

3.1.12 Pressurizer Power Operated Relief Valve (PORV) and Block Valve

Applicability

Applies to the settings, and conditions for isolation of the PORV.

Objective

To prevent the possibility of inadvertently overpressurizing or depressurizing the Reactor Coolant System.

Specification

3.1.12.1 When the RCS is below 332°F the PORV shall not be taken out of service, nor shall it be isolated from the system unless one of the following is in effect:

- a. High Pressure Injection Pump breakers are racked out.
- b. MU-V16A/B/C/D are closed with their breakers open, and MU-V217 is closed.
- c. Head of the Reactor Vessel is removed.

3.1.12.2 The PORV settings shall be as follows:

- a. Above 275°F \pm 12°F - Minimum 2425 psig (Nominal 2450 psig).

With the PORV setpoint below the minimum value, within 8 hours either:

1. restore the setpoint above the minimum value, or
2. close the associated block valve, or
3. close the PORV, and remove power from PORV
4. otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- b. Below 275°F \pm 12°F - Maximum 510 psig (Nominal 485 psig).

With the PORV setpoint above the maximum value, within 8 hours either:

1. restore the setpoint below the maximum value, or
2. satisfy the requirements of Technical Specification 3.1.12.1 allowing the PORV to be taken out of service.

- 3.1.12.3 If the reactor vessel head is installed and T_{avg} is $\leq 332^{\circ}\text{F}$, High Pressure Injection Pump breakers shall not be racked in unless:
- MU-V16A/B/C/D are closed with their breakers open, and MU-V217 is closed, and
 - Pressurizer level is ≤ 220 inches. If pressurizer level is > 220 inches, restore level to ≤ 220 inches within 1 hour.
- 3.1.12.4 The PORV Block Valve shall be OPERABLE during HOT STANDBY, STARTUP, and POWER OPERATION:
- With the PORV Block Valve inoperable, within 1 hour either:
 - restore the PORV Block Valve to OPERABLE status or
 - close the PORV (verify closed) and remove power from the PORV
 - otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
 - With the PORV block valve inoperable, restore the inoperable valve to OPERABLE status prior to startup from the next COLD SHUTDOWN unless the COLD SHUTDOWN occurs within 90 Effective Full Power Days (EFPD) of the end of the fuel cycle. If a COLD SHUTDOWN occurs within this 90 day period, restore the inoperable valve to OPERABLE status prior to startup for the next fuel cycle.

Bases

If the PORV is removed from service while the RCS is below 332°F , sufficient measures are incorporated to prevent severe overpressurization by either eliminating the high pressure sources or flowpaths or assuring that the RCS is open to atmosphere.

The PORV setpoints are specified with tolerances assumed in the bases for Technical Specification 3.1.2. Above 287°F ($275^{\circ}\text{F} + 12^{\circ}\text{F}$), the PORV setpoint has been chosen to limit the potential for inadvertent discharge or cycling of the PORV. Other action such as removing the power to the PORV has the same effect as raising the setpoint which also satisfies this requirement. There is no upper limit on this setpoint as the Pressurizer Safety Valves (T.S. 3.1.1.3) provide the required overpressure relief.

Below 263°F ($275^{\circ}\text{F} - 12^{\circ}\text{F}$), the PORV setpoint is reduced to provide the required low temperature overpressure relief when high pressure sources and flowpaths are in service. There is no lower limit on the pressure actuation specified as lower setpoints also provide this same protection.

In both cases, the $275^{\circ}\text{F} \pm 12^{\circ}\text{F}$ setting is specified to reflect the nominal value which allows for normal variations in the temperature setpoint while maintaining the tolerances assumed in the bases for T.S. 3.1.2. Either pressure actuation setpoint is acceptable within the temperature range between 263°F and 287°F .

With RCS temperatures less than 332°F and the makeup pumps running, the high pressure injection valves are closed and pressurizer level is maintained less than 220 inches to allow time for action to prevent severe overpressurization in the event of any single failure.

The PORV block valve is required to be OPERABLE during the HOT STANDBY, STARTUP, and POWER OPERATION in order to provide isolation of the PORV discharge line to positively control potential RCS depressurization.

For protection from severe overpressurization during HPI testing, refer to Section 4.5.2.1.c.