If these requirements cannot be met, then:

1. maintain the plant in a safe, stable mode which minimizes the potential for a reactor trip, and

2. continue efforts to restore water supply to the auxiliary feedwater system, and

3. notify the NRC within 24 hours regarding the planned corrective action.

Basis

Reactor shutdown from power requires removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condensers. Thereafter, core decay heat can be continuously dissipated via the steam bypass to the condenser as feedwater in the steam generator is converted to steam by heat absorption. Normally, the capability to feed the steam generators is provided by operation of the turbine cycle feedwater system.

The operability of the twenty main steam line code safety valves ensure that the secondary system pressure will be limited to within 110% of its design pressure of 1085 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 total relieving capacity of the twenty main steam safety valves is 15,108,000 lbs/hr which is 114 percent of the total secondary steam flow of 13,310,000 lbs/hr at 100% NSSS Power (3083.4 Mwt). Startup and/or power operation is allowable with main steam safety valves inoperable within the limitations of Table 3.4-1 on the basis of the reduction in secondary 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 based on the heat removal capacity of the remaining operable steam line safety valves. The maximum thermal power corresponding to the heat removal capacity of the remaining operable steam line safety valves is determined via a conservative heat balance calculation as described in the attachment to Ref. 2 with an appropriate allowance for calorimetric power uncertainty.

In the unlikely event of complete loss of electrical power to the station, decay heat removal would continue to be assured by the availability of either the steam-driven auxiliary feedwater pump or one of the two motor-driven auxiliary steam generator feedwater pumps, and steam discharge to the atmosphere via the main steam safety valves and atmospheric relief valves. One motor-driven auxiliary feedwater pump can supply sufficient feedwater for removal of decay heat from the plant. The minimum amount of water in the condensate storage tank is the amount needed for 24 hours at hot standby. When the condensate storage supply is exhausted, city water will be used.

The limit on secondary coolant total iodine activity of I-131 and I-133 is based on a postulated release of secondary coolant equivalent to the contents of four steam generators to the atmosphere due to a net load rejection with loss-of-offsite power. The limiting dose for this case would result from radioactive iodine in the secondary coolant. I-131 and I-133 are the dominant isotopes because of their low MPCs in air and because the other, shorter-lived isotopes cannot build up to significant concentrations in the secondary coolant under the limits of primary system leak rate and activity. One tenth of the iodine in the secondary coolant is assumed to reach the site boundary, making allowance for plate-out and retention in water droplets. The inhalation dose at the site boundary is then as follows:

$$\text{Dose(rem)} = \frac{C \cdot V}{10} \cdot B(t) \cdot X/Q \cdot DCF$$

where: C = secondary coolant activity (0.15 μCi/cc = 0.15 Ci/m^3)

V = water volume in four steam generators (7416 ft^3 = 210 m^3)

$B(t)$ = breathing rate (3.47×10^{-4} m^3/sec)

X/Q = 7.5×10^{-4} sec/m^3

DCF = 1.00×10^{6} rem/Ci Iodine (131 and 133) inhaled

The resultant dose is less than 1.0 rem.

Reference

1. UFSAR - Chapter 10 and Section 14.1.9
2. NRC Information Notice 94-60: Potential Overpressurization of Main Steam System

TABLE 3.4-1

Maximum Allowable Power Range Neutron Flux High
Setpoint with Inoperable Steam Line Safety Valves
During 4-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	64
2	44
3	24