



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W., SUITE 2900  
ATLANTA, GEORGIA 30323-0199

Report No.: 50-395/96-10

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

Docket No.: 50-395

License No.: NPF-12

Facility Name: Virgil C. Summer Nuclear Station

Inspection Conducted: August 19-23, 1996

Inspector: W. W. Stansberry  
W. W. Stansberry, Safeguards Inspector

7/20/96  
Date Signed

Approved by: P. E. Fredrickson  
P. E. Fredrickson, Chief  
Special Inspections Branch  
Division of Reactor Safety

9/24/96  
Date Signed

### SUMMARY

#### Scope:

This routine announced inspection was conducted in the areas of the Physical Security Program for Power Reactors. The specific areas evaluated were protected area detection equipment; alarm stations and communications; testing, maintenance and compensatory measures; security training and qualification; and followup on previous inspection findings.

#### Results:

In the areas inspected, no violations were found. One LER was closed (LER 94-0005). The following strengths to the security program were found:

Improvements in the perimeter detection system (Paragraph 2.1), new security communication equipment (Paragraph 2.2), and effectiveness and responsiveness of the security system maintenance program (Paragraph 2.3)

## REPORT DETAILS

### 1.0 Persons Contacted

#### Licensee Employees

- \*R. Burch, Supervisor, Chemistry, Summer Nuclear Station (SNS)
- \*J. Derrick, Supervisor, Procurement Engineer/Equipment Qualification, SNS
- \*S. Furstenberg, Manager, Maintenance, SNS
- \*J. LaBorde, Supervisor, Design and Engineering, SNS
- \*H. O'Quinn, Manager, Nuclear Protection Services, SNS
- \*J. Poole, Supervisor, Outage Scheduling, SNS
- \*J. Proper, Supervisor, Nuclear Licensing and Operator Experience, SNS
- \*A. Torres, Supervisor, Quality Assurance, SNS
- \*B. Waselus, Manager, Systems and Component Engineering, SNS

Other licensee employees contacted during this inspection included security force members, technicians, and administrative personnel.

#### U. S. Nuclear Regulatory Commission

- \*B. Bonser, Senior Resident Inspector

\*Attended exit interview

### 2.0 Physical Security Program for Power Reactors (81700)

#### 2.1 Protected Area Detection Equipment

Based on the commitments in Chapter 6 of the Physical Security Plan (PSP), Amendment 38, dated April 1996, the inspector inspected the licensee's intrusion detection systems to verify that they were functionally effective and met licensee commitments. This evaluation was also to ensure that there were no vulnerabilities that could be exploited to avoid detection.

The licensee had installed intrusion detection systems that could detect attempted penetrations through the isolation zone, and attempts to gain unauthorized access to the protected area. The licensee segmented the intrusion detection systems into enough alarm zones to provide adequate coverage of the protected area perimeter barrier and isolation zones. Observation of the licensee's test of five protected area alarm zones verified alarm operability. Tests of the intrusion detection systems were accomplished by the method of walking through the isolation zone. The inspector

found through observation that the licensee had installed detection and surveillance sub-systems for the protected areas. They consisted of micro-wave, E and Peri-Field systems, and close circuit television to discover and assess unauthorized activities and conditions. These systems communicated alarm conditions to response force personnel through the alarm stations, allowing for response force personnel to assess and correct the conditions. A noteworthy improvement of the perimeter detection system was the integration of the new Peri-field zones. This enhancement to the detection system was a strength to the program.

Alarmed annunciators showed the status of the penetration detection aids. They annunciated in continuously manned alarm stations, located in the protected area. The detection aids and alarm devices, including transmission lines, were tamper-indicating and self-checking. Sensors continued to function normally during loss of normal power. The licensee had compensatory measures to replace defective or inoperative detection aids.

Based upon the above evaluation, the inspector concluded that the licensee's protected area intrusion detection systems were functional and met licensee commitments. There were no vulnerabilities found.

The inspector evaluated the licensee's assessment aids to ensure that they were functional and effective for both covert and overt penetration attempts after an intrusion detection alarm. The inspector also evaluated the licensee's program for provision and maintenance of assessment aids. The licensee provided means for monitoring and observing, by human eye or closed circuit television persons and activities in the isolation zone and exterior areas within the protected area. These means provided for assessing intrusion alarms for possible threats occurring in the isolation zone and exterior areas within the protected area. The alarm stations could simultaneously monitor scenes viewed by closed circuit cameras used for intrusion alarm assessment. The transmission and control lines used in the intrusion alarm assessment system had line supervision and tamper indication. The licensee had compensatory measures for loss or malfunction of assessment aids.

This evaluation verified that the licensee's assessment aids were functional and well maintained, and effective for both covert and overt penetration attempts after an intrusion detection alarm. They met the licensee's commitments and regulatory requirements.

There were no violations of regulatory requirements found in this area.

## 2.2. Alarm Stations and Communications

The inspector evaluated the licensee's alarm stations and communication equipment to ensure application of the criteria in Chapters 5 and 6 of the PSP.

The inspector verified that annunciation of protected and vital area alarms occurred audibly and visually in the alarm stations. The licensee equipped both stations with assessment capabilities and communication equipment. Alarms were tamper-indicating and self-checking, and provided with an uninterruptable power supply. These stations were continually manned by capable and knowledgeable security operators. The stations were independent yet redundant in operation. Alarm station's interiors were not visible from the protected area, and no single act could remove the capability of calling for assistance or otherwise responding to an alarm. Alarm stations' walls, doors, floors, ceiling and windows were bullet-resistant at the high-powered rifle rating (UL752).

The inspector evaluated the provision, operation, and maintenance of internal and external security communication links, and determined that they were adequate and appropriate for their intended function. Each security force member could communicate with an individual in each of the continuously manned alarm stations, who could call for assistance from other security force personnel and from local law enforcement agencies. The alarm stations had the capability for continuous two-way voice communication with local law enforcement agencies through radio as well as the conventional telephone service. A notable improvement to the communication system was the new higher frequency portable radios used by the security force. The licensee had compensatory measures for defective or inoperable communication equipment.

Based on this evaluation, the inspector concluded that the licensee was complying with the criteria in Chapters 5 and 6 of the PSP.

There were no violations of regulatory requirements found in this area.

## 2.3. Testing, Maintenance and Compensatory Measures

The inspector evaluated the licensee's program for testing and maintenance of security equipment. This was to ensure the reliability of physical protection-related equipment and security-related devices; and licensee's compliance with the criteria in Chapter 12 of the PSP.

The licensee's program for testing and maintenance was established to ensure that physical protection-related equipment met the general performance requirements. Appropriate onsite personnel tested and maintained the security-related devices and equipment in an operable condition. Each intrusion alarm was tested for performance

at the beginning and end of any period in which it was used and at least once every seven days during continuous use. Alarm station operators tested the communication equipment required for onsite communication for performance at least at the beginning of each security work shift. Communication equipment required for offsite communication was tested at least once a day.

Records documenting tests and maintenance on security-related equipment were on hand and properly maintained. The licensee maintained records of onsite alarm annunciation, location of each protected and vital area alarm, false alarms, alarm checks, alarm circuit, date, time and response to each alarm, and intrusion or other security incident. As of this inspection, there were three outstanding maintenance works orders. The oldest one was dated June 22, 1996

Compensatory measures, which equaled the failed or damaged component of the security system, were reviewed. These measures consisted of equipment, additional security force personnel and specific procedures to assure that the effectiveness of the security system was not reduced.

Through observations, interviews, and documentation review, the inspector concluded that the licensee used programs that will ensure the reliability of security related equipment and devices. This evaluation also verified that the licensee employed compensatory measures when security equipment fails or its performance was impaired.

There were no violations of regulatory requirements found in this area.

## 2.4 Security Training and Qualification

The inspector reviewed the security training and qualification program to ensure that the criteria in the Security Personnel Training and Qualification Plan (T&QP) were met.

The inspector interviewed approximately 20 security personnel, including supervisors, and witnessed approximately 15 others in the performance of their duties. Members of the security force were knowledgeable in their responsibilities, plan commitments and procedures. Documentation was reviewed by the inspector concerning training, firearms, testing, job/task performance and requalification. Documentation and equipment inspected met the requirements in the approved T&QP.

The inspector found that armed response personnel had been instructed in the use of deadly force as required by 10 CFR Part 73. The firearms requalification of six armed response personnel with hand guns, shotguns and rifles was observed by the inspector during this inspection.



Pre-employment investigations of the contract security force include the verification of age, education and the disposition of any felony convictions. Pre-employment physicals included such tests as vision, hearing, incapacitating diseases and addiction to drugs and alcohol. As required by regulations, the licensee had certified to the mental alertness and emotional stability of security force and Alarm Station Operators.

Members of the security organization were requalified at least every twelve months in the performance of their assigned tasks, both normal and contingency. This included the conduct of physical exercise requirements and the completion of the firearms course. The committed number of security officers was available onsite and could respond immediately to alarms.

The inspector reviewed the following Security Plan Procedures (SPP) that supplemented the Safeguards Contingency Plan and detailed the duties of the members of the security organization:

SPP-300, Security Training and Qualification Program--Training, Revision 5, dated January 22, 1988.

SPP-301, Security Training and Qualification Program-Qualification, Revision 5, dated April 25, 1995.

This Plan and its procedures were audited at least every twelve months by qualified personnel.

The licensee's security organization structure and chain of command appeared adequate and appropriate for its intended function. The licensee had an onsite physical protection system and security organization, including adequately trained and qualified security force members in accordance with the licensee's T&QP and the Safeguards Contingency Plan.

Ten security personnel training and qualification records were reviewed. Through this review and interviews of security force personnel, the inspector determined that the requirements of 10 CFR 73, Appendix B, Section 1.F. concerning guard suitability, physical and mental qualification data, test results and other proficiency requirements were met.

The inspector concluded through observation and interviews of security force personnel, and reviews of procedures that the security force could adequately cope with the design-basis threat described in 10 CFR 73.1(a) and that the force met the requirements of Chapters 1 through 15 of the PSP.

There were no violations of regulatory requirements identified in this area.

### 3.0 Action on Previous Inspection Findings

(CLOSED) LER 94-0005 (VIO 50-395/94-18-01), Failure to Protect Safeguards Information and Report to the NRC. This LER was closed as Violation 50-395/94-18-01 in Inspection Report No. 50-395/96-06.

### 4.0 Exit Interview

The inspection scope and results were summarized on August 23, 1996, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. Although reviewed during this inspection, proprietary information is not contained in this report. Dissenting comments were not received from the licensee.