

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

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Report No.: 50-395/92-01

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

Docket No.: 50-395

Facility Name: Summer

Inspection Conducted: January 27-31, 1992

Inspector: Gooden Approved by Rank Emergency Preparedness Section Emergency Preparedness and Radiological Protection Branch Division of Radiation Safety and Safeguards

Date Signed gned

License No.: NPF-12

SUMMARY

Scope:

This routine, unannounced inspection involved an assessment of the operational readiness status of the emergency preparedness program. Programmatic areas reviewed were: training, independent audits, key program changes (equinment, personnel, etc.), maintenance of emergency response equipment and facilities, offsite interface, and the distribution of changes to the Emergency Plan and Emergency Plan Procedures (EP and EPP's).

Results:

Within the areas reviewed, a non-cited violation (NCV) was identified: Failure to calibrate portable air samplers at the interval specified in Section 3.0 of Health Physics Procedure (HPP) - 610 (Paragraph 3). The inspector also expressed concern to the licensee regarding the test acceptance criteria for the weekly audibility test of plant alarms (Paragraph 3). With the exception of the aforementioned items, the licensee's emergency response program appears to be maintained and implemented in a manner to protect the health and safety of plant personnel, the public, and environment. Management support continues to be a program strength as evidenced by quarterly simulator drills, increased EP staffing, and the frequent interface between the licensee and offsite authorities on matters of mutual concern involving emergency preparedness.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

##K. Beale, Supervisor, Emergency Services L. Bouknight, Emergency Plan Specialist C. Counts, Coordinator, Emergency Services ##R. Fowlkes, Associate Manager, Shift Engineering S. Furstenborg, Associate Manager, Operations D. Hicks, Engineer G. Higginbotham, Health Physicist ##W. Higgins, Supervisor, Regulatory Compliance T. Howell, Senior Instructor, Operations R. Karbach, Shift Supervisor *A. Koon, Manager, Nuclear Licensing M. Miltner, Shift Supervisor R. Myers, Emergency Plan Specialist *H. Oquinn, Manager, Nuclear Protection Services E. Rollins, Senior Health Physicist P. Shultz, Health Physicist M. Simpson, Shift Supervisor *J. Skolds, Vice President Nuclear Operations *G. Soult, General Manager Nuclear Plant Operations G. Taylor, Manager, Operations Other licensee employees contacted during this inspection included engineers, operators, security force members, technicians, and

South Carolina Emergency Preparedness Division

B. Reavis, Area-3 Coordinator

administrative personnel.

Nuclear Regulatory Commission

*F. Jape, Chief, Test Programs Section, Region II ##L. Keller, Resident Inspector *G. Wunder, Project Manager, NRR

*Attended exit interview on January 30, 1992

##Attended exit interviews on January 30 and 31, 1992

2. Emergency Plan and Implementing Procedures (82701)

Pursuant to 10 CFR 50.47(b)(16), 10 CFR 50.54(q), and Appendix E to 10 CFR Part 50, this area was reviewed to determine whether changes were made to the Plan and EPPs since the last routine inspection (March 1991), and to assess the impact of these changes on the overall state of emergency preparedness at the facility.

The inspector verified that changes to the Emergency Plan and selected EPPs were reviewed and approved by management in accordance with the administrative procedures governing the review and approval of changes. As evidenced by the transmittal dates, those changes determined by the licensee not to decrease the effectiveness of the program were distributed to the NRC within 30 days of the approval date. Since the June 1990 inspection, two Plan revisions (29 and 30) were submitted for NRC review and approval. Changes incorporated as Revision 30 was mailed on October 7, 1991. Revision 29 changes were approved by NRC during March 1991. At the time of the inspection, changes incorporated as Revision 30 was being reviewed by the NRC Regional Office staff to determine if changes were consistent with NRC requirements and commitments. The distribution of randomly selected EPP changes to NRC were reviewed for verification that changes were submitted to NRC within 30 days of the approval date. No problems were noted.

Emergency Plan, and EPPs were audited in the Technical Support Center (TSC), Operational Support Center (OSC), and Emergency Operations Facility (EOF). The documents selected were found to be the current revisions. Additional reference documents were examined as follows: South Carolina Radiological Emergency Plan, INPO Emergency Resources Manual, Corporate Emergency Management Plan (CEMP), and HPPs. No problems were noted, current revisions were available at the designated locations.

No violations or deviations were identified.

3. Emergency Facilities, Equipment, Instrumentation, and Supplies (82701)

Fursuant to 10 CFR 50.47(b)(8) and (9), Section IV.E of Appendix E to 10 CFR Part 50, and Section 7.0 of the licensee's Emergency Plan, this area was inspected to determine whether the licensee's emergency response facilities and other essential emergency equipment, instrumentation, and supplies were maintained in a state of operational readiness.

Discussions were held with a licensee representative concerning modifications to facilities, equipment, and instrumentation since the last inspection. The inspector toured the Control Room, TSC, OSC, and EOF and noted that facilities were in accordance with Section 7.0 of the Emergency Plan. Regarding equipment and/or facility changes, the inspector was informed by a member of the licensee's staff as follows:

The Early Warning Siren System (EWSS) was upgraded to include a computer controlled activation and polling system.

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- Although installation had not been completed, the Computer Services Group anticipates completion of software and implementation of an autodialer system (known as "Dectalk") by April 1992 for activation of the emergency organization.
- Cosmetic changes had been made to the TSC to incorporate a more compartmentalized layout for the TSC Engineering Staff.

The emergency response facilities (ERFs) were noted as being maintained in an operational mode, though not dedicated facilities. Under non-emergency situations, certain areas of the TSC and OSC are used as office work areas and classes were held in some locations within the EOF. The TSC is located inside the Control Room envelope and is serviced by the same HVAC system. Regarding the EOF (located approximately 2.5 miles south of the plant) HVAC system, a dedicated air handling unit comprised of filter banks is switched manually to the emergency mode during EOF activation. The inspector reviewed periodic test documentation and observed manual actuation of the EOF HVAC system to ensure that the system was maintained in an operational status. In the absence of a pressure gauge or indicator, the system appeared to function properly based on the fans and dampers actuation. During the ERFs walkdown, the inspector requested and observed operation of the TSC plant computer system for the availability of Regulatory Guide 1.97 variables. No problems were noted, system was operational and provided the referenced data for use in assessing plant conditions in the event of an accident. The inspector discussed with the licensee contect the activation of the backup EOF (BEOF) in the unlikely event the primary COF became uninhabitable due to projected doses and plume travel from a severe reactor accident. The BEOF is located at the Palmetto Center in Columbia, South Carolina (eleventh floor of the corporate headquarters). Discussions with the licensee contact and a review of documentation disclosed that the last BEOF drill was conducted on November 30, 1989. The drill objective was to demonstrate that the BEOF could be staffed with personnel to perform the required functions of the primary EOF. However, personnel were pre-staged. Consequently, a drill demonstrating real-time activation and staffing had not been performed. The licensee's five-year program plan include a BEOF drill for calendar year (CY) 1992. The referenced drill was assigned to the licensee's Regulatory Tracking System (RTS) as a commitment item No. DRL 920001. The inspector informed the licensee that actions in response to this item would be reviewed during a subsequent inspection.

In assessing the operational status of the emergency facilities, the inspector examined protective equipment, and supplies to determine if the licensee was periodically performing operational checks and inventories of emergency kits and cabinets. Reference documents, emergency kits and/or cabinets, wall-mounted respiratory equipment, and offsite monitoring team kits were inventoried, and randomly selected equipment was checked for operability. With one exception, the selected equipment operated properly, displayed current calibration stickers, and a successful battery and source checks were obtained. The exception involved two portable RADeCo air samplers assigned to the offsite monitoring team kits. The calibration due date had expired on both samplers. According to documentation affixed to the samplers, the last calibration date was July 12, 1991 and the due date was January 12, 1992. Section 3.0 of HPP-610 "Certification of Flow Rates for Portable Air Samplers" requires semi-annual certification, not to exceed 190 days. Attachment VI to EPP=019 which implements Section 8.4 of the Emergency Plan, regarding equipment maintenance and inventory, indicated that calibration of equipment is in accordance with HPP-610. When questioned regarding the out of calibration equipment the licensee informed the inspector that the equipment calibrations expired due to vendor delays in completing calibration of the equipment used to certify the flow rates for portable air samplers. Prior to the inspector's departure, the licensee located an alternative calibration source onsite and scheduled calibrations for both samplers. In light of the aforementioned actions, this apparent violation for failure to calibrate portable air samplers in accordance with procedural requirements was discussed with Regional management; and since the requirements as specified in 10 CFR Part 2, Appendix C, Section V of the NRC Enforcement Policy were satisfied, the licensee was informed that this finding was considered a non-cited violation (NCV).

NCV 50-395/92-01-01: Failure to calibrate portable air samplers in accordance with HPP-610.

The inspector verified that the Emergency Notification System (ENS) was operational from the Control Room to the NRC Operations Center. No problems were noted, transmission was clear and free of fredback noise. The monitoring instrumentation (meteorological parameters, main stack monitor, reactor building vent monitor, etc.) for post accident assessment and dose projection was also noted as operational. By review of applicable procedures and check-list documentation (covering the period March 1991 to January 1992), the inspector determined that emergency equipment (e.g. communication equipment, meteorology system, and the EOF air handling system) was being checked in accordance with procedural requirements. The inspector expressed concern to the licensee regarding the adequacy of the test acceptance criteria for the weekly audibility test performed of the plant alarms system (fire, evacuation, and radiation). The inspector was informed that the current acceptance test is verification that the signals are audible in the Control Room. No other plant locations are checked for audibility. During the exit, the

inspector informed the licensee that this approach to testing did not provide assurance that audibility is available throughout the plant. In response, the licensee acknowledged the inspector's comments but no commitments were made to review this matter or take any actions.

The licensee's management control program for the EWSS was reviewed. Periodic test documentation was reviewed covering the period June 1991 to January 1992. Documentation which summarized the calendar year 1991 testing of the EWSS disclosed the following: (1) Average annual operability for 1991 was 88.9 percent; (2) full system activation test was performed on July 17, 1991 during the annual exercise; and (3) action taken to resolve test discrepancies were well documented. The records showed that tests were being conducted in accordance with EPP-022 and NUREG-0654. The above test results were based on the old activation system. As of January 23, 1992, the licensee completed installation and modification testing of a Motorola siren control system. The inspector reviewed documentation to show the validation and verification of the Motorola siren activation system had been completed. Tests were performed to verify the siren control console would function as designed prior to removal of the old activation system. A full cycle test was conducted January 23, 1992 and resulted in 84 percent activation. The following details were provided as reasons for siren failures: (1) mechanical problems with siren motors, (2) adjustments needed to rotation sensors, and (3) loss of A.C. power. Many of the units when retested individually produced satisfactory results. During the period of the inspection, licensee communications personnel and Motorola were working to resolve failures and software problems (i.e. activation signal length). Consoles for polling system status are installed at three locations: Control Room (Shift Supervisor office), emergency preparedness office (Administration Building), and the communications department shop. The current EWSS is comprised of 106 sirens and school monitor radios (placed at eight schools) within the 10 mile emergency planning zone. According to test results, the annual verification of operability for voice radios were performed on January 21, 1992 and all locations were operational.

One NCV was identified.

Organization and Management Control (82701)

Pursuant to 10 CFR 50.47(b)(1) and (16), Section IV.A of Appendix E to 10 CFR Part 50, and Section 5.0 of the licensee's Emergency Plan, this area was inspected to determine the effects of any changes in the licensee's emergency organization and/or management control systems on the emergency preparedness program, and to verify that any such changes were properly factored into the Emergency Plan and EPPs.

The inspector discussed with a member of the licensee's staff key organizational changes since the March 1991 inspection. Key changes to the normal organization involved the reassignment of the General Manager, Auclear Safety to the position of General Manager, Station Support, and a

newly appointed Manager, Nuclear Protection Services. The aforementioned positions are directly responsible for emergency preparedness. Emergency preparedness reports to the Manager, Nuclear Protection Services, who reports to the General Manager, Station Support. The referenced changes would not appear to impact the day-to-day program implementation of emergency preparedness in that no changes were made involving personnel assigned day-to-day responsibility. The former General Manager, Station Support was assigned to a position at the corporate office. As a result of changes to the normal organization assignments, position assignments to the emergency organization were also noted. For example, an individual previously assigned the role Technical Support Coordinator in the licensee's offsite emergency organization was reassigned to the position Offsite Emergency Coordinator as a result of changes in the normal organization involving the former General Manager, Station Support. When training records were compared to position assignment, no problems were noted. Regarding the offsite support agencies, no changes had occurred since the last inspection.

In addition to the above changes, the inspector was informed of the following program changes or enhancements that were initiated or fully implemented since the last routine inspection:

- During June 1991, the emergency preparedness staffing was increased by the assignment of an individual with experience in plant operations as an Emergency Planning Specialist.
- During calendar year 1991, a job task analysis of key EOF positions was made for determination of changes to procedures and responsibilities.
- Subsequent to the July 1991 NRC graded exercise, a site only exercise in excess of those required by the Emergency Plan was conducted December 11, 1991. Plans for CY92 and future years are to conduct exercises in excess of those required by the Emergency Plan.

No violations or deviations were identified.

5. Training (82701)

Pursuant to 10 CFR 50.47(b)(2) and (15), Section IV.F of Appendix E to 10 CFR Part 50, and Section 8.0 of the Emergency Plan, this area was inspected to determine whether the licensee's key emergency response personnel were properly trained and understood their emergency responsibilities.

The inspector reviewed Section 8.0 of the Emergency Plan and EPP-018 for a description of the training program and training procedures. In addition, selected lesson plans and/or instructor guides were reviewed. Since the last inspection, the licensee had implemented a computer based tracking system in addition to the manual system for ensuring that emergency response organization training is maintained current and up to date.

Discussions with a cognizant member of the licensee's staff regarding emergency preparedness training, disclosed the following system was in place to ensure training for all emergency response organization (ERO) personnel was current and up-to-date: (1) the Emergency Services Staff manually tracks training by maintaining a log book which includes an emergency response training matrix and a position matrix of qualified or unqualified responders; (2) based on training attendance sheets and a review of position matrix as a function of training matrix, ERO assignments are logged into the computer-based tracking system; and (3) periodic training reviews are performed and ERO personnel are notified 90, 60, and 30 days in advance of the training due date.

Walkthroughs were conducted with three Control Room Shift Supervisors in the areas of emergency detection, classification, protective action recommendations (PARs), notifications, and dose assessment using the manual methodology in EPP-005. The interviewees were asked to talk through the response as Interim Emergency Director (IED) in response to the simulated accident conditions. The simulated conditions required classifications be made at the Nctification of Unusual Event (NOUE), Alert, and Site Area Emergency. The Site Area Emergency declaration was based on a major steam line break with more than 50 GPM primary to secondary leakage and indication of fuel damage. In response to the simulated conditions, the interviewees were timely and correct in the event classification. The maximum time for event declaration was ten minutes with one of the interviewees. The two remaining interviewees maximum time was four minutes. All three interviewees demonstrated excellent familiarity with the emergency classification procedures (EPP-001) and various other EPPs which implemented the station's Emergency Plan. Regarding dose projections, the interviewees were asked to perform dose projections using nomograms and input from EPP.005 "Offsite Dose Calculations". No problems were noted in the areas of emergency action level (EAL) recognition, classification, notification, dose projection, and PARs. In addition to the walkthrough evaluation, the in. tor observed portions of a licensee conducted simulator drill with conditions requiring escalation of event classification from the NOUE to General Emergency category. The postulated General Emergency was due to a loss of coolant accident and ECCS failure.

Training records were reviewed for selected members of the emergency organization. Training records were chosen based on the onsite and offsite emergency response personnel call-tree dated January 15, 1992, and the January 1992 Emergency Planning Telephone Directory. Thirty-nine names were randomly selected from various emergency positions on the emergency response position matrix, or call-tree. When personnel training records were compared with position assignments, no problems were noted. Training was also reviewed for several offsite support organizations (Richland Memorial Hospital, offsite fire support, Lexington County Emergency Medical Services, and local media personnel). No problems were noted.

The inspector discussed with the licensee contact current drill practices for ensuring the emergency response organization maintains a high degree of proficiency in responding to emergencies. During calendar year 1991, the licensee conducted a full scale drill on December 11, 1991. According to the licensee, plans are to conduct an additional drill in 1992 with an increase to three full scale drills by the years 1993 and 1994. Training and drills for the Control Room staff continue to be held on a quarterly basis involving simulator driven scenarios. As an enhancement to simulator drills and Control Room staff training, quarterly drills include evaluations by the EP staff and operations in the areas of plant operations, event classification, notification, and completeness of forms.

No violations or deviations were identified.

6. Independent Review/Audits (82701)

Pursuant to 10 CFR 50.47(b)(14) and 10 CFR 50.54(t), this area was inspected to determine whether the licensee had performed an independent review or audit of the emergency preparedness program, and whether the licensee had a corrective action system for deficiencies and weaknesses identified during exercises and drills.

According to documentation, an independent audit was conducted by the Quality Assurance Program during the period January 9-31, 1991 (documented in Audit Report No. II-01-91-8). This audit included an evaluation of the adequacy of the licensee's interface with State/local authorities. No problems were noted regarding the offsite interface. Three findings were identified during the referenced Audit, but findings had no impact on the effectiveness of the program. The most recent audit commenced on January 27, 1992, concurrent with the NRC inspection, will satisfy the annual requirement for such audits. The results of the most recent audit will be reviewed during a subsequent inspection. As part of the audit review, the inspector requested for review documentation to show that in accordance with 10 CFR 50 Appendix E, Section IV.b, the offsite authorities had reviewed and concurred with the licensee's emergency action levels (EALs). The documentation provided by the licensee contact was inadequate in that no clear, delineation or reference was made to the review of EALs. However, documentation clearly highlighted that a table top exercise was conducted involving the licensee, State, and local governments. A discussion with the offsite contact (see Paragraph 1) responsible for coordinating the annual review disclosed that the review was performed as part of a table-top exercise

with the licensee prior to the NRC graded exercise. The inspector verified the table-top documentation as that previously provided by the licensee contact. Consequently, the inspector discussed with the licensee corrective actions to ensure the appropriate documentation for the EAL review was available. In response, the licensee contact indicated that a procedural revision would incorporate Surveillance Test Task Sheets (STTS) issuance for the EAL review and documentation. The STTS issuance will occur at intervals of 90, 60, and 30 days in advance of the EAL review date to ensure that the appropriate actions are taken. This item is being tracked by the licensee's RTS as commitment No. DRL 920002. The inspector discussed with a member of the licensee's staff the coordination of emergency planing with offsite agencies. As mentioned above, the inspector discussed telephonically with a representative of selected offsite agency (Paragraph 1) that the licensee was periodically contacting State/local agencies for purposes of offering training and maintaining mutual familiarization with emergency response roles. The licensee was described by the offsite agency contact as a "good neighbor".

The licensee's program for follow-up action on audit, drill, and exercise findings was reviewed. The licensee maintains a tracking system known as the Regulatory Tracking System (RTS). The inspector reviewed the status of four items from routine inspections that were assigned to the RTS during the calendar years 1990 and 1991. All four items were resolved in a timely manner.

No violations or deviations were identified.

7. Dose Calculation and Assessment (82701)

Pursuant to 10 CFR 50.47(b)(9), this area was reviewed to determine whether there was an adequate method for assessing the consequences of an actual or potential radiological release.

The inspector reviewed EPP-005 "Offsite Dose Calculations" to determine if adequate procedures exist for dose calculation under anticipated release conditions. No problems were noted. The licensee's computerized dose projection model, known as "Emergency Dose Assessment Program (EDAP)", and the manual dose assessment method used a straight line gaussian plume model. Both methods used Regulatory Guide 1.23 assumptions for determining stability class from AT. Although documentation was available, the inspector did not review the validation and verification of the EDAP computer codes. However, documentation was reviewed which disclosed several cases of calculational comparisons between EDAP, backup manual method. State, and NRC (IRDAM, Rev. 5). The comparisons were dated September 1988, and with the cases analyzed, fair agreement was noted. According to documentation and a discussion with a member of the

licensee's staff, the maximum difference between various methods was eight, and the differences were clearly understood. In addition to the comparison with the NRC IRDAM code, EDAP was compared to NRC RASCAL Code (Version 1.3) and the results documented during calendar year 1990.

The inspector requested and observed dose assessment walkthroughs with three individuals designated as Shift Supervisors with responsibilities as the IED. The walkthroughs involved prompt dose assessment using the manual method of dose alculations utilizing nomograms in EPP-005. All interviewees calculated conject results in a timely manner. In every case, the results were completed in less than 15 minutes. No problems were noted.

No violations or deviations were identified.

8. NRC Information Notice (92703)

The inspector discussed with a licensee representative their response to the following Information Notices (IN):

°IN 90-44 "Dose-Rate Instruments Underresponding To The True Radiation Fields." The inspector reviewed documentation which disclosed the licensee had reviewed the referenced IN and determined that changes were necessary to the Health Physics Procedure (HPP-611) governing the instrument calibration procedure, and Radiation Worker Training II was revised to increase the awareness of "P personnel regarding actions to take in response to erratic equipment operations.

"IN 91-33 "Reactor Safety Information For States During Exercises And Emergencies." In response to the subject IN, the licensee contacted the State Emergency Preparedness Division (EPD) and discussed the IN. A copy of the subject IN was also forwarded to the State EPD for use and distribution. No further action was taken.

°IN 91-72 "Issuance Of A Revision To The EPA Manual Of Protective Action Guides And Protective Actions For Nuclear Incidents." The applicability of the subject IN was evaluated by the licensee's operating experience staff and the evaluation results provided to the Health Physics and Emergency Planning staff. No further action was taken at this time pending the implementation of the revised 10 CFR Part 20 requirements.

9. Exit Interview

The inspection scope and results were summarized on January 30 and 31, 1992, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection

results listed below. The licensee did not identify as proprietary any of the information provided to the inspector during the inspection. There were no dissenting comments from the licensee.

Item Number

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Description/Reference

50-395/92-01-01

NCV - Failure to calibrate portable air samplers in accordance with Health Physics Procedure (Paragraph 3).

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