

Figures

Figure 1.2-21R	Radwaste Building Plan At Elevation –9350	1-13
Figure 1.2-22R	Radwaste Building Plan At Elevation –2350	1-14
Figure 1.2-23R	Radwaste Building Plan At Elevation 4650	1-15
Figure 1.2-24R	Radwaste Building Plan At Elevation 10650	1-16
Figure 1.2-25R	Radwaste Building Plan At Elevation Section A-A And Section B-B	1-17
Figure 2.0-201	Horizontal and Vertical RB/FB Enhanced SCOR FIRS and CSDRS [5 Percent Damping] (FIRS are developed in Subsection 3.7.1)	2-40
Figure 2.0-202	Horizontal and Vertical CB Enhanced SCOR FIRS and CSDRS [5 Percent Damping] (FIRS are developed in Subsection 3.7.1)	2-41
Figure 2.0-203	Horizontal and Vertical FWSC FIRS and 1.35 Times the CSDRS [5 Percent Damping] (FIRS are developed in Subsection 3.7.1)	2-42
Figure 2.1-201	Site Location and Vicinity Within 80 km (50 Mi)	2-84
Figure 2.1-202	Site Location and Vicinity Within 12 km (7.5 Mi)	2-85
Figure 2.1-203	Fermi Property Boundary	2-86
Figure 2.1-204	Fermi 3 Site Plan	2-87
Figure 2.1-205	U.S. Counties/ CA Counties wholly or partly within 80-km (50-mi) Radius of Fermi 3 (latitude: 41° 57' 39" N, longitude: 83° 15' 43" W)	2-88
Figure 2.1-206	Segment Resident Population Distribution 0-16 km (10 mi) (Segmented Concentric Circles) from Fermi 3, 2000	2-89
Figure 2.1-207	Regional Segment Population Distribution 0-80 km (50 mi) (Segmented Concentric Circles) from Fermi 3, 2000	2-90
Figure 2.1-208	Census Block Points within Monroe County, MI	2-91
Figure 2.1-209	Census Block Points within Each Segment	2-92
Figure 2.1-210	Resident and Transient Regional Segment Population Distribution, 0-16 km (10 mi) (Segmented Concentric Circles) from Fermi 3, 2000	2-93
Figure 2.1-211	Resident and Transient Regional Segment Population Distribution 0-80 km (50 mi) (Segmented Concentric Circles) from Fermi 3, 2000	2-94
Figure 2.1-212	Example Sectional Population Growth Rate Calculation	2-95
Figure 2.1-213	Industrial Facilities, Parks and Other Facilities within the LPZ (3 mi) and 5 mi of Fermi 3	2-96

Figures

Figure 2.2-201	Industries and Transportation Routes Within 8 Km (5 Mi).....	2-128
Figure 2.2-202	Nearby Airports and Aviation Routes	2-129
Figure 2.3-201	Climatological Observing Stations near the Fermi Site	2-455
Figure 2.3-202	Total Reports of Severe Hail for the Five-County Area (1955-2007)	2-456
Figure 2.3-203	Total Hail Reports for the Five-County Area (1955-2007).....	2-457
Figure 2.3-204	Detroit Metropolitan Airport Annual Precipitation Rose (2003-2007).....	2-458
Figure 2.3-205	Detroit Metropolitan Airport January Precipitation Rose (2003-2007).....	2-459
Figure 2.3-206	Detroit Metropolitan Airport February Precipitation Rose (2003-2007)	2-460
Figure 2.3-207	Detroit Metropolitan Airport March Precipitation Rose (2003-2007).....	2-461
Figure 2.3-208	Detroit Metropolitan Airport April Precipitation Rose (2003-2007)	2-462
Figure 2.3-209	Detroit Metropolitan Airport May Precipitation Rose (2003-2007)	2-463
Figure 2.3-210	Detroit Metropolitan Airport June Precipitation Rose (2003-2007)	2-464
Figure 2.3-211	Detroit Metropolitan Airport July Precipitation Rose (2003-2007)	2-465
Figure 2.3-212	Detroit Metropolitan Airport August Precipitation Rose (2003-2007).....	2-466
Figure 2.3-213	Detroit Metropolitan Airport September Precipitation Rose (2003-2007)	2-467
Figure 2.3-214	Detroit Metropolitan Airport October Precipitation Rose (2003-2007).....	2-468
Figure 2.3-215	Detroit Metropolitan Airport November Precipitation Rose (2003-2007)	2-469
Figure 2.3-216	Detroit Metropolitan Airport December Precipitation Rose (2003-2007)	2-470
Figure 2.3-217	Detroit Metropolitan Airport Annual Wind Rose (2003-2007)	2-471
Figure 2.3-218	Detroit Metropolitan Airport January Wind Rose (2003-2007)	2-472
Figure 2.3-219	Detroit Metropolitan Airport February Wind Rose (2003-2007)	2-473
Figure 2.3-220	Detroit Metropolitan Airport March Wind Rose (2003-2007)	2-474

Figures

Figure 2.3-221	Detroit Metropolitan Airport April Wind Rose (2003-2007)	2-475
Figure 2.3-222	Detroit Metropolitan Airport May Wind Rose (2003-2007)	2-476
Figure 2.3-223	Detroit Metropolitan Airport June Wind Rose (2003-2007)	2-477
Figure 2.3-224	Detroit Metropolitan Airport July Wind Rose (2003-2007)	2-478
Figure 2.3-225	Detroit Metropolitan Airport August Wind Rose (2003-2007)	2-479
Figure 2.3-226	Detroit Metropolitan Airport September Wind Rose (2003-2007)	2-480
Figure 2.3-227	Detroit Metropolitan Airport October Wind Rose (2003-2007)	2-481
Figure 2.3-228	Detroit Metropolitan Airport November Wind Rose (2003-2007)	2-482
Figure 2.3-229	Detroit Metropolitan Airport December Wind Rose (2003-2007)	2-483
Figure 2.3-230	Fermi Site 10-m Annual Wind Rose (2003-2007)	2-484
Figure 2.3-231	Fermi Site 10-m January Wind Rose (2003-2007).....	2-485
Figure 2.3-232	Fermi Site 10-m February Wind Rose (2003-2007)	2-486
Figure 2.3-233	Fermi Site 10-m March Wind Rose (2003-2007).....	2-487
Figure 2.3-234	Fermi Site 10-m April Wind Rose (2003-2007)	2-488
Figure 2.3-235	Fermi Site 10-m May Wind Rose (2003-2007).....	2-489
Figure 2.3-236	Fermi Site 10-m June Wind Rose (2003-2007).....	2-490
Figure 2.3-237	Fermi Site 10-m July Wind Rose (2003-2007)	2-491
Figure 2.3-238	Fermi Site 10-m August Wind Rose (2003-2007)	2-492
Figure 2.3-239	Fermi Site 10-m September Wind Rose (2003-2007)	2-493
Figure 2.3-240	Fermi Site 10-m October Wind Rose (2003-2007).....	2-494
Figure 2.3-241	Fermi Site 10-m November Wind Rose (2003-2007)	2-495
Figure 2.3-242	Fermi Site 10-m December Wind Rose (2003-2007)	2-496

Figures

Figure 2.3-243	Fermi Site 60-m Annual Wind Rose (2003-2007)	2-497
Figure 2.3-244	Fermi Site 60-m January Wind Rose (2003-2007).....	2-498
Figure 2.3-245	Fermi Site 60-m February Wind Rose (2003-2007)	2-499
Figure 2.3-246	Fermi Site 60-m March Wind Rose (2003-2007).....	2-500
Figure 2.3-247	Fermi Site 60-m April Wind Rose (2003-2007)	2-501
Figure 2.3-248	Fermi Site 60-m May Wind Rose (2003-2007).....	2-502
Figure 2.3-249	Fermi Site 60-m June Wind Rose (2003-2007).....	2-503
Figure 2.3-250	Fermi Site 60-m July Wind Rose (2003-2007)	2-504
Figure 2.3-251	Fermi Site 60-m August Wind Rose (2003-2007)	2-505
Figure 2.3-252	Fermi Site 60-m September Wind Rose (2003-2007)	2-506
Figure 2.3-253	Fermi Site 60-m October Wind Rose (2003-2007).....	2-507
Figure 2.3-254	Fermi Site 60-m November Wind Rose (2003-2007)	2-508
Figure 2.3-255	Fermi Site 60-m December Wind Rose (2003-2007)	2-509
Figure 2.3-256	Topographic Features within 5 Miles of the Fermi Site	2-510
Figure 2.3-257	Topographic Features within 50 Miles of the Fermi Site	2-511
Figure 2.3-258	Terrain Elevation Profiles Within 5 Miles of the Fermi Site (Sheet 1 of 2)....	2-512
Figure 2.3-258	Terrain Elevation Profiles Within 5 Miles of the Fermi Site (Sheet 2 of 2)....	2-513
Figure 2.3-259	Terrain Elevation Profiles Within 50 Miles of the Fermi Site (Sheet 1 of 2)..	2-514
Figure 2.3-259	Terrain Elevation Profiles Within 50 Miles of the Fermi Site (Sheet 2 of 2)..	2-515
Figure 2.3-260	Process Flow Diagram of the Fermi Onsite Meteorological Monitoring Program	2-516
Figure 2.3-261	Hourly Dry Bulb Temperature from Detroit Metropolitan Airport During June 24-26, 1988	2-517
Figure 2.3-262	Hourly Dry Bulb Temperature from Detroit Metropolitan Airport During January 20-22, 1984	2-518
Figure 2.3-263	Hourly Dry Bulb and Wet Bulb Temperature from Detroit Metropolitan Airport During July 11-17, 1995	2-519
Figure 2.4-201	Central, Eastern and Western Basin Areas of Lake Erie	2-691
Figure 2.4-202	Bathymetry of Lake Erie and Lake Saint Clair.....	2-692

Figures

Figure 2.4-203	Major Tributaries of Lake Erie	2-693
Figure 2.4-204	The Great Lakes Region	2-694
Figure 2.4-205	Site Location and Vicinity Within 12 Km (7.5 Mi).....	2-695
Figure 2.4-206	Hydrology of the Great Lakes Water System	2-696
Figure 2.4-207	Total Water Withdrawals by Sector in Michigan (MGD) 2000-2004	2-697
Figure 2.4-208	Swan Creek and Stony Creek Watershed Basins	2-698
Figure 2.4-209	Topographic Map for 12 km Vicinity around the Fermi Property (Base map: USGS 1:100,000 Scale Metric Topographic Map Series)	2-699
Figure 2.4-210	Topographic Map Showing Fermi Property Boundary (Base map: USGS 1:24,000 7.5 Minute Topographic Series)	2-700
Figure 2.4-211	Fermi 3 Site Plan	2-701
Figure 2.4-212	Lake Erie Extreme Water Levels (1970-2007) NAVD 88	2-702
Figure 2.4-213	Fermi 3 Site PMP Duration-Intensity Curve	2-703
Figure 2.4-214	Existing Sub-Basin Drainage Areas	2-704
Figure 2.4-215	Final Grade Drainage Areas.....	2-705
Figure 2.4-216	NRCS Dimensional Unit Hydrograph Q Results for One Square Mi PMF of Fermi 3	2-706
Figure 2.4-217	Final Grade Drainage Areas Assuming Clogged Underground Storm Drains and Culverts	2-707
Figure 2.4-218	Swan Creek Cross-Sections	2-708
Figure 2.4-219	Hydrograph Results.....	2-709
Figure 2.4-220	Alternative II - Swan Creek Profile from Station 0+00.00 to 111+83.75.....	2-710
Figure 2.4-221	Alternative II - Swan Creek Profile at Station 5+30.7749 (East Side of Fermi Site)	2-711
Figure 2.4-222	Alternative II - Swan Creek Profile at Station 19+36.913 (West Side of Fermi Site)	2-712
Figure 2.4-223	Profile of Swan Creek for Alternative I from Station 0+00.00 to 111+83.75 .	2-713
Figure 2.4-224	Alternative I - Swan Creek Profile at Station 5+30.7749 (East Side of Fermi Site)	2-714

Figures

Figure 2.4-225	Alternative I - Swan Creek Profile at Station 19+36.913 (West Side of Fermi Site)	2-715
Figure 2.4-226	Profile of Swan Creek for Alternative III from Station 0+00.00 to 111+83.75	2-716
Figure 2.4-227	Alternative III - Swan Creek Profile at Station 5+30.7749 (East Side of Fermi Site)	2-717
Figure 2.4-228	Alternative III - Swan Creek Profile at Station 19+36.913 (West Side of Fermi Site)	2-718
Figure 2.4-229	Water Level Gauging Stations in Lake Erie.....	2-719
Figure 2.4-230	Wave Run-up and Overtopping on Impermeable Structures (Example)	2-720
Figure 2.4-231	Site Map	2-721
Figure 2.4-232	Regional Aquifer System	2-722
Figure 2.4-233	Conceptual Cross-Section of Regional Aquifer System	2-723
Figure 2.4-234	Sole Source Aquifers.....	2-724
Figure 2.4-235	Quarries of Monroe County, Michigan.....	2-725
Figure 2.4-236	All Wells Within 2 Mi	2-726
Figure 2.4-237	All Wells Within 5 Mi	2-727
Figure 2.4-238	All Wells Within 25 Mi	2-728
Figure 2.4-239	Simulated Pre-Development Water Levels in Bedrock Aquifer	2-729
Figure 2.4-240	1993 Bedrock Aquifer Potentiometric Surface in Monroe County, MI	2-730
Figure 2.4-241	2008 Bedrock Aquifer Potentiometric Surface in Monroe County, MI	2-731
Figure 2.4-242	Overburden Water Table Map 06/29/2007	2-732
Figure 2.4-243	Overburden Water Table Map 09/28/2007-09/29/2007	2-733
Figure 2.4-244	Overburden Water Table Map 12/29/2007	2-734
Figure 2.4-245	Overburden Water Table Map 03/21/2008	2-735
Figure 2.4-246	Bass Islands Aquifer Potentiometric Surface Map 06/29/2007	2-736
Figure 2.4-247	Bass Islands Aquifer Potentiometric Surface Map 09/28/2007- 09/29/2007	2-737
Figure 2.4-248	Bass Islands Aquifer Potentiometric Surface Map 12/29/2007	2-738

Figures

Figure 2.4-249	Bass Islands Aquifer Potentiometric Surface Map 03/29/2008	2-739
Figure 2.4-250	Fermi 3 Paired Hydrographs	2-740
Figure 2.4-251	Monroe County Water Level Hydrographs	2-741
Figure 2.4-252	Fermi 3 Overburden Hydraulic Conductivity.....	2-742
Figure 2.4-253	Fermi 3 Bedrock Hydraulic Conductivity	2-743
Figure 2.4-254	Groundwater Model Grid Refinement.....	2-744
Figure 2.4-255	Dewatering Bass Islands Group: Drawdown Contours - Reinforced Diaphragm Concrete Wall With Grouted Base Combination	2-745
Figure 2.4-256	Dewatering Bass Islands Group: Drawdown Contours – Grout Curtain/Freeze Wall Combination with a Grouted Base.....	2-746
Figure 2.4-257	Effective Monitoring Intervals For Bedrock Wells At The Fermi Site	2-747
Figure 2.4-258	Watershed Boundary.....	2-748
Figure 2.4-259	PMP Hyetograph	2-749
Figure 2.4-260	Results of the Snowmelt Analysis - Total Depth of Rain and Snowmelt Available for Runoff	2-750
Figure 2.4-261	Summary of HEC-HMS Results	2-751
Figure 2.4-262	Water Surface Elevation at Plant	2-752
Figure 2.4-263	Still Water Elevations	2-753
Figure 2.4-264	Wave Height and Bathymetry – Fermi Site	2-754
Figure 2.4-265	Wave Run-Up (Vertical exaggeration is approximately 5 to 1).....	2-755
Figure 2.4-266	Conceptual Model for Groundwater Transport Analysis.....	2-756
Figure 2.5.1-201	Fermi 3 Site Region and Site Vicinity Planametric Maps	2-913
Figure 2.5.1-202	Fermi 3 Site Regional Physiographic Map	2-914
Figure 2.5.1-203	Fermi 3 Site Region Map of Tectonic Structures.....	2-915
Figure 2.5.1-204	Geologic Map of the Fermi 3 Site Region	2-916
Figure 2.5.1-205	Quaternary Geology Map of the Fermi 3 Site Region	2-917
Figure 2.5.1-206	Basement Crustal Provinces in the Fermi 3 Site Region	2-918

Figures

Figure 2.5.1-207	Regional Seismicity and tectonic Features in the Fermi 3 Site Region (Sheet 1 of 3).....	2-919
Figure 2.5.1-207	Regional Seismicity and tectonic Features in the Fermi 3 Site Region (Sheet 2 of 3).....	2-920
Figure 2.5.1-207	Regional Seismicity and tectonic Features in the Fermi 3 Site Region (Sheet 3 of 3).....	2-921
Figure 2.5.1-208	Paleozoic Basins and Arches in the Fermi 3 Site Region	2-922
Figure 2.5.1-209	Geologic Timescale	2-923
Figure 2.5.1-210	Map and Schematic History of Penokean Orogeny	2-924
Figure 2.5.1-211	Hypothetical Model for the Nature and Continuity of Structures of the Midcontinent Rift System	2-925
Figure 2.5.1-212	Schematic History of the Grenville Orogeny	2-926
Figure 2.5.1-213	Map Showing Locations of Seismic Lines	2-927
Figure 2.5.1-214	Late Wisconsin Glacial Lobes, Sublobes, and Inferred Ice Flow Pathways .	2-928
Figure 2.5.1-215	Wisconsinan Stadial Interstadial Terminology.....	2-929
Figure 2.5.1-216	Summary Diagram of Lake Levels, Outlets, Inflows, Phases, and “Age” vs. Radiocarbon Age for the Northern Huron Basin.....	2-930
Figure 2.5.1-217	Stratigraphic Column for Michigan	2-931
Figure 2.5.1-218	Geologic Cross-Section of the (320 km [200 mi] Radius) Site Region..	2-932
Figure 2.5.1-219	World Stress Map Showing Maximum Horizontal Stress Trajectory in the Fermi 3 Site Region.....	2-933
Figure 2.5.1-220	Bouguer Gravity Map of the Fermi 3 Site Region.....	2-934
Figure 2.5.1-221	Magnetic Anomaly Map of the Fermi 3 Site Region	2-935
Figure 2.5.1-222	Interpretation of COCORP Lines OH-1 and OH-2.....	2-936
Figure 2.5.1-223	Summary of Displacement History of Bowling Green Fault.....	2-937
Figure 2.5.1-224	Photograph and Cross-Section of an Exposure of the Bowling Green Fault in Waterville Quarry.....	2-938
Figure 2.5.1-225	Structure Contour Maps Showing the Howell Anticline and the Lucas-Monroe Monocline	2-939
Figure 2.5.1-226	Geologic Cross-Section of Howell Anticline	2-940

Figures

Figure 2.5.1-227	Landslide Hazard Map for the Fermi 3 Site Region	2-941
Figure 2.5.1-228	Engineering Aspects of Karst Map for the Fermi 3 Site Region	2-942
Figure 2.5.1-229	Topography of the Fermi 3 Site Location	2-943
Figure 2.5.1-230	Geologic Map of the Fermi 3 Site Vicinity	2-944
Figure 2.5.1-231	Geologic Map Showing Quaternary Features of the Fermi 3 Site Vicinity....	2-945
Figure 2.5.1-232	Map Showing Quaternary Features of the Erie Basin	2-946
Figure 2.5.1-233	Chart Showing the Lake Phases and Levels and Ice Margin Positions for the Quaternary	2-947
Figure 2.5.1-234	Maps Showing Late Wisconsinan Ice Margins and Proglacial Lake Shorelines (~18 ka to 5ka)	2-948
Figure 2.5.1-235	Site Exploration Plan	2-949
Figure 2.5.1-236	Enlargement of Site Exploration Plan.....	2-950
Figure 2.5.1-237	Geologic Cross Section A-A.....	2-951
Figure 2.5.1-238	Geologic Cross Section B-B	2-952
Figure 2.5.1-239	Geologic Cross Section C-C	2-953
Figure 2.5.1-240	Geologic Cross Section D-D	2-954
Figure 2.5.1-241	Geologic Map of the Fermi 3 Site Area	2-955
Figure 2.5.1-242	Natural Gamma Log of Fermi 3 Boring RB-C8.....	2-956
Figure 2.5.1-243	Photograph of Erosion Surface in Salina Unit F, Fermi 3 Boring CB-C2.....	2-957
Figure 2.5.1-244	Quaternary Geologic Map of the Site Area	2-958
Figure 2.5.1-245	Map Showing Soils of the Fermi 3 Site Location	2-959
Figure 2.5.1-246	Tectonic Structures in the Fermi 3 Site Vicinity.....	2-960
Figure 2.5.1-247	Structure Contour Maps from Monroe County, Michigan	2-961
Figure 2.5.1-248	Structural Contour Maps Showing Bedrock Elevation of the Ordovician Trenton Group and the Silurian Bass Islands Formation	2-962
Figure 2.5.1-249	Structural Contour Map on the Top of the Bass Islands Group, Oolitic Dolomite Marker Horizon.....	2-963
Figure 2.5.1-250	Fermi 3 Site Vicinity Physiographic Map	2-964

Figures

Figure 2.5.1-251	Plot of Elevation Versus Distance of Raised and Uptilted Shorelines of the Whittlesey and Subsequent Lake Phases	2-965
Figure 2.5.1-252	Lakes Whittlesey and Saginaw, and the Port Huron Stade Ice Barriers	2-966
Figure 2.5.1-253	GPS Motions	2-967
Figure 2.5.1-254	GPS Horizontal Velocities with Motion of Rigid North America Removed....	2-968
Figure 2.5.1-255	Composite Cross Sections of Strandlines in Northern Ohio.....	2-969
Figure 2.5.1-256	Paleo-shorelines and Structural Features in the Vicinity of Fermi 3 Site.....	2-970
Figure 2.5.1-257	Topographic Profile AA' Relative to Published Elevations of Mapped Paleo-shoreline Features	2-971
Figure 2.5.1-258	Denniston Quarry: Quaternary Excavations, Soil Profile Locations and Mapped Soil Units	2-972
Figure 2.5.1-259	Denniston Quarry: Soil Profile SP-1 in Quaternary Excavation QE-1	2-973
Figure 2.5.1-260	Denniston Quarry: Stratigraphy Exposed in Quaternary QE-2.....	2-974
Figure 2.5.1-261	Denniston Quarry: Quaternary Excavation QE-3 and Soil Profiles SP-2 and SP-3	2-975
Figure 2.5.1-262	Denniston Quarry: North Wall of Quaternary Excavation QE-3.....	2-976
Figure 2.5.1-263	Index Map of Western Lake Erie Showing Names of Geographic Features	2-977
Figure 2.5.1-264	Index Map of Eastern Lake Erie Showing Names of Geographic Features .	2-978
Figure 2.5.1-265	Map Showing Locations of the Oil and Gas Wells Near the Sumpter and New Boston Pool Possible Faults.....	2-979
Figure 2.5.1-266	Earthquake and Inferred Fault Planes in the Ashtabula, Ohio, Area.....	2-980
Figure 2.5.1-267	Plot Showing Elevations of Bedrock Surfaces Based on Oil Wells across the Sumpter Pool and New Boston Pool Possible Faults.....	2-981
Figure 2.5.2-201	Earthquake Catalog for the CEUS SSC Model	2-1087
Figure 2.5.2-202	Location of Earthquakes within 320 km (200 mi) of the Fermi 3 Site	2-1088
Figure 2.5.2-203	Location of Earthquakes within 80 km (50 mi) of the Fermi 3 Site	2-1089
Figure 2.5.2-204	Master Logic Tree for the CEUS SSC Model	2-1090
Figure 2.5.2-205	Logic Tree for the Mmax Zones Branch of the Master Logic Tree for the CEUS SSC Model	2-1091

Figures

Figure 2.5.2-206	Location of the MESE and NMESE Mmax Zones for the “Narrow” Interpretation for the CEUS SSC Model	2-1092
Figure 2.5.2-207	Location of the MESE and NMESE Mmax Zones for the “Wide” Interpretation for the CEUS SSC Model	2-1093
Figure 2.5.2-208	Logic Tree for the Seismotectonic Zones Branch of the Master Logic Tree for the CEUS SSC Model	2-1094
Figure 2.5.2-209	Seismotectonic Zones Where the Rough Creek Graben Is Not Part of the Reelfoot Rift (RR) and the Narrow Paleozoic Extended Zone (PEZ-N)	2-1095
Figure 2.5.2-210	Seismotectonic Zones Where the Rough Creek Graben Is Part of the Reelfoot Rift (RR-RCG) and the Narrow Paleozoic Extended Zone (PEZ-N)	2-1096
Figure 2.5.2-211	Seismotectonic Zones Where the Rough Creek Graben Is Not Part of the Reelfoot Rift (RR) and the Wide Paleozoic Extended Crust (PEZ-W)	2-1097
Figure 2.5.2-212	Seismotectonic Zones Where the Rough Creek Graben Is Part of the Reelfoot Rift (RR-RCG) and the Wide Paleozoic Extended Crust (PEZ-W)	2-1098
Figure 2.5.2-213	Location of RLME Sources Characterized in the CEUS SSC Model	2-1099
Figure 2.5.2-214	Map Showing the RLME Sources and Seismicity from the CEUS SSC Earthquake Catalog	2-1100
Figure 2.5.2-215	Logic Tree for the New Madrid Faults RLME	2-1101
Figure 2.5.2-216	Simplified Tectonic Map Showing the Distribution of Principal Basement Faults, Rifts, and Sutures in the Midcontinent.....	2-1102
Figure 2.5.2-217	Maps Showing Major Basement Structural Features Relative to (a) Regional Magnetic Anomalies and (b) Regional Gravity Anomalies	2-1103
Figure 2.5.2-218	Seismicity Zones and Largest Observed Earthquakes in the MIDC Zone .	2-1104
Figure 2.5.2-219	Correlation of Interpreted Transitional Crust with the East Coast Magnetic Anomaly (ECMA).....	2-1105
Figure 2.5.2-220	Mesozoic Basins Within the ECC-AM Seismotectonic Zone.....	2-1106
Figure 2.5.2-221	Seismicity Within the ECC-AM and AHEX Seismotectonic Zones	2-1107
Figure 2.5.2-222	Seismicity and Largest Earthquakes in the GMH Seismotectonic Zone	2-1108
Figure 2.5.2-223	Map of Paleoequake Energy Centers and Paleoliquefaction Features in the IBEB Seismotectonic Zone.....	2-1109

Figures

Figure 2.5.2-224	Historical Seismicity and Largest Historical Earthquakes in the IBEB Seismotectonic Zone	2-1110
Figure 2.5.2-225	Seismicity of the NAP Seismotectonic Zone	2-1111
Figure 2.5.2-226	Seismicity and Tectonic Features of the PEZ Seismotectonic Zone	2-1112
Figure 2.5.2-227	Map of Seismicity and Geomorphic Features and Faults in the Reelfoot Rift Seismotectonic Zone	2-1113
Figure 2.5.2-228	Significant Earthquakes and Paleoseismology of the SLR Seismotectonic Zone	2-1114
Figure 2.5.2-229	Geomorphic and Near-Surface Tectonic Features in the New Madrid Region and Locations of NMFS RLME Fault Sources.....	2-1115
Figure 2.5.2-230	Seismicity, Subsurface Structural Features, Paleoearthquake Energy Centers, and Postulated Neotectonic Deformation in the Wabash Valley Region of Southern Illinois and Southern Indiana	2-1116
Figure 2.5.2-231	Seismicity and Tectonic Features of the Charlevoix RLME.....	2-1117
Figure 2.5.2-232	Postulated Faults and Tectonic Features in the Charleston Region with Charleston RLME Source Zones.....	2-1118
Figure 2.5.2-233	Earthquake Catalog for CEUS SSC Model with Location of Earthquakes with E[M] Greater than 4.3 from 2009 to 2012	2-1119
Figure 2.5.2-234	Mmax Distributions for Source Zone NMESE-W Based on NUREG-2115 Inputs and Updated Inputs	2-1120
Figure 2.5.2-235	Mmax Distributions for Source Zone ECC-AM Based on NUREG-2115 Inputs and Updated Inputs	2-1121
Figure 2.5.2-236	Mmax Distributions for Source Zones MIDC-A and MIDC-B Based on NUREG-2115 Inputs and Updated Inputs	2-1122
Figure 2.5.2-237	Mmax Distributions for Source Zones MIDC-C and MIDC-D Based on NUREG-2115 Inputs and Updated Inputs	2-1123
Figure 2.5.2-238	Ground Motion Characterization Logic Tree Used in the PSHA for the Fermi 3 Site	2-1124
Figure 2.5.2-239a	Comparison of Median Ground Motion Model Used in the PSHA with Recently Published Models - Cluster 1	2-1125
Figure 2.5.2-239b	Comparison of Median Ground Motion Model Used in the PSHA with Recently Published Models - Cluster 2	2-1126
Figure 2.5.2-239c	Comparison of Median Ground Motion Models Used in the PSHA with Recently Published - Cluster 3	2-1127

Figures

Figure 2.5.2-240	Contribution of Individual RLME Sources to the Mean Hazard for 1 Hz Spectral Acceleration at the Fermi 3 Site	2-1128
Figure 2.5.2-241	Contribution of Individual RLME Source to the Mean Hazard for 10 Hz Spectral Acceleration at the Fermi 3 Site	2-1129
Figure 2.5.2-242	Generic CEUS Hard Rock Hazard Results for 0.5 Hz Spectral Accelerations for the Fermi 3 Site	2-1130
Figure 2.5.2-243	Generic CEUS Hard Rock Hazard Results for 1.0 Hz Spectral Accelerations for the Fermi 3 Site	2-1131
Figure 2.5.2-244	Generic CEUS Hard Rock Hazard Results for 2.5 Hz Spectral Accelerations for the Fermi 3 Site	2-1132
Figure 2.5.2-245	Generic CEUS Hard Rock Hazard Results for 5 Hz Spectral Accelerations for the Fermi 3 Site	2-1133
Figure 2.5.2-246	Generic CEUS Hard Rock Hazard Results for 10 Hz Spectral Accelerations for the Fermi 3 Site	2-1134
Figure 2.5.2-247	Generic CEUS Hard Rock Hazard Results for 25 Hz Spectral Accelerations for the Fermi 3 Site	2-1135
Figure 2.5.2-248	Generic CEUS Hard Rock Hazard Results for Peak Ground Acceleration (100 Hz Spectral Accelerations) for the Fermi 3 Site	2-1136
Figure 2.5.2-249	Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 0.5 Hz Spectral Acceleration	2-1137
Figure 2.5.2-250	Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 1 Hz Spectral Acceleration	2-1138
Figure 2.5.2-251	Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 2.5 Hz Spectral Acceleration	2-1139
Figure 2.5.2-252	Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 5 Hz Spectral Acceleration	2-1140
Figure 2.5.2-253	Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 10 Hz Spectral Acceleration	2-1141
Figure 2.5.2-254	Contribution of CEUS SSC Model Sources to the Total Mean Hazard for 25 Hz Spectral Acceleration	2-1142
Figure 2.5.2-255	Contribution of CEUS SSC Model Sources to the Total Mean Hazard for Peak Ground Acceleration (100 Hz Spectral Acceleration)	2-1143
Figure 2.5.2-256	Uniform Hazard Response Spectra for the Fermi 3 Site and Generic Hard Rock Conditions Based on the CEUS SSC Model	2-1144

Figures

Figure 2.5.2-257	Deaggregation of Mean 10-3 Hazard	2-1145
Figure 2.5.2-258	Deaggregation of Mean 10-4 Hazard	2-1146
Figure 2.5.2-259	Deaggregation of Mean 10-5 Hazard	2-1147
Figure 2.5.2-260	Deaggregation of Mean 10-6 Hazard	2-1148
Figure 2.5.2-261	Extension of Response Spectra to 0.1 Hz.....	2-1149
Figure 2.5.2-262	Mean 10-3 UHRS, RE, and DE Spectra.....	2-1150
Figure 2.5.2-263	Mean 10-4 UHRS, RE, and DE Spectra.....	2-1151
Figure 2.5.2-264	Mean 10-5 UHRS, RE, and DE Spectra.....	2-1152
Figure 2.5.2-265	Mean 10-6 UHRS, RE, and DE Spectra.....	2-1153
Figure 2.5.2-266	Shear Wave Velocity Data for Boring TB-C5	2-1154
Figure 2.5.2-267	Shear Wave Velocity Data for Boring RB-C8	2-1155
Figure 2.5.2-268	Shear Wave Velocity Data for Boring CB-C3	2-1156
Figure 2.5.2-269	Shear Wave Velocity Data for Boring RB-C4	2-1157
Figure 2.5.2-270	Geometric Mean Velocity Profile for Fermi 3 Site GMRS Profile.....	2-1158
Figure 2.5.2-271	Estimation of Scattering κ	2-1159
Figure 2.5.2-272	Randomized Shear-Wave-Velocity Profiles 1 to 30	2-1160
Figure 2.5.2-273	Randomized Shear-Wave-Velocity Profiles 31 to 60	2-1161
Figure 2.5.2-274	Statistics of Randomized Shear Wave Velocity Profiles	2-1162
Figure 2.5.2-275	Example Response Spectra of Time Histories Used for Site Response Analyses	2-1163
Figure 2.5.2-276	Site Response Logic Tree	2-1164
Figure 2.5.2-277	Sensitivity of GMRS Profile Mean Site Amplification to Damping Assigned to Rock Layers at 10-4 Level of Exceedance	2-1165
Figure 2.5.2-278	Sensitivity of GMRS Profile Mean Site Amplification to Deaggregation Earthquake Motions at 10-4 Level of Exceedance	2-1166
Figure 2.5.2-279	GMRS Amplification Functions for the Fermi 3 Site	2-1167
Figure 2.5.2-280	Statistics of the Effective Strain for the GMRS Profile and 10-4 Motions ...	2-1168
Figure 2.5.2-281	Statistics of the Effective Strain for the GMRS Profile and 10-5 motions ...	2-1169

Figures

Figure 2.5.2-282	Development of the 10-4 Surface UHRS for the GMRS Profile	2-1170
Figure 2.5.2-283	UHRS for the GMRS Elevation	2-1171
Figure 2.5.2-284	Development of Horizontal GMRS for the Fermi 3 Site.....	2-1172
Figure 2.5.2-285	Vertical-to-Horizontal Spectral Ratios for Generic CEUS Hard Rock.....	2-1173
Figure 2.5.2-286	Fermi 3 GMRS (5 Percent Damping) with Comparison to CSDRS	2-1174
Figure 2.5.3-201	Map Showing Mapped Structures and Seismicity in the Site Vicinity.....	2-1190
Figure 2.5.3-202	Map Showing Field Reconnaissance Sites, Quarries, and Aerial Reconnaissance Route.....	2-1191
Figure 2.5.3-203	Interpreted Hillshade Model (10-m DEM) Showing Lineaments in the Site Vicinity	2-1192
Figure 2.5.3-204	Uninterpreted Hillshade Model (10-m DEM) of the Site Vicinity.....	2-1193
Figure 2.5.3-205	Interpreted 1955 1:20,000-scale Aerial Photograph Mosaic Showing Lineaments in the Site Area.....	2-1194
Figure 2.5.3-206	Uninterpreted 1955 1:20,000-scale Aerial Photograph Mosaic of the Site Area	2-1195
Figure 2.5.3-207	2006 2-m resolution Color Infrared Photograph Showing Interpreted Lineaments in the Site Area.....	2-1196
Figure 2.5.3-208	Uninterpreted 2006 2-m resolution Color Infrared Photograph of Site Area	2-1197
Figure 2.5.3-209	Uninterpreted 2006 2-m resolution Color Infrared Photograph of the Site Location	2-1198
Figure 2.5.3-210	Colored Contour Interval (0.5-m Increments) Map Highlighting Surfaces Associated with the Arkona Lake Level (Elevation 212 - 216 m)	2-1199
Figure 2.5.3-211	Topographic Profiles 1, 2, 3, and 5 Across the Sumpter Pool Possible Fault	2-1200
Figure 2.5.3-212	Topographic Profiles 4, 6, and 7 Across the Boston Pool Possible Fault ..	2-1201
Figure 2.5.3-213	Colored Contour Interval (0.5-m Increments) Map Highlighting Surfaces Associated with the Lake Grassmere Lake Level (Elevation 195 m)	2-1202
Figure 2.5.3-214	Topographic Profiles 8, 9, and 10 across the New Boston Pool and Sumpter Pool Possible Faults	2-1203
Figure 2.5.4-201	Excavation Site Plan	2-1317
Figure 2.5.4-202	Excavation Cross Section D-D'	2-1318

Figures

Figure 2.5.4-203	Excavation Cross Section C-C'	2-1319
Figure 2.5.4-204	Excavation Cross Section B-B'	2-1320
Figure 2.5.4-205	Comparison of measured Vs and Vp with RQD for Boring TB-C5	2-1321
Figure 2.5.4-206	Comparison of measured Vs and Vp with RQD for Boring RB-C8.....	2-1322
Figure 2.5.4-207	Comparison of measured Vs and Vp with RQD for Boring CB-C3.....	2-1323
Figure 2.5.4-208	Comparison of measured Vs and Vp with RQD for Boring RB-C4.....	2-1324
Figure 2.5.4-209	Influence of geologic features within Bass Islands Group on measured seismic wave velocities in Borehole TB-C5.....	2-1325
Figure 2.5.4-210	Influence of geologic features within Bass Islands Group on measured seismic wave velocities in Borehole RB-C8	2-1326
Figure 2.5.4-211	Influence of geologic features within Bass Islands Group on measured seismic wave velocities in Borehole CB-C3	2-1327
Figure 2.5.4-212	Influence of geologic features within Bass Islands Group on measured seismic wave velocities in Borehole RB-C4	2-1328
Figure 2.5.4-213	Influence of shale or claystone content within Salina Group Unit F on measured seismic wave velocities in Boring TB-C5.....	2-1329
Figure 2.5.4-214	Influence of shale or claystone content within Salina Group Unit F on measured seismic wave velocities in Boring CB-C3	2-1330
Figure 2.5.4-215	Compression wave velocity measurements using both P-S and Downhole methods in Borings TB-C5, RB-C8, CB-C3, and RB-C4	2-1331
Figure 2.5.4-216	Shear wave velocity measurements using both P-S and Downhole Methods in Borings TB-C5, RB-C8, CB-C3, and RB-C4	2-1332
Figure 2.5.4-217	Comparison of measured shear and compression wave velocity profile using P-S suspension method in Boring RB-C6 with measured N-values within overburden	2-1333
Figure 2.5.4-218	Comparison of measured shear and compression wave velocity profile using P-S suspension method in Boring RB-C6 with gravel content within overburden	2-1334
Figure 2.5.4-219	Measured shear wave velocity profile using SASW method in the overburden near Borings RB-C4, RW-C1, MW-381 and MW-393 (Sheet 1 of 2).....	2-1335
Figure 2.5.4-219	Measured shear wave velocity profile using SASW method in the overburden near Borings RB-C4, RW-C1, MW-381 and MW-393 (Sheet 2 of 2).....	2-1336

Figures

Figure 2.5.4-220	Measured shear and compression wave velocity profiles using P-S Suspension method in Boring TB-C5	2-1337
Figure 2.5.4-221	Measured shear and compression wave velocity profiles using P-S Suspension and Downhole Seismic methods in Boring RB-C8	2-1338
Figure 2.5.4-222	Measured shear and compression wave velocity profiles using P-S Suspension and Downhole Seismic methods in Boring CB-C3	2-1339
Figure 2.5.4-223	Measured shear and compression wave velocity profiles using P-S Suspension and Downhole Seismic methods in Boring RB-C4	2-1340
Figure 2.5.4-224	Measured shear and compression wave velocity profiles in the overburden using P-S Suspension Logger in Boring RB-C6	2-1341
Figure 2.5.4-225	Measured shear and compression wave velocity profiles in the overburden using SASW method near Borings RB-C4 and RW-C1	2-1342
Figure 2.5.4-226	Selected Shear Modulus Reduction and Damping Curves for Glacial Till..	2-1343
Figure 2.5.4-227	Total vertical displacement at end of excavation stage (Rebound due to Excavation).....	2-1344
Figure 2.5.4-228	Net Settlement at Base of Seismic Category I at End of Loading Stage....	2-1345
Figure 2.5.4-229	Lateral Earth Pressure on Reactor Building Walls	2-1346
Figure 2.5.4-230	Lateral Earth Pressure on Control Building Walls	2-1347
Figure 3.7.1-201	Shear Wave Velocity Profiles for Site Response Analysis: Intermediate Range, Lower Range, and Upper Range Values.....	3-68
Figure 3.7.1-202	Shear Wave Velocity Profiles for Site Response Analysis: FWSC Shear Wave Velocity Profile.....	3-69
Figure 3.7.1-203	Modulus Reduction and Damping Relationships Used for the Engineered Granular Backfill Material	3-70
Figure 3.7.1-204	Randomized Shear Wave Velocity Profiles 1-30 for the Intermediate Range Site Response Analysis Profile.....	3-71
Figure 3.7.1-205	Randomized Shear Wave Velocity Profiles 31-60 for the Intermediate Range Site Response Analysis Profile.....	3-72
Figure 3.7.1-206	Statistics of Randomized Shear Wave Velocity Profiles for the Intermediate Range Site Response Analysis Profile	3-73
Figure 3.7.1-207	Randomized Shear Modulus Reduction and Damping Relationships Used for LR Engineered Granular Backfill Material	3-74

Figures

Figure 3.7.1-208	Randomized Shear Modulus Reduction and Damping Relationships Used for IR Engineered Granular Backfill Material	3-75
Figure 3.7.1-209	Randomized Shear Modulus Reduction and Damping Relationships Used for UR Engineered Granular Backfill Material	3-76
Figure 3.7.1-210	Site Response Logic Tree for Full Soil Column Profile	3-77
Figure 3.7.1-211	PBSRS Amplification Functions for the Fermi 3 Site.....	3-78
Figure 3.7.1-212	RB/FB SCOR FIRS Amplification Functions for the Fermi 3 Site.....	3-79
Figure 3.7.1-213	CB SCOR FIRS Amplification Functions for the Fermi 3 Site	3-80
Figure 3.7.1-214	Example of FWSC 2D/1D Response Spectral Ratios for Fill Concrete Based on the 10^{-4} and 10^{-5} Exceedance Levels of Input Ground Motion.....	3-81
Figure 3.7.1-215	FWSC 2D/1D Response Spectral Ratios for Fill Concrete.....	3-82
Figure 3.7.1-216	FWSC FIRS Amplification Functions for the Fermi 3 Site	3-83
Figure 3.7.1-217	Development of 10^{-4} Surface UHRS at the Finished Ground Level Grade for the Full Soil Column Profile	3-84
Figure 3.7.1-218	Development of 10^{-4} SCOR UHRS at the RB/FB Foundation Level for the Full Soil Column Profile	3-85
Figure 3.7.1-219	Development of the Horizontal PBSRS for the Fermi 3 Site	3-86
Figure 3.7.1-220	Vertical to Horizontal Spectral ratios Developed for the Fermi 3 Site Full Soil Column Profile	3-87
Figure 3.7.1-221	Horizontal and Vertical Fermi 3 PBSRS at Finished Ground Level Grade (5 Percent Damping)	3-88
Figure 3.7.1-222	Deterministic Shear Wave Velocity Profiles for the Full Soil Column with Engineered Granular Backfill Above the Top of the Bass Islands Group Bedrock	3-89
Figure 3.7.1-223	Deterministic Shear Wave Velocity Profiles for the Soil Column without Engineered Granular Backfill Above the Top of the Bass Islands Group Bedrock	3-90
Figure 3.7.1-224	Fermi 3 RB/FB SCOR FIRS (5 Percent Damping).....	3-91
Figure 3.7.1-225	Fermi 3 CB SCOR FIRS (5 Percent Damping).....	3-92
Figure 3.7.1-226	Fermi 3 Horizontal RB/FB SCOR FIRS and Initially Enhanced SCOR FIRS with the NUREG/CR-0098 Median Rock Spectral Shape, Enveloping NUREG/CR-6728 CEUS Spectral Shape, and RG 1.60 Spectral Shape, all Scaled to a Minimum PGA of 0.1 g (5 Percent Damping)	3-93

Figures

Figure 3.7.1-227	Fermi 3 Horizontal CB SCOR FIRS and Initially Enhanced SCOR FIRS with the NUREG/CR-0098 Median Rock Spectral Shape, Enveloping NUREG/CR-6728 CEUS Spectral Shape, and RG 1.60 Spectral Shape, all Scaled to a Minimum PGA of 0.1 g (5 Percent Damping).....	3-94
Figure 3.7.1-228	Fermi 3 Horizontal and Vertical RB/FB SCOR FIRS and Enhanced RB/FB SCOR FIRS (5 Percent Damping)	3-95
Figure 3.7.1-229	Fermi 3 Horizontal CB SCOR FIRS and Enhanced CB SCOR FIRS (5 Percent Damping).....	3-96
Figure 3.7.1-230	Comparison of the Envelope of the Response Spectra of Computed Horizontal Component Surface Motions for Deterministic Profiles with Engineered Granular Backfill above the Top of the Bass Islands Group Bedrock Using the RB/FB Enhanced SCOR FIRS Input Motions with the Horizontal PBSRS	3-97
Figure 3.7.1-231	Comparison of the Envelope of the Response Spectra of Computed Horizontal Component Surface Motions for Deterministic Profiles with Engineered Granular Backfill above the Top of the Bass Islands Group Bedrock Using the CB Enhanced SCOR FIRS Input Motions with the Horizontal PBSRS	3-98
Figure 3.7.1-232	Comparison of the Envelope of the Response Spectra of Computed Horizontal Component Surface Motions for Deterministic Profiles without Engineered Granular Backfill above the Top of the Bass Islands Group Bedrock Using the RB/FB Enhanced SCOR FIRS Input Motions with the Horizontal GMRS	3-99
Figure 3.7.1-233	Comparison of the Envelope of the Response Spectra of Computed Horizontal Component Surface Motions for Deterministic Profiles without Engineered Granular Backfill above the Top of the Bass Islands Group Bedrock Using the CB Enhanced SCOR FIRS Input Motions with the Horizontal GMRS.....	3-100
Figure 3.7.1-234	Comparison of the Envelope of the Response Spectra of Computed Vertical Component Surface Motions for Deterministic Profiles With Engineered Granular Backfill Above the top of the Bass Islands Group Bedrock Using the RB/FB Enhanced SCOR FIRS Input Motions with the Vertical PBSRS	3-101
Figure 3.7.1-235	Comparison of the Envelope of the Response Spectra of Computed Vertical Component Surface Motions for Deterministic Profiles With Engineered Granular Backfill Above the top of the Bass Islands Group Bedrock Using the CB Enhanced SCOR FIRS Input Motions with the Vertical PBSRS.....	3-102
Figure 3.7.1-236	Comparison of the Envelope of the Response Spectra of Computed Vertical Component Surface Motions for Deterministic Profiles without Engineered Granular Backfill above the Top of the Bass Islands Group Bedrock Using the RB/FB Enhanced SCOR FIRS Input Motions with the Vertical GMRS	3-103
Figure 3.7.1-237	Comparison of the Envelope of the Response Spectra of Computed Vertical Component Surface Motions for Deterministic Profiles without Engineered	

Figures

	Granular Backfill above the Top of the Bass Islands Group Bedrock Using the CB Enhanced SCOR FIRS Input Motions with the Vertical GMRS	3-104
Figure 3.7.1-238	Fermi 3 FWSC FIRS (5 Percent Damping)	3-105
Figure 3.7.1-239	Response Spectrum for Spectrally Matched Horizontal (H1) Component for the Fermi 3 RB/FB Enhanced SCOR FIRS	3-106
Figure 3.7.1-240	Response Spectrum for Spectrally Matched Horizontal (H2) Component for the Fermi 3 RB/FB Enhanced SCOR FIRS	3-107
Figure 3.7.1-241	Response Spectrum for Spectrally Matched Vertical (V) Component for the Fermi 3 RB/FB Enhanced SCOR FIRS	3-108
Figure 3.7.1-242	Response Spectrum for Spectrally Matched Horizontal (H1) Component for the Fermi 3 CB Enhanced SCOR FIRS	3-109
Figure 3.7.1-243	Response Spectrum for Spectrally Matched Horizontal (H2) Component for the Fermi 3 CB Enhanced SCOR FIRS	3-110
Figure 3.7.1-244	Response Spectrum for Spectrally Matched Vertical (V) Component for the Fermi 3 CB Enhanced SCOR FIRS.....	3-111
Figure 3.7.1-245	Acceleration, Velocity, and Displacement Time Histories for the Spectrally Matched Horizontal (H1) Component Compatible with the Fermi 3 RB/FB Enhanced SCOR FIRS.....	3-112
Figure 3.7.1-246	Acceleration, Velocity, and Displacement Time Histories for the Spectrally Matched Horizontal (H2) Component Compatible with the Fermi 3 RB/FB Enhanced SCOR FIRS.....	3-113
Figure 3.7.1-247	Acceleration, Velocity, and Displacement Time Histories for the Spectrally Matched Vertical (V) Component Compatible with the Fermi 3 RB/FB Enhanced SCOR FIRS.....	3-114
Figure 3.7.1-248	Acceleration, Velocity, and Displacement Time Histories for the Spectrally Matched Horizontal (H1) Component Compatible with the Fermi 3 CB Enhanced SCOR FIRS.....	3-115
Figure 3.7.1-249	Acceleration, Velocity, and Displacement Time Histories for the Spectrally Matched Horizontal (H2) Component Compatible with the Fermi 3 CB Enhanced SCOR FIRS.....	3-116
Figure 3.7.1-250	Acceleration, Velocity, and Displacement Time Histories for the Spectrally Matched Vertical (V) Component Compatible with the Fermi 3 CB Enhanced SCOR FIRS.....	3-117
Figure 3.7.1-251	Normalized Arias Intensity and Estimates of Equivalent Stationary Duration for Calculating the PSD for the Spectrally Matched Horizontal (H1 and H2) Components Compatible with the Fermi 3 RB/FB Enhanced SCOR FIRS..	3-118

Figures

Figure 3.7.1-252	PSD Computed for the RB/FB H1 Component Spectrally Matched Time History (Enhanced SCOR FIRS) Using Full Duration Time Histories and Time Histories Windowed to an Equivalent Stationary Duration, T_D	3-119
Figure 3.7.1-253	PSD Computed for the RB/FB H2 Component Spectrally Matched Time History (Enhanced SCOR FIRS) Using Full Duration Time Histories and Time Histories Windowed to an Equivalent Stationary Duration, T_D	3-120
Figure 3.7.1-254	PSD Computed for the CB H1 Component Spectrally Matched Time History (Enhanced SCOR FIRS) Using Full Duration Time Histories and Time Histories Windowed to an Equivalent Stationary Duration, T_D	3-121
Figure 3.7.1-255	PSD Computed for the CB H2 Component Spectrally Matched Time History (Enhanced SCOR FIRS) Using Full Duration Time Histories and Time Histories Windowed to an Equivalent Stationary Duration, T_D	3-122
Figure 3.7.1-256	Power Spectra and Cumulative Power Plots for the Horizontal In-Column Acceleration Time Histories (H1 and H2) Compatible with the BE Deterministic Profile without Engineered Granular Backfill above the Top of the Bass Islands Group Bedrock	3-123
Figure 3.7.2-201	SASSI2010 Plate Element for RB/FB Basemat (RBFB1)	3-155
Figure 3.7.2-202	SASSI2010 Plate Elements for RB/FB Exterior Walls (RBFB1).....	3-156
Figure 3.7.2-203	Overview of SASSI2010 SSI RB/FB Model (RBFB1).....	3-157
Figure 3.7.2-203a	SASSI2010 Plate Element for RB/FB Basemat (RBFB2)	3-158
Figure 3.7.2-203b	SASSI2010 Plate Element for RB/FB Exterior Walls (RBFB2).....	3-159
Figure 3.7.2-203c	Overview of SASSI2010 SSI RB/FB Model (RBFB2).....	3-160
Figure 3.7.2-204	SASSI2010 Plate Elements for CB Basemat (CB1).....	3-161
Figure 3.7.2-205	SASSI2010 Plate Elements for CB Exterior Walls (CB1).....	3-162
Figure 3.7.2-206	Overview of CB SASSI2010 SSI Model (CB1).....	3-163
Figure 3.7.2-206a	SASSI2010 Plate Element for CB Basemat (CB2).....	3-164
Figure 3.7.2-206b	SASSI2010 Plate Element for CB Exterior Walls (CB2).....	3-165
Figure 3.7.2-206c	Overview of SASSI2010 SSI CB Model (CB2).....	3-166
Figure 3.7.2-207a	Comparison of Floor Response Spectra - RB/FB Refueling Floor in X-Direction	3-167
Figure 3.7.2-207b	Comparison of Floor Response Spectra - RCCV Top Slab in X-Direction ...	3-168
Figure 3.7.2-207c	Comparison of Floor Response Spectra - Vent Wall Top in X-Direction	3-169

Figures

Figure 3.7.2-207d Comparison of Floor Response Spectra - RSW Top in X-Direction	3-170
Figure 3.7.2-207e Comparison of Floor Response Spectra - RPV Top in X-Direction	3-171
Figure 3.7.2-207f Comparison of Floor Response Spectra - RB/FB Basemat in X-Direction ...	3-172
Figure 3.7.2-208a Comparison of Floor Response Spectra - RB/FB Refueling Floor in Y-Direction	3-173
Figure 3.7.2-208b Comparison of Floor Response Spectra - RCCV Top Slab in Y-Direction ...	3-174
Figure 3.7.2-208c Comparison of Floor Response Spectra - Vent Wall Top in Y-Direction	3-175
Figure 3.7.2-208d Comparison of Floor Response Spectra - RSW Top in Y-Direction	3-176
Figure 3.7.2-208e Comparison of Floor Response Spectra - RPV Top in Y-Direction	3-177
Figure 3.7.2-208f Comparison of Floor Response Spectra - RB/FB Basemat in Y-Direction ...	3-178
Figure 3.7.2-209a Comparison of Floor Response Spectra - RB/FB Refueling Floor in Z-Direction	3-179
Figure 3.7.2-209b Comparison of Floor Response Spectra - RCCV Top Slab in Z-Direction ...	3-180
Figure 3.7.2-209c Comparison of Floor Response Spectra - Vent Wall Top in Z-Direction	3-181
Figure 3.7.2-209d Comparison of Floor Response Spectra - RSW Top in Z-Direction	3-182
Figure 3.7.2-209e Comparison of Floor Response Spectra - RPV Top in Z-Direction	3-183
Figure 3.7.2-209f Comparison of Floor Response Spectra - RB/FB Basemat in Z-Direction ...	3-184
Figure 3.7.2-210a Comparison of Floor Response Spectra - CB Top in X-Direction	3-185
Figure 3.7.2-210b Comparison of Floor Response Spectra - CB Basemat in X-Direction	3-186
Figure 3.7.2-211a Comparison of Floor Response Spectra - CB Top in Y-Direction	3-187
Figure 3.7.2-211b Comparison of Floor Response Spectra - CB Basemat in Y-Direction	3-188
Figure 3.7.2-212a Comparison of Floor Response Spectra - CB Top in Z-Direction.....	3-189
Figure 3.7.2-212b Comparison of Floor Response Spectra - CB Basemat in Z-Direction.....	3-190
Figure 3.8.4-201a SSI Lateral Soil Pressure RB/FB.....	3-199
Figure 3.8.4-201b SSI Lateral Soil Pressure RB/FB.....	3-200
Figure 3.8.4-201c SSI Lateral Soil Pressure RB/FB.....	3-201
Figure 3.8.4-201d SSI Lateral Soil Pressure RB/FB.....	3-202
Figure 3.8.4-201e SSI Lateral Soil Pressure RB/FB.....	3-203

Figures

Figure 3.8.4-201f SSI Lateral Soil Pressure RB/FB.....	3-204
Figure 3.8.4-201g SSI Lateral Soil Pressure RB/FB.....	3-205
Figure 3.8.4-201h SSI Lateral Soil Pressure RB/FB.....	3-206
Figure 3.8.4-202a SSI Lateral Soil Pressure CB	3-207
Figure 3.8.4-202b SSI Lateral Soil Pressure CB	3-208
Figure 3.8.4-202c SSI Lateral Soil Pressure CB	3-209
Figure 3.8.4-202d SSI Lateral Soil Pressure CB	3-210
Figure 3.8.4-203a SSSI Lateral Soil Pressure CB.....	3-211
Figure 3.8.4-203b SSSI Lateral Soil Pressure CB.....	3-212
Figure 8.2-201 345 kV Switchyard Single-Line Diagram	8-11
Figure 8.2-202 This page is intentionally left blank.....	8-12
Figure 8.2-203 Transmission Line Map	8-13
Figure 9.2-201 Potable Water System Simplified Diagram	9-19
Figure 9.2-202 Sanitary Waste Discharge System Simplified Diagram.....	9-20
Figure 9.2-203 Station Water System – Plant Cooling Tower Makeup System (PCTMS).....	9-21
Figure 9.2-204 Station Water System – Pretreated Water Supply System (PWSS)	9-22
Figure 9.2-205 Plant Service Water System Simplified Diagram.....	9-23
Figure 9.5-201 Fire Protection System Yard Main Loop.....	9-42
Figure 9.A-2-20R Radwaste Building Fire Protection Zones EL –9350	9-57
Figure 9.A-2-21R Radwaste Building Fire Protection Zones EL –2350	9-58
Figure 9.A-2-22R Radwaste Building Fire Protection Zones EL 4650	9-59
Figure 9.A-2-23R Radwaste Building Fire Protection Zones EL 10650	9-60
Figure 9.A-2-24R Radwaste Building Fire Protection Zones Section A-A and Section B-B	9-61
Figure 9A.2-33R Site Fire Protection Zone ESBWR Plot Plan	9-62
Figure 9A.2-201 Fire Zones - Station Water Intake Building.....	9-63
Figure 10.4-201 CIRC Natural Cooling Tower and Pump	10-11
Figure 10.4-202 Condenser and Ball Cleaning System.....	10-12

Figures

Figure 11.4-1R	Solid Waste Management System Process Diagram.....	11-19
Figure 11.4-2R	SWMS Collection Subsystem.....	11-20
Figure 12.3-19R	RADWASTE BUILDING RADIATION ZONES EL -9350.....	12-47
Figure 12.3-20R	RADWASTE BUILDING RADIATION ZONES EL -2350.....	12-48
Figure 12.3-21R	RADWASTE BUILDING RADIATION ZONES EL 4650.....	12-49
Figure 12.3-22R	RADWASTE BUILDING RADIATION ZONES EL 10650.....	12-50
Figure 12.3-39R	RADWASTE BUILDING AREA RADIATION MONITORS EL -9350.....	12-51
Figure 12.3-40R	RADWASTE BUILDING AREA RADIATION MONITORS EL -2350.....	12-52
Figure 12.3-41R	RADWASTE BUILDING AREA RADIATION MONITORS EL 4650.....	12-53
Figure 12.3-42R	RADWASTE BUILDING AREA RADIATION MONITORS EL 10650.....	12-54
Figure 12.3-61R	RADWASTE BUILDING ACCESS AND EGRESS ROUTES EL -9350.....	12-55
Figure 12.3-62R	RADWASTE BUILDING ACCESS AND EGRESS ROUTES EL -2350.....	12-56
Figure 12.3-63R	RADWASTE BUILDING ACCESS AND EGRESS ROUTES EL 4650.....	12-57
Figure 12.3-64R	RADWASTE BUILDING ACCESS AND EGRESS ROUTES EL 10650.....	12-58
Figure 13.1-201	Design and Construction Organization.....	13-35
Figure 13.1-202	Nominal Plant Staff Hiring and Training Schedule.....	13-36
Figure 13.1-203	Shift Operations.....	13-37
Figure 13.1-204	Fermi 3 Site Organization (Operations).....	13-38
Figure 13.1-205	Fermi 3 Site Organization (Technical Support).....	13-39
Figure 14AA-201	Preoperational and Startup Test Organization (Typical).....	14-43