

October 28, 2004

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

ULNRC-05073

Ladies and Gentlemen:



**DOCKET NUMBER 50-483  
CALLAWAY PLANT UNIT 1  
UNION ELECTRIC CO.  
FACILITY OPERATING LICENSE NPF-30  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION ON  
COMMON STARS LICENSE AMENDMENT  
IMPLEMENTATION OF WCAP-14333 AND WCAP-15376  
RTS AND ESFAS TEST TIMES, COMPLETION TIMES,  
AND SURVEILLANCE TEST INTERVALS**

Reference: 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)."

AmerenUE submitted the referenced license amendment application in conjunction with an industry consortium of six plants as a result of a mutual agreement known as Strategic Teaming and Resource Sharing (STARS). The STARS group consists of the six plants operated by AmerenUE, TXU Power,

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Wolf Creek Nuclear Operating Corporation, Pacific Gas and Electric Company, STP Nuclear Operating Company, and Arizona Public Service Company. AmerenUE's Callaway Plant is the lead plant for the proposed license amendment.

During the NRC review of the Callaway Plant license amendment request, a number of questions were raised and responded to electronically. After further review of this information, on October 19, 2004 the NRC staff requested that portions of the additional information be provided formally to support the amendment application. The additional information provided in the attachment does not impact the conclusions of the No Significant Hazards Consideration provided in the reference. In accordance with 10 CFR 50.91, a copy of this submittal is being provided to the designated Missouri State official.

There are no new commitments associated with this submittal. If you have any further questions on this amendment application, please contact us.

Very truly yours,



Keith D. Young  
Manager, Regulatory Affairs

Attachment

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cc: U.S. Nuclear Regulatory Commission (Original and 1 copy)  
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STATE OF MISSOURI     )  
                                  )  
COUNTY OF CALLAWAY )

SS

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 28 day of OCTOBER, 2004.

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

*Lori L. Twillman*

REQUEST FOR ADDITION INFORMATION  
FOR LICENSE AMENDMENT REQUESTS INVOLVING THE IMPLEMENTATION  
OF WCAP-14333 AND WCAP-15376

Four licensees have submitted license amendment requests involving changes to Technical Specifications (TSs) 3.3.1, "Reactor Trip System (RTS) Instrumentation," and 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," to implement Westinghouse WCAP-14333-P-A, Revision 1, "Probabilistic Risk Analysis of the RPS [Reactor Protection System] and ESFAS Test Times and Completion Times," dated 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," dated March 2003. These WCAPs had been approved by NRC for application to individual plant TSs, and the licensees had requested to incorporate these WCAPs in their plant TSs.

The licensees' plants and the plant-specific application dates are the following:

Callaway Plant	December 17, 2003 (ULNRC-04929)
Comanche Peak, Units 1 and 2	January 21, 2004 (TXX-03187)
Diablo Canyon, Units 1 and 2	February 13, 2004 (DCL-04-013)
Wolf Creek Station	December 15, 2003 (WO 03-0059)

As explained in the applications, the licensees submitted their applications in conjunction with an industry consortium of the six plants listed above. The Callaway Plant is the lead plant for the proposed amendments and the other licensees submitted similar license amendment requests (LARs) in that all the applications are in the same format with the plant-specific information shown in brackets (i.e., within [.....]).

Because the WCAPs had been approved by NRC for application to plant TSs and there was uncertainty that the technical branches could complete the reviews within the time requested by the licensees, the lead project manager for the joint applications decided to review the applications and then have the technical branches review the safety evaluations and concur on the amendments. For efficiency, the review of the applications was done in two parts: (1) review the application for Callaway, the lead plant, in detail for the basis for the proposed changes to the TSs, and (2) to review the plant-specific information in detail in the remaining applications because this information which would be different from that in the Callaway application.

The review was conducted over a period starting January 2004. Several review questions were transmitted to the licensee, in order to clarify the statements in the Callaway application, by sending emails to the licensee from March 30 to April 28, 2004, and a meeting was conducted on March 23, 2004. The summary of the meeting was issued on April 2, 2004. Of the questions sent to the licensee, the following are the questions which should be answered on these plant dockets:

For Callaway, Comanche Peak, Diablo Canyon, and Wolf Creek

**Question 1:**

In the discussion of Tier 2 restrictions in WCAP-14333 (above the four bullets listed on the page) in Section 4.0 of Attachment 1 to the application, it is stated that to meet the WCAP-14333 Safety Evaluation (SE) Condition to include Tier 2 insights into the decision-making process before taking equipment out-of-service, there will be restrictions on concurrent removal of certain equipment when a logic train is inoperable for maintenance; however, this restriction would not be applied when a logic train is being tested under the existing 4-hour bypass Notes in TSs 3.3.1 Condition Q, 3.3.2 Condition C, or 3.3.2 Condition G which allow one train to be bypassed for up to 4 hours for surveillance testing provided the other train is operable.

Is the reason that the restriction on concurrent removal of certain equipment when a logic train is inoperable for maintenance does not apply to the 4-hour bypass Notes of the Conditions Q, C, and G stated in the paragraph or is it because the 4-hour bypass time is such a short time?

**Question 1 Response:**

The reason this restriction does not apply during logic surveillance testing is tied to the nature of the requested changes in the amendment. Tier 2 restrictions for Regulatory Guides 1.174 and 1.177 apply only to risk-informed TS changes. AmerenUE is not requesting any changes to the 4-hour surveillance bypass Notes in these three TS Conditions. Therefore, there is nothing risk-informed in this particular amendment request about those unchanged, current licensing basis Notes and there should be no reason to apply Tier 2 restrictions to them. The fact that the surveillance testing bypass allowance is short only serves to further reinforce the position that the Tier 2 restrictions should not come into play during logic surveillance testing.

**Question 2:**

Confirm whether the following is a correct characterization of the discussion on TSs 3.3.1 Condition Q, 3.3.2 Condition C, and 3.3.2 Condition G in the paragraph before the four bullets referenced in the previous question:

The licensee stated that the restrictions in the four bullets would not be applied when a logic train is being tested under the existing Notes in TSs 3.3.1 Condition Q, 3.3.2 Condition C, and 3.3.2

**Question 2 (continued):**

Condition G which allow one train to be bypassed for up to 4 hours for surveillance testing provided the other train is operable. In other words, as long as the inoperable train is inoperable only because of surveillance testing and only for up to 4 hours, the above restrictions would not be applied to prevent the surveillance testing of the train. This is because the inoperable train is only being considered inoperable because of the surveillance testing. The licensee further stated that, because these three TS Conditions are typically entered due to equipment failure and are unplanned entries versus planning to take the equipment out of service for maintenance, it follows that some of the Tier 2 restrictions may not be met at the time of entry into any of these TS Conditions for equipment failure. If this situation were to occur (i.e., a train becomes inoperable because of equipment failure), the Tier 3 Configuration Risk Management Program (CRMP) will assess the emergent condition during the proposed extended 24-hour Completion Time (CT) to restore the inoperable train to operable status and decide from a risk management perspective to (1) restore the inoperable logic train and exit the TS Condition, (2) implement the Tier 2 restrictions (i.e., the four bullets), or (3) shut the plant down.

Therefore, could the CRMP decide to shut down the plant sooner than required by any of the three conditions?

**Question 2 Response:**

The following response repeats back the entire characterization above, with the necessary changes in bold, italicized print.

"The licensee stated that the restrictions in the four bullets on page 14 of Attachment 1 would not be applied when a logic train is being tested under the existing Notes in TS 3.3.1 Condition Q, TS 3.3.2 Condition C, and TS 3.3.2 Condition G which allow one train to be bypassed for up to 4 hours for surveillance testing provided the other train is operable. In other words, as long as the inoperable train is inoperable only because of surveillance testing and only for up to 4 hours, the above restrictions would not be applied to *provide risk-based compensatory measures*. This is because the inoperable train is only being considered inoperable because of the surveillance testing *and the current licensing basis (CLB) already provides for the 4-hour bypass testing allowance*. The licensee further stated that, because these three TS Conditions are typically entered due to equipment failure and are unplanned entries versus planning to take the equipment out of service for maintenance, it follows that some of the Tier 2 restrictions may not be met at the time of entry into any of these TS Conditions for equipment failure. If this situation were to occur (i.e., a train becomes inoperable because of equipment failure), the Tier 3 Configuration Risk Management Program (CRMP) will assess the emergent condition during the proposed extended 24-hour CT to restore the inoperable train to operable status and decide from a risk management perspective to (1) restore the inoperable logic train and exit the TS Condition, (2) implement the Tier 2 restrictions (i.e., the four bullets), or (3) shut the plant down. Therefore, the CRMP could decide to shut down the plant sooner than required by *the proposed 24-hour Completion Time in any of the three TS Conditions (i.e., the CRMP could call for a plant shutdown for a given situation when the logic train inoperability exceeds the CLB restoration*

**Question 2 Response (continued):**

*time of 6 hours). It is unlikely that the CRMP would call for a plant shutdown until the logic train has been inoperable for 6 hours."*

**Question 3:**

It appears when you are in the test bypass time of the Notes in TSs 3.3.1 Condition Q, 3.3.2 Condition C, and 3.3.2 Condition G, that the plant is in non-risk informed space and, therefore, Tier 2 requirements do not apply. However, because (1) Tier 2 is the avoidance of risk-significant plant-specific configurations by considering potential risk-significant plant operating conditions and addressing the need to preclude potentially high risk configurations and (2) Tier 3, risk-informed plant configuration control and management, addresses the plant-specific CRMP, including the risk-informed assessment for outages and what structures, systems, and components (SSCs) that are controlled by the program, it appears to the staff that Tier 2 and Tier 3 efforts exist all the time in operating the plant and managing the inoperability of SSCs controlled by the CRMP. Therefore, how may the Tier 2 and Tier 3 efforts not be in effect during the above TS Conditions?

**Question 3 Response:**

As discussed below, Tier 2 commitments are not in place all the time as opposed to the Tier 3 program which is in place at all times.

As discussed in the responses to Questions 1 and 2 above, AmerenUE is not requesting any changes to the 4-hour logic train bypass testing Notes. Point (1) in Question 3 above is not a fully developed thought based on a reading of Section C.2.3 of Regulatory Guide (RG) 1.177 on Tier 2 and Tier 3. As discussed in RG 1.177, Tier 2 provides "reasonable assurance that risk-significant equipment outage configurations will not occur when specific plant equipment is out of service ***consistent with the proposed TS change.***" That last concept in bold, italicized print is the key issue here and is missing from the Tier 2 summarization in Question 3. Tier 2 does *not* apply at all times, it only applies when a licensee is exercising an extended Completion Time ***consistent with the proposed TS change.*** RG 1.177 also discusses Tier 3 as a program that "ensures the risk impact of out-of-service equipment is appropriately evaluated prior to performing any maintenance activity."

Since AmerenUE is not requesting any risk-based changes to the current 4-hour logic bypass testing allowance, the additional Tier 2 commitments for logic trains do not apply. Those Tier 2 commitments apply only when the plant exercises the extended Completion Times of 24 hours for those three TS Conditions involving one inoperable logic train. On the other hand, the Tier 3 CRMP applies to all risk-significant equipment outage configurations, at all times, including when a logic train is out-of-service while tested in bypass.

**Question 4:** In the last sentence of the fourth bullet referenced in the first question, it is stated "That is, one complete train of a function that supports a complete train of a function noted above must be available."

Does this sentence mean the following: Any train that supports a function noted in the first three bullets (e.g., ATWS mitigation capability, auxiliary feedwater (AFW) system, RCS pressure relief system, LOCA mitigation capability, electrical systems, cooling systems) listed must be available?

Should the word "logic" be added to the first reference to a complete train in the quoted sentence so that the sentence states "one complete logic train of a function that supports a complete train of a function noted above must be available"?

**Question 4 Response:**

The quoted sentence means the following: "*At least one complete support system train, of the support systems listed in the 4<sup>th</sup> bullet, that supports a function noted in the first three bullets (e.g., AFW system, RCS pressure relief from the PORVs and safety valves, AMSAC, turbine trip, ECCS, SSPS master and slave relays, and analog channels in the 7300 Process Protection System or Nuclear Instrumentation System) listed on the bottom of page 14 of Attachment 1 must be available.*" The quoted sentence was taken directly from Vogtle's approved license amendment request.

The first reference to "one complete train" in the quoted sentence covers only the support systems listed in the 4<sup>th</sup> bullet on page 14. As a practical application example, the quoted sentence requires that at least one complete essential service water (ESW) train be available to support AFW flow delivery.

**Question 5 (For Only Callaway, Comanche Peak, and Wolf Creek):**

For the page of Attachment 1 with the discussion on "WCAP-15376 RAI Question 18 Commitment," there are statements to the effect that the rack drift used in the setpoint study is based on a 92-day (or 30-day) interval for COTs [Channel Operational Tests] and an increase to the COT frequency from this interval to 184 days will be verified (or validated) to have no impact on the setpoint study.

Does this statement mean that the possible impact of the increased COT interval on rack drift has not been assessed yet, but will be verified to have no impact later?

In amendments issued for the plant, it appears that the licensees have made statements that instrument drift data from previous analog channel operational tests had been examined and a review of the data confirmed that the setpoint drift which could be expected under the proposed surveillance test intervals (STIs) remains within the existing allowance in the instrument setpoint calculation. In the current application, a similar positive statement is not being made.

**Question 5 Response:**

The preliminary assessment reported on page 19 of Attachment 1 is that we do not anticipate any impact on setpoints. Our experience with license amendments 17 and 64, which trebled the COT interval from monthly to quarterly with no setpoint impact, leads us to believe that we will see no impact from this amendment's doubling of the COT interval. However, just as with license amendments 17 and 64, we are now making a commitment to trend drift data to provide assurance that our expectations are met.

The basis behind the quote from page 3 of the SE for license amendment 64 was not fully developed in the staff's question. License amendment 64 was based on ULNRC-2381 dated March 19, 1991 which sought ESFAS function relaxations per WCAP-10271 Supplement 2 and Supplement 2, Revision 1. Page 11 of Attachment 1 to ULNRC-2381 responded to SE Condition 1.b (from the NRC's February 22, 1989 SE for Supplement 2 and Supplement 2, Revision 1). On that page 11 AmerenUE discussed the drift monitoring results that had been observed for the *previous* implementation of amendment 17 on the RTS functions 5 years earlier. The quote from the license amendment 64 SE refers to our positive statement on page 11 of Attachment 1 to ULNRC-2381 that, based on drift monitoring of RTS channels extended from a monthly COT to a quarterly COT 5 years previously, we did not anticipate any impact on the ESFAS channels. However, to demonstrate that expectation, we committed in ULNRC-2381 to trending channel drift for 4 COT intervals after quarterly ESFAS COTs were approved by NRC.

For the current amendment application, 4 COT intervals correspond to 2 years of data since the COT SR Frequency is being extended to 6 months. As to the proposed amendment application not making a similar positive statement, none can be made at this time given the context behind license amendment 64 (i.e., quarterly RTS COT data had been available for 5 years prior to the ULNRC-2381 ESFAS COT submittal).