

4.4.1.2.5 Test Frequency

LLRT shall be performed at a frequency as required by 10 CFR 50 Appendix J, except that:

- a. The entire personnel and emergency airlocks shall be tested once every six months. When the airlocks are opened during the interim between six month tests, the airlock door resilient seals shall be tested within 72 hours of the first of each of a series of openings. This requirement exists whenever containment integrity is required.
- b. An interspace pressurization test (See T.S. 4.4.1.7.a) shall be performed for reactor building purge isolation valves every 3 months. This requirement is not in effect during cold shutdown.
- c. Where an exemption from the frequency specified by 10 CFR 50 Appendix J has been granted by the NRC, the frequency specified by the exemption shall apply.

4.4.1.3 Isolation Valve Functional Tests

Every three months, remotely operated reactor building isolation valves shall be stroked to the position required to fulfill their safety function unless such operation is not practical during plant operation. The valves not stroked every three months shall be stroked during each refueling period.

4.4.1.4 Reactor Building Visual Examinations

Perform the required Reactor Building visual examinations in accordance with and at the frequency specified by 10 CFR 50, Appendix J.

4.4.1.5 Reactor Building Modifications

Any major modification or replacement of components affecting the reactor building integrity shall be followed by either an ILRT or an LLRT, as appropriate, and shall meet the acceptance criteria of 4.4.1.1.5 and 4.4.1.2.3, respectively.

4.4.1.6 Operability of Personnel and Emergency Air Lock Door Interlocks

At least once per six months the operability of the personnel and emergency air lock door interlocks and the associated control room annunciator circuits shall be determined. If the interlock permits both doors to be open at the same time or does not provide accurate status indication in the control room, the interlock shall be declared inoperable.

4.4.1.7 Operability of Purge Valves

- a. A periodic pressurization of the purge valve interspace to 50.6 psig per Specification 4.4.1.2.5.b shall be performed to help assure timely detection and resolution of valve and/or actuator degradation. The acceptance criteria is that total local leakage, when updated for the new purge valve leakage, shall be less than $0.60 L_a$. See Specification 3.6.8 for further action.

4.4.1.7 Operability of Purge Valves (Continued):

- b. The rubber seats on purge valves shall be visually examined and durometer tested each refueling interval to detect degradation (e.g. cracking, brittleness, etc.) and to assure timely cleaning, lubrication, and seat replacement.

Bases (1)

The performance of periodic ILRT and LLRT during the plant life provides a current assessment of potential leakage from the containment in case of an accident that would pressurize the interior of the containment. In order to provide a realistic appraisal of the integrity of the containment under accident conditions, "as found" local leakage results must be documented for correction of the ILRT results. Containment isolation valves are to be closed in the normal manner prior to LLRT or ILRT. Containment Isolation Valves are addressed in the UFSAR (Reference 2).

The minimum of 24 hours was specified for the ILRT to help stabilize conditions and thus improve accuracy and to better evaluate data scatter. The frequency of the periodic ILRT is keyed to the refueling schedule for the reactor, because these tests can best be performed during refueling shutdowns.

Surveillance tests for measuring leakage rates are consistent with the requirements of 10 CFR 50, Appendix J with the following exemption. The third test of each Type A testing set need not be conducted when the plant is shut down for the 10-year plant inservice inspections (Reference 3). The operational readiness of the containment is proven by the ILRT, and in accordance with license requirements, when completed pursuant to the frequency stated in Technical Specification 4.4.1.1.4.

The specified frequency of periodic ILRT is based on three major considerations. First is the low probability of leaks in the liner, because of conformance of the complete containment to a 0.1 percent leakage rate at 55 psig during pre-operational testing and the absence of any significant stresses in the liner during reactor operation. Second is the more frequent testing, at P_a , of those portions of the containment envelope that are most likely to develop leaks during reactor operation and the low value of leakage that is specified as acceptable from penetrations and isolation valves ($0.60 L_a$). Third is the tendon stress surveillance integrity program which provides assurance that an important part of the structural integrity of the containment is maintained.

More frequent testing of various penetrations is specified as these locations are more susceptible to leakage than the reactor building liner due to the mechanical closure involved. The basis for specifying a total leakage rate of $0.60 L_a$ from those penetrations and isolation valves is that more than one-half of the allowable integrated leakage rate will be from these sources.

Bases (Continued)

Valve operability tests are specified to assure proper closure or opening of the reactor building isolation valves to provide for isolation or functioning of Engineered Safety Features systems. Valves will be stroked to the position required to fulfill their safety function unless it is established that such testing is not practical during operation. Valves that cannot be full-stroke tested will be part-stroke tested during operation and full-stroke tested during each normal refueling shutdown.

Periodic surveillance of the airlock interlock systems (Reference 4) is specified to assure continued operability and preclude instances where one or both doors are inadvertently left open.

Purge valve interspace pressurization test operability requirements, inspections, and durometer testing provide a high degree of assurance of purge valve performance as containment isolation barriers.

Reference

- (1) UFSAR, Chapter 5.7.4 - "Post Operational Leakage Rate Tests"
- (2) UFSAR, Tables 5.7-1 and 5.7-3
- (3) NRC Letter dated February 25, 1991 (C311-91-3033)
- (4) UFSAR, Table 5.7-2