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January 27, 2003  
LIC-02-0124

U.S. Nuclear Regulatory Commission  
ATTN.: Document Control Desk  
Washington, DC 20555-0001

- References:
1. Docket No. 50-285
  2. Fort Calhoun Station Unit No. 1 License Amendment Request, "Allowance to Perform Recirculation Actuation Logic Channel Functional Test," dated April 1, 2002 (LIC-02-0040)
  3. Letter from OPPD (R. T. Ridenoure) to NRC (Document Control Desk) dated April 10, 2002, "Revision to Fort Calhoun Station Unit No. 1 License Amendment Request, "Allowance to Perform Recirculation Actuation Logic Channel Functional Test,"" (LIC-02-0044)
  4. Letter from OPPD (R. T. Ridenoure) to NRC (Document Control Desk) dated April 15, 2002, "Supplemental Information Supporting the License Amendment Request, "Allowance to Perform Recirculation Actuation Logic Channel Functional Test"" (LIC-02-0048)
  5. Letter from NRC (A. B. Wang) to OPPD (R. T. Ridenoure) dated April 19, 2002, "Fort Calhoun Station Unit No. 1 – Issuance of Amendment (TAC No. MB4664) (NRC-02-059)

**SUBJECT: Fort Calhoun Station Unit No. 1 License Amendment Request, "Removal of Allowance to Perform Recirculation Actuation Logic Channel Functional Test"**

Pursuant to 10 CFR 50.90, Omaha Public Power District (OPPD) hereby transmits an application for amendment to the Fort Calhoun Station Unit 1 (FCS) Operating License. Attachment 1 provides the No Significant Hazards Evaluation and the technical bases for this requested change to the Technical Specifications (TS). Attachments 2 and 3 contain a marked-up and clean typed version reflecting the requested Technical Specification and Basis changes.

The proposed amendment deletes the allowance to perform the surveillance test of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls while components in excess of those allowed by Conditions a, b, d, and e of TS 2.3(2) are inoperable provided they are returned to operable status within one hour. This allowance was granted in Reference 5 on an exigent basis and applies only for the remainder of the current cycle. In References 2 and 3, OPPD committed to submittal of a permanent resolution to this

allowance no later than January 31, 2003. This License Amendment Request constitutes this permanent resolution.

A plant modification to install two test switches, which will preclude the need to rely on administrative controls to allow tested equipment to remain operable while performing the quarterly recirculation actuation logic channel functional test, will be performed during the Fall 2003 Refueling Outage.

OPPD requests approval of the proposed license amendment by August 1, 2003. OPPD requests 60 days to implement this amendment. No commitments are made to the NRC in this letter.

I declare under penalty of perjury that the forgoing is true and correct. (Executed on January 27, 2003.)

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

Sincerely,



D. J. Bannister  
Plant Manager  
Fort Calhoun Station

DJB/TRB/trb

Attachments

1. Fort Calhoun Station's Revised Evaluation for Amendment of Operating License
2. Mark-up of Technical Specifications
3. Clean Version of Technical Specifications

c: E. W. Merschoff, NRC Regional Administrator, Region IV  
A. B. Wang, NRC Project Manager  
John G. Kramer, NRC Senior Resident Inspector  
Division Administrator, Public Health Assurance, State of Nebraska  
Winston & Strawn

**Attachment 1**

**Fort Calhoun Station's Revised Evaluation  
For  
Allowance to Perform Recirculation Actuation Logic Channel Functional Test**

- 1.0 INTRODUCTION
- 2.0 DESCRIPTION OF PROPOSED AMENDMENT
- 3.0 BACKGROUND
- 4.0 REGULATORY REQUIREMENTS AND GUIDANCE
- 5.0 TECHNICAL ANALYSIS
- 6.0 REGULATORY ANALYSIS
- 7.0 NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
- 8.0 ENVIRONMENTAL CONSIDERATION
- 9.0 PRECEDENCE
- 10.0 REFERENCES

## 1.0 INTRODUCTION

This letter is a request to amend Operating License DPR-40 for the Fort Calhoun Station (FCS) Unit No. 1.

Omaha Public Power District (OPPD) proposes to delete the allowance to perform the surveillance test of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls. This allowance was granted in Reference 10.4 on an exigent basis and applies only for the remainder of the current operating cycle.

## 2.0 DESCRIPTION OF PROPOSED AMENDMENT

The proposed changes are as follows:

- (1) Delete item "i" of TS 2.3(2), page 2-21: "Components in excess of those allowed by Conditions a, b, d, and e may be inoperable provided they are returned to operable status within 1 hour when performing the quarterly recirculation actuation logic channel functional test (Table 3-2 item 20) under administrative controls. This allowance applies only to the remaining portion of Cycle 20 and all of Cycle 21."
- (2) Delete the following corresponding Basis text describing actions to be taken due to inoperability of system components: "Components in excess of those allowed by Conditions a, b, d, and e may be inoperable provided they are returned to operable status within 1 hour when performing the quarterly recirculation actuation logic channel functional test (Table 3-2 item 20) under administrative controls. This allowance applies only to the remaining portion of Cycle 20 and all of Cycle 21. This prevents violating Technical Specifications or necessitating a unit shutdown due to inability to perform the quarterly recirculation actuation logic channel functional test. These administrative controls consist of stationing three dedicated operators at the Engineered Safeguards Features (ESF) panel controls in the control room. In this way, the following conditions are maintained and actions can be rapidly performed should a valid ESF actuation occur:
  - the appropriate Safety Injection Refueling Water Tank (SIRWT) to Safety Injection (SI) and Containment Spray (CS) pumps suction valve control switch is maintained in the OPEN position (spring-return switch),
  - the appropriate SI and CS pumps to SIRWT recirculation minimum flow valve control switch is maintained in the OPEN position (spring-return switch),
  - the appropriate Recirculation Actuation Signal (RAS) lockout relays and initiating signal can be rapidly reset,
  - the appropriate SI and CS pumps to SIRWT recirculation minimum flow valve control switch can be rapidly returned to the AUTO position,

- the appropriate SIRWT to SI and CS pumps suction valve control switch can be rapidly returned to the AUTO position, and
- the appropriate Containment Sump to SI and CS pumps suction valve control switch can be rapidly returned to the AUTO position.

The appropriate SI and CS pumps to SIRWT recirculation minimum flow valve control switch and the appropriate SIRWT to SI and CS pumps suction valve control switch are held in the OPEN position during the test to enhance the reliability of the appropriate SI and CS pumps by maintaining the associated valves open.”

### 3.0 BACKGROUND

The proposed amendment deletes the allowance to perform the surveillance test of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls. This allowance was granted in Reference 10.4 on an exigent basis and applies only for the remainder of the current operating cycle.

FCS was licensed for full power operation in 1973 by the NRC. The Emergency Core Cooling System (ECCS) was designed with three HPSI pumps and two LPSI pumps that have a common recirculation minimum flow header to the SIRWT. During a Loss Of Coolant Accident (LOCA), or other accidents which generate a Safety Injection Actuation Signal (SIAS), the HPSI and LPSI pumps start and pressurize their injection headers. If Reactor Coolant System (RCS) pressure is higher than the shutoff head of these pumps, a single recirculation minimum flow line provides sufficient flow to allow all five pumps to operate without damage to the pumps.

After an accident that allows injection into the RCS, the recirculation actuation signal (RAS) automatically switches the HPSI and CS pump suction to the containment sump when the water level in the SIRWT falls to a preset level. At this time, the flow path from the containment sump is opened, the SIRWT flow path is closed, the LPSI pumps are stopped automatically, and water is recirculated from the containment sump by the HPSI and CS pumps.

The recirculation minimum flow line to the SIRWT is isolated by two valves in series to prevent depositing potentially contaminated water into a tank outside of the reactor containment building. These valves are normally open and fail open on loss of air or loss of 125 VDC power. These valves perform a passive safety function in the OPEN position. The valves are designed to provide a recirculation minimum flow path from the SI and CS pumps to the SIRWT to prevent deadheading the pumps during SI and CS. These valves also perform an active safety function in the closed position to isolate the SIRWT on a RAS signal. This effectively prevents depositing potentially radioactive water into a tank outside the containment building. At this stage of the accident, isolation of the recirculation minimum flow path is not a concern with respect to pump operability since

reactor coolant pressure would be well below the pump's discharge head and a minimum flow rate would be achieved.

During the recirculation actuation logic channel functional test, a RAS signal is generated and one of the recirculation minimum flow valves closes. Until a recent NRC inspection, OPPD thought that an operator could be used during the test to ensure that in the event of an ESF actuation the test could be rapidly terminated and the recirculation minimum flow valve opened to allow a minimum flow path for the HPSI and LPSI pumps. The actions required to be performed to allow the recirculation minimum flow valve to open can be rapidly performed by one dedicated operator in less than one minute. During the NRC Safety System Design and Performance Capability (SSDPC) inspection in February 2002, station personnel were informed that manual actions could not be used in lieu of automatic actions to maintain equipment operable without prior NRC approval. A comprehensive review was conducted of plant procedures that used manual actions in place of automatic actions in order to allow equipment to remain operable.

FCS has previously credited the use of dedicated operators to allow the tested equipment to remain operable. In upgrading the procedure to eliminate this practice, this channel functional test was identified as a procedure that could not be performed without seeking NRC approval for some change to the testing methodology. The amendment granted in Reference 10.4 allowed the continued testing of the logic channels using an improved methodology (i.e., one that does not isolate the recirculation minimum flow path) for a limited time to allow careful consideration of the appropriate approach to any permanent changes to the Technical Specifications or the plant.

A plant modification to install two test switches, which will preclude the need to rely on administrative controls to allow tested equipment to remain operable while performing the quarterly recirculation actuation logic channel functional test, will be performed during the Fall 2003 Refueling Outage.

#### 4.0 REGULATORY REQUIREMENTS AND GUIDANCE

FCS was licensed for construction prior to May 21, 1971, and at that time committed to the preliminary General Design Criteria (GDC). These preliminary design criteria are contained in the FCS Updated Safety Analysis Report (USAR) Appendix G.

This activity complies with FCS Design Criterion 44, "Emergency Core Cooling Systems Capability," which is similar to 10 CFR 50 Appendix A GDC 35, "Emergency Core Cooling." FCS Design Criterion 44 states that at least two emergency core cooling systems, preferably of different design principles, each with a capability for accomplishing abundant emergency core cooling, shall be provided. Each emergency core cooling system and the core shall be designed to prevent fuel and clad damage that would interfere with the emergency core cooling function and to limit the clad metal-water reaction to negligible amounts for all sizes of breaks in the reactor coolant pressure boundary, including the double-ended rupture of the largest pipe. The performance of each

emergency core cooling system shall be evaluated conservatively in each area of uncertainty. The systems shall not share active components and shall not share other features or components unless it can be demonstrated that (a) the capability of the shared feature or component to perform its required function can be readily ascertained during reactor operation, (b) failure of the shared feature or component does not initiate a loss-of-coolant accident, and (c) capability of the shared feature or component to perform its required function is not impaired by the effects of a loss-of-coolant accident and is not lost during the entire period this function is required following the accident.

This activity also complies with FCS Design Criterion 46, "Testing of Emergency Core Cooling Systems Components," which states that design provisions shall be made so that active components of the emergency core cooling systems, such as pumps and valves, can be tested periodically for operability and required functional performance. This activity also complies with FCS Design Criterion 47, "Testing of Emergency Core Cooling Systems," which states that a capability shall be provided to test periodically the delivery capability of the emergency core cooling systems at a location as close to the core as practical. This activity also complies with FCS Design Criterion 48, "Testing of Operational Sequence of Emergency Core Cooling Systems," which states that a capability shall be provided to test under conditions as close to design as practical the full operational sequence that would bring the emergency core cooling systems into action, including the transfer to alternate power sources. These FCS Design Criteria are similar to 10 CFR 50 Appendix A GDC 37, "Testing of Emergency Core Cooling System."

This activity also complies with FCS Design Criterion 52, "Containment Heat Removal Systems," which is similar to 10 CFR 50 Appendix A GDC 38, "Containment Heat Removal." FCS Design Criterion 52 states that where active heat removal systems are needed under accident conditions to prevent exceeding containment design pressure, at least two systems, preferably of different principles, each with full capacity, shall be provided.

This activity also complies with FCS Design Criterion 59, "Testing of Containment Pressure-Reducing Systems Components," which states that the containment pressure reducing systems shall be designed so that active components, such as pumps and valves, can be tested periodically for operability and required functional performance. This activity also complies with FCS Design Criterion 60, "Testing of Containment Spray Systems," which states that a capability shall be provided to test periodically the delivery capability of the containment spray system at a position as close to the spray nozzles as is practical. This activity also complies with FCS Design Criterion 61, "Testing of Operational Sequence of Containment Pressure-Reducing Systems," which states that a capability shall be provided to test under conditions as close to the design as practical the full operational sequence that would bring the containment pressure-reducing systems into action, including the transfer to alternate power sources. These FCS Design Criteria are similar to 10 CFR 50 Appendix A GDC 40, "Testing of Containment Heat Removal System."

All of these FCS Design Criteria will continue to be satisfied after the change is made to delete the allowance to perform the quarterly surveillance test of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls.

## 5.0 TECHNICAL ANALYSIS

### Evaluation

A plant modification to install two test switches, which will preclude the need to rely on administrative controls to allow tested equipment to remain operable while performing the quarterly recirculation actuation logic channel functional test, will be performed during the Fall 2003 Refueling Outage. These test switches will serve to disconnect the prime signal from the appropriate Safety Injection Refueling Water Tank (SIRWT) to Safety Injection (SI) and Containment Spray (CS) pumps suction valve, the appropriate SI and CS pumps to SIRWT recirculation minimum flow valve, and the appropriate Containment Sump to SI and CS pumps suction valve during performance of the quarterly recirculation actuation logic channel functional test. These signals are connected to the normally closed contacts on the switches between the lockout relay and the actuation relay for each of the valves. These new test switches will initiate annunciators in the control room when placed in the TEST position. The 48 hour completion time of TS 2.15(3) is entered during performance of the recirculation actuation logic channel functional test. While the test switches are in the NORMAL position, there is no impact on the operation of RAS. These switches remain in the NORMAL position, except when the recirculation actuation logic channel functional test is being performed.

Instead of requiring operator action to prevent the valves from going to their respective RAS positions during the recirculation actuation logic channel functional test, the recirculation flow path is open during the testing, assuring the availability of the ECCS pumps. Should a RAS occur during any accident, the signal from the train not being tested will initiate closure of the other recirculation valve and thus perform the necessary safety function.

This modification has been evaluated under 10 CFR 50.59 and does not require NRC approval for its installation.

### Risk Evaluation

The proposed amendment does not involve application or use of risk-informed decisions. The risk to the health and safety of the public as a result of deleting the allowance to perform the surveillance test of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls is minimal.

## 6.0 REGULATORY ANALYSIS

The proposed amendment deletes the allowance granted in Reference 10.4 to perform the quarterly surveillance test of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls. This complies with the regulatory requirements in FCS Design Criteria 44, 46, 47, 48, 52, 59, 60, and 61 by continuing to prevent fuel and clad damage and prevent containment overpressurization, while allowing for proper surveillance testing of Emergency Core Cooling Systems and Containment Heat Removal and Pressure-Reducing Systems.

In conclusion, based on the considerations discussed above, (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.

## 7.0 NO SIGNIFICANT HAZARDS CONSIDERATION

OPPD has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. **Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

Response: No.

Deleting the requirement to perform the quarterly surveillance test of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls is acceptable since the performance of the recirculation actuation logic channel functional test is not identified as the initiator of any analyzed event. The proposed change will still require that the surveillance test be performed and the required ECCS systems to be available. This change will not alter assumptions relative to the mitigation of an accident or transient event. The performance of this activity has no effect on any accident scenario. Therefore, the proposed change does not involve a significant increase in the consequences of an accident previously evaluated.

2. **Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

Response: No.

This change only removes a short term allowance to utilize administrative controls in the performance of the recirculation actuation logic channel functional test. These proposed changes do not involve a physical alteration of the plant (no new or different

type of equipment will be installed) or change the methods governing plant operation. The proposed change does not involve any physical changes to plant systems, structures or components (SSCs) or the manner in which these SSCs are operated, maintained, modified or inspected. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

**3. Does the proposed change involve a significant reduction in a margin of safety?**

Response: No.

The minimum numbers of ECCS components required by the FCS accident analyses will remain available. The proposed change to delete the short term allowance to utilize administrative controls in the performance of the recirculation actuation logic channel functional test will not significantly impact the availability or reliability of the plant's systems or their ability to respond to plant transients and accidents. The performance of this activity has no effect on any accident scenario. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, OPPD concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

**8.0 ENVIRONMENTAL CONSIDERATION**

The proposed amendment deletes the allowance granted in Reference 10.4 to perform the surveillance testing of Table 3-2, Item 20 (Recirculation Actuation Logic Channel Functional Test) under administrative controls. The changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

- As demonstrated in Section 7.0, the proposed amendment does not involve a significant hazards consideration.
- The proposed amendment does not result in a significant change in the types or increase in the amounts of any effluents that may be released off-site. Also, the TS change does not introduce any new effluents or significantly increase the quantities of existing effluents. As such, the change cannot significantly affect the types or amounts of any effluents that may be released off-site.
- The proposed amendment does not result in a significant increase in individual or cumulative occupational radiation exposure. The proposed change does not result in any physical plant changes. No new surveillance requirements are anticipated as a result of these changes that would require additional personnel entry into radiation controlled areas. Therefore, the amendment has no significant effect on either individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## 9.0 PRECEDENCE

None

## 10.0 REFERENCES

- 10.1 Fort Calhoun Station Unit No. 1 License Amendment Request, "Allowance to Perform Recirculation Actuation Logic Channel Functional Test," dated April 1, 2002 (LIC-02-0040)
- 10.2 Letter from OPPD (R. T. Ridenoure) to NRC (Document Control Desk) dated April 10, 2002, "Revision to Fort Calhoun Station Unit No. 1 License Amendment Request, "Allowance to Perform Recirculation Actuation Logic Channel Functional Test,"" (LIC-02-0044)
- 10.3 Letter from OPPD (R. T. Ridenoure) to NRC (Document Control Desk) dated April 15, 2002, "Supplemental Information Supporting the License Amendment Request, "Allowance to Perform Recirculation Actuation Logic Channel Functional Test"" (LIC-02-0048)
- 10.4 Letter from NRC (A. B. Wang) to OPPD (R. T. Ridenoure) dated April 19, 2002, "Fort Calhoun Station Unit No. 1 – Issuance of Amendment (TAC No. MB4664) (NRC-02-059)
- 10.5 Fort Calhoun Station Updated Safety Analysis Report, Section 14.15.1
- 10.6 Fort Calhoun Station Updated Safety Analysis Report, Section 6.2.3.1
- 10.7 Fort Calhoun Station Updated Safety Analysis Report, Section 14.15.3
- 10.8 Fort Calhoun Station Updated Safety Analysis Report, Appendix K

**Attachment 2**

**Markup of  
Technical Specification Pages  
&  
Bases Pages**

## TECHNICAL SPECIFICATIONS

### 2.0 LIMITING CONDITIONS FOR OPERATION

#### 2.3 Emergency Core Cooling System (Continued)

##### (2) Modification of Minimum Requirements

During power operation, the Minimum Requirements may be modified to allow one of the following conditions to be true at any one time. If the system is not restored to meet the minimum requirements within the time period specified below, the reactor shall be placed in a hot shutdown condition within 12 hours. If the minimum requirements are not met within an additional 48 hours the reactor shall be placed in a cold shutdown condition within 24 hours.

- a. One low-pressure safety injection pump may be inoperable provided the pump is restored to operable status within 24 hours.
- b. One high-pressure safety injection pump may be inoperable provided the pump is restored to operable status within 24 hours.
- c. One shutdown heat exchanger may be inoperable for a period of no more than 24 hours.
- d. Any valves, interlocks or piping directly associated with one of the above components and required to function during accident conditions shall be deemed to be part of that component and shall meet the same requirements as listed for that component.
- e. Any valve, interlock or piping associated with the safety injection and shutdown cooling system which is not covered under d. above but which is required to function during accident conditions may be inoperable for a period of no more than 24 hours.
- f. One safety injection tank may be inoperable for reasons other than g. or h. below for a period of no more than 24 hours.
- g. Level and/or pressure instrumentation on one safety injection tank may be inoperable for a period of 72 hours.
- h. One safety injection tank may be inoperable due to boron concentration not within limits for a period of no more than 72 hours.
- ~~i. Components in excess of those allowed by Conditions a, b, d, and e may be inoperable provided they are returned to operable status within 1 hour when performing the quarterly recirculation actuation logic channel functional test (Table 3-2 item 20) under administrative controls. This allowance applies only to the remaining portion of Cycle 20 and all of Cycle 21.~~

## TECHNICAL SPECIFICATIONS

### 2.0 LIMITING CONDITIONS FOR OPERATION

#### 2.3 Emergency Core Cooling System (Continued)

~~Components in excess of those allowed by Conditions a, b, d, and e may be inoperable provided they are returned to operable status within 1 hour when performing the quarterly recirculation actuation logic channel functional test (Table 3-2 item 20) under administrative controls. This allowance applies only to the remaining portion of Cycle 20 and all of Cycle 21. This prevents violating Technical Specifications or necessitating a unit shutdown due to inability to perform the quarterly recirculation actuation logic channel functional test. These administrative controls consist of stationing three dedicated operators at the Engineered Safeguards Features (ESF) panel controls in the control room. In this way, the following conditions are maintained and actions can be rapidly performed should a valid ESF actuation occur:~~

- ~~• the appropriate Safety Injection Refueling Water Tank (SIRWT) to Safety Injection (SI) and Containment Spray (CS) pumps suction valve control switch is maintained in the OPEN position (spring return switch);~~
- ~~• the appropriate SI and CS pumps to SIRWT recirculation minimum flow valve control switch is maintained in the OPEN position (spring return switch);~~
- ~~• the appropriate Recirculation Actuation Signal (RAS) lockout relays and initiating signal can be rapidly reset;~~
- ~~• the appropriate SI and CS pumps to SIRWT recirculation minimum flow valve control switch can be rapidly returned to the AUTO position;~~
- ~~• the appropriate SIRWT to SI and CS pumps suction valve control switch can be rapidly returned to the AUTO position, and~~
- ~~• the appropriate Containment Sump to SI and CS pumps suction valve control switch can be rapidly returned to the AUTO position.~~

~~The appropriate SI and CS pumps to SIRWT recirculation minimum flow valve control switch and the appropriate SIRWT to SI and CS pumps suction valve control switch are held in the OPEN position during the test to enhance the reliability of the appropriate SI and CS pumps by maintaining the associated valves open.~~

#### References

- (1) USAR, Section 14.15.1
- (2) USAR, Section 6.2.3.1
- (3) USAR, Section 14.15.3
- (4) USAR, Appendix K
- (5) Omaha Public Power District's Submittal, December 1, 1976
- (6) Technical Specification 2.1.2, Figure 2-1B
- (7) USAR, Section 4.4.3

**Attachment 3**  
**Retyped**  
**Technical Specification Pages**  
**&**  
**Bases Pages**

## TECHNICAL SPECIFICATIONS

### 2.0 LIMITING CONDITIONS FOR OPERATION

#### 2.3 Emergency Core Cooling System (Continued)

##### (2) Modification of Minimum Requirements

During power operation, the Minimum Requirements may be modified to allow one of the following conditions to be true at any one time. If the system is not restored to meet the minimum requirements within the time period specified below, the reactor shall be placed in a hot shutdown condition within 12 hours. If the minimum requirements are not met within an additional 48 hours the reactor shall be placed in a cold shutdown condition within 24 hours.

- a. One low-pressure safety injection pump may be inoperable provided the pump is restored to operable status within 24 hours.
- b. One high-pressure safety injection pump may be inoperable provided the pump is restored to operable status within 24 hours.
- c. One shutdown heat exchanger may be inoperable for a period of no more than 24 hours.
- d. Any valves, interlocks or piping directly associated with one of the above components and required to function during accident conditions shall be deemed to be part of that component and shall meet the same requirements as listed for that component.
- e. Any valve, interlock or piping associated with the safety injection and shutdown cooling system which is not covered under d. above but which is required to function during accident conditions may be inoperable for a period of no more than 24 hours.
- f. One safety injection tank may be inoperable for reasons other than g. or h. below for a period of no more than 24 hours.
- g. Level and/or pressure instrumentation on one safety injection tank may be inoperable for a period of 72 hours.
- h. One safety injection tank may be inoperable due to boron concentration not within limits for a period of no more than 72 hours.

## TECHNICAL SPECIFICATIONS

### 2.0 **LIMITING CONDITIONS FOR OPERATION**

#### 2.3 **Emergency Core Cooling System (Continued)**

##### References

- (1) USAR, Section 14.15.1
- (2) USAR, Section 6.2.3.1
- (3) USAR, Section 14.15.3
- (4) USAR, Appendix K
- (5) Omaha Public Power District's Submittal, December 1, 1976
- (6) Technical Specification 2.1.2, Figure 2-1B
- (7) USAR, Section 4.4.3