Prepared for

SCE&G, VC Summer Station
Highway 215 and Bradham Blvd
Jenkinsville, South Carolina 29065

OPERATIONAL STATUS
V.C. SUMMER NUCLEAR STATION UNIT 1
40 CFR § 122.21(r)(8)

SOUTH CAROLINA ELECTRIC & GAS COMPANY
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LIST OF ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
cfs	cubic feet per second
CWA	Clean Water Act
CWIS	cooling water intake structure
FERC	Federal Energy Regulatory Commission
fpm	feet per minute
fps	feet per second
ft	feet
FPSF	Fairfield Pumped Storage Facility
gpm	gallons per minute
hp	horsepower
MSL	mean sea level
MW	megawatts
NGVD29	National Geodetic Vertical Datum of 1929
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
psi	pounds per square inch
rpm	revolutions per minute
SCDHEC	South Carolina Department of Health and Environmental Control
SCE&G	South Carolina Electric and Gas Company
VCSNS	Virgil C. Summer Nuclear Station

1. INTRODUCTION

This report provides a description of the operational status for South Carolina Electric & Gas Company's (SCE&G's) Virgil C. Summer Nuclear Station (VCSNS) Unit 1. VCSNS Unit 1 is an existing nuclear-powered generating facility located on Monticello Reservoir in the Broad River basin near Jenkinsville, Fairfield County, South Carolina. SCE&G operates VCSNS Unit 1 under National Pollutant Discharge Elimination System (NPDES) Permit Number SC0030856. The information provided in this report supports the facility's compliance with section 316(b) of the Clean Water Act.

The U.S. Environmental Protection Agency published 316(b) regulations for cooling water intake structures (CWISs) at existing power generating and manufacturing facilities that became effective October 14, 2014. The final 316(b) rule requires the submittal of applicable CWIS information under 40 CFR § 122.21(r) to the South Carolina Department of Health and Environmental Control (SCDHEC), the NPDES permitting agency in South Carolina.

As provided in the NPDES permit application requirements at 40 CFR § 122.21(r)(8), the owner/operator must submit:

> *A description of the operational status of each generating, production, or process unit that uses cooling water, including but not limited to:*
>
> > *(i) For power production or steam generation, descriptions of individual unit operating status including age of each unit, capacity utilization rate (or equivalent) for the previous 5 years, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, including identification of any operating unit with a capacity utilization rate of less than 8 percent averaged over a 24-month block contiguous period, and any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes to fuel type;*
> >
> > *(ii) Descriptions of completed, approved, or scheduled uprates and Nuclear Regulatory Commission relicensing status of each unit at nuclear facilities;*
> >
> > *(iii) For process units at your facility that use cooling water other than for power production or steam generation, if you intend to use reductions in flow or changes in operations to meet the requirements of 40 CFR 125.94(c), descriptions of individual production processes and product lines, operating status including age of each line, seasonal operation, including any extended*

or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, any major upgrades completed within the last 15 years, and plans or schedules for decommissioning or replacement of process units or production processes and product lines;

(iv) For all manufacturing facilities, descriptions of current and future production schedules; and

(v) Descriptions of plans or schedules for any new units planned within the next 5 years.

2. OPERATIONAL STATUS

VCSNS Unit 1 is a single-unit, 972.7-megawatt (MW), nuclear-fueled, base-load facility located at the southern end of Monticello Reservoir, a freshwater impoundment (Figure 1). It has a design intake capacity of approximately 768 million gallons per day (MGD). Although the cooling water system operates in a "once-through" mode, Monticello Reservoir was constructed for the purpose of serving as part of the cooling water system (U.S. Nuclear Regulatory Commission [NRC], 2004). Thus, the use of Monticello Reservoir as a cooling impoundment for VCSNS Unit 1 has been determined by SCDHEC and EPA to be a "closed-cycle recirculating system" under 40 CFR, Part 125, Subpart J, §125.92(c)(2).

The cooling water systems (CWS) began preliminary use in August 1978; pre-operation startup testing began in April 1980. VCSNS Unit 1 began commercial operation on January 1, 1984. It has one Westinghouse 3-loop Pressurized Water Reactor that has received approval of a 20-year license extension to operate Unit 1 from 2022 through 2042.

VCSNS Unit 1 uses cooling water for power production and not in any manufacturing capacity. There are currently no plans for updates at VCSNS Unit 1. There have been no major upgrades to CWS in the last 15 years and no new units are planned for the next 5 years. There have been no extended or unusual outages during that time with impact to the VCSNS Unit 1 CWS.

The average annual capacity utilization rate from 2013 through 2018 is shown in the table below. The five-year average annual capacity utilization rate is 86.7%.

Year	Capacity Utilization Rate
2013	98.23%
2014	81.17%
2015	83.51%
2016	101.34%
2017	81.13%
2018	86.45%
Average	**89.7%**

3. SUMMARY AND CONCLUSION

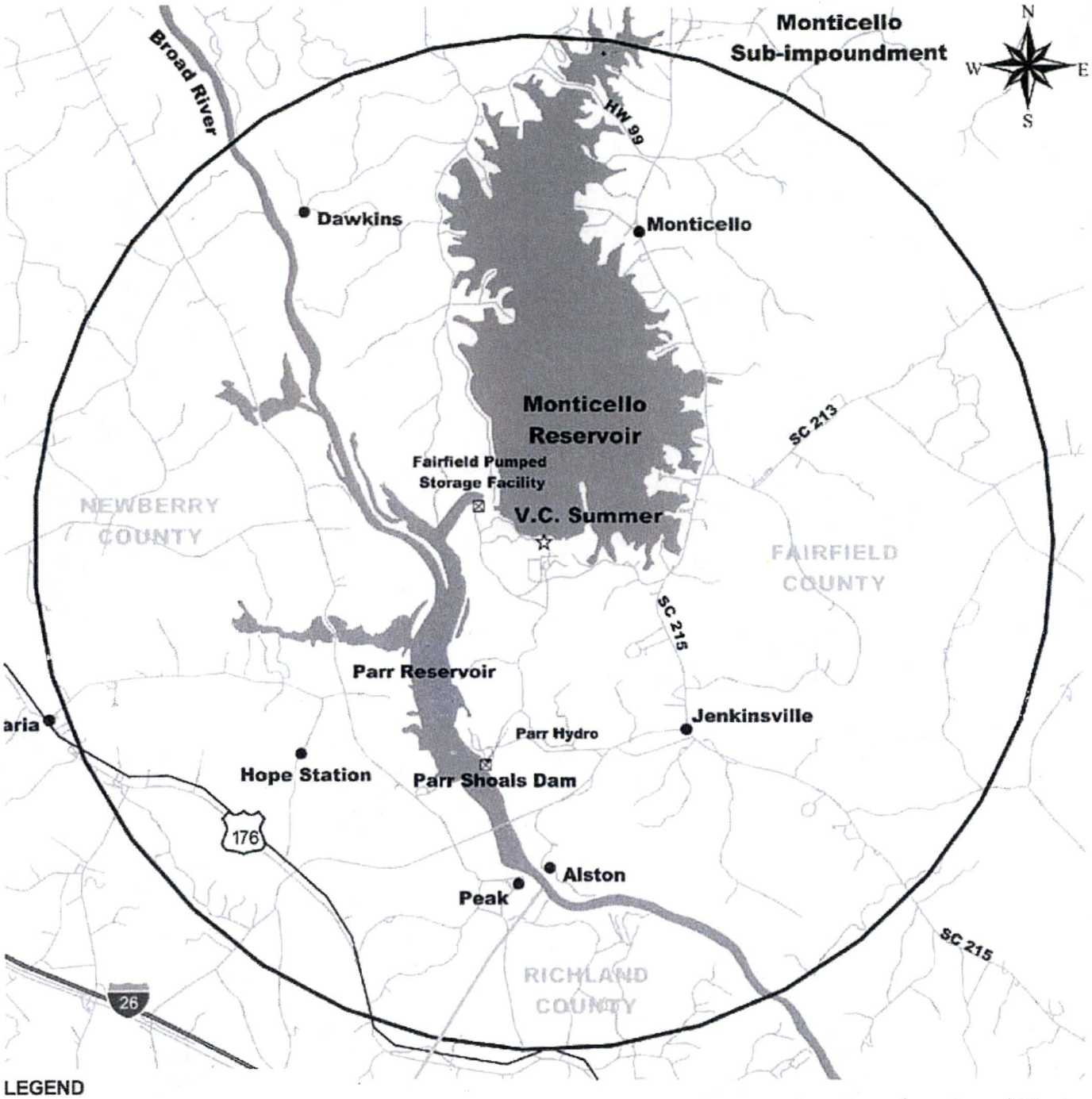
VCSNS Unit 1 is a single-unit, 972.7-MW, nuclear-fueled, base-load power generating facility located at the southern end of Monticello Reservoir in Fairfield County, South Carolina. Monticello Reservoir is a 6,500-acre freshwater impoundment constructed for the purpose of serving as part of the VCSNS cooling water system. The single, shoreline CWIS is part of a cooling water system that has been determined by SCDHEC and EPA to be a closed-cycle recirculating system under the definition at 40 CFR §125.92(c)(2).

VCSNS Unit 1 is designed to operate in one cooling mode: closed-cycle. It began commercial operation in 1984 and most recently received a license from the NRC to operate from 2022 through 2042. The five-year average annual capacity utilization rate is 86.7%.

4. REFERENCES CITED

U.S. Nuclear Regulatory Commission (NRC). 2004. Generic Environmental Impact Statement for License Renewal of Nuclear Plants. Supplement 15 Regarding Virgil C. Summer Nuclear Station. Final Report. U.S. Nuclear Regulatory Commission, Washington, DC.

FIGURE



Site Vicinity of VCSNS Unit 1

Jenkinsville, South Carolina

Geosyntec consultants

Atlanta, Georgia | October 2016

Figure 1