



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

Report No. 50-395/82-16

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

Facility Name: V. C. Summer

Docket No. 50-395

License No. CPPR-94

Inspection at V. C. Summer site near Winnsboro, South Carolina

Inspector: John F. Rogge, Jr. 3/19/82  
J. K. Skolds Date Signed

Approved by: V. L. Brownlee 3/22/82  
V. L. Brownlee, Section Chief, Division of Date Signed  
Project and Resident Programs

SUMMARY

Inspection on February 1 - 28, 1982

Areas Inspected

This routine, unannounced inspection involved 175 resident inspector-hours on site in the areas of Open Item Followup, TMI Action Plan Followup, IE Bulletin Followup, Preoperational Test Results Review, Licensee Identified Item Followup, and Independent Inspection Effort.

Results

Of the six areas inspected, one apparent item of noncompliance was found in one area (Failure to follow procedure - paragraph 9).

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*W. A. Williams, Jr., General Manager, Nuclear Operations
- J. G. Connelly, Deputy Plant Manager
- L. F. Storz, Assistant Manager, Operations
- \*S. J. Smith, Assistant Manager, Maintenance
- B. G. Croley, Assistant Manager, Technical Support
- V. R. Albert, Assistant Manager, Support Services
- \*A. R. Koon, Technical Services Coordinator
- \*H. I. Donnelly, ISEG
- \*S. S. Howze, Nuclear Licensing
- P. V. Fant, Director Station QC
- H. C. Fields, Technical Services Engineer

Other licensee employees contacted included technicians, operators and office personnel.

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on March 4, 1982, with those persons indicated in paragraph 1 above. The inspector also attended the exit interview of D. Evans on March 1, 1982, T. Gibbons on February 12, 1982, and C. Hosey on February 26, 1982.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Open Item Followup

(Closed) (80-34-05) This item dealt with commitments made in an October 2, 1980 letter to the NRC concerning the Fire Protection Evaluation. The inspector verified the following:

- (1) Thyrite protectors were added to the diesel generator metering current transformer circuits. (ECN 1514 FM)
- (2) The controls for the service water pump discharge valves were changed to drive the valves open and override any previous closed signal.

- (3) Fire service connections to the diesel generators were revised to provide automatic backup cooling. (ECN 1491 FM)
- (4) Diesel generator field flashing circuits were revised to obtain power from separate panels not located in the control building. (FCR B 10550)

(Open) (82-16-02). In reviewing the nitrogen system associated with the pressurizer PORV's the inspector found that the flow diagram indicates that the high pressure portion of this system has a design pressure of 600 psig. The hydro data sheet indicates a design pressure of 700 psig. The hydro data sheet indicates a design pressure of 875 psig. The hydro was performed at 875 psig. It was requested that the applicant provide the inspector with the correct design pressure.

(Closed) (80-40-01). This item dealt with the double O-rings on the operating shafts of the Reactor Building Air Locks. Page 6.2-112 of the FSAR indicates that the double rings are subject to Type B tests. However, 10 CFR 50 Appendix J implies that operating shafts could be included in the definition of air lock door seals. At present, the draft Technical Specifications do not specifically address these double O-rings. However, Surveillance Test Procedure STP 155.002, "Reactor Building Air Lock Test", indicates that these double O-rings will be tested at the same frequency as the air lock door O-rings every six months along with the airlock. Since the present testing procedure (STP 115.002) is more conservative than the proposed change to the Technical Specifications, the proposed method of testing these O-rings is considered acceptable.

(Closed) (81-32-01) Waiver of Experience Requirement for QC Personnel. This item involved the licensee's use of waivers of experience requirements in ANSI 45.2.6-1973. The waivers were not needed and waivers are not allowed in ANSI 45.2.6-1973. The licensee is changing the Administrative Procedure, covering the qualification of QC personnel, to eliminate the option of waiving requirements in ANSI 45.2.6-1973.

(Closed) (79-37-02). This item dealt a statement in Section 8.3.2.1.5.2 of the FSAR concerning main breakers in the electrical distribution system. The FSAR has been amended (No. 29) to correctly indicate that the main breakers are equipped with an auxiliary switch to operate indicator lights in the control room for an off-normal position.

(Closed) (81-05-18). PSI and ISI Pump and Valve Program. The inspector participated in a meeting on February 24 and 25 between the NRC (EG&G consultants) and the applicant. The PSI and ISI Pump and Valve Program was discussed in detail. All inspector concerns were resolved at this meeting.

(Closed) (81-03-09). This item dealt with the availability of the description of access routes described in Appendix 12A of the FSAR. The access routes described concern entry into the Auxiliary Building and Fuel Handling Building in post accident conditions. Emergency Plan Procedure (EEP)-003 "In Plant Radiological Surveying", Revision 1, contains maps

indicating the access routes. These routes are the same as those described in Appendix 12A to the FSAR.

(Closed) (80-29-05). This item dealt with discrepancies between instrument list setpoints and the actual setpoints on instruments monitored on the MODUFLASH unit. The inspector randomly selected twelve setpoints on the MODUFLASH unit and verified that the setpoints matched the setpoints described in Preoperational Test CB-1 "MODUFLASH Temperature/Flow Monitor". All setpoints checked matched those described in CB-1. The preoperational test will be used to generate surveillance procedures to check the setpoints.

(Closed) (82-01-01). This item dealt with the storage of preoperational test records. A study was not performed to determine if one hour cabinets are sufficient as required by ANSI N45.2.9 and NFPA 232-1975. The applicant conducted a study of the storage facility for preoperational test records and concluded that the present storage facility is adequate.

(Closed) (82-31-05). This item dealt with a commitment in a letter to the NRC to install a flow limiting orifice in the Reactor Makeup System. This orifice would limit flow to 150 gpm. Engineering Change Notice (ECN) 1883 FM was generated to install the orifice. The inspector verified the orifice has been installed.

(Closed) (81-20-02). This item dealt with the a discrepancy between the results of preoperational test LR-5 "Airlock LLRT" and the requirement in the Technical Specifications. The Technical Specifications have been changed to allow air lock leakage rates up to .01La.

(Closed) (81-29-04). This item dealt with the adequacy of the test results of RC-9, "Reactor Head Vent System". The test was conducted at a Reactor Coolant System pressure of 400 psig. Test results indicated flows ranging from 35 gpm to 42 gpm. The predicted flow for 400 psig was approximately 55 gpm. Start Up Field Report (SFR) 4442 was written to evaluate the data.

Section 5.5.15.2.1 of the FSAR states that the Reactor Head Vent System is designed to vent a volume of hydrogen and non condensible gases at system design pressure and temperature approximately equivalent to one half of the reactor coolant system volume in one hour. Using the data obtained in RC-9, an extrapolation was done to system design pressure and temperature and the venting capability was found satisfactory.

(Open) (82-06-03) and (82-06-04). These items deal with the adequacy of System Operating Procedures (SOP), General Operating Procedures (GOP) and Emergency Operating Procedures (EOP). It was noted that the applicant has undertaken a major effort to rewrite all GOP, SOP and EOP all procedure will be rewritten prior to fuel load. The NRC will conduct a special inspection to review these procedures.

## 6. TMI Action Plan Item Followup

(Closed) II.E.3.1, Emergency Power Supply for Pressurizer Heaters. This item deals with the power supplies for pressurizer heaters. The pressurizer backup heaters are powered from 7.2KV buses 1DA and 1DB. Both buses can be powered from either offsite or the emergency diesel generators. Emergency Operating Procedure (EOP)-4 "Station Blackout" described the procedure to be used in energizing the pressurizer heaters when buses 1DA and 1DB are connected to the diesel generator. The heaters will be loaded manually at APN 4101 and APN 4102. Precautions are included to prevent overloading the diesel generator. The backup heaters trip on a Safety Injection signal.

(Closed) II.E.4.1, Dedicated Hydrogen Penetrations. The plant utilizes internal hydrogen recombiners so there is no modification necessary.

(Closed) II.F.1.2.D. Containment Pressure Monitor. This item deals with a continuous indication of containment pressure in the control room. Measurement and indication capability shall be possible from 5 psig to 3 times the design pressure of the containment. The licensee has installed two separate containment pressure measuring systems and a recording system to observe one channel. The system is capable of recording pressure from 5 psig to 175 psig. Containment design pressure is 57 psig and therefore this range ( 5 to 175 psig) is acceptable. The inspector verified the pressure monitors (PT954A/B) have been installed.

(Closed) II.G.1. Emergency Power for Pressurizer Equipment. This item deals with motive and control components of the power operated relief valves and associated block valves and the pressurizer level indication being capable of being supplied from the offsite power source or from the emergency power buses when offsite power is not available. The inspector found the following:

1. Motive and control components of the power-operated relief valves is capable of being supplied from either the offsite power source or the emergency power source when the offsite power is not available.
2. Motive and control components associated with the power operated relief valve block valves is capable of being supplied from either the offsite power source or the emergency power source when the offsite power is not available.
3. Motive and control power connections to the emergency buses for the power operated relief valves and their associated block valves is through devices that have been qualified in accordance with safety-grade requirements.
4. The pressurizer level indication instrument channels is powered from the vital instrument buses. The buses have the capability of being

supplied from either the offsite power source or the emergency power source when offsite power is not available.

5. The motive and control power for the block valve is supplied from an emergency power bus different from that which supplies the power operated relief valves.
6. The electrical power supply for instrument air compressors XAC3B and XAC12 is capable of being manually connected to the emergency power sources.

(Closed) II.K.3.17, Report on Outages of Emergency Core Cooling System; Licensee Report and Proposed Technical Specification Changes. The applicant has included in Administrative Procedure (AP)-217, "Removal and Restoration of Station Equipment", a provision for Technical Support to conduct an annual audit. The audit will document (1) outage dates and duration of the outage; (2) cause of the outage; (3) ECC systems or components involved in the outage; and (4) corrective action taken.

7. IE Bulletin Followup

(Closed) IEB 80-15, Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power.

This bulletin requires that all extensions of the ENS remain fully operable from the facility to the NRC Operations Center in the event of a loss of offsite power to the facility. The ENS system is powered from vital ac buses, which would not lose power in the event of a loss of offsite power. The bulletin also requires an administrative procedure or directive requiring notification of the NRC Operations Center within one hour of the time that one or more extensions of the ENS is found inoperable. Special Instruction 82-6 adequately describes the actions to be taken in the event the ENS is found inoperable.

8. Preoperational Test Results Review

The inspector reviewed the following preoperational test:

AH P1 Reactor Building Cooling Unit

The results were reviewed to ensure the test was performed in accordance with procedures and the commitments in the FSAR and the results were within the acceptance criteria. Findings were acceptable.

9. Independent Inspection Effort

1. The inspector reviewed the following Startup Field Reports (SFR's):

5014	5106	4912	4966
5020	5124	4916	4834

5047	5125	4926
5048	5139	4944
5058	5149	4946
5121	5160	4954
5131	4906	4960

The SFR's were reviewed to ensure they were completed in accordance with Startup Manual Procedure SUM-B-13 "Startup Field Reports". Specifically the closeout of the SFR's was reviewed. Findings were acceptable.

2. The inspector attended an 8 hour Station Orientation Lecture covering Basic Radiological Health Principles and Station Specific Radiological Health Procedures. The lecture adequately covered the subjects described in Regulatory Guide 8.29 and 8.13. The subjects were well taught and the examination adequately tested an individual's knowledge.
3. Startup Field Report (SFR) 2198 required valves 3127A, 3127B, 3129A and 3129D to be flow tested to determine valve position versus flow in 100 gpm increments from 100 gpm and 900 gpm. This SFR was closed out on 3/2/81 based on the fact that a Phase I test, VU-1, was written, that Engineering Change Notice (ECN 1577) was written and that Construction Work Request (CWR) 4630 was written. The problems identified are as follows:
  - a. The closeout of the SFR was not complete in that CWR 4605 and 4455 were also used to implement the SFR.
  - b. The final disposition of SFR 2198 indicated that valves 3129 A and D were to be flow tested. The Test Supervisor performing VU-1 tested valves 3129 B and C instead of 3129 A and D. Procedure Sum-B-13 "Startup Field Reports", Section 6.1.(g) indicates that the Lead System Supervisor will implement the SFR in accordance with the approved disposition of the SFR. The flow testing of 3129 B and C instead of 3129 A and D violates Sum-B-13 section 6.1.(g).
  - c. The inspector found that even though the service water low cutout was removed the low flow alarm was still present. The low flow alarm needs to be changed. Also, the Annunciator Response Procedure does not indicate what actions are to be taken on a low temperature alarm.

The activities described in paragraph (b) violates 10 CFR 50 Appendix B, Criterion V in that these activities were not accomplished in accordance with the procedure, Startup Manual

Sum-B-13 "Startup Field Reports". The corrective action taken by the licensee consists of the following:

- (1) SFR 2198 was redispositioned to allow throttling of valves 3129B and 3129C instead of 3129A and 3129D.
- (2) The Test Supervisor has been instructed that the engineering disposition must be followed explicitly and that reference to procedures are not to be used to close out SFR's.
- (3) A random review of 50 completed SFR's was performed with no similar instances found.

The above corrective action is considered adequate and no reply to this violation is requested.

Until the low flow alarm is changed and the Annunicator Response Procedure is changed this item will remain open. (82-16-03)

#### 10. Licensee Identified Item Followup

(Closed) (81-29-03). Service Water Pump Oil Leakage. In an interim report dated September 18, 1981 the licensee reported a potential significant deficiency concerning oil leakage around the upper bearing pot of the Service Water Pumps. In a final report dated February 15, 1982 the licensee indicated that the Service Water Pump Motors were installed without a required vent in the upper bearing pot. Without the vent, oil is siphoned from the oil resevoir to the motor exterior. The correction action was to drill a vent hole in the upper bearing pot. The inspector reviewed the following documentation concerning the problem and the corrective action: Startup Field Report (SFR) 4954, Nonconforming Notice (NCN) 194, Maintenance Work Requests (MWR) 54407, 54408, and 54409. Findings were acceptable.

(Closed) (80-16-04). Deficient Chiller Design. In an interim report dated May 29, 1980 the applicant reported a significant deficiency concerning the Centrifugal Chiller Units. When Service Water temperature was too low the chillers could not be loaded due to low evaporator pressure. In a final report dated May 4, 1981 the applicant indicated that the following corrective action would be taken:

- a. The low flow cutout of the Service Water to the Chiller Condenser would be deleted.
- b. Motor operated butterfly valves would be installed in the Service Water inlet to the chiller which open when the chiller starts and close when the chiller stops.
- c. An administrative controls program would be instituted to regulate flow to the operating chiller as well as the idle chiller to ensure automatic start and operating in the event the chiller is needed.

- d. A dual range temperature alarm for both high and low temperature conditions would replace the single high setpoint.

The inspector reviewed items a through d and found that the corrective action taken is adequate. However, the implementation of the corrective action resulted in a violation. This is described in paragraph 9.

(Open) (82-16-01). Mechanical snubber failure in a letter dated February 15, 1982, the applicant informed NRC that four snubbers were found to be in unworkable condition. These snubbers were found as a result of the IEB 81-01 testing procedure. The response to IEB 81-01 will serve as final report.