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SCE&G®
A SCANA COMPANY

RC-01-0075
April 5, 2001

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
ANNUAL OPERATING REPORT - CORRECTION

Reference: Stephen A. Byrne, SCE&G, Letter to USNRC, Document Control Desk, dated March 30, 2001, RC-01-0067

Enclosed is a corrected 2000 Annual Operating Report for the South Carolina Electric & Gas Company Virgil C. Summer Nuclear Station Unit No. 1. A correction has been made to the total gross electrical energy generated for 2000 in Section 2.0 Operational Data. The value previously reported was the net electrical energy generated rather than gross electrical energy. This report was previously sent on March 30, 2001. This report is submitted in accordance with Technical Specifications 6.9.1.4, 6.9.1.5 and Regulatory Guide 1.16.

If there are any questions, please call at your convenience.

Very truly yours,

Stephen A. Byrne

SBR/SAB/sr
Attachment

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File (818.02-10, RR 8225)
DMS (RC-01-0075)

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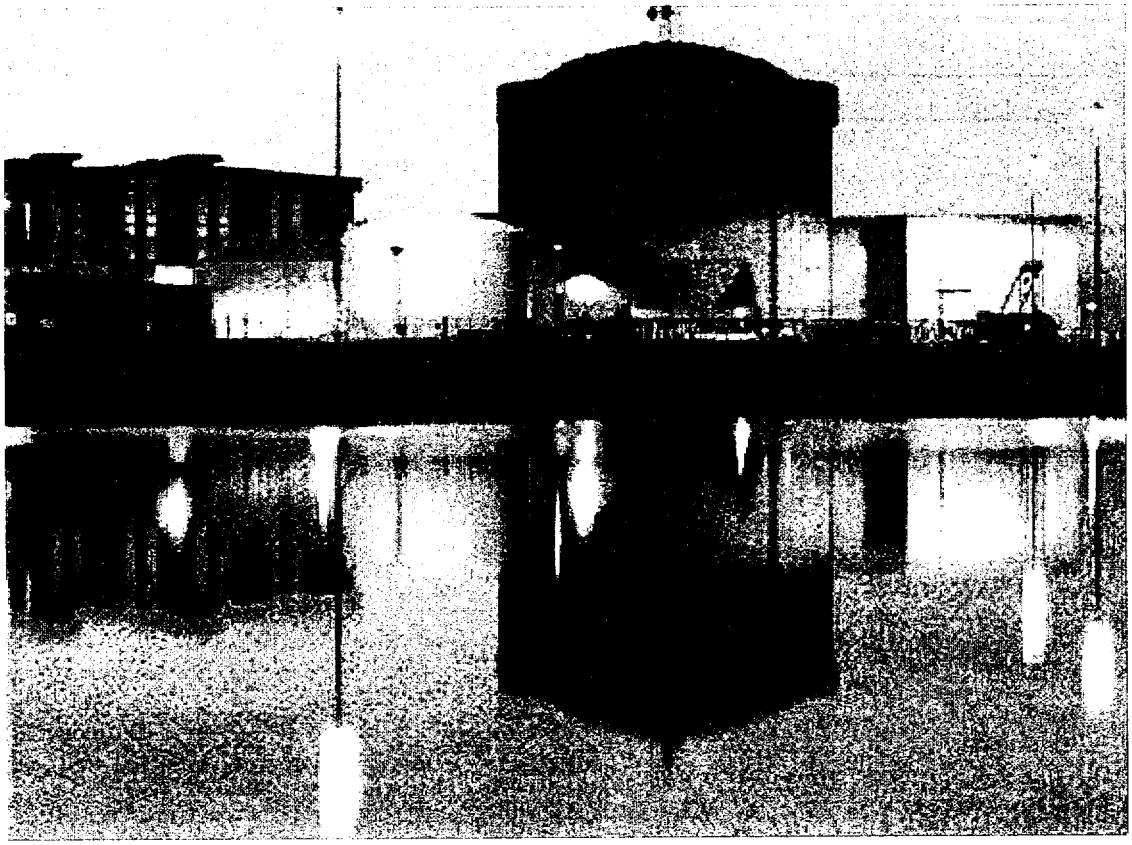
VIRGIL C. SUMMER NUCLEAR STATION



2000 ANNUAL OPERATING REPORT

PREFACE

The 2000 Annual Operating Report for the Virgil C. Summer Nuclear Station is hereby submitted in accordance with Technical Specifications 6.9.1.4, 6.9.1.5, and Regulatory Guide 1.16 under Docket Number 50/395 and Facility Operating License NPF-12.

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ATTACHMENTS

I. Outages or Power Reductions Caused by Maintenance Activities

II. 2000 Man-Rem Report

ANNUAL OPERATING REPORT

1.0 INTRODUCTION

The Virgil C. Summer Nuclear Station (VCSNS) utilizes a pressurized water reactor rated at 2900 MWT. The maximum dependable capacity is 966 Mwe.

The station is located approximately 26 miles northwest of Columbia, South Carolina.

2.0 OPERATIONAL DATA

For the reporting period of January 1 through December 31, 2000, the station operated at a capacity factor of 75.1 percent (using maximum dependable capacity) and a unit availability of 76.2 percent. The reactor was critical for a total of 6724.9 hours, the generator remained on line 6689.6 hours, and the total gross electrical energy generated for 2000 was 6,619,700 MWH.

The station successfully completed its twelfth refueling outage in 147 days and 11.3 hours.

3.0 OPERATING SUMMARY

The Virgil C. Summer Nuclear Station (VCSNS) Unit No.1 operated at 100 percent power from January 1 through March 2nd. On March 2nd, power was reduced to 89% to support maintenance activities on the "C" Main Feedwater Pump (MFP) and the "A" Feedwater Booster Pump. Power was not restored to 100% until March 11th due to "C" MFP mechanical interference. The problem appeared to stem from a clearance issue with the seal and pump cooldown methods.

VCSNS operated at 100 percent power from March 11th to April 14th. On April 14th, the plant power was reduced to 34% to support maintenance on a Reactor Coolant System transmitter. This transmitter has a common tap with those in other protection channels and the power reduction was done conservatively to get below the P-9 (38%) interlock so that a perturbation, when the transmitter was restored, would not cause a plant trip. On April 16th, power was restored to 100%.

VCSNS operated at 100 percent power from April 16th to June 15th. On June 15th, the plant power was reduced and the Main Generator Breaker was opened. This was done to support repairs to the "C" Main Feedwater Isolation Valve operator. Repairs were completed and the power was restored to 100 percent power on June 19th.

VCSNS operated at 100 percent power from June 19th to August 11th. On August 11th plant power was reduced to 99% due to high circulating water discharge temperature. The high circulating water discharge temperature was caused by high lake water inlet temperature due to the hot August weather. On August 13th, power was restored to 100 percent.

VCSNS operated at 100 percent power from August 13th to September 16th, when the station was allowed to begin the coastdown prior to the twelfth refueling outage. The main generator breaker was opened on October 7th.

The plant remained shutdown for the remainder of 2000. This planned outage was extended to conduct repairs to the "A" Loop of the Reactor Coolant System Hot Leg Pipe. This pipe was discovered to have a crack in the weld between the Reactor Coolant Pipe and the Reactor Coolant Vessel Nozzle.

Maintenance

Attachment I, "Power Reductions Caused by Maintenance Activities," provide more detailed information on operating time lost as a result of maintenance activities.

Refuel 12 Summary

The main generator was opened at 0154 on October 7th, for refueling outage 12.

Major work activities included:

- Repair "A" Loop Reactor Coolant System Hot Leg Pipe
- 100% Eddy Current Inspection on the Steam Generators
- Reactor Vessel Split Pin Replacement
- Secondary System Water Hammer Modification
- Main Condenser Bellows Replacement
- Diesel Generator Governor Problem Resolution
- Main Feed Regulating Valve Leak-by
- Reactor Coolant Pump Seal Replacements
- Reactor Coolant System Pre-outage Cleanup
- Main Transformer Overhaul
- Reactor Core Barrel Removal
- Main Feedwater Piping Replacement after Flow Accelerated Corrosion Inspections
- Reactor Building Tendon Inspection
- Reactor Building Flooding Modification
- Condensate System Rerate
- Main Generator Breaker Overhaul
- Heater Drain System Digital Control Upgrade
- RHR & Spray Systems Guardpipe Inspections
- Steam Generator Feed Ring debris removal
- IWE/IWL Inspections
- 'B' Diesel Generator Heat Exchanger Replacement
- Sodium Hydroxide Spray Tank Outlet Valve Repair

On October 7th, during the containment inspection after entering the refueling outage, a large quantity of boron was found on the floor and protruding from the air boot around the "A" loop RCS hot leg pipe. On October 12th, a liquid penetrant test (PT) indicated the existence of a 4-inch long circumferential indication in the first weld between the reactor vessel and the "A" loop hot leg piping, approximately three feet from the reactor vessel. All fuel was removed from the reactor vessel to perform a more thorough examination.

Additional testing of the "A" loop hot leg piping did not confirm a flaw at the location of the circumferential indication. The tests identified, at a different location, an axial crack-like indication, approximately 2.7 inches long, and located approximately 9 degrees countereclockwise from top dead center of the weld. Visual examination from the outside diameter of the pipe identified a small "weephole" in the center of the weld.

On November 18, a section (spool piece) of "A" hot leg pipe, approximately one foot long was cut out. The spool piece was sent to Westinghouse laboratory for examinations and analysis. A new spool piece was installed. All testing indicated that the new spool piece was installed properly.

Refuel 12 duration in 2000 was 85.9 days. Outage planned duration was approximately 38.5 days. Personnel exposure in 2000 due to the outage was approximately 184.267 man rem with 83.503 man rem being directly related to the "A" hot leg piping repair.

4.0 EXPOSURES

Attachment II consists of tables which list the number of station, utility, and other personnel (including contract personnel) receiving exposures greater than 100 mrem/year and their associated man-rem exposure according to work and job function.

5.0 FAILED FUEL

VCSNS has not had indication of failed fuel in 2000.

The reactor coolant system specific activity did not exceed the 1.0 microcuries per gram dose equivalent iodine-131 specific activity or the 100/E microcuries per gram limits of Technical Specification 3.4.8, for this reporting period.

ATTACHMENT I

TO

2000 ANNUAL REPORT

V. C. Summer Nuclear Station Events

Outage or Power Reductions Caused by Maintenance Activities

Date	Time Start	Cause of Event/NERCGADS* Code	Date	Time Finish	Duration	Net Capacity MWe	Type
03/03/2000	2150 Hrs	Main Feed Pump / 3411	03/11/2000	1840 Hrs	189.5 Hrs	929	Planned
04/14/2000	2222 Hrs	Reactor Coolant Loop Flow Repair /2390	04/16/2000	1809 Hrs	43.8 Hrs	945	Planned
06/15/2000	2137 Hrs	"C" Feedwater Isolation Valve Repair / 3431	06/19/2000	1900 Hrs	93.4 Hrs	824	Unplanned
10/07/2000	0154 Hrs	Refuel 12 Outage / 2070	11/30/2000	2400 Hrs	1318.0 Hrs	0	Planned
12/01/2000	0001 Hrs	Refuel 12 Outage / 2070	12/31/2000	2400 Hrs	744.0 Hrs	0	Planned

ATTACHMENT II

TO

2000 ANNUAL REPORT

PERSONNEL AND MAN-REM BY WORK AND DUTY FUNCTION
FINAL END OF YEAR REPORT FOR 2000

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL OVER 100mREM			TOTAL MAN-REM		
	STATION WORKERS	UTILITY WORKERS	CONTRACT WORKERS	STATION WORKERS	UTILITY WORKERS	CONTRACT WORKERS
ROUTINE MAINTENANCE						
MAINTENANCE PERSONNEL	6	0	6	3.028	0.000	3.783
OPERATIONS PERSONNEL	1	0	1	0.672	0.000	0.486
HEALTH PHYSICS PERSONNEL	1	0	9	0.611	0.000	1.681
SUPERVISORY PERSONNEL	1	0	0	0.197	0.000	0.017
ENGINEERING PERSONNEL	1	0	0	0.358	0.000	0.086
SPECIAL MAINTENANCE						
MAINTENANCE PERSONNEL	63	0	176	25.161	0.003	93.505
OPERATIONS PERSONNEL	13	0	5	3.964	0.000	2.681
HEALTH PHYSICS PERSONNEL	12	0	22	3.964	0.000	6.614
SUPERVISORY PERSONNEL	3	0	2	0.862	0.000	0.356
ENGINEERING PERSONNEL	2	0	9	1.048	0.000	4.744
REACTOR OPERATIONS & SURVEILLANCE						
MAINTENANCE PERSONNEL	4	0	1	1.180	0.000	0.990
OPERATIONS PERSONNEL	11	0	2	3.526	0.000	0.673
HEALTH PHYSICS PERSONNEL	5	0	1	1.540	0.000	1.063
SUPERVISORY PERSONNEL	1	0	0	0.347	0.000	0.003
ENGINEERING PERSONNEL	0	0	0	0.208	0.000	0.046
WASTE PROCESSING						
MAINTENANCE PERSONNEL	0	0	0	0.057	0.000	0.153
OPERATIONS PERSONNEL	0	0	0	0.009	0.000	0.006
HEALTH PHYSICS PERSONNEL	5	0	1	1.162	0.000	0.381
SUPERVISORY PERSONNEL	0	0	0	0.090	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0.000	0.000	0.000
IN-SERVICE INSPECTION						
MAINTENANCE PERSONNEL	10	0	22	3.110	0.000	8.245
OPERATIONS PERSONNEL	3	0	1	0.980	0.000	0.293
HEALTH PHYSICS PERSONNEL	2	0	7	0.798	0.000	2.332
SUPERVISORY PERSONNEL	0	0	0	0.020	0.000	0.013
ENGINEERING PERSONNEL	1	0	3	0.233	0.000	0.463
REFUELING						
MAINTENANCE PERSONNEL	4	0	23	1.337	0.001	6.092
OPERATIONS PERSONNEL	0	0	1	0.301	0.000	0.372
HEALTH PHYSICS PERSONNEL	1	0	1	0.304	0.000	0.786
SUPERVISORY PERSONNEL	0	0	0	0.062	0.000	0.007
ENGINEERING PERSONNEL	0	0	0	0.156	0.000	0.094
TOTALS						
MAINTENANCE PERSONNEL	87	0	228	33.873	0.004	112.768
OPERATIONS PERSONNEL	28	0	10	9.452	0.000	4.511
HEALTH PHYSICS PERSONNEL	26	0	41	8.379	0.000	12.857
SUPERVISORY PERSONNEL	5	0	2	1.578	0.000	0.396
ENGINEERING PERSONNEL	4	0	12	2.003	0.000	5.433
GRAND TOTAL	150	0	293	55.285	0.004	135.965

********** END OF REPORT **********