

November 16, 2004

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

ULNRC-05087

Ladies and Gentlemen:

**DOCKET NUMBER 50-483  
CALLAWAY PLANT  
UNION ELECTRIC CO.  
FACILITY OPERATING LICENSE NPF-30  
COMMON STARS LICENSE AMENDMENT  
IMPLEMENTATION OF WCAP-14333 AND WCAP-15376  
RTS AND ESFAS TEST TIMES, COMPLETION TIMES,  
AND SURVEILLANCE TEST INTERVALS**

Reference 1: ULNRC-04929 dated December 17, 2003

In the letter referenced above, AmerenUE transmitted an application for amendment to Facility Operating License Number NPF-30 for Callaway Plant. The proposed amendment would revise Technical Specification (TS) 3.3.1, "Reactor Trip System (RTS) Instrumentation," TS 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," and TS 3.3.9, "Boron Dilution Mitigation System (BDMS)" to adopt Completion Time, test bypass time, and Surveillance Frequency changes approved by NRC in WCAP-14333-P-A, Revision 1, "Probabilistic Risk Analysis of the RPS and ESFAS Test Times and Completion Times," October 1998 and WCAP-15376-P-A, Revision 1, "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times," March 2003. As discussed in Reference 1 above, the requested changes were based on the following NRC-approved travelers: Industry/Technical Specification Task Force (TSTF) Standard TS (STS) Change Traveler 411, Revision 1, "Surveillance Test Interval Extensions for Components of the Reactor Protection System (WCAP-15376)"; and Industry/TSTF STS Change Traveler 418, Revision 2, "RPS and ESFAS Test Times and Completion Times (WCAP-14333)."

Reference 1 proposed to restructure TS 3.3.1 Condition D from what was approved in TSTF-418, Revision 2, to avoid confusion as to when a flux map for determining the Quadrant Power Tilt Ratio (QPTR) is required. Discussions with the NRC Project Manager and NRC Technical Specification Section personnel on July 13, 2004 and July 29, 2004 identified potential format concerns with the originally proposed Condition D. After further review, it was determined that the originally proposed Condition D should be revised. The proposed revision was again discussed with the NRC staff on September 1, 2004.

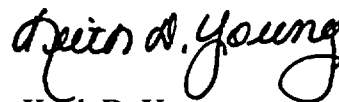
A001



Attachment 1 contains the proposed revision to TS 3.3.1 Condition D and replaces the mark-ups to TS page 3.3-3 included in Attachment 2 of Reference 1. Attachment 2 contains the revised TS Bases for Condition D (for information only). This supplemental information does not impact the conclusions of the No Significant Hazards Consideration or the Environmental Consideration provided in Reference 1.

The proposed revision to TS 3.3.1 Condition D was reviewed by the Onsite Review Committee. There are no new commitments associated with this submittal. If you have further questions on this amendment application, please contact us.

Very truly yours,

A handwritten signature in black ink, reading "Keith D. Young". The signature is written in a cursive style with a large, stylized "Y" at the end.

Keith D. Young  
Manager, Regulatory Affairs

Attachments

STATE OF MISSOURI     )  
                                      )  
COUNTY OF CALLAWAY )

S S

Keith D. Young, of lawful age, being first duly sworn upon oath says that he is Manager, Regulatory Affairs, for Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By *Keith D. Young*  
Keith D. Young  
Manager, Regulatory Affairs

SUBSCRIBED and sworn to before me this 16<sup>TH</sup> day of NOVEMBER, 2004.

LORI L. TWILLMAN  
Notary Public - Notary Seal  
STATE OF MISSOURI  
Callaway County  
My Commission Expires: Aug. 3, 2007

*Lori L. Twillman*

ULNRC-05087  
November 16, 2004  
Page 3

cc: U.S. Nuclear Regulatory Commission (Original and 1 copy)  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

Mr. Bruce S. Mallett  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-4005

Senior Resident Inspector  
Callaway Resident Office  
U.S. Nuclear Regulatory Commission  
8201 NRC Road  
Steedman, MO 65077

Mr. Jack N. Donohew (2 copies)  
Licensing Project Manager, Callaway Plant  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Mail Stop 7E1  
Washington, DC 20555-2738

Missouri Public Service Commission  
Governor Office Building  
200 Madison Street  
PO Box 360  
Jefferson City, MO 65102-0360

Deputy Director  
Department of Natural Resources  
P.O. Box 176  
Jefferson City, MO 65102

## ATTACHMENT 1

MARKUP OF TECHNICAL SPECIFICATION 3.3.1 CONDITION D

INSERT 3.3.1.D

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Power Range Neutron Flux - High channel inoperable.	----- NOTE ----- The inoperable channel may be bypassed for up to 4 hours for surveillance testing and setpoint adjustment of other channels. -----	
	D.1.1 Place channel in trip.	6 hours
	<u>AND</u>	
	D.1.2 Reduce THERMAL POWER to $\leq 75\%$ RTP.	12 hours
	<u>OR</u>	
	D.2.1 Place channel in trip.	6 hours
	<u>AND</u>	
	D.2.2 ----- NOTE ----- Only required to be performed when the Power Range Neutron Flux input to QPTR is inoperable. -----	
	Perform SR 3.2.4.2.	Once per 12 hours
	<u>OR</u>	
	D.3 Be in MODE 3.	12 hours

(continued)

# INSERT 3.3.1.D

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Power Range Neutron Flux - High channel inoperable.	<p>----- NOTE-----</p> <p>The inoperable channel may be bypassed for up to 12 hours for surveillance testing and setpoint adjustment of other channels.</p> <p>-----</p>	
	<p>D.1.1      ----- NOTE-----</p> <p>Only required when the Power Range Neutron Flux input to QPTR is inoperable.</p> <p>-----</p> <p>Perform SR 3.2.4.2.</p>	<p>12 hours from discovery of THERMAL POWER &gt; 75% RTP</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p>
	<p><u>AND</u></p>	
	<p>D.1.2      Place channel in trip.</p>	72 hours
	<p><u>OR</u></p> <p>D.2          Be in MODE 3.</p>	78 hours

## **ATTACHMENT 2**

**PROPOSED TECHNICAL SPECIFICATION 3.3.1 CONDITION D  
BASES CHANGES  
(for information only)**



BASES

ACTIONS

C.1, C.2.1, AND C.2.2 (continued)

- Automatic Trip Logic.

This action addresses the train orientation of the RTS for these Functions. With one channel or train inoperable, the inoperable channel or train must be restored to OPERABLE status within 48 hours. If the affected Function(s) cannot be restored to OPERABLE status within the allowed 48 hour Completion Time, the unit must be placed in a MODE in which the requirement does not apply. To achieve this status, action must be initiated within the same 48 hours to fully insert all rods and the Rod Control System must be rendered incapable of rod withdrawal within the next hour (e.g., by de-energizing all CRDMs, by opening the RTBs, or de-energizing the motor generator (MG) sets). The additional hour for the latter provides sufficient time to accomplish the action in an orderly manner. With the rods fully inserted and the Rod Control System incapable of rod withdrawal, these Functions are no longer required.

The Completion Time is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function, and given the low probability of an event occurring during this interval.

Condition C is modified by a Note stating that while this LCO is not met for Function 19, 20, or 21 in MODE 5, making the Rod Control System capable of rod withdrawal is not permitted. This Note specifies an exception to LCO 3.0.4 for this MODE 5 transition and avoids placing the plant in a condition where control rods can be withdrawn or not fully inserted while the reactor trip system is degraded.

D.1.1, D.1.2, ~~D.2.1, D.2.2, and D.3~~ and D.2

Condition D applies to the Power Range Neutron Flux - High trip Function.

INSERT 1 →

The NIS power range detectors provide input to the Rod Control System and the SG Water Level Control System and, therefore, have a two-out-of-four trip logic. A known inoperable channel must be placed in the tripped condition. This results in a partial trip condition requiring only one-out-of-three logic for actuation. The 6 hours allowed to place the inoperable channel in the tripped condition is justified in Reference ②.

In addition to placing the inoperable channel in the tripped condition, THERMAL POWER must be reduced to  $\leq 75\%$  RTP within 12 hours. Reducing the power level prevents operation of the core with radial power distributions beyond the design limits at a power level where DNB

(continued)

## INSERT 1

With one of the NIS power range detectors inoperable, 1/4 of the radial power distribution monitoring capability is lost. Therefore, SR 3.2.4.2 must be performed (Required Action D.1.1) within 12 hours of THERMAL POWER exceeding 75% RTP and once per 12 hours thereafter. If reactor power decreases to  $\leq 75\%$  RTP, the measurement of both Completion Times for Required Action D.1.1 stops and SR 3.2.4.2 is no longer required. Completion Time tracking recommences upon reactor power exceeding 75% RTP. Calculating QPTR every 12 hours compensates for the lost monitoring capability due to the inoperable NIS power range channel and allows continued plant operation at power levels  $> 75\%$  RTP. At power levels  $\leq 75\%$  RTP, operation of the core with radial power distributions beyond the design limits, at a power level where DNB conditions may exist, is prevented. The 12 hour Completion Time is consistent with the SR 3.2.4.2 Frequency in LCO 3.2.4, "QUADRANT POWER TILT RATIO (QPTR)."

Required Action D.1.1 has been modified by a Note which only requires SR 3.2.4.2 to be performed if the Power Range Neutron Flux input to QPTR becomes inoperable. Failure of a component in the Power Range Neutron Flux Channel which renders the High Flux Trip Function inoperable may not affect the capability to monitor QPTR. As such, determining QPTR using the movable incore detectors once per 12 hours may not be necessary.

BASES

ACTIONS

D.1.1, D.1.2, D.2.1, D.2.2, and D.3 (continued) *and D.2*

conditions may exist. With one of the NIS power range detectors inoperable, 1/4 of the radial power distribution monitoring capability is lost.

As an alternative to the above actions, the inoperable channel can be placed in the tripped condition within 6 hours and the QPTR monitored once every 12 hours as per SR 3.2.4.2 (including the SR 3.2.4.2 Note), QPTR verification. Calculating QPTR every 12 hours compensates for the lost monitoring capability due to the inoperable NIS power range channel and allows continued unit operation at power levels > 75% RTP. The 6 hour Completion Time and the 12 hour Frequency are consistent with LCO 3.2.4, "QUADRANT POWER TILT RATIO (QPTR)."

*Seventy-eight (78)*

As an alternative to the above Actions, the plant must be placed in a MODE where this Function is no longer required OPERABLE. ~~Twelve~~ hours are allowed to place the plant in MODE 3. This is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging plant systems. If Required Actions cannot be completed within their allowed Completion Times, LCO 3.0.3 must be entered.

*INSERT 1B*

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 12 hours while performing routine surveillance testing of other channels. The Note also allows placing the inoperable channel in the bypassed condition to allow setpoint adjustments of other channels when required to reduce the setpoint in accordance with other Technical Specifications. The 12 hour time limit is justified in Reference 17.

*12*

Required Action D.2.2 has been modified by a Note which only requires SR 3.2.4.2 to be performed if the Power Range Neutron Flux input to QPTR becomes inoperable. Failure of a component in the Power Range Neutron Flux Channel which renders the High Flux Trip Function inoperable may not affect the capability to monitor QPTR. As such, determining QPTR using the movable incore detectors once per 12 hours may not be necessary.

E.1 and E.2

Condition E applies to the following reactor trip Functions:

- Power Range Neutron Flux - Low;
- Overtemperature  $\Delta T$ ;

(continued)

## **INSERT 1B**

**The 78-hour Completion Time includes 72 hours for channel corrective maintenance, and an additional 6 hours for the MODE reduction as required by Required Action D.2.**