ATTACHMENT 2

OCONEE NUCLEAR STATION

TEST REQUIREMENTS BASES

JUSTIFICATION FOR REVERSE DIRECTION TESTING

TEST REQUIREMENT BASES

1. Penetrations 4, 43 - OTSG B, A Drain Lines

Test Requirements - This system can be isolated from the OTSG's and is drained and vented during a Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

The inside containment isolation valves are normally closed manual gate valves. Outside containment isolation valve is a normally closed motor-operated gate valve which receives an ES signal to close. The manual isolation valves provide the containment isolation function but are not required to be tested based on the definition of containment isolation valves in Appendix J, II.H. The ES closure signal to outside isolation valve is provided as a backup method to assure containment isolation. During normal operation, the primary means to assure containment isolation is by having the system valves closed as this system is normally used only when the unit is shutdown and for a limited period of time during the unit heat-up and prior to criticality. Furthermore, the drain lines are connected to a seismically designed system, which does not communicate with the containment, and which operates at conditions well above postulated accident pressure and temperature conditions. Any containment leakage associated with this system would be included in the Type A test. It is considered that a Type C test is neither necessary nor required for this system.

2. Penetrations 8, 9, 52 - Loop A Nozzle Warming Line; High Pressure Injection Lines, A, B

Test Requirements - This system is normally filled with water and operating under post-accident conditions. Thus, it need not be drained and vented during the Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

For the loop A nozzle warming line, the inside containment isolation valve is a normally open stop-check valve. The outside containment isolation valves are a normally open stop-check valve in series with a normally throttled needle valve.

For the HP injection lines, the inside containment valves are a single swing check in series with two parallel stop-check valves. The outside containment valve is a motor-operated globe valve (A loop-normally closed, B loop-normally open) which receives an ES signal to open. These valves do not perform a containment isolation function as defined in Appendix J, II.4 and thus a Type C test need not be performed.

3. Penetrations 13, 14 - Reactor Building Spray Inlet Lines, A, B

Test Requirements - Reactor Building spray system is normally filled with water and operating under post-accident conditions and thus, need not be drained and vented during the Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

The inside containment valve is a tilting disc check valve. Outside containment valve is a normally closed motor-operated glove valve which receives an ES signal to open. These valves do not perform a containment isolation function as defined in Appendix J, II.H and thus a Type C test need not be performed.

4. Penetrations 15, 16 - Low Pressure Injection and Decay Heat Removal Inlet Lines, A, B

Test Requirements - This system is required to be filled with water to maintain the plant in a safe condition during the Type A test. Additionally, this system is normally filled with water and operating under post-accident conditions. Thus, it need not be drained and vented during the Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

The inside containment valve is a swing check valve. The outside containment valve is a normally closed motor-operated gate valve which receives and ES signal to open. These valves do not perform a containment isolation function as defined in Appendix J, II.H and thus a Type C test need not be performed.

5. Penetrations 17, 50 - OTSG, B, A Emergency FDW Lines

Test Requirements - This system is normally filled with water and operating under post-accident conditions, and thus, need not be drained and vented during the Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

The inside containment valve is a tilting disc check valve. The outside containment valves are a tilting disc check valve in series with a normally closed pneumatically opened gate valve. These valves do not perform a containment isolation function as defined in Appendix J, II.H and thus a Type C test need not be performed.

6. Penetrations 25, 27 - OTSG B, A Feedwater Lines

Test Requirements - The OTSG is required to be filled with water to maintain it in a safe condition during the Type A test and thus, the feedwater lines cannot be drained and vented. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

No inside containment isolation valves exist. The outside containment valve is a tilting disc check valve. The feedwater lines are connected to a seismically designed system which does not communicate with the containment atmosphere. The feedwater lines are seismically qualified through the outside containment valve. It is not postulated that this system will rupture during a postulated LOCA condition. However, even if it were to rupture, the operating pressure and temperature are well above that expected in the containment. Thus, it is considered that a Type C test is neither necessary nor required for this system.

7. Penetrations 26, 28 - OTSG B, A Main Steam Lines

Test Requirements - The OTSG is required to be filled with water to maintain it in a safe condition during the Type A test and thus, the main steam line is not vented. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

No inside containment isolation valves exist. The outside containment valves are two electro-hydraulic turbine stop valves in parallel per main steam line. The steam lines are connected to a seismically designed system which does not communicate with the containment atmosphere. The steam lines are seismically qualified through the stop valves. It is not postulated that this system will rupture during a postulated LOCA condition. However, even it were to rupture, the operating pressure and temperature are well above that expected in the containment. Thus, it is considered that a Type C test is neither necessary nor required for this system.

8. Penetrations 30, 31, 32 LPSW for RB Cooling Units Inlet Line
33, 34, 35 LPSW for RB Cooling Units Outlet Line

Test Requirements - This system is normally filled with water and operating under post-accident conditions and, thus, need not be drained and vented during the Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

No inside containment isolation valves exist. The outside containment valve is normally open motor-operated gate valve which also receives an ES signal to open. These valves do not perform a containment isolation function as defined in Appendix J, II.H and, thus, a Type C test need not be performed.

9. Penetrations 36, 37 - Reactor Building Emergency Sump Recirculation Line

Test Requirements - This system is normally filled with water and operating under post-accident conditions and thus, need not be drained and vented during the Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

No inside containment isolation valves exist. The outside containment valve for each penetration is a normally closed motor-operated gate valve. This valve does not perform a containment isolation function as defined in Appendix J, II.H and, thus, a Type C test need not be performed.

10. Penetration 40 - RB Emergency Sump Drain Line

Test Requirements - This system is drained and vented during a Type A test. During postulated accident conditions, the RB Emergency Sump contains water but this line would not be in operation. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

No inside containment isolation valves exist. All inside containment piping is imbeded in concrete. The outside containment valves are two normally closed manual gate valves in series. Any containment leakage associated with this system would be included in the Type A test. Therefore, it is considered that the additional Type C test is not necessary.

11. Penetration 47 (Unit 1 Only) - Demineralized Water Supply to RC Pump Seal Vents

Test Requirements - This system is drained and vented during a Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

Both the inside and outside containment valves are tilting disc check valves. Any containment leakage associated with this system would be included in the Type A test. Therefore, it is considered that the additional Type C test is not necessary.

12. Penetration 51 - Leak Rate Test Line

Test Requirements - This air system is vented during the Type A test. Draining of fluids is not required. A Type B test is also required by Appendix J, III.B.

The inside containment device is a gasketed blind flange which is removed only to perform the Type A test. The outside containment valves is a normally closed air-operated Saunders diaphragm valve. During the performance of the Type A test, this valve is closed and the connecting line vented. Any containment leakage associated with this system would be included in the Type A test. Therefore, it is considered that the additional Type B test is not necessary.

13. Penetration 57 (Unit 1), 62 (Unit 2, 3) Decay Heat Removal Return Line

Test Requirements - This system is required to be filled with water to maintain the plant in a safe condition during the Type A test. Additionally, this system is normally filled with water and operating under post-accident conditions. Thus, it need not be drained and vented during the Type A test. A Type C test is required for containment isolation valves by Appendix J, III.A.1(d).

The inside containment valves are two normally closed motor-operated gate valves in series. The outside containment valve is a normally closed motor-operated gate valve. These valves do not perform a containment isolation function as defined in Appendix J, II.H and, thus, a Type C test need not be performed.

14. Penetration 59 - CF Tank Sample Line

Test Requirements - This system is vented and drained during the Type A test. A Type C test is also required for containment isolation valves by Appendix J, III.A.1(d).

The inside containment valves are two normally closed motor-operated gate valves in parallel, one to each core flood tank. The outside containment valves are two normally closed manual globe valves in parallel. Any containment leakage associated with this system would be included in the Type A test. Furthermore, these valves do not perform a containment isolation function as defined in Appendix J, II.H, and thus, it is considered that a Type C test need not be performed.

JUSTIFICATION FOR REVERSE DIRECTION TESTING

1. Penetration 5 - Reactor Building Normal Sump Drain Line

Test Requirements - This system is drained and vented during the Type A test. Type C test is also required.

Justification Basis - Both containment isolation valves are located outside containment. Test connections exist between the two valves. The valve nearest to containment is an MOV normally closed gate valve and is tested in the reverse direction. The other valve is a pneumatically operated normally closed gate valve which is tested in the required direction. The Type A test requirements are fully met. The Type C test results include the total leakage through both valves and is considered to be conservative.

2. Penetration 7 - Reactor Coolant Pump Seal Return Line

Test Requirements - System is drained and vented during the Type A test. Type C test is also required.

Justification Basis - The inside containment isolation valve is a normally open MOV globe valve which receives an ES signal to close. The outside containment isolation valve is a normally open pneumatically operated valve which receives an ES signal to close. Test connections exist between the two valves. The inside containment valve is tested in the reverse direction. The Type A test requirements are fully met. The Type C test results include total leakage through both valves and is considered to be conservative.

3. Penetration 18 - Quench Tank Vent Line

Test Requirements - This system is drained and vented during the Type A test. Type C test is also required.

Justification Basis - The inside containment isolation valve is a normally closed MOV gate valve which receives an ES signal to close. The outside containment isolation valve is a normally closed pneumatically operated gate valve which also receives an ES signal to close. Test connections exist between the two valves. The inside containment valve is tested in the reverse direction. The Type A test requirements are fully met. The Type C test results include total leakage through both valves and is considered to be conservative.

4. Penetrations 19, 20 - Reactor Building Purge Inlet and Outlet Lines

Test Requirements - This system is vented during the Type A test. Type C test is also required.

Justification Basis - The inside containment isolation valve for each penetration is a normally closed MOV butterfly valve which receives an ES signal to close. The outside containment isolation valve for each penetration is a normally closed pneumatically operated butterfly valve which also receives an ES signal to close. Test connections exist between the two valves for each penetration. The inside containment valve is tested in the reverse direction. The Type A test requirements are fully met. The Type C test results include total leakage through both valves and is considered conservative.

5. Penetrations 21, 22 - LPSW to/from RC Pump Motors and Lube Oil Coolers

Test Requirements - This system is normally filled with water and operating under post-accident conditions and, thus, need not be drained and vented during the Type A test. Type C test is required.

Justification Basis - The inside containment isolation valves are normally open MOV gate valves. The outside containment isolation valves for each penetration is a normally open MOV gate valve which receives an ES signal to close. Test connections exist for each penetration between the penetration and the outside containment isolation valve. The inside containment isolation valves are tested in the reverse direction. The Type A test requirements are fully met. The Type C test results include total leakage through all valves and is considered to be conservative.

6. Penetration 10, 23 - Reactor Coolant Pump Seal Injection

Test Requirements - This system is normally filled with water and operating under post-accident conditions and, thus, need not be drained and vented during the Type A test. Type C test is required.

Justification Basis - Both inside and outside containment isolation valves are normally open stop-check valves. Test connections exist between the valves. The inside valves are tested in the reverse direction. The Type A test requirements are fully met. The Type C test results include total leakage through all valves and is considered to be conservative.

7. Penetration 29 - Quench Tank Drain Line

Test Requirements - This system is drained and vented during the Type A test. Type C test is required.

Justification Basis - The inside containment isolation valve is a normally closed MOV gate valve which received an ES signal to close. The outside containment isolation valve is a normally closed pneumatically operated gate valve which also receives an ES signal to close. Test connections exist between the two valves. The inside containment valve is tested in the reverse direction. The Type A test requirements are fully met. The Type C test results include total leakage through both valves and is considered conservative.

8. Penetration 54 - Component Cooling Outlet Line

Test Requirements - This system is drained and vented during the Type A test. Type C test is required.

Justification Basis - The inside containment isolation valve is a normally open MOV operated gate valve. The outside containment isolation valve is a normally open pneumatically operated gate valve. Both valves receive ES signals to close. Test connections exist between the two valves. The inside containment valve is tested in the reverse direction. The type C test results include total leakage through all valves and is considered to be conservative.

9. Penetrations 60, 61 - Reactor Building Sample Line (outlet and inlet)

Test Requirements - This system is drained and vented during the Type A test. Type B test is required.

Justification Basis - The inside containment valves are normally closed moter operated valves. The outside containment valves are normally closed pneumatically operated valves. Both valves for each penetration receive ES signals to close. Test connections exist between the two valves for each penetration. The inside containment valves are tested in the reverse direction. The Type B test results include total leakage through all valves and is considered to be conservative.

10. Penetration 55, (Units 2 & 3 Only), Demineralized Water Supply

Test Requirements - This system is drained and vented during the Type A test. A Type B test is required.

Justification Basis - The inside and outside containment isolation valves are normally closed manual Saunders diaphragm valves. Test connections only exist between the two valves. The inside containment valve is tested in the reverse direction. The Type A test requirements are fully met. The Type B test results include total leakage through both valves and are considered conservative.