

Tables

Table 1.2-1	Federal, State and Local Environmental Authorizations	1-10
Table 1.2-2	State, Local and Regional Planning Authorities	1-19
Table 2.1-1	Distances from Fermi 3 Effluent Release Locations to Boundary	2-4
Table 2.2-1	Acreage Associated with Land Uses on Fermi Site	2-36
Table 2.2-2	Land Use within the 7.5-Mile Vicinity.....	2-37
Table 2.2-3	Livestock Population Estimates for Local Counties and Districts, 2006.....	2-38
Table 2.2-4	Recreation Areas in the Fermi Vicinity	2-39
Table 2.2-5	Land Use within Existing Transmission Line Corridors	2-40
Table 2.2-6	Land Use Acreages within 0.5 Mile of Fermi Transmission Lines.....	2-41
Table 2.2-7	Land Use within the 50-Mile Region.....	2-42
Table 2.2-8	Average Annual Yields for Major Agricultural Products of the Fermi Region	2-43
Table 2.2-9	Recreation Areas in the Fermi Region	2-48
Table 2.3-1	Open Coast Flood Levels at Various Return Periods.....	2-122
Table 2.3-2	Great Lake Basin Hydrology November 2007.....	2-123
Table 2.3-3	Lake Erie Modeled Water Surface Temperatures (Celsius).....	2-124
Table 2.3-4	Lake Erie Overlake Precipitation (millimeters)	2-127
Table 2.3-5	Lake Erie Monthly Evaporation (mm over lake) from GLERL Lake Evaporation Model	2-133
Table 2.3-6	Great Lakes Water Level Table for Lake Erie	2-136
Table 2.3-7	Great Lakes Water Levels.....	2-138
Table 2.3-8	Lake Erie Mean Lake Levels (IGLD 1985)	2-141
Table 2.3-9	Historical Max and Min Water Levels for Fermi 3.....	2-142
Table 2.3-10	NOAA's Great Lakes Coastal Forecasting System, Data for Lake Erie	2-147
Table 2.3-11	Extreme Recorded Lake Erie Water Levels	2-148
Table 2.3-12	Possible Storm Induced Lake Level Increases	2-149
Table 2.3-13	Detroit River Flows	2-150

Tables

Table 2.3-14	Estimated Characteristics of Western Basin Lake Erie Tributaries	2-156
Table 2.3-15	Low Water Flow Rates for Western Basin Lake Erie Tributaries	2-157
Table 2.3-16	Monthly Flow Rates (Q) for Swan Creek.....	2-158
Table 2.3-17	Monthly Flow Rates (Q) for Stony Creek.....	2-159
Table 2.3-18	Monthly Flow Rates (Q) for River Raisin	2-160
Table 2.3-19	EPA Region 5 Sole Source Aquifers	2-161
Table 2.3-20	Monroe County, Michigan Projected Groundwater Use Through 2060.....	2-162
Table 2.3-21	Wayne County, Michigan Projected Groundwater Use Through 2060.....	2-163
Table 2.3-22	Monitoring Well/Piezometer Construction Data.....	2-164
Table 2.3-23	Surface Water Gauge Construction Data	2-166
Table 2.3-24	Water Level Data.....	2-167
Table 2.3-25	Overburden Hydraulic Conductivity	2-170
Table 2.3-26	Bedrock Aquifer Hydraulic Conductivity	2-171
Table 2.3-27	Net Basin Supply for Lake Erie	2-173
Table 2.3-28	The Nine Sectors of Water Consumption in the Great Lakes Basin	2-174
Table 2.3-29	Consumptive Use Coefficients	2-176
Table 2.3-30	2004 Basin Water Usage Report for Lake Erie	2-178
Table 2.3-31	2002 and 2003 Basin Water Usage Report for Lake Erie Water.....	2-179
Table 2.3-32	2001 and 2000 Basin Water Usage Report for Lake Erie	2-180
Table 2.3-33	1999 and 1998 Basin Water Usage Report for Lake Erie	2-181
Table 2.3-34	Monroe County Water Usage (2000 – 2006)	2-182
Table 2.3-35	2005 Monroe County Report	2-185
Table 2.3-36	2006 Monroe County Report	2-186
Table 2.3-37	2006 Monroe County Water Capacity Report	2-187
Table 2.3-38	Water Withdrawals Registered in Michigan.....	2-188

Tables

Table 2.3-39	2006 Local Public Water Supply Entities Daily Consumption From the Western Basin of Lake Erie Within Fermi 3 Site Vicinity	2-189
Table 2.3-40	Projected Water Use – Monroe County.....	2-190
Table 2.3-41	Projected Water Use – Wayne County.....	2-191
Table 2.3-42	Summary of GLENDATA Data, March, April, and August 1996-2004	2-192
Table 2.3-43	Lake Erie Sample Results from the Vicinity of the Fermi Site, August 2007 ...	2-195
Table 2.3-44	Water Sample Results from Plum Creek, Sandy Creek and Swan Creek, Monroe and Wayne Counties, June 1993	2-197
Table 2.3-45	Temperature, Stream Characteristics and Flow Data, Swan Creek, Monroe County, June 1993	2-198
Table 2.3-46	Swan Creek and Stony Creek USGS NWIS Water Quality Data	2-199
Table 2.3-47	Water Sampling Results for Stony Creek and Palmer Drain, Monroe County, MI, September 1995	2-201
Table 2.3-48	Water Sampling Results for Stony Creek and Palmer Drain, Monroe County, MI, December 1995	2-203
Table 2.3-49	Water Sampling Results for Stony Creek and Amos Palmer Drain, Monroe County, MI, July 1997	2-204
Table 2.3-50	River Raisin USGS NWIS Water Quality Data	2-205
Table 2.3-51	River Raisin EPA STORET Water Quality Data from MDEQ	2-211
Table 2.3-52	Rouge River USGS NWIS Water Quality Data	2-217
Table 2.3-53	Huron River USGS NWIS Water Quality Data	2-221
Table 2.3-54	Huron River EPA STORET Water Quality Data from MDEQ	2-225
Table 2.3-55	Monroe County USGS Groundwater Monitoring Well Water Quality Data.....	2-231
Table 2.3-56	USGS NWIS Groundwater Data	2-234
Table 2.3-57	Michigan Department of Agriculture Groundwater Quality Data	2-238
Table 2.3-58	Groundwater Arsenic Samples within approximately 5 mi of the Fermi Site ...	2-239
Table 2.3-59	Groundwater Nitrate Samples within approximately 5 mi of the Fermi Site	2-240
Table 2.3-60	Groundwater VOC Samples within approximately 5 mi of the Fermi Site	2-242
Table 2.3-61	Chemical Analyses of Groundwater by the Detroit Edison Company, 1970 ...	2-244

Tables

Table 2.3-62	Chemical Analyses of Groundwater by the Detroit Edison Company, 1969 ...	2-245
Table 2.3-63	Groundwater Sample Results from the Fermi Site, 2007	2-246
Table 2.3-64	Groundwater Sample Results from the Fermi Site, 2007	2-248
Table 2.3-65	Groundwater Sample Results from the Fermi Site, 2007	2-251
Table 2.3-66	Groundwater Sample Results from the Fermi Site, 2007	2-253
Table 2.3-67	Summary of Water Quality Impairments in the Vicinity of the Fermi Site	2-256
Table 2.3-68	Parameters Sampled at Fermi Intake in October 2003	2-259
Table 2.4-1	Approximate Acres per Plant Community Present on the Fermi Site	2-367
Table 2.4-2	Plant Species Listed for the Fermi Site	2-368
Table 2.4-3	Common Mammals Directly or Indirectly Observed on the Fermi Site Between 1973 and 2008	2-378
Table 2.4-4	Birds Potentially Occurring in the Monroe, Michigan Region and Seasonal Abundance	2-379
Table 2.4-5	Amphibians and Reptiles Occurring on the Fermi Site	2-393
Table 2.4-6	Flora and Fauna Noted on the Fermi Site during Wildlife Habitat Council (WHC) Site Visit, July 2000	2-394
Table 2.4-7	Individual Phytoplankton Taxa from Lake Erie Near the Davis Besse Power Plant (1978)	2-396
Table 2.4-8	Individual Zooplankton Taxa from Lake Erie Near the Davis Besse Power Plant (1978)	2-398
Table 2.4-9	Individual Benthic Macroinvertebrate Taxa in Lake Erie Near the Davis Besse Power Plant (1978)	2-400
Table 2.4-10	Fish Species Collected in Ichthyoplankton Studies in Western Lake Erie from 1974 to 1986	2-401
Table 2.4-11	Fish Species Impinged at Bayshore Power Station in the Ohio Waters of Western Lake Erie 1976-1977, Michigan Waters, and Waters of the DRIWR, 2005	2-402
Table 2.4-12	Fish Species Collected in Stony Creek	2-404
Table 2.4-13	Fish Species Known to Occur in the Ottawa-Stony Watershed	2-405
Table 2.4-14	Commercial and Recreational Fish Species in the Vicinity of the Fermi Site ..	2-408

Tables

Table 2.4-15	Threatened and Endangered Fish and Mollusk Species Within a 50-mi Radius of the Fermi Site	2-410
Table 2.4-16	Fish Species Impinged at Fermi 2 Plant (Oct 1991 – Sep 1992)	2-414
Table 2.4-17	Land Use and Vegetation Types Within the 300-ft Fermi to Milan Transmission Corridor	2-415
Table 2.5-1	U.S. and Canadian Counties within a 50-Mile Radius of Fermi 3	2-490
Table 2.5-2	Resident Population Distribution by Segment, 1 to 10 Miles from the Fermi Site (2000).....	2-491
Table 2.5-3	Largest Population Areas within 10 Miles of the Fermi Site (2000).....	2-492
Table 2.5-4	Resident Population Distribution by Segment, 0 to 50 Miles from the Fermi Site (2000).....	2-493
Table 2.5-5	Resident and Transient Population and Density by 0 to 10-Mile Concentric Circles from Fermi 3 (2000).....	2-494
Table 2.5-6	Resident and Transient Population and Density by 0 to 50-Mile Concentric Circles from Fermi 3 (2000).....	2-495
Table 2.5-7	Commuter Information for the Fermi 3 Region (2000)	2-496
Table 2.5-8	Special Facilities Transient Population Data for the Regional Counties (2000).....	2-497
Table 2.5-9	United States Population and Average Annual Growth Rates	2-498
Table 2.5-10	1 to 10 Mile Resident and Transient Population Projections (2000, 2008, 2020, 2030, 2040, 2050, and 2060).....	2-499
Table 2.5-11	Canadian Population and Average Annual Growth Rates	2-504
Table 2.5-12	10 to 50 Mile Resident and Transient Population Projections (2000, 2008, 2020, 2030, 2040, 2050, and 2060)	2-505
Table 2.5-13	United States Age and Gender Distribution Surrounding Fermi 3 (2000)	2-509
Table 2.5-14	Canadian Age and Gender Distribution Surrounding Fermi 3, 50-Mile Radius (2001).....	2-510
Table 2.5-15	United States Racial and Ethnic Distribution Surrounding the Fermi Site (2000)	2-511
Table 2.5-16	Canadian Racial and Ethnic Distribution Surrounding Fermi 3, 50-mi Radius (2001)	2-512

Tables

Table 2.5-17	United States Household Income Distribution Surrounding Fermi 3 (2000)....	2-513
Table 2.5-18	United States County and State Median Household Income Data.....	2-514
Table 2.5-19	Canadian Census Division Median Household Income Data (2001)	2-515
Table 2.5-19-A	Population Data for the Fermi 3 Region Counties and Selected Cities.....	2.516
Table 2.5-20	Regional Employment Data (2000 and 2006)	2-517
Table 2.5-21	Area Employment by Industry (2000 and 2006).....	2-518
Table 2.5-22	Employment by Industry for Canadian Counties in the 50-mi Region (2001) .	2-520
Table 2.5-23	Monroe County Principal Employers (2006 and 1998).....	2-521
Table 2.5-24	Charter County of Wayne, Michigan Principal Employers (2007 and 1998) ...	2-522
Table 2.5-25	Lucas County Principal Employers (2007 and 1997)	2-523
Table 2.5-26	Detroit MSA and Michigan Industry Employment Forecasts (2004 – 2014)....	2-524
Table 2.5-27	Toledo MSA Industry Employment Projections Report (2004-2014).....	2-526
Table 2.5-28	Recent and Projected Major Employment Changes within Monroe County....	2-528
Table 2.5-28(A)	Regional Union Construction Labor Force and Wage by Major Craft Occupation ...	2-529
Table 2.5-28(B)	Michigan and Ohio Construction Labor Force.....	2-530
Table 2.5-28(C)	Michigan and Ohio Nuclear Operations Labor Force and Wages.....	2-531
Table 2.5-29	Monroe County Direct and Overlapping Property Rates (2001-2005) (Rate per \$1,000 of Taxable Value)	2-532
Table 2.5-30	Monroe County Assessed and Estimated True Cash Value of Taxable Property (2001-2005)	2-533
Table 2.5-31	Monroe County’s Largest Property Tax Payers	2-534
Table 2.5-32	Charter County of Wayne Principal Property Taxpayers (Fiscal Year 2007) ..	2-535
Table 2.5-33	Lucas County Top Ten Private Sector Principal Tax Payers, December 31, 2006 (Amount’s in 000’s).....	2-536
Table 2.5-34	Frenchtown Township Total Revenue and Property Tax Comparison	2-537
Table 2.5-35	Taxable Value of Property in Frenchtown Township.....	2-538
Table 2.5-36	Per Capita Michigan State Taxes and U.S. Rank (2004)	2-540

Tables

Table 2.5-37	Michigan General Property Tax Collection (2004 and 2005)	2-541
Table 2.5-38	Treasury Administered Taxes and Fee Collected on a Cash Basis	2-542
Table 2.5-39	Regional Housing Information (2000).....	2-543
Table 2.5-40	Regional Occupied Housing Stability Characteristics (2000)	2-545
Table 2.5-41	Change in Monroe, Wayne, and Lucas County Housing Characteristics (2000 to 2006).....	2-546
Table 2.5-42	Adequacy of Structures in Regional Areas (2000)	2-547
Table 2.5-42-A	Housing Information for the Fermi 3 Region Counties	2-548
Table 2.5-42-B	Forecast of Occupied Housing Units (also Number of Households) by County, Southeast Michigan 1990-2035.....	2-552
Table 2.5-42-C	Mobile Home Parks in Monroe County, 2006.....	2-553
Table 2.5-42-D	Mobile Home Parks and Sites in Southeast Michigan, 2000-2006	2-555
Table 2.5-42-E	Twenty-Year History of Building Permit Activity in Southeast Michigan	2-556
Table 2.5-42-F	Accommodations within 50 miles of Monroe	2-557
Table 2.5-43	Data for Monroe County School Districts and Charter Schools (2005-2006 School Year).....	2-573
Table 2.5-44	Wayne County School District Information (2005-2006 School Year).....	2-574
Table 2.5-45	Lucas County School District Information (2005-2006 School Year)	2-578
Table 2.5-46	Revenues and Expenditures by School District in Monroe County (2004 – 2005)... 2-580	
Table 2.5-47	Expenditures for Public Elementary and Secondary School Districts (2004 – 2005) 2-586	
Table 2.5-48	Monroe County Recreational Facilities.....	2-587
Table 2.5-49	List of Recreation and Lodging Facilities within a 10-mi Radius	2-599
Table 2.5-50	Township Zoning Reviews By Requested District (2004)	2-602
Table 2.5-51	Land Use and Change for Frenchtown Township, Monroe County, and Wayne County (2000)	2-603
Table 2.5-52	Frenchtown Township Water System Pumpage (1995-2001).....	2-604
Table 2.5-53	Monroe County Fire Departments	2-605

Tables

Table 2.5-54	Primary Regional Hospitals and Health Care Facilities	2-607
Table 2.5-55	Frenchtown Township and Monroe County Commuter and Resident Destination Table (2000)	2-609
Table 2.5-56	Transportation Profile for Frenchtown Township & Monroe County (2000)	2-611
Table 2.5-57	Michigan Department of Transportation Scheduled Projects in Monroe County (2008-2012)	2-612
Table 2.5-58	Proposed Transportation Projects within Monroe County	2-613
Table 2.5-59	Minor Airports	2-615
Table 2.5-60	Regional Ports	2-616
Table 2.5-61	Monroe County Tourist Attractions	2-618
Table 2.5-62	Archaeological Sites Located Within Two Miles of Fermi 3.....	2-620
Table 2.5-63	NRHP-Listed and NRHP-Eligible Above-ground Resources within 10 Miles of Fermi 3.....	2-621
Table 2.5-64	Previously Recorded Archaeological Sites within 1.5 Miles of the Proposed Project Area	2-622
Table 2.5-65	Minority and Low-Income Community Block Group (CBG) Populations within the 50-mi Region.....	2-625
Table 2.5-66	Michigan and Ohio Population, by Race (2000).....	2-626
Table 2.5-67	Low-Income Populations in Michigan and Ohio	2-627
Table 2.5-68	Regional Migrant Labor Statistics.....	2-628
Table 2.5-69	Summary of Fermi Ambient Sound Level Survey Results	2-629
Table 2.5-70	Fermi 2 Property Tax History	2-631
Table 2.5-71	Frenchtown Charter Township 2007 Millage Composition.....	2-632
Table 2.5-72	Average Direct and Indirect Taxes and Capital Expenditures for Fermi 2 (2002-2007).....	2-633
Table 2.7-1	National Weather Service First-Order and Cooperative Observing Stations Surrounding the Fermi Site	2-706
Table 2.7-2	Local Climatological Data Summary for Detroit, Michigan	2-707
Table 2.7-3	Local Climatological Data Summary for Flint, Michigan	2-711

Tables

Table 2.7-4	Local Climatological Data Summary for Toledo, Ohio.....	2-715
Table 2.7-5	Climatological Normals for National Weather Service First-Order and Cooperative Observation Stations in the Region Surrounding the Fermi Site	2-719
Table 2.7-6	Climatological Extremes for National Weather Service First-Order and Cooperative Observation Stations Surrounding the Fermi Site.....	2-720
Table 2.7-7	Mean Monthly and Annual Mixing Heights (Meters) at White Lake, Michigan (2003 - 2007)	2-721
Table 2.7-8	Annual Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-722
Table 2.7-9	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-723
Table 2.7-10	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-724
Table 2.7-11	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-725
Table 2.7-12	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-726
Table 2.7-13	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-727
Table 2.7-14	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-728
Table 2.7-15	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-729
Table 2.7-16	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-730
Table 2.7-17	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-731
Table 2.7-18	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-732
Table 2.7-19	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-733
Table 2.7-20	Monthly Temperature Inversion Frequency and Persistence at the Fermi Site (2003 - 2007).....	2-734

Tables

Table 2.7-21	Freezing Rain Events in the Five-County Area Surrounding the Fermi Site (1993-2007).....	2-735
Table 2.7-22	Monthly and Annual Temperature Data for Detroit Metropolitan Airport and Fermi Site (2003 - 2007)	2-736
Table 2.7-23	Monthly and Annual Dew-point Temperature (°F) Summaries for the Fermi Site (2003 - 2007)	2-738
Table 2.7-24	Hours with Precipitation and Hourly Precipitation Rate Distribution for Detroit Metropolitan Airport (2003-2007).....	2-739
Table 2.7-25	Mean Monthly and Annual Summaries (Hours) of Fog and Heavy Fog for Detroit, Michigan (1961-1995).....	2-740
Table 2.7-26	Monthly and Annual Mean Wind Speeds (mph) for Detroit Metropolitan Airport and Fermi Site (2003 - 2007).....	2-741
Table 2.7-27	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-742
Table 2.7-28	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-743
Table 2.7-29	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-744
Table 2.7-30	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-745
Table 2.7-31	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-746
Table 2.7-32	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-747
Table 2.7-33	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-748
Table 2.7-34	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-749
Table 2.7-35	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-750
Table 2.7-36	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-751
Table 2.7-37	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-752
Table 2.7-38	Wind Direction Persistence Summaries - Fermi Site 10-Meter Level	2-753
Table 2.7-39	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-754
Table 2.7-40	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-755
Table 2.7-41	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-756
Table 2.7-42	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-757
Table 2.7-43	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-758

Tables

Table 2.7-44	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-759
Table 2.7-45	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-760
Table 2.7-46	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-761
Table 2.7-47	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-762
Table 2.7-48	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-763
Table 2.7-49	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-764
Table 2.7-50	Wind Direction Persistence Summaries - Fermi Site 60-Meter Level	2-765
Table 2.7-51	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-766
Table 2.7-52	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-767
Table 2.7-53	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-768
Table 2.7-54	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-769
Table 2.7-55	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-770
Table 2.7-56	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-771
Table 2.7-57	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-772
Table 2.7-58	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-773
Table 2.7-59	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-774
Table 2.7-60	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-775
Table 2.7-61	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-776
Table 2.7-62	Wind Direction Persistence Summaries - Detroit Metropolitan Airport 10 Meter Level.....	2-777

Tables

Table 2.7-63	Monthly and Annual Vertical Stability Class and Mean 60-Meter Wind Speed Distributions for Fermi Site (2003 - 2007).....	2-778
Table 2.7-64	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-780
Table 2.7-65	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-781
Table 2.7-66	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-782
Table 2.7-67	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-783
Table 2.7-68	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-784
Table 2.7-69	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-785
Table 2.7-70	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-786
Table 2.7-71	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-787
Table 2.7-72	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-788
Table 2.7-73	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-789
Table 2.7-74	Annual JFD of Wind Sirection, Wind Speed, and Stability Class	2-790
Table 2.7-75	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-791
Table 2.7-76	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-792
Table 2.7-77	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-793
Table 2.7-78	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-794
Table 2.7-79	Annual JFD of Wind Direction, Wind Speed, and Stability Class	2-795
Table 2.7-80	Distances to Site Boundary	2-796
Table 2.7-81	Distances to Nearest Residence	2-797
Table 2.7-82	Distances to Nearest Vegetable Garden.....	2-798
Table 2.7-83	Distances to Nearest Sheep.....	2-799
Table 2.7-84	Distances to Nearest Goat	2-800
Table 2.7-85	Distances to Nearest Meat Cow.....	2-801
Table 2.7-86	Distances to Nearest Milk Cow	2-802
Table 2.7-87	Site Boundary X/Q and D/Q Factors for Ground-Level Release	2-803

Tables

Table 2.7-88	Site Boundary X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack	2-804
Table 2.7-89	Site Boundary X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack	2-805
Table 2.7-90	Nearest Goat X/Q and D/Q Factors for Ground-Level Release	2-806
Table 2.7-91	Nearest Goat X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack	2-807
Table 2.7-92	Nearest Goat X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack	2-808
Table 2.7-93	Nearest Milk Cow X/Q and D/Q Factors for Ground-Level Release	2-809
Table 2.7-94	Nearest Milk Cow X/Q and D/Q Factors for Mixed-Mode Release from the Reactor Building/Fuel Building Stack	2-810
Table 2.7-95	Nearest Milk Cow X/Q and D/Q Factors for Mixed-Mode Release from the Turbine Building Stack	2-811
Table 2.7-96	Annual Average X/Q Values (No Decay, Undepleted) for Ground Level Release... 2-812	
Table 2.7-97	Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Ground Level Release.....	2-815
Table 2.7-98	Annual Average X/Q Values (8.0 Day Decay, Depleted) for Ground Level Release 2-818	
Table 2.7-99	Annual Average D/Q Values for Ground Level Release	2-821
Table 2.7-100	Annual Average X/Q Values (No Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack.....	2-824
Table 2.7-101	Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack.....	2-827
Table 2.7-102	Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Reactor Building/Fuel Building Stack.....	2-830
Table 2.7-103	Annual Average D/Q Values for Mixed-Mode Release from the Reactor Building/Fuel Building Stack.....	2-833
Table 2.7-104	Annual Average X/Q Values (No Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack	2-836
Table 2.7-105	Annual Average X/Q Values (2.26 Day Decay, Undepleted) for Mixed-Mode Release from the Turbine Building Stack	2-839

Tables

Table 2.7-106	Annual Average X/Q Values (8.0 Day Decay, Depleted) for Mixed-Mode Release from the Turbine Building Stack	2-842
Table 2.7-107	Annual Average D/Q Values for Mixed-Mode Release from the Turbine Building Stack.....	2-845
Table 3.3-1	Chemical Additives for Water Treatment.....	3-20
Table 3.4-1	Monthly Cooling Tower Temperatures and Flows.....	3-30
Table 3.6-1	Chemicals Added to Liquid Effluent Streams	3-48
Table 3.6-2	Effluent Chemical Constituents*	3-49
Table 3.6-3	Standby Diesel Generators	3-50
Table 3.6-4	Ancillary Diesel Generators	3-51
Table 3.6-5	Auxiliary Boiler System Emissions<	3-52
Table 3.6-6	Diesel-Driven Fire Pump Emissions	3-53
Table 3.6-6-(A)	Estimated Emissions of CO ₂ from Operations of the Proposed Fermi 3 Stationary Sources	3-54
Table 3.6-7	Estimated Emissions of PM10 and PM2.5 from Operation of the Proposed Femi 3 NDCT and 4-Cell MDCTs.....	3-55
Table 3.6-8	Hazardous Waste Management (Fermi 2)	3-56
Table 3.8-1	Summary Table S-4 – Environmental Impact of Transportation of Fuel and Waste To and From One Light-Water-Cooled Nuclear Power Reactor	3-72
Table 3.8-2	ESBWR Transportation Worksheet.....	3-74
Table 3.8-3	Number of Truck Shipments of Unirradiated Fuel	3-75
Table 3.8-4	Number of Truck Shipments of Irradiated Fuel	3-76
Table 3.8-5	Number of Truck Shipments of Radioactive Waste.....	3-77
Table 3.8-6	Non-radiological Transportation Impacts - Accidents, Injuries, and Fatalities per Shipment, Round Trip	3-78
Table 3.8-7	Non-radiological Transportation Impacts - Accidents, Injuries, and Fatalities Annually.....	3-79
Table 3.8-8	RADTRAN 5 Input Parameters for Analysis of Unirradiated Fuel Shipments ...	3-80
Table 3.8-9	Annual Radiological Impacts of Transporting Unirradiated Fuel	3-82

Tables

Table 3.8-10	RADTRAN 5 Input Parameters for Analysis of Spent Fuel Shipments	3-83
Table 3.8-11	Annual Radiological Impacts of Transporting Spent Fuel	3-85
Table 3.8-12	Spent Fuel Radionuclides for ESBWR	3-86
Table 3.8-13	Annual Spent Fuel Transportation Accident Radiological Impacts.....	3-87
Table 3.8-14	Distances and Population Densities for Transportation of Unirradiated Fuel to Alternate Sites	3-88
Table 3.8-15	Distances and Population Densities for Transportation of Irradiated Fuel to Alternate Sites	3-89
Table 4.1-1	Acreage Affected by Various Facilities Associated with Fermi 3.....	4-20
Table 4.3-1	Potential Impacts to Terrestrial Communities on the Fermi Site from Construction of Fermi 3	4-57
Table 4.3-2	Important Terrestrial Species Potentially Impacted by Fermi 3 Construction Activities	4-58
Table 4.3-3	Acreage of Detroit River International Wildlife Refuge, Lagoona Beach Unit, Impacted by Fermi 3.....	4-59
Table 4.3-4	Vegetation Communities Occurring along the Transmission Corridor1	4-60
Table 4.4-1	Estimated Construction Equipment Noise Emissions	4-93
Table 4.4-2	Construction Workforce within 70-mi and 50-mi Radii of the Fermi Site	4-94
Table 4.4-3	Regional Labor Force in 2000 for the Primary Impact Area and the Assumed Allocation of Fermi 3 Relocating Workers at Peak	4-95
Table 4.4-3-(A)	Selected Bulk Material Purchases and Approximate Costs	4-96
Table 4.4-4	Assumed Primary Impact Area Relocating Worker Households and Students.	4-97
Table 4.4-4-(A)	Projected Fermi 3 Construction Workforce County of Residence and Average Commute Estimation	4-98
Table 4.4-4-(B)	Regional Union Construction Labor Force and Wage by Major Craft Occupation, 2009	4-99
Table 4.4-5	Average Wage Data for Key Craft Occupations in the Fermi Region ¹	4-100
Table 4.4-6	Fermi 3 Construction Workforce Employment and Earnings Impacts.....	4-101
Table 4.5-1	TLD Annual Dose	4-109

Tables

Table 4.5-2	Annual Doses to Members of the Public at the Visitor’s Center from Gaseous Releases from Fermi 2.....	4-110
Table 4.5-3	Estimated Doses to Construction Workers from Gaseous Releases from Fermi 2..	4-111
Table 4.5-4	4-112
Table 4.5-4	Annual Dose to a Construction Worker by Source (mrem)	4-112
Table 4.5-5	Comparison of Construction Worker Dose to Public Dose Limits Specified in 10 CFR 20.1301	4-113
Table 4.5-6	Comparison of Construction Worker Dose from Gaseous Effluent Discharges to Public Dose Limits Specified in 40 CFR 190.....	4-114
Table 4.5-7	Comparison with 10 CFR 50 Appendix I Criteria for Effluent Doses	4-115
Table 4.6-1	Summary of Measures and Controls to Limit Adverse Impacts During Construction	4-119
Table 4.8-1	Summary of Construction and Pre-Construction Related Impacts	4-139
Table 5.3-1	Model Sets Used in CORMIX Thermal Plume Analysis	5-61
Table 5.3-2	The Four Modeling Scenarios Performed for Each Month in Model Set 1	5-62
Table 5.3-3	Ambient Conditions Time Series and Additional Data Sources	5-63
Table 5.3-4	Monthly Statistics of Ambient Water Temperature Near the Discharge	5-64
Table 5.3-5	Mean Monthly Water Depth at NOAA GLIN Buoy 9063090, Fermi 2, 1964-1969 and 1996-2008	5-65
Table 5.3-6	Monthly Statistics of Ambient Current Speed near the Discharge	5-66
Table 5.3-7	Average Monthly Wind Velocity at Gross Ile, Michigan, Airport	5-67
Table 5.3-8	Michigan Water Quality Standards, Maximum Allowable Monthly Water Temperatures	5-68
Table 5.3-9	Diffuser Configuration Parameters for CORMIX Modeling	5-69
Table 5.3-10	Monthly Discharge Rates and Temperatures	5-70
Table 5.3-11	Monthly-Variable CORMIX Input Parameters	5-71
Table 5.3-12	Monthly CORMIX Results for Model Set 1, Scenarios 1 and 2: Evaluation of the Maximum Allowable Temperature Rise Standard	5-72

Tables

Table 5.3-13	Monthly CORMIX Results for Model Set 2, Scenarios 3 and 4: Evaluation of the Maximum Allowable Absolute Temperature Standard	5-73
Table 5.3-14	Plume Dimensions For May Scenario with Varying Depth	5-74
Table 5.3-15	Plume Length Resulting from Westward Ambient Flow	5-75
Table 5.3-16	Temperature Tolerance Ranges of Selected Principal Aquatic Species	5-76
Table 5.3-17	SACTI Input Parameters	5-77
Table 5.3-18	Average Plume Lengths during NDCT Operation	5-78
Table 5.3-19	Annual Plume Length Frequency during NDCT Operation	5-79
Table 5.3-20	Annual Salt Deposition during NDCT Operation	5-81
Table 5.3-21	Winter Salt Deposition during NDCT Operation	5-84
Table 5.3-22	Spring Salt Deposition during NDCT Operation	5-87
Table 5.3-23	Summer Salt Deposition during NDCT Operation	5-89
Table 5.3-24	Fall Salt Deposition during NDCT Operation.....	5-91
Table 5.3-25	5-Year Total Hours of Plume Induced Shadowing during NDCT Operation	5-94
Table 5.3-26	Annual Plume Water Deposition during NDCT Operation.....	5-96
Table 5.4-1	Liquid Pathway Input Parameters	5-115
Table 5.4-2	Annual Consumption/Usage Rates for MEI and Average Individual Liquid and Gaseous Pathways	5-116
Table 5.4-3	Gaseous Pathway Input Parameters.....	5-117
Table 5.4-4	Liquid Pathway Doses for Maximally Exposed Individual	5-118
Table 5.4-5	Comparison of Annual Maximally Exposed Individual Doses with 10 CFR 50, Appendix I Limits.....	5-119
Table 5.4-6	50-mile Population Doses from Liquid Effluents.....	5-120
Table 5.4-7	50-mile Population Doses from Gaseous Effluents.....	5-121
Table 5.4-8	Comparison of Maximally Exposed Individual Doses with 40 CFR 190 Criteria	5-122
Table 5.4-9	Doses to Biota from Liquid and Gaseous Effluents.....	5-123
Table 5.7-1	Scaling Factor - Reference LWR and Fermi 3	5-149

Tables

Table 5.7-2	Summary Table S-3 – Uranium Fuel Cycle Environmental Data	5-150
Table 5.7-3	Comparison of Annual Average Dose Received by an Individual from All Sources. 5-153	
Table 5.8-1	Estimated Facility Noise Impacts – Increase in Ambient Sound Level (Cooling Systems and Transformers).....	5-173
Table 5.8-2	Estimated Facility Noise Impacts – Increase in Day-Night Sound Level (L _{dn}) (Cooling Systems and Transformers).....	5-174
Table 5.8-3	Estimated Emissions of CO ₂ from Fermi 3 Worker Vehicles	5-175
Table 5.8-4	Estimated Emissions of CO ₂ from Fermi 3 On-site Support Vehicles and Heavy Equipment	5-176
Table 5.8-4-(A)	Projected Fermi 3 Operations Workforce Residence and Commuting Distance.....	5-177
Table 5.8-5	Estimated Emissions of CO ₂ from Fermi 3 Deliveries and Removal of Fuel and Materials.....	5-178
Table 5.8-6	Approximate Annual Tax Impact Attributed to the Increase in Personal Income Associated with Fermi 3 Permanent Staff (2008 dollars)	5-179
Table 5.8-7	2020 Population and the Assumed Residence of Relocating Fermi 3 Operating Staff in the Primary Impact Area*	5-180
Table 5.8-8	Fermi 3 Operations Workforce Employment and Earnings Impacts	5-181
Table 5.10-1	Summary of Measures and Controls to Limit Adverse Impacts During Operation ...	5-187
Table 6.2-1	Fermi 2 Radiological Environmental Monitoring Program Locations.....	6-9
Table 6.2-2	Radiological Environmental Monitoring Program Summary	6-17
Table 6.3-1	Groundwater and Surface Water Testing Parameters	6-28
Table 6.4-1	Meteorological Parameters Monitored at the Fermi Site	6-39
Table 6.4-2	Accuracies and Thresholds for the Fermi Onsite Meteorological Monitoring Program Instruments.....	6-40
Table 6.4-3	Method for Substituting Redundant Parameters of the Critical Meteorological Measurements	6-41
Table 6.4-4	Data Recovery Percentages for the Fermi Onsite Meteorological Monitoring Instruments During the 2003-2007 Time Period.....	6-42

Tables

Table 6.6-1	Surface Water Quality Monitoring Program Information from Fermi 2 NPDES Permit No. MI0037028	6-55
Table 6.6-2	Anticipated Fermi 3 Surface Water Quality Monitoring Program Derived from Fermi 2 NPDES Permit No. MI0037028 Requirements	6-58
Table 6.7-1	Thermal Monitoring	6-63
Table 6.7-2	Radiological Monitoring	6-64
Table 6.7-3	Hydrological Monitoring	6-65
Table 6.7-4	Meteorological Monitoring	6-67
Table 6.7-5	Terrestrial Ecological Monitoring	6-68
Table 6.7-6	Aquatic Ecological Monitoring	6-69
Table 6.7-7	Chemical Monitoring.....	6-70
Table 6.7-8	Noise Monitoring	6-72
Table 7.1-1	Maximum 50th percentile C/Q Values.....	7-4
Table 7.1-2	Determination of C/Q Ratios	7-5
Table 7.1-3	Summary of Design Bases Accident Doses.....	7-6
Table 7.1-4	Feedwater Line Break Pre-Incident Iodine Spike (DCD Doses are from DCD Table 15.4-16).....	7-7
Table 7.1-5	Feedwater Line Break Equilibrium Iodine Spike (DCD Doses are from DCD Table 15.4-16).....	7-8
Table 7.1-6	Small Line Carrying Primary Coolant Outside Containment Pre-Incident Iodine Spike (DCD Doses are from DCD Table 15.4-19).....	7-9
Table 7.1-7	Small Line Carrying Primary Coolant Outside Containment Equilibrium Iodine Spike (DCD Doses are from DCD Table 15.4-19).....	7-10
Table 7.1-8	Main Steam Line Break Pre-Incident Iodine Spike (DCD Doses are from DCD Table 15.4-13).....	7-11
Table 7.1-9	Main Steam Line Break Equilibrium Iodine Spike (DCD Doses are from DCD Table 15.4-13).....	7-12
Table 7.1-10	Loss of Coolant Accident (DCD Doses are from DCD Table 15.4-9).....	7-13
Table 7.1-11	Fuel Handling Accident (Reactor Building or Fuel Building) (DCD Doses are from DCD Table 15.4-4)	7-14

Tables

Table 7.1-12	RWCU/SDC Line Break Pre-Incident Iodine Spike (DCD Doses are from DCD Table 15.4-23).....	7-15
Table 7.1-13	RWCU/SDC Line Break Equilibrium Iodine Spike (DCD Doses are from DCD Table 15.4-23).....	7-16
Table 7.2-1	Impacts to the Population and Land from Fermi 3 Severe Accidents Analysis .	7-27
Table 7.2-2	Comparison of Fermi 3 Results to U.S. NRC Safety Goals	7-28
Table 7.3-1	Valuation of the Detroit Edison ESBWR Base Case	7-32
Table 7.4-1	Radionuclide Inventory Used in Transportation Accident Risk Calculations for the ESBWR	7-37
Table 8.1-1	Sales Information by Rate Class Sales by Rate Class (MW-hr).....	8-12
Table 8.1-2	Sales Information by Rate Class Customer Count by Rate Class	8-12
Table 8.1-3	Sales Information by Rate Class Average Sales per Customer (MW-hr)	8-13
Table 8.1-4	Sales Information by Rate Class % of Total MW-hr by Rate Class	8-13
Table 8.2-1	Annual Electric Sales (1990 – 2004) Units are in Gigawatt-hours (GWh)	8-30
Table 8.2-2	Peak Demand (1990 – 2004) Units are in Megawatts (MW)	8-31
Table 8.2-3	Annual Sales Forecast - Base Case Units are in Gigawatt-hours (GWh)	8-32
Table 8.2-4	Annual Sales Forecast – High Growth Scenario Units are in Gigawatt-hours (GWh)	8-33
Table 8.2-5	Annual Sales Forecast – Low Growth Scenario Units are in Gigawatt-hours (GWh)	8-34
Table 8.2-6	Peak Demand Forecast - Base Case Units are in Megawatts (MW)	8-35
Table 8.2-7	Peak Demand Forecast - High Growth Scenario Units are in Megawatts (MW)	8-36
Table 8.2-8	Peak Demand Forecast - Low Growth Scenario Units are in Megawatts (MW)	8-37

Tables

Table 8.2-9	Total Projected Electric Savings Due to Energy Efficiency	8-38
Table 8.2-10	Total Projected Peak Electric Demand Reduction Due to Energy Efficiency	8-38
Table 8.3-1	Michigan Electrical Generating Unit Inventory, Region: Southeast Michigan ...	8-50
Table 8.3-2	Michigan Electrical Generating Unit Inventory, Region: Balance of Lower Peninsula 8-51	
Table 8.3-3	Michigan Electrical Generating Unit Inventory, Region: Upper Peninsula	8-52
Table 8.3-4	ITC <i>Transmission</i> Region, Existing Generation Resources (Greater than 100 MW) 8-53	
Table 8.3-5	METC Region, Existing Generation Resources (Greater than 100 MW)	8-54
Table 8.3-6	Wolverine Power Supply Cooperative, Existing Generation Resources (Greater than 100 MW)	8-55
Table 8.3-7	Lansing Board of Water & Light, Existing Generation Resources (Greater than 100 MW)	8-55
Table 8.3-8	Midwest ISO Interconnection Request Queue as of June 11, 2008.....	8-56
Table 8.3-9	Summary of Active Generator Interconnection Requests In the State of Michigan by Fuel Type (As of June 11, 2008).....	8-57
Table 8.3-10	Key Interface Capabilities.....	8-57
Table 8.3-11	Modeled Unit Retirement Schedule.....	8-58
Table 8.3-12	Aggregate Unit Retirements	8-59
Table 8.4-1	Reserve Margin Analysis (Reserve Margin with No Capacity Additions)	8-76
Table 8.4-2	Summary of Scenarios and Sensitivities	8-77
Table 8.4-3	Comparison of Scenarios Using Base Case Demand Assumptions (2006 – 2025). 8-78	
Table 9.2-1	Average Capacity Factors for Renewable Resources.....	9-36
Table 9.2-2	State of Michigan Capacity Projections from Renewables for 7 and 10 Percent Renewable Portfolios (MWe)	9-37
Table 9.2-3	Energy Projections for 7 and 10 Percent Renewable Portfolios (GWh/year and Percent of Total Generation Requirements)	9-38
Table 9.2-4	Total Biomass Resources Available – State of Michigan	9-39
Table 9.2-5	Estimated Coal-Fired Power Plant Emissions.....	9-40

Tables

Table 9.2-6	Estimated Natural Gas-Fired Power Plant Emissions	9-41
Table 9.2-7	Impacts Comparison Summary	9-42
Table 9.3-1	Listing of Potential Sites	9-65
Table 9.3-2	Potential Site Evaluation Summary Table	9-66
Table 9.3-3	Evaluation Scores of Candidate Sites	9-69
Table 9.3-4	Ranking of the Candidate Sites	9-74
Table 9.4-1	Screening of Alternative Heat Dissipation Systems	9-102
Table 9.4-2	Summary Comparison of Heat Dissipation Systems Impacts	9-110
Table 9.4-3	Screening of Alternatives to the Proposed Intake System (Base Case & Alternative 1)	9-111
Table 9.4-4	Screening of Alternatives to the Proposed Intake Location (Base Case & Alternative 2)	9-112
Table 9.4-5	Screening of Alternatives to the Proposed Discharge System (Base Case & Alternative 3)	9-114
Table 9.4-6	Screening of Alternatives to the Proposed Discharge Location (Base Case & Alternative 4)	9-115
Table 9.4-7	Screening of Alternatives to the Proposed Water Treatment System (Base Case & Alternatives 5 & 6)	9-117
Table 10.1-1	Unavoidable Adverse Environmental Impacts of Construction	10-3
Table 10.1-2	Unavoidable Adverse Environmental Impacts of Operation	10-8
Table 10.2-1	Summary of Irreversible and Irrecoverable Commitment of Environmental Resources	10-17
Table 10.2-2	Commitment of Materials	10-19
Table 10.3-1	Comparison of Short-Term Uses to Long-Term Productivity	10-23
Table 10.4-1	Monetary and Non-Monetary Benefits of Fermi 3	10-33
Table 10.4-2	Internal and External Costs of Fermi 3	10-34

Tables