

EMERGENCY CORE COOLING SYSTEMS

3/4.5.5 REFUELING WATER STORAGE TANK

LIMITING CONDITION FOR OPERATION

3.5.5 The refueling water storage tank (RWST) shall be OPERABLE with:

- a. A minimum contained borated water volume of 394,000 gallons,
- b. A boron concentration of between 2400 and 2500 ppm of boron,
- c. A minimum solution temperature of 37°F, and
- d. A maximum solution temperature of 100°F.

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

ACTION:

- a. With the RWST inoperable due to the boron concentration not being within the specified limits, restore the tank to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With the RWST inoperable for reasons other than the boron concentration not being within the specified limits, restore the tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.5 The RWST shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 - 1) Verifying the contained borated water volume in the tank, and
 - 2) Verifying the boron concentration of the water.
- b. At least once per 24 hours by verifying the RWST temperature when the outside air temperature is either less than 37°F or greater than 100°F.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 91 TO FACILITY OPERATING LICENSE NO. NPF-42

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

1.0 INTRODUCTION

By letter dated September 14, 1995, Wolf Creek Nuclear Operating Corporation (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-42) for the Wolf Creek Generating Station. The proposed changes would revise Technical Specification 3/4.5.5 to increase the allowed outage time of the refueling water storage tank (RWST), for adjustment of boron concentration, from 1 hour to 8 hours. Specifically, the current action statement would be deleted and replaced with two action statements. Action statement (a) would specify the requirements when the RWST is inoperable due to the boron concentration not being within the specified limits. The action statement would provide 8 hours to restore the boron concentration to within the required limits. If the boron concentration were not restored within 8 hours, the action statement would require that the unit be in HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours. Action statement (b) would specify the requirements when the RWST is inoperable due to reasons other than the boron concentration not being within the specified limits. This approach is consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants."

2.0 BACKGROUND

The RWST, which contains approximately 400,000 gallons of borated water with a boron concentration between 2400 and 2500 ppm, is a passive component of the emergency core cooling system (ECCS). The RWST provides storage for borated demineralized water to supply to the refueling pool during refueling, to the chemical and volume control system (CVCS) during abnormal operating conditions, and to the containment spray system and the ECCS during accident conditions.

During normal plant operation (except for refueling and testing), the RWST performs no plant functions and is aligned to provide borated water to the containment spray pumps, safety injection pumps, and residual heat removal pumps. Each redundant pump is individually fed by a separate line, containing a check valve and a motor operated valve, from the RWST supply header. Except for the centrifugal charging pump suction valves, all ECCS and containment spray system pump suction valves are normally in an open position.

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The centrifugal charging pump suction isolation valves from the RWST are normally closed to allow suction from the volume control tank. If a low-low level in the volume control tank is reached, these valves automatically open to provide an alternate source of charging water from the RWST. Upon receipt of the low-low signal, the suction valves from the volume control tank close. These valves are interlocked to preclude closure prior to full opening of the RWST suction valves.

3.0 EVALUATION

As indicated above, the RWST only supplies borated water upon a containment spray system actuation, upon ECCS actuation, or when called upon during abnormal operating conditions or refueling. As such, its boron concentration is not affected by changing plant conditions or process variations. Some closed lines to and from the tank may be administratively opened if required to provide recirculation for pump testing or to allow operation of the purification system. In those cases, the water from the tank is returned to the tank without changing the boron concentration. Boron concentration can be changed through dilution with water of lower boron concentration than that in the tank. However, the administrative controls for RWST makeup make inadvertent or incorrect makeup unlikely.

Boron concentration changes could affect the accident analyses pertaining to the following events: loss-of-coolant accident, inadvertent ECCS actuation, main steamline break, feedwater line break, and steam generator tube rupture. However, as discussed in the licensee's submittal, the expected deviation of the boron concentration from the TS-required concentration would be small, and (1) small changes to the minimum limit on boron concentration for an additional 7 hours would have little effect on the results of the affected analysis, and (2) small changes to the maximum limit on boron concentration would not have a significant effect on the post-LOCA sump solution pH value or on the maximum allowable time to switch to hot-leg recirculation.

The change to an 8-hour allowed outage time for the RWST due to boron concentration may have positive effects on plant safety by reducing the probability of unnecessary plant transients and shutdowns. The additional time provides a better opportunity to determine the cause of a boron concentration problem, identify and institute appropriate corrective actions, and conduct any needed post-maintenance verification. Additionally, this change is consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants."

The staff finds the licensee's assessment acceptable to support the increase in the allowed outage time for the RWST for adjustment of boron concentration from 1 to 8 hours.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Kansas State Official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (60 FR 52936). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: K. Thomas

Date: November 13, 1995