



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30323

NOV 27 1990

Report No.: 50-395/90-29

Licensee: South Carolina Electric & Gas Company
 Columbia, SC 29218

Docket No.: 50-395

License No.: NPF-12

Facility Name: V. C. Summer Nuclear Station

Inspection Conducted: October 29 - November 2, 1990

Inspector: J R Decker for 11/21/90
 R. R. Marston Date Signed

Accompanying Personnel: D. W. Jones

Approved by: J R Decker 11/21/90
 T. R. Decker, Chief Date Signed
 Radiological Effluents and Chemistry Section
 Radiological Protection and Emergency
 Preparedness Branch
 Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This routine, unannounced inspection was conducted in the areas of radiological liquid and gaseous effluents, water chemistry, process and effluent monitoring systems, and periodic reports.

Results:

In the areas inspected, violations or deviations were not identified. The licensee's release program was closely and professionally monitored and controlled. Radiological effluents were maintained within Technical Specifications and 10 CFR 50, Appendix I limits. Water chemistry parameters were closely monitored and controlled.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *W. Bacon, Associate Manager, Chemistry
- *W. Baehr, Manager, Chemistry and Health Physics
- *L. Blue, Manager, Corporate Health Physics and Environmental Programs
- *B. Christiansen, Manager, Technical Services
- *H. Donnelly, Senior Engineer, Nuclear Licensing
- G. Guy, Radwaste Process Coordinator
- *W. Higgins, Acting Manager, Nuclear Licensing
- *D. Moore, General Manager, Station Support
- J. Nesbitt, Instrumentation and Control Supervisor
- *C. Price, Manager, Technical Oversight
- *J. Proper, Manager, Quality Systems
- *M. Quinton, General Manager, Engineering Services
- E. Rollins, Senior Staff Health Physicist
- *L. Shealy, Senior Engineer, Independent Safety Engineering Group
- *J. Sowell, Count Room Supervisor
- *G. Taylor, Acting Plant Manager

Other licensee employees contacted during this inspection included operators, security force members, chemistry specialists, health physics specialists, and administrative personnel.

NRC Resident Inspector

- *R. Haag, SRI

*Attended exit interview

2. Audits (84750)

Technical Specification (TS) 6.5.2.8 states the requirements for subject matter and frequency of Quality Assurance (QA) audits. The inspector reviewed audits and surveillances on the areas of the licensee's program covered by this inspection which were issued subsequent to the previous inspection (50-395/90-04) in this area in order to verify compliance and to assess quality. Audit #11-03-90-F, Chemistry, conducted February 7 through February 26, 1990, was reviewed. This audit was conducted by actual observation of work rather than through documentation and program review. Three findings were identified. Two were closed, and the third (failure to follow procedures) was due to be followed up within two weeks subsequent to the inspection. The following surveillances were also reviewed:

- #03-HMK-90-R, Pre-Release Sampling and Analysis of a Waste Monitor Tank, conducted January 19 through February 2, 1990. Two findings were identified and corrective action was implemented.
- #5-RFM-90-M, Panasonic Dosimetry Processing, conducted May 3 and 4, 1990. Minor documentation errors were identified and corrected. No findings were identified.
- #07-HMK-90-F, Secondary Lab Sampling and Analysis, conducted August 7, 1990. Sampling and analysis of the Demineralized Water Storage Tank was observed. No deficiencies or findings were identified.
- #11-RFM-90-R, Calibration of RM-L6, conducted September 28, 1990. One finding was identified concerning procedure inadequacies. A response had not been received from the responsible supervisor at the time of the inspection.
- #09-HMK-90-F, RCS Sample Analysis for Sulfate, conducted September 20, 1990. Analysis of a coolant sample for sulfate on the ion chromatograph was observed. No deficiencies or findings were identified.
- #12-RFM-90-F, Steam Generator Sampling and Analysis, conducted October 9, 1990. Sampling of Steam Generators A, B, and C was observed with subsequent analysis of silica determination. No deficiencies or findings were identified.

The inspector determined from the reviews that the audits and surveillances that were conducted gave a thorough and comprehensive review of the subject programs.

No violations or deviations were identified.

3. Procedures (84750)

TS 6.8.1 requires the licensee to establish, implement, and maintain written procedures for the effluent and environmental monitoring program. The inspector reviewed the licensee's health physics procedures for releases of liquid and gaseous radiological effluents and surveillance test procedures for calibration and operational testing of selected liquid and gaseous effluent radiation monitors. The procedures reviewed were found to be adequate for their intended purpose.

No violations or deviations were identified.

4. Changes to Programs (84750)

The inspector discussed status and changes to the licensee's programs with cognizant licensee representatives in order to evaluate capability and quality of the programs. The inspector discussed the radwaste

program with the Radwaste Process Coordinator. The Coordinator stated that with an upcoming reorganization, the position would be upgraded to Supervisor. With the change, the Supervisor would assume responsibility for Liquid waste processing, boron recycle, and resin transfers. The Coordinator stated that by the first of the year, the plant would be using submicron filters (0.45 microns) to reduce radioactive activation and corrosion products that have to be processed by the liquid radwaste system. The filters would be used first in the Reactor Coolant System (RCS), then later, in interfacing systems. The Duratek system was purchased in 1984, and consisted of five deepbed demineralizers of 30 cubic feet each and associated tubing and pumps. The unit took suction from the Fuel Handling Building or Floor Drain Tank and exhausted to the Fuel Handling Building or Waste Monitor Tank. This year, the unit used ion specific resins (cobalt, cesium). The limit for annual release to the public was 0.6 Curies. The Coordinator stated that at the time of the inspection, 0.22 Curies had been released for the year.

The inspector discussed status and changes to the Chemistry & Health Physics (C&HP) organization with the Manager, Chemistry & Health Physics. The Manager stated that the C&HP organization had 82 total slots including 10 contractor and 2 temporary positions. There were a minimum of two Health Physics Specialists and one Chemistry Specialist onsite at a time. The proposed reorganization would result in the Plant Chemist position being deleted, resulting in a Radwaste Supervisor position reporting to the Manager, and a Quality Control/Special Projects Coordinator reporting to the Associate Manager, Chemistry. It was planned to get two additional Auxiliary Operators and cross train them in Health Physics, and cross train two Health Physics Specialists in Radwaste Operations. The Manager stated that this could make for better movement of process streams, and the Radwaste Supervisor being able to work one on one with the Operations Shift Supervisor. One further proposed change would be to move the Count Room back to the control of the Associate Manager, Health Physics.

The inspector discussed the transfer of various radiological effluent and radiological environmental requirements from the TSs to the Offsite Dose Calculation Manual (ODCM) as authorized by U. S. NRC Generic Letter 89-01 with the Manager, Corporate Health Physics and Environmental Programs and the Senior Staff Health Physicist. The inspector also reviewed the latest draft copy of the proposed ODCM. The Manager stated that the TS requirements had been transferred to the ODCM, but were also retained in the TSs until the transfer had been reviewed, approved by the NRC, and implemented. Some changes had been made to improve readability of the ODCM, and some Dose Factors had been updated. The document had been submitted to the Plant Safety Review Committee for review. The Manager stated that the approved ODCM was expected to be submitted to the NRC by the end of this year.

The inspector determined that the changes implemented or proposed by the licensee should improve the operation of the programs, or at least, have no adverse affects.

No violations or deviations were identified.

5. Liquid Effluent Processing and Release (84750)

TS 3/4.11.1 specifies the requirements for release, sampling, and analysis of liquid radiological effluents. The inspectors toured the liquid waste processing areas of the plant and discussed the operation of the Duratek system with the Rad Waste Process Coordinator. The Rad Waste Process Coordinator indicated that the system had been performing well as evidenced by the low levels of radioactivity in the liquid discharges from the facility. The inspector also reviewed liquid radwaste release permits for ten batches of liquid waste discarded from the waste monitor tanks and for two batches discarded from the steam generator blowdown monitor tank during the period July - October, 1990. For each batch reviewed, the radionuclide concentrations and the projected offsite doses resulting from those batches were well within their specified requirements. The release permits had been reviewed and approved by licensee supervision and management as required by the licensee's written procedure for liquid releases.

No violations or deviations were identified.

6. Gaseous Effluent Processing and Release (84750)

TS 3/4.11.2 specifies the requirements for release, sampling, and analysis of gaseous radiological effluents. The inspector reviewed gaseous radwaste release permits for one continuous release through the main vent during January 1-5, 1990, and for three batches released from the waste gas release tanks during the period March - October, 1990. The Count Room Supervisor indicated that no gaseous releases due to containment purges had occurred since the last outage which ended during May, 1990. For each release examined, the radionuclide concentrations and the projected offsite doses resulting from those releases were well within their specified requirements. The release permits had been reviewed and approved by licensee supervision and management as required by the licensee's written procedure for gaseous releases.

No violations or deviations were identified.

7. Radiological Effluent Monitors and Counting Equipment (84750)

TSs 3/4.3.3.8 and 3/4.3.3.9 specify the operational and surveillance requirements for radioactive liquid and gaseous effluent monitoring instrumentation. TS 3/4.11.1 and 3/4.11.2 specify the performance criteria for the radioanalytic instrumentation used to determine the concentrations of radioactive material in samples of liquid and gaseous effluents. The inspector toured the plant areas where three gaseous effluent monitors (RM-A2, RM-A3, and RM-A4) and two liquid effluent monitors (RM-L5 and RM-L9) were located. The monitors were found to consist of the instrumentation as described in the FSAR and to be clean

and in good working order. A computer printout listing the dates on which operational tests and calibrations were performed on monitors RM-A3, RM-A4, and RM-L9 was examined. It was determined that since the last inspection in this area (50-395/90-04), the tests and calibrations had been performed at the required frequencies. The data and records for the most recent calibration of the RM-L9 monitor were examined and it was determined that the calibration had been performed in accordance with the calibration procedure. The inspector also toured the licensee's count room and found that the radioanalytic instrumentation included gamma spectroscopic systems, a liquid scintillation counting system, and an alpha/beta counting system. The Count Room Supervisor indicated that two gamma spectrographic detectors were currently in service, one was out of service due to its failure to pass a quality control test, and that calibration had not been completed for one new detector. The inspector determined that the equipment in use was as described in the FSAR and was adequate for performing the required analyses.

No violations or deviations were identified.

8. Chemistry (84750)

TSs 3.4.7 and 3.4.8 state the chemistry and radiochemistry limits respectively, for the primary coolant system, and TSs 4.4.7 and 4.4.8 state the surveillance requirements for the system. TSs 3.7.1.4 and 4.7.1.4 state the radiochemistry and surveillance requirements respectively, for the secondary coolant system. TS 6.8.4.c states the required elements for a program of monitoring secondary water chemistry. The inspector toured the plant, examining laboratory facilities to assess capability. The Primary Lab was equipped with a PE 5100PC Atomic Absorption Spectrophotometer and two ion chromatographs. The Turbine Cycle Sample Panel was located in the Secondary Lab. Steam Generator cation conductivity, pH, and conductivity were measured at this facility, as were parameters from condenser, demineralizer, feedwater booster pump, and other secondary points. The inspector also toured the Sterile Lab, where non-radiological environmental samples were analyzed, and the Oil Lab, where oil and lubricant chemistry was conducted. The labs appeared to be well-equipped and were clean.

The inspector reviewed the results of chemistry analyses and associated trend charts for May 1989 through mid-October 1990, to verify compliance and evaluate quality. The laboratory quality control results were also reviewed. Chemistry results were generally within limits, and where outside the limits, were returned within a timely manner. The QC Standards evaluations for October 1990 were generally within the Warning Levels. The instrumentation quality checks which included ion chromatograph for boron, pH probe, atomic absorption spectrophotometer for various parameters, and total organic carbon analyzer, were checked for October 1990, and were predominantly within limits. Through the above reviews, the inspector determined that the chemistry monitoring and control program was adequate.

No violations or deviations were identified.

9. Effluent and Environmental Reports (84750)

a. Radiological Environmental Monitoring Report

TS 6.9.1.6 requires that routine Radiological Environmental Operating Reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year. TS 6.9.1.7 specifies content and format of the Report including referencing Regulatory Guide 4.8. The inspector reviewed the Radiological Environmental Operating Report for Calendar Year 1989 to verify compliance. The Report was submitted by the date required by the TS. The Report was formatted and included information required by the TS. No limits were exceeded, and no radioactive material was detected attributable to gaseous releases. Activated corrosion products attributable to liquid effluent releases were detected in fish and sediment. The doses to the public were a small fraction of the variation in the natural background. Fission products due to liquid effluent releases and residual fallout were detected. The doses to the public were a small fraction of the observed variation in the natural background. The Report also stated that the results of the Radiological Environmental Monitoring Program substantiated the continuing adequacy of source control at the plant and conformance of station operation to 10 CFR 50, Appendix I design goals.

No violations or deviations were identified.

b. Semi-Annual Effluent and Waste Disposal Report

TS 6.9.1.8 requires that routine radioactive effluent release reports covering the operation of the unit during the previous 6 months of operation be submitted within 60 days after January 1 and July 1 of each year. TS 6.9.1.9 states the format and content required in the Report. Regulatory Guide 1.21 is included as a reference. The inspector reviewed the Report covering the first 6 months of Calendar Year 1990 to verify compliance. The inspector determined that the format and content were in accordance with the requirements. The inspector reviewed the trends for liquid and gaseous releases by comparing those reported with those of previous years. The effluents for the first half of 1990 were generally lower than those for 1989, which were slightly higher than those for previous years. The inspector considered those changes slight enough so that no significant trends were considered to have occurred. The Report included one TS Reportable Incident. The Iodine Channel of the Main Plant Vent Monitor (RM-A3) was inoperable for greater than 30 days. On April 9, 1990, during a routine maintenance check, there was no response to the check source. A Maintenance Work Order was processed, but heavy outage maintenance requirements resulted in the

Monitor not being brought back to operational status until May 10, 1990. The Report stated that continuous samples were taken and analyzed in accordance with Technical Specifications.

No violations or deviations were identified.

10. Exit Interview

The inspection scope and findings were summarized on November 2, 1990, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee and no proprietary information was disclosed or included in this report. The inspectors stated that the comprehensive Quality Assurance audit and surveillance programs represented a strength in the licensee's programs, and that the chemistry laboratories were very well equipped and appeared to be capable.