

2.0 LIMITING CONDITIONS FOR OPERATION

2.7 Electrical Systems (Continued)

(2) Modification of Minimum Requirements

The minimum requirements may be modified to the extent that one of the following conditions will be allowed after the reactor coolant has been heated above 300°F made critical. However, the reactor shall not be made critical unless all minimum requirements are met. If any of the provisions of these exceptions are violated, the reactor shall be placed in a hot shutdown condition within the following 12 hours. If the violation is not corrected within an additional 12 24 hours, the reactor shall be placed in a cold shutdown condition within an additional 24 hours.

- a. Both unit auxiliary power transformers T1A-1 and -2 (4.16 kV) may be inoperable for up to 24 hours provided the operability of both diesel generators is demonstrated immediately.
- b. ~~House service transformers T1A-3 or T1A-4 (4.16kV) may be inoperable for up to one week. House service transformers T1A-3 and 4 (4.16 kV) may be inoperable for up to 24 hours provided the operability of both diesel generators is demonstrated immediately, and the NRC is notified immediately and a report is submitted to the NRC as specified in Section 5.6 with an outline of the plans for prompt restoration of off-site power and the additional precautions to be taken while the transformers are out of service.~~

Either house service transformer T1A-3 or T1A-4 (4.16kV) may be inoperable for up to 7 days provided the operability of the diesel generator associated with the inoperable transformer is immediately verified. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 7 days is permissible, provided a special report is submitted to the NRC within 48 hours after transformer inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of transformer operability and the additional precautions to be taken while the transformer is out of service.

- c. Both house service transformers T1A-3 and T1A-4 (4.16kV) may be inoperable for up to 72 hours provided the operability of both diesel generators is immediately verified. The loss of the 161kV incoming line renders both transformers inoperable. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 72 hours is permissible, provided a special report is submitted to the NRC within 48 hours after both transformers' inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of the transformers' operability and the additional precautions to be taken while the transformers are out of service.

2.0 LIMITING CONDITIONS FOR OPERATION

2.7 Electrical Systems (Continued)

- l. m. Either one of the 125V d-c DC distribution panels AI-41A or and AI-41B may be inoperable for up to 8 hours.
- m. n. Either one of the 120V a-c AC instrument panels AI-42A or AI-42B may be inoperable for up to 8 hours.
- n. ~~The 161kV transmission line may be out of service and unit operation may continue or the reactor may be restarted from a hot shutdown condition if (i) operability of the remaining source is immediately verified and (ii) immediate notification is made by telephone or telegraph to the Director of the NRC Regional Office in Arlington, Texas of the loss and of the plans to restore the electric power system to its full capability.~~

Basis

The electrical system equipment is arranged so that no single failure can inactivate enough engineered safeguards to jeopardize the plant safety. The 480 V safeguards are arranged on nine bus sections. The 4.16 kV safeguards are supplied from two buses.

The normal source of auxiliary power with the plant at power for the safeguards buses is from the house service power transformers being fed from the 161 kV incoming line with on-site emergency power from either one of two diesel generators and off-site standby power via the unit auxiliary transformers.⁽¹⁾ The loss of the 161kV incoming line renders the house service transformers (T1A-3 and T1A-4) inoperable in that the transformers cannot supply power to the 4.16kV safeguards buses 1A3 and 1A4. Inoperability of the house service transformer(s) or loss of the 161kV incoming line is not reportable pursuant to 10 CFR 50.72 criteria; however, the NRC will be promptly notified of these events via the NRC Operations Center.

The two emergency diesel generators on site do not require outside power for start up or operation.

Upon loss of normal and standby power sources, the 4.16 kV buses 1A3 and 1A4 are energized from the diesel generators. Bus load shedding, transfer to the diesel generator and pickup of critical loads are carried out automatically.⁽²⁾

When the turbine generator is out of service for an extended period, the generator can be isolated by opening motor operated disconnect switch DS-T1 in the bus between the generator and the main transformer, allowing the main transformer and the unit auxiliary power transformers (T1A-1 and T1A-2) to be returned to service.⁽³⁾ The auxiliary power transformers are not considered inoperable during these normal plant startup/shutdown realignments.

5.9.3 Special Reports

Special reports shall be submitted to the Regional Administrator of the appropriate NRC Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification where appropriate:

- a. In-service inspection report, reference 3.3.
- b. Tendon surveillance, reference 3.5.
- c. Containment structural tests, reference 3.5.
- d. Special maintenance reports.
- e. Containment leak rate tests, reference 3.5.
- f. Radioactive effluent releases, reference 2.9.
- g. Materials radiation surveillance specimens reports, reference 3.3.
- h. Fire protection equipment outage, reference 2.19.
- i. Post-accident monitoring instrumentation, reference 2.21.
- j. Electrical systems, reference 2.7(2).

5.9.4 Unique Reporting Requirements

a. Radioactive Effluent Release Report

A report covering the operation of the Fort Calhoun Station during the previous six months shall be submitted within 60 days after January 1 and July 1 of each year per the requirements of 10 CFR 50.36a.

The radioactive effluent release report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the plant as outlined in Regulatory Guide 1.21, Revision 1.

The radioactive effluent release report shall include a summary of the meteorological conditions concurrent with the release of gaseous effluents during each quarter as outlined in Regulatory Guide 1.21, Revision 1.

The radioactive effluent release report shall include an assessment of radiation doses from the radioactive liquid and gaseous effluents released from the unit during each calendar quarter as outlined in Regulatory Guide 1.21, Revision 1. In addition, the unrestricted area boundary maximum noble gas gamma air and beta air doses shall be evaluated. The meteorological conditions concurrent with the

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- a. Both unit auxiliary power transformers T1A-1 and -2 (4.16 kV) may be inoperable for up to 24 hours provided the operability of both diesel generators is demonstrated immediately.
- b. Either house service transformer T1A-3 or T1A-4 (4.16kV) may be inoperable for up to 7 days provided the operability of the diesel generator associated with the inoperable transformer is immediately verified. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 7 days is permissible, provided a special report is submitted to the NRC within 48 hours after transformer inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of transformer operability and the additional precautions to be taken while the transformer is out of service.
- c. Both house service transformers T1A-3 and T1A-4 (4.16kV) may be inoperable for up to 72 hours provided the operability of both diesel generators is immediately verified. The loss of the 161kV incoming line renders both transformers inoperable. The NRC Operations Center shall be notified by telephone within 4 hours after transformer inoperability. Continued operation beyond 72 hours is permissible, provided a special report is submitted to the NRC within 48 hours after both transformers' inoperability pursuant to Section 5.9.3 of the Technical Specifications. The special report will outline the plans for restoration of the transformers' operability and the additional precautions to be taken while the transformers are out of service.

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2.7 Electrical Systems (Continued)

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Basis

The electrical system equipment is arranged so that no single failure can inactivate enough engineered safeguards to jeopardize the plant safety. The 480 V safeguards are arranged on nine bus sections. The 4.16 kV safeguards are supplied from two buses.

The normal source of auxiliary power with the plant at power for the safeguards buses is from the house service power transformers being fed from the 161 kV incoming line with on-site emergency power from either one of two diesel generators and off-site standby power via the unit auxiliary transformers.⁽¹⁾ The loss of the 161kV incoming line renders the house service transformers (T1A-3 and T1A-4) inoperable in that the transformers cannot supply power to the 4.16kV safeguards buses 1A3 and 1A4. Inoperability of the house service transformer(s) or loss of the 161kV incoming line is not reportable pursuant to 10 CFR 50.72 criteria; however, the NRC will be promptly notified of these events via the NRC Operations Center.

The two emergency diesel generators on site do not require outside power for start up or operation.

Upon loss of normal and standby power sources, the 4.16 kV buses 1A3 and 1A4 are energized from the diesel generators. Bus load shedding, transfer to the diesel generator and pickup of critical loads are carried out automatically.⁽²⁾

When the turbine generator is out of service for an extended period, the generator can be isolated by opening motor operated disconnect switch DS-T1 in the bus between the generator and the main transformer, allowing the main transformer and the unit auxiliary power transformers (T1A-1 and T1A-2) to be returned to service.⁽³⁾ The auxiliary power transformers are not considered inoperable during these normal plant startup/shutdown realignments.

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The radioactive effluent release report shall include an assessment of radiation doses from the radioactive liquid and gaseous effluents released from the unit during each calendar quarter as outlined in Regulatory Guide 1.21, Revision 1. In addition, the unrestricted area boundary maximum noble gas gamma air and beta air doses shall be evaluated. The meteorological conditions concurrent with the

ATTACHMENT B

DISCUSSION, JUSTIFICATION, AND NO SIGNIFICANT HAZARDS CONSIDERATION

Omaha Public Power District (OPPD) is proposing to change Specification 2.7, "Electrical Systems," to correct inconsistencies and to provide further guidance on equipment necessary for the 161kV power supply. Additionally, administrative changes are proposed for Specification 2.7. Following is the discussion and justification for the proposed changes.

Specification 2.7 Electrical Systems

Specification 2.7(1) Minimum Requirements

As currently written this specification applies when the reactor coolant is above 300 degrees F; however, the modification to minimum requirements only applies after the reactor is critical. If the reactor coolant is above 300 degrees but not yet critical, and a listed system is declared inoperable, Specification 2.0.1 is invoked which requires the unit to be placed in hot shutdown within 6 hours. If the same system is declared inoperable at full power the modification to minimum requirements apply which contain an allowed outage time for the specific system and additionally allow 12 hours to place the unit in hot shutdown if the system outage time cannot be met.

The proposed revision to Specification 2.7(2) as it applies to 2.7(1), would allow the same modifications to minimum requirements above 300 degrees F as allowed after criticality. However, it would not allow the reactor to be made critical unless all of the listed systems are operable.

The statement concerning minimum requirements is being revised to add the word "coolant" and delete the word "up" to be more consistent with Specification 2.5.

Administrative Changes

Specifications 2.7(1)a., 2.7(1)b., and 2.7(1)d. contain typographical errors. The equipment designation for transformers is identified as "T1" and is being corrected to read "T1."

Specification 2.7(1)i, j, and k are being revised to include the specific equipment designations.

Specification 2.7(1)h. contains typographical errors. The equipment designation for electrical panels is identified as "A1" and is being corrected to read "A1."

**Specification 2.7(2)
Modification of Minimum Requirements**

The proposed revision would allow the modification of minimum requirements to apply after the reactor is above 300 degrees F or after the reactor has been made critical. This revision will not allow the reactor to be made critical unless all systems listed in 2.7(1) are operable. Additional clarification is also proposed for the time limits contained in the action statement. This proposed change is consistent with the present specification and does not change the allowed outage time. The action statement allows a total of 48 hours to reach the cold shutdown condition. Specification 2.0.1, which would be invoked if systems in excess of the modification to minimum requirements are inoperable, allows a total of 42 hours to reach the cold shutdown condition.

Proposed Specifications Concerning Inoperability of House Service Transformers

OPPD has reviewed Technical Specification 2.7(2)b house service transformers T1A-3 and T1A-4 and 2.7(2)n 161kV off-site power supply Limiting Conditions for Operation for that equipment using the guideline provided by the NRC in a Safety Evaluation Report dated January 30, 1990. (ACN No. 9002070242) The proposed Technical Specification will delete the present specification 2.7(2)n in its entirety and modify 2.7(2)b to provide direction on the 161kV supply. The proposed specification will define time limits and reporting requirements.

**Proposed Specification 2.7(2)b.
One House Service Transformer (T1A-3 or T1A-4) Inoperable**

This specification would allow operation for seven (7) days with one house service transformer out of service and is consistent with the present specifications. Verbal notification of the transformer inoperability will be made within 4 hours. Added to this portion of the specification is a clause which permits operation beyond the seven days provided OPPD submits a special report to the NRC within 48 hours detailing restoration plans and measures taken to prevent a plant trip and diesel generator inoperability while the transformer is out of service.

Continued operation is considered desirable in that a unit shutdown would result in the loss of one of the 4.16kV safeguards buses resulting in challenges to the diesel safety system and primary system transients. The proposed specification also directs the operability verification of the diesel generator associated with the inoperable House Service Transformer to be completed. This provides additional assurance that the plant can be safely shutdown, if required. Verification is defined as a reverification of the last monthly surveillance test. Demonstrating operability of the diesel generator by conducting the surveillance test is not desirable. Conducting the surveillance test requires that the diesel be taken out of the automatic mode. This would create a situation whereby one division of safeguards equipment would be without any emergency power for the duration of the test.

**Proposed Specification 2.7(2)c.
Both House Service Transformers (T1A-3 and T1A-4) Inoperable**

The proposed specification would allow operation for 72 hours with both house service transformers out of service. The specification has been clarified to indicate that the loss of the 161kV off-site power is considered to render both House Service Transformers inoperable. Demonstrating operability of the diesel generators by conducting the surveillance test is not desirable. Consistent with the present specification, the operability of both diesel generators is to be verified, which is defined as a reverification of the last monthly surveillance test. Conducting the surveillance test requires that the diesel be taken out of the automatic mode. This would create a situation whereby one division of safeguards equipment would be without any emergency power for the duration of the test.

The reporting requirement specifies that a 4 hour verbal notification be made to the NRC. If operation is to be continued beyond 72 hours a special report must be sent to the NRC within 48 hours detailing restoration plans and additional measures to be taken while the transformers are out of service.

Continued operation is a preferred course of action rather than shutdown because a turbine generator trip would result in a loss of off-site power. This loss of off-site power would cause the following:

1. Diesel generator start and energizing of the safety busses.
2. Natural circulation cooling of fuel to remove decay heat.
3. Decay heat removal from the steam generators via the main steam safety valves due to loss of the condenser.
4. A challenge to the automatic auxiliary feedwater system.

The plant cannot establish the normal hot shutdown configuration until 345kV backfeed has been established after the turbine generator trip. Condenser operations can then be reestablished and the reactor coolant pumps restarted.

Specification 2.7(2)n

This specification is to be deleted. The loss of the 161kV off-site supply will be specified in Technical Specification 2.7(2)c. The specification which permits reactor startup with the 161kV out of service will be deleted. The present Technical Specification is incorrect in that although the reactor could be taken to hot standby (critical), the generator could not be synchronized to the power grid or even supply house loads. This is because the disconnect switch DS-T1, is a manual/motor switch with no synchronization capability. The 345kV bus must be de-energized before closing DS-T1. Removal of the 345kV bus would de-energize all four Reactor Coolant Pumps and this would scram the reactor.

Basis of Specification 2.7

Changes to Discussions Concerning the 161kV Power Supply Contained in the Basis

Clarification concerning the loss of the 161kV line has been added to the basis of Specification 2.7. This clarification indicates that the loss of the incoming 161kV line renders the house transformers inoperable due to their inability to supply the 4.16kV safeguards buses 1A3 and 1A4. In order to restore off-site power to the safeguards buses upon loss of the 161kV line, 345kV backfeed must be manually established. Therefore, upon the loss of the 161kV line, the house service transformers are considered inoperable.

A statement is being added clarifying that the loss of 161kV will not be reported pursuant to 10 CFR 50.72 criteria.

Additional clarification has also been added concerning the operability of the auxiliary transformers. Normal plant startup and shutdown requires manually transferring the 4.16kV buses 1A1, 1A2, 1A3, and 1A4 between the 345/22kV and the 161kV power supply. During the actual realignment manipulations, off-site power, although available, cannot power the transformers until completion of the manipulations. This clarification states that the transformers are not considered inoperable during these startup and shutdown realignments. During normal power operations should the 161kV incoming line be lost, the auxiliary power transformers supply the 4.16kV buses 1A1, 1A2, 1A3, and 1A4 from the 345/22kV system after automatic fast transfer occurs.

5.9.3 Special Reports

Specification 5.9.3 is being revised to add a reference to Technical Specification 2.7(2).

Administrative Changes to the Basis

A correction has been made to the example contained in the basis which discusses the results of losing bus 1A3. In the normal electrical lineup bus 1A3 (4.16kV) powers bus 1B3A (480 V) and island bus 1B3A-4A (480 V). This lineup would cause the loss of two high pressure safety injection (HPSI) pumps and one containment spray (CS) pump and leave one HPSI and two CS pumps available upon loss of bus 1A3. This correction does not affect the number of pumps assumed to be available in a Design Basis Accident.

The rating of the battery chargers is being revised from "200" to "400" amperes to reflect an increase in rating as a result of modification MR-FC-84-119.

The word "avilible" is misspelled and is being corrected to read "available."

Basis for No Significant Hazards Consideration

The proposed changes do not involve significant hazards consideration because operation of Fort Calhoun Station in accordance with this change would not:

1. Involve a significant increase in the probability or consequence of an accident previously evaluated.

Changes to the Minimum Requirements and Modification to the Minimum Requirements

The proposed changes to the minimum requirements and modification to minimum requirements do not increase the probability or consequences of an accident previously evaluated. This proposed change would allow the modification to minimum requirements that apply when the reactor is at full power to also apply when the reactor is above 300 degrees F but not critical. The consequences of an accident at full power are significantly greater than when the reactor is not critical. By not allowing the unit to be made critical unless all of the systems listed in the minimum requirements are operable ensures that the consequences would not be increased.

Changes Concerning the Operation of the 161kV Line and Associated Equipment

The proposed changes concerning the operation of the 161kV off-site power line and associated equipment does not adversely affect the consequences or probability of an accident or event previously evaluated. This change clarifies the operability requirements of the remaining power sources during times when the House Service Transformers are out-of-service, requires reporting of actions to restore the transformer(s) and other precautions to be taken while the transformer is out-of-service, and removes the permissive to restart with the 161kV line out-of-service. The present Specifications allow the 161kV line, and therefore the transformers, to be out-of-service for an indefinite time period. This change defines a consistent allowed outage time for both the 161kV line and the associated transformers.

Changes to Table 2-10

The proposed changes to Table 2-10 are administrative only. These changes consist of correcting typographical errors and providing clarification which is consistent with an interpretation from the Office of Nuclear Reactor Regulation. Therefore, the changes to Table 2-10 does not involve a significant increase in the probability or consequences of an accident previously evaluated.