

U. S. NUCLEAR REGULATORY COMMISSION (NRC)

REGION II

Docket Nos. 50-424 and 50-425

License Nos. NPF-68 and NPF-81

Report No: 50-424/99-07 and 50-425/99-07

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Vogtle Electric Generating Plant Units 1 and 2

Location: 7821 River Road
Waynesboro, GA 30830

Dates: September 5 through October 16, 1999

Inspectors: J. Zeiler, Senior Resident Inspector
K. O'Donohue, Resident Inspector
D. Forbes, Reactor Inspector (Sections R1.2 and R2)

Approved by: P. Skinner, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Enclosure

EXECUTIVE SUMMARY

Vogtle Electric Generating Plant Units 1 and 2
NRC Inspection Report 50-424/99-07 and 50-425/99-07

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a six-week period of resident inspection. It also includes the results of an inspection by a regional chemistry and effluents inspector.

Operations

- Actions to restore both trains of Safety Injection to an operable status following discovery of air in the system piping were performed in a timely and thorough manner. The licensee's investigation of the event resulted in detailed and comprehensive corrective actions. An unresolved item was opened pending licensee completion of a risk evaluation and subsequent NRC assessment. (Section O2.1)

Plant Support

- The licensee effectively controlled solid radioactive material; effectively implemented programs for maintaining laboratory gamma counting equipment; and meteorological monitoring equipment was maintained in an operational condition. (Sections R1.2 and R2)

Report Details

Summary of Plant Status

Unit 1 operated at 100 percent Rated Thermal Power (RTP) throughout the entire inspection period.

Unit 2 operated at 100 percent RTP until September 20, 1999, at which time a coast down for the seventh refueling outage (2R7) commenced. On October 2, a shutdown to begin 2R7 was initiated from 88 percent power.

I. Operations

O1 Conduct of Operations

O1.1 General Observations of Operations Activities (71707)

The inspectors conducted routine control room tours and attended operations shift turnovers and daily management plant status meetings. Operator logs were reviewed to verify compliance with Technical Specifications (TS). Instrumentation, computer indications, and safety system lineups were periodically reviewed to assess system availability. No problems were identified in the above areas.

The inspectors conducted reviews observations of ongoing operations activities associated with Unit 2 refueling outage 2R7, including unit shutdown, controls for reduced reactor system inventory, and core offload. The inspectors noted active management involvement in outage activities. Pre-job and infrequently performed evolution briefings led by managers continued to be thorough and effective. Management continued to provide specific attention and focus on high shutdown risk activities such as reduced inventory and inoperable redundant safety equipment. The inspectors concluded that the conduct of operations was professional and safety conscious.

O2 Operational Status of Facilities and Equipment

O2.1 Unit 2 TS 3.0.3 Entry Due to Inoperability of Both Safety Injection Trains

a. Inspection Scope (40500) (61726) (71707)

The inspectors reviewed the licensee's response to Unit 2 Safety Injection (SI) system inoperability due to air intrusion.

b. Observations and Findings

On September 26, during performance of surveillance 14460-2, "ECCS Flow Path Verification," Revision (Rev) 21, the licensee discovered air in the pump casing of the 2A and 2B SI pumps. Both SI pumps were declared inoperable which resulted in the licensee entering the action statement of TS 3.0.3. The SI system piping was vented

followed by sequential operation of each pump to remove any additional air from the SI system piping and both pumps were declared operable and TS 3.0.3 was exited.

The inspectors observed the licensee's event review activities and reviewed Event Report 2-99-003. The root cause investigation by the licensee identified inadequate filling and venting of the SI systems following maintenance activities completed on September 9, 10, 20, and 21 as the direct cause for the air in the piping. The licensee's major corrective actions included requirements to enhance fill and vent procedures, development of system diagrams with piping elevation information to aid in system fill and vent, review and enhancement of post-maintenance testing criteria following system outages, engineering evaluation of procedures 14460-1/2 for possible enhancement, and included this event in the continuing training program for operations personnel.

The licensee was performing an evaluation of the overall risk impact assuming that both SI pumps were unavailable from September 9 through September 26 at the close of this report period. The inspectors were informed that a report to meet the requirements of 10 CFR 50.73 was being developed. This issue is identified as Unresolved Item (URI) 50-425/99-07-01: Review of Risk Analysis of Air Intrusion into the Unit 2 Safety Injection System, pending NRC assessment of the safety and risk significance of this event.

c. Conclusions

The licensee's response to the discovery of air in the SI system piping was appropriate. Actions to restore both trains to an operable status were performed in a timely and thorough manner. The licensee's investigation of the event resulted in detailed and comprehensive corrective actions. A URI was identified pending licensee completion of their risk evaluation and subsequent NRC assessment of the safety and risk significance of this event.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Observations of Maintenance and Surveillance Activities (61726) (62707)

The inspectors observed or reviewed portions of selected maintenance and surveillance activities associated with Unit 2 refueling outage 2R7. The observed maintenance and surveillance activities were completed by qualified personnel knowledgeable of their assigned tasks. Procedures were present at the work location and provided sufficient guidance for the intended activities. Problems encountered during the performance of activities were properly resolved.

M8 Miscellaneous Maintenance Issues (92902)**M8.1 (Closed) URI 50-424, 425/99-05-01: Complete Review of Adequacy of Testing and Preventive Maintenance for the Emergency Diesel Generator Fuel Oil System**

The inspectors had identified that the Emergency Diesel Generator Fuel Oil transfer pumps and pump discharge check valve and relief valves were not included in the licensee's Inservice Testing (IST) Program. The Updated Final Safety Analysis Report (UFSAR), Section 9.5.4.1.3, Codes and Standards, indicated that the fuel oil system is designed to ANSI N195-1976, and section 1.9 stated that the licensee was committed to ANSI N195-1976. This description in the UFSAR implies that the system should be classified as Safety Class 3 with ASME Code Class 3 components and meet the testing requirements of the IST program consistent with 10 CFR 50.55a, which requires that inservice testing be performed on certain Code Class 1, 2, and 3 pumps and valves. Discussions with the licensee indicated that it was not their intent that these components be in the IST program.

To address this issue, the licensee planned to revise the UFSAR commitment to ANSI Standard N195-1976, taking exception to the design requirements that the fuel oil system pumps and valves be ASME Code Class 3. This UFSAR change would clarify the licensee's intention to test the system components for degradation commensurate with safety, but not include the system and components into the IST program. This change would effectively reclassify the fuel oil system components as an owner optional upgrade in accordance with paragraph IWA-1320 of the ASME code. NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, identifies that if a licensee's UFSAR states that a system or component is designed, fabricated, and maintained as code class at the option of the Owner as permitted by paragraph IWA-1320, then the application of IST requirements are also optional.

The inspectors determined that the licensee's proposed actions to maintain the fuel oil system as code class as an owner option, not include the system in the IST program, and clarify the UFSAR was acceptable. However, the inspectors determined that initially not including the fuel oil system in the IST program constituted a violation 10 CFR 50.55a, Codes and Standards. This failure constitutes a violation of minor significance and is not subject to formal enforcement action. The inspectors concluded that although the fuel oil system was not in the IST program, the preventive maintenance program and testing methodology were satisfactory to address testing the fuel oil system components commensurate with their safety significance.

III. Engineering

E1 Conduct of Engineering

E1.1 General Observations (37551)

The inspectors observed engineering support activities for emergent and day-to-day operational and maintenance issues, and evaluations.

During Unit 2 refueling outage 2R7, engineering involvement and evaluations of equipment problems were thorough and technically sound. The inspectors concluded that engineering support was timely and effective.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R.1 General Observations of Radiological Protection Activities (71750)

The inspectors observed radiological controls during the conduct of routine tours of the radiologically controlled areas and observed operations and maintenance activities during Unit 2 refueling outage 2R7. Radiological surveys reviewed were well documented. In addition, the inspectors attended health physics As Low As Reasonably Achievable (ALARA) pre-job worker briefings and discussed ALARA planning with health physics personnel. The inspectors noted that health physics support during the outage continued to be strong. ALARA briefings were thorough and radiation work practices of outage personnel were proper. The licensee provided good management oversight of radiation work activities.

R1.2 Effluent Sampling and Radioactive Material Storage Control (84750)

The inspectors reviewed sampling procedures and observed chemistry technicians performing sampling from the Unit 2 plant vent and a liquid sample from waste monitor tank #13 to verify release limits would not be exceeded. The samples were performed in accordance with licensee procedures. The samples were also representative as required by the Offsite Dose Calculation Manual (ODCM) for evaluating the principal gamma emitters. The licensee added shielding to the primary chemistry sampling sink and installed remote monitors for dissolved hydrogen and conductivity. Based on records reviewed, these initiatives reduced radiation doses for chemistry personnel.

The inspectors independently performed surveys of selected radiological storage areas and verified that solid waste was stored in accordance with licensee and NRC requirements.

During the inspection, the licensee successfully performed a chemical cleanup of the reactor coolant system in preparation for the 2R7 refueling outage to reduce overall radiation levels in the containment building and on the refueling floor. The inspectors reviewed the chemical sample analysis and determined that the licensee achieved established goals for reducing radioactivity.

R2 Status of Radiation Protection and Chemistry Facilities and Equipment

R2.1 Laboratory Monitoring Equipment (84750)

Laboratory gamma counting equipment procedures were reviewed and discussed with cognizant personnel to include a review of calibration and source check records. The inspectors also reviewed trend analysis performed by licensee personnel to identify any detector anomalies. No problems were identified. The inspectors determined that the licensee had effectively implemented programs for maintaining laboratory gamma counting equipment.

R2.2 Meteorological Monitoring Equipment (84750)

The inspectors observed licensee meteorological monitoring equipment and reviewed calibration records for meteorological equipment described in the UFSAR. The inspectors concluded that meteorological monitoring equipment was being maintained in an operational condition to comply with TS requirements and UFSAR commitments.

S1 Conduct of Security and Safeguards Activities

S1.1 General Observations of Security and Safeguards Activities (71750) (81700)

The inspectors periodically toured the protected area for adequate lighting and security control functions, observed visitor escorting, the use of special purpose detectors at the protected area entrance, and observed personnel, packages, and vehicles entering the protected area. The inspectors determined that the security fence was intact and the isolation zones were being adequately maintained free of objects. Lighting of the perimeter and protected area was acceptable. Visitor escorting and special purpose detectors were used as applicable before personnel or package entry.

V. Management Meetings and Other Areas

X1 Exit Meeting Summary

The inspectors presented the inspections results to licensee management on October 21, 1999. An interim exit was held on October 8, 1999, to discuss the findings of a regional-based chemistry and effluents inspector. The licensee acknowledged the findings presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED**Licensee**

R. Brown, Manager, Training and Emergency Preparedness
 W. Burmeister, Manager Engineering Support
 S. Chesnut, Plant Operations Assistant General Manager
 G. Frederick, Manager Operations
 J. Gasser, Nuclear Plant General Manager
 K. Holmes, Manager Maintenance
 P. Rushton, Plant Support Assistant General Manager
 M. Sheibani, Nuclear Safety and Compliance Supervisor
 C. Tippins, Jr., Nuclear Specialist I

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
 IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
 IP 61726: Surveillance Observation
 IP 62707: Maintenance Observation
 IP 71707: Plant Operations
 IP 71750: Plant Support
 IP 84750: Radioactive Waste Treatment, and Effluent and Environmental Monitoring
 IP 92902: Followup - Maintenance

ITEMS OPENED AND CLOSED

| ITEM NUMBER | TYPE | DESCRIPTION |
|----------------------|-------------|---|
| <u>Opened</u> | | |
| 50-425/99-07-01 | URI | Review of Risk Analysis of Air Intrusion into the Unit 2 Safety Injection System (Section O2.1) |
| <u>Closed</u> | | |
| 50-424, 425/99-05-01 | URI | Complete Review of Adequacy of Testing and Preventive Maintenance for the Emergency Diesel Generator Fuel Oil System (Section M8.1) |