

December 18, 2002



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

ULNRC-04786

Ladies and Gentlemen:

**DOCKET NUMBER 50-483  
CALLAWAY PLANT  
UNION ELECTRIC COMPANY  
REQUEST FOR ENFORCEMENT DISCRETION TO ALLOW ADDITIONAL  
TIME FOR RESTORATION OF INOPERABLE TURBINE DRIVEN  
AUXILIARY FEEDWATER PUMP (NOED # 02-4-004)**

On December 16, 2002 telephone discussions were conducted with representatives from the NRC staff (Region IV and Office of Nuclear Reactor Regulation) and AmerenUE (Union Electric) to discuss a verbal request for enforcement discretion regarding the Limiting Condition for Operation (LCO) requirements of Technical Specification (TS) 3.7.5, "Auxiliary Feedwater (AFW) System." The request concerned the need for additional time to repair and test the turbine-driven AFW pump (TDAFP) at the Callaway Plant, which had been declared inoperable in response to a failure to start.

Events leading to the request began with a reactor trip that occurred on December 14, 2002. As described in further detail in the attachment to this letter, the TDAFP started and ran properly for 30 minutes in response to the reactor trip and associated AFW actuation signal. However, the TDAFP failed to properly start when it tripped due to an overspeed condition upon receipt of a second valid AFW actuation signal 40 minutes following the reactor trip. The pump was declared inoperable at 0501 on December 14, as the plant was stabilized and subsequently maintained in Mode 3.

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Investigation determined that the overspeed condition was caused by misalignment of the governor valve stem, resulting in increased friction/binding which hindered the ability of the governor valve to respond and effect its steam throttling function quickly enough with steam initially applied to the turbine. Repairs and a modification to address the start failure / overspeed trip were planned and executed during the days following the event.

From the repairs and modification to be implemented, it was identified that a significant amount of post-maintenance testing would be required to ensure proper governor valve response and TDAFP speed control settings. The testing necessitated an adequate steam supply so that testing could be performed at conditions similar to what existed at the time of the start failure and to perform testing to confirm operability of TDAFP, including the test required by TS Surveillance Requirement (SR) 3.7.5.2 which requires a minimum steam pressure of 900 psig. Such a supply of steam can only be provided by the steam generators with the plant in Mode 3. (Steam supplied by the auxiliary steam system has a nominal pressure of only 125 psig.). Therefore, with the plant already in Mode 3, it was strongly desired to remain in that Mode to complete the required testing. With the TDAFP inoperable and the expected amount of testing required, however, it was acknowledged that compliance with the LCO requirements of TS 3.7.5 could require the plant to be taken to Mode 4 before testing could be completed.

Specifically, declaring the TDAFP (i.e., the affected AFW train) inoperable at 0501 on December 14 placed Condition C under TS 3.7.5 in effect, which applies when one AFW train is declared inoperable (for reasons other than addressed in Conditions A and B of that TS). Entry into Condition C places Required Action C.1 into effect. This Required Action requires restoring the inoperable AFW train to OPERABLE status within 72 hours. With this Required Action / Completion Time not met, Condition D must be entered which places Required Actions D.1 and D.2 into effect. These respectively require the plant to be in Mode 3 (Hot Standby) within 6 hours and in Mode 4 (Hot Shutdown) within 12 hours. Thus, after the TDAFP was declared inoperable on December 14, Required Action C.1 required the affected AFW train to be restored to OPERABLE status by 0501 on December 17 (Tuesday morning). Otherwise, the plant was required to be in Mode 4 (per Required Action D.2) by 1701 on that day.

As noted above, Ameren desired to maintain the plant in Mode 3 in order to complete the required testing under the appropriate plant conditions before being required to place the plant in Mode 4. The disruption to the ongoing progress for restoring the TDAFP to Operable status, and the associated thermal cycling involved in affecting the Mode change(s) that may be required were judged to be unnecessary and inappropriate. Requesting enforcement discretion was identified to be an appropriate means to resolve the issue by allowing additional time for restoring TDAFP Operability beyond the 72-hour Completion Time of Required Action C.1 before Condition D (Required Action D.2) must be entered.

Two telephone conferences were therefore held on December 16 to enable AmerenUE to request that the NRC exercise enforcement discretion not to enforce compliance with the 72-hour Completion Time of Required Action C.1 under TS 3.7.5. Specifically, an additional 48 hours (beyond the 72-hours) was requested for restoring the TDAFP to OPERABLE status before entry into Condition D with its attendant Required Actions (for plant shutdown) would be required. This would allow the inoperable TDAFP at Callaway to be restored to Operable status by 0501 on December 19, 2002 before entry into Condition D was required.

In support of that request, the information provided in the attachment to this letter was prepared in accordance with the guidance provided by the NRC Inspection Manual, "Part 9900:Technical Guidance, Operations – Notices of Enforcement Discretion." This information was verbally provided in the telephone discussions conducted on December 16. During the second discussion, the NRC staff concluded that an NOED is warranted and at 6:16 PM (CST) granted verbal approval of AmerenUE's request for the NRC to exercise enforcement discretion. AmerenUE was directed to submit a written request within 2 working days following the verbal approval. That request is hereby submitted but with the following additional information.

Subsequent to the NRC's verbal approval of AmerenUE's request on December 16, repair activities were concluded, and testing activities were initiated. The compensatory measures to which AmerenUE committed (as described in the attachment) were implemented, as testing continued through that evening and into the following morning. Testing proceeded smoothly and successfully so that the TDAFP was declared OPERABLE at 0814 on December 17.

Based on the above, the total time required to restore the TDAFP to OPERABLE status was 75 hours and 13 minutes. As noted previously, if the Completion Times of Required Action C.1 and D.2 are considered, the total time allowed to repair the TDAFP and bring the plant to Mode 4 was 72 + 12 (or 84) hours.

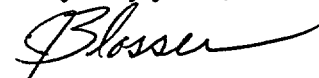
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The plant was already in Mode 3 (so that Required Action D.1 was already met). Based on administrative cool-down rates, approximately four hours would be needed to take the plant to Mode 4 in an orderly fashion prior to expiration of the 12-hour Completion Time of Action D.1. With the restoration of the TDAFP to OPERABLE status at 0814 on December 17, and in accordance with TS LCO 3.0.2, it was permissible to exit Condition D of TS LCO 3.7.5 at that time. (Per TS LCO 3.0.2, when a Required Action is in effect, if the associated LCO is met or is no longer applicable prior to expiration of the specified Completion Time, completion of the Required Action(s) is not required.) Condition D was therefore only in effect for 3 hours and 13 minutes. This was well ahead of when action would be required to effect an orderly shutdown from the given plant conditions.

Based on the above, it may be concluded that the TS were fully met so that no violation of the license (Technical Specifications) occurred. Consequently, enforcement discretion was not needed. AmerenUE is informing the NRC of this conclusion in accordance with the guidance provided in Section 4.0 of the noted PART 9900: Technical Guidance document.

Notwithstanding the above result, and as previously noted, all of the information needed to support AmerenUE's request is hereby provided in the attachment. For any additional questions regarding this request, please contact Dave Shafer at (314) 554-3104.

Very truly yours,



John D. Blosser  
Manager-Regulatory Affairs

**Attachment: REQUEST FOR ENFORCEMENT DISCRETION REGARDING  
COMPLIANCE WITH TECHNICAL SPECIFICATION 3.7.5,  
"AUXILIARY FEEDWATER (AFW) SYSTEM"**

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**REQUEST FOR ENFORCEMENT DISCRETION  
REGARDING COMPLIANCE WITH TECHNICAL SPECIFICATION 3.7.5,  
"AUXILIARY FEEDWATER (AFW) SYSTEM"**

**I. Technical Specification (TS) or other License Conditions that will be violated:**

As discussed in more detail below (Section II), on December 16, 2002, AmerenUE verbally requested that NRC exercise discretion to not enforce compliance with the actions required in Callaway Plant Technical Specification (TS) 3.7.5, "Auxiliary Feedwater (AFW) System." The turbine-driven auxiliary feedwater pump (TDAFP) was declared inoperable at 0501 on December 14, 2002 and Condition C of TS 3.7.5 was entered at that time. Required Action C.1 of TS 3.7.5 requires that one inoperable AFW train be restored to OPERABLE status within 72 hours, when that AFW train is inoperable for reasons other than an inoperable steam supply to the TDAFP (Condition A of TS 3.7.5) or an inoperable essential service water (ESW) supply to the TDAFP (Condition B of TS 3.7.5). If the 72-hour Completion Time of Required Action C.1 is not met, Condition D of TS 3.7.5 must be entered and the plant must be taken to MODE 3 within 6 hours and MODE 4 within 12 hours. Verbal approval was granted by NRC on December 16, 2002 to extend the time allowed for restoring the TDAFP to OPERABLE status beyond the Completion Time of TS 3.7.5 Required Action C.1 by 48 hours (for a total Completion Time of 120 hours).

**AFW System Design Basis**

The design basis of the AFW system is to supply water to the steam generators to remove decay heat and other residual heat by delivering at least the minimum required flow rate to the steam generators at pressures corresponding to the lowest steam generator safety valve set pressure plus 3% accumulation. In addition, the AFW system must supply enough makeup water to replace steam generator secondary inventory lost as the unit cools to MODE 4 conditions. Sufficient AFW flow must also be available to account for flow losses such as pump recirculation and line breaks.

The AFW system consists of two motor-driven AFW pumps and one TDAFP configured into three trains. Each motor-driven pump provides 100% of the feedwater flow required for removal of decay heat from the reactor assumed in the accident analyses. The TDAFP provides 200% of the capacity of a motor-driven pump. The pumps are equipped with recirculation lines to prevent pump operation against a closed system. Each motor-driven AFW pump is powered from an independent Class 1E power supply and feeds two steam generators, although each pump has the capability to be locally aligned to feed other steam generators. The TDAFP receives steam from two main steam lines upstream of the main steam isolation valves and water from either the condensate storage tank or redundant ESW supply lines. Each of the steam feed lines will supply 100% of the

requirements of the TDAFP. In addition, each of the ESW supply lines will supply 100% of the requirements of the TDAFP.

The TDAFP supplies a common header capable of feeding all steam generators with normally open-air operated control valves. The TDAFP is automatically started by steam generator water level - low-low in any two steam generators, undervoltage on either 4.16-kV engineered safety feature bus (NB01 or NB02), and upon actuation of the AMSAC (Anticipated Transient Without Scram Mitigation System Actuation Circuitry).

## **II. Circumstances Requiring the Request for Enforcement Discretion**

At 0420 on December 14, 2002 an automatic reactor trip occurred due to a trip from the Overtemperature Delta Temperature (OTDT) instrument channels in the reactor trip system. Prompt investigation determined that the reactor trip was due to an overly conservative gain setting in the isolation amplifier potentiometers in the summing amplifier cards in the OTDT trip function channels, which has now been corrected. In response to the reactor trip, the TDAFP and both motor-driven AFW pumps automatically started per design. Since it was not needed, the turbine-driven pump was secured after 30 minutes in accordance with plant procedures. A short time (~10 minutes) later, however, the pump received a valid start signal when water level in two of the steam generators decreased below the automatic actuation setpoint level. This time the TDAFP failed to properly start as it tripped from an overspeed condition. Steam generator water levels were restored to normal using the running motor-driven AFW pumps, and the plant was stabilized in Mode 3 at normal operating temperature and pressure (NOP/NOT).

After failing to properly start, the TDAFP was declared inoperable at 0501 on December 14. Efforts to identify the cause were promptly begun and troubleshooting was completed later that day. The start failure was confirmed to be due to an electronic overspeed trip. Further investigation determined that the overspeed condition was caused by misalignment of the governor valve stem, resulting in increased friction/binding which hindered the ability of the governor valve to respond quickly. Failure of the governor valve to respond quickly, i.e., to perform its throttling function soon enough, allowed enough excess steam to be initially admitted to the turbine to produce the overspeed trip.

Evidence that governor valve binding due to stem misalignment had occurred was discovered when scoring was found upon inspection of the valve's stem and internals. (Note: Misalignment or binding of governor valve linkage is a known cause of overspeed trips for TERRY turbines as documented in EPRI's Terry Turbine Maintenance Guide, AFW Application, Final Report 1007461, issued November 2002. AmerenUE has implemented corrective actions in response to that report.) It should be noted that during the most recent refueling outage, a modification was made to the TDAFP control system wherein the existing mechanical system was replaced with a digital control system. This modification required an extensive amount of post-modification testing which required

the governor valve to be cycled numerous times. This is believed to have contributed to the amount of scoring that was identified following the December 14 start failure.

Repair activities, as well as a modification to the turbine control system, were planned and implemented in response to the TDAFP start failure. (These are described in further detail in Section III below.) Following completion of the repairs and noted modification, a significant amount of post-maintenance testing was identified for performance to ensure proper governor valve response and TDAFP speed control settings. The intent, in part, was to perform the testing under the same conditions that existed when the TDAFP failure occurred on December 14. Also, it was anticipated that operability of the TDAFP would need to be confirmed by performance of the testing required per TS Surveillance Requirement (SR) 3.7.5.2, and SR 3.7.5.5, which requires a minimum steam pressure of 900 psig.

To perform the required testing an adequate main steam supply pressure (nominally 1000 psig) would be needed. The required steam supply can only be provided by the steam generators with the plant in Mode 3. (Although the Auxiliary Steam system is an alternate source, steam supplied by the auxiliary steam system has a nominal pressure of only 125 psig.). Therefore, with the plant already in Mode 3, it was highly desired to maintain the plant in that Mode to complete the required testing, rather than entering Mode 4 and then re-entering Mode 3 to complete the testing, as would be required by complying with the Required Actions under the LCO requirements of TS 3.7.5.

Maintaining the plant in Mode 3 was viewed to preclude a disruption to the current progress on restoring the TDAFP to operable status and avoid the associated thermal cycling involved in taking the plant from Mode 3 to Mode 4 and back to Mode 3. However, to maintain the plant in Mode 3 and allow sufficient time to complete the required testing, it was recognized that enforcement discretion would be needed to permit the plant to remain in this Mode and delay entry into Mode 4, beyond the 72 hour Completion Time specified per Required Action C.1 of TS 3.7.5. It was determined that allowing an additional 48 hours (beyond the required 72 hours) before the plant must be taken to Mode 4 (per Required Action D.2) would allow sufficient time to complete repairs and perform all of the required actions to confirm operability and thus insure that the actions taken in response to the TDAFP start failure were adequate to preclude recurrence.

Based on the above, AmerenUE requested that the NRC exercise enforcement discretion with respect to the 72-hour Completion Time of Required Action C.1 to allow an additional 48 hours (beyond the 72 hours) before entry into Condition D with its attendant plant shutdown requirements would be required. This would allow the inoperable TDAFP at Callaway to be restored to operable status by 0501 on December 19, 2002 before entry into Condition D was necessary.



### **III. Safety Basis (Including Risk Assessment and Basis Justification for Duration of Noncompliance)**

#### **Need for 48-Hour Extension of Completion Time**

The 48-hour extension of the Completion Time for restoration of the inoperable TDAFP was viewed to be adequate for completing repairs and completing all of the testing needed to confirm operability of the TDAFP under the desired plant conditions without placing undue time pressure on operations and maintenance personnel.

In response to the identified stem binding of the turbine governor valve, the following actions were taken to repair the valve:

- A new valve stem was machined and installed.
- Carbon spacers that serve to guide the valve stem were replaced.
- Correct clearances between the stem and valve body spacers/bushings were verified.
- Correct alignment between the valve stem and actuator was verified.

In addition, a modification was implemented to alter the responsiveness of the governor controls by changing the control logic. The effect of the modification is to slightly change the time interval between when the steam admission valve is opened and when the governor valve receives its signal to affect its throttle function. The change will have no adverse effect on the overall system response time but will reduce the likelihood of an overspeed condition. This modification was not implemented until post-maintenance testing associated with the repairs to the turbine governor valve was completed. This was necessary in order to verify that the repairs successfully addressed the apparent cause for the valve stem binding and to ensure that the effect of the repairs was not masked by the modification. This approach was expected to add additional time for completing the overall test sequence.

The planned testing was also expected to verify the correct operation of the TDAFP governor controls.

#### **Risk Assessment for Support of the 48-Hour Extension**

As noted previously, Callaway Technical Specification 3.7.5 specifies a Completion Time of 72 hours for restoring an inoperable AFW train, in this case the train associated with the turbine-driven auxiliary feedwater pump (TDAFP), to OPERABLE status, during Modes 1, 2, and 3. Upon expiration of this Completion Time, the plant is required to be taken to Mode 4 (within the following 12 hours).

To support a request for extending the Completion Time per an NOED, a risk evaluation was performed to assess the impact on core damage risk due to staying in Mode 3 for an additional 48 hours, with the TDAFP out of service. This evaluation credited no

additional risk-significant plant equipment being out of service, not performing any work in the switchyard and limiting personnel access to the switchyard. The incremental core damage frequency (CDF) was estimated to be  $2.36E-7$  per year for the Completion Time extension. This is a very small value and is conservative since it does not credit various extended timeframes for recovery, and the corresponding higher recovery probabilities, that would result from the reduced decay heat load that exists now, versus the decay heat load upon reactor trip. In fact, the current decay heat load is only approximately 4.5 percent of the decay heat load accounted for in the PRA model. A sensitivity analysis, partially factoring in this decreased decay heat load, indicates that the incremental CDF is less than  $1.50E-7$  per year.

Although an incremental CDF was estimated (above), in fact, the extended Completion Time for an inoperable TDAFP is actually risk neutral. This is because the TDAFP provides a decay heat removal function in Mode 4 as well as in Mode 3. Therefore, with the TDAFP out of service, there would be no decrease in CDF with the plant in Mode 4, versus Mode 3, making this NOED request risk neutral. In addition, placing the plant in Mode 4 would increase the risk due to the potential for interfacing systems LOCA and pressurized thermal shock. (Note that while the TDAFP provides no decay heat removal function in Mode 5, if the plant were taken to Mode 5, it would not be possible to perform an adequate retest of the TDAFP.)

In summary, the requested NOED does not involve any net increase in radiological risk.

#### **IV. Justification for Duration of Noncompliance**

This information was provided in the above section (Section III).

#### **V. Basis for Conclusion That Noncompliance Is Not a Potential Detriment to the Public Health and Safety and That No Significant Hazard Consideration is Involved**

##### **No Significant Hazards Consideration Evaluation**

In accordance with 10 CFR 50.92(c), AmerenUE's evaluation of the proposed enforcement discretion for significant hazards concluded the request would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

Based on the risk assessment presented in Section III above, the discussion of accident consequences is presented first.

The incremental core damage frequency (CDF) was conservatively estimated to be  $2.36E-07$ /year (less than  $1.50E-07$ /year with consideration given to a decreased decay heat load that exists 72 hours after reactor trip) for the increase in the Completion Time of TS 3.7.5 Required Action C.1 from 72 hours to 120 hours. However, the Completion Time extension was actually risk neutral. The TDAFP provides a decay heat removal function in MODE 4, prior to the RHR system being placed in service, as well as in MODE 3. This MODE 4 function is included in the Callaway PRA model. Therefore, with the TDAFP out of service, there would be no decrease in CDF with the plant in MODE 4 versus MODE 3, making this NOED request risk neutral. In addition, placing the plant in MODE 4 would increase the risk due to interfacing systems LOCA and pressurized thermal shock.

Further, the NRC's approval of the additional 48 hours for the repair of the TDAFP was acceptable since two motor-driven AFW trains remained capable of performing their intended function. During the extended maintenance and test period, appropriate compensatory actions were implemented (i.e., no additional risk-significant plant equipment was allowed to be out of service, no work was performed in the switchyard and personnel access to the switchyard was limited).

Therefore, the Completion Time extension did not involve a significant increase in the consequences of an accident previously evaluated.

Overall protection system performance remained within the bounds of the previously performed accident analyses since no hardware changes were proposed. The protection systems continued to function in a manner consistent with the plant design basis. This Completion Time extension did not result in a condition where the design, material, and construction standards that were applicable prior to the request were altered. The time response modeling assumptions used in the FSAR Chapter 15 safety analyses remained the same. The Completion Time extension did not modify any system interface. The Completion Time extension did not affect the probability of any event initiators. There was no degradation in the performance of, or an increase in the number of challenges imposed on, safety-related equipment assumed to function during an accident situation. There was no change to normal plant operating parameters or accident mitigation performance.

The Completion Time extension did not alter any assumptions or change any mitigation actions in the radiological consequence evaluations in the FSAR.

Therefore, the Completion Time extension did not involve a significant increase in the probability or consequences of an accident previously evaluated.

- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

There were no hardware changes nor were there any changes in the method by which any safety-related plant system performs its safety function. The Completion Time extension did not affect the normal method of plant operation. No performance requirements were affected.

No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures were introduced as a result of this request. There were no adverse effects or challenges imposed on any safety-related system as a result of this request.

The Completion Time extension did not alter the design or performance of the 7300 Process Protection System, Nuclear Instrumentation System, or Solid State Protection System used in the plant protection systems.

Therefore, the Completion Time extension did not create the possibility of a new or different kind of accident from any accident previously evaluated.

- (3) Involve a significant reduction in a margin of safety.

The Completion Time extension did not affect the total system response time assumed in the safety analyses. The Completion Time extension did not affect the acceptance criteria for any analyzed event nor was there a change to any Safety Analysis Limit (SAL). There was no effect on the manner in which safety limits or limiting safety system settings are determined nor was there any effect on those plant systems necessary to assure the accomplishment of protection functions. There was no impact on the overpower limit, departure from nucleate boiling ratio limits,  $F_Q$ , FAH, LOCA PCT, peak local power density, or any other margin of safety. The radiological dose consequence acceptance criteria listed in the Standard Review Plan continued to be met.

Therefore, the Completion Time extension did not involve a significant reduction in any margin of safety.

**Conclusion:** Based on the above information, it has been determined that the proposed request meets the requirements of 10 CFR 50.92(c) and does not involve a significant hazards consideration.

Consistent with the responses to the above 10 CFR 50.92 criteria, and as supported by the risk analysis that was performed, the compensatory measures taken (as described in Section VII), and the determination that there is no adverse impact to radiological

effluents or reactor operation (as discussed in Section VI), it was concluded that the noncompliance did not constitute a potential detriment to public health and safety.

## **VI. Environmental Evaluation**

This request for enforcement discretion was determined to meet eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) as specified below:

- (1) It involves no significant hazards consideration.

As demonstrated in Section VI above, this request does not involve a significant hazards consideration.

- (2) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The request does not involve a change to the facility or operating procedures that would cause an increase in the amounts of effluents or create new types of effluents.

- (3) There is no significant increase in individual or cumulative occupational radiation exposure.

The requested noncompliance would not adversely affect the operation of the reactor, nor does it create additional exposure to utility personnel or affect radiation levels that are present.

Based on the above, it may be concluded that there would be no impact on the environment resulting from the request, and that the request meets the criteria specified in 10 CFR 51.22 for a categorical exclusion from the requirements of 10 CFR 51.21 relative to requiring a specific environmental assessment by the Commission.

## **VII. Compensatory Actions**

The following compensatory actions were imposed during the time that the extended period for restoring the inoperable TDAFP was in effect:

- Access and activities in the switchyard were restricted to operator rounds. All other activities were prohibited.
- No other risk-significant equipment important to safety for the existing plant operating mode (Mode 3) was removed from service or otherwise rendered

inoperable. A list of risk-significant equipment in this regard was provided to Operations personnel.

#### **VIII. Approval by the Onsite Review Committee**

This request for enforcement discretion was reviewed and approved by Callaway's onsite review committee on December 16, 2002.

#### **IX. Basis for Type of NOED Required (Per Criteria Specified in Section B of Part 9900, "Technical Guidance: Operations – Notice of Enforcement Discretion")**

The type of NOED required per this request was identified to be a "regular" NOED, i.e., one that does not involve severe weather or other natural phenomena. It involves a nonrecurring noncompliance as it only involves a single request for extending the period of time that an inoperable plant component must be restored to OPERABLE status as specified per the plant Technical Specifications. As such, it involves a plant condition whereby the plant would be returned to compliance with the plant operating license within a short period of time. The NOED was therefore determined to be an NRC Region-issued NOED (if issued).

With regard to "regular" NOEDS, Section 2.1 of the NRC's Part 9900 guidance identifies NOED criteria applicable to various plant conditions, which the NRC takes into consideration when considering the issuance of an NOED. Specifically, this guidance refers to "operating plants," "plants in a shutdown condition," and "plants attempting to start up." It notes that for an operating plant, the NOED is intended to (a) avoid unnecessary transients as a result of compliance with the license condition and, thus, minimize potential safety consequences and operational risks, or (b) avoid testing, inspection, or system realignment that is inappropriate for the particular plant conditions.

For its request, AmerenUE determined that the guidance pertaining to "operating plants" is most applicable. This determination is based on the fact that the intent was to avoid an unnecessary transition from Mode 3 (Hot Standby) to Mode 4 (Hot Shutdown), which would be a transition in the shutdown direction. The intent of avoiding the transition was to also avoid the undesired thermal cycling associated with such a transition. This is in keeping with the intent of the NRC guidance for avoiding unnecessary transients resulting from compliance per criterion (a) noted above. In addition, the intent to maintain the plant in the appropriate plant condition (Hot Standby) for performing adequate testing to confirm TDAFP operability is in keeping with criterion (b) above for "operating plants," where the intent of the NOED may be to avoid testing or system realignment that is inappropriate for the particular plant conditions.

Finally, with regard to “operating plants,” it may be noted that a review of the plant Technical Specifications shows there is a distinction made between system requirements for Modes 3 and 4 versus Modes 5 and 6. The former are generally associated with an “operating” plant, while Modes 5 and 6 are generally associated with a “shutdown” plant. For example, with regard to electric power source requirements, TS 3.8.1, “AC Sources – Operating,” gives requirements for what electric power sources are required for Modes 1,2,3, and 4, while TS 3.8.2, “AC Sources – Shutdown,” gives source requirements for Modes 5 and 6. A similar division of requirements is made for “operating” Modes and “shutdown” Modes in TS 3.5.2, “ECCS – Operating,” versus TS 3.5.3, “ECCS – Shutdown”; TS 3.8.4, “DC Sources – Operating,” versus TS 3.8.5, “DC Sources – Operating”; and TS 3.8.9, “Distribution Systems – Operating,” versus TS 3.8.10, “Distribution Systems – Shutdown”; to name a few.

Based on the above, AmerenUE’s request was determined to involve a “regular” NOED applicable to an “operating plant” per the guidance provided in Part 9900 of the NRC Inspection Manual.