



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

Report No.: 50-424/88-30

Licensee: Georgia Power Company  
P. O. Box 4545  
Atlanta, GA 30302

Docket No.: 50-424

License No.: NPF-68

Facility Name: Vogtle 1

Inspection Conducted: July 11-15, 1988

Inspector: H. F. Whitener 9-1-88  
H. L. Whitener Date Signed

Accompanying Personnel: J. Zeiler

Approved by: F. Jape 9-1-88  
F. Jape, Chief Date Signed  
Test Programs Section  
Engineering Branch  
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection was in the areas of local leak rate testing and verification of containment integrity.

Results: In the areas inspected, violations or deviations were not identified.

Within the scope of this inspection, the findings indicated that the licensee has developed and implemented a program of controls, procedures, and testing as required by Technical Specification to maintain containment integrity. Also, appropriate containment related systems were available and adequate procedures were implemented to mitigate releases in the event of a loss of containment integrity following a LOCA. However, one weakness was identified concerning the licensee's procedures for performing the personnel and escape airlock door seal leakage tests. This is discussed in Paragraph 4.c. of this report.

The above conclusions were based on limited available plant data, since the plant has not undergone it's first refueling outage during which time more extensive testing and maintenance activities are expected. A more conclusive review of the licensee's implementation of containment related programs will be conducted in subsequent inspections when more plant data is available for review.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

D. Abernathy, Work Planning Group  
J. Cash, On-Shift Operations Supervisor  
\*J. A. Davis, Senior Plant Engineer  
\*G. R. Fredrick, QA Site Manager  
\*T. Greene, Plant Support Manager  
\*K. Pointer, Senior Plant Engineer  
H. Soulia, Surveillance Group

Other licensee employees contacted during this inspection included engineers, operators, maintenance work planners, and administrative personnel.

#### NRC Resident Inspectors

\*J. Rogge, Senior Resident Inspector

\*Attended exit interview

### 2. Purpose

The purpose of this inspection was to verify the development and implementation of programs, controls, procedures, and test activities which ensure that containment integrity is established, monitored, and maintained consistent with the requirements of the Technical Specifications, Appendix J of 10 CFR 50, and applicable industry standards.

### 3. Local Leak Rate Testing (61720)

An important part of monitoring and maintaining containment integrity is the periodic testing performed to verify the leak tightness of containment leakage barriers. The inspector reviewed the formal procedures established by the licensee to verify local leak tightness of leakage barriers. Documents reviewed either totally, or in part, to verify that the licensee has established adequate procedures and controls included:

#### a. Administrative Procedures

00404-C, Revision 8, Surveillance Test Program  
00350-C, Revision 12, Maintenance Program  
00150-C, Revision 8, Deficiency Control  
29401-C, Revision 2, Maintenance Work Order Functional Tests  
29402-C, Revision 3, WPG Work Order Processing

## b. Test Procedures

<u>Procedure</u>	<u>System</u>	<u>Penetration</u>
24912-1	Chemical Addition	12A
24913-1	Containment Air Monitor	13A
24921-1	Pressurizer Liquid Sample Line	67B
24922-1	Demin. Water Supply Line	22
24935-1	Containment Spray Supply Line	35
24942-1	Nitrogen Supply to Accumulator	42
24943-1	Accumulator Sample Line	72A

## c. Test Control Procedure (Leak Rate Log)

28916-1, Revision 3, Containment Type A, B and C Leakage Totalization.

The above documents were reviewed in general for assignment of responsibility, adequate instructions, control of test activity, appropriate test intervals, appropriate test parameters, approved test methods and adequate acceptance criteria. A detailed walk through of the procedures for local leak testing was performed for the seven penetrations shown in item b., above. Partial review of other penetrations was also performed and no problems were identified relative to venting, draining, valve identification, valve alignment or system restoration. The inspectors also verified that procedures are developed and identified in the surveillance program data base for all penetrations identified in FSAR Table 6.2.4-1 as requiring Type B or C leak rate tests. In addition to procedure reviews, the inspectors witnessed the local leak rate test on penetration 42 and reviewed the final test data package. No problems were identified in the performance and documentation of this test.

Although not all of the local leak rate test procedures were reviewed in step by step detail, based on the sample reviewed and the administrative controls in effect, the inspectors concluded that programmatically the licensee has developed a containment local leak rate measurement program which is consistent with the regulatory requirements of the Technical Specification, Section 4.6; 10 CFR 50, Appendix J; and ANSI-N45.4-1972.

Implementation of the licensee's program for establishing and maintaining containment leak tight barriers was also reviewed. This review included a limited amount of data since the plant has not had a refueling outage and consequently has not yet performed the Type B and C periodic test program.

Review of available test data and the leak rate summation log (Procedure 28916) indicated that:

- (1) Surveillance tests on purge valves and airlocks have been performed at 3 and 6 month intervals as required.

- (2) "As found" and "as left" data are recorded.
- (3) Total leakage for Type B and C components is maintained current.
- (4) Retest when required is accomplished through the Deficiency Control (DC) or Maintenance Work Order (MWO) systems.

The inspectors reviewed the surveillance, MWO and DC controls to ensure that the method of tracking a failed leak rate test through the maintenance, retest, review and close out is adequately defined. Task sheets are computer generated and issued for each initial Type B and C test. These sheets have a unique number identifying a specific component and specify the schedule, the test to be performed and the test procedure. If a valve fails the test, an MWO is issued. Each MWO is processed by the Work Planning Group (WPG) where the operations representative identifies the required post-maintenance retest and procedure. Satisfactory retest is indicated by both the test procedure and the MWO. A deficiency card is also required to be written which alerts operations to evaluate the deficiency in relation to licensee requirements. Performance of a Type B or C test procedure also triggers a task sheet requiring update of the summation of Type B and C leakage. Based on a limited review of maintenance and retest data, the inspectors determined that the system of controls has been implemented. The inspectors concluded that the process provides adequate assurance that maintenance and retest of leakage barriers are completed and reviewed.

#### 4. Verification of Containment Integrity (61715)

The adequacy and implementation of the licensee's program designed to ensure and maintain containment integrity was assessed by reviewing: the adequacy of surveillance test procedures; surveillance test records; post-maintenance activities associated with surveillance tests; and Quality Assurance involvement in containment related activities.

##### a. Procedures Reviewed

- 14475-1, Revision 4, Containment Integrity Verification - Valve Outside Containment, (Frequency: Monthly)
- 14480-1, Revision 1, Containment Integrity Verification - Valves Inside Containment, (Frequency: Usually 92 days)
- 54055-1, Revision 2, Train A Diesel Generator and Engineered Safety Features Actuation Test, (Frequency: 18 Months)
- 54065-1, Revision 2, Train B Diesel Generator and Engineered Safety Features Actuation Test, (Frequency: 18 Months)
- 24907-C, Revision 0, Escape Airlock Leak Rate Test, (Frequency: When Required)

- 24909-C, Revision 0, Personnel Airlock Door Seals Leak Rate Test, (Frequency: When Required)
- 24905-C, Revision 1, Personnel Airlock Leak Rate Test, (Frequency: When Required)
- 14000-1, Revision 13, Operations Shift and Daily Surveillance Logs, (Frequency: Daily)
- 14485-1, Revision 1, Containment Spray System Flow Path Verification, (Frequency: Monthly)
- 14806-1, Revision 3, Containment Spray Pumps and Check Valves Inservice Test, (Frequency: 3 Months)
- 54070-1, Revision 2, Train A Containment Spray System Automatic Actuation Test, (Frequency: 18 Months)
- 54071-1, Revision 2, Train B Containment Spray System automatic Actuation Test, (Frequency: 18 Months)
- 35170-C, Revision 2, Chemistry Control of the Containment Spray Additive System, (Frequency: 6 Months)
- 14490-1, Revision 2, Containment Cooling System Operability Test, (Frequency: Monthly)
- 24551-1, Revision 10, Containment Hydrogen Monitor Train A, (Frequency: Monthly)
- 24552-1, Revision 9, Containment Hydrogen Monitor Train B, (Frequency: Monthly)
- 14970-1, Revision 2, Hydrogen Recombiner Functional Test, (Frequency: 6 Months)
- 24820-1, Revision 1, Containment Electric Hydrogen Recombiner 1-1513-H7-002-000 Train B Channel Calibration, (Frequency: 18 Months)
- 24821-1, Revision 1, Containment Electric Hydrogen Recombiner 1-1513-H7-001-000 Train A Channel Calibration, (Frequency: 18 Months)
- 28835-C, Revision 1, Hydrogen Recombiner Visual and Electric Test, (Frequency: 18 Months)
- 14228-1, Revision 8, Operations Monthly Surveillance Logs, (Frequency: Monthly)

- 24955-1, Revision 3, Containment Local Leak Rate Test - Penetration 83, (Frequency: 3 Months)
- 24956-1, Revision 3, Containment Local Leak Rate Test - Penetration 84, (Frequency: 3 Months)

b. Scope of Procedure and Record Review

The inspectors reviewed the above surveillance procedures either totally or partially to verify their technical and administrative adequacy. The procedures were reviewed to verify applicable technical specification requirements were met, adequate information and instruction were provided, and adequate acceptance criteria and limits were specified.

The inspectors also reviewed test records of the above surveillance tests to ascertain the availability of these systems. Those containment systems involved in this review included the following areas:

- Containment isolation valve alignment checks and operability test (abbreviated as CIV)
- Containment personnel airlocks (abbreviated as CA)
- Containment internal pressure and temperature limits (abbreviated as CPT)
- Containment combustible gas monitoring system (abbreviated as CCGM)
- Containment depressurization system - containment spray (abbreviated as CDS-CS)
- Containment depressurization system - containment spray additive (abbreviated as CDS-CSA)
- Containment depressurization system - containment cooling (abbreviated as CDS-CC)
- Containment ventilation system (abbreviated as CV)

The following records associated with the previously mentioned containment related and post-LOCA mitigation systems were reviewed by the inspector. Also shown is the applicable Technical Specification which required the surveillance test.

<u>Containment System</u>	<u>Procedure No.</u>	<u>Records Reviewed</u>	<u>T.S.</u>
CIV	14475-1	01/17/88 through 06/20/88	4.6.1.1.a
CIV	14480-1	02/19/87 through 01/25/88	4.6.1.1.a
CIV	54055-1	01/14/87	4.6.3.2.a 4.6.3.2.b
CIV	54065-1	02/19/87	4.6.3.2.a 4.6.3.2.b
CA	24907-C	08/26/87 through 04/01/88	4.6.1.3.a 4.6.1.3.b.1 4.6.1.3.b.2
CA	24909-C	05/31/87 through 10/31/87	4.6.1.3.a
CA	24905-C	08/18/87 through 03/30/88	4.6.1.3.b.1 4.6.1.3.b.2
CPT and CCGM	14000-1	05/01/88 through 05/31/88	4.6.1.4 4.6.1.5
CDS-CS	14485-1	01/19/88 through 06/22/88	4.6.4.1.a 4.6.2.1.a 4.6.2.2.a
CDS-CS	14806-1	12/13/87 through 06/13/88	4.6.2.1.b
CDS-CS and CDS-CSA	54070-1	01/31/87	4.6.2.1.c.1 4.6.2.1.c.2 4.6.2.2.c
CDS-CS and CDS-CSA	54071-1	01/31/87	4.6.2.1.c.1 4.6.2.1.c.2 4.6.2.2.c
CDS-CSA	35170-C	02/19/87 through 12/23/87	4.6.2.2.b.1 4.6.2.2.b.2
CDS-CC	14490-1	01/25/88 through 06/27/88	4.6.2.3.a.1 4.6.2.3.a.2
CCGM	24551-1	01/30/88 through 05/29/88	4.6.4.1.b
CCGM	24552-1	02/03/88 through 05/30/88	4.6.4.1.b
CCGM	14970-1	03/04/87 through 03/06/88	4.6.4.2.a
CCGM	24820-1	11/29/87	4.6.4.2.b.1 4.6.4.2.b.2
CCGM	24821-1	11/28/87	4.6.4.2.b.1 4.6.4.2.b.2
CCGM	28835-C	03/05/87 and 03/06/87	4.6.4.2.b.3
CV	14228-1	01/22/88 through 06/25/88	4.6.1.7.1 4.6.1.7.3
CV	24955-1	02/06/87 through 06/02/88	4.6.1.7.2
CV	24956-1	05/08/87 through 05/20/88	4.6.1.7.2

c. Findings Summary

The procedures reviewed were technically accurate and in conformance with technical specifications. However, during a review of Procedure No. 24909-C, Personnel Airlock Door Seal Leak Rate Test, and Procedure No. 24907-C, Escape Airlock Leak Rate Test, the inspectors

noted a discrepancy between the procedures and 10 CFR 50, Appendix J. Item 1.3 and Item 1.4 in the purpose section of the respective procedures stated that the procedure shall be performed at a minimum test interval of 72 hours during multiple use of the airlock or within 72 hours after each airlock closing. Paragraph III.D.2.b.iii of 10 CFR 50, Appendix J states that air locks opened during periods when containment integrity is required by the plant's Technical Specifications shall be tested within 3 days after being opened. The inspectors made licensee management aware of this discrepancy and cautioned against using the airlock closing time as opposed to the opening time for the start of the 72 hour test requirement. Similarly, the inspectors discussed with the licensee about the same discrepancy which exists between the closing versus opening wording of Technical Specification surveillance requirement 4.6.1.3.a and 10 CFR 50, Appendix J. The inspectors indicated that in most instances where there exists a conflict between requirements, the more conservative requirement takes precedence, i.e., the Code of Federal Regulations in this circumstance.

The inspectors also reviewed the licensee's controls for triggering the performance of the 72 hour airlock seal leakage tests discussed above. The licensee's Instrumentation & Control (I&C) representative responsible for performing these tests stated that he contacts the On-Shift Control Room Operator every Monday, Wednesday, and Friday of the week and checks if containment entries have been made. However, there exist no procedures or other administrative controls which require this action. Through subsequent discussions with licensee management after the inspection, the licensee provided Administrative Procedure No. 00303-C, Containment Entry, which among other actions requires plant operations personnel to notify the appropriate I&C personnel when multiple containment entries are planned in plant modes 1,2,3, and 4 and directs I&C to perform the 72 hour airlock seal leakage test. The inspectors found this to be a procedural weakness in that the airlock seal leakage tests are required 72 hours after each containment opening or on a 72 hour test interval for multiple entries. The procedure delegates the Unit Shift Supervisor with the responsibility for ensuring the appropriate actions are successfully completed. Licensee management reported that even though I&C personnel contact operations personnel for containment entry information, the ultimate responsibility for test performance and completion lies with operations.

The inspectors' review of surveillance test records identified no discrepancies. The inspectors verified that the surveillance tests were performed at the required frequencies; test results met acceptance criteria; appropriate retests or other post-maintenance activities were prescribed for failed tests; and, appropriate sign-offs, test reviews, and test concurrences were performed. These findings indicated that required plant programs designed to ensure containment integrity and containment systems designed to mitigate contamination releases in the event of containment integrity failure



following a LOCA are in a relatively high state of availability. However, this conclusion was based on limited available plant data since the plant has operated for less than one and one-half years and has not had a refueling outage.

d. Post-Maintenance Activities

The inspectors reviewed a small sample of maintenance records associated with local leak rate surveillance test activities. The objective of this review was to verify that test failures and deficiencies were promptly corrected and that appropriate retests or other functional test requirements were performed. The inspector found that in all cases reviewed, post-maintenance testing was completed as required and in a timely manner. No unacceptable conditions were identified.

e. Quality Assurance Involvement in Containment Related Activities

To determine the extent that QA was involved in containment related activities, the inspectors interviewed the QA Site Manager and reviewed QA surveillance and audit reports. Based on this discussion and the information reviewed, the inspectors determined that adequate QA coverage of Technical Specification required surveillance activities related to containment integrity was performed.

5. Exit Interview

The inspection scope and results were summarized on July 15, 1988, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results. Proprietary information is not contained in this report.