



444 South 16th Street Mall  
Omaha NE 68102-2247

October 8, 2002  
LIC-02-0101

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

- References:
1. Docket No. 50-285
  2. Letter from OPPD (R. T. Ridenoure) to NRC (Document Control Desk), "Fort Calhoun Station Unit No. 1 License Amendment Request, Steam and Feedwater Systems," dated July 23, 2002 (LIC-02-0065)

**SUBJECT: Fort Calhoun Station Unit No. 1 License Amendment Request,  
"Steam and Feedwater Systems" - Revision**

Pursuant to 10 CFR 50.90, Omaha Public Power District (OPPD) hereby requests the following amendment to Fort Calhoun Station (FCS) Technical Specifications 2.5. This proposed amendment will: (1) remove the requirement to demonstrate operability of redundant auxiliary feedwater system components, and (2) provide an allowed outage time to restore operability of the emergency feedwater storage tank. The changes requested in this letter supplement the application submitted in Reference 2.

This submittal revises the total completion time for Technical Specification 2.5.1.A, auxiliary feedwater turbine steam supply, from ten days to eight days. The proposed completion time now agrees with the assumptions used in the improved technical specifications, NUREG 1432. Attachment 1 contains replacement pages for the Technical Specification and Basis changes requested in Reference 2. Attachment 2 contains replacement pages for the clean version reflecting the requested Technical Specification and Basis changes.

The basis and conclusions reached in the Discussion, Justification and No significant Hazards Consideration provided in the July 23, 2002 submittal (Reference 2) remain valid and therefore are not resubmitted.

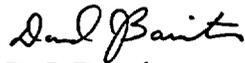
OPPD requests approval of the proposed amendment by January 15, 2003 and 120 days to implement this amendment. No commitments are made to the NRC in this letter.

I declare under penalty of perjury that the foregoing is true and correct. (Executed on October 8, 2002)

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If you have any questions or require additional information, please contact Dr. R. L. Jaworski at (402) 533-6833.

Sincerely,



D. J. Bannister  
Manager – Fort Calhoun Station

DJB/RRL/rrl

Attachments:

1. Replacement pages for the Markup of Technical Specification Pages
  2. Replacement pages for the Proposed Technical Specification Pages
- c: E. W. Merschoff, NRC Regional Administrator, Region IV  
A. B. Wang, NRC Project Manager  
J. G. Kramer, NRC Senior Resident Inspector  
Division Administrator - Public Health Assurance, State of Nebraska  
Winston & Strawn

# ATTACHMENT 1

Replacement pages for the  
Markup of  
Technical Specification Pages

# TECHNICAL SPECIFICATIONS

## 2.0 LIMITING CONDITIONS FOR OPERATION

### 2.5 Steam and Feedwater Systems

#### Applicability

Applies to the operating status of the steam and feedwater systems. When steam generators are relied upon for reactor coolant system heat removal.

#### NOTE:

When heating the reactor coolant above 300°F the steam driven auxiliary feedwater (AFW) pump is only required to be OPERABLE prior to making the reactor critical.

#### Objective

To define certain conditions for the steam and feedwater system necessary to assure adequate decay heat removal.

#### Specifications

The reactor coolant shall not be heated above 300°F unless the following conditions are met:

- (1) Two AFW trains shall be OPERABLE when  $T_{cold}$  is above 300°F.
  - A. With one steam supply to the turbine driven AFW pump inoperable, restore the steam supply to OPERABLE status within 7 days and within 8 days from discovery of failure to meet the LCO. The motor driven auxiliary feedwater pump is operable. The reactor shall not be made critical unless the steam driven auxiliary feedwater pump is operable. During modes 1 and 2, one auxiliary feedwater pump may be inoperable for up to 24 hours, provided that the redundant component shall be tested to demonstrate operability.
  - B. With one AFW train inoperable for reasons other than condition A, restore the AFW train to OPERABLE status within 24 hours.
  - C. If the required action and associated completion times of condition A or B are not met, then the unit shall be placed in MODE 2 in 6 hours, in MODE 3 in the next 6 hours, and less than 300°F without reliance on the steam generators for decay heat removal within the next 18 hours.
  - D. With both AFW trains inoperable, then initiate actions to restore one AFW train to OPERABLE status immediately. Technical Specification (TS) 2.0.1 and all TS actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.
- (2) The motor driven train is required to be OPERABLE when  $T_{cold}$  is below 300°F and the steam generators are relied upon for heat removal. With the motor driven AFW train inoperable, then initiate actions to restore one AFW train to OPERABLE status immediately. Technical Specification (TS) 2.0.1 and all TS actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.
- (23) A minimum of 55,000 gallons of water in the emergency feedwater storage tank (EFWST) and a backup water supply to the emergency feedwater storage tank shall be available. With the

## TECHNICAL SPECIFICATIONS

EFWST inoperable, verify operability of the backup water supply within four hours and once per 12 hours thereafter, and restore the EFWST to OPERABLE status within 24 hours. If these action requirements cannot be satisfied, then the unit shall be placed in at least MODE 3 within 6 hours, and less than 300°F without reliance on the steam generators for decay heat removal within the next 18 hours.

(3) ~~All valves, interlocks and piping associated with the above components required to function during accident conditions are operable. Manual valves that could interrupt auxiliary feedwater flow to the steam generators shall be locked in the required position to ensure a flow path to the steam generators.~~

(4) The main steam stop valves are ~~operable~~ OPERABLE when  $T_{\text{cold}}$  is above 300°F and capable of closing in four seconds or less under no-flow conditions.

### Basis

A reactor shutdown from power requires a removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condenser. Therefore, core decay heat can be continuously dissipated via the steam bypass to the condenser as long as feedwater to the steam generator is available. Normally, the capability to supply feedwater to the steam generators is provided by operation of the turbine cycle feedwater system. In the unlikely event of complete loss of electrical power to the station, decay heat removal is by steam discharge to the atmosphere via the main steam safety and atmospheric dump valves. Either auxiliary feed pump

## TECHNICAL SPECIFICATIONS

### 2.0 LIMITING CONDITIONS FOR OPERATION

#### 2.5 Steam and Feedwater Systems

can supply sufficient feedwater for removal of decay heat from the plant. Technical Specification 2.1.1 establishes when the steam generators are required for heat removal. Each train includes the pump, piping, instruments, and controls to ensure the availability of an OPERABLE flow path capable of taking suction from the EFWST and delivering water to the steam generators. The eight day completion time for 2.5(1)A provides a limit on the maximum time allowed for any combination of conditions to be inoperable during any continuous failure to meet the LCO. With one of the required AFW trains inoperable, actions must be taken to restore OPERABLE status within 24 hours. With no AFW trains OPERABLE the unit is in a seriously degraded condition with no safety related means for conducting a cooldown, and only limited means for conducting cooldown with nonsafety grade equipment. In such a condition the unit should not be perturbed by any action, including a power change, that might result in a trip.

The minimum amount of water in the emergency feedwater storage tank is the amount needed for 8 hours of such operation. The tank can be resupplied with water from the raw water system.<sup>(1)</sup>

A closure time of 4 seconds for the main steam stop valves is considered adequate time and was selected as being consistent with expected response time for instrumentation as detailed in the steam line break analysis.<sup>(2)(3)</sup>

#### References

- (1) USAR, Section 9.4.6
- (2) USAR, Section 10.3
- (3) USAR, Section 14.12

# ATTACHMENT 2

Replacement pages for the  
Proposed  
Technical Specification Pages

## TECHNICAL SPECIFICATIONS

### 2.0 LIMITING CONDITIONS FOR OPERATION

#### 2.5 Steam and Feedwater Systems

##### Applicability

When the steam generators are relied upon for reactor coolant system heat removal.

##### NOTE:

When heating the reactor coolant above 300°F the steam driven auxiliary feedwater (AFW) pump is only required to be OPERABLE prior to making the reactor critical.

##### Objective

To define certain conditions for the steam and feedwater system necessary to assure adequate decay heat removal.

##### Specifications

- (1) Two AFW trains shall be OPERABLE when  $T_{cold}$  is above 300°F.
  - A. With one steam supply to the turbine driven AFW pump inoperable, restore the steam supply to OPERABLE status within 7 days and within 8 days from discovery of failure to meet the LCO.
  - B. With one AFW train inoperable for reasons other than condition A, restore AFW train to OPERABLE status within 24 hours.
  - C. If the required action and associated completion times of condition A or B are not met, then the unit shall be placed in MODE 2 in 6 hours, in MODE 3 in the next 6 hours, and less than 300°F without reliance on the steam generators for decay heat removal within the next 18 hours.
  - D. With both AFW trains inoperable, then initiate actions to restore one AFW train to OPERABLE status immediately. Technical Specification (TS) 2.0.1 and all TS actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.
- (2) The motor driven train is required to be OPERABLE when  $T_{cold}$  is below 300°F and the steam generators are relied upon for heat removal. With the motor driven AFW train inoperable, then initiate actions to restore one AFW train to OPERABLE status immediately. Technical Specification (TS) 2.0.1 and all TS actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.
- (3) A minimum of 55,000 gallons of water in the emergency feedwater storage tank (EFWST) and a backup water supply to the emergency feedwater storage tank shall be available. With the EFWST inoperable verify operability of the backup water supply within four hours and once per 12 hours thereafter, and restore the EFWST to OPERABLE status within 24 hours. If these action requirements cannot be satisfied, then the unit shall be placed in at least MODE 3 within 6 hours, and less than 300°F without reliance on the steam generators for decay heat removal within the next 18 hours.
- (4) The main steam stop valves are OPERABLE when  $T_{cold}$  is above 300°F and capable of closing in four seconds or less under no-flow conditions.

## TECHNICAL SPECIFICATIONS

### 2.0 LIMITING CONDITIONS FOR OPERATION

#### 2.5 Steam and Feedwater Systems

##### Basis

A reactor shutdown from power requires a removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condenser. Therefore, core decay heat can be continuously dissipated via the steam bypass to the condenser as long as feedwater to the steam generator is available. Normally, the capability to supply feedwater to the steam generators is provided by operation of the turbine cycle feedwater system. In the unlikely event of complete loss of electrical power to the station, decay heat removal is by steam discharge to the atmosphere via the main steam safety and atmospheric dump valves. Either auxiliary feed pump can supply sufficient feedwater for removal of decay heat from the plant. Technical Specification 2.1.1 establishes when the steam generators are required for heat removal. Each train includes the pump, piping, instruments, and controls to ensure the availability of an OPERABLE flow path capable of taking suction from the EFWST and delivering water to the steam generators. The eight day completion time for 2.5(1)A provides a limit on the maximum time allowed for any combination of conditions to be inoperable during any continuous failure to meet the LCO. With one of the required AFW trains inoperable, actions must be taken to restore OPERABLE status within 24 hours. With no AFW trains OPERABLE the unit is in a seriously degraded condition with no safety related means for conducting a cooldown, and only limited means for conducting cooldown with nonsafety grade equipment. In such a condition the unit should not be perturbed by any action, including a power change, that might result in a trip.

The minimum amount of water in the emergency feedwater storage tank is the amount needed for 8 hours of such operation. The tank can be resupplied with water from the raw water system.<sup>(1)</sup>

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