9.0 PRIMARY SYSTEM SURVEILLANCE

9.1 APPLICABILITY

Applies to preoperational and inservice structural surveillance of the reactor vessel and other Class 1, Class 2 and Class 3 system components.

9.2 OBJECTIVE

To insure the integrity of the Class 1, Class 2 and Class 3 piping systems and components.

9.3 SPECIFICATIONS

a. The structural integrity of ASME Classes 1, 2 and 3 components, as determined by 10 CFR 50, Section 50.55a, shall be verified and maintained at an acceptable level in accordance with Section XI of the ASME B&PV Code with applicable addenda as required by 10 CFR 50, Section 50.55a(g), except where specific relief has been granted by the NRC.

b. Inservice testing of ASME Classes 1, 2 and 3 pumps and valves, as determined by 10 CFR 50, Section 50.55a, shall be performed in accordance with Section XI of the ASME B&PV Code with applicable addenda as required by 10 CFR 50, Section 50.55a(g), except where specific relief has been granted by the NRC, and where provisions of Sections 11.4.1.4, 4.1.5 and 11.4.3.4 take precedence.

c. Sufficient records of each inspection shall be kept to allow comparison and evaluation of future tests. (See also Sections 6.9.4 and 6.10.2.g.)

d. The inservice inspection program shall be reevaluated as required by 10 CFR 50, Section 50.55a(g)(5) to consider incorporation of new inspection techniques that have been proven practical, and the conclusions of the evaluation shall be used as appropriate to update the inspection program.

e. A surveillance program to monitor radiation induced changes in the mechanical and impact properties of the reactor vessel materials shall be maintained as described in Section 4.1.1(h) of these Technical Specifications.

9.4 BASIS

The inspection program implements Section XI of the ASME Boiler and Pressure Vessel Code to the maximum extent practical. It is recognized that plant design and construction were completed approximately seven years prior to the development of Section XI and it is, therefore, not possible to comply fully with the code.

3.5.2 (Contd)

(b) Water addition to the containment sphere must be manually stopped before the accumulated water level reaches an elevation of 596 feet.

(c)

(Deleted)

3.6 CONTAINMENT REQUIREMENTS

Containment sphere integrity shall be maintained during power operation, refueling operation, shutdown and cold shutdown conditions except as specified by a system of procedures and controls to be established for occasions when containment must be breached during cold shutdown.

3.7 CONTAINMENT SPHERE LEAKAGE TESTING

For the purpose of this specification, leakage rate is defined as the percent of the contained atmosphere (weight basis) which escapes per day (24 hours) under the defined pressure conditions through any leaks in the containment boundary and all isolation valves and their associated piping.

The maximum allowable integrated leakage rate shall not exceed 0.5% per day of the containment atmosphere (weight basis) at the design pressure of 27 psig. The procedure for containment sphere leakage testing shall be:

(a) At least once every 6 months, the personnel lock, the equipment lock and the sphere supply-and-exhaust ventilation valves shall be pressurized, with air to 20 psig, to test their leak tightness. The sum of leakage rates from these valves and locks shall be less than 0.25%/day of the containment atmosphere (weight basis) at 20 psig.

(b) At least once each reactor refueling but in no case intervals greater than two years, the following valves shall be tested for operability from both the manual and automatic modes of operation and, at the same time, shall be tested for leak tightness by means of a pressure test utilizing air or the normal working fluid at a pressure not less than 20 psig:

Main Steam Isolation (MO-7050)
*Main Steam Drain (MO-7065)
Clean-Up System Resin Sluice (CV-4091, CV-4092, CV-4093)
Reactor and Fuel Pit Drain Isolation (CV-4027, CV-4117)
Reactor Enclosure Clean Sump Isolation (CV-4031, CV-4102)
Reactor Enclosure Dirty Sump Isolation (CV-4025, CV-4103)

*Operability, automatic controls, and instrumentation tests required only if valve is opened for use during operation.

3.7 (Contd)

All significant leaks (drops/second) revealed by these tests shall require repair of valve seals and retests.

Automatic controls and instrumentation associated with these valves shall be tested at approximately quarterly intervals; these tests may be conducted with a simulated signal or in such other manner as to obviate plant shutdown.

(c) At least once each reactor shutdown for refueling but in no case intervals greater than two years, the following shall be visually examined for evidence of corrosion, cracking or deterioration:

All Electrical and Accessible Piping Penetration
Nipple Welds
All Accessible Piping Welds to Nipples
All Expansion Joints and Welds on Expansion Joints
Potting Compound in All Electrical Penetrations

Insulation at piping penetration welds shall be removed to permit visual examination.

The probable cause of any significant corrosion, cracking or deterioration revealed by such visual examination shall be determined, and evaluated in terms of likelihood of recurrence and probable effect upon other containment sphere penetration components. An individual component leak detection test shall be performed with air at 10 psig on the faulty component prior to its repair or modification. The faulty component, and other components if necessary, shall be repaired or modified, and an individual component leak detection test performed with air at 10 psig upon each repaired or modified component. All components so repaired or modified shall be visually reexamined at appropriate intervals, but not less frequently than once every six months, until the adequacy of annual visual inspection is reestablished to the operator's satisfaction.

After cutting into the sphere or its components, or any disassembly of components that would affect sphere integrity, an individual component leakage rate or an integrated leakage rate test, whichever is deemed more appropriate by the operator, shall be performed, with air at a pressure not less than 10 psig. It shall be permissible to employ a leak detection test in lieu of the above for insuring containment integrity following disassembly of the emergency condenser or the gasketed, bolted closure of the coaxial cable electrical penetrations.

The individual component leakage rate determined from the above tests when combined with the previously measured integrated

4.1.2 (Contd)

periods of power operation. The following are absolute limits which, if exceeded, shall necessitate reactor shutdown. Corrective action will necessarily be taken at more stringent limits to minimize the possibility of these absolute limits ever being reached.

Conductivity	(Micromho/cm)
Maximum	5
Maximum Transient*	10
pH (Lower and Upper Limits)	4.0 and 10.0
Chloride Ion (Ppm)	1.0
Equilibrium Halogen Radioactivity (μc/ml)	35
Boron (Ppm)	100

(c) Leakage Limits

1. If the primary coolant system leakage exceeds 1 gpm and the source of leakage is not identified, the reactor shall be placed in the hot shutdown condition within 12 hours, and cooldown to a cold shutdown condition shall be initiated within 24 hours.

2. If leakage from the primary coolant system exceeds 10 gpm, the reactor shall be placed in the hot shutdown condition within 12 hours, and cooldown to a cold shutdown condition shall be initiated within 24 hours.

3.

(Deleted)

4.1.3 Primary System Shielding

Reactor shielding is ordinary concrete with a density of approximately 150 lb/ft^3. Thickness varies in plan and elevation to suit structural requirements. The shielding thickness directly opposite the core shall be approximately 9 feet, 6 inches. The control rod drive room, which is directly beneath the reactor, has ordinary concrete walls which shall be approximately 4 feet thick. A removable shield plug of a thickness 4 feet, 6-1/2 inches, consisting of 4 feet, 4 inches of concrete and 2-1/2 inches of lead, shall close the opening above the top of the reactor.

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*Conductivity is expected to increase temporarily after start-ups from cold shutdown. The maximum transient value here stated is the maximum permissible and applies only to the period subsequent to a cold shutdown between criticality and 24 hours after reaching 20% rated power.

(NOTE: This is the new format of the Specifications to be issued in the future. Therefore, the numbering system may conflict with existing sections. Both are still applicable.)

Limiting Conditions for Operation	Surveillance Requirement
3.1.5 REACTOR DEPRESSURIZATION SYSTEM	4.1.5 REACTOR DEPRESSURIZATION SYSTEM
Applicability:	Applicability:
Applies to the operating status of the Reactor Depressurization System (RDS).	Applies to periodic testing requirements for the RDS.
Objective:	Objective:
To assure the operability of the RDS and when working in conjunction with the emergency core cooling system to allow cooling of the reactor fuel in the even of a Loss of Coolant Accident.	To verify operability of the RDS.
Specification:	Specification:
A. The RDS shall be operable at all power levels and when the reactor is critical with the head on or when in hot shutdown conditions.	A. The isolation valves shall be test-operated at least once every three months.
B. The limiting conditions for operation of the instrumentation and actuating circuitry which initiates and controls the RDS are given in table 3.5.2.h.	B. The depressurizing valves shall be test-operated during each cold shutdown; however, in the case of frequent cold shutdowns. these valves need not be exercised more often than once every three months per Section IWV-3410 Summer 1973 Addenda of the ASME B&PV Code Section XI.
	C. The instrumentation shall be functionally tested, calibrated and checked as indicated in Table 4.5.2.h.