

3.4 SECONDARY STEAM AND POWER CONVERSION SYSTEM

Applicability

Applies to the operating status of turbine cycle.

Objective

To define conditions of the turbine cycle steam-relieving capacity. Auxiliary Feedwater System and Service Water System operation is necessary to ensure the capability to remove decay heat from the core.

Specification

3.4.1 The reactor coolant shall not be heated above 350°F unless the following conditions are met:

- a. A minimum turbine cycle steam relieving capability of twelve (12) main steam safety valves operable.
- b. Three auxiliary feedwater pumps must be operable.
- c. A minimum of 35,000 gallons of water in the condensate storage tank and an unlimited water supply from the lake via either leg of the plant Service Water System.
- d. Essential features including system piping and valves directly associated with the above components are operable.
- e. The main steam stop valves are operable and capable of closing in five seconds or less.

- 3.4.2 The specific activity of the secondary coolant system shall be $\leq 0.10 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$ under all modes of operation from cold shutdown through power operation. When the specific activity of the secondary coolant system is $> 0.10 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$, be in at least HOT SHUTDOWN within 6 hours and COLD SHUTDOWN within the following 30 hours.

The specific activity of the secondary coolant system shall be determined to be within the limit by performance of the sampling and analysis program of Table 4.1-2.

- 3.4.3 If, during power operations, any of the specifications in 3.4.1, with the exception of 3.4.1.b above, cannot be met within 24 hours, the operator shall initiate procedures to put the plant in the hot shutdown condition. If any of these specifications cannot be met within an additional 48 hours, the operator shall cool the reactor below 350°F using normal procedures.

- 3.4.4 With one auxiliary feedwater pump INOPERABLE, restore that auxiliary feedwater pump to OPERABLE status within 72 hours, or;

- a. Submit a special report to the Commission in accordance with Specification 6.9.3.f within 30 days outlining the cause of the inoperability and the action taken to return the pump to OPERABLE status, and;
- b. Restore all three auxiliary feedwater pumps to operable status within 7 days or be in at least HOT SHUTDOWN within 6 hours.

- 3.4.5 With two auxiliary feedwater pumps INOPERABLE, restore at least one inoperable auxiliary feedwater pump to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within 6 hours.

- 3.4.6 In the event that the number of channels of the Auxiliary Feedwater Initiation circuits falls below the limits given in the column entitled Minimum Operable Channels, or Minimum Degree of Redundancy

cannot be achieved, operation shall be limited according to the requirements shown in Column 3 of Table 3.4-1. The Auxiliary Feedwater System Automatic Initiation Setting Limits are shown in Table 3.4-2. If the setpoint is less conservative than the value shown in the Allowable Values column to Table 3.4-2, declare the channel inoperable and operation shall be limited according to the requirement shown in Column 3 of Table 3.4-1.

Basis

A reactor shutdown from power requires removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condenser. Therefore, 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 return feedwater flow to the steam generators is provided by operation of the turbine cycle feedwater system.

The twelve main steam safety valves have a total combined rated capability of 10,068,845 lbs/hr. The total full power steam flow is 10,068,845 lbs/hr.; therefore, twelve (12) main steam safety valves will be able to relieve the total steam flow if necessary.⁽¹⁾ Following a loss of load, which represents the worst transient, steam flows are below the total capacity of the 12 safety valves. Therefore, over-pressurization of the secondary system is not possible.

In the unlikely event of complete loss of turbine-generator and offsite electrical power to the plant, 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 operated from the diesel generators 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.⁽²⁾ In order to provide a high degree of reliability all three auxiliary feedwater pumps will be operable prior to exceeding 350°F. The minimum amount of water in the condensate storage tank is the amount needed for at least two-hours operation at hot standby conditions. If the outage is more than two hours, deep well or Lake Robinson water may be used.

An unlimited supply is available from the lake via either leg of the plant Service Water System for an indefinite time period.

6.9.3 Special Reports

Special reports shall be submitted to the Director of the Regional Office of Inspection and Enforcement 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:

	<u>Area</u>	<u>Reference</u>	<u>Submittal Date</u>
a.	Containment Leak Rate Testing	4.4	Upon completion of each test
b.	Containment Sample Tendon Surveillance	4.4	Upon completion of the inspection at 25 years of operation
c.	Post-operational Containment Structural Test	4.4	Upon completion of the test at 20 years of operation
d.	Fire Protection System	3.14	As specified by limiting condition for operation
e.	Overpressure Pro- tection System Operation	3.1.2.1e	Within 30 days of operation
f.	Auxiliary Feedwater Pumps	3.4	Within 30 days after becoming INOPERABLE