

PLANT SYSTEMS

3.7.1.6 ATMOSPHERIC DUMP VALVES

LIMITING CONDITION FOR OPERATION

3.7.1.6 The atmospheric dump valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4*.

ACTION:

- a. With an atmospheric dump valve inoperable, restore the valve to OPERABLE status within 72 hours, or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN and on shutdown cooling within the next 12 hours.
- b. With both atmospheric dump valves inoperable, be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN and on shutdown cooling within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.6 Each atmospheric dump valve shall be demonstrated OPERABLE at least once per REFUELING INTERVAL by:

- a. Verifying that each atmospheric dump valve will open in modulate mode using the backup nitrogen system,
- b. Verifying that each atmospheric dump valve will close to its isolation position upon a MSIS test signal,
- c. Verifying that each atmospheric dump valve will open in modulate/override mode with a MSIS test signal present, and
- d. Verifying that local manual operation will fully open and close each atmospheric dump valve.

*When steam generators are being used for decay heat removal.

PLANT SYSTEMS

BASES

3/4.7.1.4 ACTIVITY

The limitations on secondary system specific activity ensure that the resultant off-site radiation dose will be limited to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture. This dose also includes the effects of a coincident 1.0 GPM primary to secondary tube leak in the steam generator of the affected steam line and a concurrent loss of offsite electrical power. These values are consistent with the assumptions used in the accident analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVE

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and 2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the accident analyses.

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator RT_{NDT} of 30°F and are sufficient to prevent brittle fracture.

← INSERT 3/4.7.1.6
SECTION HERE. SEE
ATTACHED.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the component cooling water system ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

3/4.7.4 SALT WATER COOLING SYSTEM

The OPERABILITY of the salt water cooling system ensures that sufficient cooling capacity is available for continued operation of equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

Add the following paragraphs to the Plant Systems Bases section on page B 3/4 7-3:

3/4.7.1.6 ATMOSPHERIC DUMP VALVES

The Atmospheric Dump Valves (ADV) provide a safety grade method for cooling the plant to the shutdown cooling entry conditions should the preferred heat sink via the Steam Bypass System to the condenser not be available. This is done in conjunction with the Auxiliary Feedwater System providing a safety grade source of cooling water from the condensate storage tanks. The ADVs are equipped with pneumatic controllers to permit control of the cooldown rate. The ADVs may also be utilized during a normal cooldown when either a vacuum in the condenser or the Steam Bypass Control System is not available.

Two ADVs are provided to meet single failure assumptions following an event rendering one steam generator unavailable for Reactor Coolant System (RCS) heat removal. In the accident analysis, the ADVs are not assumed to be used until the operator takes action to cool down the plant. This is typically 30 minutes following initiation of an event. The limiting events are those which render one steam generator unavailable for RCS heat removal, with a coincident loss of offsite power. Typical initiating events falling into this category are a main steam line break (MSLB) upstream of the main steam isolation valves, a feedwater line break (FWLB), and a steam generator tube rupture (SGTR) event.

At least one ADV is required to remain available to conduct a plant cooldown following an event in which one steam generator becomes unavailable. Failure to meet the LCO can result in the inability to cool the plant to shutdown cooling entry conditions following an event in which the condenser is unavailable for use with the Steam Bypass System. The ADVs are required to be OPERABLE whenever the steam generators are being used for RCS heat removal. In these MODES they provide the safety grade path for cooling the RCS to shutdown cooling conditions in MODE 4.

The ADVs are one of the systems required to meet Branch Technical Position (BTP) RSB 5-1, Design Requirements of the Residual Heat Removal System, and 10CFR50, Appendix R for taking the plant from normal operating conditions to cold shutdown. The ADVs are operated from the plant non-safety instrument air supply. A Seismic Category I Pressurized Gas Supply, which consists of bottled nitrogen, is provided to the ADVs on loss of normal instrument air supply. Surveillance of the ADVs using the nitrogen backup capability provides adequate assurance that the ADVs and the nitrogen backup system remain operable. In addition, handwheels are provided for local manual operation for each ADV. This redundancy enables the Reactor Coolant System to be cooled down to 350°F or below such that the Shutdown Cooling System can be placed in service.

In order to perform a controlled cooldown of the RCS, the ADVs must be able to be opened and throttled through their full opening range from either the Control Room or the local handwheel. The surveillance requirements ensure that the ADVs are tested through a full control cycle at least once per fuel cycle. As the valves are subject to inservice testing, the frequency of these surveillances is based on the length of a fuel cycle.

SONGS Units 2 and 3 have both met the requirements for Class 2 plants under BTP RSB 5-1, as indicated in the February 24, 1988 NRC letter on the Safety Evaluation of the Natural Circulation Cooldown Tests at SONGS Units 2 and 3. The Safety Evaluation states in paragraph g: "That the atmospheric dump valves could be manually operated in the event the nitrogen supply to these valves should become depleted."

ATTACHMENT B .

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