2.8 RELATED FEDERAL AND OTHER PROJECT ACTIVITIES

It is NRC's policy to take account of the regulations of the Council on Environmental Quality that implement the National Environmental Policy Act [10 CFR 51.10(a)]. The Council on Environmental Quality Regulation 40 CFR 1508.25(c) requires that environmental impact statements implementing the National Environmental Policy Act address impacts that may be cumulative, defining "cumulative impact" at 40 CFR 1508.7 as follows:

> "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

NRC uses material in an applicant's environmental report in preparing an environmental impact statement to meet its obligations under the National Environmental Policy Act. SCE&G has identified in Section 2.8 activities that, in combination with the proposed action, Units 2 and 3 may have cumulative impacts. SCE&G identified candidate activities through review of South Carolina Project Notification and Review System bulletins, internet research of the nearby localities, county government and planning organizations and military installations, and a tour of the local area. The review sought activities having impacts that could be similar to those anticipated from the new units and concentrated on those projects and activities that would most likely contribute to cumulative impacts in the areas of water consumption, water quality, radiological emissions, transportation infrastructure, and socioeconomic resources, anticipated to be the most significant impacts from the proposed action.

2.8.1 FEDERAL PROJECTS/ACTIONS

Related federal actions include the permitting of the Parr Hydro facility and Fairfield Pumped Storage Facility by the Federal Energy Regulatory Commission These facilities currently hold a Federal Energy Regulatory Commission permit that must be renewed periodically. The current permit expires June 30, 2020 (FPC 1974). The water source for Parr Hydro is Parr Reservoir, which is an impoundment on the Broad River. Parr Reservoir serves as the lower pool for Fairfield Pumped Storage Facility. The Monticello Reservoir serves as the upper pool. The Monticello Reservoir is also the water source for the existing Unit 1 and would be the water source for Units 2 and 3. Thus, all these existing facilities and the proposed units are interrelated with regard to water sources (see Subsections 2.3.2.2 and 2.8.3 for more detail). Furthermore, the Federal Energy Regulatory Commission must approve the proposed units' water usage from the Monticello Reservoir and discharge to Parr Reservoir.

Other related federal actions in the vicinity are the existing NRC license for Unit 1 and the planned independent spent fuel storage installation that would require an NRC license. The old and new units would share some infrastructure, including transmission line rights-of-way and the independent spent fuel storage

installation. The independent spent fuel storage installation would be licensed under NRC regulation 10 CFR 72.

SCE&G's review of existing and planned activities in the vicinity of VCSNS first identified federal facilities in the vicinity of the project including the Department of Energy's Savannah River Site located more than 50 miles from VCSNS and three federal military bases located within 50 miles of VCSNS. These are Fort Jackson, approximately 25 miles southeast; Shaw Air Force Base, approximately 50 miles southeast; and North Air Field, approximately 47 miles south-southeast. North Air Field is designated as a "bare base" and is listed as closed on aeronautical charts. It is used for limited military training functions. Other federal facilities within the 50-mile vicinity of VCSNS include Moncrief Army Community Hospital located at Fort Jackson, the William Jennings Bryan Dorn Veterans Affairs Medical Center in Columbia, South Carolina, and various federal government buildings with administrative functions located in the Columbia area. A federal prison in Edgefield County is near the edge of the 50-mile radius. The Sumter National Forest is adjacent to the Monticello Reservoir and Congaree National Park is located about 40 miles south in Hopkins, South Carolina.

Existing and planned federal projects and actions were reviewed with regard to any connections to the proposed project based on the following criteria provided in NUREG 1555.

- Acquisition and/or use of the proposed site
- Providing or ensuring adequate cooling water supply
- Requiring the completion of any federal project before construction and operation of the proposed project
- Significant new power purchases by federal projects within the proposed project service area
- Contingency of any federal projects on construction and operation of the proposed project

The property where Units 2 and 3 would be located is currently owned by SCE&G and is contiguous with the Unit 1 site. No offsite property would be needed for the proposed AP1000 reactors and supporting infrastructure. However, the proposed transmission lines would involve offsite property and may require some land acquisition. The proposed transmission lines would not extend outside South Carolina, therefore, the Federal Energy Regulatory Commission would not be involved in approvals and permitting of transmission lines. As noted above, the proposed project would use an existing water makeup source and would be subject to federal action (i.e., approval by the Federal Energy Regulatory Commission of the water usage). The proposed project is contingent on the continued operation by SCE&G of the Parr Hydro facility and Fairfield Pumped Storage Facility to provide a water supply (see Subsections 2.3.2.2 and 2.8.3). No federal projects or activities are contingent on the construction and operation of

the proposed project. The need for power (Chapter 8) that would be provided by Units 2 and 3 does not require any planned federal project or activity as justification.

2.8.2 COOPERATING AGENCIES

NRC regulations (10 CFR 51.10(b)(2)) state that the Commission will follow the Council on Environmental Quality regulations at 40 CFR 1501.6 related to cooperating agencies. The Council's regulations require that any other federal agency beyond the lead agency that has jurisdiction by law be a cooperating agency. The regulations further allow the lead agency to request other federal agencies that have special expertise with respect to any environmental issue that should be addressed in the environmental impact statement to become a cooperating agency. NRC goes beyond the Council's regulation on cooperating agency by seeing the possible need to involve a state or local agency or an Indian Tribe, when a reservation is involved (10 CFR 51.14(a)).

SCE&G and Santee Cooper, the co-owners of the proposed units, are regulated by NRC. There is no other federal agency that has jurisdiction by law. As discussed in Subsection 2.8.1, some interdependent SCE&G facilities are permitted by the Federal Energy Regulatory Commission. As to special expertise with regard to environmental impacts, NRC can choose to request another federal agency or a state or local agency to serve as a cooperating agency if it sees the need for such assistance. The U.S. Army Corps of Engineers has agreed to participate as a cooperating agency in the preparation of the environmental impact statement supporting NRC's review of the combined license application for VCSNS Units 2 and 3. The proposed site for Units 2 and 3 does not involve an Indian reservation.

2.8.3 PROJECTS AND ACTIVITIES IN THE REGION WITH POTENTIAL TO CONTRIBUTE TO CUMULATIVE IMPACTS

Units 2 and 3 would be located at the VCSNS site, which already has one pressurized water commercial nuclear reactor (Figure 2.1-1). SCE&G also operates two nearby hydroelectric plants—the Fairfield Pumped Storage Facility and the Parr Hydro facility (Figure 2.1-3). These generating facilities depend on the Broad River, Parr Reservoir, and/or Monticello Reservoir. As described more fully in Section 2.3, the Broad River was impounded to create the Parr Reservoir for the purpose of siting the Parr Hydro station. In 1977, the Parr Reservoir was enlarged to support the development of the Fairfield Pumped Storage Facility, which was constructed on Frees Creek. At this time, the Monticello Reservoir was created in the Frees Creek Valley to serve as the upper pool for the Fairfield Pumped Storage Facility and as the cooling water source for Unit 1. Water flow to support these facilities is as follows: Parr Hydro draws water from the Parr Reservoir and returns water to Broad River. During pumpback operation, the Fairfield Pumped Storage Facility draws water from the Parr Reservoir and discharges it to the Monticello Reservoir. Unit 1 withdraws cooling water from the Monticello Reservoir, the heated water leaving the plant via the discharge bay and canal is returned to the Monticello Reservoir.

In addition to these users of water in the Broad River, there are six hydroelectric plants that use waters of the Broad River. Five are upstream of the proposed units and one is downstream. Another large user of the Broad River is the city of Columbia, which withdraws an average of approximately 32.5 million gpd. A detailed discussion of area surface water usage is presented in Subsection 2.3.2.2.

Pending upstream users of the Broad River include two proposed nuclear generating reactors. Duke Energy has proposed to construct two AP1000 reactors (to be known as Lee Nuclear Station) upstream from VCSNS on the Broad River in Cherokee County, South Carolina (Figure 2.8-1). The reactors would not be colocated with an existing, operating nuclear plant. Duke Energy estimates that the two units would come into service by 2016 (Duke Energy 2007).

Numerous locations within South Carolina and close to its borders manage and may ship anthropogenic radiological materials. These are shown on Figure 2.8-1, with the exception of area hospitals. These managers of radiological materials are mentioned here with regard to the potential for cumulative impacts in the 50-mile radius from radiological emissions, transportation of radiological materials, and socioeconomic resources (*e.g.,* sources of radiological workers).

Anthropogenic sources of radiological emissions in the 50-mile vicinity include the existing Unit 1 reactor, and decommissioned steam generators at the onsite old steam generator recycle facility vault. SCE&G also has plans to construct an independent spent fuel storage installation onsite for dry spent fuel storage. The decommissioned Carolinas-Virginia Tube reactor, which was at the east end of Parr Shoals Dam, has been decontaminated, demolished, and removed and is no longer a potential source of radiological emissions in the vicinity. Other sources of anthropogenic radiation in the 50-mile vicinity include a Westinghouse fuel fabrication facility south of Columbia and hospitals using medical isotopes in Columbia, Lexington, Newberry, Rock Hill, Lancaster, Laurens, Greenwood, and Camden.

Beyond the 50-mile vicinity, but within South Carolina borders, lie six other nuclear reactors (U.S. NRC 1999, 2002a, 2003). Other operating nuclear plants located in South Carolina are the Catawba Nuclear Station (two reactors) located in York County, the H. B. Robinson Steam Electric Plant (one reactor) in Darlington County, and the Oconee Nuclear Station (three reactors) located in Oconee County. The 50-mile radii of these reactors overlap the 50-mile radii of Units 2 and 3.

North Carolina and Georgia have nuclear plants that are near the border with South Carolina (Figure 2.8-1) (U.S. NRC 1985 and 2002b). The McGuire Nuclear Station (two reactors) is located in Mecklenburg County, North Carolina, north of Charlotte. Vogtle Electric Generating Plant (two reactors) in Burke County, Georgia is just across the Savannah River from Barnwell County.

The U.S. DOE's Savannah River Site is adjacent to the Savannah River in Aiken, Barnwell, and Allendale Counties (Figure 2.8-1). Defense radiological materials

and wastes are manufactured, stored, and disposed of at the Savannah River Site and transported to and from the site. Construction of additional radiological handling facilities is anticipated with construction beginning in 2007 and continuing until 2020 (Lanigan 2006, Patterson 2006a, 2006b, 2006c). The construction workforce for these projects would require an estimated 600 to 1,850 workers, with the peak workforce year of 2010 (Lanigan 2006, Patterson 2006a, 2006b, 2006c). Adjacent to the eastern side of the Savannah River Site in Barnwell County is a commercial radioactive waste disposal facility operated by Energy Solutions (formerly Chem-Nuclear) (Figure 2.8-1). The Barnwell facility is the only state-owned facility currently available to most of the nation for the disposal of commercially generated low-level radioactive waste. Radiological material is also managed at the Charleston Naval Weapons Station.

Section 2.8 References

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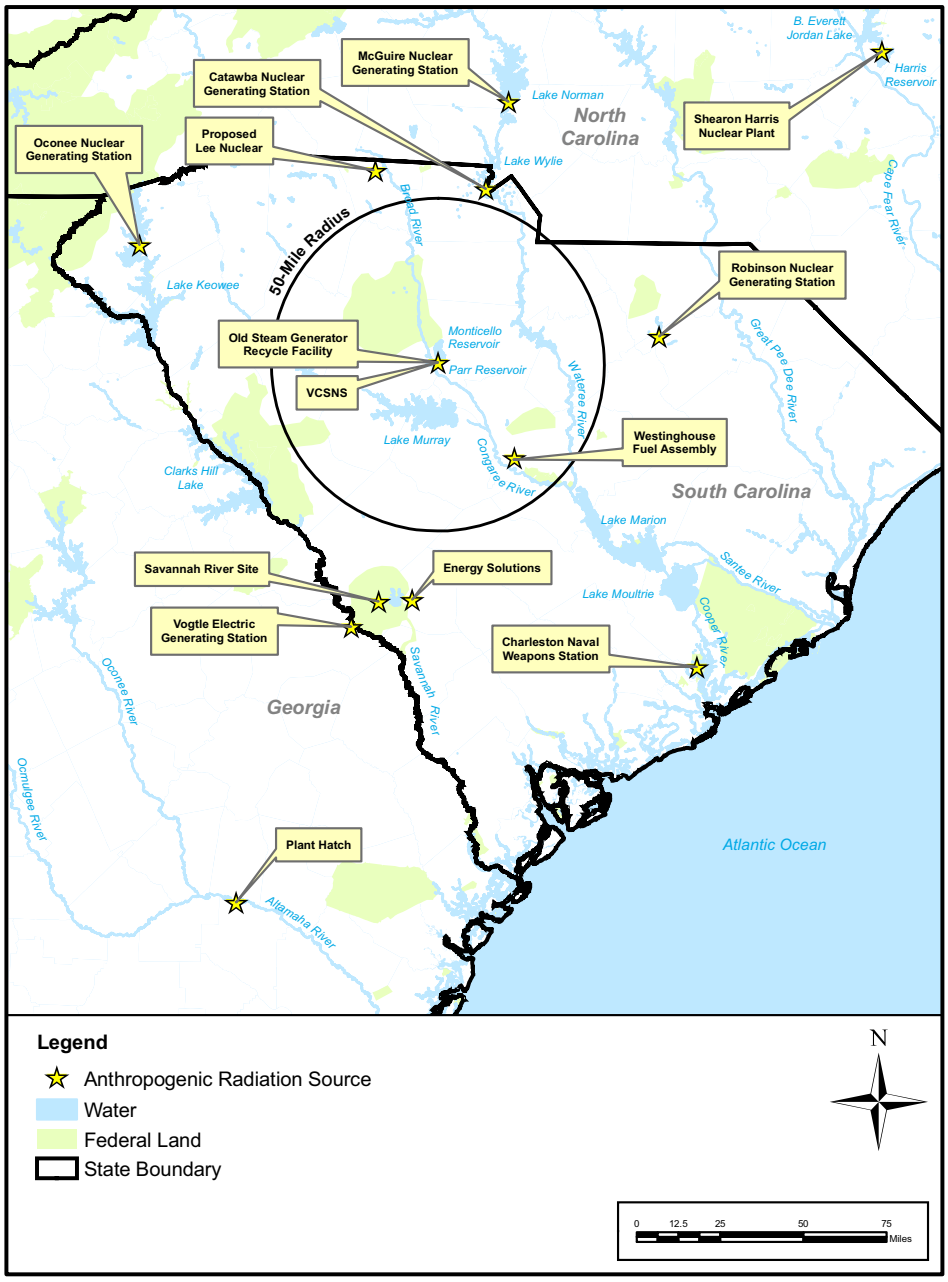

Figure 2.8-1. Anthropogenic Radiation Sources