BEFORE THE UNITED STATES

NUCLEAR REGULATORY COMMISSION

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| In the Matter of | ) | |
| | ) | |
| Omaha Public Power District | ) | Docket No. 50-285 |
| (Fort Calhoun Station | ) | |
| Unit No. 1) | ) | |

APPLICATION FOR AMENDMENT
OF
OPERATING LICENSE

Pursuant to Section 50.90 of the regulations of the U. S. Nuclear Regulatory Commission ("the Commission"), Omaha Public Power District, holder of Facility Operating License No. DPR-40, herewith requests that the Technical Specifications set forth in Appendix A to that License be amended to change the Chemical and Volume Control System.

A revised Discussion, Justification and No Significant Hazards Consideration Analysis, which demonstrates that the proposed changes do not involve significant hazards considerations, is appended in Attachment B. The proposed changes in specifications would not authorize any change in the types or any increase in the amounts of effluents or a change in the authorized power level of the facility.

WHEREFORE, Applicant respectfully requests that Sections 1, 2, 3, and 5 of Appendix A to Facility Operating License No. DPR-40 be amended in the form attached hereto as Attachment A.

A copy of this Application, including its attachments, has been submitted to the Director - Nebraska State Division of Radiological Health, as required by 10 CFR 50.91.

OMAHA PUBLIC POWER DISTRICT

By W. Gary Gates
Division Manager
Nuclear Operations

Subscribed and sworn to before me this 25 day of April, 1990.

Melva L. Evans
Notary Public

GENERAL NOTARY - State of Nebraska
MELVA L. EVANS
My Comm. Exp. 2-11-92

Basis for No Significant Hazards Considerations

The proposed change to Section 2.2, Chemical and Volume Control System will revise Technical Specifications 2.2(2).c, 2.2.(2).d., 2.2.(2).e, 2.2.(3).c, 2.2.(3).d, 2.2.(3).e and 2.2.(3).f, add Figure 2-11, and 2-12 and amend the basis and reference.

The specifications define: (1) the volume and concentration of boric acid to be maintained in the Safety Injection Refueling Water Tank (SIRWT) and Boric Acid Storage Tanks (BAST) for cooldown of the plant; and (2) and flow paths from the BAST to the reactor coolant system during the various modes of plant operation.

Technical Specification Section 2.2.(2).c and 2.2.(2).d specify the minimum tank levels and system flow paths to ensure that an adequate source of boric acid is available to provide a 4.0% delta k/k shutdown margin during a plant cooldown. The flow path available will determine if the required volume of borated water can be either the combined volume of the two BASTs, or the minimum in each BAST, or can be contained in a specific BAST. The most conservative cooldown requirements have been utilized in the determination of the minimum BAST level along with application of appropriate biases and uncertainties for level indication, vortex generation, and auxiliary spray usage. Single failure requirements with operator action have been identified to ensure the ability of the boric acid system to perform its safety function of plant cooldown. Credit is not taken in any of the safety analyses including the LOCA analysis for concentrated boric acid injection to mitigate an accident or anticipated operational occurrence.

Technical Specification Section 2.2.(2).e is deleted as heat tracing of the boric acid system is no longer required to prevent precipitation of boric acid from solution. The reduction of the concentration range to be maintained in one or both BASTs is specified in Figure 2-11. The new Figure 2-11 will represent the minimum required volume at a given concentration of boric acid to be maintained. The proposed change will allow this volume to be maintained as a combined volume in either or both of the BASTs. The concentration is in the range of approximately 2.5 to 4.5 weight percent boric acid. Figure 2-11 incorporates five curves which represent the minimum boric acid volume required from BASTs for a given SIRWT concentration.

In order to verify the minimum ambient temperature in the Auxiliary Building is sufficient to prevent boric acid precipitation an administrative procedure to monitor the temperature in the inservice BAST(s) and boric acid system piping will be implemented. The temperature values will be verified with Figure 2-12 to ensure operation at an acceptable concentration. Immediate actions will be required by operators should the concentration be identified as unacceptable. Sufficient operators actions will ensure that the boric acid system remains operable at all times. Operation at an unacceptable concentration will potentially restrict the ability to inject boron into the reactor coolant system, not prohibit the ability due to the line size and the acid concentration.

Technical Specification Section 2.2.(3).c and 2.2.(3).d are deleted since they specify the minimum system configuration requirements for the equipment during

operation. The system flow paths have been established in Section 2.2.(2).d to ensure sufficient boric acid is available for injection to the RCS. The proposed change will require that both the gravity feed and the boric acid transfer pumps are operable. There is one gravity feed path and one boric acid pump path from each BAST. If the combined volume of boric acid required is contained as a combined volume between the two BASTs, then the proposed change will required both gravity feed paths and both boric acid transfer pump paths be operable. If the minimum boric acid requirements are being satisfied by one BAST, then the proposed change will allow one BAST to be out of service for 72 hours based on standard technical specifications duration.

Technical Specification Section 2.2.(3).e is deleted as it specifies the minimum heat tracing operability. The reduction of the concentration range to be maintained in one or both BASTs is specified in Figure 2-11. The new Figure 2-11 will represent the minimum required volume at a given concentration of boric acid to be maintained. The proposed change will allow this volume to be maintained as a combined volume in either or both of the BASTs. The concentration is in the range of approximately 2.5 to 4.5 weight percent boric acid. Figure 2-11 incorporates five curves which represent the minimum boric acid volume required from BASTs for a given SIRWT concentration.

Technical Specification Section 2.2.(3).f has been changed to 2.2.(3).c for consistency in numbering for the section.

Technical Specification 2.2.(3).d has been added to specify a 72 hour duration for one of the BASTs to be removed from service. This time period is consistent with the standard technical specifications utilized by other Combustion Engineering Plants.

Figure 2-11 specifies the minimum required boric acid tank volume as a function of concentration to maintain the shutdown margin of 4.0% delta k/k at all times during a cooldown to 210°F. To set the minimum BAST volume corresponding to the various BAST and SIRWT concentrations a parametric analysis was completed to calculate the required boric acid concentration to maintain the 4.0% delta k/k shutdown margin for various BAST and SIRWT level versus RCS temperature.

Figure 2-12 specifies the acceptable boric acid concentration for system temperature to ensure the solubility of the boric acid in water. The curve is derived from the US Borax & Chemical Corporation Technical Data Sheet for boric acid solubility in water. A 10°F bias has been added to the US Borax temperature value to account for temperature measurement uncertainty and to provide for additional solubility margin. This is consistent with the proposed changes described above.

The basis of Technical Specification Section 2.2 has been amended to reflect the proposed change as described in the justification and discussion evaluation. This is consistent with the proposed changes described above.

The reference "FSAR, Section 9.2" has been changed to "USAR, Section 9.2" as the FSAR has been replaced by the USAR. This is an administrative change and does not have any impact on the Technical Specification.

The proposed amendment to the Technical Specification does not involve a significant hazards consideration because the operation of the Fort Calhoun Station in Accordance with this amendment would not:

(1) Involve a significant increase in the probability of occurrence or consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report. The boric acid system is not utilized in the safety analysis report to mitigate the consequences of an accident or malfunction. From the standpoint of reactivity control, the BAST and SIRWT concentrations ensure that a minimum of 4.0% shutdown margin is maintained during a cooldown from hot standby to cold shutdown as described in the safe shutdown scenario described below.

The plant is in hot standby and has been held at hot zero power conditions with the most reactive rod stuck in the full out position for 23.5 hours following a power reduction from 100% to 0%. (The Xenon peak after shutdown will have decayed back to the 100% power equilibrium Xenon level. Further Xenon decay will add positive reactivity to the core during the plant cooldown). No credit was taken for the negative activity effects of the Xenon concentration peak following the power reduction. At 23.5 hours offsite power is lost and the plant goes into natural circulation. All non-safety grade plant equipment and components are lost. During the natural circulation cooldown the RCS average temperature initially rises 25°F due to decay heat in the core. The initial temperature at the start of the cooldown is 557°F.

Approximately 0.5 hours later, at 24 hours, the operators commence a cooldown to cold shutdown (210°F). The proposed volume and flow path requirements will ensure that the plant can be brought to cold shutdown conditions assuming letdown is unavailable, in conjunction with the loss of offsite power, and assuming the limiting single failure. Therefore, the proposed change does not increase the probability or consequences of an accident or malfunction of equipment important to safety.

(2) Create the possibility for an accident or malfunction of a new or different type than previously evaluated in the safety analysis report. The proposed change does not physically alter the configuration of the plant and no new or different mode of operation has been implemented. Therefore, the possibility of an accident or malfunction of a new or different type than any previously evaluated in the safety analysis report.

(3) Involve a significant reduction in the margin of safety as defined in the basis for any Technical Specification. The proposed change maintains the basis of the safety analysis. In addition, the more restrictive requirements of boron flow paths effectively ensure that the plant can be brought to cold shutdown in the limiting safe shutdown scenario. Therefore, the margin of safety as defined in the basis for the Technical Specification is not reduced.

Based on the above considerations, OPPD does not believe that this amendment involves a significant hazards consideration as defined by 10CFR50.92 and the proposed changes will not result in a condition which significantly alters the impact of the station on the environment. Thus, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10CFR51.22(e)(9) and pursuant to 10CFR51.22(b) no environmental impact or environmental assessment need be prepared.