

2.0 **LIMITING CONDITIONS FOR OPERATION**
2.1 **Reactor Coolant System (continued)**
2.1.6 **Pressurizer and Main Steam Safety Valves**

Applicability

Applies to the status of the pressurizer and main steam safety valves.

Objective

To specify minimum requirements pertaining to the pressurizer and main steam safety valves.

Specifications

To provide adequate overpressure protection for the reactor coolant system and steam system, the following safety valve requirements shall be met:

- (1) Two pressurizer safety valves shall be OPERABLE in MODES 1 and 2, with lift settings of 2485 psig +1%/-3% and 2530 psig +1%/-3% respectively.
- (2) Whenever there is fuel in the reactor, and the reactor vessel head is installed, a minimum of one OPERABLE safety valve shall be installed on the pressurizer. However, when in at least the COLD SHUTDOWN condition, safety valve nozzles may be open to containment atmosphere during performance of safety valve tests or maintenance to satisfy this specification.
- (3) At least four of the five Main Steam Safety Valves (MSSVs) associated with each steam generator shall be OPERABLE in MODES 1 and 2. Lift settings shall be at 985 psig +3/-2%, 1000 psig +3/-2%, 1010 psig +3/-2%, 1025 psig +3/-2%, and 1035 psig +3/-2%.⁽¹⁾
 - a. With less than four of the five MSSVs associated with each steam generator OPERABLE, be in at least HOT STANDBY within 6 hours and HOT SHUTDOWN within an additional 6 hours.
- (4) Two power-operated relief valves (PORVs) shall be OPERABLE during heatups and cooldowns when the RCS temperature is less than 515°F, and in MODES 4 and 5 whenever the head is on the reactor vessel and the RCS is not vented through a 0.94 square inch or larger vent, to prevent violation of the pressure-temperature limits designated by Figure 2-1.
 - a. With one PORV inoperable during heatups and cooldowns when the RCS temperature is less than 515°F, restore the inoperable PORV to OPERABLE within 7 days or be in COLD SHUTDOWN within the next 36 hours and depressurize and vent the RCS through at least a 0.94 square inch or larger vent within the following 36 hours.
 - b. With both PORVs inoperable during heatups and cooldowns when the RCS temperature is less than 515°F, be in COLD SHUTDOWN within the next 36 hours and depressurize and vent the RCS through at least a 0.94 square inch or larger vent within the following 36 hours.
 - c. With one PORV inoperable in MODES 4 or 5, within one hour ensure the pressurizer steam space is greater than 53% volume (50.6% or less actual level) and restore the inoperable PORV to OPERABLE within 7 days. If adequate steam space cannot be established within one hour, then restore the inoperable PORV to OPERABLE within 24 hours. If the PORV cannot be restored in the required time, depressurize and vent the RCS through at least a 0.94 square inch or larger vent within the next 36 hours.

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- d. With both PORVs inoperable in Modes 4 or 5 depressurize and vent the RCS through at least a 0.94 square inch or larger vent within the next 36 hours.
- (5) Two power-operated relief valves (PORVs) and their associated block valves shall be operable in Modes 1, 2, and 3.
- a. With one or both PORV(s) inoperable because of excessive seat leakage, within 1 hour either restore the PORV(s) to operable status or close the associated block valve(s) with power maintained to the block valve(s); otherwise, be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 36 hours.
- b. With one PORV inoperable due to causes other than excessive seat leakage, within 1 hour either restore PORV to operable status or close its associated block valve and remove power from the block valve; restore the PORV to operable status within the following 72 hours or be in HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN with the following 36 hours.
- c. With both PORVs inoperable due to causes other than excessive seat leakage, within 1 hour either restore at least one PORV to operable status or close both block valves, remove power from the block valves, and be in HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 36 hours.
- d. With one or both block valve(s) inoperable, within 1 hour restore the block valve(s) to operable status or place the associated PORV(s) in the closed position. Restore at least one block valve to operable status within the next hour if both block valves are inoperable; restore the remaining inoperable block valve to operable within 72 hours. Otherwise, be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 36 hours.

Basis

The purpose of the two spring-loaded Pressurizer Safety Valves (PSV's) is to provide Reactor Coolant System (RCS) overpressure protection and thereby ensure that the Safety Limit for RCS pressure (i.e., 2750 psia) is not exceeded for analyzed accidents. The maximum RCS pressure transient for an analyzed accident is associated with a Loss of Load event⁽²⁾.

The TS 2.1.6(1) lift settings are determined during Surveillance Testing in accordance with ASME Code test methods. The ASME Code requires that valves in steam service use steam as the test medium for establishing the setpoint. The +1%/-3% tolerance range specified in TS 2.1.6(1) applies to opening pressures determined during Surveillance Testing. When the valves are installed in the system, the presence of a water-filled loop seal at the valve inlets may result in in-situ actuation at a pressure that differs from the actuation pressure with steam at the inlet. Comparative testing and analysis indicates that with a loop seal present, the opening pressure of these valves may be up to 1% lower than the opening pressure under normal test conditions. Opening pressures below the specified setpoints are not a concern with respect to the safety limit for RCS pressure. Analysis of a loss of load case involving elevated PSV opening pressures indicated that RCS pressures remained below the 2750 psia Safety Limit with PSV opening pressures upon to 6% above the nominal setpoints. The valves are set to a tolerance of $\pm 1\%$ of setpoint using ASME Code test methods before being returned to service after testing. This allows for some setpoint variance over the surveillance interval.

The power-operated relief valves (PORVs) operate to relieve RCS pressure below the setting of the pressurizer code safety valves. These relief valves have remotely operated block valves to provide a positive shutoff capability should a relief valve become inoperable. The electrical power for both the relief valves and the block valves is capable of being supplied from an emergency power source to ensure the ability to seal this possible RCS leakage path.

TABLE 3-5

MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

	<u>Test</u>	<u>Frequency</u>	<u>USAR Section Reference</u>	
1.	Control Element Assemblies	Drop times of all full-length CEA's	Prior to reactor criticality after each removal of the reactor vessel closure head	7.5.3
2.	Control Element Assemblies	Partial movement of all CEA's (Minimum of 6 in)	Q	7
3.	Pressurizer Safety Valves	Verify each pressurizer safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, lift settings shall be 2485 psig ±1% and 2530 psig ±1% respectively.	R	7
4.	Main Steam Safety Valves	Set Point	R	4
5.	DELETED			
6.	DELETED			
7.	DELETED			
8.	Reactor Coolant System Leakage	Evaluate	D*	4
9.	Diesel Fuel Supply	Fuel Inventory	D	8.4
10a.	Charcoal and HEPA Filters for Control Room	1. <u>In-Place Testing**</u> Charcoal adsorbers and HEPA filter banks shall be leak tested and show ≥99.95% Freon (R-11 or R-112) and cold DOP particulates removal, respectively.	On a refueling frequency or every 720 hours of system operation or after each complete or partial replacement of the charcoal adsorber/HEPA filter banks, or after any major structural maintenance on the system housing or following significant painting, fire or chemical releases in a ventilation zone communicating with the system.	9.10

* Whenever the system is at or above operating temperature and pressure.

** Tests shall be performed in accordance with applicable section(s) of ANSI N510-1980.

5.0 **ADMINISTRATIVE CONTROLS**

5.9 **Reporting Requirements (Continued)**

- b. **Annual Occupational Exposure Report.** An annual occupational exposure report shall be submitted on or before April 30 of each year. The report shall consist of a tabulation on an annual basis of the number of station, utility and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,^{3/} e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling outages. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.
- c. **Monthly Operating Report.** Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Document Control Desk, with a copy to the appropriate Regional Office, no later than the fifteenth of each month following the calendar month covered by the report.

5.9.2 **Reportable Event**

A Licensee Event Report (LER) shall be submitted to the U.S. Nuclear Regulatory Commission for any event meeting the requirements of 10 CFR Part 50.73.

5.9.3 **Special Reports**

Special reports shall be submitted to the appropriate NRC Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification where appropriate:

- a. In-service inspection report, reference 3.3.
- b. Tendon surveillance, reference 5.21.
- c. Containment structural tests, reference 3.5.
- d. DELETED
- e. DELETED
- f. DELETED
- g. Materials radiation surveillance specimens reports, reference 3.3.
- h. DELETED
- i. Post-accident monitoring instrumentation, reference 2.21
- j. Electrical systems, reference 2.7(2).

^{3/} This tabulation supplements the requirements of § 20.2206 of 10 CFR Part 20.