Thomas P. Joyce
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PSEG Nuclear LLC

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

SUPPLEMENT TO REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS REGARDING EMERGENCY CORE COOLING SYSTEMS
Tavg < 350°F
SALEM GENERATING STATION - UNIT 1 AND UNIT 2
DOCKET NOS. 50-272 AND 50-311
FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75

Reference: LR-N05-0003, "Request for Change to Technical Specifications Emergency Core Cooling Systems Tavg < 350°F," dated February 10, 2005

The proposed amendment referenced above modifies Emergency Core Cooling System (ECCS) Subsystems surveillance requirement by increasing the flexibility of operating a Safety Injection pump provided it is isolated from the Reactor Coolant System. Through several telephone conference calls, the NRC requested that PSEG provide clarification to ensure that two independent means of preventing Reactor Coolant System injection be utilized while running the Safety Injection pump for Technical Specifications (TS) Surveillance requirement 4.5.3.2.b. PSEG has reviewed the previously submitted amendment request and has determined that changes to the proposed specification and associated bases are necessary to provide the assurance that two independent means of isolation will be assured.

Attachment 1 provides the revised marked-up TS pages and TS Bases pages. PSEG has determined that the previously submitted amendment request and determination of no significant hazards consideration remain valid and do not require modification as a result of the proposed changes.

A001

Should you have any questions regarding this request, please contact Mr. Steve Mannon at (856) 339-1129.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 10/20/05 (Date)

Sincerely,

Thomas P. Joyce
Site Vice President
Salem Generating Station

Attachment (1)

C Mr. S. Collins, Administrator - Region 1
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

U.S. Nuclear Regulatory Commission
ATTN: Mr. S. Bailey, Licensing Project Manager - Salem
Mail Stop 08B1
Washington, DC 20555

USNRC Senior Resident Inspector - (Salem X24)

Mr. K. Tosch, Manager IV
Bureau of Nuclear Engineering
P.O. Box 415
Trenton, NJ 08625

MARKED-UP TECHNICAL SPECIFICATION AND BASES PAGES

REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS REGARDING EMERGENCY CORE COOLING SYSTEMS Tavg < 350°F

SALEM GENERATING STATION - UNIT 1 AND UNIT 2
DOCKET NOS. 50-272 AND 50-311
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EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - Tavg < 350°F

SURVEILLANCE REQUIREMENTS

4.5.3.1 The ECCS subsystem shall be demonstrated OPERABLE per applicable Surveillance Requirements of 4.5.2.

4.5.3.2 All safety injection pumps and centrifugal charging pumps, except the above required OPERABLE pump, shall be demonstrated to be inoperable at least once per 12 hours while in MODE 4 and the temperature of one or more of the RCS cold legs is less than or equal to 312°F, MODE 5, or MODE 6 when the head is on the reactor vessel by either of the following methods:

a. By verifying that the motor circuit breakers have been removed from their electrical power supply circuits or,

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b. For testing purposes, by verifying that the pump is in a recirculation flow path and that the manual discharge valve or disabled automatic valve(s) are closed.

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two independent means of preventing RCS injection are utilized.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 ACCUMULATORS

The OPERABILITY of each RCS accumulator ensures that a sufficient volume of borated water will be immediately forced into the reactor core through each of the cold legs in the event the RCS pressure falls below the pressure of the accumulators. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on accumulator volume, boron concentration and pressure ensure that the assumptions used for accumulator injection in the safety analysis are met.

The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required.

The limits for operation with an accumulator inoperable for any reason except an isolation valve closed minimizes the time exposure of the plant to a LOCA event occurring concurrent with failure of an additional accumulator which may result in unacceptable peak cladding temperatures. If a closed isolation valve cannot be immediately opened, the full capability of one accumulator is not available and prompt action is required to place the reactor in a mode where this capability is not required.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long term core cooling capability in the recirculation mode during the accident recovery period.

The limitation for a maximum of one safety injection pump or centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all safety injection pumps except the allowed OPERABLE pump to be inoperable below 312°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single POPs relief valve.

When running a safety injection pump with the RCS temperature less than 350°F with a potential for injecting into the RCS and creating a mass addition pressure transient, two independent means of preventing reactor coolant system injection will be utilized. The two independent means can be satisfied by any one of the following methods:

(1) A manual isolation valve locked in the close position; or
(2) Two manual isolation valves closed; or
(3) One motor operated valve closed and its breaker de-energized and control circuit fuses removed.

EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - Tavg < 350°F

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(2) Two manual isolation valves closed; or
(3) One motor operated valve closed and its breaker de-energized and control circuit fuses removed.

ECCS SUBSYSTEMS (Continued)

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The limitation for a maximum of one safety injection pump or one centrifugal charging pump to be OPERABLE and the Surveillance requirement to verify all safety injection pumps except the allowed OPERABLE safety injection pump to be inoperable below 312°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single POPS relief valve.

The surveillance requirements, which are provided to ensure OPERABILITY of each component, ensure that, at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. The safety analyses make the assumptions with respect to: 1) both the maximum and minimum total system resistance, and 2) both the maximum and minimum branch injection line resistance. These resistances, in conjunction with the ranges of potential pump performance, are used to calculate the maximum and minimum ECCS flow assumed in the safety analyses.

The maximum and minimum flow surveillance requirements in conjunction with the maximum and minimum pump performance curves ensures that the assumptions of total system resistance and the distribution of that system resistance among the various paths are met.

The maximum total pump flow surveillance requirements ensure the pump runout limits of 560 gpm for the centrifugal charging pumps and 675 gpm for the safety injection pumps are not exceeded. Due to the effect of pump suction boost alignment, the runout limits for the surveillance criteria are $\leq$ 554 gpm for C/SI pumps, $\leq$ 664 gpm for SI pumps in cold leg alignment and $\leq$ 654 gpm for SI pumps in hot leg alignment.

The surveillance requirement for the maximum difference between the maximum and minimum individual injection line flows ensure that the minimum individual injection line resistance assumed for the spilling line following a LOCA is met.

3/4.5.4 SEAL INJECTION FLOW

The Reactor Coolant Pump (RCP) seal injection flow restriction limits the amount of ECCS flow that would be diverted from the injection path following an ECCS actuation. This limit is based on safety analysis assumptions, since RCP seal injection flow is not isolated during Safety Injection (SI).

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b. By verifying that the pump is in a recirculation flow path and that two independent means of preventing RCS injection are utilized.

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