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

Report No.: 50-395/96-02

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: January 28 through March 9, 1996

Inspectors: L W Garner for 4-8-96
B. R. Bonser, Senior Resident Inspector Date Signed

J. L. Starefos, Resident Inspector

Approved by: George A Belisle 4/8/96
George A. Belisle, Chief Date Signed
Reactor Projects Branch 5
Division of Reactor Projects

SUMMARY

Scope:

This routine resident inspection was conducted on site in the areas of plant operations which included plant status, equipment monitoring when exiting radiation control area, and leakage from Residual Heat Removal System heat exchangers; maintenance which included maintenance observations, surveillance observations, charcoal testing, testing requirements for engineered safety feature air handling systems, and chilled water; engineering which included non-safety feedwater valves fed from safety related power, and service water self-assessment; and plant support which included emergency preparedness training drill, Notification of Unusual Event, temporary shielding installed on residual heat removal and safety injection piping, and Management Review Board meeting. A review of Final Safety Analysis Report commitments was also conducted.

ENCLOSURE 2

Results:

Plant Operations

The inspectors conducted plant tours and reviewed plant events. No problems were identified (paragraph 2.2).

An example of a violation was identified for failure of an operator to appropriately monitor hand held computer logging equipment when exiting the radiation control area (paragraph 2.3).

A walkdown of portions of the Residual Heat Removal System was conducted. During the system review a concern with residual heat removal heat exchanger leakage was identified. Actual leakage identified exceeded estimates in the Final Safety Analysis Report. A review of this leakage by the licensee concluded that dose calculations enveloped the actual leakage (paragraph 2.4).

Maintenance

Maintenance activities were observed. No concerns were identified during the observation of these activities (paragraph 3.1).

Surveillance activities were observed. Diesel generator A fuel oil strainer was observed to be reading less than zero during the monthly surveillance. The gauge was considered to be reading within its span of error. A work order was issued to address the other diesel generator. An example of a violation was identified during the weekly battery surveillance. A technician adjusted the voltage on the wrong bus (paragraph 3.2).

An unresolved item was identified concerning testing charcoal adsorber for the Control Room Emergency Ventilation System and the Fuel Handling Building Exhaust System in a manner different than that specified in Technical Specification surveillance requirements (paragraph 3.3).

An unresolved item was identified concerning the difference between Final Safety Analysis Report statements and Technical Specification requirements involving the minimum time per month that filter trains are to be operated (paragraph 3.4).

Engineering

The inspectors routinely interfaced with system and design engineering personnel to follow up on issues. These issues included residual heat removal heat exchanger leakage, electrical separation/isolation, containment sump construction, condensate storage tank nitrogen sparging, and the chilled water system (paragraph 4.1).

A concern regarding isolation of non-safety from safety circuits was identified. An inspection follow-up item was identified to review the adequacy of the isolation devices and single failure criterion (paragraph 4.2).

A licensee Service Water System self-assessment did not identify any operability concerns and the state of the Service Water System was found to be sound. The results identified several areas for improvement (paragraph 4.3).

Plant Support

Aspects of plant support in the areas of radiological controls, physical security, and fire protection were routinely observed. No problems were observed (paragraph 5.1).

A training drill was observed. No problems were identified (paragraph 5.2).

A Notification of Unusual Event was declared and terminated when it was identified that less that 75 per cent of the emergency sirens had been operable during a power outage (paragraph 5.3).

An example of a violation was identified for failure to follow temporary shielding procedures. Temporary shielding was installed on safety related piping without proper authorization and without meeting the prerequisites of an engineering analysis (paragraph 5.4).

A management review board meeting was attended on fire protection issues. The discussions during the meeting were open and focussed on the resolution of outstanding issues (paragraph 5.5).

REPORT DETAILS

Acronyms used in this report are defined in paragraph 9.

1.0 PERSONS CONTACTED

Licensee Employees

*Bacon, F., Manager, Chemistry Services
*Blue, L., Manager, Health Physics
*Browne, M., Manager, Design Engineering
*Byrne, S., General Manager, Nuclear Plant Operations
*Derrick, J., Supervisor, Procurement Engineering
*Fipps, S., Independent Safety Evaluation Group
*Fowlkes, M., Manager, Operations
*Franchuk, T., Supervisor, Administration, Facilities, Document Control
*Furstenberg, S., Manager, Maintenance Services
*Hunt, S., Manager, Quality Systems
*Kelley, V., Coordinator, Emergency Services
LaCoe, P., Supervisor, Test Unit
Lavigne, D., General Manager, Nuclear Safety
*Lippard, G., Manager, Nuclear Licensing and Operating Experience
*Loignon Jr., G., Project Coordinator
*Moffatt, G., Manager, Planning and Scheduling
*Nesbitt, J., Manager, Technical Services
*Nettles, K., General Manager, Strategic Planning and Development
*O'Quinn, H., Manager, Nuclear Protection Services
Proper, J., Supervisor, Nuclear Licensing and Operating Experience
*Taylor, G., Vice President, Nuclear Operations
*Taylor, T., Manager, Engineering Services
*Waselus, R., Manager, Systems and Component Engineering
*Wasieczko, J., Supervisor, Security Operations
*White, R., Nuclear Coordinator, South Carolina Public Service Authority
Williams, G., Associate Manager, Operations

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation, and corporate personnel.

2.0 PLANT OPERATIONS (71707, 40500)

2.1 Plant Status

The plant operated at or about full power during the entire inspection period.

2.2 General

The inspectors conducted frequent CR tours to verify proper staffing, operator attentiveness, and adherence to procedures. The inspectors attended daily plant status meetings and shift turnovers to maintain awareness of overall facility operations, and reviewed operator logs to verify operational safety and compliance with TS. Instrumentation and safety system lineups were periodically reviewed from CR indications to

assess operability. Frequent plant tours were conducted to observe equipment status and housekeeping.

ONOs were reviewed to assure that potential safety concerns were properly reported and resolved. The inspectors routinely attended plan of the day meetings where management discussed the details of the ONOs and proposed actions to resolve the issues.

2.3 Equipment Monitoring When Exiting RCA

On February 18, the inspectors toured the auxiliary building with the auxiliary building operator during his rounds. Operators take their logs on a hand-held computer. The operator exited the RCA by passing through the personnel monitor at the RCA exit point with the computer equipment in his hand. The inspectors questioned the release of the equipment without monitoring it separately in the N.E. SAM9 tool monitor. The operator indicated that this was an acceptable monitoring practice. The inspectors questioned HP who indicated that the equipment needed to be monitored in the N.E. SAM9 tool monitor prior to release from the RCA. Since the operator had completed monitoring and was on the clean side of the RCA boundary, the HP technician took the equipment back into the RCA for monitoring. The equipment was subsequently released by HP. The inspectors interviewed other operations shift personnel who indicated that they considered that carrying this particular equipment through the personnel monitor was an acceptable monitoring practice.

Health Physics Procedure, HPP-158, Contamination Control for Areas, Equipment and Materials, revision 6, states, "Personal, hand-carried, or equipment/uniform type items used in clean areas of the RCA may be released as follows: Hand-carried items like flashlights, paperwork, or clipboards should normally be monitored in the N.E. SAM9." The inspectors also reviewed training materials which qualify individuals for unescorted access to the RCA. Training material indicated, "Any material leaving the RCA will be monitored by Health Physics." The HP manager has stated that HP procedures require hand-held items be monitored separately when exiting the RCA. The licensee is addressing this issue as ONO 96-78.

This failure to appropriately monitor hand-held computer logging equipment prior to releasing it from the RCA is identified as one example of VIO 50-395/96-02-01, Failure to Follow Procedure.

2.4 Leakage from Residual Heat Removal System Heat Exchangers

While performing an RHR system review and walkdown, the inspectors discussed previously identified leakage on the RHR system heat exchangers with the system engineer. On March 22, 1995, the licensee documented a 67 drops/minute leak (201 cc/hr) on the A train RHR heat exchanger in an engineering TWR. The inspectors observed the heat exchangers and found crystallized boron on the heat exchanger flange and the heat exchanger room floor. The heat exchanger was not leaking at the time.

FSAR Chapter 15.4.1.3, Radioactive Release from Recirculation Loops, states that recirculation loops are estimated to have a maximum potential leakage of 120 cc/hr for heat exchanger flanges as indicated by Table 6.3-4. It also states that this leakage refers to specified design limits for components and normal leakage is expected to be well below these upper limits. Actual leakage from the A train RHR heat exchanger was 201 cc/hr. The licensee assessed this leakage and determined that the dose assessment calculations bounded the actual leakage. The licensee determined that dose assessment calculations used 240 cc/hr, a factor of two times the FSAR values. The inspectors reviewed the licensee's TWR that addressed the significance of the leakage problem and were satisfied that the licensee adequately considered the leakage with regard to dose assessment.

The licensee plans to implement a one time TS change that will allow an extension of the allowable outage time for each RHR train to 7 days in order to replace the RHR heat exchanger head gasket. The licensee plans to work on the heat exchangers before the Spring 1996 RFO. The inspectors consider this to be a positive action toward eliminating the RHR heat exchanger leakage.

In the area of Operations, an example of one violation was identified.

3.0 MAINTENANCE (62703, 61726, 40500)

3.1 Maintenance Observations

Station maintenance activities for safety-related systems and components were observed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, and industry codes or standards and in conformance with TS. The following types of items were considered during this review: limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; activities were accomplished by qualified personnel; parts and materials used were properly certified; and, radiological and fire prevention controls were implemented. The following maintenance activities were observed:

- WR 9504165, Bearing Flow Indicator on SW Pump A.
- WR 9504221, Fix Leaking Oil Sightglass on SW Pump A.
- WR 9603172, A Chilled Water Pump, Repair Pump Shaft Leakage.

No concerns were identified during the observation of these activities.

3.2 Surveillance Observations

The following surveillance activities were observed:

- STTS No. 0060808; STP-125.002, Diesel Generator Operability Test, revision 17, change B, EDG A.

During the surveillance, the inspectors observed the operator document the fuel oil strainer differential pressure as less than zero on his copy of the procedure data sheet. Upon review of the completed test data sheet, the inspectors noted that the fuel oil strainer differential pressure was documented as zero. The inspectors brought this to the attention of the SS who accompanied the inspectors to the instrument in field. The SS determined that the instrument was valved in and the gauge was reading less than zero. The licensee determined that when the procedure data was transferred from the field copy to the documentation copy, it was considered that the gauge was within its span of error. The licensee did, however, address the pressure gauge for the fuel oil strainer on EDG B, which was also reading below zero, by writing a MWR on the instrument.

- STTS No. 0060476, STP-396.001, Emergency FW to Steam Generator A Flow Instrument (IFT03561) Calibration, revision 4.

- PMTS P0195542; EMP-115.011, Battery Inspection, revision 9, Train 1X.

- STTS Nos. 0060814, 0060815; STP-501.001, Battery Weekly Test, revision 7, Trains A and B.

On February 12, the inspectors observed the performance of STP-501.001, on the XBA-1A and XBA-1B safety batteries. The inspectors also observed the technicians perform the weekly battery surveillance on the XBA-1X non-safety battery. The technicians were assigned multiple safety and non-safety battery surveillances to be completed during their shift. The technicians began with the XBA-1X non-safety battery surveillance, moved directly to the XBA-1A battery surveillance, and then to the XBA-1B battery surveillance.

The procedure for the safety batteries required recording the battery bus voltage and adjusting the battery voltage as necessary if battery voltage was not 134.5 VDC (acceptable range of 133-135 VDC). The procedure required that if the voltage was less than 129 VDC notify the SS. The technicians recorded the A train battery voltage as 133.9 VDC, within the acceptable range, and made no adjustment. The technicians then proceeded to the B train battery room. The B train battery voltage was recorded as 135.1 VDC, outside the acceptable range of 133-135 VDC, and required adjustment of the B train battery voltage.

To make the voltage adjustment the inspectors accompanied one of the technicians into a battery charger room while the other technician measured the voltage on the B train battery bus in the battery cell room. The technician in the charger room adjusted the battery float

voltage using a potentiometer on the battery charger panel. Upon exiting the charger room, the technician recognized the voltage adjustment was made in the A battery charger room. The technician then proceeded to make the adjustment on the B train battery bus at the B charger. When the B train adjustment was complete, the technicians proceeded to make voltage adjustments to the A train battery voltage until it was within the acceptable range. The final adjusted value of the A train bus was recorded as 134.6 VDC. The final adjusted value of the B train bus was recorded as 133.8 VDC. Both as left values were within the acceptable range. The inspectors asked the technician what the A train voltage was after the unintended adjustment and before readjustment. The technician indicated that the battery voltage was not below the required 129 VDC.

This failure to properly implement surveillance test procedure STP-501.001, Battery Weekly Test, for the B train safety battery is identified as an example of VIO 50-395/96-02-01, Failure to Follow Procedure.

In addition, the inspectors concluded that there was poor communication between the two technicians adjusting the voltage on the bus. The technicians were in separate rooms while the float voltage was adjusted.

The inspectors reviewed the setpoints for the DC system overvoltage and undervoltage control room annunciators, window XCP-636, 4-6, DC SYS OVRVOLT/UNDRVOLT, for the A train, and window XCP-637, 4-6, DC SYS OVRVOLT/UNDRVOLT, for the B train. The Annunciator Response Procedures, ARP-001, ARP-001-XCP-636, revision 7, and ARP-001, ARP-001-XCP-637, revision 6, state that the undervoltage setpoints are 126 VDC. The TS surveillance requirement addresses the operability of the battery bank and charger, in part, by verifying that the total battery terminal voltage is greater than or equal to 129 volts on float charge. The inspectors concluded that the battery voltage could be less than 129 volts and operators would not have received a control room alarm. FSAR section 8.3.2.1.5 states that additional monitoring is provided by a special, narrow band, d-c voltage relay to monitor Class 1E battery voltage. It also states that the relay initiates an alarm in the control room if battery voltage falls slightly below normal float voltage. The inspectors determined that with the current control room annunciator setting, the additional monitoring capability is not effective to indicate a slightly below normal float voltage.

3.3 Charcoal Testing

On February 7, the licensee identified that the testing criteria used to test the charcoal samples taken from the CREVS and the Fuel Handling Building Exhaust System charcoal plenums were not in accordance with the applicable TS surveillance requirements. An evaluation of procurement documents identified that this different testing criteria had been used since plant startup.

Control Room Normal and Emergency Air Handling System and Spent Fuel Pool Ventilation System TS surveillance requirements 4.7.6.c.2 and 4.7.6.d, and TS requirements 4.9.11.b.2 and 4.9.11, state that charcoal testing shall meet the criteria of Regulatory Position C.6.a of 1.52, revision 2, dated March 1978. The RG position requires that representative samples of used activated carbon pass a laboratory test given in Table 2 of RG 1.52. The applicable part of Table 2 states to test the carbon per test 5.b of Table 5-1 of ANSI/ASME N509-1976, Nuclear Power Plant Air Cleaning Units and Components. The licensee identified that the laboratory they had used to perform the carbon analysis was testing per ANSI/ASME N509-1980 at 70 per cent relative humidity and 30 degrees C.

Several significant elements of the test standards differed. The 1976 standard required the test be performed at 80 degrees C, a pre-test equilibration for temperature and humidity at 25 degrees C, and a two hour post test sweep at 25 degrees C. The 1980 standard required the test be performed at 30 degrees C, no pre-test sweep for temperature and humidity equilibration, and a four hour post test sweep. The licensee and the vendor determined that this other testing method better demonstrate the ability of these ESF systems to perform their functions than the test specified in the TS.

When the licensee identified this discrepancy between their existing practice and the TS requirements, the inspectors were promptly notified. Following discussions with NRC management on February 9, the licensee decided to submit an Emergency TS Change Request. At about 6 p.m., on February 9, the plant was considered to have entered TS 4.0.3 for failure to perform TS surveillance requirements. The TS allows delaying the action requirements for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the Action requirements are less than 24 hours. On February 10, an Emergency TS Change Request for the Charcoal Filters was submitted by the licensee and approved. The essential elements of the TS change included the requirements of RG 1.52 and ANSI N509-1980. The licensee subsequently tested the control room plenum charcoal and found it acceptable.

In 1987, the licensee reviewed NRC IN 87-32, "Deficiencies in the Testing of Nuclear-Grade Activated Charcoal," dated July 10, 1987. The IN identified shortcomings with testing companies test capabilities and testing standards and encouraged licensees to contact their testing companies. The licensee reviewed their testing program with the vendor at the time but did not recognize the discrepancies between the TS requirements and the vendor's test methodology. As a result the licensee did not request a TS change.

The safety and regulatory significance of utilizing a test different than specified by the TSs is presently under NRC review. Until that review is complete, this item will be identified as URI 50-395/96-02-03, Charcoal Adsorber Tested In A Manner Different Than Specified In TS.

3.4 Testing Requirements For ESF Air Handling Systems

On March 8 as a follow-up to the charcoal testing issue for the CREVS, the inspectors reviewed other tests and acceptance criteria for the Reactor Building Cooling System HEPA filters, the control room emergency filter plenums and the Fuel Handling Building Charcoal Exhaust System with RG 1.52, revision 1, commitments. RG 1.52 item 4-e states that each atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters. FSAR Table 6.5-1 items 1.4-e, 2.4-e, and 3.4-e for the Reactor Building Cooling System HEPA filters, the control room emergency filter plenums and the Fuel Handling Building Charcoal Exhaust System, respectively, state that operating procedures comply with this request. Surveillance procedures for these systems do not comply with item 4-e of the RG. The licensee complies with the TS surveillance requirements to operate the HEPA filters and charcoal adsorbers at least 15 minutes per month. The licensee could not provide an explanation for this difference in operating times between the FSAR and the TS. The licensee agreed that there are discrepancies in the FSAR and is reviewing the necessity for a comprehensive review of the FSAR. Pending further NRC review concerning the difference between the FSAR statements and TS requirements, this item is identified as URI 50-395/96-02-04, Review Difference Between FSAR Statements and TS Requirements For Minimum Monthly Operating Requirements of ESF Filter Trains.

3.5 Chilled Water

On January 26, the licensee entered TS 3.0.3 to realign chillers. NRC IR 50-395/96-01 reviewed the licensee's decision to enter TS 3.0.3 and concluded the licensee had made a conservative decision when the chillers were realigned. The inspectors reviewed the cause of the chiller problem and found it was due to a maintenance error. The A chiller tripped on low evaporator pressure due to air in-leakage around the motor cooling cartridge gasket. The gasket was replaced during annual preventive maintenance and was apparently damaged when the joint was tightened incorrectly. The inspectors reviewed the procedure for chiller maintenance MMP-451.002, Maintenance of HVAC Mechanical Water Chillers, revision 9, and found the gasket replacement was a routine maintenance task.

There has been a history of reliability problems with the Chilled Water System. Most problems have not been associated with maintenance errors. Air in-leakage problems have been a significant contributor to chiller reliability problems. On February 12, the inspectors attended a meeting to review the recent chiller problem and other Chilled Water System reliability issues. Operating, maintenance and engineering issues were discussed. System engineering has prepared a detailed action plan to evaluate the issues and propose solutions. The inspectors concluded that this was a positive step in resolving a long standing issue.

In the area of Maintenance, an example of one violation and two URIs were identified.

4.0 ENGINEERING (37551)

4.1 General

General engineering activities were reviewed to determine their effectiveness in preventing, identifying, and resolving safety issues, events, and problems. During the inspection period the inspectors interfaced routinely with system and design engineers to follow issues. These issues included issues related to RHR heat exchanger leakage, electrical separation/isolation, containment sump construction, CST nitrogen sparging, and the chilled water system.

4.2 Non-Safety Feedwater Valves Fed From Safety Related Power

On February 29, the licensee de-energized the three non-safety related feedwater pump discharge valves in the open position. The licensee identified a concern with the separation of safety from non-safety wires in the feedwater pump discharge valve's safety related 480-volt switchgear 1DA-2X. After evaluation, the licensee determined that the wiring was safety-related and that a separation issue did not exist.

While reviewing the licensee's resolution to the separation concern, the inspectors questioned the method of isolation of the non-safety from the safety portions of the circuit. The inspectors questioned how adequate safety/non-safety isolation was achieved. FSAR Appendix 3A section 1.7.5 indicated that isolation is accomplished with the use of two diverse, Class 1E overcurrent protective devices in series. Class 1E overcurrent devices include I-limiter thermal magnetic breakers, current limiting fuses, and magnetic breakers combined with starter thermal overloads. The feedwater pump discharge valve power circuits contained a magnetic breaker, a contactor/thermal overload device and fuses. The control power to the contactor/thermal overload device was non-safety and hence, no isolation credit was taken for this device. A magnetic breaker without starter thermal overloads was not included in the FSAR discription of Class 1E overcurrent devices. In addition, without credit for the thermal overloads, due to their non-safety control power, the inspectors were concerned that a problem might exist with meeting the single failure criterion.

Pending further NRC review of the licensee's evaluation, this item is identified as IFI 50-395/96-02-02, Isolation of Non-Safety Load from Safety Bus.

4.3 Service Water Self-Assessment (40500)

On February 20, the inspectors reviewed the results of a SW system self-assessment with the licensee. This assessment was patterned after the NRC TI and performed by an independent external assessment team. The assessment did not identify any operability concerns and the SW system was found to be sound. The results identified several areas for improvement. The assessment also identified concerns with the licensee's internal problem reporting systems and the way problems are

documented and evaluated. The licensee has recognized this as an area for improvement and is preparing a new system for problem reporting and resolution.

Within the Engineering area, one IFI was identified.

5.0 PLANT SUPPORT (71750)

5.1 General

During inspection activities and tours of the plant, the inspectors routinely observed aspects of plant support in the areas of radiological controls, physical security, and fire protection. The level of radiological protection controls applied to work activities observed was commensurate with the difficulty and risk associated with the task. Effective implementation of the physical security program continued to be demonstrated during inspectors observations of: search and inspection of packages, personnel, and vehicles; tours and compensatory posting of security officers; and control of protected and vital area barriers.

5.2 Emergency Preparedness Training Drill

On February 21, the inspectors observed a training drill from the TSC, the simulator, and the EOF. The inspectors concluded that the licensee met the drill objectives and challenged their emergency response team with the drill scenario.

5.3 Notification of Unusual Event

On March 4, at 11:00 a.m., the licensee declared and terminated a NOUE based on the EWSS being inoperable. The licensee's emergency plan procedures require declaration of a NOUE when the EWSS is declared inoperable. The EWSS is considered inoperable when less than 75 percent of the sirens are operable or when there is a total loss of the capability to activate the EWSS.

The licensee identified the siren problem while reviewing an EWSS computer monitoring system alarm printout on the morning of March 4. There had been a power outage at 5:30 a.m. in areas around the plant. The loss of power rendered 36 sirens inoperable for approximately 42 minutes. This event is reviewed in more detail in NRC IR 50-395/96-05.

5.4 Temporary Shielding Installed on Residual Heat Removal and Safety Injection Piping

On February 26, HP initiated a TSR to support ISI work in the auxiliary building. The TSR was forwarded to design engineering for evaluation as required by procedure HPP-819, Temporary Shielding Evaluation, Installation, and Removal, revision 8. Shielding was requested to be placed directly on a SI and RHR line. On March 5, engineering completed and approved the evaluation and the shielding was installed by HP later in the day.

On March 6, during a routine review of TSR paperwork, an HP shiftleader identified that a required SS signature had not been obtained. The TSR was taken to the SS and signed after a brief review. The SS determined that an R&R (TS LCO) log number was not necessary. HP later returned to the control room with the complete TSR package after questioning the lack of an R&R number. The entire package was then reviewed and it was noted that discrepancies existed between the installation of the shielding and the evaluation. The engineering evaluation assumed that the piping was drained and out of service and the pipe spring cans were pinned. The placement of the blankets did not, however, meet the assumption and conditions stated in the engineering evaluation. The shielding was immediately removed and an NCN issued to evaluate the effect on the piping.

The lead shielding was hung on twelve foot sections of the 10-inch diameter SI and the 12-inch diameter RHR stainless steel pipe. Each set of shielding weighed about 480 pounds. The licensee walked down the piping, visually inspected the spring cans and reviewed the loading that was placed on the piping and did not identify any operability concerns.

The inspectors concluded that a series of errors had taken place resulting in this failure to follow the temporary shielding procedure. Prevention of any one of these errors could have prevented this challenge to safety related systems. The engineering analysis failed to adequately consider the conditions under which the lead shielding would be placed on the piping, HP did not have the SS review and approve the TSR before the shielding was installed, and HP failed to ensure that the prerequisites were met on the engineering analysis when the shielding was installed.

This shielding error is another example of three human performance errors identified in this report. The licensee has recognized that there has been an increase in the number of human performance errors and is considering steps to prevent more serious challenges to the plant. This temporary shielding issue is an example of VIO 50-395/96-02-01, Failure to Follow Procedure.

5.5 Management Review Board Meeting

On February 6, the inspectors attended a meeting of the MRB convened to discuss fire protection issues. The meeting was chaired by the site vice-president. The state of the fire protection system, design issues, implementation of the Simplex MRF, and the state of the Appendix R program were discussed. The inspectors considered the discussions to be open and focussed on resolving outstanding issues.

Within the Plant Support area, an example of one violation was identified.

6.0 OTHER NRC PERSONNEL ON SITE

None

7.0 REVIEW OF FSAR COMMITMENTS

A recent discovery of a licensee operating their facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR description. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the FSAR that related to the areas inspected. The following inconsistencies were noted between the wording of the FSAR and the plant practices, procedures and/or parameters observed by the inspectors:

FSAR section 8.3.2.1.5.2 states that additional monitoring is provided by a special, narrow band, d-c voltage relay to monitor Class 1E battery voltage. It also states that the relay initiates an alarm in the control room if battery voltage falls slightly below normal float voltage. The inspectors determined that with the current control room annunciator setting, the additional monitoring capability is not effective to indicate a slightly below normal float voltage (paragraph 3.2).

FSAR Table 6.5-1 indicates that operating procedures comply with RG 1.52, revision 1, item 4-e. Item 4-e states that each atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters. The TS states that the HEPA filters and charcoal adsorbers will be operated for at least 15 minutes per month. The licensee complies with the TS surveillance requirement. The licensee could not provide an explanation for this difference in operating times between the FSAR and the TS (URI 350-395/96-02-04; paragraph 3.4).

FSAR Appendix 3A section 1.7.5 indicates that isolation is accomplished with the use of two diverse, Class 1E overcurrent protective devices in series. Class 1E overcurrent devices include I-limiter thermal magnetic breakers, current limiting fuses, and magnetic breakers combined with starter thermal overloads. The feedwater pump discharge valve power circuits contained a magnetic breaker, a contactor/thermal overload device and fuses. The control power to the contactor/thermal overload device was non-safety and hence, no isolation credit was taken for this device. A magnetic breaker without starter thermal overloads was not included in the FSAR description of Class 1E overcurrent devices (IFI 50-395/96-02-02; paragraph 4.2).

8.0 EXIT

The inspection scope and finding were summarized on March 12, 1996, by B. R. Bonser with those persons indicated by an asterisk in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results. A listing of inspection findings is provided.

During the exit, the URIs listed below were discussed as a violation and as a deviation. Proprietary information is not contained in this report.

The Vice President, Nuclear Operations Division, indicated that the NRC should make sure that the wrong message was not sent to the industry regarding self-identification of issues. In addition, the Vice President stated that he did not think the NRC was consistent and asked the inspectors to consider whether the agency is consistent.

On April 8, 1996, J. L. Starefos informed the licensee that the proposed violation concerning charcoal laboratory testing and the proposed deviation involving ESF filter train operating times were reclassified as URIs.

Type	Item Number	Status	Description and Reference
VIO	50-395/96-02-01	Open	Failure To Follow Procedure (paragraphs 2.3, 3.2, 5.4).
IFI	50-395/96-02-02	Open	Isolation Of Non-Safety Load From Safety Bus (paragraph 4.2).
URI	50-395/96-02-03	Open	Charcoal Adsorber Tested In A Manner Different Than Specified In TS (paragraph 3.3).
URI	50-395/96-02-04	Open	Review Difference Between FSAR Statements And TS Requirements For Minimum Monthly Operating Requirements Of ESF Filter Trains (paragraph 3.4).

9.0 ACRONYMS

ANSI American National Standards Institute
ARP Annunciator Response Procedure
ASME American Society of Mechanical Engineers
C Celsius
CFR Code of Federal Regulations
CR Control Room
CREVS Control Room Emergency Ventilation System
CST Condensate Storage Tank
DC Direct Current
DG Diesel Generator
DRP Division of Reactor Projects
EDG Emergency Diesel Generator
EMP Electrical Maintenance Procedure
EOF Emergency Operating Facility
ESF Engineered Safety Feature
EWSS Emergency Warning Siren System
FSAR Final Safety Analysis Report

FW	Feedwater
HEPA	High Efficiency Particulate Air
HP	Health Physics
HPP	Health Physics Procedure
IFI	Inspection Follow Up Item
IN	Information Notice
IR	Inspection Report
ISI	Inservice Inspection
LCO	Limiting Condition for Operation
MMP	Mechanical Maintenance Procedure
MRB	Management Review Board
MRF	Modification Request Form
MWR	Maintenance Work Request
NCN	Nonconformance Notice
NOUE	Notification of Unusual Event
NPF	Nuclear Production Facility [Type of license]
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
ONO	Off Normal Occurrence
PC	Personal Computer
PDR	Public Document Room
PMTS	Preventive Maintenance Task Sheet
RCA	Radiation Control Area
RFO	Refueling Outage
RG	Regulatory Guide
RHR	Residual Heat Removal
SAP	Station Administrative Procedure
SI	Safety Injection
SS	Shift Supervisor
STP	Surveillance Test Procedure
STTS	Surveillance Test Task Sheet
SW	Service Water
TI	Temporary Instruction
TS	Technical Specification
TSC	Technical Support Center
TSR	Temporary Shielding Request
TWR	Technical Work Record
UFSAR	Updated Final Safety Analysis Report
VDC	Volts DC
VIO	Violation
WR	Work Request