

CHAPTER 2, ENVIRONMENTAL DESCRIPTION

LIST OF FIGURES

<u>Number</u>	<u>Title</u>
2.1-1	VCSNS Site and Proposed Plant Footprint
2.1-2	50-Mile Vicinity
2.1-3	6-Mile Vicinity
2.1-4	Oblique Aerial Photograph of VCSNS Site
2.2-1	Land Use on the Proposed Site
2.2-2	Land Use in the Vicinity of the Proposed Site
2.2-3	Existing Transmission System for VCSNS Unit 1
2.2-4	Potential New Transmission Lines
2.2-5	Land Use in the Region of the Proposed Site
2.3-1	Major Hydrologic Features within the 50-mile Radius Zone around Units 2 and 3
2.3-2	Topography of the Vicinity of the Units 2 and 3 and Monticello Reservoir, Based on Data from the Aerial Survey Conducted in 2006
2.3-3	Major Hydrologic Features Within the 6-mile Radius Zone around Units 2 and 3
2.3-4	Broad River Watershed Upstream of the Site and Nearest Stream Flow Gauging Stations
2.3-5	100-year Floodplain Map in the Vicinity of VCSNS (Source: FEMA issued flood map, Fairfield County, South Carolina, ID 4500750175B)
2.3-6	Flood Frequency Curve for the Broad River at Parr Shoals Dam
2.3-7	Parr Reservoir Area and Storage Capacity Curves
2.3-8	Monticello Reservoir Area and Storage Capacity Curves
2.3-9	Location of Bathymetric Survey Areas

List of Figures (Continued)

<u>Number</u>	<u>Title</u>
2.3-10	Proposed Intake Location Monticello Reservoir, South Carolina
2.3-11	Proposed Discharge Location Parr Reservoir, South Carolina
2.3-12	Locations of Water Quality Monitoring Stations in Monticello Reservoir
2.3-13	January Vertical Profiles for Water Temperatures in Monticello Reservoir in 2006
2.3-14	August Vertical Profiles for Water Temperatures in Monticello Reservoir in 2006
2.3-15	Recorded Water Temperatures in Broad River
2.3-16	Suspended Sediment in the Broad River for the Carlisle and Alston Gauges (USGS #02156500 and USGS #0216100, respectively)
2.3-17	Backwater Effects from Parr Reservoir Extend Thirteen Miles Upstream
2.3-18	SCE&G Sediment Sampling Sites from January 2007
2.3-19	Ternary Diagram Showing the Sediment Gradations for Parr Reservoir Sediment Sampling
2.3-20	Mapped Wetlands
2.3-21	Hydrogeologic Provinces and Associated Physiographic Provinces in South Carolina (Childress and Butler 2006)
2.3-22	Geologic Cross Section of the Regional Physiographic Provinces and Associated Aquifer Systems (Miller 1990)
2.3-23	Hydrogeologic Cross Section of South Carolina (Childress and Butler 2006)
2.3-24	Regional Aquifer Systems
2.3-25	Groundwater Flow in the Piedmont/Blue Ridge Aquifer System (Miller 1990)
2.3-26	Observation Well Locations in the Saprolite/ Shallow Bedrock Zone

List of Figures (Continued)

<u>Number</u>	<u>Title</u>
2.3-27	Deep Bedrock Zone Observation Well Locations
2.3-28	Hydrographs for Saprolite/Shallow Bedrock Hydrostratigraphic Zone VCSNS Observation Wells, June 2006–June 2007
2.3-29	Hydrographs for Deep Bedrock Hydrostratigraphic Zone VCSNS Observation Wells, June 2006–June 2007
2.3-30	Piezometric Contour Map in the Saprolite/Shallow Bedrock Zone, June 2007
2.3-31	Piezometric Contour Map in the Deep Bedrock Zone, June 2007
2.3-32	Head Differential between the Saprolite/Shallow Bedrock Hydrostratigraphic Zone and the Deep Bedrock Hydrostratigraphic Zone based on Well Pairs
2.3-33	Porosity components as a Function of Grain Size (de Marsily, 1986)
2.3-34	Plan View of Subsurface Contaminant Pathways for Units 2 and 3 (All elevations are with reference to the NAVD88 datum)
2.3-35	Diagram of Broad River, Parr Reservoir, and Monticello Reservoir System
2.3-36	Plan View Showing Locations of Cross Sections for Unit 2 and Unit 3 Pathways
2.3-37	Cross Section Along the Subsurface Contaminant Pathway for Unit 2
2.3-38	Cross Section Along the Subsurface Contaminant Pathway for Unit 3
2.4-1	Habitats and Areas That Will Be Disturbed During Construction of Units 2 and 3
2.4-2	Areas Surveyed for Endangered and Threatened Species at VCSNS, 2002–2007
2.4-3	Small Mammal Trapping Transects on the VCSNS Site, October 2008

List of Figures (Continued)

<u>Number</u>	<u>Title</u>	
2.5-1	10-Mile Radius Sector Chart Superimposed Over a VCSNS Site Vicinity Map	
2.5-2	50-Mile Radius Sector Chart Divided into 10-Mile Radii	
2.5-3	Road and Highway Transportation System in the Four-County Region	
2.5-4	Public Airports and Rail System Within 50 Miles of the Proposed Site	
2.5-5	Areas Surveyed for Cultural Resources at VCSNS	
2.5-6	Black Races Block Groups Within 50 Miles	
2.5-7	American Indian or Alaskan Native Block Groups Within 50 Miles	
2.5-8	Asian Block Groups Within 50 Miles	
2.5-9	Aggregate Block Groups Within 50 Miles	
2.5-10	Hispanic Ethnicity Block Groups Within 50 Miles	
2.5-11	Low-Income Block Groups Within 50 Miles	
2.6-1	Map of Physiographic Provinces	
2.6-2	Geologic Map of the Jenkinsville, Pomaria, Little Mountain, and Chapin 7.5-Minute Quadrangles	
2.7-1	Climatological Observing Stations near the VCSNS Site	
2.7-2	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Annual	
2.7-3	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Winter	
2.7-4	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Spring	

List of Figures (Continued)

<u>Number</u>	<u>Title</u>	
2.7-5	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Summer	
2.7-6	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Autumn	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — January (Sheet 1 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — February (Sheet 2 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — March (Sheet 3 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — April (Sheet 4 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — May (Sheet 5 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — June (Sheet 6 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — July (Sheet 7 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — August (Sheet 8 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — September (Sheet 9 of 12)	

List of Figures (Continued)

<u>Number</u>	<u>Title</u>	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — October (Sheet 10 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — November (Sheet 11 of 12)	
2.7-7	10-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — December (Sheet 12 of 12)	
2.7-8	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Annual	
2.7-9	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Winter	
2.7-10	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Spring	
2.7-11	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Summer	
2.7-12	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — Autumn	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — January (Sheet 1 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — February (Sheet 2 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — March (Sheet 3 of 12)	

List of Figures (Continued)

<u>Number</u>	<u>Title</u>	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — April (Sheet 4 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — May (Sheet 5 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — June (Sheet 6 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — July (Sheet 7 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — August (Sheet 8 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — September (Sheet 9 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — October (Sheet 10 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — November (Sheet 11 of 12)	
2.7-13	60-Meter Level Composite Wind Rose for the Units 2 and 3 Monitoring Program (January 1, 2007–December 31, 2007) — December (Sheet 12 of 12)	
2.7-14	Site Area Map (50-Mile Radius)	
2.7-15	Terrain Elevation Profiles Within 50 Miles of the Site for Units 2 and 3 (Sheet 1 of 6)	
2.7-15	Terrain Elevation Profiles Within 50 Miles of the Site for Units 2 and 3 (Sheet 2 of 6)	

List of Figures (Continued)

<u>Number</u>	<u>Title</u>
2.7-15	Terrain Elevation Profiles Within 50 Miles of the Site for Units 2 and 3 (Sheet 3 of 6)
2.7-15	Terrain Elevation Profiles Within 50 Miles of the Site for Units 2 and 3 (Sheet 4 of 6)
2.7-15	Terrain Elevation Profiles Within 50 Miles of the Site for Units 2 and 3 (Sheet 5 of 6)
2.7-15	Terrain Elevation Profiles Within 50 Miles of the Site for Units 2 and 3 (Sheet 6 of 6)
2.7-16	Site and Vicinity Map (5-Mile Radius)
2.7-17	Site Boundary/Exclusion Area Boundary, Dose Evaluation Periphery, and PBA Circle
2.8-1	Anthropogenic Radiation Sources