

LIST OF AFFECTED PAGES AND MARKED-UP TECHNICAL SPECIFICATIONS

<u>Page</u>	<u>Specification</u>	<u>Description of Change</u>
3/4 4-34	3/4.4.9.3	Change in the AOT for the RHR suction relief valves from 7 days to 72 hours
B 3/4.5-2	B 3/4.5.3	PORVs incorrectly identified as low temperature overpressure protection when $T_{cold}$ is less than 300°F

REACTOR COOLANT SYSTEM

OVERPRESSURE PROTECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

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- 3.4.9.3 At least one of the following overpressure protection systems shall be OPERABLE:
- a. Two-RHR relief valves with:
    1. A lift setting of less than or equal to 450 psig, and
    2. The associated RHR relief valve isolation valves open; or
  - b. The Reactor Coolant System (RCS) depressurized with an RCS vent of greater than or equal to 2.7 square inches.

APPLICABILITY:

MODE 4 when the temperature of any RCS cold leg is less than or equal to 300°F, MODE 5, and MODE 6 with the reactor vessel head on.

ACTION:

- a. With one RHR relief valve inoperable, <sup>72 HOURS</sup> restore the inoperable valve to OPERABLE status within ~~7 days~~ or depressurize and vent the RCS through a greater than or equal to 2.7 square inch vent within the next 8 hours.
- b. With both RHR relief valves inoperable, within 8 hours either:
  1. Restore at least one RHR relief valve to OPERABLE status, or
  2. Depressurize and vent the RCS through a greater than or equal to 2.7 square inch vent.
- c. In the event an RHR relief valve or RCS vent is used to mitigate an RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the RHR relief valves or vent on the transient and any corrective action necessary to prevent recurrence.
- d. The provisions of Specification 3.0.4 are not applicable.

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APPLICABILITY:

MODE 4 when the temperature of any RCS cold leg is less than or equal to 300°F, MODE 5, and MODE 6 with the reactor vessel head on.

ACTION:

- a. With one RHR relief valve inoperable, restore the inoperable valve to OPERABLE status within 72 hours or depressurize and vent the RCS through a greater than or equal to 2.7 square inch vent within the next 8 hours.
- b. With both RHR relief valves inoperable, within 8 hours either:
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## EMERGENCY CORE COOLING SYSTEMS

### BASES

#### ECCS SUBSYSTEMS (Continued)

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE charging pump to be inoperable below 300°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single ~~PORV~~ *RHR SUCTION RELIEF VALVE*.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

#### 3/4.5.4 REFUELING WATER STORAGE TANK

The OPERABILITY of the Refueling Water Storage Tank (RWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of either a LOCA, a steamline break or inadvertent RCS depressurization. The limits on RWST minimum volume and boron concentration ensure 1) that sufficient water is available within containment to permit recirculation cooling flow to the core, 2) that the reactor will remain subcritical in the cold condition (68 to 212 degrees-F) following a small break LOCA assuming complete mixing of the RWST, RCS, Spray Additive Tank (SAT), containment spray system piping and ECCS water volumes with all control rods inserted except the most reactive control rod assembly (ARI-1), 3) that the reactor will remain subcritical in the cold condition following a large break LOCA (break flow area  $> 3.0$  sq. ft.) assuming complete mixing of the RWST, RCS, ECCS water and other sources of water that may eventually reside in the sump post-LOCA with all control rods assumed to be out (ARO), 4) long term subcriticality following a steamline break assuming ARI-1 and preclude fuel failure.

The maximum allowable value for the RWST boron concentration forms the basis for determining the time (Post-LOCA) at which operator action is required to switch over the ECCS to hot leg recirculation in order to avoid precipitation of the soluble boron.

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics

## EMERGENCY CORE COOLING SYSTEMS

### BASES

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The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE charging pump to be inoperable below 300°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single RHR suction relief valve.

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SAFETY EVALUATION  
FOR REDUCING THE ALLOWED OUTAGE TIME IN  
THE VIRGIL C. SUMMER NUCLEAR STATION  
TECHNICAL SPECIFICATIONS

Description of Amendment Request

SCE&G proposes to modify the VCSNS Technical Specifications (TS) to reduce the allowed outage time (AOT) for the RHR Suction Relief Valves (SRV) (TS 3/4.4.9.3). These valves are used to prevent overpressurization of the RHR system and to protect the Reactor Coolant System (RCS) from pressure transients during low temperature operation (below 300°F). These relief valves, XVR8708A and XVR8708B, have a setpoint of 450 psig and each can relieve the Design Basis Low Temperature Overpressure Event Flow. These valves are aligned to the RCS whenever the RHR Suction Isolation Valves XVG8701A, XVG8702A, XVG8701B, XVG8702B are open.

The limits for operation in MODE 4 with  $T_{cold}$  less than or equal to 300°F, MODE 5, and MODE 6 with the reactor vessel head on, minimize the time exposure of the plant to a low temperature overpressure event. A low temperature overpressure event could potentially cause a rupture of the Reactor Coolant System which was not previously analyzed and which has the potential to uncover the core. Generic Letter 90-06 recommends an AOT of 24 hours. SCE&G proposes an AOT of 72 hours based on allowable outage times for other safeguards equipment of commensurate importance and function. Reduction of the AOT to 72 hours will decrease the probability of a low temperature overpressure event and still permit any required maintenance or testing to be performed in a safe manner.

Safety Evaluation

This proposed TS change will reduce the allowable time for the RHR Suction Relief Valves to be inoperable while in MODE 4 with  $T_{cold}$  less than or equal to 300°F, MODE 5, and MODE 6 with the reactor vessel head on. The decrease in time is from 7 days (168 hours) to 72 hours and is based on the resolution to Generic Issue 94, found in Generic Letter 90-06. Please note that the proposed change to 72 hours is contrary to the AOT of 24 hours recommended by the NRC. SCE&G contends that the proposed 24 hour AOT is unnecessarily restrictive and, therefore proposes a 72 hour AOT on the following basis.

The allowed outage time for the ECCS subsystems while at power is 72 hours. This time limit has not been determined to be excessive. The RHR system is a component of the ECCS for accident mitigation and has this AOT while at power.

The intent of this decrease in AOT is to maximize the availability of the RHR SRVs during the period when a low temperature overpressure event would be likely to occur. SCE&G does not consider 72 hours an excessive amount of time for one train of Low Temperature Overpressure Protection to be inoperable. Since the system design provides for two trains, each with 100% relief capability, the proposed AOT results in an overly conservative time constraint for the plant's ability to respond to an out of service condition for a relief valve. Also, plant procedures provide administrative controls which minimize the probability of the initiation of an overpressure event.

NO SIGNIFICANT HAZARDS EVALUATION FOR REDUCING  
THE ALLOWED OUTAGE TIME OF THE RHR SUCTION  
RELIEF VALVES IN THE VIRGIL C. SUMMER NUCLEAR STATION  
TECHNICAL SPECIFICATIONS 3/4.4.9.3

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Basis For No Significant Hazards Consideration Determination

SCE&G has evaluated the proposed changes to the VCSNS Technical Specifications described above against the Significant Hazards Criteria listed in 10 CFR 50.92 and has determined that the changes do not involve any significant hazards for the following reasons:

1. The probability or consequences of an accident previously evaluated is not significantly increased.

This change decreases the allowed outage time of a Low Temperature Overpressure Protection (LTOP) system. There is no hardware, software, or operating methodology change, so there is no increase in probability or consequences. Since the time allowed for one train of this equipment to be inoperable is shorter, the probability of an overpressure event not being mitigated has also been reduced. The consequences will not change unless the system or operation of the system changes.

2. Create the possibility of a new or different kind of accident from any previously analyzed.

As this proposed change will not involve any changes to hardware, software, or operating practices, it cannot create any possibility of new or different kinds of accidents from those previously analyzed. The

RHR SRVs are intended to provide protection against a rupture of a pressure boundary from an over-pressure condition which has the potential to result in core uncover. The original design basis of the plant complies with the requirements of 10 CFR 50 Appendix G and uses the RHR SRVs to meet the fracture toughness requirements of 10 CFR 50 Appendix G. This change only increases the availability of this protection and does not create any new or different kinds of accidents.

3. Involve a significant reduction in a margin of safety.

SCE&G already has administrative controls in place to minimize the possibility of an overpressure event occurring as well as to assure that there are two trains of LTOP equipment operable during the modes when the potential exists for this event. There are controls to preclude the inadvertent start-up of a Reactor Coolant Pump or Charging Pump and controls to assure that both RHR Suction Isolation Valves for each train are open and remain open except for testing and maintenance. This alignment is maintained until the RHR System is realigned for its ECCS function. These controls are proceduralized in plant operating procedures.

This change does not involve a significant reduction in a margin of safety as nothing is changed which affects the margin in a negative direction. The decrease in AOT actually increases the margin since the allowed time for one train to be inoperable has been reduced.