AGRICULTURAL STATISTICS
SOUTHWEST MICHIGAN(a)

Crop	1966		1980	
	Percent of State	Total Production for State	Percent of State	Total Production for State
Corn	14.8	94,269,000 Bu	15.8	247,000,000 Bu
Wheat	10.9	30,480,000 Bu	7.0	35,200,000 Bu
Soybeans	6.6	10,800,000 Bu	8.4	30,400,000 Bu
Dry Beans	0.2	7,610,000 Cwt	0.4	7,448,000 Cwt
Barley	21.2	1,260,000 Bu	4.0	1,113,000 Bu
Oats	9.7	24,772,000 Bu	9.7	20,100,000 Bu
Fruit	49.2	575,450 tons	57.8(b)	602,760 tons(b)
Vegetables	28.1	574,830 tons	26.3(b)	120,137 acres(b)
Livestock				
Cattle & Calves	11.0	1,769,000	13.8	1,310,000
Milk Cows	11.5	653,000	14.0	395,000
Hens & Pullets	27.4	7,151,000	33.9	6,400,000
Sheep & Lambs	6.9	195,000	8.5	132,000
Hogs & Pigs	25.1	636,000	41.2	830,000

(a) Includes: Van Buren, Berrien, Cass, Kalamazoo, Allegan, Ottawa and Kent Counties

(b) This data based on 1978 - No data is available for 1980

POPULATION RELATED TO SELECTED LAND USE CATEGORIES(a)

MOTELS AND RENTAL COTTAGES(b)

Map Code	Name	Sector Location	Units	Population
	South Haven			
A1	Sunset Cottages	NNE/5-10	20	60
A2	Lake Bluff Motel	NNE/3-4	52	156
A3	Sleepy Hollow Resort	NNE/5-10	80	240
A4	Sunny Brook Farm	NE/5-10	40	120
A5	South Haven Motel	NNE/5-10	10	30
A6	Sun'n Sand Resort	NNE/5-10	25	75
A7	Econolodge	NE/5-10	60	180
A8	Guest House Inn	NE/5-10	54	162
A9	Hampton Inn	NE/5-10	62	186
A10	Holiday Inn	NE/5-10	64	192
A11	Hotel Nichols	NNE/5-10	9	27
A12	Old Harbor Inn	NNE/5-10	37	111
A13	Michi-Mona-Mac Lakeshore	NNE/5-10	6	18
	Potential Daily Transient Population		**519**	**1557**

(a) Data derived from 1999-2000 commercial and institutional listings.
(b) Population based on three persons per unit. Assume peak season occupancy.

POPULATION RELATED TO SELECTED LAND USE CATEGORIES(a)

BED AND BREAKFAST (c)

Map Code	Name	Sector Location	Units	Population
	South Haven			
B1	A Country Place	NNE/5-10	9	18
B2	Arundel House	NNE/5-10	7	14
B3	Carriage House on the Harbor	NNE/5-10	11	22
B4	Last Resort Bed and Breakfast	NNE/5-10	(d)	
B5	Sand Castle Inn	NNE/5-10	8	16
B6	Victoria Bed and Breakfast	NNE/5-10	24	48
B7	Yelton Manor	NNE/5-10	17	34
	Potential Weekly Transient Population		**76+**	**152+**

BED and BREAKFASTS - Most bed and breakfast are full in the summer and fall and then usually busy on weekends in the spring and the winter. They had an average of 6 employees in each house; some had more.

(a) Data derived from 1999-2000 commercial and institutional listings.
(c) Population based on two persons per unit.
(d) No response to inquiry.

POPULATION RELATED TO SELECTED LAND USE CATEGORIES (a)

CAMPGROUNDS AND BEACHES (e)

Map Code	Name	Sector Location	Campsites	Peak Instantaneous Use (f)
C1	Covert Township Park	SSW/1-2	85	540
C2	Jensen's Travel Trailer Park & Campgrounds	NNE/5-10	68	272
C3	Van Buren State Park	NNE/0-1	220/490 (g)	2840
C4	Singing Sand RV Park	NNE/5-10	25 (est.)	100
C5	Dune Lake	S/3-4	86	344
C6	North Beach/South Beach	NNE/5-10	0	3200
C7	South Haven Municipal and Private Marinas	NNE/5-10	1163 slips	2326
Potential Peak Instantaneous Transient Population			**484**	**9622**

(a) Data derived from 1999-2000 commercial and institutional listings.
(e) Estimate does not account for annual festivals and special events, which can draw significant weekend crowds in.
(f) Population estimate for typical peak weekend during the 14-week summer season (the majority of park usage from Memorial Day through Labor Day). Potential population based on four persons per campsite or per day-use vehicle (vehicle counts provided by park managers).
(g) Numbers are for campsites (220) and additional parking spaces for day users (490) and assumes four people per vehicle at a maximum.

POPULATION RELATED TO SELECTED LAND USE CATEGORIES (a)

MEDICAL AND EDUCATIONAL RELATED FACILITIES

Map Code	Name	Sector Location	Population
	Medical Facilities		
M1	South Haven Community Hospital	NNE/5-10	341
M2	Watervliet Hospital	SSE/5-10	250
M3	Countryside Nursing Home	NNE/5-10	90
M4	South Haven Healthcare Center	NNE/5-10	237
	Total		**918**
	Educational Facilities		
S1	South Haven Public Schools and Parochial School	NNE/5-10	2728
S2	Maple Grove Elementary	NE/4-5	110
S3	Coloma Public Schools	S/5-10	2346
S4	Watervliet Public Schools	SSE/5-10	1303
S5	Bangor Public Schools	E/5-10	1689
S6	Covert Public Schools	SE/2-3	700
	Total		**8876**

(a) Data derived from 1999-2000 commercial and institutional listings.

PEOPLE PER DWELLING BY TOWNSHIP AND CITY
(1990 CENSUS)

Location	Population (1990)	Population (1998 est.)	Dwelling Units	Pop/DU
ALLEGAN COUNTY				
Casco Township	2894	2851	1092	2.65
VAN BUREN COUNTY				
South Haven City	5563	5296	2180	2.55
South Haven Township	4267	4365	1588	2.69
Geneva Township	3156	3565	1139	2.77
Bangor City	1894	1905	732	2.59
Bangor Township	1948	1613	695	2.80
Covert Township	2773	2495	1082	2.56
Hartford Township	3046	3088	1025	2.96
BERRIEN COUNTY				
Watervliet City	1867	1814	701	2.66
Watervliet Township	2919	2896	1205	2.42
Coloma City	1679	1594	636	2.64
Coloma Township	5115	5326	1903	2.68
Hagar Township	4113	3993	1543	2.67

Source: U.S. Census Bureau, 1990 Census (http://www.census.gov/) and 1990-1998 Places and Minor Civil Divisions (MCDs) Population Estimates. Also accessed through CIESIN, Demographic Data Viewer, http://plue.sedac.ciesin.org/plue/tmp/21565.ddv20/attdata.dat).

PERMANENT RESIDENT POPULATION DISTRIBUTION
(1990 CENSUS)

	Distance From Plant (Miles)						
Direction	**0-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**Total**
NNE	0	215	322	257	1672	7084	9550
NE	0	60	198	198	332	1682	2470
ENE	0	27	168	153	88	1665	2101
E	0	28	88	115	45	3078	3354
ESE	7	59	146	86	75	385	758
SE	7	67	136	374	69	1329	1982
SSE	6	19	21	92	100	4144	4382
S	17	7	0	50	98	6068	6240
SSW	0	7	283	27	51	3009	3377
Total	**37**	**489**	**1342**	**1352**	**2530**	**28,444**	**34,194**

TRANSIENT POPULATION RELATED TO EDUCATIONAL FACILITIES WITHIN 10 MILES OF PALISADES
(1990 CENSUS (a))

Direction	Distance From Plant (Miles) 0-3	3-4	4-5	5-10		Weight Factor (b)	Nonresident Population
NNE				2728	(5 miles)	0	0
NE		110			(4 miles)	0	0
E				1689	(10 miles)	0.5	845
SE		700			(3.5 miles)	0	0
SSE				1303	(10 miles)	0.5	652
S				2346	(10 miles)	0.5	1173
	Total Nonresident Population						2670

(a) Data from telephone surveys conducted in January 2000.

(b) Based on the assumption that no students are bused more than five miles. This means that all schools within five miles of the Plant are indigenous population and, conversely, schools at the ten-mile limit have 50 percent of the student body from outside the annulus.

MAJOR EMPLOYER'S WORK FORCE DISTRIBUTION WITHIN 10 MILES OF THE PALISADES PLANT (a)

Distance From Plant (Miles)

Direction	0-1	1-2	2-3	3-4	4-5	5-10	Total
NNE	-	-	-	-	436 (b)	423 (c)	859+
NE	-	-	-	-	(d)	-	-
ENE	-	35	-	(d)	-	-	35
E	(d) (e)	-	-	-	-	116	116+
ESE	-	-	-	-	-	-	-
SE	-	-	-	(d)	-	-	-
SSE	-	-	-	-	-	-	-
S	-	-	-	-	-	-	-
SSW	-	-	-	-	-	-	-
Total	**-**	**35**	**-**	**-**	**436+**	**539**	**1010+**

(a) Data from telephone surveys conducted in January and February 2000. Only those employers with more than 7-10 employees included in totals. Number of employees is total for each facility. Many of the facilities have more than one shift so the people present at any one time should be less than the value shown. Also, many employees may have been counted as part of the permanent resident population. Covert Generating Station added October 2003.

(b) South Haven Industrial Park (5 of 15 employers did not respond to inquiry).

(c) Industries located in South Haven (majority of employers did not respond to inquiry).

(d) Data from previous survey was unconfirmed. No major employers located.

(e) Data does not include Palisades plant workers.

MOTELS AND COTTAGES WITHIN 10 MILES OF PALISADES PLANT
(NUMBER OF SUMMER UNITS AVAILABLE (b))

	Distance From Plant (Miles)						
Direction	**0-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**Total**
NNE	-	-	-	52	-	187(76)	315
NE	-	-	-	-	-	280	280
ENE	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-
SSE	-	-	-	-	-	-	-
S	-	-	-	-	-	-	-
SSW	-	-	-	-	-	-	-
Total	**-**	**-**	**-**	**52**	**-**	**467(76)**	**595**

(a) Data from telephone surveys conducted in January 2000.

(b) Number in parentheses are bed and breakfast units. Assuming a 3-person-per-unit occupancy for hotels and motels and a 2-person occupancy for bed and breakfasts, there would be a potential population for these facilities of 1709.

CAMPSITES WITHIN 10 MILES OF PALISADES PLANT (a)

	Distance From Plant (Miles)						
Direction	**0-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**Total**
NNE	220 (b)	-	-	-	-	93 (d)	313
NE	-	-	-	-	-	-	-
ENE	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-
SSE	-	-	-	-	-	-	-
S	-	-	-	86	-	-	86
SSW	-	85 (c)	-	-	-	-	85
Totals	**220**	**85**	**-**	**86**	**-**	**93**	**484**

(a) Data is from telephone surveys conducted in January 2000. Population numbers based on estimates of vehicles per year. Assuming four persons per site other than the two sites with estimated capacities, there could be a grand total of 4096 people associated with the facilities.

(b) Manager's estimated maximum population is 2840.

(c) Park attendants' estimated maximum population 540.

(d) Does not include boat slips at marinas in the estimate.

MAXIMUM PROBABLE POPULATION FOR ALL CATEGORIES (a)

	Distance From Plant (Miles)						
Direction	**0-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**Total**
N	0	0	0	0	0	0	0
NNE	2,840	215	322	413	1672	13,695 (b)	19,157
NE	0	60	198	198	332	2,522	3,310
ENE	0	27	168	153	88	1,665	2,101
E	0	28	88	115	45	3,923	4,199
ESE	7	59	146	86	75	385	758
SE	7	67	136	374	69	1,329	1,982
SSE	6	19	21	92	100	4,796	5,034
S	17	7	0	394	98	7,241	7,757
SSW	0	547	283	27	51	3,009	3,917
Total	**2,877**	**1,029**	**1,362**	**1,852**	**2,530**	**38,565**	**48,215**

Maximum probable population for 2000 in all sectors, 0-5 miles from site 9,650

Maximum probable population for 2000 in all sectors, 0-10 miles from site 48,215

(a) This table includes only permanent residents and transient residents (overnight visitors to hotels, motels, bed-and-breakfast establishments, and campsites; day visitors to beaches; and non-resident school population). Inclusion of employee and institutional populations (including hospitals and government offices) will result in significant double counting. Therefore, these values have not been incorporated in the table.

(b) Includes 3200 from the North and South Beaches and 2326 from the South Haven Marinas.

POPULATION GROWTH AND DENSITY BY COUNTY
(Counties Within 50 Miles of Palisades)

Michigan County	Area Mi^2	1960 Census	Density Pop/Mi^2	1970 Census	Density Pop/Mi^2	1980 Census	Density Pop/Mi^2	1990 Census	Density Pop/Mi^2	2000 Pop Est	Est Pop Density	2010 Pop Est	Est Pop Density	2020 Pop Est	Est Pop Density
Allegan	827	57,729	70	66,575	80	81,555	99	98,509	119	104,100	126	116,600	141	123,600	149
Barry	556	31,738	57	38,166	69	45,781	82	50,057	90	54,900	99	59,800	108	62,800	113
Berrien	570	149,865	263	168,875	296	171,276	300	161,378	283	159,300	279	160,900	282	162,500	285
Cass	492	36,932	75	43,312	88	49,499	101	49,477	101	49,200	100	49,700	101	50,200	102
Kalamazoo	562	169,712	302	201,550	359	212,278	378	223,411	398	230,000	409	234,600	418	236,900	422
Kent	856	363,187	424	411,044	480	444,506	519	500,631	585	549,000	641	587,400	686	616,800	720
Ottawa	566	98,719	175	128,181	227	157,174	278	187,768	332	229,400	406	254,600	450	267,300	473
St Joseph	504	42,332	84	47,392	94	56,083	111	58,913	117	61,400	122	63,200	125	63,800	127
Van Buren	611	48,395	79	56,173	92	66,814	109	70,060	115	76,300	125	81,600	134	85,700	140
TOTALS	5,544	998,609	180	1,161,268	209	1,284,966	232	1,400,204	253	1,513,600	273	1,608,400	290	1,669,600	301
Indiana County															
Elkhart	464	106,790	230	126,529	273	137,330	296	156,198	337	175,800	379	193,400	417	203,000	438
La Porte	598	95,111	159	105,342	176	108,632	182	107,066	179	115,200	193	124,400	208	130,600	218
St Joseph	457	238,614	522	245,045	536	241,617	528	247,052	540	258,100	564	260,700	570	263,300	576
TOTALS	1519	440,515	290	476,916	314	487,579	321	510,316	336	549,100	361	578,500	381	596,900	393

FIELD PERMEABILITY TEST RESULTS

Drill Hole Number	Elevation of Test	Flow "Q" (Gpm)	Head "H" (Feet)		Permeability "K" (ft/Yr)	Permeability "K" (cm^3/s)
5	576	0.0029	12.3		30.4	0.3×10^{-4}
	570	0.0101	12.3		106.0	1.1×10^{-4}
	565	0.0088	12.3		92.0	0.89×10^{-4}
	560	0.0035	12.3		36.8	0.36×10^{-4}
	555	0.0136	12.3		143.0	1.4×10^{-4}
	550	0.0064	12.3		67.0	0.65×10^{-4}
	545	0.0033	12.3		34.6	0.34×10^{-4}
				Average	72.8	0.72×10^{-4}
7	580	0.0303	25		156	1.5×10^{-4}
	575	0.0477	25		246	2.4×10^{-4}
	570	0.0588	25		303	2.9×10^{-4}
	565	0.0588	25		303	2.9×10^{-4}
	560	0.0834	25		430	4.2×10^{-4}
	550	0.3333	25		1,720	16.7×10^{-4}
	545	0.0677	25		350	3.4×10^{-4}
	540	0.2500	25		1,290	12.5×10^{-4}
	535	0.2000	25		1,035	10.1×10^{-4}
				Average	648	6.3×10^{-4}

ANALYSES OF SOIL SAMPLES

		Saturation Extract Values Milliequivalents per Liter					
Sample No	pH	ECe	Calcium	Magnesium	Sodium	SAR	Sample Description
1	8.25	1.2	0.5	Trace	11.7	23.5	DH 22 E1 596
2	8.4	1.4	0.5	Trace	13.0	26	DH 22 E1 591
3	8.3	1.3	0.5	Trace	12.3	24.5	DH 22 E1 586
4	8.45	1.4	0.5	Trace	14.4	29	DH 22 E1 581
5	8.5	1.5	0.5	0.1	14.8	27	DH 22 E1 576
6	8.3	1.5	0.5	Trace	14.8	29.5	DH 22 E1 571
7	8.5	1.3	0.5	0.05	12.7	24	DH 22 E1 566
8	8.2	0.5	3.0	0.4	1.1	1	DH 22 E1 561
9	8.1	0.6	3.4	0.7	2.4	1.5	DH 22 E1 555

ECe = Millimhos per centimeter
SAR = Sodium adsorption ratio on saturation extract

EPICENTER DISTANCE FROM SITE VERSUS REPORTED INTENSITY
1804 - 1968(a)

Miles (From Site)	Epicenter Intensity (MM)	Year
35	VI	1883
70 (Two)	V	1804 & 1947
110	VI	1912
120	VII	1909
130	V	1872
140 (Three)	IV-V, VI, VII	1877, 1884 & 1937
150 (Two)	V, VII-VIII	1929 & 1937
160	VII	1931
170	VII	1937

(a) Epicenters reported within a 200-mile radius from Palisades site.

STABILITY CLASS COMPARISON BY WIND SECTOR

PALISADES SITE
DELTA TEMPERATURE 60-10 METERS - WINDS 60 METERS
DECEMBER 1, 1977 THROUGH NOVEMBER 30, 1978

Wind Sector	Pasquill Stability Class A	B	C	D	E	F	G	All Classes
NNE	0.00 0.00	0.40 0.01	0.86 0.04	4.11 1.63	6.03 1.84	5.53 0.56	3.42 0.29	4.37
NE	0.00 0.00	1.21 0.04	1.14 0.05	4.51 1.79	4.55 1.39	11.06(a) 1.12	5.56 0.47	4.85
ENE	0.00 0.00	0.40 0.01	2.57 0.11	4.02 1.59	3.63 1.11	8.17 0.83	7.83 0.67	4.32
E	0.00 0.00	0.40 0.01	2.00 0.09	5.61 2.23	3.63 1.11	6.61 0.67	6.98 0.60	4.70
ESE	0.00 0.00	0.40 0.01	3.71 0.16	5.73 2.27	3.71 1.13	3.49 0.35	6.84 0.58	4.51
SE	0.31 0.01	3.24 0.10	4.57 0.19	5.27 2.09	4.75 1.45	6.73 0.68	8.69 0.74	5.27
SSE	4.64 0.18	2.02 0.06	2.57 0.11	3.59 1.42	7.50 2.29	10.82 1.09	10.97 0.94	6.09
S	9.91 0.39	8.50 0.26	6.57 0.28	5.58 2.21	11.06(a) 3.37	12.74(a) 1.29	17.66(a) 1.51	9.31(a)
SSW	3.41 0.13	3.64 0.11	4.57 0.19	5.40 2.14	10.98(a) 3.35	10.94 1.11	12.39(a) 1.06	8.09
SW	8.98 0.35	16.19 0.49	13.43(a) 0.57	8.62 3.42	10.02 3.05	4.69 0.47	9.97 0.85	9.21(a)
WSW	5.88 0.23	6.48 0.19	7.14 0.30	6.29 2.49	4.95 1.51	4.09 0.41	3.70 0.32	5.46
W	12.07 0.47	6.48 0.19	8.86 0.38	8.16 3.24	6.55 2.00	3.25 0.33	2.56 0.22	6.82
WNW	16.41 0.64	11.34 0.34	10.29 0.44	8.80(a) 3.49	4.87 1.48	3.73 0.38	0.85 0.07	6.85
NW	17.96(a) 0.71	17.81(a) 0.54	10.57 0.45	10.27(a) 4.08	5.23 1.59	2.28 0.23	0.71 0.06	7.65
NNW	19.20(a) 0.75	16.60(a) 0.50	16.57(a) 0.71	7.79 3.09	5.99 1.82	2.16 0.22	0.71 0.06	7.15
N	1.24 0.05	4.86 0.15	4.57 0.19	6.26 2.48	6.55 2.00	3.73 0.38	1.00 0.09	5.33
CALM	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.14 0.01	0.01
TOTAL	100.00 3.93	100.00 3.00	100.00 4.26	100.00 39.67	100.00 30.47	100.00 10.12	100.00 8.54	100.00

(a)Highest or second highest within stability class.

XXX Percent occurrences this class.
XXX Percent occurrences all classes.

METEOROLOGICAL DATA RECOVERY RATES

PALISADES SITE
DECEMBER 1, 1977 THROUGH NOVEMBER 30, 1978
(PERCENTAGE)

Parameter	Annual Average
Wind Speed 10 m	97.0
Wind Direction 10 m	97.0
Wind Speed 60 m	97.0
Wind Direction 60 m	97.1
Temperature 10 m	95.2
Dew Point 10 m	92.8
Delta Temperature 60-10 m	95.4

PHYSICAL CHARACTERISTICS OF THE ROUTINE RELEASE POINTS FOR THE PALISADES NUCLEAR PLANT

Containment Building	
Vent Height	58.10 Meters
Vent Diameter	N/A (Ground Level)
Vent Velocity	N/A (Ground Level)
Representative Wind Height	10 Meters
Building Height	58.10 Meters
Bldg Min CRs Sec Area	2,000 Square Meters
Heat Emission Rate	0 (Ambient Temperature)

RELATIVE DISPERSION (X/Q) VALUES (s/m^3) VERSUS AVERAGING TIME
TURBINE BUILDING VENT - GROUND LEVEL RELEASE
EXCLUSION AREA BOUNDARY

Downwind Sector	Distance (Meters)	0-2 Hours	0-8 Hours	8-24 Hours	1-4 Days	4-30 Days	Annual Average	Hours per Year Max 0-2 h X/Q Is Exceeded in Sector	Downwind Sector
S	676.	1.14E-04	5.38E-05	3.69E-05	1.63E-05	5.05E-06	1.20E-06	17.5	S
SSW	772.	1.06E-04	4.88E-05	3.31E-05	1.43E-05	4.28E-06	9.80E-07	76.3	SSW
SW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	SW
WSW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	WSW
W	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	W
WNW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	WNW
NW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	NW
NNW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	NNW
N	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	N
NNE	805.	1.55E-04	7.17E-05	4.88E-05	2.11E-05	6.37E-06	1.47E-06	43.7	NNE
NE	1046.	8.30E-05	4.01E-05	2.79E-05	1.27E-05	4.08E-06	1.02E-06	7.8	NE
ENE	1400.	4.38E-05	2.08E-05	1.44E-05	6.41E-06	2.01E-06	4.88E-07	0.7	ENE
E	1320.	5.43E-05	2.58E-05	1.78E-05	7.95E-06	2.50E-06	6.06E-07	1.3	E
ESE	1223.	5.13E-05	2.42E-05	1.66E-05	7.37E-06	2.29E-06	5.48E-07	2.0	ESE
SE	1014.	5.93E-05	2.93E-05	2.06E-05	9.56E-06	3.18E-06	8.29E-07	1.3	SE
SSE	772.	1.03E-04	5.09E-05	3.59E-05	1.68E-05	5.63E-06	1.48E-06	14.0	SSE
Max X/Q		1.55E-04(a)				Total Hours Around Site:		164.7	
SRP 2.3.4	676.	1.43E-04	6.70E-05	4.59E-05	2.02E-05	6.24E-06	1.48E-06		
Site Limit		7.71E-05 (5%)	4.01E-05	2.89E-05	1.42E-05	5.14E-06	1.48E-06		

NOTES:
1. E-04 = 10^{-4}.
2. The data based on 10-meter-level winds and (60-10 ΔT) onsite meteorological data for the period December 1, 1977 - November 30, 1978.
3. No decay, no terrain adjustment factors, no open terrain recirculation factors, no plume depletion and Pasquill-Gifford (Slade 1968) diffusion parameters were used.

(a) 0.5% X/Q to an individual is limiting.

RELATIVE DISPERSION (X/Q) VALUES (s/m^3) VERSUS AVERAGING TIME
TURBINE BUILDING VENT - GROUND LEVEL RELEASE
LOW POPULATION ZONE

Downwind Sector	Distance (Meters)	0-2 Hours	0-8 Hours	8-24 Hours	1-4 Days	4-30 Days	Annual Average	Hours per Year Max 0-2 h X/Q Is Exceeded in Sector	Downwind Sector
S	4827.	1.03E-05	4.52E-06	2.99E-06	1.23E-06	3.40E-07	7.08E-08	5.2	S
SSW	4827.	1.27E-05	5.35E-06	3.48E-06	1.37E-06	3.58E-07	6.94E-08	95.3	SSW
SW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	SW
WSW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	WSW
W	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	W
WNW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	WNW
NW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	NW
NNW	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	NNW
N	Offshore	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	N
NNE	4827.	2.72E-05	1.09E-05	6.94E-06	2.58E-06	6.25E-07	1.10E-07	43.7	NNE
NE	4827.	1.49E-05	6.60E-06	4.39E-06	1.82E-06	5.13E-07	1.09E-07	14.6	NE
ENE	4827.	9.68E-06	4.37E-06	2.93E-06	1.24E-06	3.58E-07	7.87E-08	5.1	ENE
E	4827.	1.08E-05	4.92E-06	3.31E-06	1.41E-06	4.11E-07	9.12E-08	5.4	E
ESE	4827.	8.98E-06	4.04E-06	2.71E-06	1.14E-06	3.28E-07	7.16E-08	5.0	ESE
SE	4827.	8.55E-06	3.95E-06	2.69E-06	1.16E-06	3.50E-07	8.04E-08	2.3	SE
SSE	4827.	1.16E-05	5.28E-06	3.56E-06	1.51E-06	4.41E-07	9.80E-08	9.5	SSE
Max X/Q		2.72E-05(a)				Total Hours Around Site:		186.1	
SRP 2.3.4	4827.	1.28E-05	5.83E-06	3.94E-06	1.68E-06	4.93E-07	1.10E-07		
Site Limit		1.23E-05 (5%)	5.66E-06	3.83E-06	1.64E-06	4.88E-07	1.10E-07		

NOTES:
1. E-04 = 10^{-4}.
2. The data based on 10-meter-level winds and (60-10 ΔT) onsite meteorological data for the period December 1, 1977 - November 30, 1978.
3. No decay, no terrain adjustment factors, no open terrain recirculation factors, no plume depletion and Pasquill-Gifford (Slade 1968) diffusion parameters were used.

(a) 0.5% X/Q to an individual is limiting.

ANNUAL AVERAGE X/Q (sec/m^3) VALUES
TURBINE BUILDING VENT - GROUND LEVEL RELEASE(a)

Downwind Sector	Distance (Meters)	12/1/77-11/20/78 Avg. Site Boundary X/Q sec/m^3(a)	1/1/88-12/31/92 Avg. Site Boundary X/Q sec/m^3(a)
N	Offshore	-	-
NNE	805	1.5E-06	1.7E-06
NE	1,046	1.0E-06	1.2E-06
ENE	1,400	4.9E-07	5.5E-07
E	1,320	6.1E-07	6.2E-07
ESE	1,223	5.5E-07	7.0E-07
SE	1,014	8.3E-07	1.1E-06
SSE	772	1.5E-06	1.8E-06
S	676	1.2E-06	1.7E-06
SSW	772	9.8E-07	1.0E-06
SW	Offshore	-	-
WSW	Offshore	-	-
W	Offshore	-	-
WNW	Offshore	-	-
NW	Offshore	-	-
NNW	Offshore	-	-

(a) No decay, no terrain adjustment factors, no open terrain recirculation factors, no plume depletion.

DETECTION CAPABILITIES FOR ENVIRONMENTAL SAMPLE ANALYSIS
LOWER LIMIT OF DETECTION (LLD)

Analysis	Water (pCi/ℓ)	Airborne Particulate or Gases (pCi/m^3)	Fish (pCi/kg, Wet)	Milk (pCi/ℓ)	Food Products (pCi/kg, Wet)	Sediment (pCi/kg, Dry)
Gross Beta	4	0.01				
H3	2,000*					
Mn-54	15		130			
Fe59	30		260			
Co58, 60	15		130			
Zn65	30		260			
ZrNb95	15					
I131	1[d]	0.07		1	60	
Cs134	15	0.05	130	15	60	150
Cs137	18	0.06	150	18	80	180
BaLa140	15			15		

*If no drinking water pathway exists, a value of 3,000 pCi/ℓ may be used.

X/Q Values (s/m^3) – Ground Level Release – Exclusion Area Boundary

DOWNWIND SECTOR	DISTANCE (METERS)	0-2 HOURS	0-8 HOURS	8-24 HOURS	1-4 DAYS	4-30 DAYS	ANNUAL AVERAGE	HOURS PER YEAR MAX 0-2 HR X/Q IS EXCEEDED IN SECTOR	DOWNWIND SECTOR
S	677.	1.57E-04	1.01E-04	8.07E-05	4.98E-05	2.49E-05	1.07E-05	7.3	S
SSW	677.	1.61E-04	9.85E-05	7.70E-05	4.51E-05	2.10E-05	8.20E-06	225.9	SSW
SW	677.	1.96E-04	1.18E-04	9.11E-05	5.24E-05	2.36E-05	8.94E-06	7.8	SW
WSW	677.	2.37E-04	1.39E-04	1.07E-04	5.97E-05	2.60E-05	9.41E-06	10.4	WSW
W	677.	2.82E-04	1.65E-04	1.26E-04	7.04E-05	3.05E-05	1.10E-05	13.1	W
WNW	677.	3.39E-04	1.98E-04	1.51E-04	8.41E-05	3.63E-05	1.30E-05	17.3	WNW
NW	677.	4.49E-04	2.65E-04	2.04E-04	1.15E-04	5.07E-05	1.86E-05	29.9	NW
NNW	677.	5.39E-04	3.31E-04	2.59E-04	1.53E-04	7.14E-05	2.82E-05	43.7	NNW
N	677.	5.19E-04	3.16E-04	2.46E-04	1.44E-04	6.63E-05	2.57E-05	40.6	N
NNE	677.	2.76E-04	1.65E-04	1.27E-04	7.30E-05	3.28E-05	1.23E-05	12.6	NNE
NE	677.	1.38E-04	9.09E-05	7.38E-05	4.69E-05	2.44E-05	1.10E-05	5.2	NE
ENE	677.	1.07E-04	7.11E-05	5.79E-05	3.70E-05	1.95E-05	8.90E-06	4.6	ENE
E	677.	1.00E-04	6.62E-05	5.38E-05	3.42E-05	1.79E-05	8.09E-06	3.7	E
ESE	677.	1.02E-04	6.84E-05	5.59E-05	3.61E-05	1.92E-05	8.91E-06	3.8	ESE
SE	677.	1.13E-04	7.73E-05	6.39E-05	4.24E-05	2.35E-05	1.14E-05	6.1	SE
SSE	677.	1.38E-04	9.43E-05	7.80E-05	5.16E-05	2.85E-05	1.38E-05	7.9	SE
MAX X/Q		5.39E-04				TOTAL HOURS AROUND SITE:		439.9	
SRP 2.3.4	677.	5.18E-04	3.20E-04	2.51E-04	1.49E-04	7.05E-05	2.82E-05		
SITE LIMIT		3.67E-04	2.40E-04	1.94E-04	1.23E-04	6.33E-05	2.82E-05		

X/Q Values (s/m^3) – Ground Level Release – Low Population Zone

DOWNWIND SECTOR	DISTANCE (METERS)	0-2 HOURS	0-8 HOURS	8-24 HOURS	1-4 DAYS	4-30 DAYS	ANNUAL AVERAGE	HOURS PER YEAR MAX 0-2 HR X/Q IS EXCEEDED IN SECTOR	DOWNWIND SECTOR
S	4820.	1.68E-05	8.22E-06	5.75E-06	2.65E-06	8.68E-07	2.22E-07	5.8	S
SSW	4820.	1.57E-05	7.42E-06	5.10E-06	2.26E-06	7.06E-07	1.69E-07	217.8	SSW
SW	4820.	1.92E-05	8.90E-06	6.06E-06	2.63E-06	7.93E-07	1.83E-07	6.3	SW
WSW	4820.	2.56E-05	1.14E-05	7.59E-06	3.14E-06	8.88E-07	1.89E-07	9.7	WSW
W	4820.	3.22E-05	1.41E-05	9.36E-06	3.83E-06	1.06E-06	2.21E-07	12.5	W
WNW	4820.	3.95E-05	1.72E-05	1.14E-05	4.62E-06	1.27E-06	2.61E-07	16.7	WNW
NW	4820.	5.37E-05	2.36E-05	1.56E-05	6.41E-06	1.78E-06	3.72E-07	28.9	NW
NNW	4820.	6.66E-05	3.03E-05	2.04E-05	8.67E-06	2.54E-06	5.65E-07	43.7	NNW
N	4820.	6.37E-05	2.87E-05	1.93E-05	8.13E-06	2.35E-06	5.15E-07	40.5	N
NNE	4820.	3.12E-05	1.40E-05	9.42E-06	3.97E-06	1.14E-06	2.50E-07	12.6	NNE
NE	4820.	1.40E-05	7.01E-06	4.96E-06	2.35E-06	8.02E-07	2.15E-07	4.1	NE
ENE	4820.	1.05E-05	5.31E-06	3.79E-06	1.81E-06	6.31E-07	1.73E-07	3.0	ENE
E	4820.	9.52E-06	4.83E-06	3.44E-06	1.65E-06	5.72E-07	1.57E-07	2.6	E
ESE	4820.	1.00E-05	5.11E-06	3.65E-06	1.75E-06	6.13E-07	1.69E-07	2.6	ESE
SE	4820.	1.16E-05	6.03E-06	4.34E-06	2.13E-06	7.62E-07	2.18E-07	4.1	SE
SSE	4820.	1.46E-05	7.53E-06	5.41E-06	2.64E-06	9.45E-07	2.68E-07	5.4	SSE
MAX X/Q		6.66E-05				TOTAL HOURS AROUND SITE:		416.5	
SRP 2.3.4	4820.	6.13E-05	2.82E-05	1.92E-05	8.27E-06	2.47E-06	5.65E-07		
SITE LIMIT		4.30E-05	2.10E-05	1.47E-05	6.76E-06	2.21E-06	5.65E-07		