

BEFORE THE UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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 reflect changes to the Limiting Conditions for Operations for the Chemical and Volume Control System.

The proposed changes in Technical Specifications are discussed in Attachment A to this Application. A 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 the definitions and Sections 2 and 3 of Appendix A to Facility Operating License No. DPR-40 be amended in the form attached hereto as Attachment A.

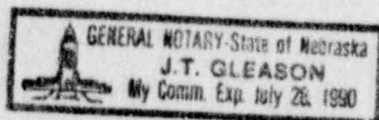
A copy of this Application, including its attachments, has been submitted to the Director - Nebraska State Division of Radiological Health, as required by 10 CFR 50.91.

OMAHA PUBLIC POWER DISTRICT

By *H. J. Morris*  
Division Manager  
Nuclear Operations

Subscribed and sworn to before me this 20TH day of December, 1989.

*J. T. Gleason*  
Notary Public



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

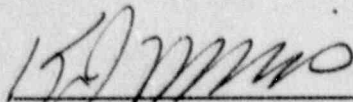
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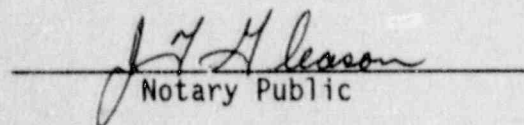
K. J. Morris, being duly sworn, hereby deposes and says that he is the Division Manager - Nuclear Operations of the Omaha Public Power District; that as such he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached information concerning the Application for Amendment dated December 20, 1989, concerning the Limiting Condition for Operation for the Chemical and Volume Control System; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information, and belief.



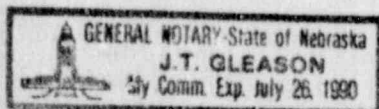
K. J. Morris  
Division Manager  
Nuclear Operations

STATE OF NEBRASKA)  
) ss  
COUNTY OF DOUGLAS)

Subscribed and sworn to before me, a Notary Public in and for the State of Nebraska on this 20TH day of December, 1989.



Notary Public



**ATTACHMENT A**

2.0 LIMITING CONDITIONS FOR OPERATION

2.2 Chemical and Volume Control System

Applicability

Applies to the operational status of the chemical and volume control system.

Objective

To define those conditions of the chemical and volume control system necessary to assure safe reactor operation.

Specifications

- (1) When fuel is in the reactor, there shall be at least one flow path to the core for boric acid injection.
- (2) The reactor shall not be made critical unless all the following minimum requirements are met:
  - a. At least two charging pumps shall be operable.
  - b. One boric acid transfer pump shall be operable.
  - c. The two concentrated boric acid tanks together shall contain a minimum of 68 inches of a 6-1/4 percent to 12 percent by weight boric acid solution at a temperature of at least 20°F above saturation temperature for the concentration present in the tank.
  - d. System piping and valves shall be operable to the extent of establishing two flow paths from the concentrated boric acid tanks to the reactor coolant system and a flow path from the SIRW tank to the charging pumps.
  - e. Both channels of heat tracing shall be operable for the above flow paths.
  - f. Both level instruments on the concentrated boric acid tanks shall be operable.

(3) Modification of Minimum Requirements

During power operation, the minimum requirements may be modified to allow any one of the following conditions to exist at any one time. If the system is not restored to meet the minimum requirements within the time period specified, the reactor will be placed in a hot shutdown condition in 4 hours. If the minimum requirements are not satisfied within an additional 48 hours, a cold shutdown shall be initiated.

2.0 LIMITING CONDITIONS FOR OPERATION2.2 Chemical and Volume Control System (Continued)

- a. One of the operable charging pumps may be removed from service provided two charging pumps are operable within 24 hours.
- b. Both boric acid pumps may be out of service for 24 hours.
- c. One concentrated boric acid tank may be out of service provided a minimum of 68 inches of 6-1/4 percent to 12 percent by weight boric acid solution at a temperature of at least 20°F above saturation temperature is contained in the operable tank and provided that the tank is restored to operable status within 24 hours.
- d. One flow path from the concentrated boric acid tanks to the reactor coolant system may be operable provided either the other flow path from the concentrated boric acid tanks to the reactor coolant system or the flow path from the SIRW tank to the charging pumps is restored to operable status within 24 hours.
- e. One channel of neoc tracing may be out of service provided it is restored to operable status within 24 hours.
- f. One level instrument on each concentrated boric acid tank may be out of service for 24 hours.

Basis

The chemical and volume control system provides control of the reactor coolant system boron inventory. (1) This is normally accomplished by using any one of the three charging pumps in series with one of the two boric acid pumps. An alternate method of boration will be to use the charging pumps directly from the SIRW storage tank. A third method will be to depressurize and use the safety injection pumps. There are two sources of borated water available for injection through three different paths.

- (1) The boric acid pumps can deliver the concentrated boric acid tank contents (6-1/4 - 12 weight percent concentration of boric acid) to the charging pumps. The tanks are located above the charging pumps so that the boric acid will flow by gravity without being pumped.
- (2) The safety injection pumps can take suction from the SIRW tank (at least 1800 ppm boron solution).

2.0 LIMITING CONDITIONS FOR OPERATION  
2.2 Chemical and Volume Control System (Continued)

- (3) The charging pumps can take their suctions by gravity from either the boric acid tanks or the SIRW tank.

Each concentrated boric acid tank containing 68 inches of 5-1/4 weight percent boric acid has sufficient boron to bring the plant to a cold shutdown condition. Boric acid pumps are each of sufficient capacity to feed all three charging pumps at their maximum capacity.

The concentrated boric acid storage tank is sized for a 5-1/4 weight percent boric acid solution and is capable of storing solution up to 12 weight percent solution. All components of the system are capable of maintaining 12 weight percent solution. The elevation of the concentrated boric acid tank is sufficiently above the charging pump suction so as to provide adequate gravity flow to the charging pumps.

Duplicate heating equipment is provided on all components of the system to maintain the temperature of the surface to at least 160°F, which is 20°F above the saturation temperature of a 12 percent solution. Malfunction of any heater element will be annunciated in the control room in sufficient time to energize redundant heater elements before the 20°F limit above saturation temperature is reached; the 20°F limit also provides assurance that the plant can be shut down before the boric acid precipitation temperature is reached.

The SIRW tank contents are sufficient to borate the reactor coolant in order to reach cold shutdown at any time during core life.

The limits on component operability and the time periods for inoperability were selected on the basis of the redundancy indicated above and engineering judgment.

References

- (1) FSAR, Section 9.2