

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 associated with each steam generator shall be OPERABLE with lift settings as specified in Table 3.7-2.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With four 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 Range Neutron Flux High Trip Setpoint is reduced per Table 3.7-1; otherwise, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.7.1.1 No additional requirements other than those required by Specification 4.0.5. During surveillance testing, as -left lift settings shall be within $\pm 1\%$.

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER RANGE NEUTRON FLUX HIGH SETPOINT WITH
INOPERABLE STEAM LINE SAFETY VALVES DURING FOUR LOOP OPERATION

MAXIMUM NUMBER OF INOPERABLE
SAFETY VALVES ON ANY
OPERATING STEAM GENERATOR

MAXIMUM ALLOWABLE POWER RANGE
NEUTRON FLUX HIGH SETPOINT
(PERCENT OF RATED THERMAL POWER)

1	87
2	65
3	43
4 or 5	24

~~*Unit operation shall be restricted to no greater than Mode 3. This is applicable for one time, prior to entering Mode 2 following the first refueling outage.~~

TABLE 3.7-2

STEAM LINE SAFETY VALVES PER LOOP

VALVE NUMBER					LIFT SETTING* $(\frac{+}{-} \frac{1\%}{1.5\%})^{**}$	ORIFICE SIZE
	Loop A	Loop B	Loop C	Loop D		
1. SV-20	SV-14	SV-8	SV-2		1175 psig	14.18 in. ²
2. SV-21	SV-15	SV-9	SV-3		1190 psig	14.18 in. ²
3. SV-22	SV-16	SV-10	SV-4		1205 psig	14.18 in. ²
4. SV-23	SV-17	SV-11	SV-5		1220 psig	14.18 in. ²
5. SV-24	SV-18	SV-12	SV-6		1230 psig	14.18 in. ²

*The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

~~**Change applies to Unit 2 only. Change only applies until first forced outage, reactor trip, or refueling outage.~~

3/4.7 PLANT SYSTEMS

BASES

3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES

Table 3.7-2 allows a $\pm 3\%$ setpoint tolerance for OPERABILITY; however, the valves are reset to $\pm 1\%$ during surveillance testing to allow for drift.

INSERT The OPERABILITY of the main steam line Code safety valves ensures that the Secondary System pressure will be limited to within 110% (1304 psig) of its design pressure of 1185 psig during the most severe anticipated system operational transient. The maximum relieving capacity is associated with a Turbine trip from valve wide-open condition coincident with an assumed loss of condenser heat sink (i.e., no steam bypass to the condenser).

The specified valve lift settings and relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Code, 1971 Edition. The total relieving capacity for all valves on all of the steam lines is 16.85×10^6 lbs/h which is 105% of the total secondary steam flow of 16.05×10^6 lbs/h at 100% RATED THERMAL POWER. A minimum of two OPERABLE safety valves per steam generator ensures that sufficient relieving capacity is available for the allowable THERMAL POWER restriction in Table 3.7-1.

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 Coolant System steam flow and THERMAL POWER required by the reduced Reactor trip settings of the Power Range Neutron Flux channels. The Reactor Trip Setpoint reductions are derived on the following bases:

For four loop operation

$$SP = \frac{(X) - (Y)(V)}{X} \times (109)$$

Where:

SP = Reduced Reactor Trip Setpoint in percent of RATED THERMAL POWER,

V = Maximum number of inoperable safety valves per steam line,

109 = Power Range Neutron Flux-High Trip Setpoint for four loop operation,

X = Total relieving capacity of all safety valves per steam line in lbs/hour, and

Y = Maximum relieving capacity of any one safety valve in lbs/hour

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SURVEILLANCE REQUIREMENTS

4.7.1.1 No additional requirements other than those required by Specification 4.0.5. During surveillance testing, as-left lift settings shall be within $\pm 1\%$.

TABLE 3.7-1

MAXIMUM ALLOWABLE POWER RANGE NEUTRON FLUX HIGH SETPOINT WITH
INOPERABLE STEAM LINE SAFETY VALVES DURING FOUR LOOP OPERATION

<u>MAXIMUM NUMBER OF INOPERABLE SAFETY VALVES ON ANY OPERATING STEAM GENERATOR</u>	<u>MAXIMUM ALLOWABLE POWER RANGE NEUTRON FLUX HIGH SETPOINT (PERCENT OF RATED THERMAL POWER)</u>
1	87
2	65
3	43
4 or 5	2

TABLE 3.7-2

STEAM LINE SAFETY VALVES PER LOOP

<u>VALVE NUMBER</u>					<u>LIFT SETTING* ($\pm 3\%$)</u>	<u>ORIFICE SIZE</u>
	<u>Loop A</u>	<u>Loop B</u>	<u>Loop C</u>	<u>Loop D</u>		
1.	SV-20	SV-14	SV-8	SV-2	1175 psig	14.18 in. ²
2.	SV-21	SV-15	SV-9	SV-3	1190 psig	14.18 in. ²
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3/4.7.1.1 SAFETY VALVES

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