1.1 Definitions (continued)

EMERGENCY CORE COOLING SYSTEM (ECCS) RESPONSE TIME	The ECCS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ECCS initiation setpoint at the channel sensor until the ECCS equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
END OF CYCLE RECIRCULATION PUMP TRIP (EOC-RPT) SYSTEM RESPONSE TIME	The EOC-RPT SYSTEM RESPONSE TIME shall be that time interval from initial movement of the associated turbine stop valve or the turbine control valve to complete suppression of the electric arc between the fully open contacts of the recirculation pump circuit breaker. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
ISOLATION SYSTEM RESPONSE TIME	The ISOLATION SYSTEM RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its isolation initiation setpoint at the channel sensor until the isolation valves travel to their required positions. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
~~L_a~~	~~The maximum allowable primary containment leakage rate, L_a, shall be 0.26% of primary containment air weight per day at the calculated peak containment pressure (P_a).~~

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1.1	Perform required visual examinations and leakage rate testing except for primary containment air lock testing, in accordance with the Primary Containment Leakage Rate Testing Program. ~~10 CFR 50, Appendix J, as modified by approved exemptions.~~ ~~The leakage rate acceptance criteria is $\leq$ 1.0 L_a. However, during the first unit startup following testing performed in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, the leakage rate acceptance criteria is $\leq$ 0.6 L_a for the Type B and Type C tests and $\leq$ 0.75 L_a for the Type A test.~~	~~NOTE SR 3.0.2 is not applicable~~ In accordance with the Primary Containment Leakage Rate Testing Program ~~10 CFR 50, Appendix J, as modified by approved exemptions~~

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.6.1.2.1	----------NOTES---------- 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. During MODES 1, 2, and 3, results shall be evaluated against acceptance criteria of SR 3.6.1.1.1 in accordance with the Primary Containment Leakage Rate Testing Program. ~~10 CFR 50, Appendix J, as modified by approved exemptions.~~ ---------- Perform required primary containment air lock leakage rate testing in accordance with the Primary Containment Leakage Rate Testing Program. ~~10 CFR 50, Appendix J, as modified by approved exemptions.~~ Verify the combined leakage rate is $\leq$ 13,500 cc/hr for all required annulus bypass leakage paths when pressurized to $\geq P_a$.	~~NOTE~~ ~~SR 3.0.2 is not applicable~~ In accordance with the Primary Containment Leakage Rate Testing Program ~~10 CFR 50, Appendix J, as modified by approved exemptions~~
SR 3.6.1.2.2	Verify primary containment air lock seal air flask pressure is $\geq$ 90 psig.	7 days
SR 3.6.1.2.3	----------NOTE---------- Only required to be performed upon entry or exit through the primary containment air lock. ---------- Verify only one door in the primary containment air lock can be opened at a time.	184 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.6.1.3.8	Verify in-leakage rate of ≤ 340 scfh for each of the following valve groups when tested at 11.5 psid for MS-PLCS valves and 33 psid for PVLCS sealed valves. a. Division I MS-PLCS valves and Division I PVLCS valves. b. Division II MS-PLCS valves and Division II PVLCS valves. c. Division I MS-PLCS valves and all first outboard PVLCS valves.	18 months
SR 3.6.1.3.9	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify the combined leakage rate for all secondary containment bypass leakage paths equipped with PVLCS is ≤ 170,000 cc/hr when pressurized to ≥ P_a.	~~NOTE~~ ~~SR 3.0.2 is not applicable.~~ In accordance with the Primary Containment Leakage Rate Testing Program ~~10 CFR 50, Appendix J, as modified by approved exemptions~~

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.10	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify leakage rate through the valves served by each division of MS-PLCS is ≤ 150 scfh per division when tested at ≥ P_a.	~~NOTE~~ ~~SR 3.0.2 is not applicable~~ In accordance with the Primary Containment Leakage Rate Testing Program ~~10 CFR 50, Appendix J, as modified by approved exemptions~~
SR 3.6.1.3.11	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify combined leakage rate of 1 gpm times the total number of PCIVs through hydrostatically tested lines that penetrate the primary containment is not exceeded when these isolation valves are tested at ≥ 1.1 P_a.	~~NOTE~~ ~~SR 3.0.2 is not applicable.~~ In accordance with the Primary Containment Leakage Rate Testing Program ~~10 CFR 50, Appendix J, as modified by approved exemptions~~

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.12	Verify the combined leakage rate is $\leq$ 13,500 cc/hr for all required annulus bypass leakage paths when pressurized to $\geq P_a$.	~~NOTE SR 3.0.2 is not applicable~~ In accordance with the Primary Containment Leakage Rate Testing Program ~~10 CFR 50, Appendix J, as modified by approved exemptions~~

5.5 Programs and Manuals

5.5.11 Technical Specifications (TS) Bases Control Program (continued)

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the USAR.

d. Proposed changes that do not meet the criteria of either Specification 5.5.11.b.1 or Specification 5.5.11.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.12 Biofouling Prevention and Detection

A program, which will include the procedures to prevent biofouling of safety-related equipment, to assure detection of Corbicula in the intake embayment and the clarifier influent, and to monitor and survey safety-related equipment to detect biofouling. Changes to this program will be submitted to and approved by the NRC (both the Region and NRR) prior to implementation.

5.5.13 Primary Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," as modified by approved exceptions.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 7.6 psig.

The maximum allowable leakage rate, L_a, shall be 0.26% of primary containment air weight per day at the calculated peak containment pressure (P_a).

The provisions of SR 3.0.2 do not apply to test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to Primary Containment Leakage Rate Testing Program test frequencies.

The Primary Containment overall leakage rate acceptance criteria is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.6\ L_a$ for the Type B and Type C tests and $< 0.75\ L_a$ for Type A tests.

5.5.13 Primary Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," as modified by approved exceptions.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 7.6 psig.

The maximum allowable leakage rate, L_a, shall be 0.26% of primary containment air weight per day at the calculated peak containment pressure (P_a).

The provisions of SR 3.0.2 do not apply to test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to Primary Containment Leakage Rate Testing Program test frequencies.

The Primary Containment overall leakage rate acceptance criteria is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.6\ L_a$ for the Type B and Type C tests and $< 0.75\ L_a$ for Type A tests.

BASES

BACKGROUND (continued)

2. SR 3.6.1.1.1 leakage rate requirements are in conformance with 10 CFR 50, Appendix J, Option B (Ref. 3), as modified by approved exemptions.

APPLICABLE SAFETY ANALYSES

The safety design basis for the primary containment is that it must withstand the pressures and temperatures of the limiting DBA without exceeding the design leakage rate.

The DBA that postulates the maximum release of radioactive material within primary containment is a LOCA. In the analysis of this accident, it is assumed that primary containment is OPERABLE such that release of fission products to the environment is controlled by the rate of primary containment leakage.

Analytical methods and assumptions involving the primary containment are presented in References 1 and 2. The safety analyses assume a nonmechanistic fission product release following a DBA, which forms the basis for determination of offsite doses. The fission product release is, in turn, based on an assumed leakage rate from the primary containment. OPERABILITY of the primary containment ensures that the leakage rate assumed in the safety analyses is not exceeded.

The maximum allowable leakage rate for the primary containment (L_a) is 0.26% by weight of the containment and drywell air per 24 hours at the design basis LOCA maximum peak containment pressure (P_a) of 7.6 psig (Ref. 4).

Primary containment satisfies Criterion 3 of the NRC Policy Statement.

LCO

Primary containment OPERABILITY is maintained by limiting overall leakage to $\leq 1.0\ L_a$. During the first startup following testing in accordance with the Primary Containment Leakage Rate Testing Program (Ref. 5), the leakage rate acceptance criteria are $< 0.6\ L_a$ for the Type B and Type C tests and $< 0.75\ L_a$ for Type A tests. ~~, except prior to the first startup after performing a required 10 CFR 50, Appendix J, leakage test. At this time, the combined Type B and C leakage must be $< 0.6\ L_a$, and the overall Type A leakage must be $< 0.75\ L_a$.~~ Compliance with this LCO will ensure a primary containment configuration, including

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1.1 (continued)

test requirements of the Primary Containment Leakage Rate Testing Program (Ref. 5). ~~10 CFR 50, Appendix J (Ref. 3), as modified by approved exemptions.~~ Failure to meet air lock leakage testing (SR 3.6.1.2.1 and SR 3.6.1.2.4) resilient seal primary containment purge valve leakage testing (SR 3.6.1.3.5), secondary containment bypass leakage (SR 3.6.1.3.9), main steam positive leakage control system (SR 3.6.1.3.10), hydrostatically tested valve leakage (SR 3.6.1.3.11), or annulus bypass leakage (SR 3.6.1.3.12) does not necessarily result in a failure of this SR. The impact of the failure to meet these SRs must be evaluated against the Type A, B, and C acceptance criteria of the Primary Containment Leakage Rate Testing Program. The Primary Containment overall leakage rate acceptance criteria is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.6\ L_a$ on a Maximum Pathway Leakage Rate (MXPLR) for the Type B and Type C tests and $< 0.75\ L_a$ for Type A tests. The MXPLR for combined Type B and C leakage is the measured leakage through the worst of the two isolation valves, unless a penetration is isolated by use of one closed and deactivated automatic valve, closed manual valve, or blind flange. In this case, the MXPLR of the isolated penetration is assumed to be the measured leakage through the isolation device. ~~10 CFR 50, Appendix J, as modified by approved exemptions (Ref. 3). As left leakage prior to the first startup after performing a required 10 CFR 50, Appendix J, leakage test is required to be $< 0.6\ L_a$ for combined Type B and C leakage, and $< 0.75\ L_a$ for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of $\leq 1.0\ L_a$.~~ At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. The Frequency is required by the Primary Containment Leakage Testing Program. ~~10 CFR 50, Appendix J, as modified by approved exemptions. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply.~~

REFERENCES

1. USAR, Section 6.2.
2. USAR, Section 15.6.5.
3. 10 CFR 50, Appendix J, Option B.
4. USAR, Section 6.2.6.
5. Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

BASES

ACTIONS

E.1, E.2, and E.3 (continued)

of a component to a safe position. Also, if applicable, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Action must continue until OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.2.1

Maintaining primary containment air locks OPERABLE requires compliance with the leakage rate test requirements of the Primary Containment Leakage Rate Testing Program (Ref. 5). ~~10 CFR 50, Appendix J (Ref. 2), as modified by approved exemptions when in MODES 1, 2, and 3.~~ This SR reflects the leakage rate testing requirements with regard to air lock leakage (Type B leakage tests). The acceptance criteria (i.e., $\leq$13,500 cc/hr for the combination of all annulus bypass leakage paths that are required to be meeting leak tightness) ensures that the combined leakage rate of annulus bypass leakage paths is less than the specified leakage rate. This provides assurance in MODES 1, 2, and 3 that the assumptions in the radiological evaluations are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (e.g., leakage through the air lock door with the highest leakage) unless the penetration is isolated by use of (for this Specification) one closed and locked air lock door. The leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation devices (e.g., air lock door). If both air lock doors are closed, the actual leakage rate is the lesser leakage rate of the two barriers (doors). This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J, Option B, maximum pathway leakage limits used to evaluate Type A, B and C limits are to be quantified in accordance with Appendix J, Option B).

During the operational conditions of moving irradiated fuel assemblies in the primary containment, CORE ALTERATIONS, or OPDRVS, the only annulus bypass path leakage required to be met is through the two primary containment airlocks; therefore the entire 13,500 cc/hr limit can be applied to the air locks. In these operational conditions the reactor coolant system is not pressurized and specific primary containment leakage limits are not imposed. However, due to the size of the air lock penetration, leakage limits are

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.2.1 (continued)

imposed to assure an OPERABLE barrier. In these conditions the leakage limits are not related to radiological evaluations, but only reflect engineering judgment of an acceptable barrier. The periodic testing requirements verify that the air lock leakage does not exceed the allowed fraction of the overall primary containment leakage rate. The Frequency is required by the Primary Containment Leakage Rate Testing Program. ~~10 CFR 50, Appendix J, as modified by approved exemptions. Thus, SR 3.0.2 (which allows Frequency extensions) does not apply.~~

The SR has been modified by two Notes. Note 1 states that an inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. This is considered reasonable since either air lock door is capable of providing a fission product barrier in the event of a DBA. Note 2 has been added to this SR, requiring the results to be evaluated against the acceptance criteria of SR 3.6.1.1.1 during operation in MODES 1, 2, and 3. This ensures that air lock leakage is properly accounted for in determining the overall primary containment leakage rate. Since the overall primary containment leakage rate is only applicable in MODE 1, 2, and 3 operation, the Note 2 requirement is imposed only during these MODES.

SR 3.6.1.2.2

The seal air flask pressure is verified to be at $\geq$ 90 psig every 7 days to ensure that the seal system remains viable. It must be checked because it could bleed down during or following access through the air lock, which occurs regularly. The 7 day Frequency has been shown to be acceptable through operating experience and is considered adequate in view of the other indications available to operations personnel that the seal air flask pressure is low.

SR 3.6.1.2.3

The air lock interlock mechanism is designed to prevent simultaneous opening of both doors in the air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident primary containment pressure (Ref. 3), closure of either door will

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.2.3 (continued)

support primary containment OPERABILITY. Thus, the interlock feature supports primary containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous inner and outer door opening will not inadvertently occur. Due to the nature of this interlock, and given that the interlock mechanism is only challenged when the primary containment airlock door is opened, this test is only required to be performed upon entering or exiting a primary containment air lock, but is not required more frequently than once per 184 days. The 184 day Frequency is based on engineering judgment and is considered adequate in view of other administrative controls.

SR 3.6.1.2.4

A seal pneumatic system test to ensure that pressure does not decay at a rate equivalent to > 1.28 psig for a period of 24 hours from an initial pressure of 90 psig is an effective leakage rate test to verify system performance.

The 18 month Frequency is based on the fact that operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. USAR, Section 3.8.

2. 10 CFR 50, Appendix J, Option B.

3. USAR, Table 6.2-1.

4. USAR, 15.7.4.

5. Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.9 (continued)

evaluations of Reference 4 are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J, Option B maximum pathway leakage limits are to be quantified in accordance with Appendix J, Option B). The Frequency is required by the Primary Containment Leakage Rate Testing Program (Ref. 5). ~~10 CFR 50, Appendix J (Ref. 4), as modified by approved exemptions; thus, SR 3.0.2 (which allows Frequency extensions) does not apply.~~

A note is added to this SR which states that these valves are only required to meet this leakage limit in MODES 1, 2 and 3. In the other conditions the Reactor Coolant System is not pressurized and primary containment leakage limits are not required.

SR 3.6.1.3.10

The analyses in References 2 and 3 are based on leakage out of the primary containment that is less than the specified leakage rate. Leakage through the valves sealed in each division of MS-PLCS must be $\leq$ 150 scfh per division when tested at $\geq P_a$, 7.6 psig. The leakage rate must be verified to be in accordance with the leakage test requirements of Reference 4, as modified by approved exemptions.

A note is added to this SR which states that these valves are only required to meet this leakage limit in MODES 1, 2 and 3. In the other conditions, the Reactor Coolant System is not pressurized and specific primary containment leakage limits are not required. The Frequency is required by the Primary Containment Leakage Rate Testing Program (Ref. 5). ~~10 CFR 50, Appendix J (Ref. 4), as modified by approved exemptions; thus, SR 3.0.2 (which allows Frequency extensions) does not apply.~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.1.3.11

Surveillance of hydrostatically tested lines at $\geq 1.1\ P_a$, 8.36 psig provides assurance that the calculation assumptions of References 2 and 3 are met. The combined leakage rates must be demonstrated at the frequency of the leakage test requirements of the Primary Containment Leakage Rate Testing Program (Ref. 5). ~~Reference 4, as modified by approved exemptions; thus, SR 3.0.2 (which allows Frequency extensions) does not apply.~~

A note is added to this SR which states that these valves are only required to meet the combined leakage rate in MODES 1, 2, and 3 since this is when the Reactor Coolant System is pressurized and primary containment is required. In some instances, the valves are required to be capable of automatically closing during MODES other than MODES 1, 2, and 3. However, specific leakage limits are not applicable in these other MODES or conditions.

SR 3.6.1.3.12

This SR ensures that the combined leakage rate of annulus bypass leakage paths is less than the specified leakage rate. This provides assurance that the assumptions in the radiological evaluations of Reference 4 are met. The leakage rate of each bypass leakage path is assumed to be the maximum pathway leakage (leakage through the worse of the two isolation valves) unless the penetration is isolated by use of one closed and de-activated automatic valve, closed manual valve, or blind flange. In this case, the leakage rate of the isolated bypass leakage path is assumed to be the actual pathway leakage through the isolation device. If both isolation valves in the penetration are closed, the actual leakage rate is the lesser leakage rate of the two valves. This method of quantifying maximum pathway leakage is only to be used for this SR (i.e., Appendix J, Option B maximum pathway leakage limits are to be quantified in accordance with Appendix J, Option B). The Frequency is required by the Primary Containment Leakage Rate Testing Program (Ref. 5). ~~10 CFR 50, Appendix J (Ref. 4), as modified by approved exemptions; thus, SR 3.0.2 (which allows Frequency extensions) does not apply.~~

(continued)

BASES (continued)

REFERENCES

1. USAR, Chapter 15.

2. USAR, Section 6.2.

3. USAR, Table 6.2-40.

4. 10 CFR 50, Appendix J, Option B.

5. Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.