(b) When the water level above the top of the irradiated fuel assemblies seated within the reactor vessel is less than 15 feet, both shutdown cooling heat exchangers and at least two LPSI or containment spray pumps shall be operable.

Exceptions

All decay heat removal loops may be made inoperable for up to 8 hours provided (1) no operations are permitted that would cause dilution of the reactor coolant system boron concentration, (2) no refueling operations are taking place, and (3) all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere are closed within 4 hours.

(5) At least one reactor coolant pump or one low pressure safety injection pump in the shutdown cooling mode shall be in operation whenever a change is being made in the boron concentration of the reactor coolant when fuel is in the reactor.

(6) Both steam generators shall be filled above the low steam generator water level trip set point and available to remove decay heat whenever the average temperature of the reactor coolant is above 300°F. Each steam generator shall be demonstrated operable by performance of the in-service inspection program specified in Section 3.3(2) prior to exceeding a reactor coolant temperature of 300°F.

(7) Maximum reactor coolant system hydrostatic test pressure shall be 3125 psia. A maximum of 10 cycles of 3125 psia hydrostatic tests are allowed.

(8) Reactor coolant system leak and hydrostatic tests shall be conducted within the limitations of Figures 2-1A and 2-1B.

(9) Maximum secondary hydrostatic test pressure shall not exceed 1250 psia. A minimum measured temperature of 73°F is required. Only 10 cycles are permitted.

(10) Maximum steam generator steam side leak test pressure shall not exceed 1000 psia. A minimum measured temperature of 73°F is required.

(11) A non-operating reactor coolant pump shall not be started unless at least one of the following conditions are met:

The requirement to have two shutdown cooling pumps operable when there is less than 15 feet of water above the core ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capability. With the reactor vessel head removed and 15 feet of water above the core, a large heat sink is available for core cooling; thus, in the event of a failure of the operating shutdown cooling loop, adequate time is provided to initiate emergency procedures to cool the core.

When reactor coolant boron concentration is being changed, the process must be uniform throughout the reactor coolant system volume to prevent stratification of reactor coolant at lower boron concentration which could result in a reactivity insertion. Sufficient mixing of the reactor coolant is assured if one low pressure safety injection pump or one reactor coolant pump is in operation. The low pressure safety injection pump will circulate the reactor coolant system volume in less than 35 minutes when operated at rated capacity. The pressurizer volume is relatively inactive; therefore, it will tend to have a boron concentration higher than the rest of the reactor coolant system during a dilution operation. Administrative procedures will provide for use of pressurizer sprays to maintain a nominal spread between the boron concentration in the pressurizer and the reactor coolant system during the addition of boron.(1)

Both steam generators are required to be filled above the low steam generator water level trip set point whenever the temperature of the reactor coolant is greater than the design temperature of the shutdown cooling system to assure a redundant heat removal system for the reactor. The design cyclic transients for the reactor system are given in USAR Section 4.2.2. In addition, the steam generators are designed for additional conditions listed in USAR Section 4.3.4. Flooded and pressurized conditions on the steam side assure minimum tube sheet temperature differential during leak testing. The minimum temperature for pressurizing the steam generator steam side is 70°F; in measuring this temperature, the instrument accuracy must be added to the 70°F limit to determine the actual measured limit. The measured temperature limit will be 73°F based upon use of an instrument with a maximum inaccuracy of ±2°F and an additional 1°F safety margin. Formation of a 60% steam space ensures that the resulting pressure increase would not result in any overpressurization, should a reactor coolant pump be started when the steam generator secondary side temperature is greater than that of the RCS cold leg.

For the case in which no pressurizer steam space exists, limitation of the steam generator secondary side/RCS cold leg ΔT to 50°F ensures that a single low set point PORV would prevent an overpressurization due to actuation of a reactor coolant pump. The exception to Specification 2.1.1(4) requiring all containment penetrations providing direct access from the containment to the outside atmosphere be closed within 4 hours requires that the equipment hatch be closed and held in place by a minimum of four bolts.

References

(1) USAR Section 4.3.7

DISCUSSION

The proposed emergency amendment application is submitted to account for the method used for measuring the steam generator secondary side temperature. The existing limit on temperature for the secondary side of the steam generators when performing the hydrostatic or leak tests is 82°F. This limit is based on the 70°F limit specified by Combustion Engineering, Inc. in Section 1-1-3 of Steam Generators Instruction Manual, Book No. 71266 plus an assumed 12°F instrument error on feedwater temperature indication. However, to conduct the hydrostatic test, the feedwater temperature indicators must be isolated. Additionally, without the primary side of the steam generator being filled, there is no available heat source to increase the secondary side temperature. Accordingly, the steam generator temperature will equalize with containment ambient temperature (normally 72-78°F) and by use of a more accurate temperature instrument the District can ensure the 70°F temperature limit will not be exceeded. Thus, the proposed amendment application will ensure the District maintains the required minimum temperature of 70°F for the secondary side steam generator hydrostatic or leak tests. This will be accomplished by use of a contact temperature instrument with a maximum verified inaccuracy of $\leq \pm 2$°F. An additional safety margin of 1°F will be included such that measured temperature of the steam generator surface shall not be less than 73°F. Additionally, temperatures will be measured as a minimum at the bottom wide range steam generator level handhole and the upper manway cover to account for temperature gradients in the steam generator.

JUSTIFICATION FOR FEE CLASSIFICATION

The proposed amendment is deemed to be Class III, within the meaning of 10 CFR 170.22, in that it involves a single safety concern.

ATTACHMENT C