353E-11	6.039E-12	4.494E-12	4.385E-12
SW	6.356E-09	1.775E-09	5.582E-10	2.710E-10	1.600E-10	6.382E-11	1.910E-11	8.303E-12	5.818E-12	4.817E-12
WSW	6.917E-09	1.795E-09	5.418E-10	2.591E-10	1.542E-10	6.127E-11	1.991E-11	1.126E-11	6.851E-12	4.292E-12
W	8.181E-09	2.062E-09	6.029E-10	2.840E-10	1.657E-10	6.693E-11	2.744E-11	1.345E-11	7.356E-12	4.559E-12
WNW	9.076E-09	2.278E-09	6.601E-10	3.116E-10	1.823E-10	7.785E-11	3.423E-11	1.613E-11	8.787E-12	5.444E-12
NW	8.614E-09	2.140E-09	6.137E-10	2.896E-10	1.697E-10	6.904E-11	3.173E-11	1.604E-11	8.372E-12	5.188E-12
NNW	6.805E-09	1.599E-09	4.585E-10	2.184E-10	1.297E-10	5.718E-11	2.997E-11	1.438E-11	7.633E-12	4.731E-12

Insert Table 2.3-336 Annual Average X/Q Values (No Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 1 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	2.201E-06	7.406E-07	4.177E-07	2.335E-07	1.153E-07	7.323E-08	5.214E-08	3.971E-08	3.164E-08	2.604E-08	2.209E-08
NNE	4.384E-06	1.491E-06	8.431E-07	4.603E-07	2.169E-07	1.335E-07	9.317E-08	6.999E-08	5.630E-08	4.687E-08	3.947E-08
NE	3.086E-06	1.131E-06	6.769E-07	3.920E-07	2.021E-07	1.308E-07	9.380E-08	7.161E-08	5.706E-08	4.692E-08	3.953E-08
ENE	1.894E-06	6.959E-07	4.154E-07	2.491E-07	1.419E-07	9.873E-08	7.445E-08	5.889E-08	4.818E-08	4.043E-08	3.463E-08
E	1.372E-06	5.209E-07	3.101E-07	1.847E-07	1.047E-07	7.291E-08	5.520E-08	4.387E-08	3.606E-08	3.040E-08	2.615E-08
ESE	1.636E-06	5.931E-07	3.431E-07	1.995E-07	1.098E-07	7.571E-08	5.721E-08	4.555E-08	3.757E-08	3.180E-08	2.746E-08
SE	1.439E-06	5.183E-07	2.990E-07	1.745E-07	9.710E-08	6.712E-08	5.060E-08	4.010E-08	3.290E-08	2.769E-08	2.378E-08
SSE	1.593E-06	5.684E-07	3.319E-07	1.926E-07	1.024E-07	6.805E-08	4.978E-08	3.855E-08	3.106E-08	2.576E-08	2.186E-08
S	1.576E-06	5.584E-07	3.258E-07	1.849E-07	9.299E-08	5.987E-08	4.304E-08	3.300E-08	2.643E-08	2.184E-08	1.848E-08
SSW	1.116E-06	4.091E-07	2.482E-07	1.473E-07	7.915E-08	5.263E-08	3.838E-08	2.959E-08	2.372E-08	1.957E-08	1.652E-08
SW	1.297E-06	4.751E-07	2.927E-07	1.795E-07	9.708E-08	6.307E-08	4.485E-08	3.382E-08	2.659E-08	2.159E-08	1.797E-08
WSW	1.299E-06	4.660E-07	2.781E-07	1.644E-07	8.402E-08	5.278E-08	3.675E-08	2.733E-08	2.128E-08	1.716E-08	1.435E-08
W	1.811E-06	6.138E-07	3.526E-07	2.011E-07	9.778E-08	5.999E-08	4.129E-08	3.052E-08	2.370E-08	1.908E-08	1.579E-08
WNW	2.106E-06	6.937E-07	3.857E-07	2.186E-07	1.080E-07	6.724E-08	4.682E-08	3.493E-08	2.733E-08	2.214E-08	1.843E-08
NW	2.088E-06	6.839E-07	3.671E-07	2.023E-07	9.803E-08	6.078E-08	4.232E-08	3.162E-08	2.479E-08	2.013E-08	1.686E-08
NNW	2.006E-06	6.514E-07	3.496E-07	1.901E-07	9.111E-08	5.674E-08	3.987E-08	3.010E-08	2.383E-08	1.953E-08	1.658E-08

Insert Table 2.3-336 Annual Average X/Q Values (No Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 2 of 3)

Annual Average X/Q (sec/m^3)											
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	1.910E-08	1.187E-08	8.698E-09	5.886E-09	4.463E-09	3.575E-09	2.941E-09	2.446E-09	2.058E-09	1.764E-09	1.537E-09
NNE	3.395E-08	1.970E-08	1.373E-08	8.609E-09	6.170E-09	4.760E-09	3.850E-09	3.219E-09	2.757E-09	2.406E-09	2.131E-09
NE	3.397E-08	1.993E-08	1.393E-08	8.749E-09	6.275E-09	4.844E-09	3.922E-09	3.283E-09	2.816E-09	2.462E-09	2.184E-09
ENE	3.016E-08	1.852E-08	1.331E-08	8.646E-09	6.343E-09	4.985E-09	4.098E-09	3.476E-09	3.019E-09	2.669E-09	2.393E-09
E	2.287E-08	1.411E-08	1.016E-08	6.598E-09	4.827E-09	3.774E-09	3.081E-09	2.593E-09	2.233E-09	1.956E-09	1.737E-09
ESE	2.412E-08	1.524E-08	1.119E-08	7.514E-09	5.643E-09	4.511E-09	3.756E-09	3.218E-09	2.816E-09	2.505E-09	2.257E-09
SE	2.077E-08	1.287E-08	9.307E-09	6.108E-09	4.514E-09	3.567E-09	2.945E-09	2.507E-09	2.182E-09	1.934E-09	1.737E-09
SSE	1.890E-08	1.162E-08	8.432E-09	5.658E-09	4.321E-09	3.543E-09	3.035E-09	2.672E-09	2.392E-09	2.162E-09	1.965E-09
S	1.595E-08	9.628E-09	6.883E-09	4.478E-09	3.306E-09	2.618E-09	2.170E-09	1.855E-09	1.622E-09	1.443E-09	1.299E-09
SSW	1.422E-08	8.374E-09	5.851E-09	3.661E-09	2.617E-09	2.015E-09	1.628E-09	1.361E-09	1.166E-09	1.018E-09	9.017E-10
SW	1.527E-08	8.546E-09	5.769E-09	3.444E-09	2.382E-09	1.787E-09	1.413E-09	1.159E-09	9.769E-10	8.403E-10	7.346E-10
WSW	1.226E-08	6.802E-09	4.579E-09	2.732E-09	1.892E-09	1.422E-09	1.126E-09	9.239E-10	7.781E-10	6.684E-10	5.829E-10
W	1.336E-08	7.676E-09	5.319E-09	3.327E-09	2.383E-09	1.821E-09	1.439E-09	1.170E-09	9.776E-10	8.350E-10	7.256E-10
WNW	1.568E-08	9.327E-09	6.666E-09	4.417E-09	3.300E-09	2.561E-09	2.022E-09	1.651E-09	1.386E-09	1.189E-09	1.037E-09
NW	1.443E-08	8.538E-09	6.074E-09	3.992E-09	2.999E-09	2.400E-09	1.979E-09	1.653E-09	1.394E-09	1.199E-09	1.048E-09
NNW	1.438E-08	8.993E-09	6.673E-09	4.634E-09	3.562E-09	2.835E-09	2.275E-09	1.864E-09	1.569E-09	1.349E-09	1.178E-09

Insert Table 2.3-336 Annual Average X/Q Values (No Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	4.076E-07	1.229E-07	5.279E-08	3.181E-08	2.215E-08	1.207E-08	5.879E-09	3.558E-09	2.439E-09	1.767E-09
NNE	8.168E-07	2.339E-07	9.466E-08	5.662E-08	3.962E-08	2.021E-08	8.663E-09	4.772E-09	3.223E-09	2.408E-09
NE	6.513E-07	2.126E-07	9.478E-08	5.736E-08	3.966E-08	2.038E-08	8.801E-09	4.857E-09	3.288E-09	2.464E-09
ENE	4.039E-07	1.465E-07	7.470E-08	4.829E-08	3.469E-08	1.879E-08	8.658E-09	4.992E-09	3.480E-09	2.671E-09
E	3.012E-07	1.083E-07	5.539E-08	3.614E-08	2.619E-08	1.430E-08	6.601E-09	3.777E-09	2.595E-09	1.957E-09
ESE	3.348E-07	1.146E-07	5.748E-08	3.765E-08	2.751E-08	1.541E-08	7.500E-09	4.511E-09	3.219E-09	2.505E-09
SE	2.924E-07	1.010E-07	5.081E-08	3.297E-08	2.383E-08	1.304E-08	6.110E-09	3.571E-09	2.508E-09	1.935E-09
SSE	3.225E-07	1.072E-07	5.016E-08	3.118E-08	2.192E-08	1.182E-08	5.680E-09	3.547E-09	2.669E-09	2.157E-09
S	3.149E-07	9.870E-08	4.351E-08	2.656E-08	1.854E-08	9.812E-09	4.491E-09	2.622E-09	1.856E-09	1.443E-09
SSW	2.391E-07	8.251E-08	3.866E-08	2.382E-08	1.657E-08	8.551E-09	3.684E-09	2.021E-09	1.363E-09	1.019E-09
SW	2.829E-07	1.003E-07	4.530E-08	2.675E-08	1.804E-08	8.805E-09	3.489E-09	1.796E-09	1.162E-09	8.416E-10
WSW	2.693E-07	8.799E-08	3.726E-08	2.144E-08	1.441E-08	7.026E-09	2.769E-09	1.429E-09	9.261E-10	6.692E-10
W	3.433E-07	1.039E-07	4.197E-08	2.388E-08	1.586E-08	7.892E-09	3.350E-09	1.818E-09	1.173E-09	8.367E-10
WNW	3.799E-07	1.144E-07	4.751E-08	2.752E-08	1.851E-08	9.556E-09	4.420E-09	2.543E-09	1.656E-09	1.191E-09
NW	3.642E-07	1.046E-07	4.296E-08	2.497E-08	1.693E-08	8.752E-09	4.013E-09	2.391E-09	1.647E-09	1.201E-09
NNW	3.458E-07	9.784E-08	4.046E-08	2.398E-08	1.664E-08	9.158E-09	4.611E-09	2.805E-09	1.869E-09	1.351E-09

Insert Table 2.3-337 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 1 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	2.200E-06	7.400E-07	4.172E-07	2.331E-07	1.150E-07	7.299E-08	5.193E-08	3.951E-08	3.145E-08	2.587E-08	2.192E-08
NNE	4.382E-06	1.489E-06	8.420E-07	4.595E-07	2.164E-07	1.331E-07	9.282E-08	6.967E-08	5.600E-08	4.659E-08	3.920E-08
NE	3.084E-06	1.130E-06	6.760E-07	3.914E-07	2.016E-07	1.303E-07	9.343E-08	7.127E-08	5.674E-08	4.662E-08	3.924E-08
ENE	1.893E-06	6.952E-07	4.148E-07	2.487E-07	1.415E-07	9.837E-08	7.410E-08	5.855E-08	4.785E-08	4.012E-08	3.432E-08
E	1.371E-06	5.204E-07	3.097E-07	1.843E-07	1.044E-07	7.262E-08	5.492E-08	4.360E-08	3.580E-08	3.015E-08	2.589E-08
ESE	1.636E-06	5.925E-07	3.425E-07	1.991E-07	1.095E-07	7.540E-08	5.692E-08	4.527E-08	3.729E-08	3.153E-08	2.719E-08
SE	1.438E-06	5.177E-07	2.985E-07	1.742E-07	9.681E-08	6.685E-08	5.035E-08	3.987E-08	3.267E-08	2.747E-08	2.356E-08
SSE	1.593E-06	5.678E-07	3.314E-07	1.922E-07	1.021E-07	6.780E-08	4.954E-08	3.833E-08	3.085E-08	2.557E-08	2.167E-08
S	1.575E-06	5.579E-07	3.254E-07	1.846E-07	9.274E-08	5.966E-08	4.285E-08	3.282E-08	2.626E-08	2.167E-08	1.832E-08
SSW	1.115E-06	4.087E-07	2.478E-07	1.471E-07	7.894E-08	5.244E-08	3.821E-08	2.943E-08	2.357E-08	1.943E-08	1.639E-08
SW	1.296E-06	4.747E-07	2.923E-07	1.792E-07	9.686E-08	6.288E-08	4.468E-08	3.367E-08	2.645E-08	2.146E-08	1.785E-08
WSW	1.298E-06	4.656E-07	2.777E-07	1.641E-07	8.385E-08	5.263E-08	3.663E-08	2.722E-08	2.118E-08	1.706E-08	1.427E-08
W	1.810E-06	6.134E-07	3.522E-07	2.008E-07	9.759E-08	5.983E-08	4.115E-08	3.039E-08	2.358E-08	1.897E-08	1.569E-08
WNW	2.105E-06	6.931E-07	3.853E-07	2.182E-07	1.077E-07	6.704E-08	4.664E-08	3.477E-08	2.718E-08	2.201E-08	1.830E-08
NW	2.087E-06	6.833E-07	3.666E-07	2.019E-07	9.779E-08	6.059E-08	4.215E-08	3.147E-08	2.465E-08	2.001E-08	1.674E-08
NNW	2.005E-06	6.508E-07	3.491E-07	1.898E-07	9.088E-08	5.655E-08	3.970E-08	2.995E-08	2.369E-08	1.940E-08	1.646E-08

Insert Table 2.3-337 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 2 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	1.894E-08	1.172E-08	8.547E-09	5.728E-09	4.299E-09	3.408E-09	2.774E-09	2.283E-09	1.901E-09	1.614E-09	1.393E-09
NNE	3.369E-08	1.947E-08	1.351E-08	8.401E-09	5.969E-09	4.565E-09	3.661E-09	3.034E-09	2.576E-09	2.229E-09	1.957E-09
NE	3.369E-08	1.967E-08	1.369E-08	8.511E-09	6.043E-09	4.618E-09	3.701E-09	3.067E-09	2.604E-09	2.253E-09	1.978E-09
ENE	2.986E-08	1.824E-08	1.303E-08	8.365E-09	6.064E-09	4.709E-09	3.825E-09	3.206E-09	2.750E-09	2.402E-09	2.128E-09
E	2.262E-08	1.387E-08	9.919E-09	6.362E-09	4.594E-09	3.546E-09	2.858E-09	2.374E-09	2.018E-09	1.745E-09	1.530E-09
ESE	2.386E-08	1.498E-08	1.093E-08	7.245E-09	5.371E-09	4.238E-09	3.484E-09	2.947E-09	2.546E-09	2.235E-09	1.988E-09
SE	2.056E-08	1.266E-08	9.106E-09	5.905E-09	4.313E-09	3.368E-09	2.747E-09	2.310E-09	1.987E-09	1.739E-09	1.544E-09
SSE	1.872E-08	1.145E-08	8.264E-09	5.485E-09	4.143E-09	3.360E-09	2.846E-09	2.477E-09	2.192E-09	1.959E-09	1.760E-09
S	1.580E-08	9.491E-09	6.751E-09	4.347E-09	3.177E-09	2.490E-09	2.043E-09	1.729E-09	1.497E-09	1.318E-09	1.175E-09
SSW	1.409E-08	8.258E-09	5.741E-09	3.556E-09	2.516E-09	1.917E-09	1.533E-09	1.268E-09	1.074E-09	9.281E-10	8.137E-10
SW	1.515E-08	8.446E-09	5.678E-09	3.361E-09	2.304E-09	1.714E-09	1.343E-09	1.092E-09	9.120E-10	7.774E-10	6.736E-10
WSW	1.217E-08	6.731E-09	4.514E-09	2.674E-09	1.839E-09	1.372E-09	1.078E-09	8.781E-10	7.342E-10	6.260E-10	5.419E-10
W	1.327E-08	7.596E-09	5.245E-09	3.258E-09	2.316E-09	1.757E-09	1.379E-09	1.113E-09	9.236E-10	7.835E-10	6.760E-10
WNW	1.556E-08	9.221E-09	6.565E-09	4.316E-09	3.198E-09	2.462E-09	1.929E-09	1.563E-09	1.302E-09	1.108E-09	9.590E-10
NW	1.432E-08	8.438E-09	5.980E-09	3.902E-09	2.910E-09	2.312E-09	1.893E-09	1.570E-09	1.315E-09	1.123E-09	9.745E-10
NNW	1.426E-08	8.880E-09	6.560E-09	4.515E-09	3.440E-09	2.713E-09	2.158E-09	1.752E-09	1.462E-09	1.246E-09	1.080E-09

Insert Table 2.3-337 Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	4.071E-07	1.226E-07	5.258E-08	3.163E-08	2.199E-08	1.191E-08	5.719E-09	3.392E-09	2.278E-09	1.617E-09
NNE	8.159E-07	2.334E-07	9.431E-08	5.632E-08	3.935E-08	1.998E-08	8.456E-09	4.578E-09	3.039E-09	2.231E-09
NE	6.505E-07	2.121E-07	9.441E-08	5.704E-08	3.937E-08	2.013E-08	8.564E-09	4.632E-09	3.072E-09	2.255E-09
ENE	4.033E-07	1.461E-07	7.435E-08	4.796E-08	3.439E-08	1.850E-08	8.378E-09	4.717E-09	3.209E-09	2.404E-09
E	3.008E-07	1.080E-07	5.511E-08	3.588E-08	2.594E-08	1.406E-08	6.367E-09	3.550E-09	2.377E-09	1.746E-09
ESE	3.343E-07	1.142E-07	5.719E-08	3.738E-08	2.724E-08	1.515E-08	7.232E-09	4.238E-09	2.947E-09	2.236E-09
SE	2.920E-07	1.007E-07	5.056E-08	3.274E-08	2.361E-08	1.284E-08	5.909E-09	3.371E-09	2.312E-09	1.740E-09
SSE	3.220E-07	1.069E-07	4.993E-08	3.098E-08	2.173E-08	1.165E-08	5.506E-09	3.363E-09	2.474E-09	1.954E-09
S	3.145E-07	9.844E-08	4.332E-08	2.639E-08	1.838E-08	9.675E-09	4.361E-09	2.494E-09	1.730E-09	1.318E-09
SSW	2.388E-07	8.230E-08	3.849E-08	2.367E-08	1.644E-08	8.434E-09	3.579E-09	1.923E-09	1.270E-09	9.291E-10
SW	2.826E-07	1.001E-07	4.513E-08	2.661E-08	1.792E-08	8.706E-09	3.406E-09	1.723E-09	1.095E-09	7.788E-10
WSW	2.690E-07	8.782E-08	3.713E-08	2.134E-08	1.432E-08	6.955E-09	2.712E-09	1.379E-09	8.804E-10	6.269E-10
W	3.430E-07	1.037E-07	4.183E-08	2.377E-08	1.577E-08	7.813E-09	3.281E-09	1.755E-09	1.117E-09	7.852E-10
WNW	3.794E-07	1.142E-07	4.733E-08	2.738E-08	1.839E-08	9.449E-09	4.319E-09	2.445E-09	1.568E-09	1.110E-09
NW	3.638E-07	1.044E-07	4.279E-08	2.483E-08	1.681E-08	8.653E-09	3.923E-09	2.304E-09	1.565E-09	1.125E-09
NNW	3.453E-07	9.760E-08	4.029E-08	2.384E-08	1.651E-08	9.044E-09	4.492E-09	2.685E-09	1.758E-09	1.249E-09

Insert Table 2.3-338 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 1 of 3)

	Annual Average X/Q (sec/m^3)										
	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	2.100E-06	6.859E-07	3.794E-07	2.108E-07	1.038E-07	6.583E-08	4.678E-08	3.555E-08	2.824E-08	2.318E-08	1.962E-08
NNE	4.171E-06	1.376E-06	7.631E-07	4.131E-07	1.934E-07	1.185E-07	8.241E-08	6.168E-08	4.956E-08	4.121E-08	3.460E-08
NE	2.937E-06	1.047E-06	6.181E-07	3.575E-07	1.847E-07	1.195E-07	8.551E-08	6.509E-08	5.168E-08	4.235E-08	3.555E-08
ENE	1.810E-06	6.490E-07	3.822E-07	2.294E-07	1.316E-07	9.184E-08	6.923E-08	5.466E-08	4.461E-08	3.734E-08	3.189E-08
E	1.317E-06	4.899E-07	2.876E-07	1.712E-07	9.751E-08	6.805E-08	5.150E-08	4.086E-08	3.351E-08	2.818E-08	2.417E-08
ESE	1.571E-06	5.568E-07	3.171E-07	1.839E-07	1.016E-07	7.023E-08	5.308E-08	4.222E-08	3.477E-08	2.938E-08	2.532E-08
SE	1.381E-06	4.861E-07	2.759E-07	1.607E-07	8.986E-08	6.228E-08	4.695E-08	3.716E-08	3.043E-08	2.555E-08	2.189E-08
SSE	1.521E-06	5.291E-07	3.044E-07	1.762E-07	9.395E-08	6.246E-08	4.560E-08	3.521E-08	2.827E-08	2.336E-08	1.975E-08
S	1.499E-06	5.167E-07	2.969E-07	1.677E-07	8.426E-08	5.419E-08	3.887E-08	2.972E-08	2.372E-08	1.953E-08	1.647E-08
SSW	1.062E-06	3.790E-07	2.269E-07	1.347E-07	7.266E-08	4.836E-08	3.521E-08	2.706E-08	2.162E-08	1.778E-08	1.495E-08
SW	1.238E-06	4.410E-07	2.686E-07	1.653E-07	8.976E-08	5.821E-08	4.122E-08	3.091E-08	2.417E-08	1.951E-08	1.615E-08
WSW	1.241E-06	4.331E-07	2.549E-07	1.508E-07	7.707E-08	4.823E-08	3.341E-08	2.469E-08	1.911E-08	1.531E-08	1.275E-08
W	1.727E-06	5.682E-07	3.211E-07	1.824E-07	8.826E-08	5.383E-08	3.680E-08	2.702E-08	2.084E-08	1.667E-08	1.372E-08
WNW	2.017E-06	6.461E-07	3.527E-07	1.991E-07	9.796E-08	6.072E-08	4.204E-08	3.118E-08	2.426E-08	1.955E-08	1.618E-08
NW	2.004E-06	6.395E-07	3.367E-07	1.843E-07	8.878E-08	5.474E-08	3.789E-08	2.815E-08	2.194E-08	1.772E-08	1.477E-08
NNW	1.919E-06	6.061E-07	3.185E-07	1.718E-07	8.178E-08	5.071E-08	3.549E-08	2.668E-08	2.104E-08	1.718E-08	1.455E-08

Insert Table 2.3-338 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 2 of 3)

Annual Average X/Q (sec/m^3)											
	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	1.694E-08	1.048E-08	7.645E-09	5.142E-09	3.843E-09	2.946E-09	2.319E-09	1.867E-09	1.526E-09	1.273E-09	1.082E-09
NNE	2.968E-08	1.701E-08	1.172E-08	7.221E-09	5.101E-09	3.888E-09	3.112E-09	2.576E-09	2.178E-09	1.879E-09	1.644E-09
NE	3.045E-08	1.763E-08	1.219E-08	7.523E-09	5.322E-09	4.063E-09	3.258E-09	2.703E-09	2.293E-09	1.984E-09	1.741E-09
ENE	2.770E-08	1.684E-08	1.200E-08	7.689E-09	5.581E-09	4.348E-09	3.549E-09	2.990E-09	2.571E-09	2.254E-09	2.001E-09
E	2.109E-08	1.287E-08	9.177E-09	5.874E-09	4.243E-09	3.281E-09	2.653E-09	2.213E-09	1.889E-09	1.642E-09	1.446E-09
ESE	2.220E-08	1.392E-08	1.016E-08	6.745E-09	5.020E-09	3.983E-09	3.294E-09	2.805E-09	2.440E-09	2.159E-09	1.933E-09
SE	1.908E-08	1.171E-08	8.403E-09	5.444E-09	3.982E-09	3.119E-09	2.555E-09	2.160E-09	1.867E-09	1.642E-09	1.462E-09
SSE	1.702E-08	1.035E-08	7.450E-09	4.946E-09	3.756E-09	3.072E-09	2.627E-09	2.301E-09	2.013E-09	1.773E-09	1.568E-09
S	1.417E-08	8.457E-09	5.990E-09	3.842E-09	2.808E-09	2.207E-09	1.819E-09	1.547E-09	1.341E-09	1.183E-09	1.053E-09
SSW	1.282E-08	7.445E-09	5.140E-09	3.156E-09	2.223E-09	1.691E-09	1.353E-09	1.120E-09	9.475E-10	8.185E-10	7.168E-10
SW	1.365E-08	7.475E-09	4.954E-09	2.871E-09	1.938E-09	1.426E-09	1.109E-09	8.945E-10	7.408E-10	6.274E-10	5.398E-10
WSW	1.084E-08	5.877E-09	3.881E-09	2.246E-09	1.519E-09	1.119E-09	8.678E-10	6.921E-10	5.650E-10	4.707E-10	3.987E-10
W	1.154E-08	6.511E-09	4.445E-09	2.717E-09	1.866E-09	1.360E-09	1.035E-09	8.132E-10	6.589E-10	5.467E-10	4.623E-10
WNW	1.370E-08	8.038E-09	5.683E-09	3.692E-09	2.622E-09	1.946E-09	1.481E-09	1.169E-09	9.520E-10	7.934E-10	6.736E-10
NW	1.258E-08	7.330E-09	5.149E-09	3.330E-09	2.449E-09	1.878E-09	1.484E-09	1.200E-09	9.822E-10	8.212E-10	6.992E-10
NNW	1.258E-08	7.832E-09	5.786E-09	3.990E-09	2.935E-09	2.221E-09	1.719E-09	1.363E-09	1.113E-09	9.296E-10	7.910E-10

Insert Table 2.3-338 Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Turbine Building Stack (Sheet 3 of 3)

	X/Q (sec/m^3) for Each Segment									
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	3.725E-07	1.107E-07	4.737E-08	2.840E-08	1.968E-08	1.065E-08	5.121E-09	2.935E-09	1.866E-09	1.277E-09
NNE	7.437E-07	2.089E-07	8.376E-08	4.984E-08	3.474E-08	1.748E-08	7.279E-09	3.901E-09	2.578E-09	1.881E-09
NE	5.977E-07	1.941E-07	8.640E-08	5.196E-08	3.568E-08	1.806E-08	7.582E-09	4.077E-09	2.705E-09	1.985E-09
ENE	3.736E-07	1.357E-07	6.943E-08	4.471E-08	3.196E-08	1.710E-08	7.710E-09	4.357E-09	2.990E-09	2.254E-09
E	2.808E-07	1.008E-07	5.166E-08	3.358E-08	2.422E-08	1.305E-08	5.883E-09	3.286E-09	2.215E-09	1.643E-09
ESE	3.112E-07	1.060E-07	5.331E-08	3.484E-08	2.537E-08	1.409E-08	6.737E-09	3.984E-09	2.805E-09	2.158E-09
SE	2.714E-07	9.334E-08	4.712E-08	3.049E-08	2.194E-08	1.188E-08	5.452E-09	3.124E-09	2.161E-09	1.642E-09
SSE	2.973E-07	9.823E-08	4.594E-08	2.838E-08	1.981E-08	1.055E-08	4.974E-09	3.076E-09	2.284E-09	1.768E-09
S	2.883E-07	8.944E-08	3.930E-08	2.384E-08	1.652E-08	8.629E-09	3.859E-09	2.212E-09	1.546E-09	1.182E-09
SSW	2.197E-07	7.564E-08	3.546E-08	2.171E-08	1.500E-08	7.614E-09	3.182E-09	1.697E-09	1.121E-09	8.191E-10
SW	2.610E-07	9.252E-08	4.163E-08	2.432E-08	1.622E-08	7.726E-09	2.919E-09	1.436E-09	8.971E-10	6.286E-10
WSW	2.482E-07	8.063E-08	3.388E-08	1.926E-08	1.280E-08	6.092E-09	2.286E-09	1.125E-09	6.939E-10	4.719E-10
W	3.144E-07	9.387E-08	3.743E-08	2.102E-08	1.379E-08	6.711E-09	2.723E-09	1.365E-09	8.178E-10	5.487E-10
WNW	3.496E-07	1.039E-07	4.268E-08	2.444E-08	1.626E-08	8.249E-09	3.659E-09	1.940E-09	1.175E-09	7.960E-10
NW	3.362E-07	9.487E-08	3.849E-08	2.211E-08	1.483E-08	7.528E-09	3.343E-09	1.873E-09	1.198E-09	8.237E-10
NNW	3.172E-07	8.797E-08	3.602E-08	2.118E-08	1.460E-08	7.978E-09	3.920E-09	2.211E-09	1.369E-09	9.325E-10

Insert Table 2.3-339 Annual Average D/Q Values for Mixed-Mode Release from the Turbine Building Stack (Sheet 1 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Distance in Miles from the Site										
Sector	**0.25**	**0.5**	**0.75**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**	**4.5**
N	2.322E-08	1.111E-08	6.853E-09	3.611E-09	1.379E-09	7.339E-10	4.555E-10	3.107E-10	2.257E-10	1.714E-10	1.347E-10
NNE	5.010E-08	2.258E-08	1.354E-08	7.118E-09	2.730E-09	1.457E-09	9.061E-10	6.186E-10	4.530E-10	3.476E-10	2.725E-10
NE	4.258E-08	1.991E-08	1.257E-08	7.009E-09	2.879E-09	1.605E-09	1.026E-09	7.130E-10	5.233E-10	3.996E-10	3.145E-10
ENE	2.478E-08	1.304E-08	8.571E-09	4.856E-09	2.001E-09	1.123E-09	7.216E-10	5.031E-10	3.703E-10	2.835E-10	2.235E-10
E	2.127E-08	1.178E-08	7.708E-09	4.281E-09	1.712E-09	9.459E-10	6.020E-10	4.176E-10	3.066E-10	2.345E-10	1.849E-10
ESE	2.342E-08	1.289E-08	8.343E-09	4.565E-09	1.793E-09	9.801E-10	6.196E-10	4.280E-10	3.135E-10	2.395E-10	1.888E-10
SE	1.970E-08	1.088E-08	7.056E-09	3.873E-09	1.526E-09	8.365E-10	5.295E-10	3.661E-10	2.683E-10	2.050E-10	1.617E-10
SSE	1.914E-08	9.975E-09	6.447E-09	3.582E-09	1.443E-09	7.993E-10	5.093E-10	3.534E-10	2.594E-10	1.983E-10	1.563E-10
S	1.660E-08	7.888E-09	4.979E-09	2.760E-09	1.122E-09	6.227E-10	3.971E-10	2.754E-10	2.020E-10	1.542E-10	1.214E-10
SSW	1.341E-08	6.529E-09	4.203E-09	2.370E-09	9.842E-10	5.504E-10	3.524E-10	2.450E-10	1.800E-10	1.375E-10	1.082E-10
SW	1.715E-08	8.392E-09	5.677E-09	3.243E-09	1.365E-09	7.678E-10	4.932E-10	3.435E-10	2.525E-10	1.930E-10	1.520E-10
WSW	2.025E-08	9.844E-09	6.443E-09	3.517E-09	1.416E-09	7.714E-10	4.853E-10	3.336E-10	2.434E-10	1.852E-10	1.498E-10
W	2.787E-08	1.351E-08	8.102E-09	4.448E-09	1.741E-09	9.184E-10	5.645E-10	3.820E-10	2.758E-10	2.085E-10	1.632E-10
WNW	2.820E-08	1.463E-08	9.352E-09	4.883E-09	1.865E-09	9.836E-10	6.058E-10	4.111E-10	2.976E-10	2.257E-10	1.772E-10
NW	2.596E-08	1.394E-08	8.683E-09	4.622E-09	1.725E-09	9.056E-10	5.569E-10	3.779E-10	2.738E-10	2.080E-10	1.636E-10
NNW	2.224E-08	1.136E-08	7.031E-09	3.653E-09	1.354E-09	7.097E-10	4.361E-10	2.958E-10	2.143E-10	1.627E-10	1.292E-10

Insert Table 2.3-339 Annual Average D/Q Values for Mixed-Mode Release from the Turbine Building Stack (Sheet 2 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

	Distance in Miles from the Site										
Sector	**5**	**7.5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
N	1.086E-10	5.232E-11	3.223E-11	1.741E-11	2.664E-11	2.025E-11	1.314E-11	9.403E-12	7.323E-12	5.855E-12	4.783E-12
NNE	2.194E-10	1.037E-10	6.323E-11	3.323E-11	2.124E-11	1.531E-11	1.184E-11	9.588E-12	7.997E-12	6.846E-12	5.991E-12
NE	2.534E-10	1.203E-10	7.377E-11	3.888E-11	2.458E-11	1.748E-11	1.332E-11	1.067E-11	8.785E-12	7.433E-12	6.420E-12
ENE	1.805E-10	8.584E-11	5.291E-11	2.811E-11	1.788E-11	1.289E-11	9.950E-12	8.096E-12	6.739E-12	5.773E-12	5.041E-12
E	1.495E-10	7.125E-11	4.407E-11	2.358E-11	1.504E-11	1.105E-11	8.501E-12	6.750E-12	5.489E-12	4.548E-12	3.826E-12
ESE	1.527E-10	7.280E-11	4.512E-11	2.419E-11	1.545E-11	1.140E-11	8.791E-12	6.999E-12	5.709E-12	4.732E-12	4.061E-12
SE	1.307E-10	6.235E-11	3.859E-11	2.070E-11	1.323E-11	9.733E-12	7.529E-12	6.040E-12	5.057E-12	4.379E-12	3.880E-12
SSE	1.262E-10	6.025E-11	3.725E-11	1.982E-11	1.274E-11	9.129E-12	7.627E-12	9.160E-12	9.412E-12	7.603E-12	6.191E-12
S	9.786E-11	4.641E-11	2.866E-11	1.516E-11	9.601E-12	6.878E-12	5.283E-12	4.244E-12	3.721E-12	3.497E-12	4.243E-12
SSW	8.723E-11	4.146E-11	2.552E-11	1.337E-11	8.447E-12	6.024E-12	4.605E-12	3.690E-12	3.057E-12	2.600E-12	2.326E-12
SW	1.225E-10	5.866E-11	3.567E-11	1.871E-11	1.177E-11	8.328E-12	6.301E-12	4.985E-12	4.081E-12	3.432E-12	2.980E-12
WSW	1.206E-10	5.709E-11	3.432E-11	1.783E-11	1.131E-11	8.048E-12	7.466E-12	7.044E-12	5.680E-12	4.603E-12	3.747E-12
W	1.313E-10	6.159E-11	3.735E-11	2.432E-11	1.986E-11	1.381E-11	9.800E-12	7.404E-12	5.763E-12	4.604E-12	3.758E-12
WNW	1.430E-10	6.886E-11	4.172E-11	3.502E-11	2.473E-11	1.628E-11	1.173E-11	8.833E-12	6.872E-12	5.490E-12	4.482E-12
NW	1.323E-10	6.351E-11	3.934E-11	2.124E-11	2.325E-11	1.739E-11	1.235E-11	8.593E-12	6.668E-12	5.329E-12	4.354E-12
NNW	1.044E-10	4.982E-11	3.078E-11	2.296E-11	2.358E-11	1.464E-11	1.021E-11	7.713E-12	6.001E-12	4.793E-12	3.913E-12

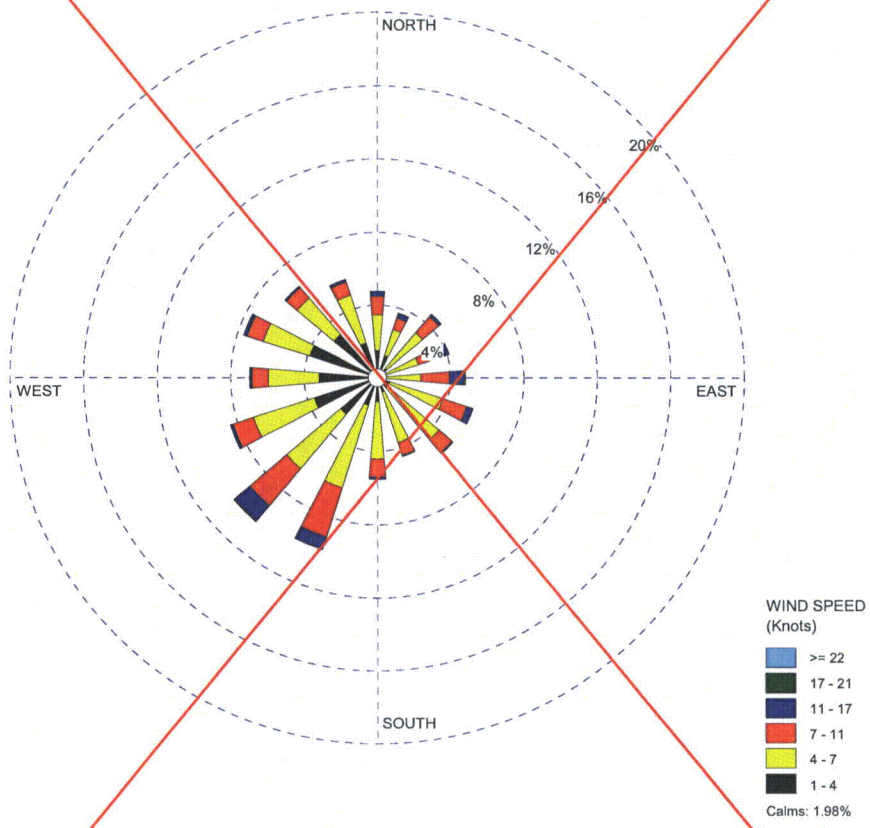
Insert Table 2.3-339 Annual Average D/Q Values for Mixed-Mode Release from the Turbine Building Stack (Sheet 3 of 3)

Relative Deposition per Unit Area (m^{-2}) at Fixed Points by Downwind Sectors

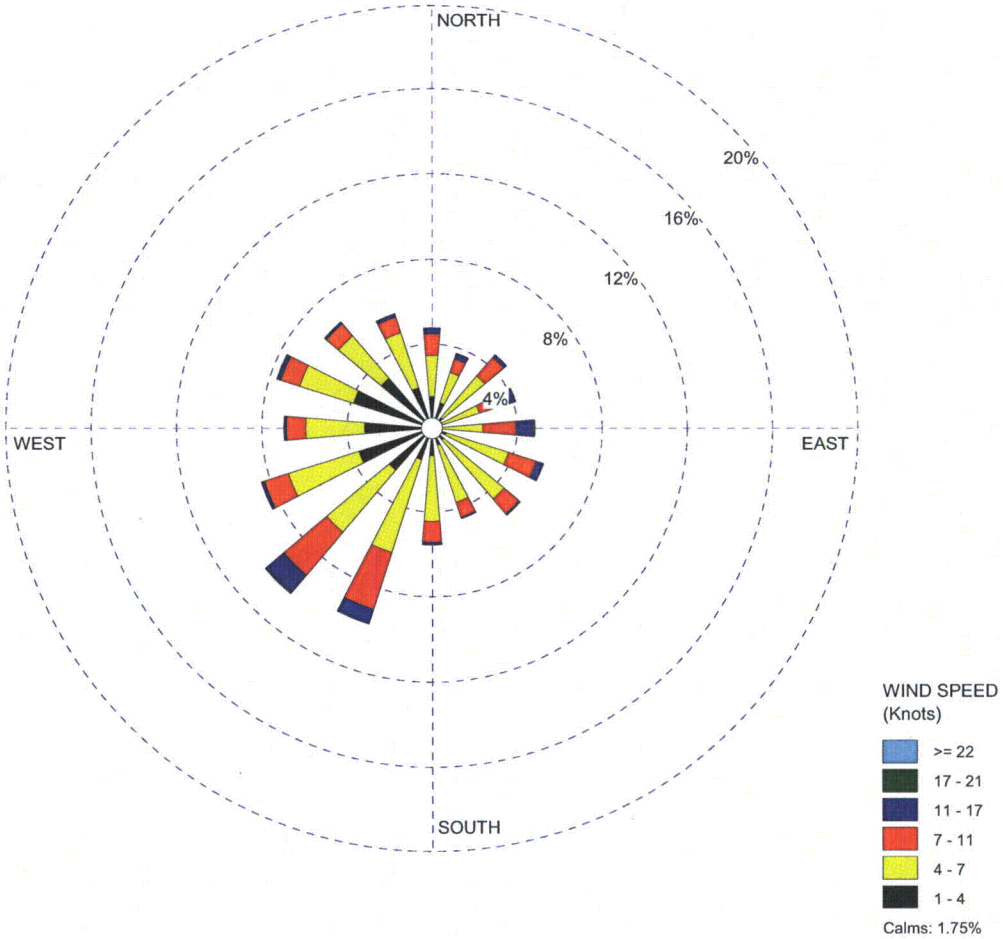
	Segment Boundaries in Miles from the Site									
Sector	**.5-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**
N	6.359E-09	1.588E-09	4.718E-10	2.293E-10	1.359E-10	5.591E-11	2.481E-11	1.911E-11	9.679E-12	5.893E-12
NNE	1.270E-08	3.140E-09	9.381E-10	4.601E-10	2.751E-10	1.114E-10	3.457E-11	1.550E-11	9.624E-12	6.870E-12
NE	1.173E-08	3.231E-09	1.055E-09	5.304E-10	3.171E-10	1.292E-10	4.028E-11	1.771E-11	1.071E-11	7.458E-12
ENE	7.913E-09	2.245E-09	7.413E-10	3.752E-10	2.253E-10	9.223E-11	2.907E-11	1.305E-11	8.109E-12	5.788E-12
E	7.089E-09	1.942E-09	6.200E-10	3.108E-10	1.865E-10	7.656E-11	2.434E-11	1.109E-11	6.770E-12	4.560E-12
ESE	7.675E-09	2.048E-09	6.391E-10	3.180E-10	1.904E-10	7.825E-11	2.496E-11	1.144E-11	7.019E-12	4.773E-12
SE	6.490E-09	1.741E-09	5.460E-10	2.721E-10	1.630E-10	6.698E-11	2.136E-11	9.784E-12	6.091E-12	4.396E-12
SSE	5.957E-09	1.632E-09	5.243E-10	2.630E-10	1.576E-10	6.468E-11	2.055E-11	9.490E-12	8.818E-12	7.616E-12
S	4.639E-09	1.264E-09	4.086E-10	2.048E-10	1.224E-10	4.995E-11	1.569E-11	6.966E-12	4.342E-12	3.840E-12
SSW	3.905E-09	1.099E-09	3.623E-10	1.824E-10	1.091E-10	4.455E-11	1.388E-11	6.103E-12	3.710E-12	2.634E-12
SW	5.198E-09	1.517E-09	5.065E-10	2.558E-10	1.532E-10	6.263E-11	1.939E-11	8.435E-12	5.017E-12	3.457E-12
WSW	5.899E-09	1.596E-09	5.009E-10	2.470E-10	1.495E-10	6.109E-11	1.860E-11	8.684E-12	6.645E-12	4.605E-12
W	7.679E-09	1.977E-09	5.859E-10	2.805E-10	1.648E-10	6.631E-11	2.523E-11	1.382E-11	7.464E-12	4.634E-12
WNW	8.539E-09	2.144E-09	6.287E-10	3.026E-10	1.789E-10	7.327E-11	3.193E-11	1.671E-11	8.913E-12	5.526E-12
NW	8.045E-09	2.005E-09	5.783E-10	2.785E-10	1.651E-10	6.805E-11	2.616E-11	1.694E-11	8.933E-12	5.365E-12
NNW	6.492E-09	1.578E-09	4.529E-10	2.179E-10	1.300E-10	5.349E-11	2.497E-11	1.525E-11	7.775E-12	4.825E-12

Add Insert #1 here

Figure 2.3-230 **Fermi Site 10-m Annual Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

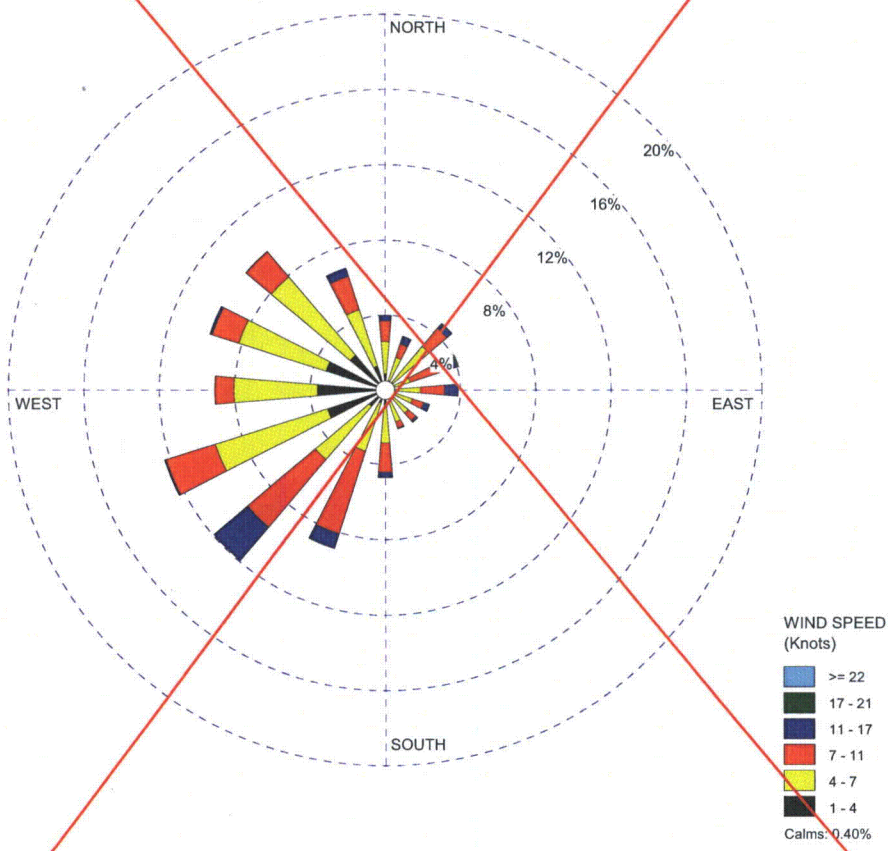


Insert 1

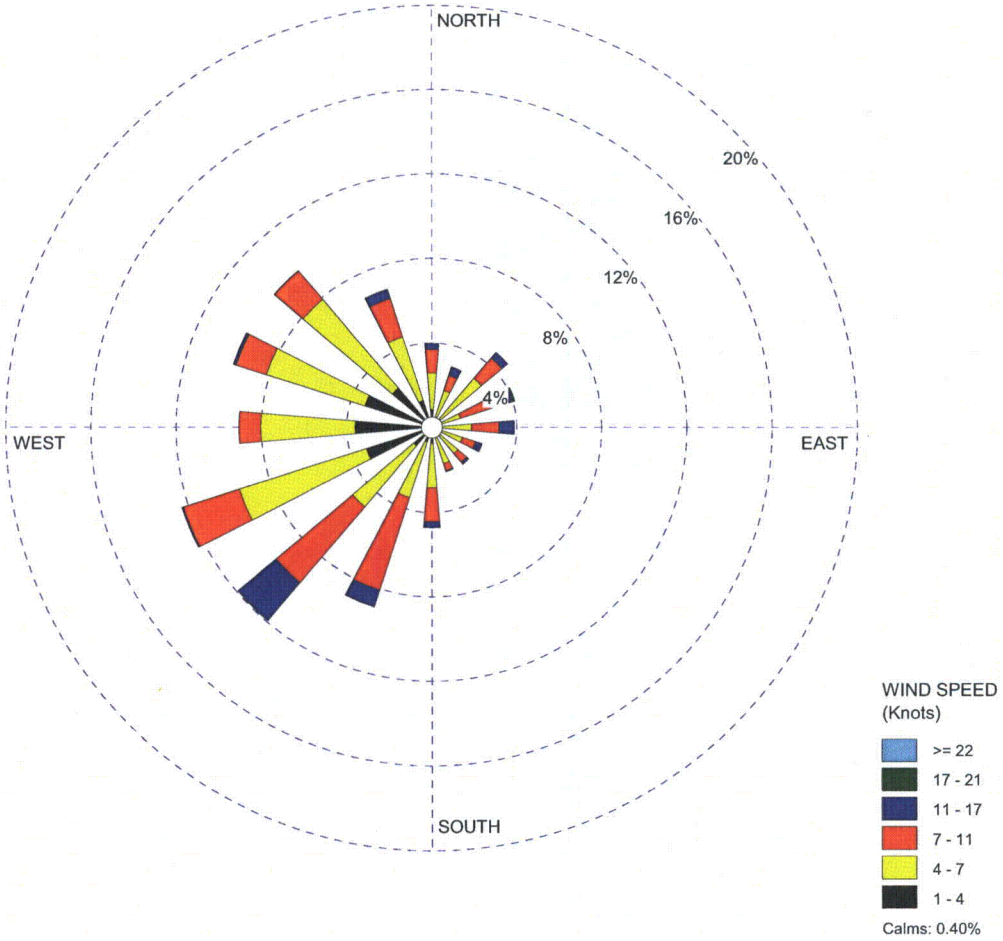

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 1.75%

Add Insert #2 here

Figure 2.3-231 Fermi Site 10-m January Wind Rose (2003-2007)[EF3 COL 2.0-8-A]

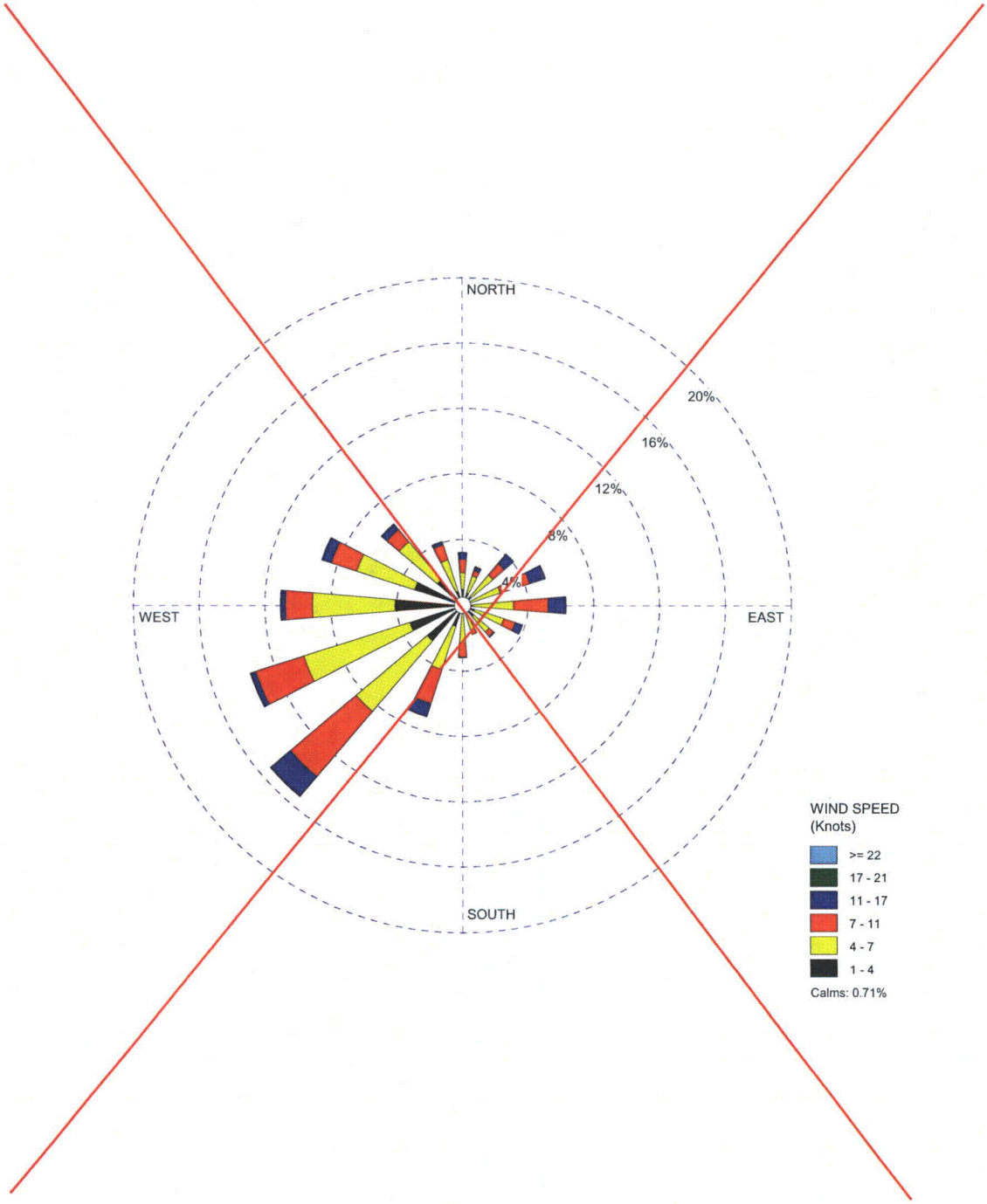


Insert 2

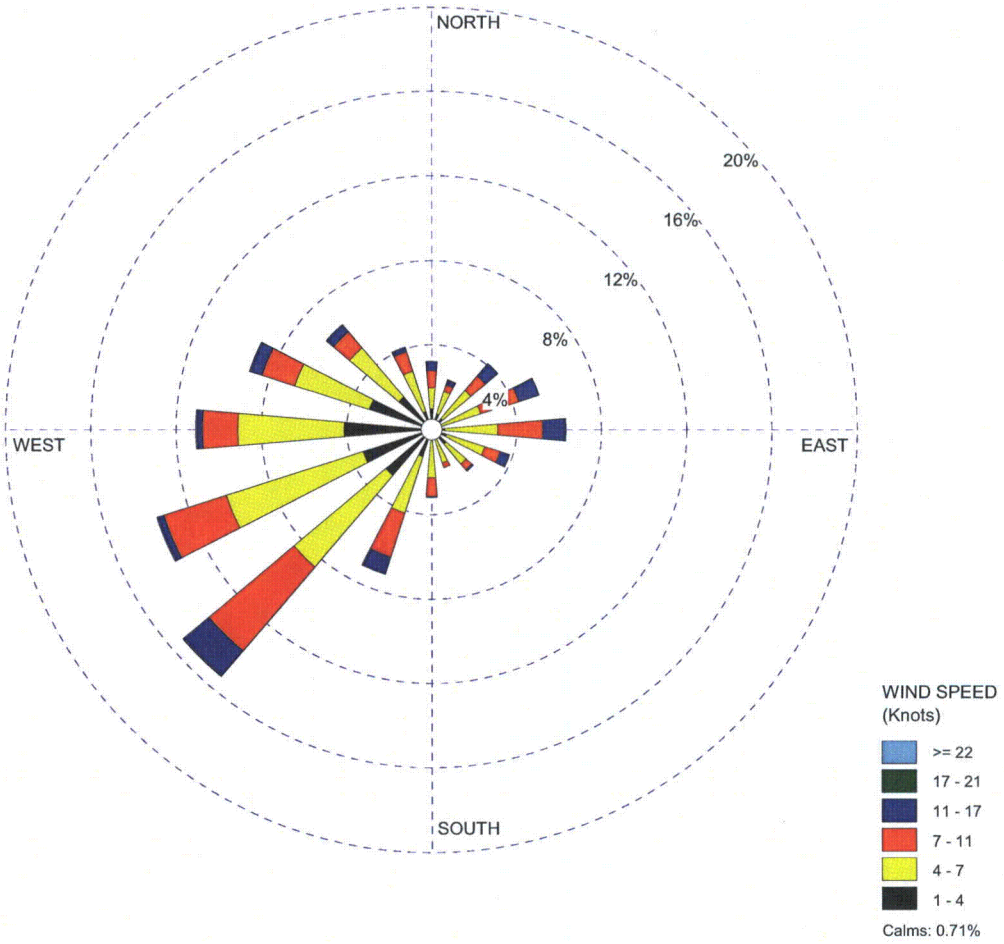

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.40%

Add Insert #3 here

Figure 2.3-232 **Fermi Site 10-m February Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

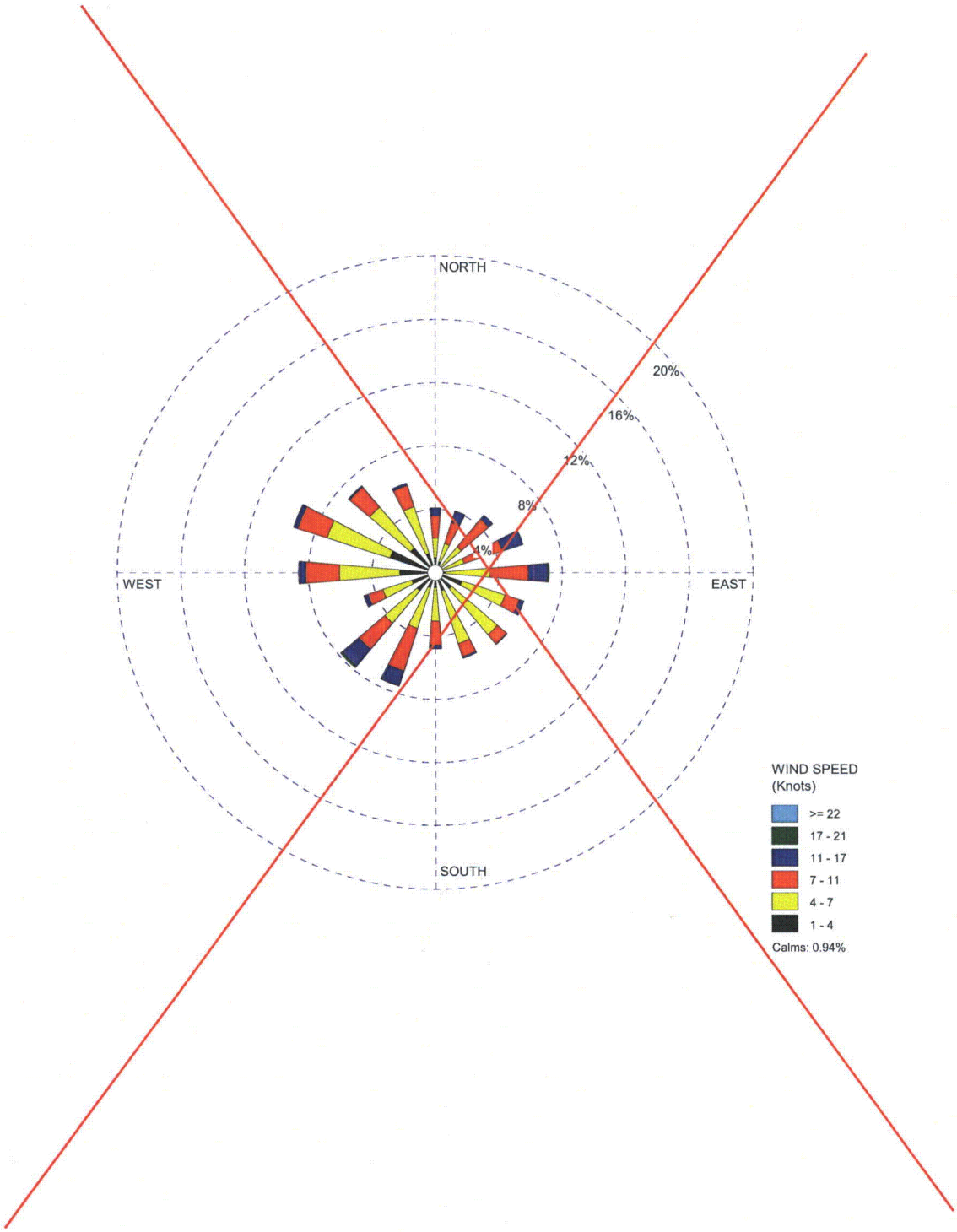


Insert 3

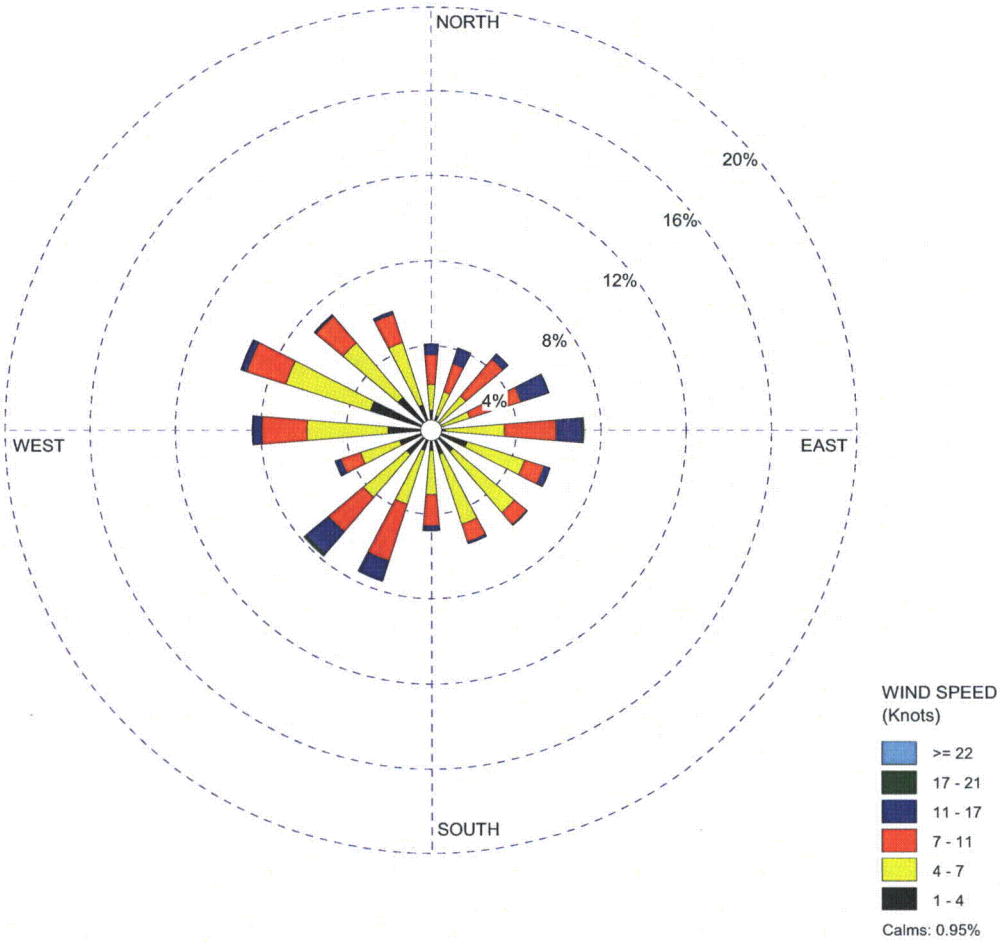

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.71%

Add Insert #4 here

Figure 2.3-233 Fermi Site 10-m March Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

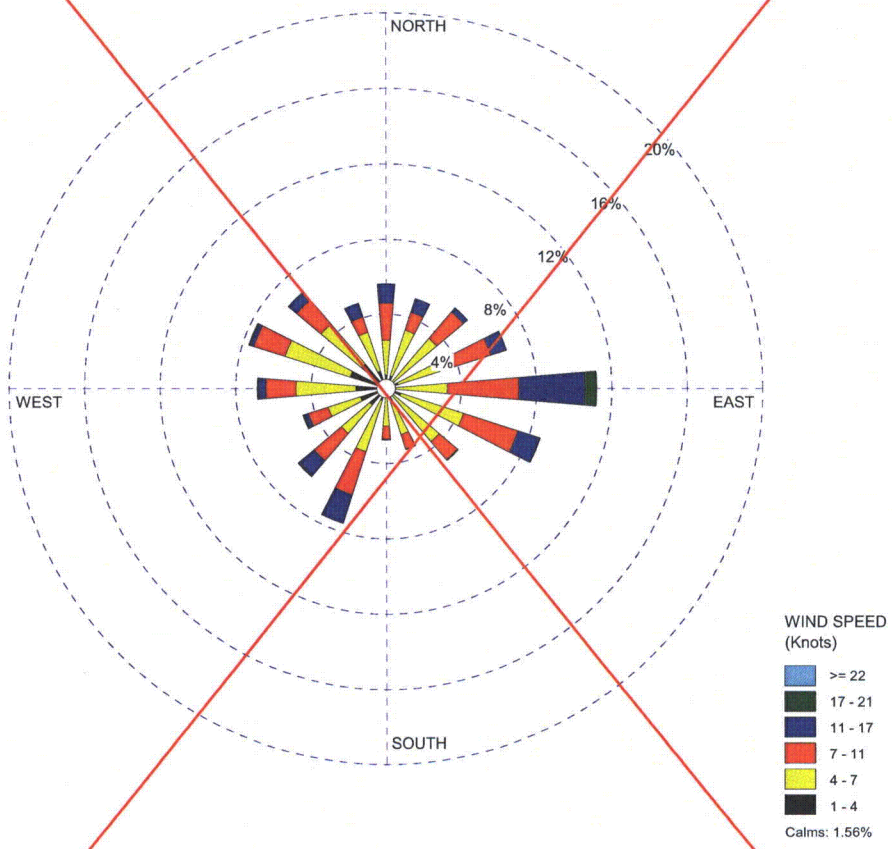


Insert 4

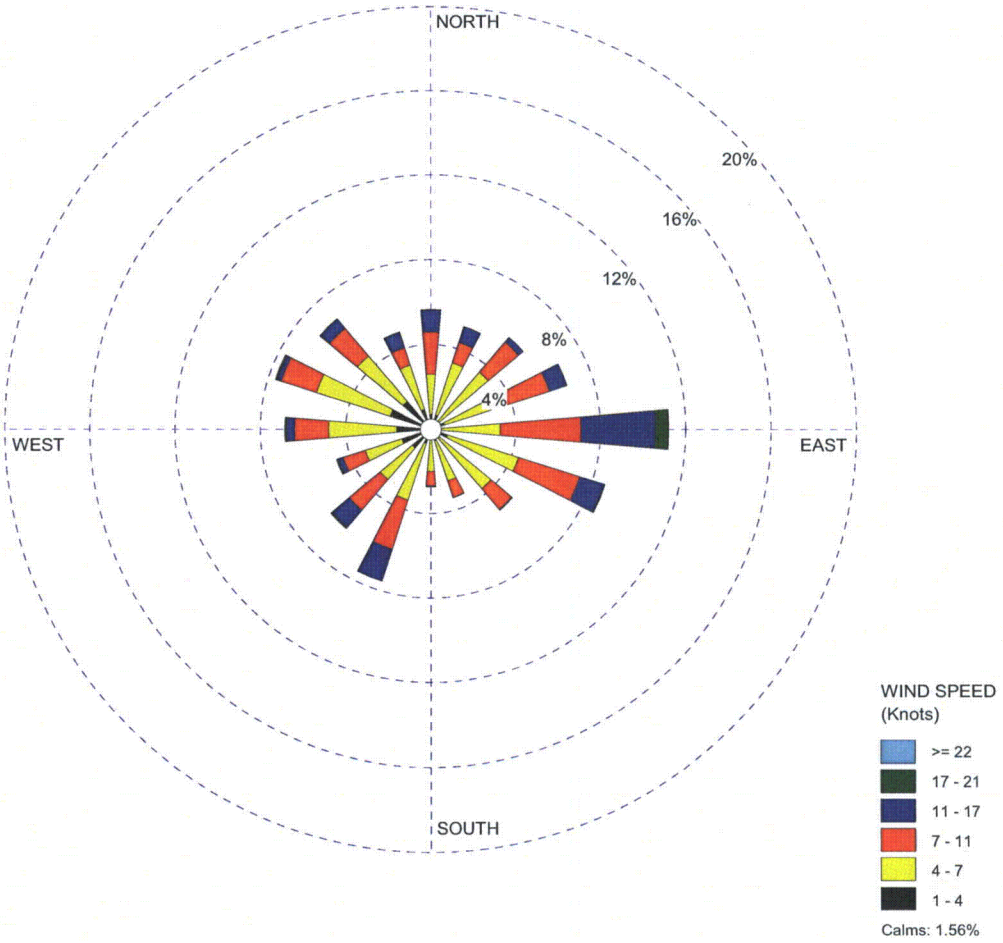

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.95%

Add Insert #5 here

Figure 2.3-234 Fermi Site 10-m April Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

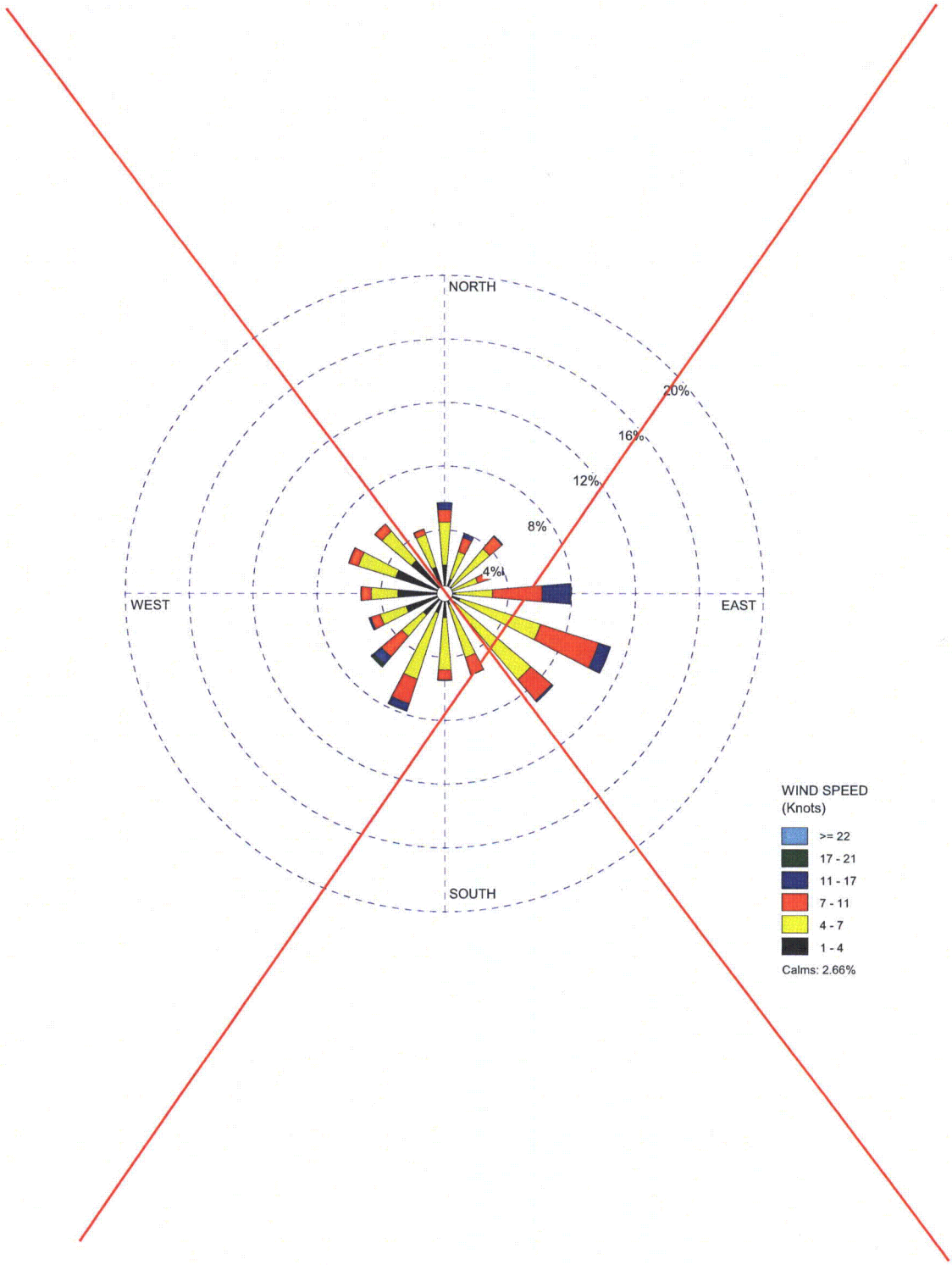


Insert 5

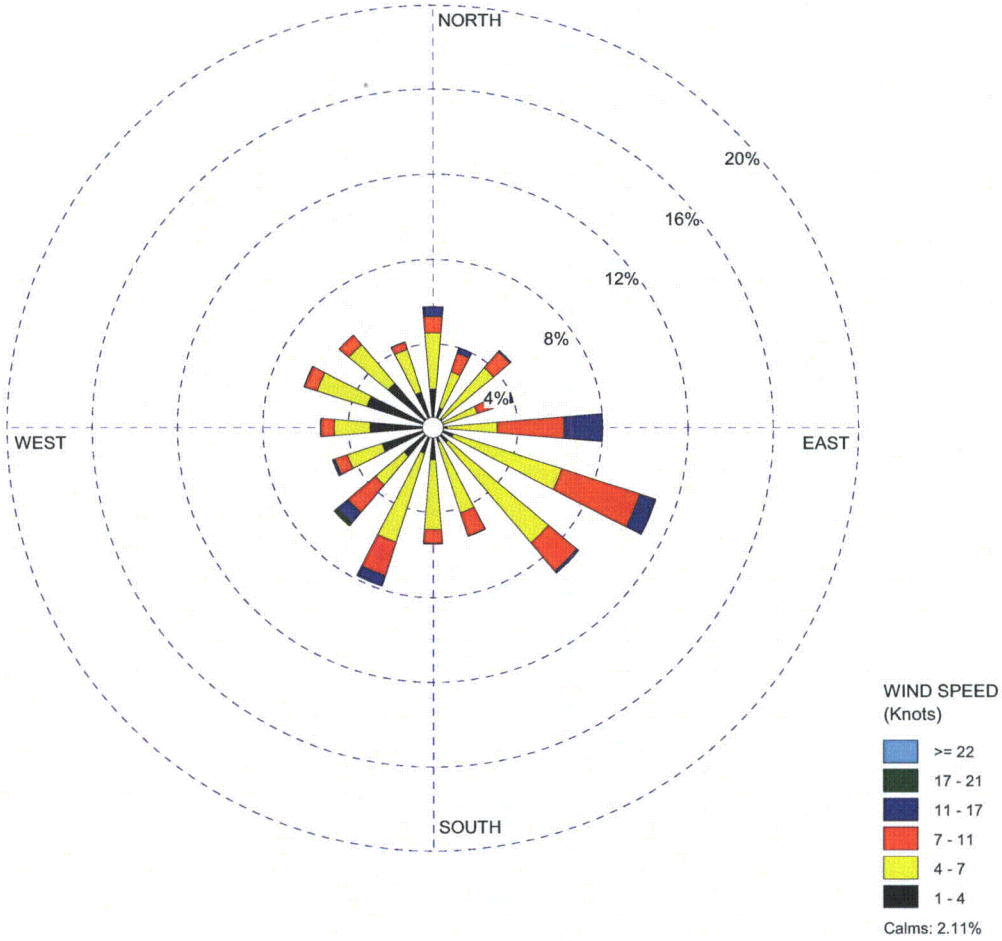

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 1.56%

Add Insert #6 here

Figure 2.3-235 Fermi Site 10-m May Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

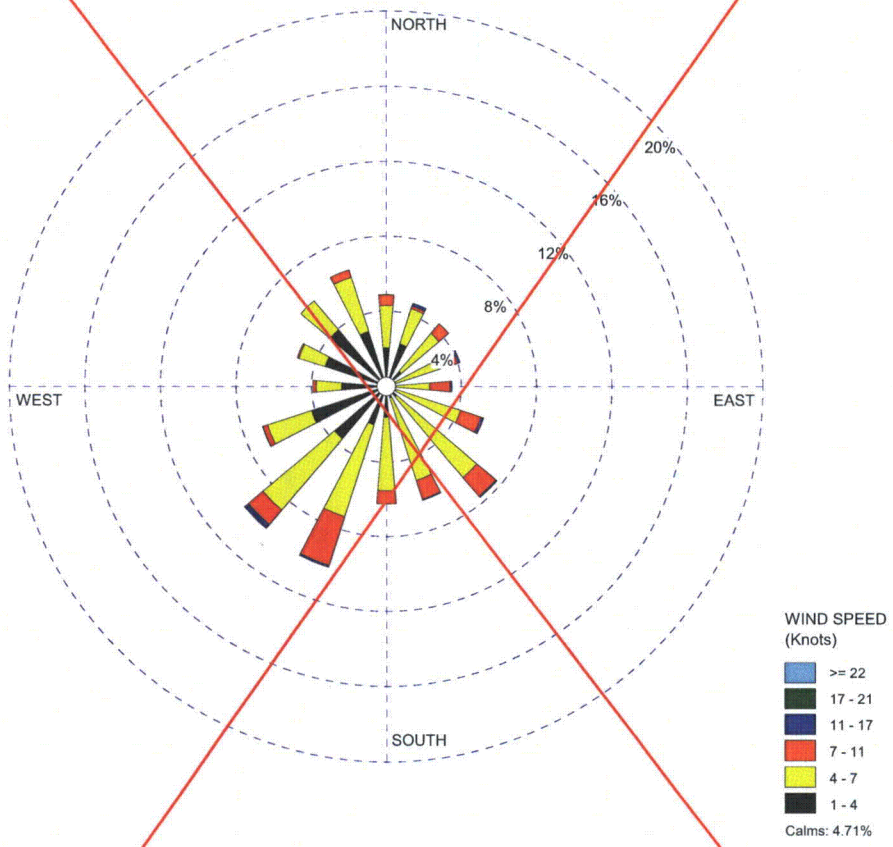


Insert 6

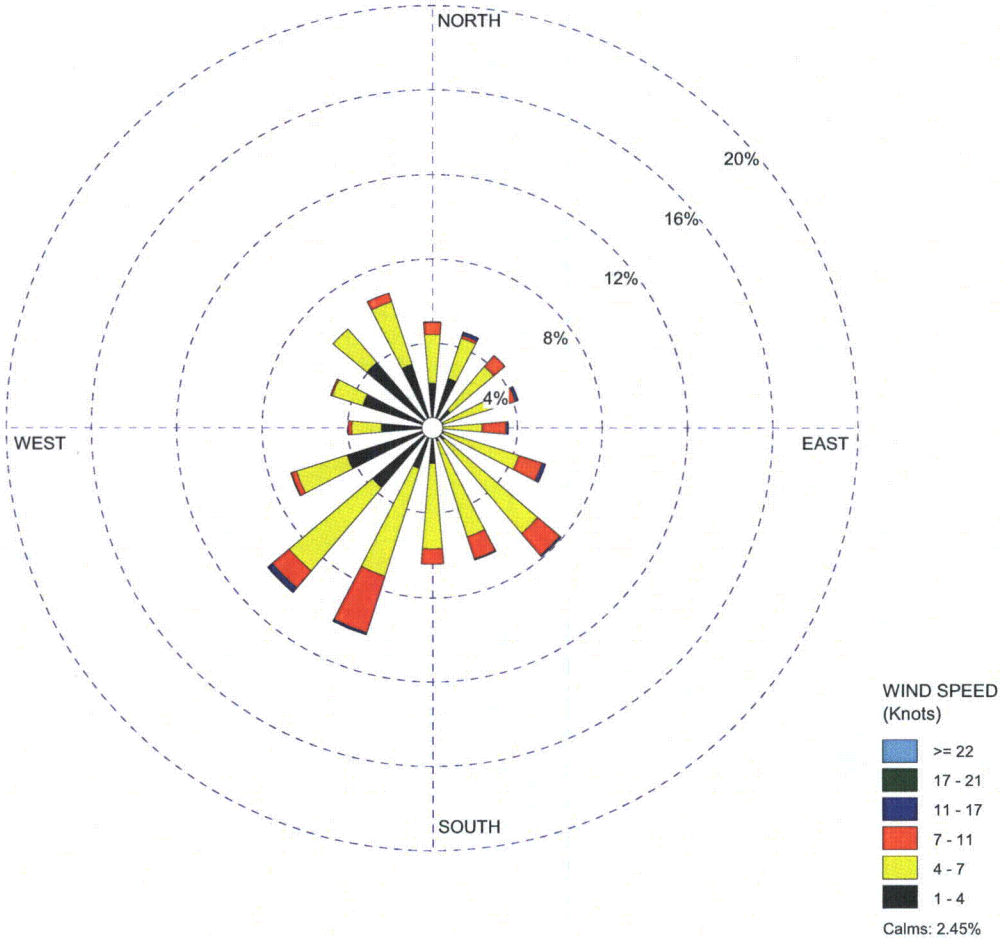

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 2.11%

Add Insert #7 here

Figure 2.3-236 Fermi Site 10-m June Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

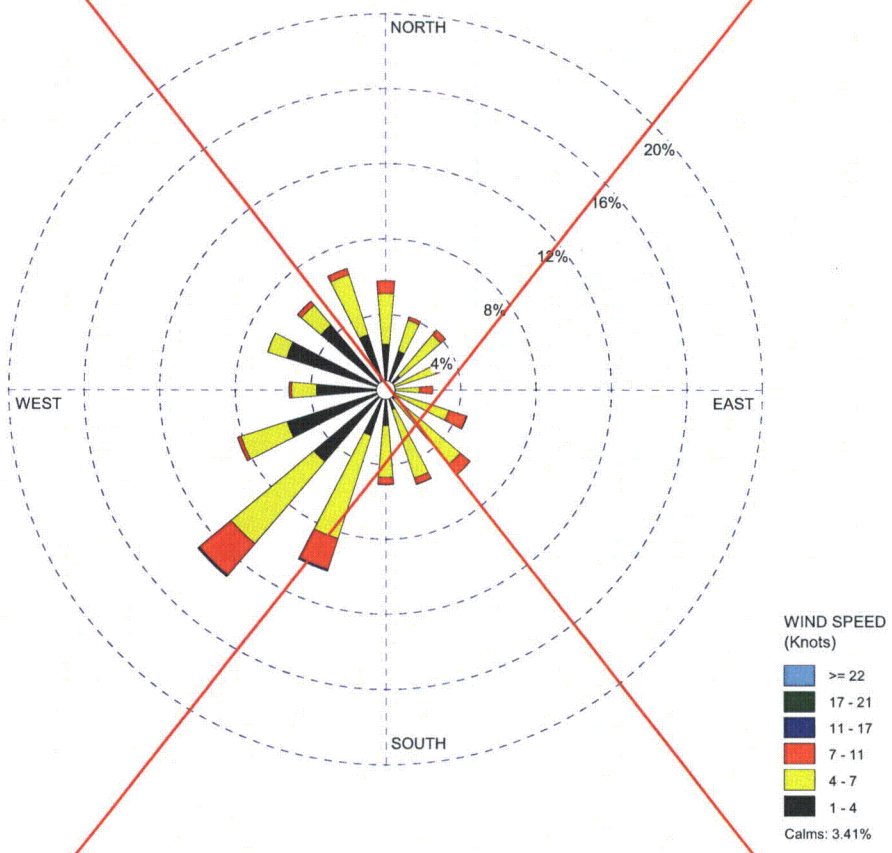


Insert 7

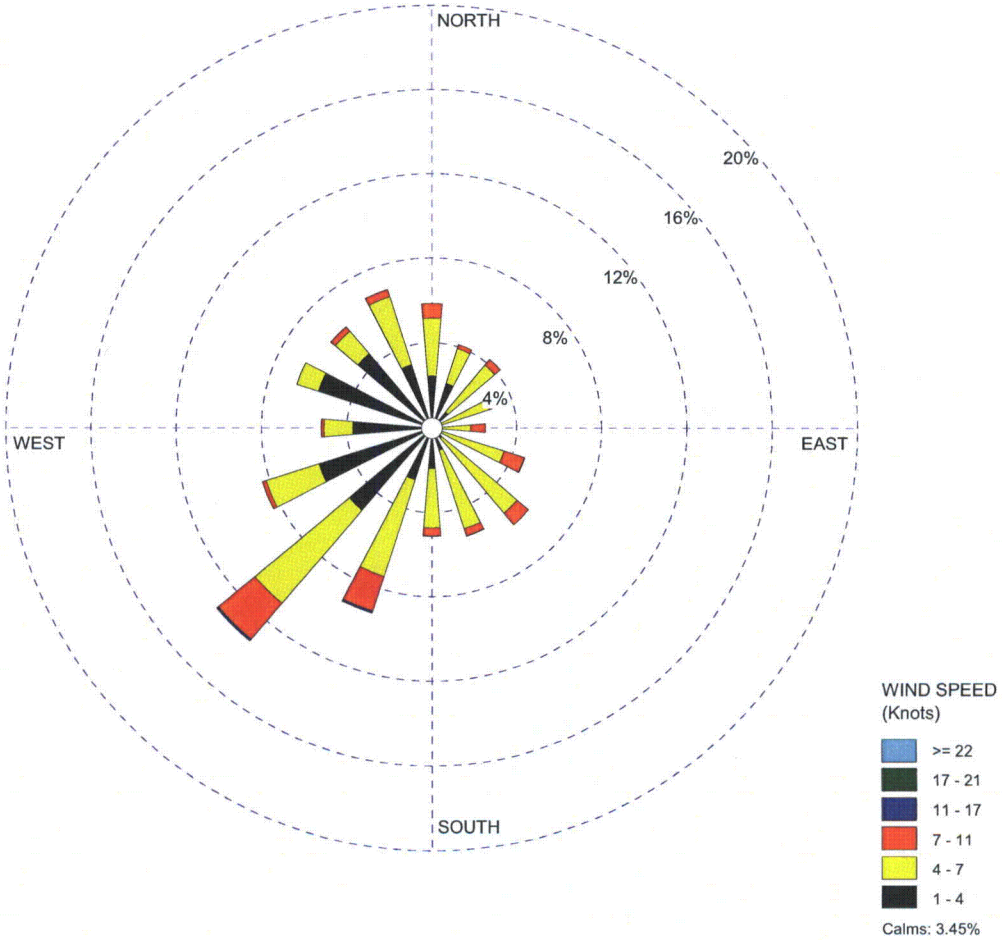

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 2.45%

Add Insert #8 here

Figure 2.3-237 Fermi Site 10-m July Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

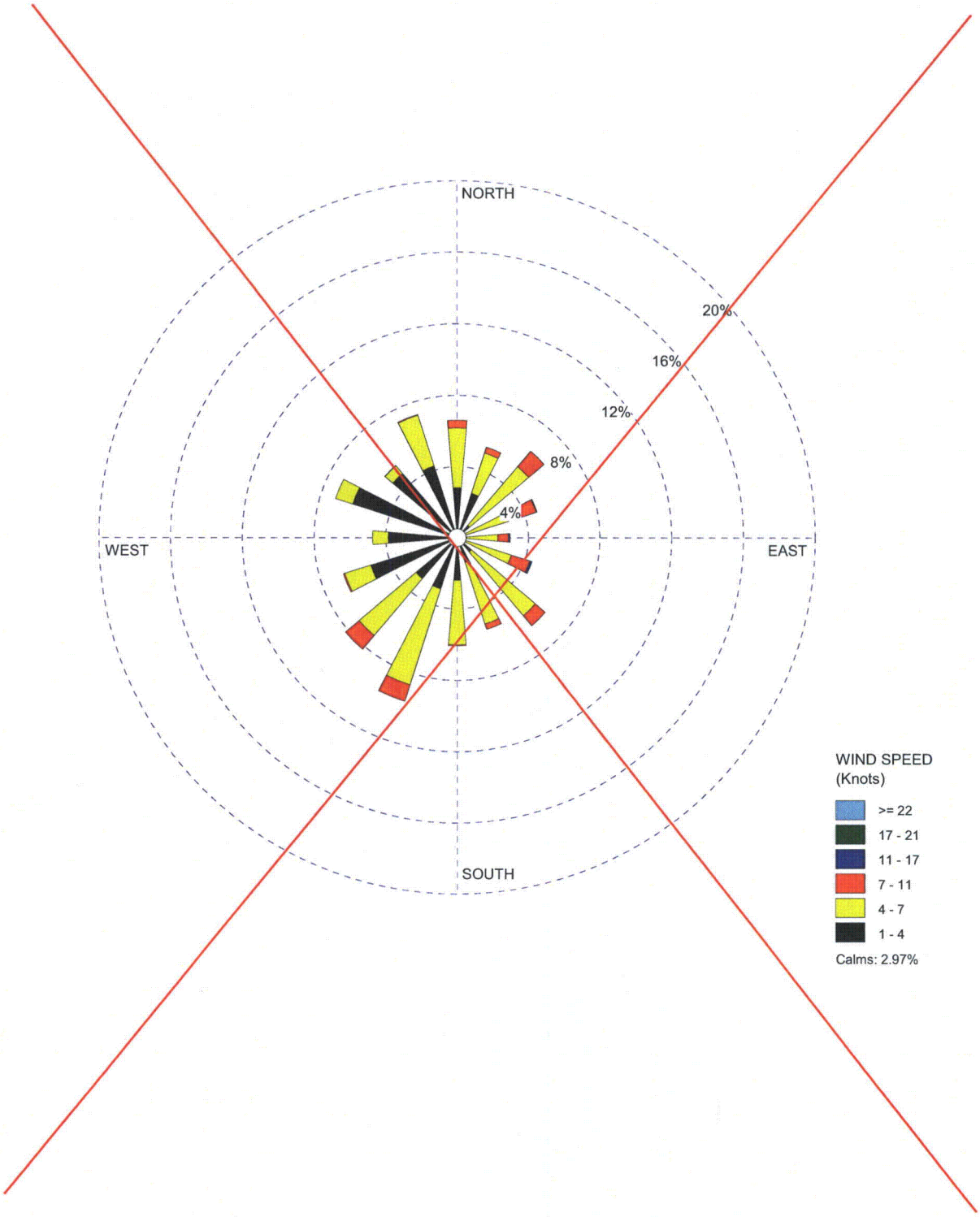


Insert 8

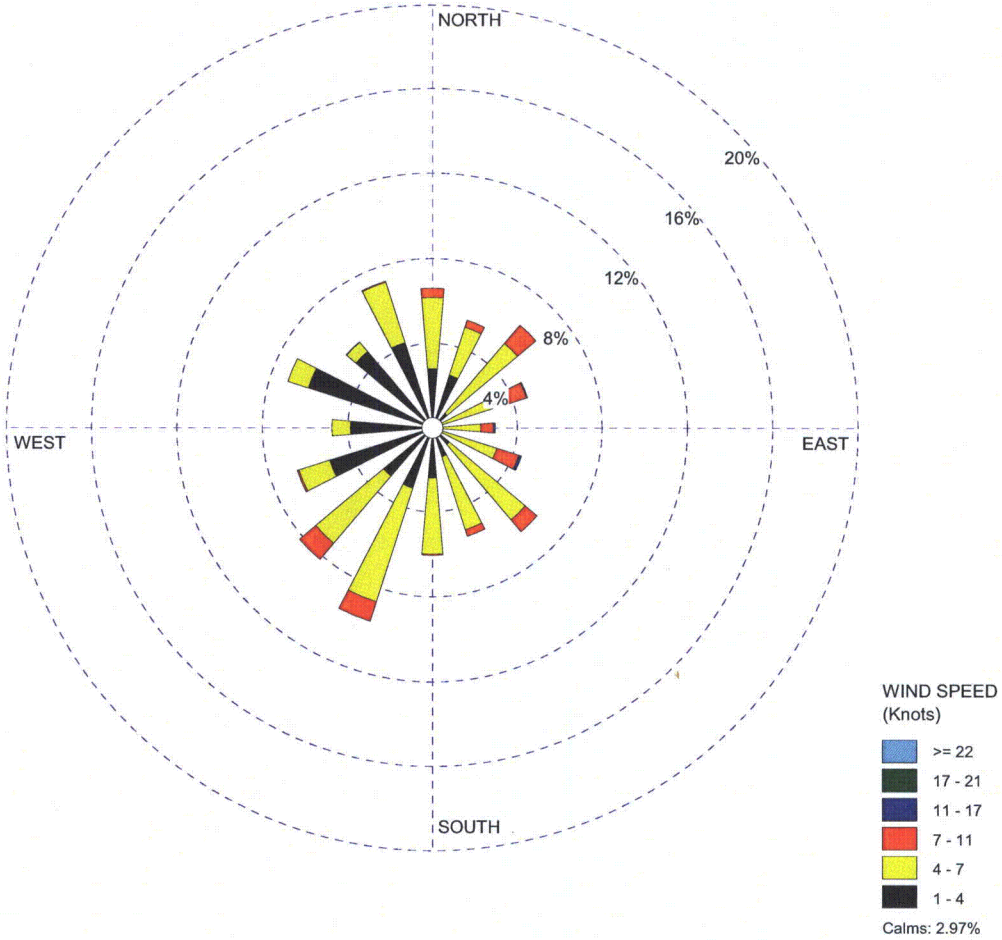

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 3.45%

Add Insert #9 here

Figure 2.3-238 **Fermi Site 10-m August Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

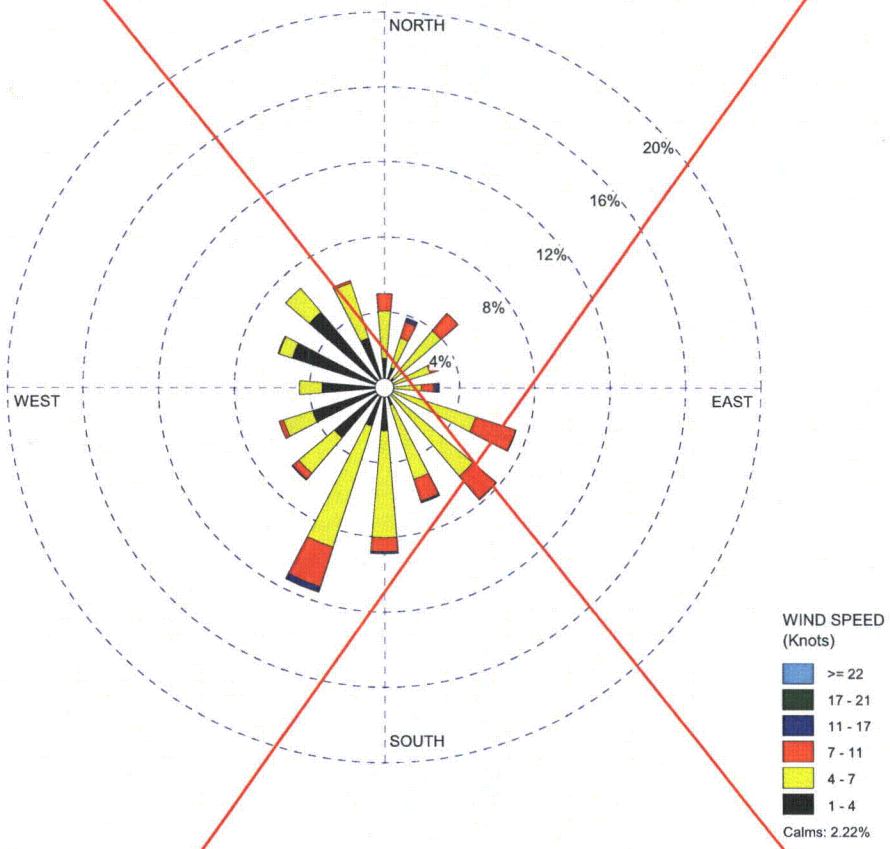


Insert 9

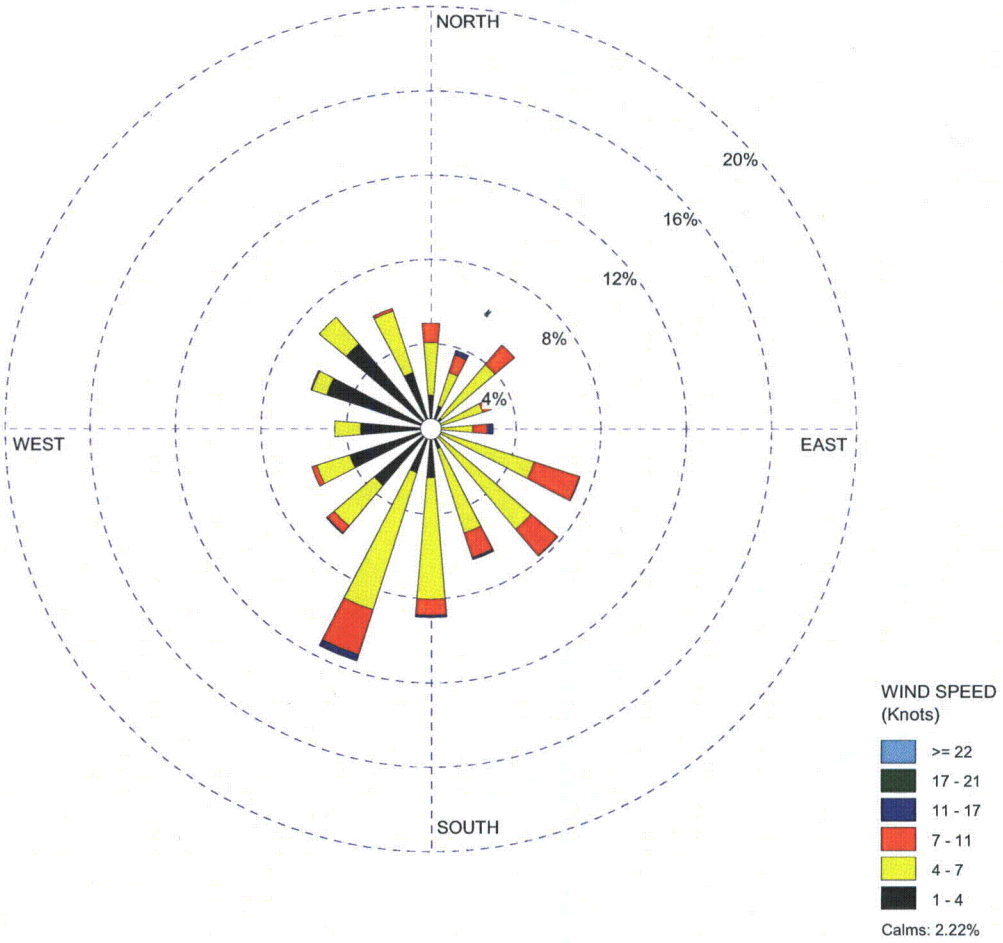

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 2.97%

Add Insert #10 here

Figure 2.3-239 **Fermi Site 10-m September Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

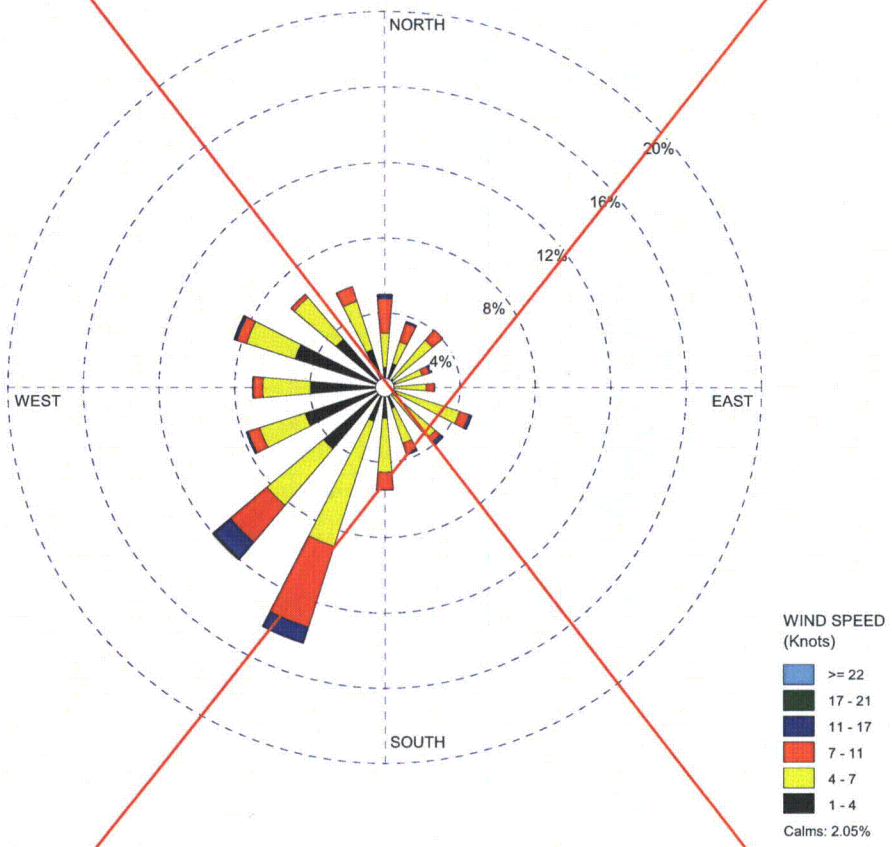


Insert 10

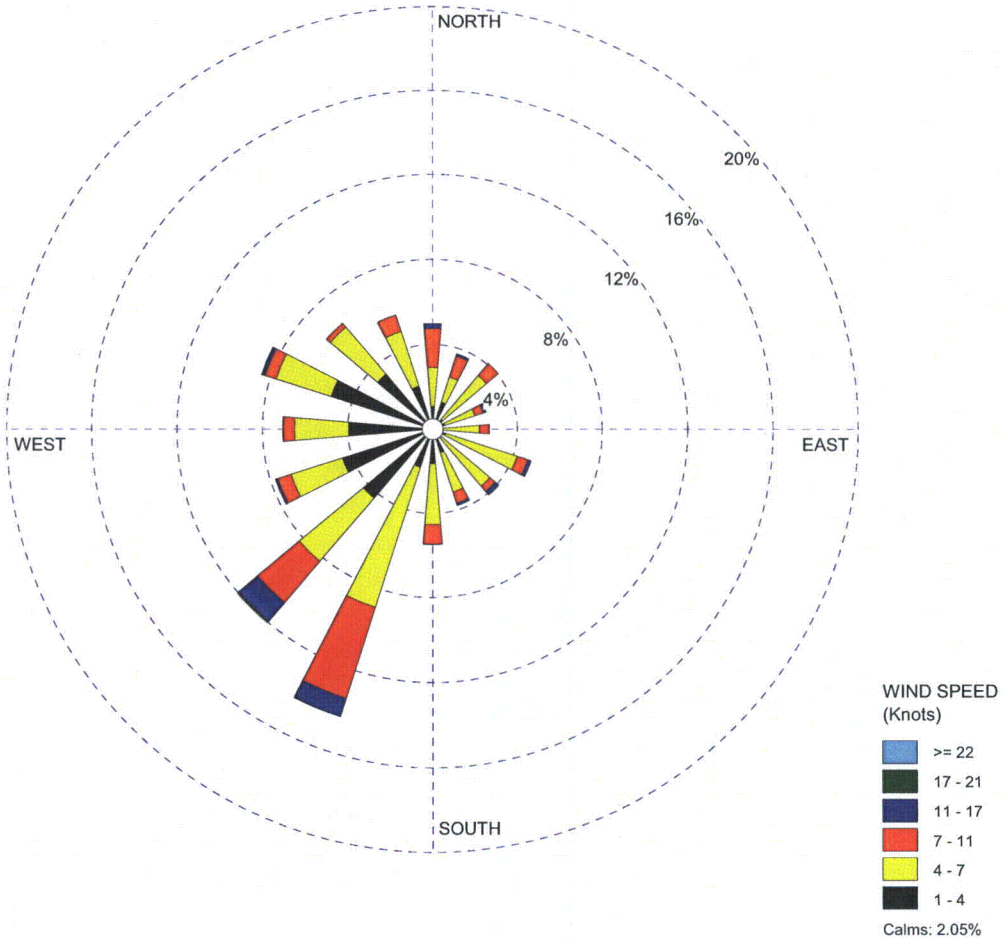

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 2.22%

Add Insert #11 here

Figure 2.3-240 Fermi Site 10-m October Wind Rose (2003-2007)[EF3 COL 2.0-8-A]

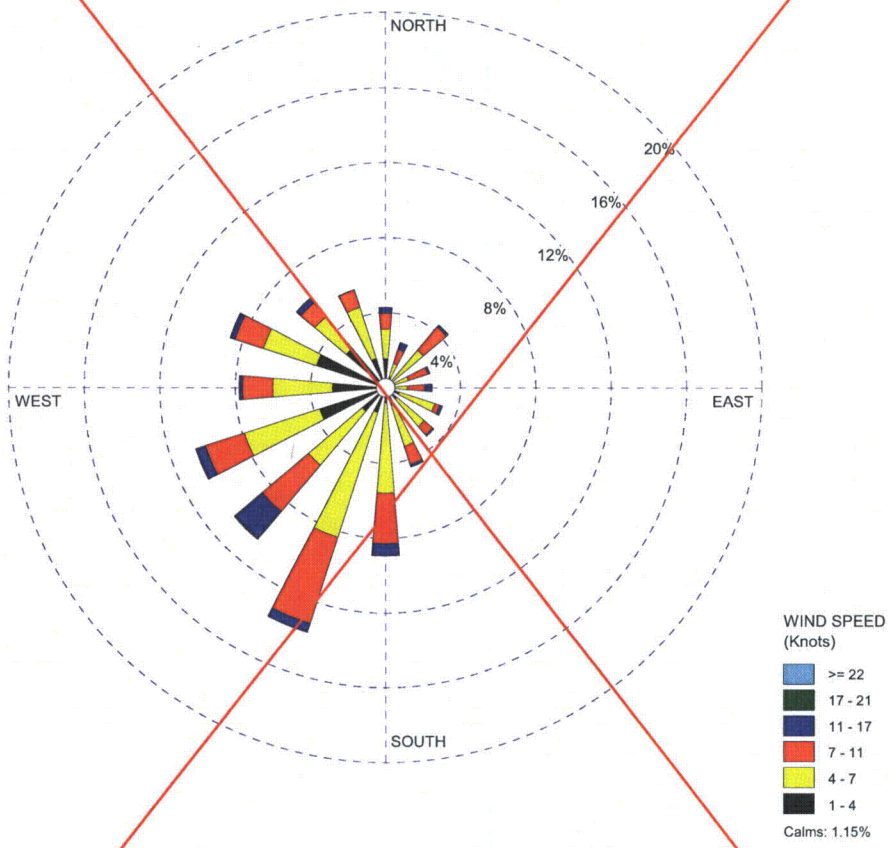


Insert 11

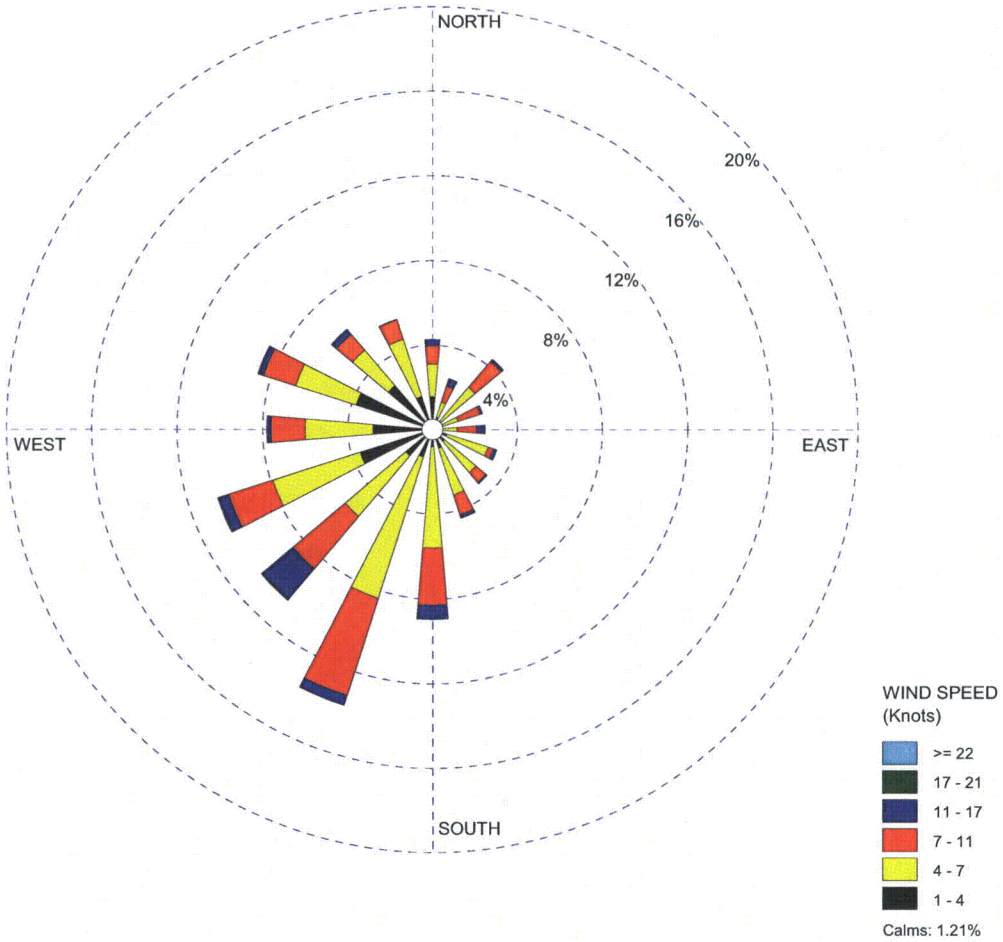

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 2.05%

Add Insert #12 here

Figure 2.3-241 **Fermi Site 10-m November Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

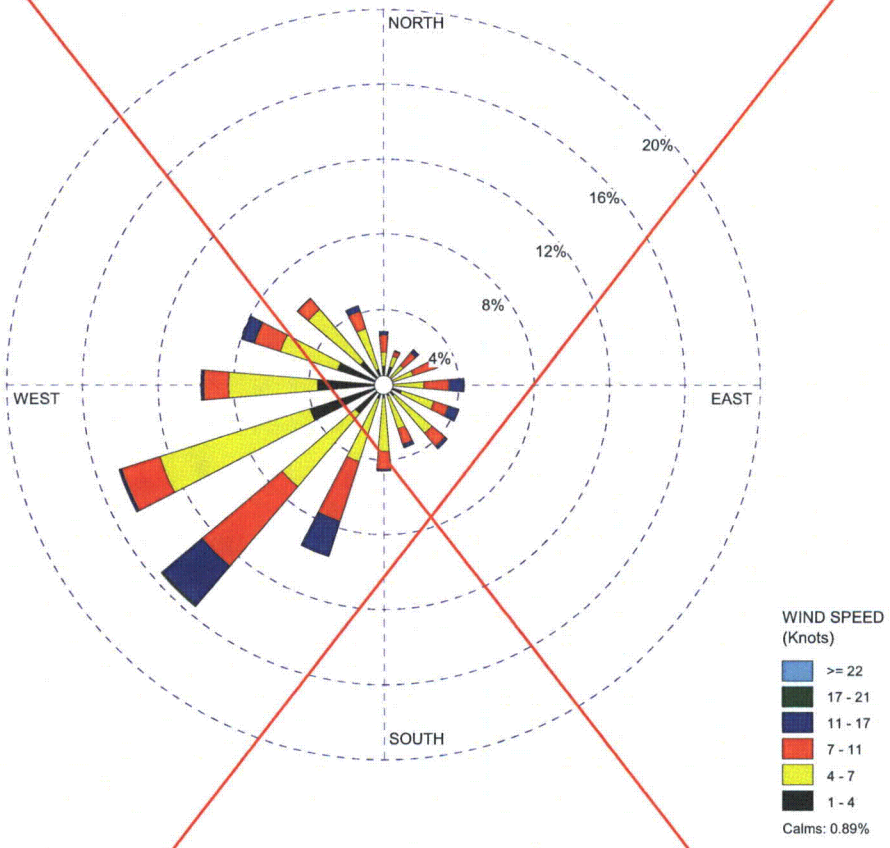


Insert 12

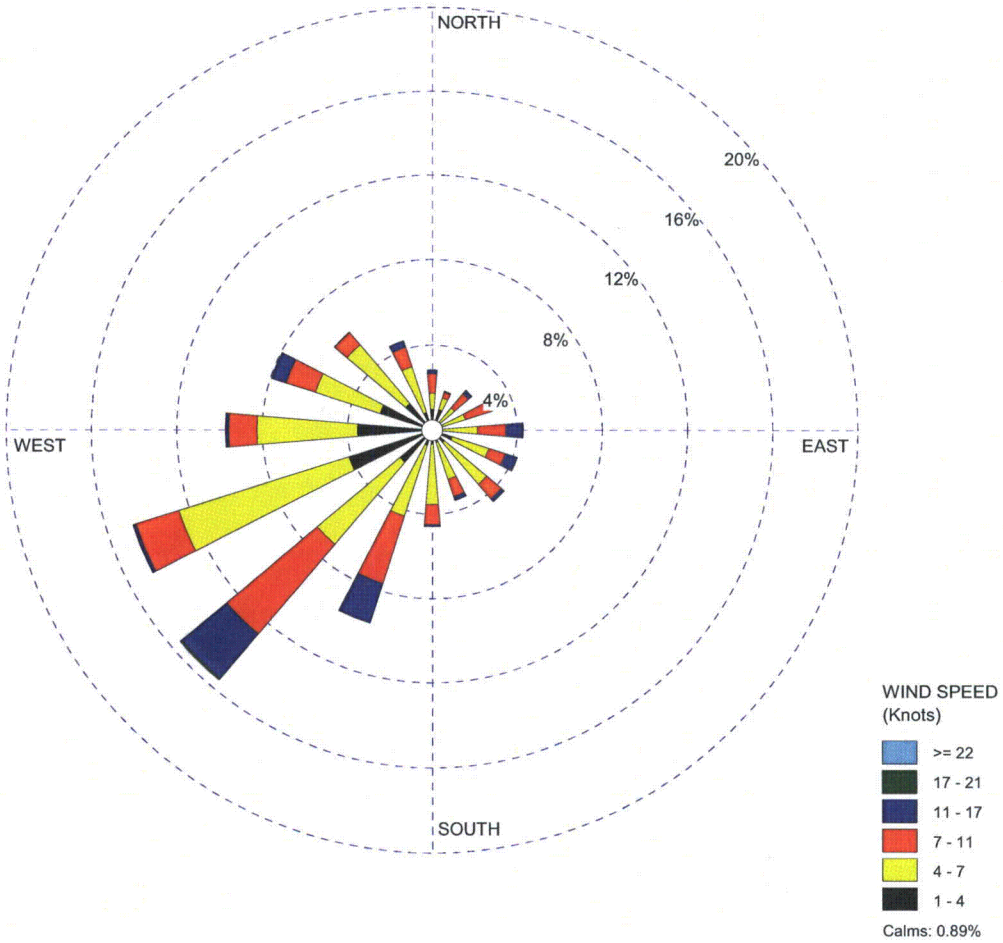

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 1.21%

Add Insert #13 here

Figure 2.3-242 **Fermi Site 10-m December Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

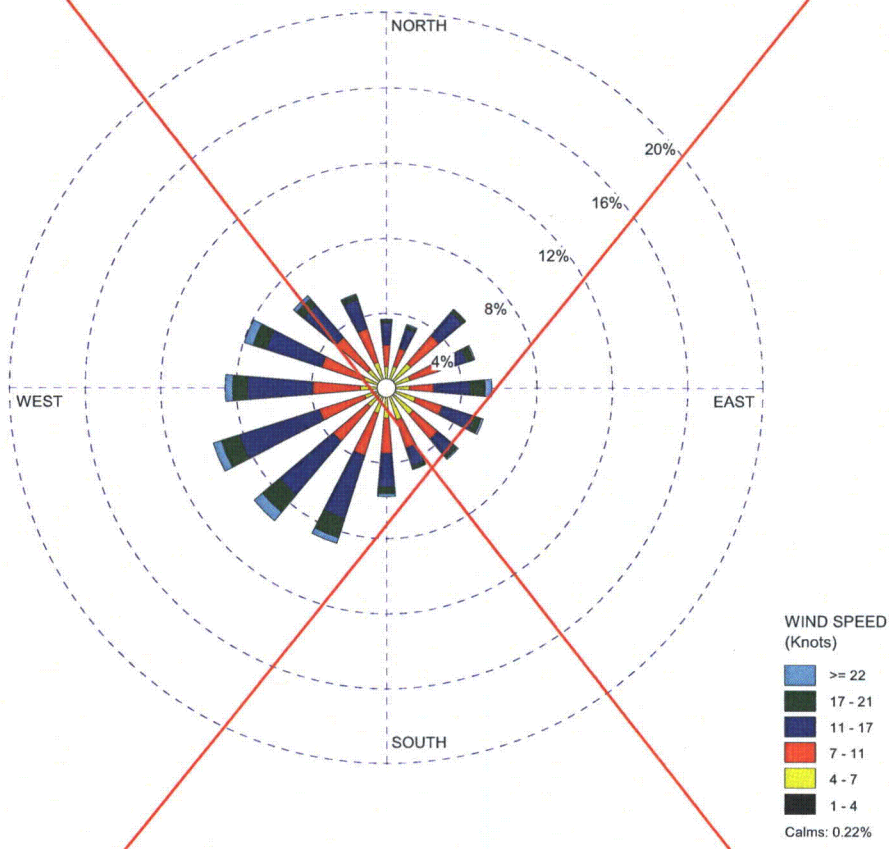


Insert 13

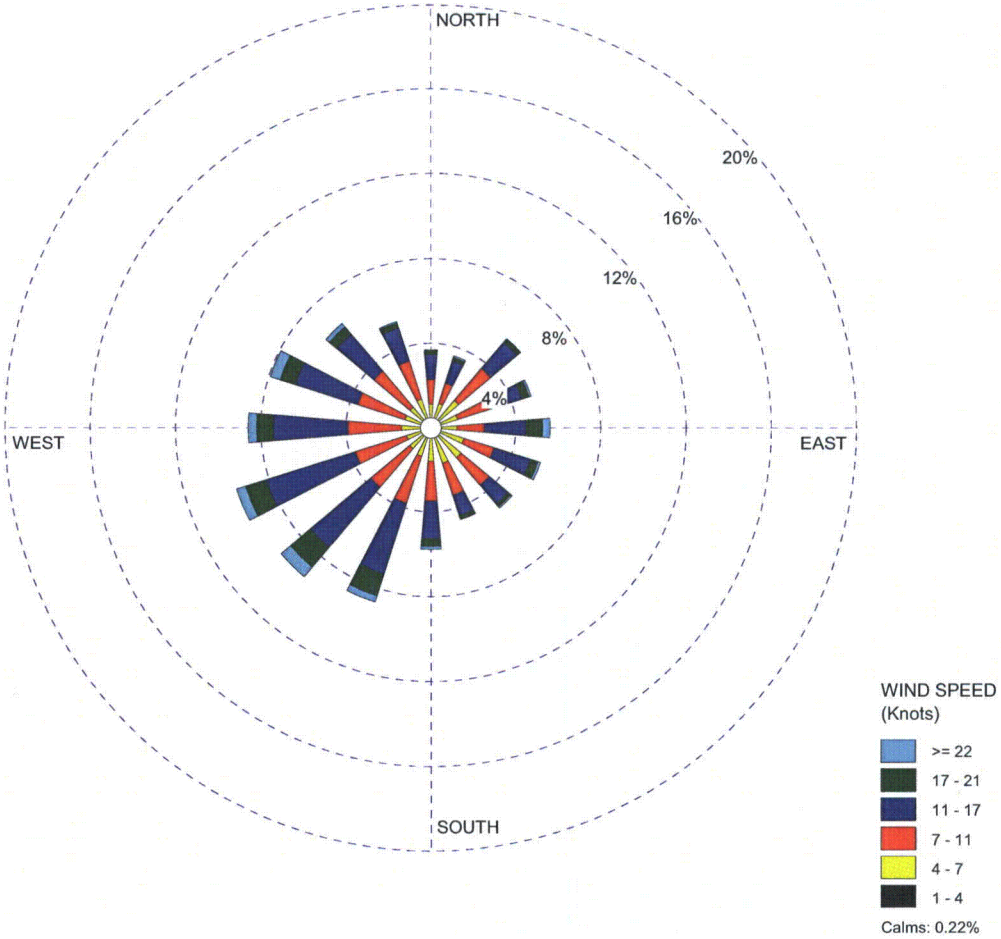

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.89%

Add Insert #14 here

Figure 2.3-243 Fermi Site 60-m Annual Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

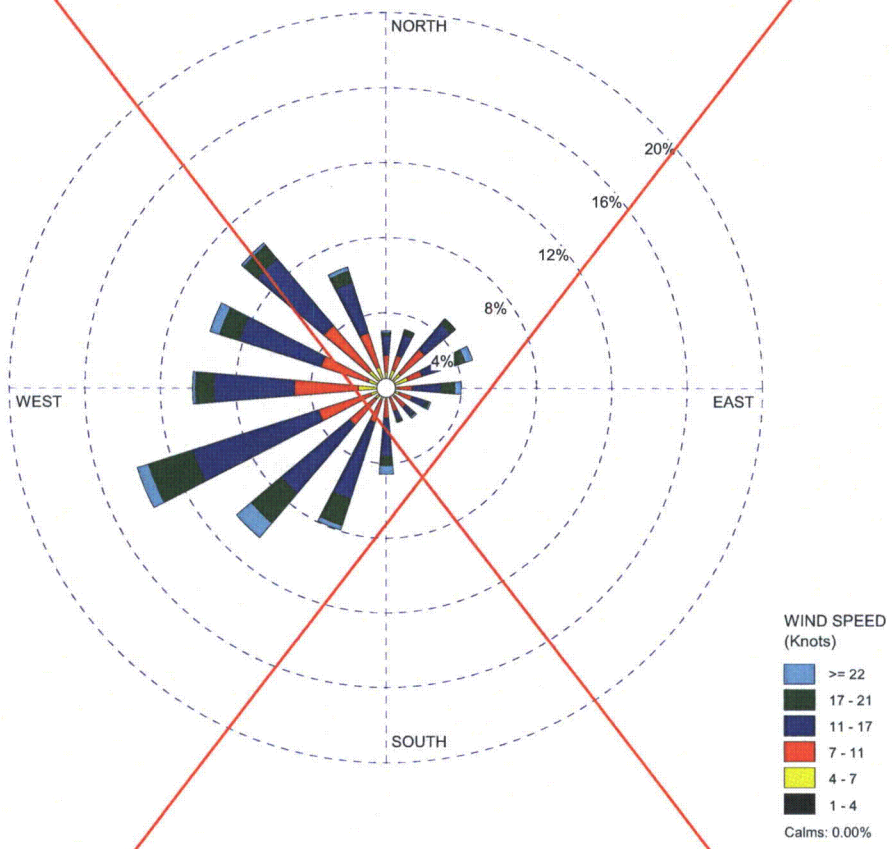


Insert 14

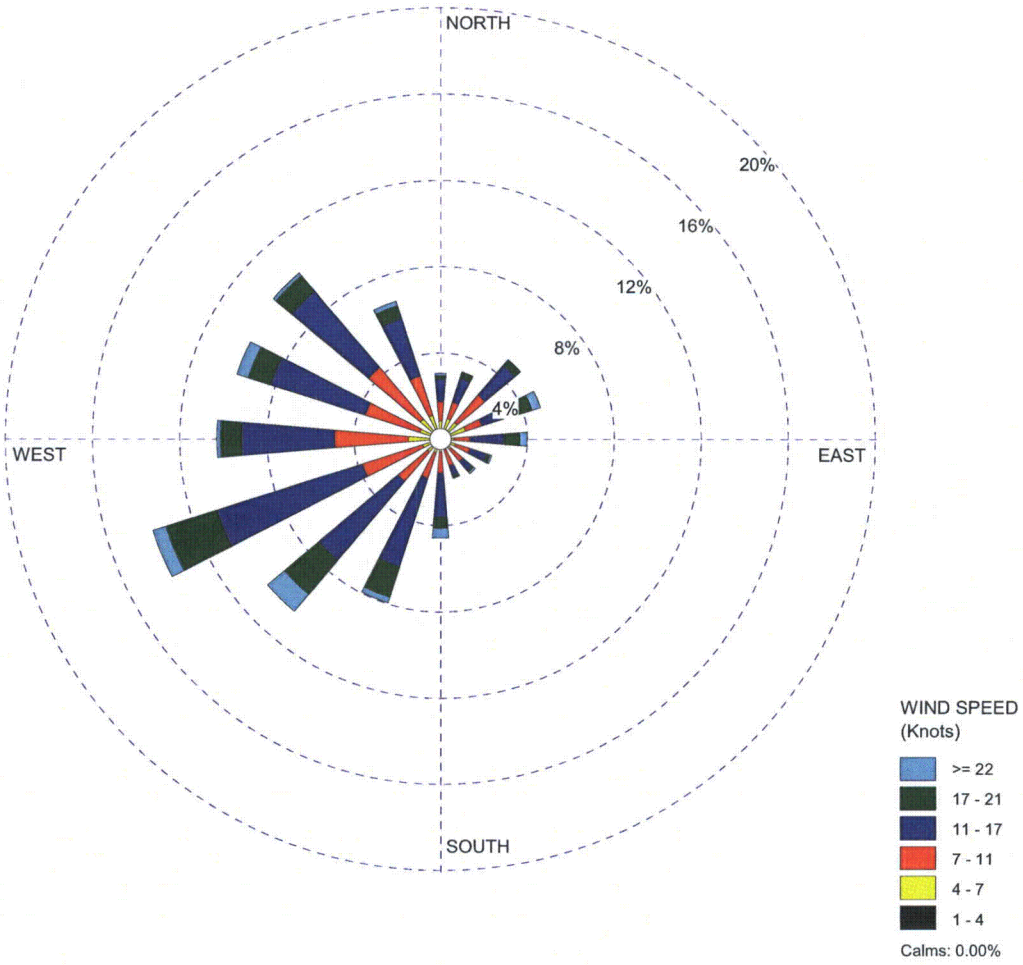

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.22%

Add Insert #15 here

Figure 2.3-244 Fermi Site 60-m January Wind Rose (2003-2007)[EF3 COL 2.0-8-A]

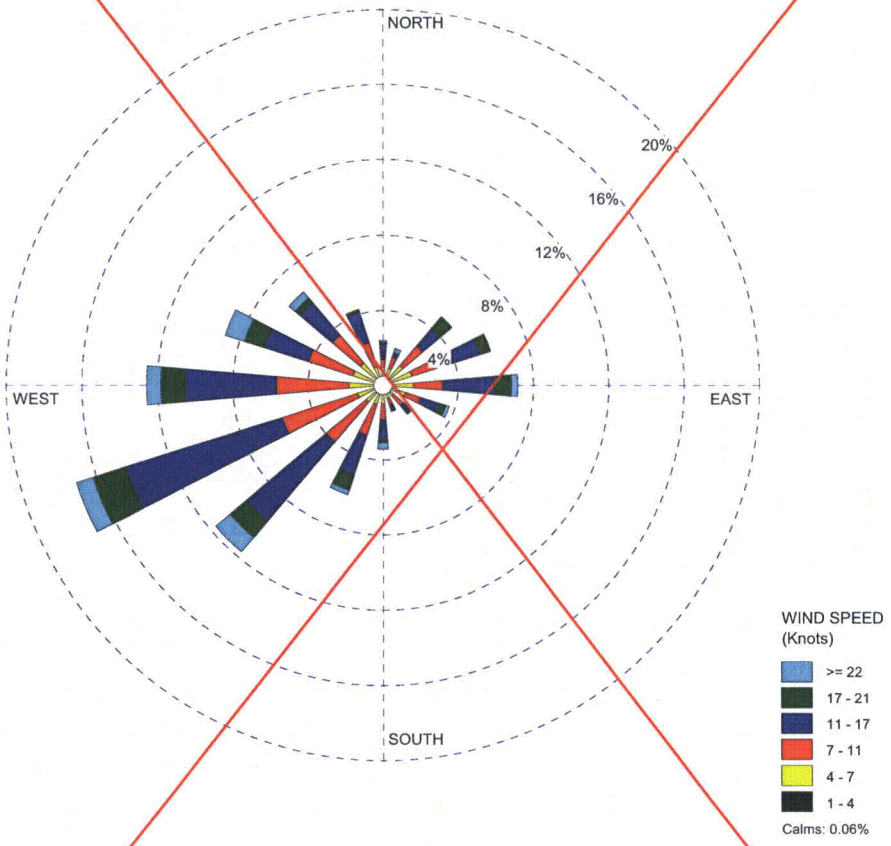


Insert 15

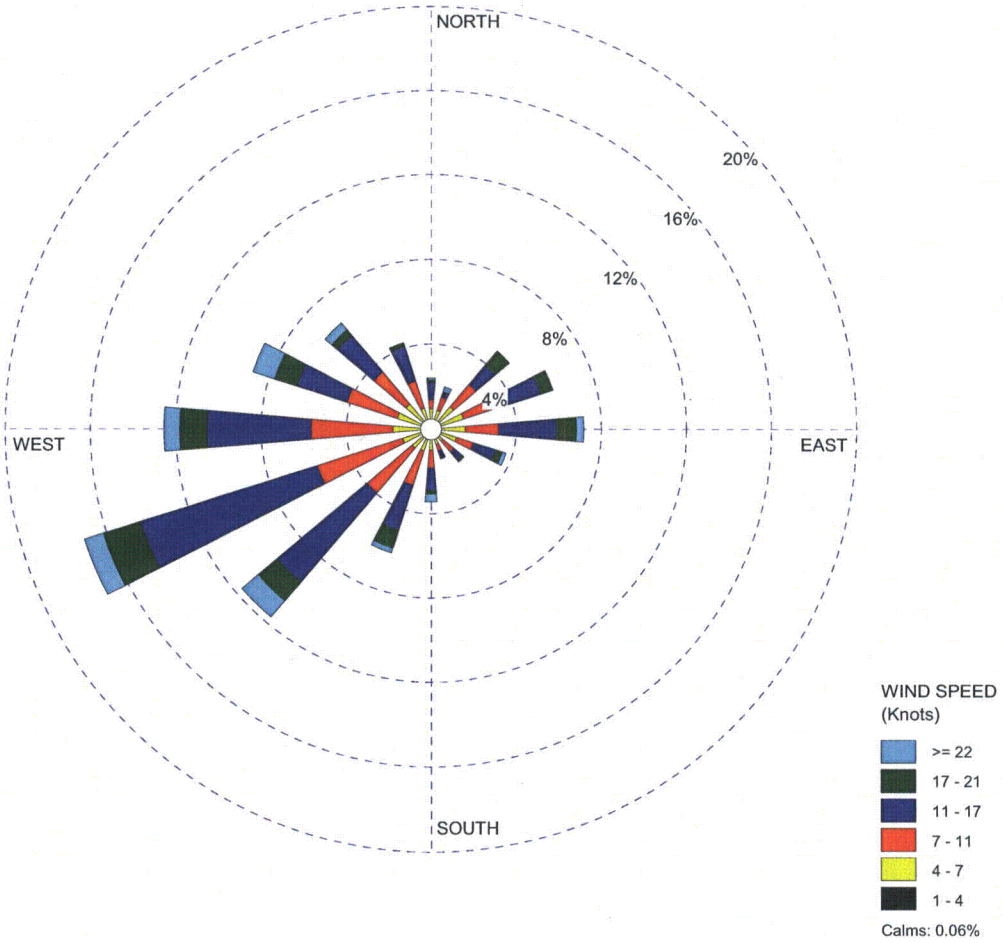

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.00%

Add Insert #16 here

Figure 2.3-245 **Fermi Site 60-m February Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

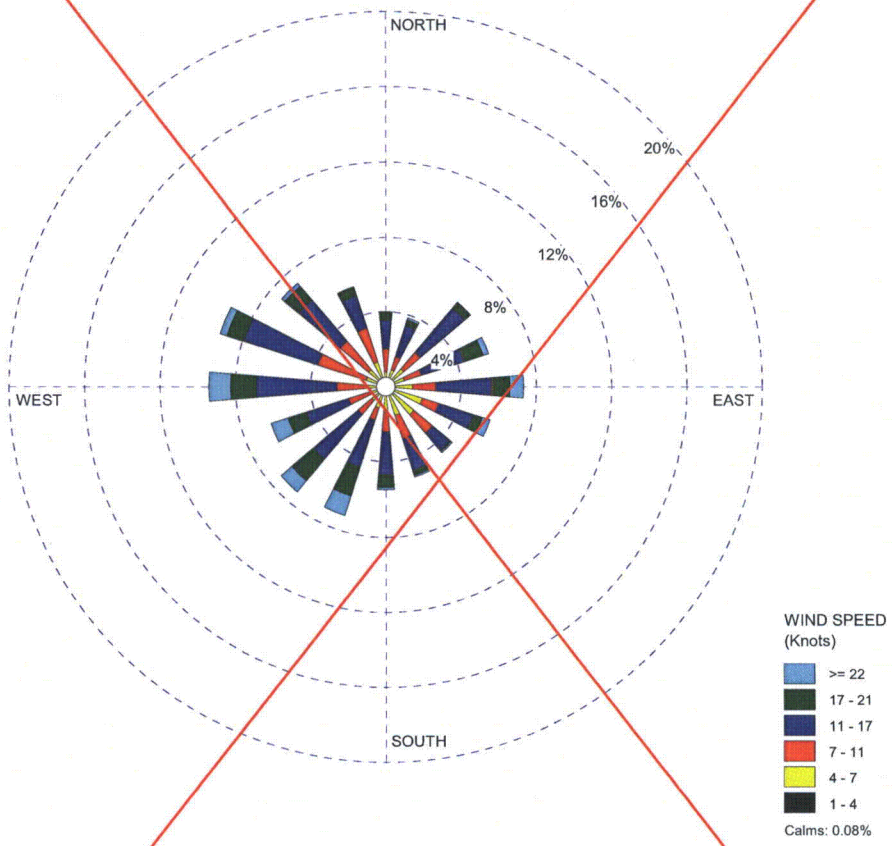


Insert 16

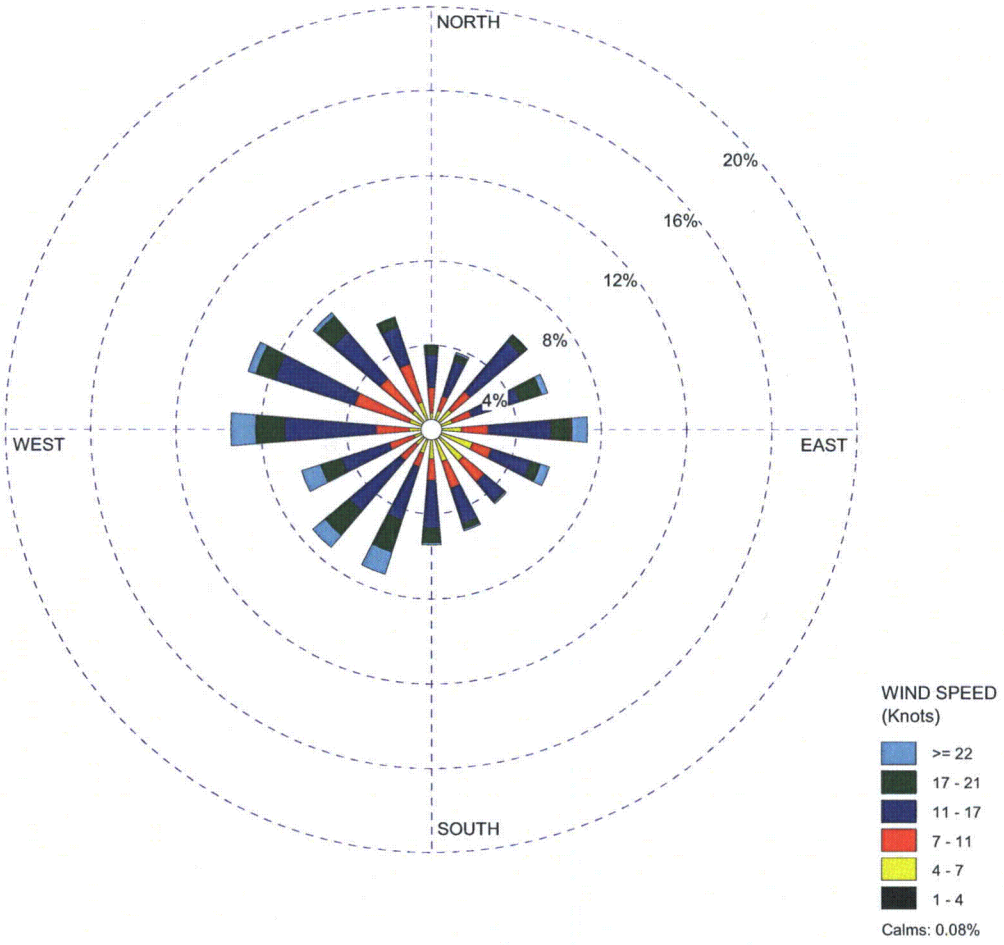

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.06%

Add Insert #17 here

Figure 2.3-246 Fermi Site 60-m March Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

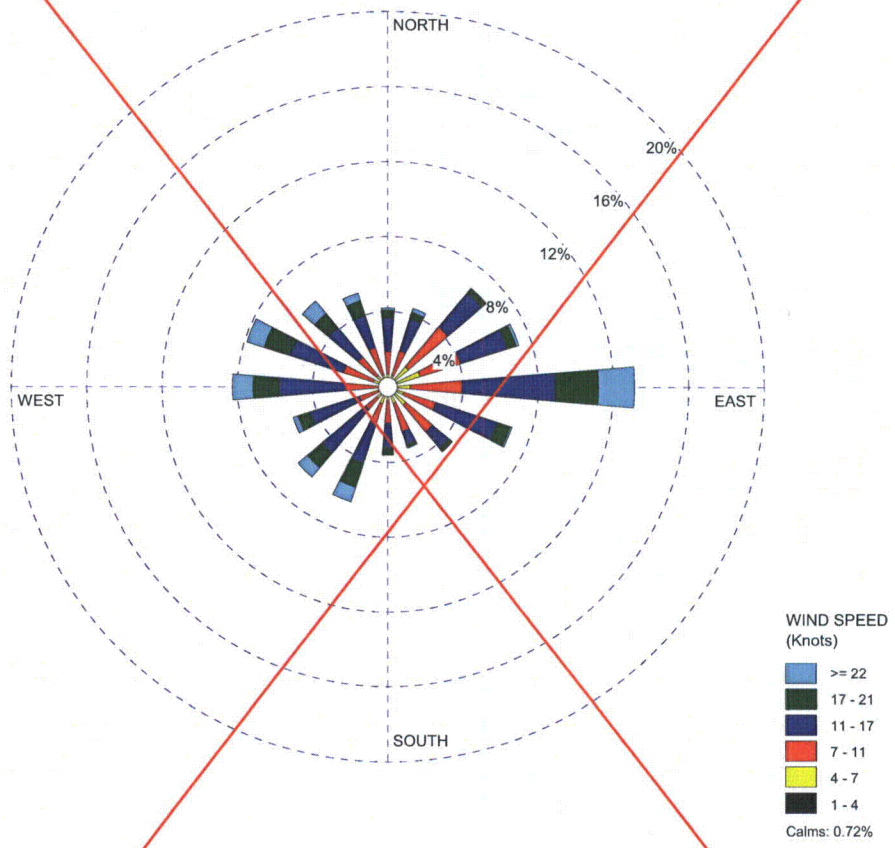


Insert 17

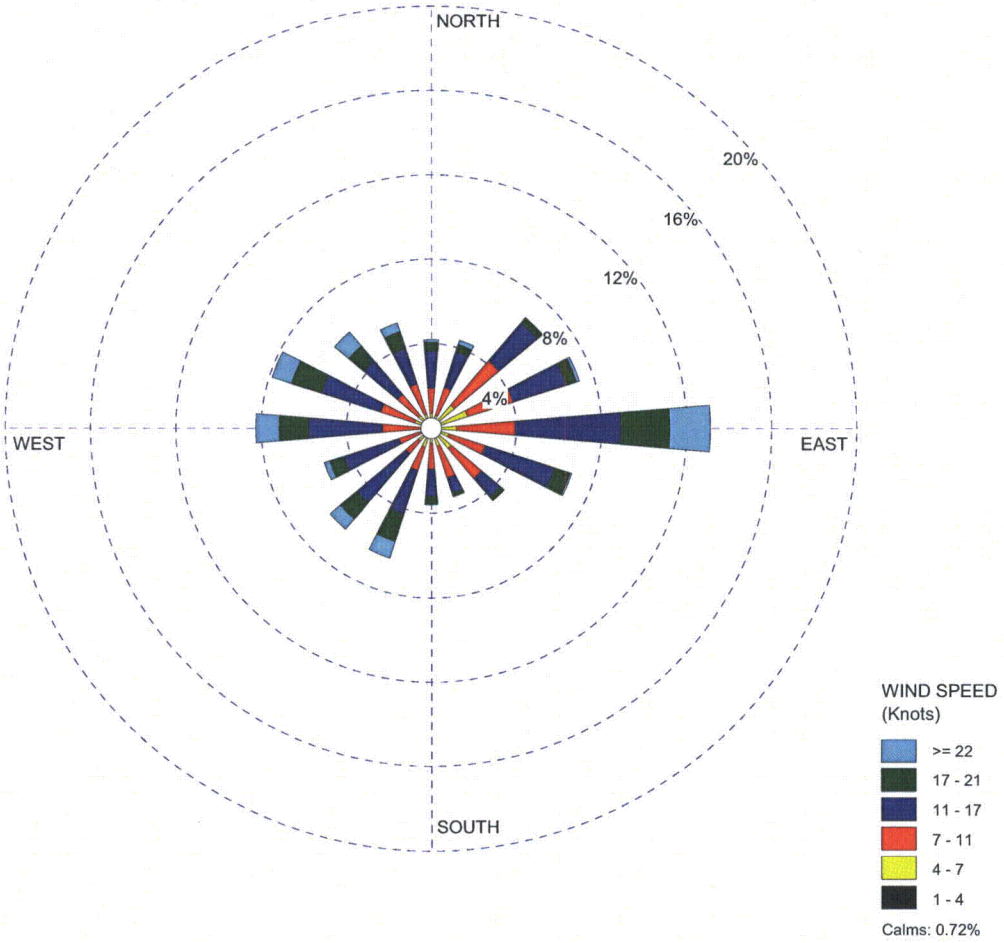

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.08%

Add Insert #18 here

Figure 2.3-247 Fermi Site 60-m April Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

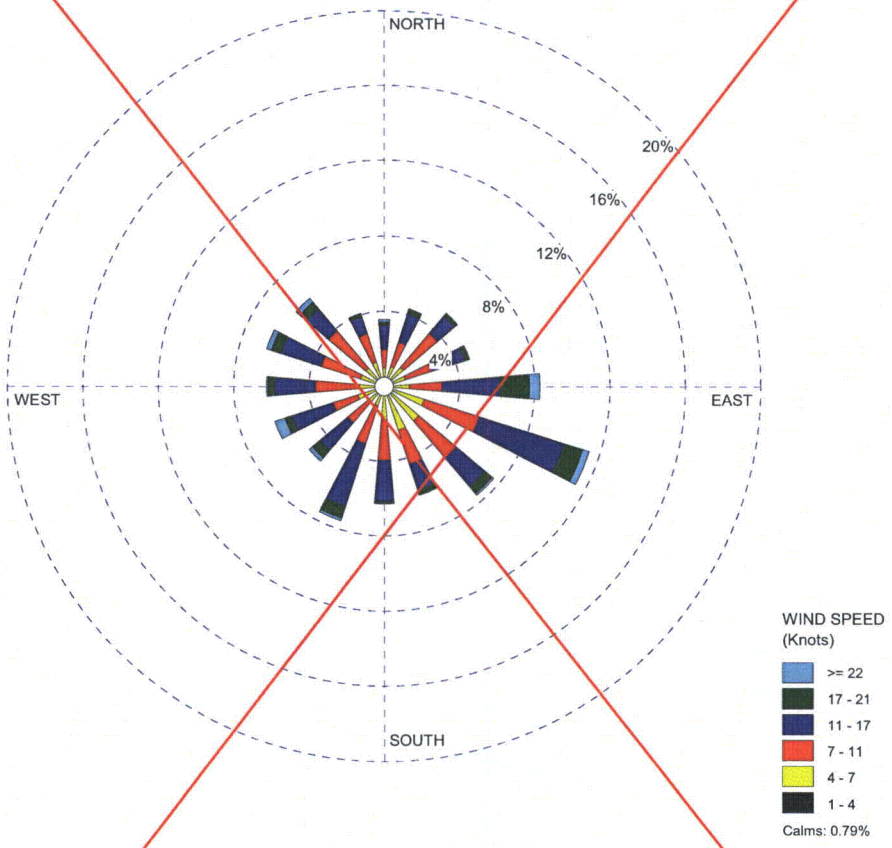


Insert 18

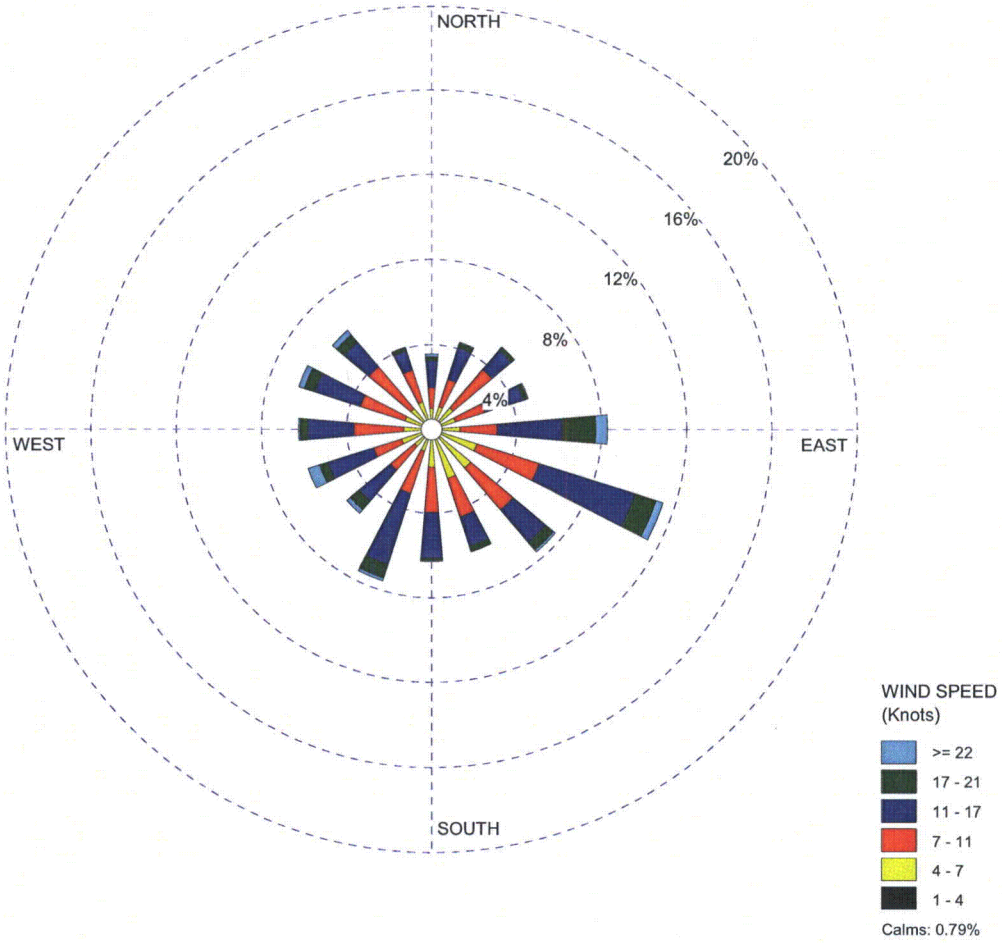

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.72%

Add Insert #19 here

Figure 2.3-248 Fermi Site 60-m May Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

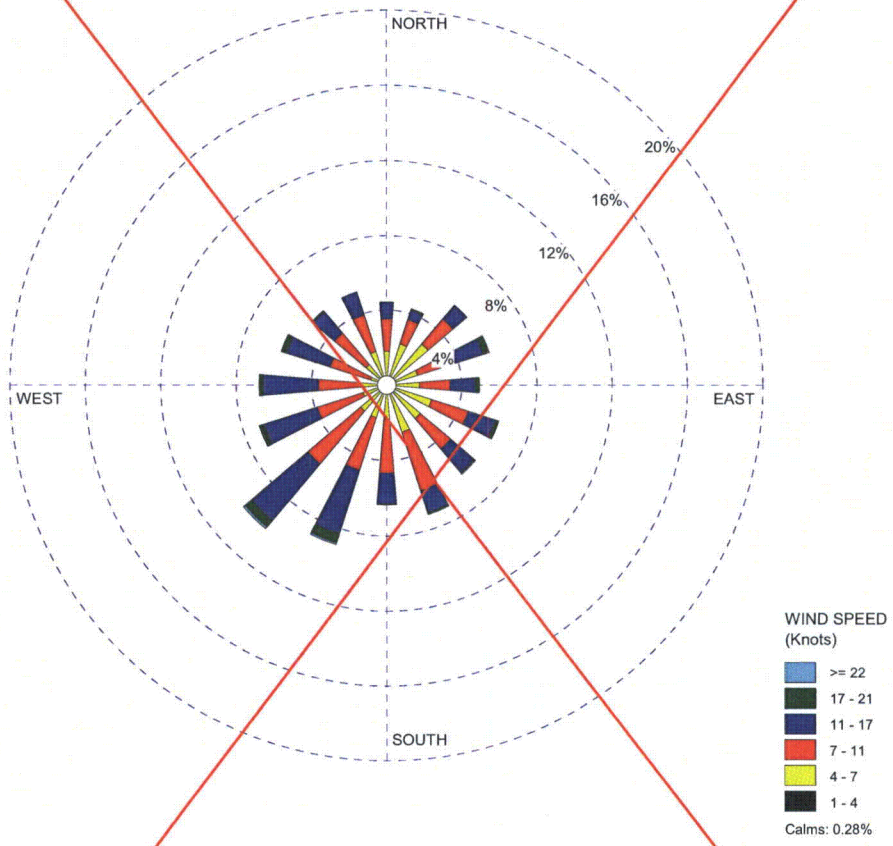


Insert 19

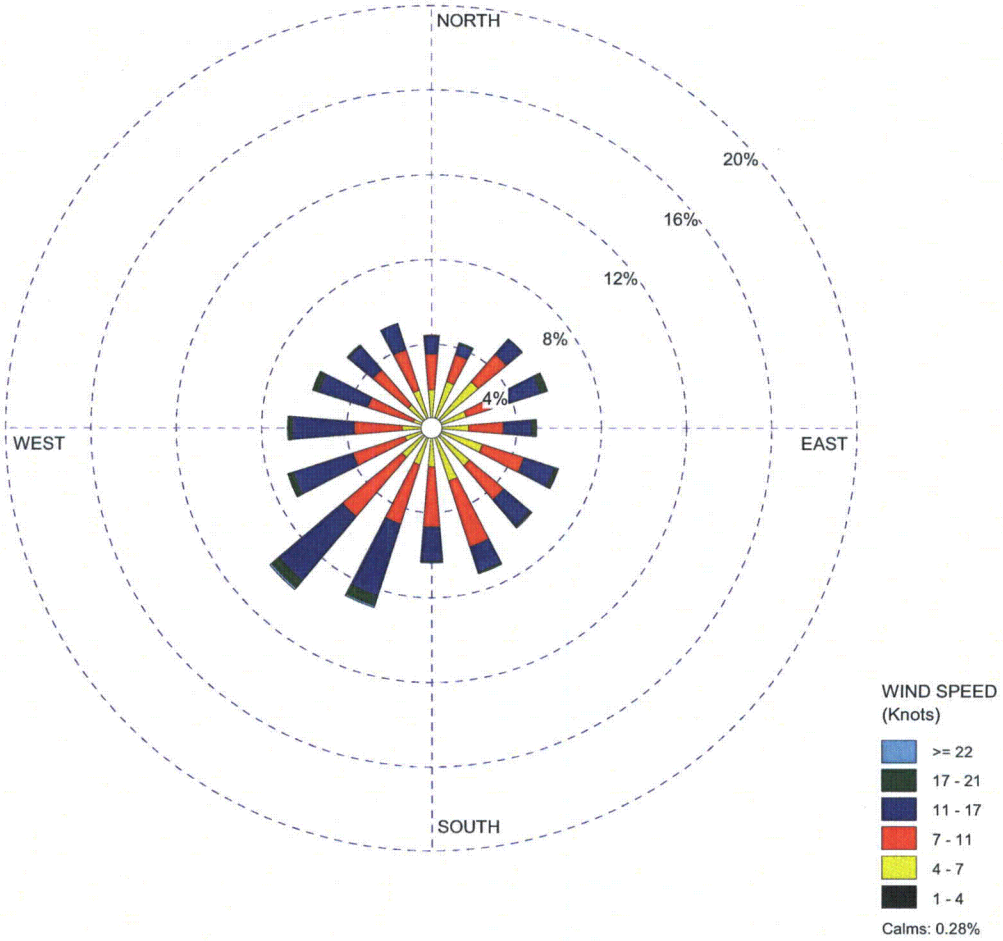

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.79%

Add Insert #20 here

Figure 2.3-249 Fermi Site 60-m June Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

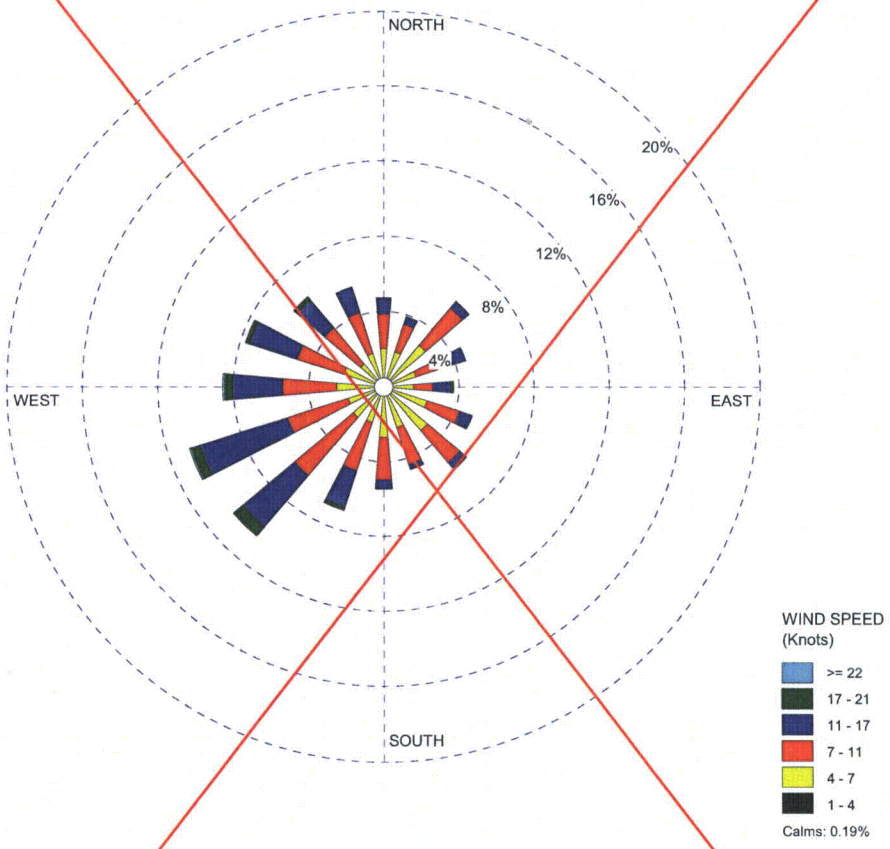


Insert 20

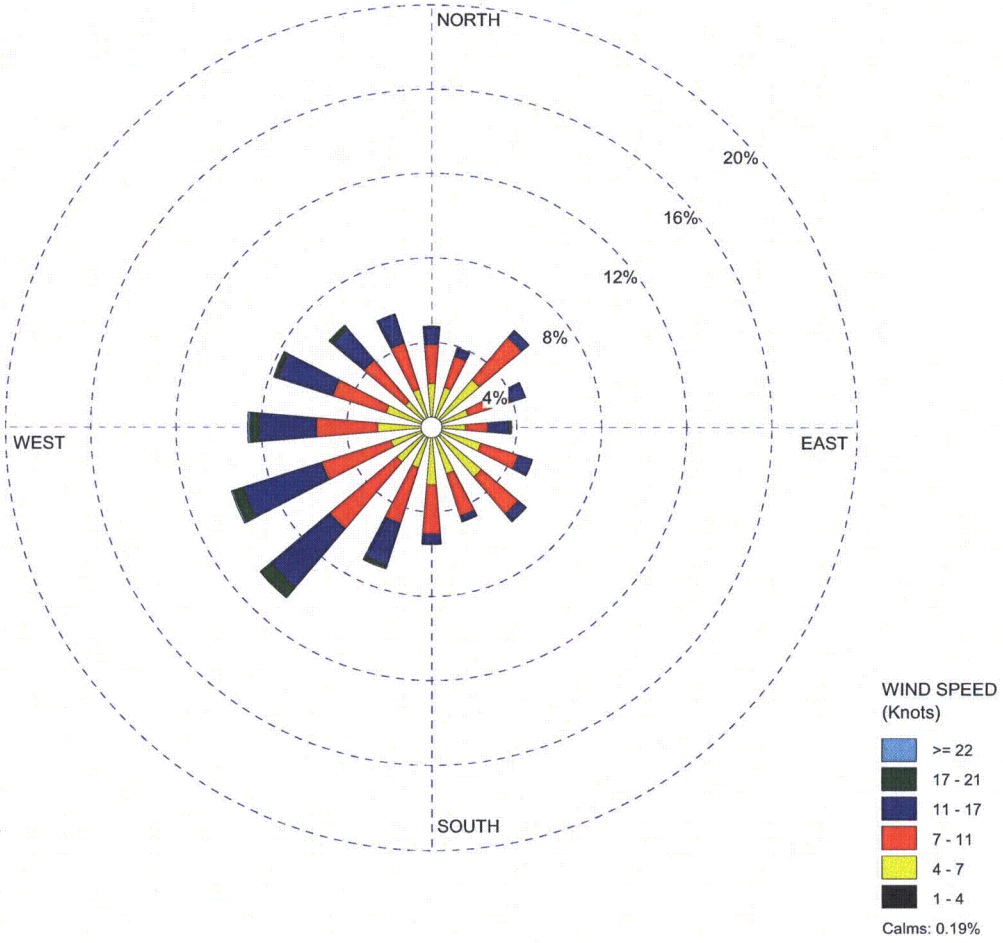

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.28%

Add Insert #21 here

Figure 2.3-250 Fermi Site 60-m July Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

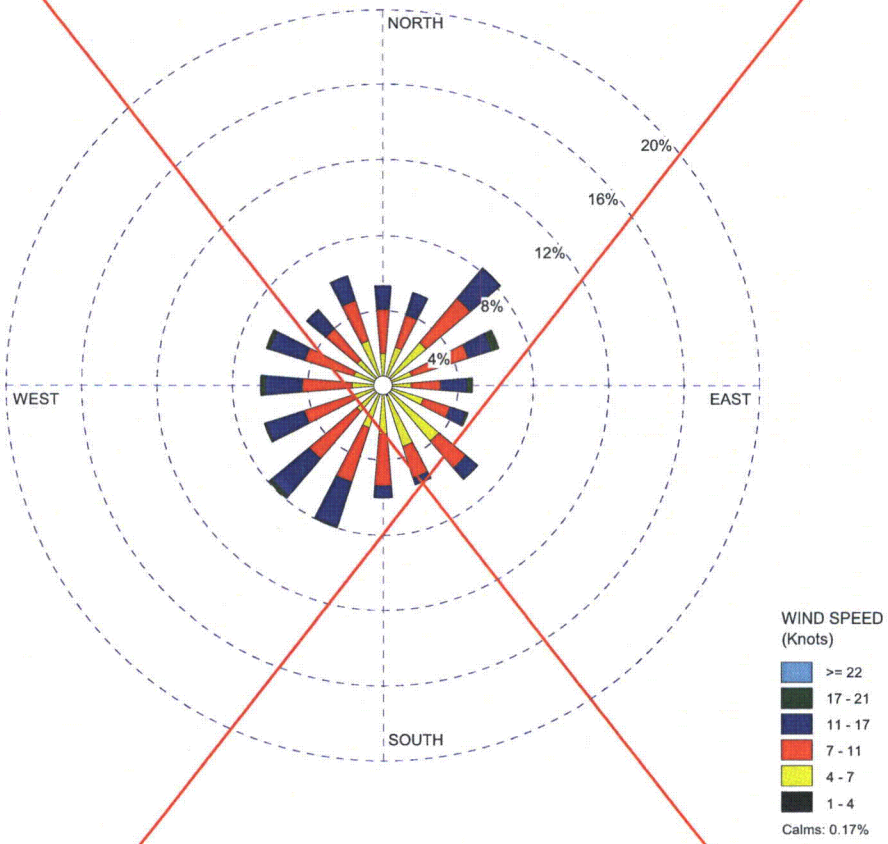


Insert 21

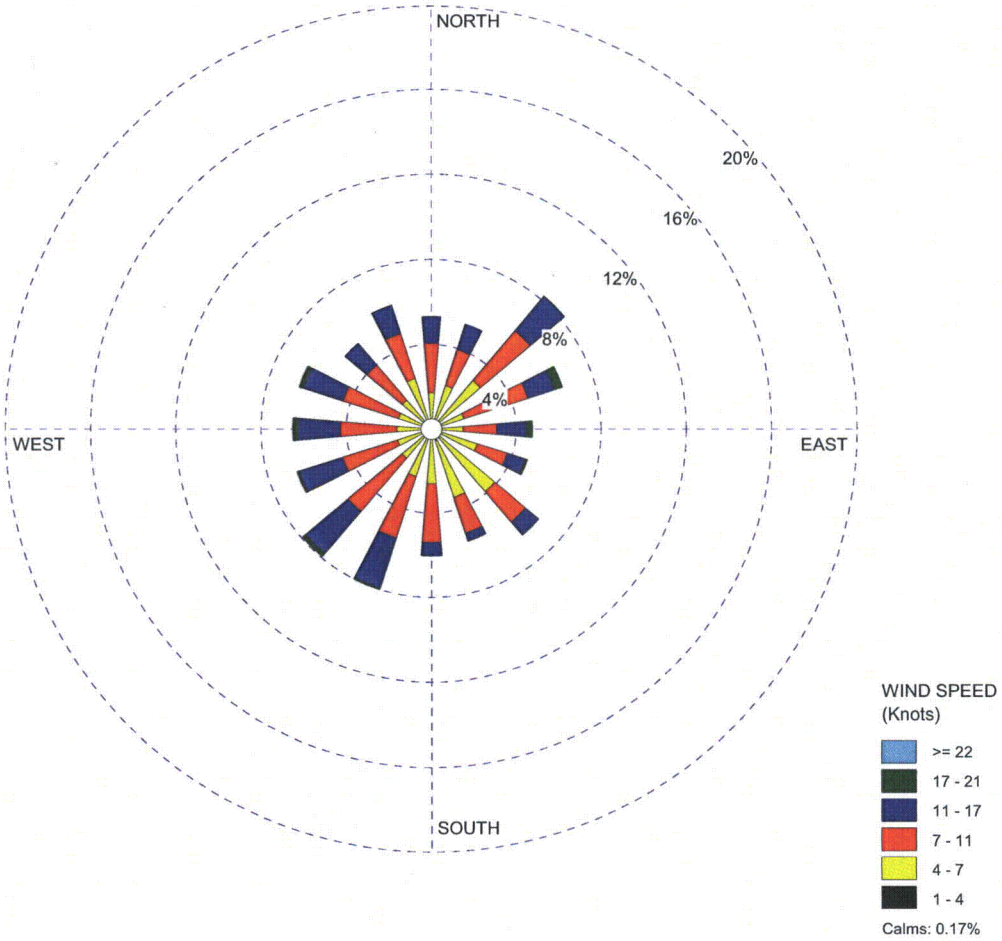

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.19%

Add Insert #22 here

Figure 2.3-251 Fermi Site 60-m August Wind Rose (2003-2007) [EF3 COL 2.0-8-A]

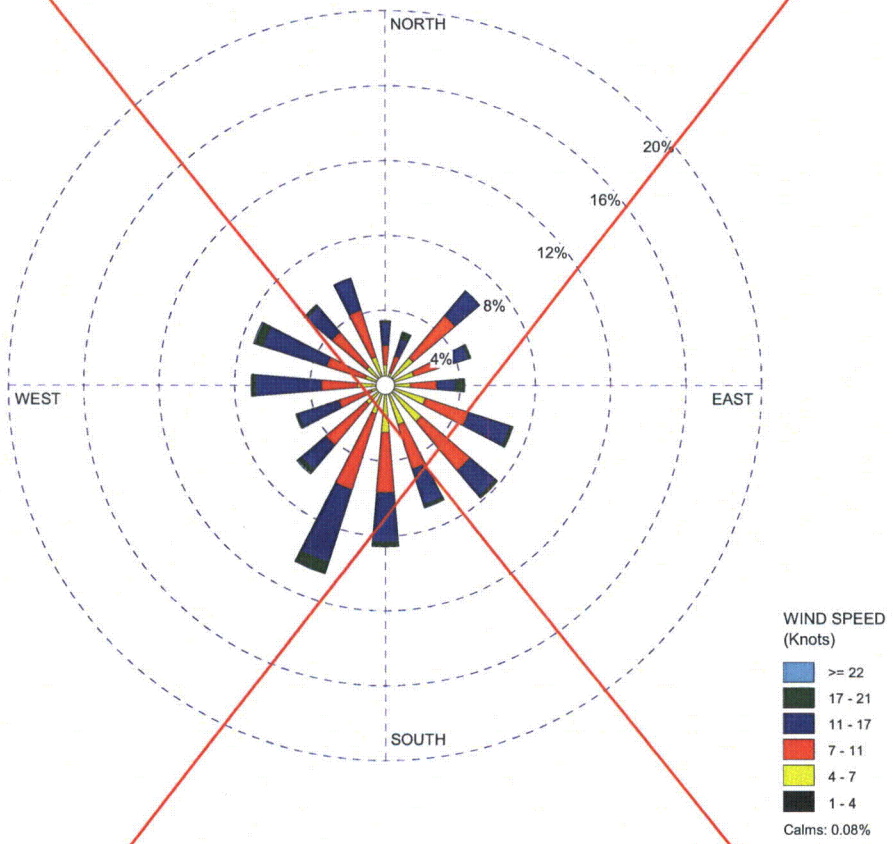


Insert 22

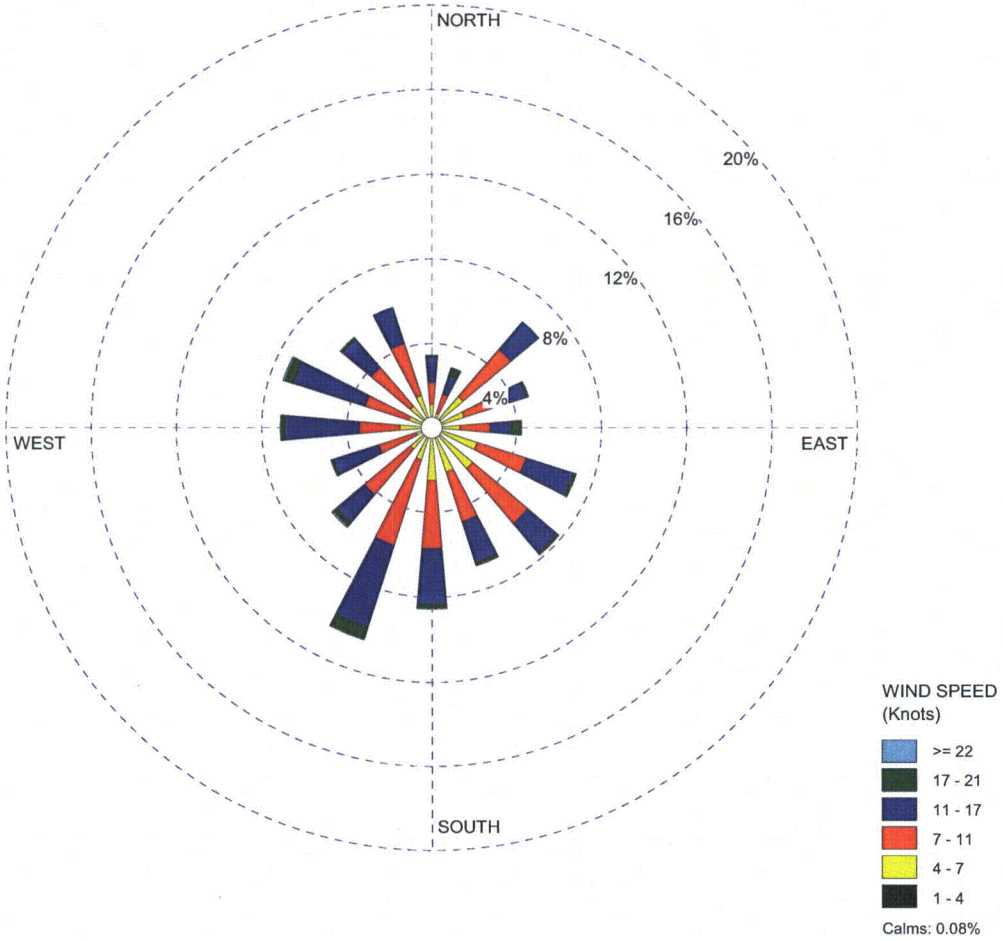

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.17%

Add Insert #23 here

Figure 2.3-252 **Fermi Site 60-m September Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

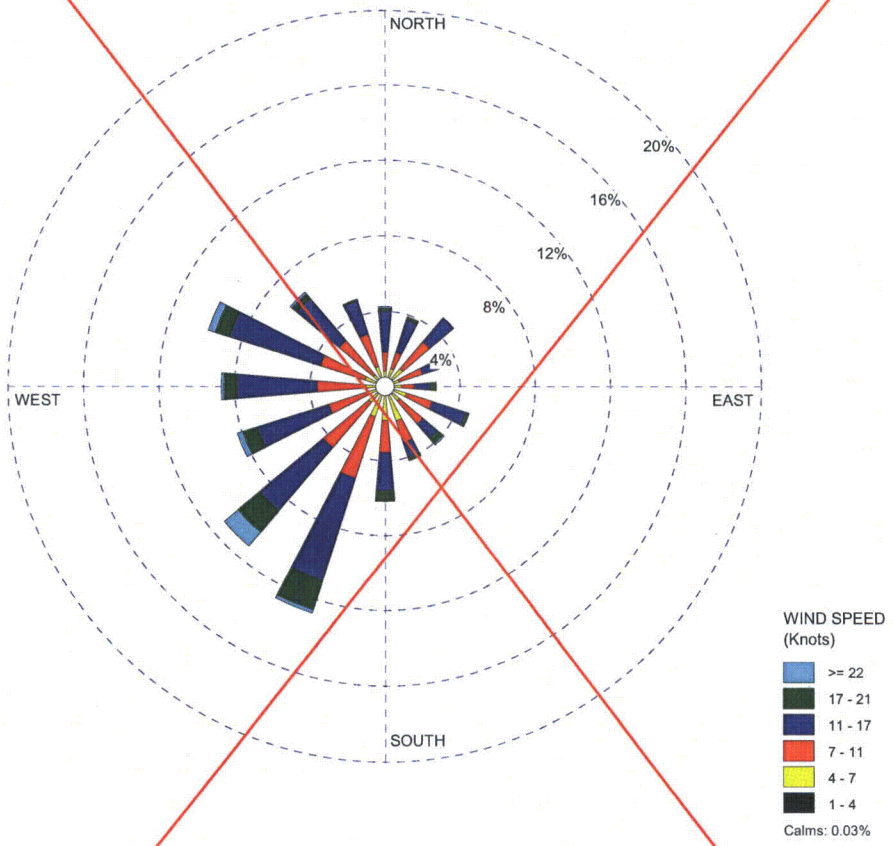


Insert 23

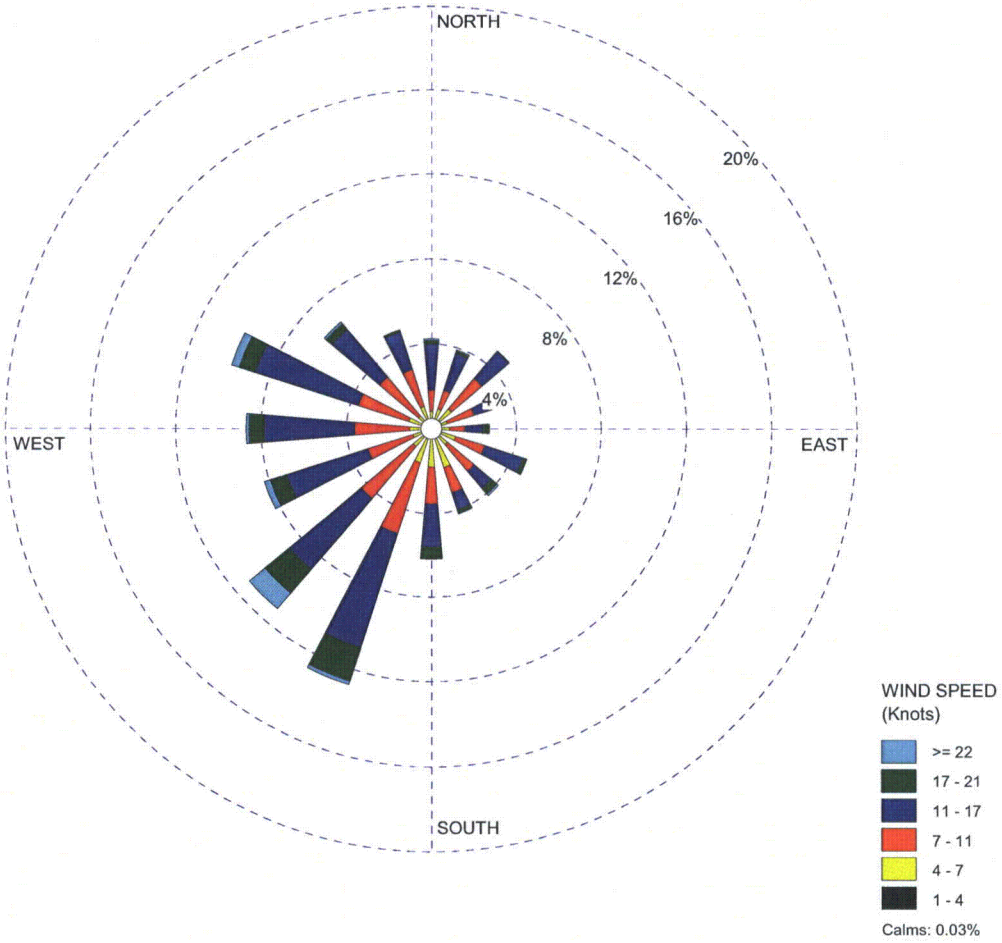

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.08%

Add Insert #24 here

Figure 2.3-253 Fermi Site 60-m October Wind Rose (2003-2007)[EF3 COL 2.0-8-A]

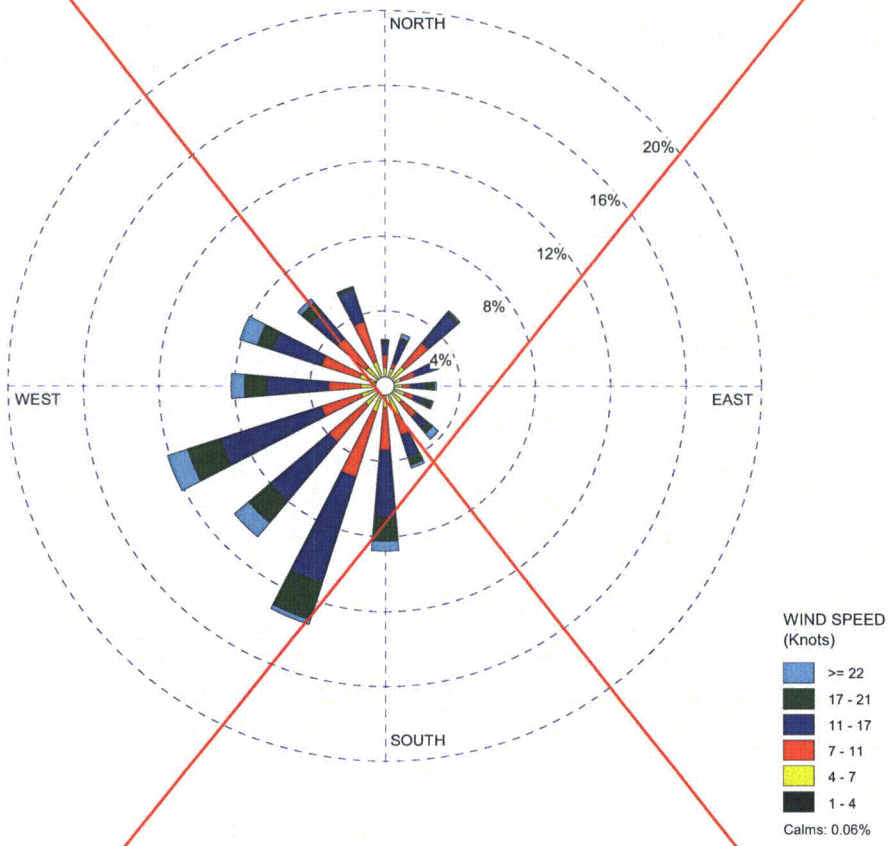


Insert 24

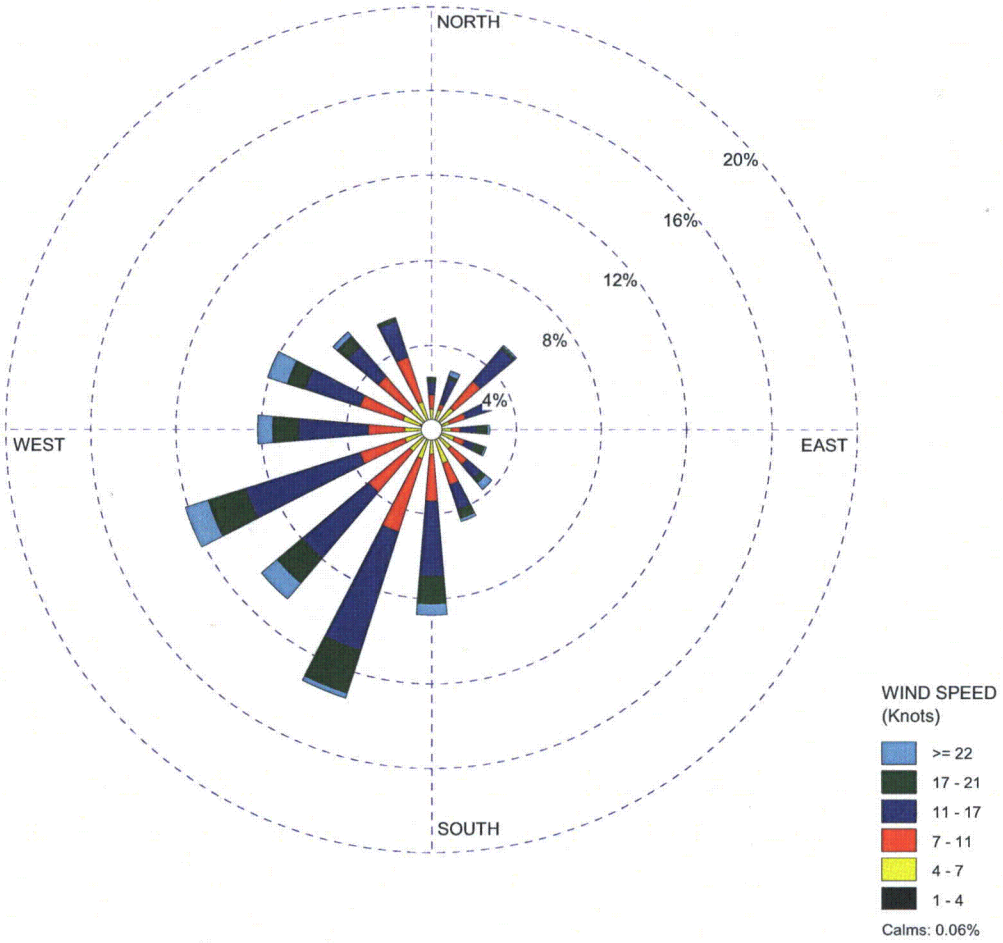

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.03%

Add Insert #25 here

Figure 2.3-254 **Fermi Site 60-m November Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]

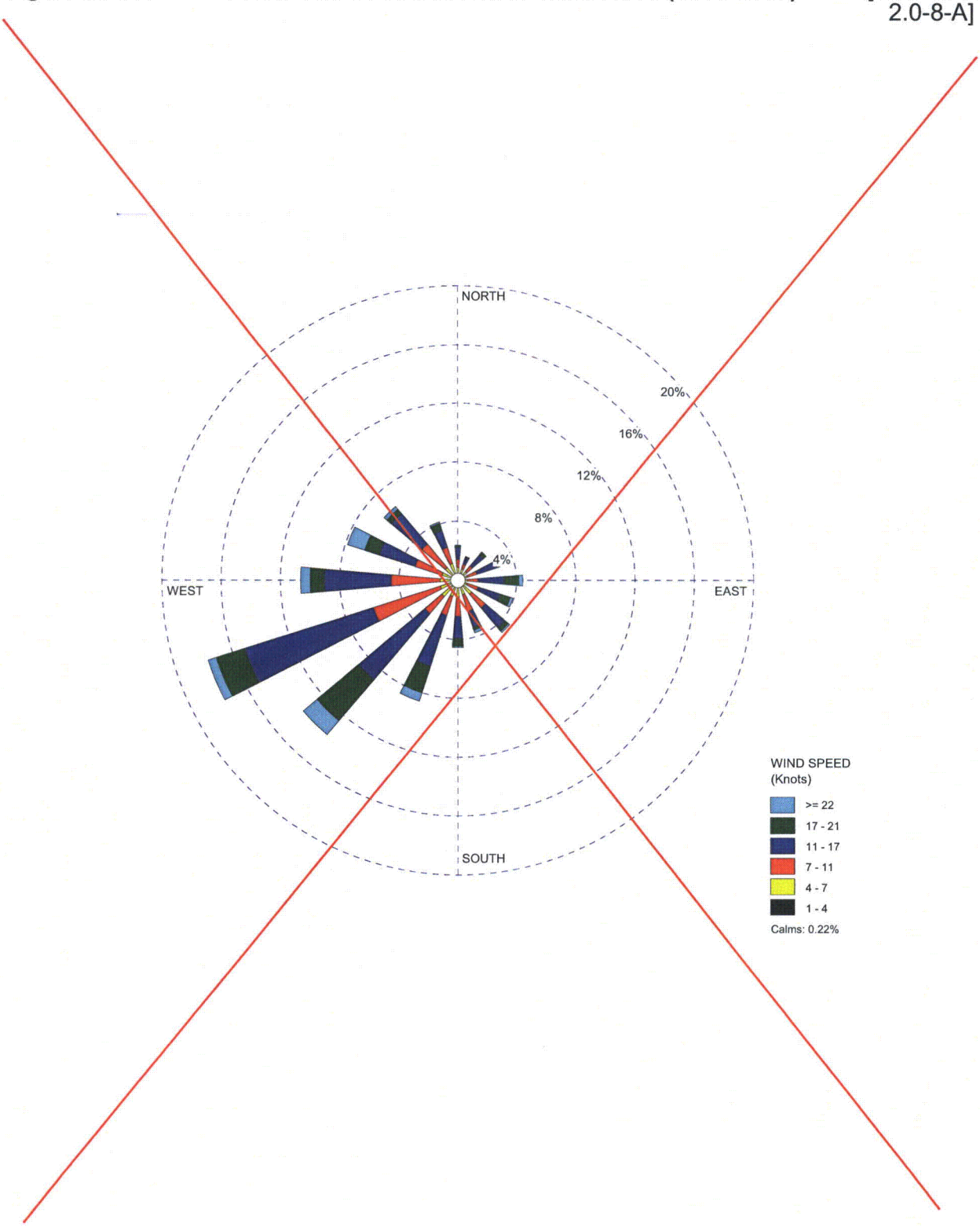


Insert 25

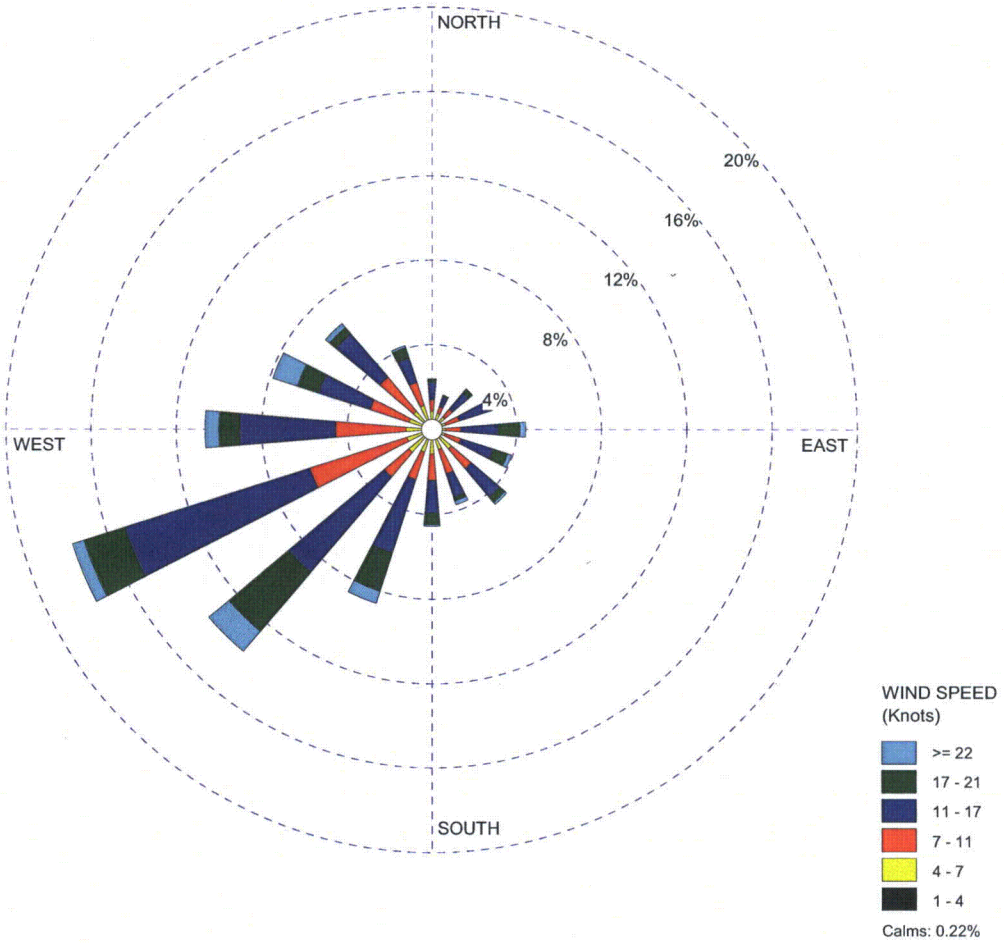

NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.06%

Add Insert #26 here

Figure 2.3-255 **Fermi Site 60-m December Wind Rose (2003-2007)** [EF3 COL 2.0-8-A]



Insert 26


NORTH
SOUTH
WEST
EAST
4%
8%
12%
16%
20%
WIND SPEED
(Knots)
>= 22
17 - 21
11 - 17
7 - 11
4 - 7
1 - 4
Calms: 0.22%

Appendix 2A ARCON96 Source/Receptor Inputs

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

2A.2.1 Meteorological Data

Add the following as the last sentence of this section.

EF3COL 2A.2-1-A Instrumentation heights used in the analysis are described in Subsection 2.3.3.1.1 Meteorological data from 2001 through 2007 is used in the analysis

2A.2.3 ARCON96 ESBWR Inputs

Replace the last sentence of the first paragraph with the following.

EF3COL 2A.2-1-A These directions are adjusted by the difference in angle (approximately 19 degrees counterclockwise) between the ESBWR plant north and the Fermi 3 plant north; Fermi 3 receptor to source directions are shown in Table 2A-4R analysis.

2A.2.4 Confirmation of the ESBWR χ/Q Values

Replace this section with the following.

303

EF3COL 2A.2-1-A DCD Figure 2A-1 shows the locations of the sources and receptors for ESBWR control room determinations, also used in the Fermi 3 evaluations. The dimensions of the diffuse source planes provided in DCD Table 2A-3 are determined as directed by RG 1.194, Regulatory Position 3.2.4.5, for the nearest receptor locations. ARCON96 calculations are performed for source/receptor pairs listed in DCD Table 2A-3 and Table 2A-4R using site-specific meteorological data. Results of the site-specific analysis are provided in Table 2.3-~~203~~ and Table 2.3-304.

~~[START COM 2.3-204] The atmospheric dispersion factors (χ/Qs) calculated for the Control Room and Technical Support Center using ARCON96 are currently under revision as part of the effort described in Detroit Edison letter NRC3-10-003, dated February 8, 2010. Detroit Edison will provide the COLA revision to reflect the new atmospheric dispersion factors (χ/Qs) calculated for the Control Room and Technical Support Center under separate correspondence to the NRC by March 25, 2010. [END COM 2.3-204]~~

2A.2.5 Confirmation of the Reactor Building χ/Q Values

Replace this section with the following.

or personnel air locks

During refueling, doors or personnel air locks on the east sides of the Reactor Building or Fuel Building could act as a point source that could result in control room χ/Q values that are higher than the ESBWR χ/Q values for a release in the Reactor Building. Therefore, the doors are administratively controlled ~~prior to and~~ during movement of irradiated fuel bundles. ~~The administrative controls are such that the doors and personnel air locks on the East sides of the Reactor Building or Fuel Building are promptly closed under conditions indicative of a fuel handling accident.~~

to remain closed

2A.3 COL Information

2A.2-1-A Confirmation of the ESBWR χ/Q Values

EF3 COL 2A.2-1-A This COL item is addressed in Subsection 2.3.4.3 and in Subsection 2A.2.4.

2A.2-2-A Confirmation of the Reactor Building χ/Q Values

EF3 COL 2A.2-2-A This COL item is addressed in Subsection 2A.2.5.

Table 2A-4R ARCON 96 Input-Recptor to Source Direction [EF3 COL 2A.2-1-A]

SourcelReceptor	Receptor to Source Direction {deg.}
RB to CBL	289
RB to EN	279
RB to ES	299
RB to N	303
RB to TSCB	231
RB to TSCA(1)	~~219~~ 235
PCCS to CBL	328
PCCS to EN	304
PCCS to ES	323
PCCS to N	327
PCCS to TSCB	233
PCCS to TSCA(1)	~~220~~ 236
TB to CBL	2
TB to EN	343
TB to ES	350
TB to N	355
TB to TSCB	251
TB to TSCA(1)	~~239~~ 255
TB-TDto ~~eB~~ CBL	360
TB-TDto EN	350
TB-TD to TSCB	296
FB to ~~eBL~~	247
FBto EN CBL	253
FB to ES	267
FBtoN	271
RWtoN	323
RB-VS to ~~eBL~~ CBL	266
RB-VS to ES	280
RB-VS to N	281
TB-VS to ~~eBL~~ CBL	15
TB-VS to EN	360
TB-VS to N	7
RW-VS to ~~eBL~~ CBL	321
RW-VS to EN	309
RW-VS to N	323
BPNto ~~eBL~~ CBL	341
BPN to EN	304
BPNto ES	325

Table 2A-4R ARCON 96 Input-Recptor to Source Direction [EF3 COL 2A.2-1-A]

SourcelReceptor	Receptor to Source Direction {deg.}
BPNto N	334
BPS to CBL	238
BPS to EN	248
BPS to ES	274
BPS to N	278
Fermi 3 to Fermi 2	48
Fermi 2 to Fermi 3	228

~~1. **[START COM 2.3-204]** The atmospheric dispersion factors (X/Qs) calculated for the Control Room and Technical Support Center using ARCON96 are currently under revision as part of the effort described in Detroit Edison letter NRC3-10-003, dated February 8, 2010. Detroit Edison will provide the COLA revision to reflect the new atmospheric dispersion factors (X/Qs) calculated for the Control Room and Technical Support Center under separate correspondence to the NRC by March 25, 2010. **[END COM 2.3-204]**~~

- Labor Cost Correction Factor (LCCF) - Obtained from RG 1.110, Table A-4, this factor takes into account the relative labor cost differences among geographical regions. A factor of 1.5 is assumed in the analysis based on Fermi being located in Region II as shown on RG 1.110, Figure A-1.

A value of $1,000 per person-rem is prescribed in 10 CFR 50, Appendix I.

There are three augments which fall below the $1000 per person-rem threshold value; these are a 20 gpm cartridge filter, evaporator distillate demineralizer, and 10,000 gallon tank.

If it is conservatively assumed that each radwaste treatment system augment is a "perfect" technology that reduces the effluent dose by 100 percent, the annual cost of the augment can be determined and the lowest annual cost can be considered a threshold value. The lowest-cost option for augments is a 20 gpm cartridge filter at $11,900 per year, which yields a threshold value of 11.9 person-rem whole body or thyroid dose from liquid effluents.

Neglecting the modeling of filters in the development of the source term, the addition of a 20 gpm cartridge filter would treat only 20 percent of the total analyzed liquid radwaste discharge of 105 gpm. Assuming 100 percent effectiveness, this would represent a dose reduction of 30.07 person-rem x 20 percent = 6.014 person-rem. The cost benefit ratio for this augment is therefore greater than the $1000/person-rem and not a cost benefit augment.

The addition of an evaporator distillate demineralizer is dependent on the existence of an evaporator. Even though the cost of the option, $16,400, is below the threshold value, this system cannot be incorporated without the use of an evaporator which would have a cost greater than the ~~$21,080~~ threshold. Based on the threshold of ~~$21,080~~ and the presence of the evaporator, it is determined that this augment is not cost-beneficial.

$30,700

The cost to incorporate a 10,000 gallon tank is $18,600. The purpose of such a tank is to provide additional holdup capacity to allow decay of short-lived radionuclides prior to discharge. The 10,000 gallon tank would be used for holdup, based on 105 gpm effluent discharge; holdup time would be 95 minutes. The list of nuclides in the effluent discharge can be found from the average annual liquid release in ESBWR DCD Table 12.2-19b. By examining the half-life of each nuclide, only three of the half-lives are less than the 95 minute holdup time Compared to overall

person-rem and/or $1000 per person-thyroid-rem, should be implemented in order of diminishing cost-benefit. TAC of radwaste system augments considered herein is determined following Regulatory Guide 1.110, Appendix A, assuming that Fermi 2 and Fermi 3 will have separate radwaste systems and a seven percent per year cost of money. The maximum reduction of any augment is bounded by the total annual dose exposures. As shown in Table 12.2-204, the annual whole body dose from gaseous effluents is less than ~~4.5~~ 4.48 person-rem/year whole body and ~~24.1~~ 23.8 person-rem/year thyroid for the 80-km (50-mile) population. Therefore, for augments that have a TAC below the ~~$4500 and $24,100~~ $4480 and $23,800 thresholds, the TAC is divided by the amount of the total annual dose that the augment is assumed to eliminate.

3-Ton Charcoal Absorber

The annual cost of the 3-ton charcoal absorber is $9691/year; thus, potential reductions to thyroid dose are considered. Per DCD Table 11.3-1, the total mass of charcoal in the Offgas System (OGS) is 237,000 kg (523,000 lb), or approximately 237 metric tonnes (262 tons). Addition of a 3-ton charcoal absorber provides an additional 1.1 percent capacity to the existing OGS. Section 12.2 shows that the annual airborne releases from the OGS represent approximately 4 percent of the total annual airborne releases. Additional charcoal absorbers would improve the holdup times of the xenon and krypton isotopes, but those only contribute ~~4.1~~ 4 percent to the thyroid dose. Therefore, additional charcoal absorber material could make a maximum improvement of 0.16 percent of the ~~23.5~~ 23.8 person-rem/year thyroid dose, or 0.04 person-rem/year. The $9691/year cost of the 3-ton charcoal absorber augment divided by the annual dose reduction of 0.04 person-rem/year, results in an estimated cost of over $240,000/person-rem saved. This augment exceeds the cost-benefit ratio of $1000/person-rem and is eliminated from further consideration.

Charcoal Vault Refrigeration

Charcoal vault refrigeration would improve the performance of the OGS which uses activated charcoal absorber beds to minimize and control the release of radioactive material into the atmosphere by delaying release of the offgas process stream. The annual cost of the charcoal vault refrigeration system is $29,655/year. This value exceeds ~~$24,100~~ $23,800 for person-rem/year thyroid dose and ~~$4500~~ $4480 person-rem/year whole body

dose; therefore this augment exceeds the cost-benefit ratio of $1000/person-rem and is eliminated from further consideration.

Main Condenser Vacuum Pump Charcoal/HEPA Filtration System

The annual cost of the main condenser vacuum pump charcoal/HEPA filtration system is $8210/year; thus, potential reductions to thyroid dose are considered. The addition of a main condenser vacuum pump charcoal/HEPA filtration system would provide for a reduction in the amount of iodides discharged from the plant. DCD Table 12.2-16 shows the mechanical vacuum pump contributes approximately 0.7 percent of the total iodine releases. The maximum improvement to the off-site dose would be 0.7 percent of the ~~24.1~~ 23.8 person-rem/year thyroid dose, or less than 0.20 person-rem/year. The $8210/year cost of the main condenser vacuum pump HEPA filtration system augment divided by the annual dose reduction of 0.2 person-rem/year, results in an estimated cost of over $41,000/person-rem saved. This augment exceeds the cost-benefit ratio of $1000/person-rem and is eliminated from further consideration.

15,000-cfm HEPA Filtration System

ESBWR has four structures that contain potentially radioactive air: the Fuel Building, Radwaste Building, Reactor Building, and Turbine Building. Because the buildings all have flow rates that exceed the 15,000-cfm flow rate, multiple 15,000-cfm HEPA filters would be needed. The total annual cost for each 15,000-cfm HEPA filter is $17,167 for those located in the Turbine Building, and $27,952 for all other locations. The number of HEPA filters and the total annual cost for those filters is shown in Table 11.3-201.

These values all exceed ~~$21,100~~ $23,800 for person-rem/year thyroid dose and ~~$4500~~ $4,480 person-rem/year whole body dose; therefore this augment exceeds the cost-benefit ratio of $1000/person-rem and is eliminated from further consideration.

Charcoal/HEPA Filtration Systems

Table A-1 of Regulatory Guide 1.110 lists several charcoal/HEPA filtration system sizes, 1000-cfm, 15,000-cfm, and 30,000-cfm. It is assumed that these are to be combined in the most economical manner to envelope the building flow rates. There are different direct costs for the 15,000-cfm and 30,000-cfm systems depending on their location.

ESBWR has four structures that contain potentially radioactive air: the Fuel Building, Radwaste Building, Reactor Building, and Turbine Building. The exhaust systems for these buildings and their flow rates are listed in Table 11.3-201.

Because the buildings all have flow rates that exceed the 30,000-cfm flow rate, combinations of 1000-cfm, 15,000-cfm, and 30,000-cfm charcoal/HEPA filters are needed. The total annual cost for each 1000-cfm charcoal/HEPA filter is $8231; each 15,000-cfm charcoal/HEPA filter is $33,286 for those located in the Turbine Building, and $34,792 for all other locations; and each 30,000-cfm charcoal/HEPA filter is $54,958 for those located in the Turbine Building, and $57,578 for all other locations. The number of HEPA filters and the total annual cost for those filters is shown in Table 11.3-202.

$23,800

$4480

These values all exceed ~~$24,100~~ for person-rem/year thyroid dose and ~~$4500~~ person-rem/year whole body dose; therefore this augment exceeds the cost-benefit ratio of $1000/person-rem and is eliminated from further consideration.

600-ft^3 Gas Decay Tank

The gas decay tank would be used as an augment to the OGS. The gas decay tank would be utilized to allow noble gas decay before release through the exhaust. Based on the OGS flow rate of 54 m^3/hr (31.8 cfm) (DCD Table 12.2-15), the average residence time in the decay tank is 18.9 minutes.

The total tank size would need to be sized for 4.48 hours (Kr-85m half-life) of hold-up to impact the half-lives of the Ar and Kr isotopes (with the exception of Kr-85). Fifteen 600 ft^3 tanks would be required to provide a hold-up of 4.48 hours. Each 600 ft^3 tank has a total annual cost of $9036, and 15 tanks would cost over $135,000. This value exceeds the ~~$24,100~~ threshold for person-rem/year thyroid dose, and the ~~$4500~~ person-rem/year whole body dose; therefore this augment is not cost beneficial for dose reduction.

$23,800

$4480

Conclusion

There are no gaseous radwaste system augments that are cost beneficial to implement for Fermi 3.

Instrument calibrators are normally used for calibrating gamma dose rate instrumentation. These may be self-contained, heavily shielded, multiple source calibrators. Beta and alpha radiation sources are also available for instrument calibration. Calibration sources are traceable to the National Institute of Standards and Technology, or equivalent.

Radiography sources are surveyed upon entry to the site. Radiation protection personnel maintain copies of the most recent leak test records for owner-controlled sources. Contractor radiography personnel provide copies of the most recent leak test records upon radiation protection personnel request. Radiography is conducted in accordance with approved procedures.

12.2.2.1 Airborne Releases Offsite

Replace this section with the following.

EF3 COL 12.2-2-A

Airborne sources are calculated using the source terms given in Section 11.1.

The bases for these calculations are shown in Table 12.2-15R.

conservative

The ESBWR standard design employs three ventilation stacks (airborne release points). Individual stacks service the ventilation flows from the Reactor/Fuel Buildings (RB/FB), the Turbine Building (TB) and the Radwaste Building (RWB). The offsite airborne release analysis of the ESBWR ventilation stack design employs ~~separate~~ long term atmospheric dispersion (X/Q) and deposition (D/Q) parameter values for each release location. Fermi site-specific values for these parameters are shown in Table 12.2-15R.

The subject X/Q and D/Q values in Table 12.2-15R are used in the calculation of the gaseous effluent normal operation doses in . Calculation of site-specific doses is discussed in Subsection 12.2.2.2.

Table 12.2-15R contains values used in calculating the annual airborne

release source term. These source terms are provided in DCD Table 12.2-16. Design basis noble gas, iodine, and other fission product concentrations are taken from the tables in DCD Chapter 11. Specific details and information on the derivation of the airborne source terms are provided in DCD Appendix 12B.

Annual Releases

Based upon the above criteria, the normal operating source terms are given in DCD Table 12.2-16 and a comparison to 10 CFR 20 criteria is given in Table 12.2-17R. ~~For determining the maximum activity concentration at the site boundary, the site specific X/Q values from each vent stack are conservatively assumed to be 800 meters (0.5 mile) from the site boundary.~~ This table also shows the maximum activity concentration for each nuclide at the site boundary from combined operation of Fermi 2 and Fermi 3, and the corresponding concentration limit from 10 CFR 20, Appendix B, Table 2, Column 1.

12.2.2.2 Airborne Dose Evaluation Offsite

Replace this section with the following.

EF3 COL 12.2-2-A

The bases for the calculation of Fermi 3-specific airborne offsite doses are provided in Table 12.2-18aR. The annual gaseous pathway doses are provided in . The methodology in RG 1.109 was used in determining the annual airborne dose values. The bases include values that are default parameters in RG 1.109 and other values that are Fermi 3 site-specific inputs. As part of the analysis, several sensitivities were performed to account for potentially limiting combinations of atmospheric dispersion, deposition and ingestion pathways. The ~~SSE~~ direction provides the limiting ~~plume dose~~. The WNW direction at the site boundary provides the limiting dose for ~~non-milk iodine and particulate sources. This is conservative relative to the doses at the actual residences, vegetable gardens and meat cows.~~ The WNW direction ~~at the actual locations~~ provides the dose ~~contribution~~ due to milk consumption. ~~In this case the cow and goat milk are both included for conservatism.~~ The total dose is the sum of these individual pathways. The results of the Fermi 3 gaseous pathway dose analysis are given in

Table 12.2-18bR

NNW

ground exposure.

The NW direction provides the limiting dose for residents and consumption of vegetables.

applicable

limiting

limiting

Table 12.2-18bR

The NNW direction provides the limiting dose due to meat consumption.

12.2.2.2.1 Compliance with 10 CFR 50, Appendix I, Sections II.B and II.C

Table 12.2-201 demonstrates that offsite doses due to Fermi 3 radioactive airborne effluents comply with the regulatory dose limits in 10 CFR 50, Appendix I, Sections II.B and II.C.

12.2.2.2.2 Compliance with 10 CFR 50, Appendix I, Section II.D

Population dose is determined for the gaseous effluent releases from Fermi 3 for both whole body dose and thyroid dose. The whole body dose is 4.5 person-rem/yr as shown in Table 12.2-204. The thyroid dose is ~~24.1~~ 23.8 person-rem/yr. The cost-benefit analysis performed to consider gaseous radwaste augments to reduce doses due to gaseous effluents is presented in Section 11.3. Based on the results from the cost-benefit analyses, no augments are cost-beneficial. Therefore, Fermi 3 complies with 10 CFR 50, Appendix I, Section II.D.

12.2.2.2.3 Compliance with 10 CFR 20 Appendix B, Table 2, Column 1

Table 12.2-17R provides the gaseous effluent concentrations in comparison to the 10 CFR 20, Appendix B, Table 2, Column 1 limits. The Fermi 3 gaseous effluent concentrations comply with 10 CFR 20, Appendix B, Table 2, Column 1.

12.2.2.2.4 Compliance with 10 CFR 20.1301 and 20.1302

Compliance with 10 CFR 20.1301 and 20.1302 is demonstrated in Subsection 12.2.2.4.4 and 12.2.2.4.5, respectively.

12.2.2.4 Liquid Doses Offsite

Replace this section with the following.

EF3 COL 12.2-3-A

The ESBWR LWMS is designed with the capability to recycle 100 percent of the liquid radwaste (zero liquid release). The analysis of dose via liquid effluents is presented in order to provide a conservative representation of unit operation. Detroit Edison intends to operate Fermi 3 with zero liquid effluents.

Liquid pathway doses were calculated based on the criteria specified in DCD Section 12.2.2.3 for compliance with 10 CFR 50, Appendix I. Dose conversion factors and methodologies consistent with RGs 1.109 and

Using the Fermi 3-specific gaseous effluent release activities identified in Table 12.2-17R and the liquid effluent release activities identified in Table 12.2-19bR, the total annual doses to the MEI and the population resulting from Fermi 3 liquid and gaseous effluents are calculated and presented in Table 12.2-203 and Table 12.2-204, respectively.

The direct radiation contribution from operation of Fermi 3 is negligible. The direct dose contribution from Fermi 3 at two distances is provided in DCD Table 12.2-21. The annual dose of 5.93E-04 mrem/yr at 800 m (0.5 mi) is negligible. The distance to the site boundary from Fermi 3 (Reactor Building centerline) is at least 890 m (0.56 mi) and the increase in distance further reduces the low dose rate.

The total annual doses to the MEI and the population resulting from Fermi 2 liquid and gaseous effluents are provided in Table 12.2-203 and Table 12.2-204, respectively. The values shown are representative based on review of Fermi 2 annual radiological environmental reports (Reference 12.2-201).

The direct radiation contribution from operation of Fermi 2 is negligible. An evaluation of operating plants by the NRC states that:

> "...because the primary coolant of an LWR is contained in a heavily shielded area, dose rates in the vicinity of light water reactors are generally undetectable and are less than 1 mrem/year at the site boundary."

The NRC concludes that the direct radiation from normal operation results in "small contributions at site boundaries" (Reference 12.2-202, Section 4.6.1.2).

Table 12.2-203 shows that the total Fermi site doses resulting from the normal operation of Fermi 2 and Fermi 3 are well within the regulatory limits of 40 CFR 190.

Table 12.2-204 shows the whole body doses from liquid and gaseous effluents doses attributable to Fermi 3 for the population within 80 km (50 mi) from the Fermi site.

12.2.2.4.5 Compliance with 10 CFR 20.1302

Surveys of radiation levels in unrestricted and controlled areas and radioactive materials in effluents released to unrestricted and controlled areas are conducted to demonstrate compliance with the dose limits given in 10 CFR 20.1302 for individual members of the public.

Table 12.2-15R Airborne Sources Calculation [EF3 COL 12.2-2-A]

	Calculation Bases	
	Methodology	DCD Appendix 12B
	Noble Gas Source at t=30 min	740 MBq/sec (20,000 µCi/sec)
	I-131 Release Rate	3.7 MBq/sec (100 µCi/sec)
EF3 COL 12.2-2-A	Meteorology Boundary	Table 2.3-305 and Table 2.3-306 ~~(Residences, Vegetable Gardens and Meat-Cows conservatively assumed to be located at site boundary)~~
EF3 COL 12.2-2-A	Meteorology X/Qs	
	RWB Ventilation Stack	Table 2.3-328 through Table 2.3-330
	RB/FB Ventilation Stack	Table 2.3-332 through Table 2.3-334
	TB Ventilation Stack	Table 2.3-336 through Table 2.3-338
EF3 COL 12.2-2-A	Meteorology D/Qs	
	RWB Ventilation Stack	Table 2.3-331
	RB/FB Ventilation Stack	Table 2.3-335
	TB Ventilation Stack	Table 2.3-339
	Plant Availability Factor	0.92
	Offgas System:	
	Offgas stream temperature	100°F
	Flow rate	54 m^3/hr
	K_d (Kr)	18.5 cm^3/g
	K_d (Xe)	330 cm^3/g
	K_d (Ar)	6.4 cm^3/g
	Guard tank charcoal mass	7,500 kg (single tank)
	Adsorber tank charcoal mass	27,750 kg (each)
	Adsorber tank arrangement	2 parallel trains of 4 tanks each
	Turbine Gland Sealing System Exhaust:	
	I-131 release	0.81 Ci/yr per µCi/g of I-131 in coolant
	I-133 release	0.22 Ci/yr per µCi/g of I-133 in coolant

Table 12.2-17R Comparison of Airborne Release Concentrations with 10 CFR 20 Limit (Sheet 1 of 5) [EF3 COL 12.2-2.A]

	Fermi 3 Annual Release		Fermi 3 Concentration		Fermi 2 + 3 Concentration	10 CFR 20 Concentration Limit	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Nuclide	MBq/yr	Ci/yr	Bq/m^3	µCi/ml	µCi/ml	µCi/ml	
Kr-83m	8.5E+01	2.3E-03	1.7E-06	4.6E-17	3.6E-12	5.0E-05	7.2E-08
Kr-85m	6.6E+05	1.8E+01	1.4E-02	3.9E-13	1.4E-10	1.0E-07	1.4E-03
Kr-85	5.2E+06	1.4E+02	1.1E-01	3.1E-12	2.2E-11	7.0E-07	3.2E-05
Kr-87	1.4E+06	3.9E+01	3.2E-02	8.6E-13	3.2E-12	2.0E-08	1.6E-04
Kr-88	2.1E+06	5.6E+01	4.6E-02	1.2E-12	5.4E-11	9.0E-09	6.0E-03
Kr-89	1.4E+07	3.7E+02	7.0E-01	1.9E-11	9.8E-11	1.0E-09	9.8E-02
Xe-131m	1.5E+05	4.1E+00	3.3E-03	8.9E-14	5.8E-12	2.0E-06	2.9E-06
Xe-133m	1.9E+02	5.2E-03	3.8E-00	[illegible]	2.4E-12	6.0E-07	4.0E-06
Xe-133	4.1E+07	1.1E+03	4.0E+00	1.1E-10	1.1E-09	5.0E-07	2.1E-03
Xe-135m	2.2E+07	6.0E+02	7.8E+00	2.1E-10	2.1E-10	4.0E-08	5.3E-03
Xe-135	2.8E+07	7.5E+02	4.5E+00	1.2E-10	1.4E-10	7.0E-08	2.1E-03
Xe-137	2.8E+07	7.6E+02	1.8E+00	4.8E-11	7.1E-11	1.0E-09	7.1E-02
Xe-138	2.3E+07	6.3E+02	5.4E-01	1.5E-11	1.1E-10	2.0E-08	5.7E-03
I-131	8.7E+03	2.3E-01	4.0E-04	1.1E-14	2.2E-14	2.0E-10	1.1E-04
I-132	5.8E+04	1.6E+00	3.1E-03	8.3E-14	1.8E-13	2.0E-08	9.2E-06
I-133	4.3E+04	1.2E+00	2.3E-03	6.1E-14	1.4E-13	1.0E-09	1.4E-04

Insert Table 12.2-17R

Table 12.2-17R Comparison of Airborne Release Concentrations with 10 CFR 20 Limit (Sheet 2 of 5) [EF3 COL 12.2-2.A]

	Fermi 3 Annual Release		Fermi 3 Concentration		Fermi 2 + 3 Concentration	10 CFR 20 Concentration Limit	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Nuclide	MBq/yr	Ci/yr	Bq/m^3	µCi/ml	µCi/ml	µCi/ml	
I-134	1.1E+05	3.0E+00	5.6E-03	1.5E-13	3.4E-13	6.0E-08	5.7E-06
I-135	5.9E+04	1.6E+00	3.2E-03	8.6E-14	2.0E-13	6.0E-09	3.3E-05
H-3	2.8E+06	7.6E+01	5.5E-02	1.5E-12	1.6E-12	1.0E-07	1.6E-05
C-14	5.3E+05	1.4E+01	1.2E-02	3.2E-13	3.2E-13	3.0E-09	1.1E-04
Na-24	5.4E+00	1.5E-04	1.1E-07	2.9E-18	2.9E-18	7.0E-09	4.1E-10
P-32	1.3E+00	3.5E-05	2.6E-08	7.0E-19	7.0E-19	5.0E-10	1.4E-09
Ar-41	1.4E+03	3.8E-02	3.1E-05	8.3E-16	8.3E-16	1.0E-08	8.3E-08
Cr-51	1.8E+02	4.7E-03	1.4E-05	3.8E-16	3.8E-16	3.0E-08	1.3E-08
Mn-54	1.5E+02	4.1E-03	6.2E-05	1.7E-15	1.7E-15	1.0E-09	1.7E-06
Mn-56	1.1E+01	3.0E-04	2.2E-07	5.9E-18	5.9E-18	2.0E-08	2.9E-10
Fe-55	4.7E+01	1.3E-03	9.3E-07	2.5E-17	2.5E-17	3.0E-09	8.4E-09
Fe-59	2.0E+01	5.4E-04	4.8E-06	1.3E-16	1.3E-16	5.0E-10	2.6E-07
Co-58	4.0E+01	1.1E-03	3.8E-06	1.0E-16	1.0E-16	1.0E-09	1.0E-07
Co-60	3.2E+02	8.7E-03	1.1E-04	3.0E-15	3.0E-15	5.0E-11	6.0E-05
Ni-63	4.7E+02	1.3E-06	9.3E-10	2.5E-20	2.5E-20	1.0E-09	2.5E-11
Cu-64	6.9E+00	1.9E-04	1.4E-07	3.7E-18	3.7E-18	3.0E-08	1.2E-10

Table 12.2-17R Comparison of Airborne Release Concentrations with 10 CFR 20 Limit (Sheet 3 of 5) [EF3 COL 12.2-2.A]

	Fermi 3 Annual Release		Fermi 3 Concentration		Fermi 2 + 3 Concentration	10 CFR 20 Concentration Limit	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Nuclide	MBq/yr	Ci/yr	Bq/m^3	µCi/ml	µCi/ml	µCi/ml	
Zn-65	3.2E+02	8.6E-03	1.1E-05	3.0E-16	3.0E-16	4.0E-10	7.4E-07
Rb-89	2.0E-01	5.4E-06	4.0E-09	1.1E-19	1.1E-19	2.0E-07	5.4E-13
Sr-89	1.5E+02	3.9E-03	3.2E-06	8.6E-17	7.4E-16	2.0E-10	3.7E-06
Sr-90	1.0E+00	2.7E-05	2.2E-08	5.9E-19	5.0E-17	6.0E-12	8.3E-06
Y-90	8.1E-02	2.2E-06	1.6E-09	4.3E-20	4.3E-20	9.0E-10	4.8E-11
Sr-91	6.7E+00	1.8E-04	1.3E-07	3.6E-18	1.4E-14	5.0E-09	2.8E-06
Sr-92	4.6E+00	1.2E-04	9.1E-08	2.5E-18	2.2E-14	9.0E-09	2.4E-06
Y-91	1.7E+00	4.6E-05	3.4E-08	9.1E-19	9.1E-19	2.0E-10	4.6E-09
Y-92	3.7E+00	1.0E-04	7.3E-08	2.0E-18	2.0E-18	1.0E-08	2.0E-10
Y-93	7.2E+00	1.9E-04	1.4E-07	3.9E-18	3.9E-18	3.0E-09	1.3E-09
Zr-95	4.4E+01	1.2E-03	1.3E-05	3.4E-16	3.5E-16	4.0E-10	8.7E-07
Nb-95	2.4E+02	6.5E-03	4.8E-06	1.3E-16	1.3E-16	2.0E-09	6.5E-08
Mo-99	1.7E+03	4.5E-02	3.3E-05	9.0E-16	5.5E-15	2.0E-09	2.8E-06
Tc-99m	2.2E+00	5.9E-05	4.4E-08	1.2E-18	5.7E-14	2.0E-07	2.9E-07
Ru-103	1.0E+02	2.8E-03	2.0E-06	5.5E-17	5.9E-17	9.0E-10	6.5E-08
Rh-103m	3.5E-03	9.5E-08	6.9E-11	1.9E-21	1.9E-21	2.0E-06	9.4E-16
Ru-106	1.4E-01	3.8E-06	2.8E-09	7.5E-20	7.5E-20	2.0E-11	3.8E-09

Table 12.2-17R Comparison of Airborne Release Concentrations with 10 CFR 20 Limit (Sheet 4 of 5) [EF3 COL 12.2-2.A]

	Fermi 3 Annual Release		Fermi 3 Concentration		Fermi 2 + 3 Concentration	10 CFR 20 Concentration Limit	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Nuclide	MBq/yr	Ci/yr	Bq/m^3	µCi/ml	µCi/ml	µCi/ml	
Rh-106	4.5E-06	1.2E-10	8.9E-14	2.4E-24	2.4E-24	1.0E-09	2.4E-15
Ag-110m	1.0E-01	2.8E-06	2.0E-09	5.5E-20	5.5E-20	1.0E-10	5.5E-10
Sb-124	5.3E+00	1.4E-04	1.2E-06	3.1E-17	3.1E-17	3.0E-10	1.0E-07
Te-129m	1.6E+00	4.3E-05	3.2E-08	8.6E-19	8.6E-19	3.0E-10	2.9E-09
Te-131m	5.5E-01	1.5E-05	1.1E-08	2.9E-19	2.9E-19	1.0E-09	2.9E-10
Te-132	1.4E-01	3.8E-06	2.8E-09	7.5E-20	1.0E-15	9.0E-10	1.1E-06
Cs-134	1.8E+02	4.9E-03	3.8E-05	1.0E-15	1.1E-15	2.0E-10	5.4E-06
Cs-136	1.5E+01	4.0E-04	3.0E-07	8.2E-18	3.1E-17	9.0E-10	3.5E-08
Cs-137	2.7E+02	7.3E-03	6.4E-05	1.7E-15	1.8E-15	2.0E-10	8.9E-06
Cs-138	8.5E-01	2.3E-05	1.7E-08	4.6E-19	3.1E-14	8.0E-08	3.9E-07
Ba-140	7.8E+02	2.1E-02	1.6E-05	4.4E-16	2.3E-15	2.0E-09	1.2E-06
La-140	1.3E+01	3.5E-04	2.6E-07	7.0E-18	7.0E-18	2.0E-09	3.5E-09
Ce-141	2.6E+02	7.1E-03	5.8E-06	1.6E-16	1.7E-16	8.0E-10	2.1E-07
Ce-144	1.3E-01	3.5E-06	2.6E-09	7.0E-20	7.3E-18	2.0E-11	3.6E-07
Pr-144	1.6E-04	4.3E-09	3.2E-12	8.6E-23	8.6E-23	2.0E-07	4.3E-16
W-187	1.3E+00	3.5E-05	2.6E-08	7.0E-19	7.0E-19	1.0E-08	7.0E-11

Table 12.2-17R Comparison of Airborne Release Concentrations with 10 CFR 20 Limit (Sheet 5 of 5) [EF3 COL 12.2-2.A]

	Fermi 3 Annual Release		Fermi 3 Concentration		Fermi 2 + 3 Concentration	10 CFR 20 Concentration Limit	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Nuclide	**MBq/yr**	**Ci/yr**	**Bq/m^3**	**µCi/ml**	**µCi/ml**	**µCi/ml**	
Np-239	8.3E+01	2.2E-03	1.6E-06	4.5E-17	4.9E-14	3.0E-09	1.6E-05
Total (w/ H-3)	1.7E+08	4.6E+03	2.0E+01	5.3E-10	1.9E-09		1.9E-01
Total (w/o H-3)	1.7E+08	4.5E+03	2.0E+01	5.3E-10	1.9E-09		1.9E-01

Insert Table 12.2-17R:

Nuclide	Fermi 3 Annual Release MBq/yr	Fermi 3 Annual Release Ci/yr	Fermi 3 Concentration Bq/m^3	Fermi 3 Concentration µCi/ml	Fermi 2 + 3 Concentration µCi/ml	10 CFR 20 Concentration Limit µCi/ml	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Kr-83m	8.5E+01	2.3E-03	1.8E-06	4.8E-17	3.6E-12	5.0E-05	7.2E-08
Kr-85m	6.6E+05	1.8E+01	1.5E-02	4.0E-13	1.4E-10	1.0E-07	1.4E-03
Kr-85	5.2E+06	1.4E+02	1.2E-01	3.2E-12	2.2E-11	7.0E-07	3.2E-05
Kr-87	1.4E+06	3.9E+01	3.3E-02	8.9E-13	3.2E-12	2.0E-08	1.6E-04
Kr-88	2.1E+06	5.6E+01	4.8E-02	1.3E-12	5.4E-11	9.0E-09	6.0E-03
Kr-89	1.4E+07	3.7E+02	7.1E-01	1.9E-11	9.8E-11	1.0E-09	9.8E-02
Xe-131m	1.5E+05	4.1E+00	3.4E-03	9.3E-14	5.8E-12	2.0E-06	2.9E-06
Xe-133m	1.9E+02	5.2E-03	4.0E-06	1.1E-16	2.4E-12	6.0E-07	4.0E-06
Xe-133	4.1E+07	1.1E+03	4.0E+00	1.1E-10	1.1E-09	5.0E-07	2.1E-03
Xe-135m	2.2E+07	6.0E+02	7.8E+00	2.1E-10	2.1E-10	4.0E-08	5.3E-03
Xe-135	2.8E+07	7.5E+02	4.5E+00	1.2E-10	1.4E-10	7.0E-08	2.1E-03
Xe-137	2.8E+07	7.6E+02	1.8E+00	4.9E-11	7.2E-11	1.0E-09	7.2E-02
Xe-138	2.3E+07	6.3E+02	5.6E-01	1.5E-11	1.1E-10	2.0E-08	5.7E-03
I-131	8.7E+03	2.4E-01	4.0E-04	1.1E-14	2.2E-14	2.0E-10	1.1E-04
I-132	5.8E+04	1.6E+00	3.1E-03	8.5E-14	1.8E-13	2.0E-08	9.2E-06
I-133	4.3E+04	1.2E+00	2.3E-03	6.2E-14	1.4E-13	1.0E-09	1.4E-04

Nuclide	Fermi 3 Annual Release MBq/yr	Fermi 3 Annual Release Ci/yr	Fermi 3 Concentration Bq/m^3	Fermi 3 Concentration µCi/ml	Fermi 2 + 3 Concentration µCi/ml	10 CFR 20 Concentration Limit µCi/ml	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
I-134	1.1E+05	3.0E+00	5.7E-03	1.5E-13	3.4E-13	6.0E-08	5.7E-06
I-135	5.9E+04	1.6E+00	3.2E-03	8.7E-14	2.0E-13	6.0E-09	3.3E-05
H-3	2.8E+06	7.6E+01	5.8E-02	1.6E-12	1.6E-12	1.0E-07	1.6E-05
C-14	5.3E+05	1.4E+01	1.2E-02	3.3E-13	3.3E-13	3.0E-09	1.1E-04
Na-24	5.4E+00	1.5E-04	1.1E-07	3.1E-18	3.1E-18	7.0E-09	4.4E-10
P-32	1.3E+00	3.5E-05	2.7E-08	7.4E-19	7.4E-19	5.0E-10	1.5E-09
Ar-41	1.4E+03	3.8E-02	3.2E-05	8.6E-16	8.6E-16	1.0E-08	8.6E-08
Cr-51	1.8E+02	4.7E-03	1.4E-05	3.8E-16	3.8E-16	3.0E-08	1.3E-08
Mn-54	1.5E+02	4.1E-03	6.2E-05	1.7E-15	1.7E-15	1.0E-09	1.7E-06
Mn-56	1.1E+01	3.0E-04	2.3E-07	6.2E-18	6.2E-18	2.0E-08	3.1E-10
Fe-55	4.7E+01	1.3E-03	9.8E-07	2.7E-17	2.7E-17	3.0E-09	8.9E-09
Fe-59	2.0E+01	5.4E-04	4.8E-06	1.3E-16	1.3E-16	5.0E-10	2.6E-07
Co-58	4.0E+01	1.1E-03	3.8E-06	1.0E-16	1.0E-16	1.0E-09	1.0E-07
Co-60	3.2E+02	8.7E-03	1.1E-04	3.0E-15	3.0E-15	5.0E-11	6.0E-05
Ni-63	4.7E-02	1.3E-06	9.8E-10	2.7E-20	2.7E-20	1.0E-09	2.7E-11
Cu-64	6.9E+00	1.9E-04	1.4E-07	3.9E-18	3.9E-18	3.0E-08	1.3E-10

Nuclide	Fermi 3 Annual Release MBq/yr	Fermi 3 Annual Release Ci/yr	Fermi 3 Concentration Bq/m^3	Fermi 3 Concentration µCi/ml	Fermi 2 + 3 Concentration µCi/ml	10 CFR 20 Concentration Limit µCi/ml	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Zn-65	3.2E+02	8.6E-03	1.1E-05	3.0E-16	3.0E-16	4.0E-10	7.6E-07
Rb-89	2.0E-01	5.4E-06	4.2E-09	1.1E-19	1.1E-19	2.0E-07	5.7E-13
Sr-89	1.5E+02	3.9E-03	3.3E-06	8.9E-17	7.4E-16	2.0E-10	3.7E-06
Sr-90	1.0E+00	2.7E-05	2.3E-08	6.2E-19	5.0E-17	6.0E-12	8.3E-06
Y-90	8.1E-02	2.2E-06	1.7E-09	4.6E-20	4.6E-20	9.0E-10	5.1E-11
Sr-91	6.7E+00	1.8E-04	1.4E-07	3.8E-18	1.4E-14	5.0E-09	2.8E-06
Sr-92	4.6E+00	1.2E-04	9.6E-08	2.6E-18	2.2E-14	9.0E-09	2.4E-06
Y-91	1.7E+00	4.6E-05	3.6E-08	9.6E-19	9.6E-19	2.0E-10	4.8E-09
Y-92	3.7E+00	1.0E-04	7.7E-08	2.1E-18	2.1E-18	1.0E-08	2.1E-10
Y-93	7.2E+00	1.9E-04	1.5E-07	4.1E-18	4.1E-18	3.0E-09	1.4E-09
Zr-95	4.4E+01	1.2E-03	1.3E-05	3.4E-16	3.5E-16	4.0E-10	8.7E-07
Nb-95	2.4E+02	6.5E-03	5.1E-06	1.4E-16	1.4E-16	2.0E-09	6.9E-08
Mo-99	1.7E+03	4.5E-02	3.5E-05	9.5E-16	5.5E-15	2.0E-09	2.8E-06
Tc-99m	2.2E+00	5.9E-05	4.6E-08	1.2E-18	5.7E-14	2.0E-07	2.9E-07
Ru-103	1.0E+02	2.8E-03	2.2E-06	5.8E-17	6.2E-17	9.0E-10	6.9E-08
Rh-103m	3.5E-03	9.5E-08	7.3E-11	2.0E-21	2.0E-21	2.0E-06	9.9E-16
Ru-106	1.4E-01	3.8E-06	2.9E-09	7.9E-20	7.9E-20	2.0E-11	4.0E-09

	Fermi 3 Annual Release		Fermi 3 Concentration		Fermi 2 + 3 Concentration	10 CFR 20 Concentration Limit	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Nuclide	**MBq/yr**	**Ci/yr**	**Bq/m^3**	**µCi/ml**	**µCi/ml**	**µCi/ml**	
Rh-106	4.5E-06	1.2E-10	9.4E-14	2.5E-24	2.5E-24	1.0E-09	2.5E-15
Ag-110m	1.0E-01	2.8E-06	2.2E-09	5.8E-20	5.8E-20	1.0E-10	5.8E-10
Sb-124	5.3E+00	1.4E-04	1.2E-06	3.1E-17	3.1E-17	3.0E-10	1.0E-07
Te-129m	1.6E+00	4.3E-05	3.3E-08	9.1E-19	9.1E-19	3.0E-10	3.0E-09
Te-131m	5.5E-01	1.5E-05	1.2E-08	3.1E-19	3.1E-19	1.0E-09	3.1E-10
Te-132	1.4E-01	3.8E-06	2.9E-09	7.9E-20	1.0E-15	9.0E-10	1.1E-06
Cs-134	1.8E+02	4.9E-03	3.9E-05	1.0E-15	1.1E-15	2.0E-10	5.4E-06
Cs-136	1.5E+01	4.0E-04	3.2E-07	8.6E-18	3.2E-17	9.0E-10	3.5E-08
Cs-137	2.7E+02	7.3E-03	6.4E-05	1.7E-15	1.8E-15	2.0E-10	9.0E-06
Cs-138	8.5E-01	2.3E-05	1.8E-08	4.8E-19	3.1E-14	8.0E-08	3.9E-07
Ba-140	7.8E+02	2.1E-02	1.7E-05	4.6E-16	2.4E-15	2.0E-09	1.2E-06
La-140	1.3E+01	3.5E-04	2.7E-07	7.4E-18	7.4E-18	2.0E-09	3.7E-09
Ce-141	2.6E+02	7.1E-03	6.1E-06	1.6E-16	1.7E-16	8.0E-10	2.2E-07
Ce-144	1.3E-01	3.5E-06	2.7E-09	7.4E-20	7.3E-18	2.0E-11	3.6E-07
Pr-144	1.6E-04	4.3E-09	3.3E-12	9.1E-23	9.1E-23	2.0E-07	4.5E-16
W-187	1.3E+00	3.5E-05	2.7E-08	7.4E-19	7.4E-19	1.0E-08	7.4E-11
Np-239	8.3E+01	2.2E-03	1.7E-06	4.7E-17	4.9E-14	3.0E-09	1.6E-05
Total (w/ H-3)	1.7E+08	4.6E+03	2.0E+01	5.3E-10	1.9E-09		1.9E-01

	Fermi 3 Annual Release		Fermi 3 Concentration		Fermi 2 + 3 Concentration	10 CFR 20 Concentration Limit	Fermi 2 + 3 Fraction of 10 CFR 20 Limit
Nuclide	**MBq/yr**	**Ci/yr**	**Bq/m^3**	**µCi/ml**	**µCi/ml**	**µCi/ml**	
Total (w/o H-3)	1.7E+08	4.5E+03	2.0E+01	5.3E-10	1.9E-09		1.9E-01

Table 12.2-18bR Gaseous Pathway Doses to the MEI [EF3 COL 12.2-2-A]

		Fermi 3		
		Whole Body	Thyroid	Skin
Location	Pathway	Annual Dose (mrem/year)		
Site Boundary (1131 m [0.7 mi] SSE)	Plume	1.0E-01	1.05E-01	2.53E-01
	Ground (SB)	2.57E-01	2.57E-01	3.01E-01
	Vegetable (SB)			
	Adult	1.08E-01	4.50E+00	4.18E-02
	Teen	1.37E-01	6.24E+00	7.02E-02
	Child	2.44E-01	1.21E+01	1.71E-01
	Meat Cow (SB)			
	Adult	2.39E-02	1.66E-01	1.69E-02
	Teen	1.82E-02	1.22E-01	1.42E-02
	Child	3.07E-02	1.89E-01	2.66-02
	Inhalation (SB)			
	Adult	1.73E-03	1.47E-01	8.61E-04
	Insert Table 12.2-18bR			
	Teen	1.76E-03	1.91E-01	8.69E-04
Site Boundary (SB) (919 m [0.57 mi] WNW)	Child	1.54E-03	2.34E-01	7.67E-04
	Infant	9.28E-04	2.13E-01	4.41E-04
In direction of Residence, GArden, Meat Cow, Goat Milk, and Cow Milk (WNW)	Goat Milk (3704 m [2.3 mi])			
	Adult	8.44E-03	3.25E-01	1.85E-03
	Teen	1.01E-02	5.15E-01	3.35E-03
	Child	1.43E-02	1.03E+00	8.15E-03
	Infant	2.43E-02	2.49E+00	1.70E-02
	Cow Milk (3513 m [2.18 mi])			
	Adult	4.81E-03	2.63E-01	1.97E-03
	Teen	6.89E-03	4.17E-01	3.60E-03
	Child	1.28E-02	8.31E-01	8.80E-03
	Infant	2.38E-02	2.02E+00	1.83E-02
	Total (Includes Plume)			

Table 12.2-18bR Gaseous Pathway Doses to the MEI [EF3 COL 12.2-2-A]

Location	Pathway	Fermi 3		
		Whole Body	Thyroid	Skin
		Annual Dose (mrem/year)		
	Adult	5.09E-01	5.76E+00	6.17E-01
	Teen	5.36E-01	7.85E+00	6.46E-01
	Child	6.66E-01	1.47E+01	7.69E-01
	Infant	4.11E-01	5.08E+00	5.90E-01

Notes:

1. There are no infant doses for the vegetables and meat cow pathways because infants do not consume these foods.
2. 1 mrem = 0.01 mSv.

Insert Table 12.2-18bR

Location	Pathway	Annual Dose (mrem/yr)			
		Whole Body	Thyroid	Bone	Skin
Site Boundary (769 m [0.48 mi] NNW)	Plume	1.24E-01	1.24E-01	1.24E-01	2.96E-01
Site Boundary (769 m [0.48 mi] WNW)	**Radioiodines and Particulates:**				
	Ground	3.28E-01	3.28E-01	3.28E-01	3.85E-01
	Inhalation				
	Adult	2.29E-03	1.95E-01	1.29E-03	1.13E-03
	Teen	2.33E-03	2.53E-01	1.79E-03	1.14E-03
	Child	2.05E-03	3.10E-01	2.40E-03	1.00E-03
	Infant	1.24E-03	2.83E-01	1.71E-03	5.78E-04
	Total (Iodine & Particulates)				
	Adult	3.30E-01	5.23E-01	3.29E-01	3.86E-01
	Teen	3.30E-01	5.81E-01	3.30E-01	3.86E-01
	Child	3.30E-01	6.38E-01	3.30E-01	3.86E-01
	Infant	3.29E-01	6.11E-01	3.30E-01	3.86E-01
Residence (957 m [0.59 mi] + Garden (960 m [0.60 mi] NW)	**Radioiodines and Particulates:**				
	Ground	2.25E-01	2.25E-01	2.25E-01	2.65E-01
	Vegetable				
	Adult	9.57E-02	3.84E+00	2.63E-01	3.81E-02
	Teen	1.22E-01	5.32E+00	4.40E-01	6.39E-02
	Child	2.19E-01	1.04E+01	1.06E+00	1.55E-01
	Inhalation				
	Adult	1.57E-03	1.32E-01	8.54E-04	8.05E-04
	Teen	1.60E-03	1.72E-01	1.19E-03	8.12E-04
	Child	1.40E-03	2.10E-01	1.59E-03	7.17E-04
	Infant	8.45E-04	1.91E-01	1.13E-03	4.13E-04
	Total (Iodine & Particulates)				
	Adult	3.22E-01	4.20E+00	4.89E-01	3.04E-01
	Teen	3.49E-01	5.72E+00	6.66E-01	3.30E-01
	Child	4.45E-01	1.08E+01	1.29E+00	4.21E-01
	Infant	2.26E-01	4.16E-01	2.26E-01	2.65E-01
Meat Cow (4754 m [2.95 mi] NNW)	**Radioiodines and Particulates:**				
	Ground	5.04E-03	5.04E-03	5.04E-03	5.91E-03
	Cow Meat				
	Adult	1.11E-03	4.38E-03	4.89E-03	9.65E-04
	Teen	8.95E-04	3.28E-03	4.13E-03	8.12E-04
	Child	1.61E-03	5.25E-03	7.75E-03	1.53E-03
	Inhalation				
	Adult	8.74E-05	6.59E-03	3.75E-05	5.62E-05
	Teen	9.00E-05	8.53E-03	5.21E-05	5.67E-05
	Child	8.06E-05	1.04E-02	7.00E-05	5.01E-05
	Infant	4.85E-05	9.47E-03	5.05E-05	2.88E-05

Location	Pathway	Annual Dose (mrem/yr)			
		Whole Body	Thyroid	Bone	Skin
	Total (Iodine & Particulates)				
	Adult	6.24E-03	1.60E-02	9.97E-03	6.93E-03
	Teen	6.02E-03	1.68E-02	9.22E-03	6.78E-03
	Child	6.73E-03	2.07E-02	1.29E-02	7.49E-03
	Infant	5.09E-03	1.45E-02	5.09E-03	5.94E-03
Milk Cow (3363 m [2.09 mi] WNW)	**Radioiodines and Particulates:**				
	Ground	1.41E-02	1.41E-02	1.41E-02	1.65E-02
	Cow Milk				
	Adult	5.23E-03	2.84E-01	1.31E-02	2.10E-03
	Teen	7.46E-03	4.50E-01	2.40E-02	3.84E-03
	Child	1.38E-02	8.97E-01	5.85E-02	9.40E-03
	Infant	2.56E-02	2.18E+00	1.12E-01	1.96E-02
	Inhalation				
	Adult	1.74E-04	1.35E-02	7.63E-05	1.11E-04
	Teen	1.80E-04	1.75E-02	1.06E-04	1.12E-04
	Child	1.63E-04	2.14E-02	1.42E-04	9.87E-05
	Infant	9.89E-05	1.95E-02	1.04E-04	5.68E-05
	Total (Iodine & Particulates)				
	Adult	1.95E-02	3.12E-01	2.73E-02	1.87E-02
	Teen	2.17E-02	4.81E-01	3.82E-02	2.05E-02
	Child	2.80E-02	9.33E-01	7.27E-02	2.60E-02
	Infant	3.98E-02	2.21E+00	1.26E-01	3.61E-02
Milk Goat (3554 m [2.21 mi] WNW)	**Radioiodines and Particulates:**				
	Ground	1.25E-02	1.25E-02	1.25E-02	1.46E-02
	Goat Milk				
	Adult	9.11E-03	3.48E-01	1.57E-02	1.98E-03
	Teen	1.09E-02	5.52E-01	2.87E-02	3.60E-03
	Child	1.54E-02	1.10E+00	6.97E-02	8.75E-03
	Infant	2.61E-02	2.67E+00	1.29E-01	1.82E-02
	Inhalation				
	Adult	1.58E-04	1.22E-02	6.85E-05	1.02E-04
	Teen	1.64E-04	1.59E-02	9.51E-05	1.03E-04
	Child	1.48E-04	1.93E-02	1.28E-04	9.07E-05
	Infant	8.99E-05	1.76E-02	9.30E-05	5.22E-05
	Total (Iodine & Particulates)				
	Adult	2.17E-02	3.73E-01	2.83E-02	1.67E-02
	Teen	2.35E-02	5.81E-01	4.12E-02	1.83E-02
	Child	2.80E-02	1.13E+00	8.23E-02	2.35E-02
	Infant	3.87E-02	2.70E+00	1.42E-01	3.29E-02

Table 12.2-201 Comparison of Annual Doses to the MEI from Gaseous Effluents

[EF3 COL 12.2-2-A]

Type of Dose	Location	Fermi 3	10 CFR 50 Limit
Gamma Air (mrad/yr)	Site Boundary (1131 m [0.70 mi] SSE)	1.62E-01	10
Beta Air (mrad/yr)	Site Boundary (1131 m [0.70 mi] SSE)	2.00E-01	20
Whole Body (mrem/yr)	Site Boundary (1131 m [0.70 mi] SSE)	6.66E-01	5
Skin (mrem/yr)	Site Boundary (1131 m [0 Insert Table 12.2-201	7.69E-01	15
Iodines and Particulates – Max Organ Thyroid (mrem/yr)	WNW Direction, Site Boundary (919 m [0.57 mi]) for Residence, Garden and Meat Cow 3704 m [2.3 mi} for Goat Milk 3513 m [2.18 mi]) for Cow Milk	1.47E+01	15

1 mrad = 0.01 mGy
1 mrem = 0.01 mSv

Insert Table 12.2-201

Type of Dose	Location	Fermi 3	10 CFR50 Limit
Gamma Air (mrad/yr)	Site Boundary (769 m [0.48 mi] NNW)	1.90E-01	10
Beta Air (mrad/yr)	Site Boundary (769 m [0.48 mi] NNW)	2.33E-01	20
Whole Body (mrem/yr) [Includes Plume Exposure]	Table 12.2-18bR	5.69E-01	5
Skin (mrem/yr) [Includes Plume Exposure]	Table 12.2-18bR	7.17E-01	15
Iodines and Particulates – Max Organ Thyroid (mrem/yr)	Table 12.2-18bR	1.08E+01	15

1 mrad = 0.01 mGy
1 mrem = 0.01 mSv

Table 12.2-203 Comparison of Site Doses to the MEI

[EF3 COL 12.2-2-A] [EF3 COL 12.2-3-A]

Type of Dose	Fermi 3 (ESBWR) Liquid	Gaseous	Total	Fermi 2	Site Total[1]	40 CFR 190 Limit
Whole Body (mrem/yr)	0.006	0.67	0.68	4.68	5.36	25
Thyroid (mrem/yr)	0.026	Insert Table 12.2-203		2.66	17.39	75
Bone (mrem/yr)	0.088	1.81	1.90	0.052	1.95	25

Notes:

1. This site total dose includes the Fermi 3 total dose and the dose from Fermi 2.
2. 1 mrem = 0.01 mSv

Insert Table 12.2-203

Type of Dose	Fermi 3 (ESBWR) Liquid	Gaseous	Total	Fermi 2	Site Total (1)	40 CFR 190 Limit
Whole Body (mrem/yr)	0.006	0.569	0.58	4.68	5.26	25
Thyroid (mrem/yr)	0.026	10.8	10.83	2.66	13.49	75
Bone (mrem/yr)	0.088	1.29	1.38	0.05	1.43	25

Table 12.2-204 Collective Total Body (Population) Doses Within 50 Miles [EF3 COL 12.2-2-A] [EF3 COL 12.2-3-A]

Units in person-rem/yr

	Fermi 3
Total Body (Liquid)	14.9
Bone (Liquid)	104.2
Thyroid (Liquid)	30.1
Total Body (Gaseous)	4.5
Max Organ – Thyroid (Gaseous)	~~24.1~~ 23.8

1 rem = 0.01 Sv