

3/4.7 PLANT SYSTEMS

3.4.7.1 TURBINE CYCLE

SAFETY VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.1 All main steam line code safety valves shall be OPERABLE.*

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With both reactor coolant loops and associated steam generators in operation and with one or more main steam line code safety valves inoperable, operation in MODES 1, 2 and 3 may proceed provided, that within 4 hours, either the inoperable valve is restored to OPERABLE status or the Power Level-High trip setpoint is reduced per Table 3.7-1; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one reactor coolant loop and associated steam generator in operation and with one or more main steam line code safety valves associated with the operating steam generator inoperable, operation in MODES 1, 2 and 3 may proceed provided:
 1. That at least 2 main steam line code safety valves on the non-operating steam generator are OPERABLE, and -
 2. That within 4 hours, either the inoperable valve is restored to OPERABLE status or the Power Level-High trip setpoint is reduced per Table 3.7-2; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.1 No additional Surveillance Requirements other than those required by Specification 4.0.5 are applicable for the main steam line code safety valves of Table 4.7-1.

* Entry into MODE 3 is permitted to determine operability of main steam line code safety valves. During this time, at least 2 main steam line code safety valves per steam generator shall be OPERABLE.

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TABLE 4.7-1

STEAM LINE SAFETY VALVES PER LOOP

<u>VALVE NUMBER</u>	<u>LIFT SETTINGS</u> [*] <u>($\pm 1\%$) ALLOWABLE</u>	<u>ORIFICE SIZE</u>
a. RV-3992/4000	935-995 985 psig	R
b. RV-3993/4001	935-995 985 psig	R
c. RV-3994/4002	935-1035 995 psig	R
d. RV-3995/4003	935-1035 995 psig	R
e. RV-3996/4004	935-1065 1015 psig	R
f. RV-3997/4005	935-1065 1015 psig	R
g. RV-3998/4006	935-1065 1035 psig	R
h. RV-3999/4007	935-1065 1035 psig	R

Lift settings for a given steam line are also acceptable if any 2 valves lift between 935 and 995 psig, any 2 other valves lift between 935 and 1035 psig, and the 4 remaining valves lift between 935 and 1065 psig.

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES

The OPERABILITY of the main steam line code safety valves ensures that the secondary system pressure will be limited to within its design pressure of 1000 psig during the most severe anticipated system operational transient. The maximum relieving capacity is associated with a turbine trip from 100% RATED THERMAL POWER coincident with an assumed loss of condenser heat sink (i.e., no steam bypass to the condenser). *The main steam line code safety valves are tested and maintained*

The specified valve lift settings and relieving capacities are in accordance with the requirements of Section IX of the ASME Boiler and Pressure Code, 1971 Edition. The total relieving capacity for all valves on all of the steam lines is 12.18×10^6 lbs/hr which is 100 percent of the total secondary steam flow of 11.23×10^6 lbs/hr at 100% RATED THERMAL POWER. A minimum of 2 OPERABLE safety valves per steam generator ensures that sufficient relieving capacity is available for removing decay heat.

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STARTUP and/or POWER OPERATION is allowable with safety valves inoperable within the limitations of the ACTION requirements on the basis of the reduction in secondary system steam flow and THERMAL POWER required by the reduced reactor trip settings of the Power Level-High channels. The reactor trip setpoint reductions are derived on the following bases:

For two loop operation

$$SP = \frac{(X) - (Y)(V)}{X} \times 106.5$$

For single loop operation (two reactor coolant pumps operating in the same loop)

$$SP = \frac{(X) - (Y)(U)}{X} \times 46.8$$

where:

SP = reduced reactor trip setpoint in percent of RATED THERMAL POWER

V = maximum number of inoperable safety valves per steam line

The as-lift lift settings will be no less than 985 PSIG to insure that the lift settings will remain within specification during the cycle.

110% of

XI

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In Mode 3, two main steam safety valves are required operable per steam generator. These valves will provide adequate relieving capacity for removal of both decay heat and reactor coolant pump heat from the reactor coolant system via either of the two steam generators. This requirement is provided to facilitate the post-overhaul setting and operability testing of the safety valves which can only be conducted when the RCS is at or above 500°F. It allows entry into Mode 3 with a minimum number of main steam safety valves operable so that the set pressure for the remaining valves can be adjusted in the plant. This is the most accurate means for adjusting safety valve set pressures since the valves will be in thermal equilibrium with the operating environment.