

September 7, 2000

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ULNRC-04307

DOCKET NUMBER 50-483  
CALLAWAY PLANT  
UNION ELECTRIC COMPANY  
REQUEST FOR  
NRR NOTICE OF ENFORCEMENT DISCRETION (NOED)



Gentlemen:

This letter confirms the results of a teleconference between AmerenUE and NRC Staff representatives in which AmerenUE requested an NRR Notice of Enforcement Discretion from the requirements of LCO 3.5.2, "ECCS - Operating." SR 3.5.2.5 has not been performed within the specified Frequency (18 months), plus the extension allowed by SR 3.0.2, on the "A" train of ECCS (i.e., demonstration of the automatic closure function of BNHV8812A). In this case SR 3.0.3 allows a 24-hour extension to perform the surveillance. Since this surveillance should not be performed at power, SR 3.0.3 would require that LCO 3.5.2 be declared not met after the 24-hour delay period expires. LCO 3.5.2 requires that two ECCS trains be OPERABLE in MODES 1, 2, and 3. Condition A covers the situation where one or more trains are inoperable and at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train is available. Required Action A.1 requires that the inoperable train(s) be restored within 72 hours. If the Completion Time for Required Action A.1 is not met, Condition B is entered. Required Actions B.1 and B.2 require the plant to be shutdown to MODE 3 within 6 hours and to MODE 4 within 12 hours.

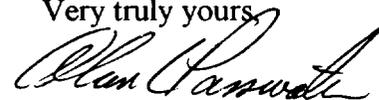
Currently, Callaway Plant is in MODE 1. The SR 3.0.3 delay period expires at 1135 hours CDT on September 8, 2000 after which Condition A of LCO 3.5.2 must be entered with a 72-hour restoration which expires at 1135 CDT on September 11, 2000. AmerenUE requests an extension until an exigent license amendment is approved that extends the SR 3.5.2.5 surveillance interval for valve BNHV8812A until the next MODE 5 shutdown. This will facilitate the completion of the testing during proper plant conditions. The exigent license amendment will be requested within 48 hours of approval of this NOED.

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This request for enforcement discretion was verbally discussed with the NRC Region IV Office and Office of Nuclear Reactor Regulation on September 7, 2000.

If you should have any questions regarding this request, please contact me at (314) 554-3205 or Dave Shafer at (314) 554-3104.

Very truly yours,



Alan C. Passwater

Manager

Corporate Nuclear Services

Attachments:

- Attachment 1      REQUEST FOR ENFORCEMENT DISCRETION  
REGARDING COMPLIANCE WITH TECHNICAL  
SPECIFICATION 3.5.2, "ECCS - OPERATING"
- Attachment 2      Cold Shutdown Justification EJ-06
- Attachment 3      Draft Technical Specification Markup of SR 3.5.2.5 (Page 3.5-  
5)

STATE OF MISSOURI     )  
  )  
COUNTY OF CALLAWAY )     S S

Alan C. Passwater, of lawful age, being first duly sworn upon oath says that he is Manager, Corporate Nuclear Services 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 Alan C. Passwater  
Alan C. Passwater  
Manager, Corporate Nuclear Services

SUBSCRIBED and sworn to before me this 7 day  
of September, 2000.

Gloria J. Taylor

GLORIA J. TAYLOR  
NOTARY PUBLIC  
STATE OF MISSOURI - CALLAWAY COUNTY  
NOTARY SEAL  
MY COMMISSION EXPIRES JUNE 21, 2003

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## **REQUEST FOR ENFORCEMENT DISCRETION REGARDING COMPLIANCE WITH TECHNICAL SPECIFICATION 3.5.2, "ECCS - OPERATING"**

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

Surveillance Requirement (SR) 3.5.2.5 has not been performed within the specified Frequency (18 months), plus the extension allowed by SR 3.0.2, on the "A" train of Emergency Core Cooling System (ECCS) (i.e., demonstration of the automatic closure function of BNHV8812A as discussed in Section B below). In this case, SR 3.0.3 allows a 24-hour extension to perform the surveillance. Since this surveillance should not be performed at power, SR 3.0.3 would require that LCO 3.5.2 be declared not met after the 24-hour delay period expires. Valve EJHV8811A is encapsulated and is tested only during plant shutdown (MODES 5 or 6) conditions during In-Service Testing (IST). The NRC-reviewed IST Cold Shutdown Frequency Justification EJ-06, which discusses the cold shutdown frequency justification for this encapsulated valve, concludes that the additional risks encountered and amount of time to test the encapsulated valves on-line do not justify the small incremental assurance gained by the testing. The encapsulation is part of the containment boundary which cannot be opened in MODEs 1, 2, 3, or 4. LCO 3.5.2 requires that two ECCS trains be OPERABLE in MODEs 1, 2, and 3. Condition A covers the situation where one or more trains are inoperable and at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train is available. Required Action A.1 requires that the inoperable train(s) be restored within 72 hours. If the Completion Time for Required Action A.1 is not met, Condition B is entered. Required Actions B.1 and B.2 require the plant to be shutdown to MODE 3 within 6 hours and to MODE 4 within 12 hours.

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

As discussed in the LCO Bases for TS 3.5.2, each ECCS train must be capable of taking suction from the Refueling Water Storage Tank (RWST) upon a Safety Injection (SI) signal and automatically transferring suction to the containment recirculation sump. The 100% flow requirement of Condition A applies during both injection and recirculation phases after a Loss of Coolant Accident (LOCA).

SR 3.5.2.5 requires that each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position will actuate to its correct position on an actual or simulated actuation signal. The actuation signals are specified in the Bases for SR 3.5.2.5, which states: "Each automatic ECCS valve actuates to the required position on an actual or simulated SI signal and on an actual or simulated RWST Level Low-Low 1 Automatic Transfer signal coincident with an SI signal." The Frequency of SR 3.5.2.5 is 18 months. The RWST Level Low-Low coincident with an SI signal automatically opens the RHR containment sump isolation valves (EJHV8811A/B). Normal switchover from the injection MODE (suction from the RWST) to the recirculation MODE (containment

recirculation sump) involves the sequential opening of the RHR containment sump isolation valves (EJHV8811A/B), followed by the closing of the RWST isolation valves (BNHV8812A/B). BNHV8812A/B are interlocked with EJHV8811A/B and will automatically close after the full open position switches on EJHV8811A/B are actuated. However, the automatic closure of BNHV8812A has not been functionally tested within the specified Frequency, plus allowed extension of SR 3.0.2. This feature has not been fully tested since a maintenance retest in April 1998 (during Refuel 9) for the "A" train of ECCS. The automatic closure of BNHV8812A/B was not previously included in the plant Technical Specification surveillance procedures because the valve does not actuate via a slave relay and therefore was not recognized as covered by this surveillance requirement.

Without enforcement discretion, the 24-hour extension for surveillance performance allowed by SR 3.0.3 will expire at 1135 hours CDT on September 8, 2000 and LCO 3.5.2 will be considered not met for the "A" train of ECCS. Thereafter, Callaway Plant will be required to shutdown to MODE 4 in accordance with TS 3.5.2, Required Action B.2. or test the valve interlock limit switch in MODE 1. Performance of the test with the Plant in MODE 1 is not desirable (see attached Cold Shutdown Justification, EJ-06) since encapsulated valve EJHV8811A must be stroked fully open. Enforcement discretion is being sought until an exigent license amendment is approved that extends the SR 3.5.2.5 surveillance interval for valve BNHV8812A until the next MODE 5 shutdown. This will facilitate the completion of the testing during proper plant conditions.

### **C. Safety Evaluation**

#### Design Basis Function

At the end of the injection phase of a LOCA, the RWST will be nearly empty. Continued cooling must be provided by the ECCS to remove core decay heat. Containment spray operation in the recirculation phase may also be required. The suction source for the ECCS and containment spray pumps is switched to the containment recirculation sumps. The low head Residual Heat Removal (RHR) pumps and containment spray pumps take suction from the containment recirculation sumps. The RHR pumps direct flow to the RHR heat exchangers and, depending on RCS pressure, recirculate the fluid back to the RCS directly or via the safety injection and centrifugal charging pumps. The ECCS switchover from injection to recirculation is initiated automatically upon receipt of the RWST Level Low-Low 1 Automatic Transfer signal coincident with an SI signal and is completed via timely operator action at the main control board after automatic switchover verification has occurred. Switchover from the RWST to the containment recirculation sumps must be completed before the RWST empties to prevent damage to the ECCS and containment spray pumps and a loss of core cooling capability. For similar reasons, switchover must not occur before there is sufficient water in the containment recirculation sumps to support ECCS and containment spray pump operation. Furthermore, switchover must not occur before ensuring that sufficient borated water is injected from the RWST. This ensures the reactor remains shut down in the recirculation MODE.

### Impact on Nuclear Safety

Based on the following points, we believe it is prudent to defer testing until the next refueling outage, which will minimize the potential safety consequences from a unit shutdown or testing in MODE 1. A shutdown could initiate unexpected transients, potentially cause electric grid instability which may affect offsite power sources, and place an unnecessary thermal cycle on safety significant equipment.

- The redundant train "B" of ECCS is operable.
- BNHV8812A can be manually closed from the main control room as demonstrated during quarterly IST surveillance testing. A sensitivity calculation has been performed which demonstrates there is sufficient time for manual operator action to close both BNHV8812A and B while following the Emergency Operating Procedures to complete the switchover to the recirculation phase for ECCS.
- There is no reason to question the ability of BNHV8812A to automatically close after EJHV8811A has fully opened. Only the frequency of demonstrating this function is at issue. All of the circuitry with the exception of the EJHV8811A open interlock limit switch has been tested within the last 18 months and all components have been tested since Refuel 9 (April 1998) when a complete new Limitorque actuator was installed. The EJHV8811A open interlock limit switch was also verified to operate properly three times prior to the Refuel 9 actuator replacement as a retest activity following maintenance evolutions on this valve actuator.
- Heightened operator attention will be assured by issuing a night order explaining the issue of BNHV8812A not being tested within the required frequency. Just in time training will also be conducted with operating crews covering the existing contingency steps in Emergency Operating Procedure ES-1.3 should BNHV8812A fail to close.
- See attached Cold Shutdown Justification, EJ-06 for the potential impacts of testing in MODE 1.

### Probabilistic Safety Assessment (PSA) Evaluation

The Callaway PRA does not require BNHV8812A/B to automatically close for successful ECCS or containment spray recirculation. The basis for not requiring these valves to close for ECCS recirculation is that failure of these valves to close is postulated to result in an equalization of levels in the RWST and containment recirculation sumps at an elevation above the Net Positive Suction Head (NPSH) required for the RHR and containment spray pumps.

A calculation was performed where it was assumed BNHV8812A must go closed and the autoclosure feature was inoperable. The calculation determined the incremental conditional core damage probability (ICCDP) incurred due to operating until the next refueling outage without surveillance testing the auto-closure feature for BNHV8812A. The maximum ICCDP is  $1.47E-6$ , which assumes zero limit switch reliability for the remainder of this cycle. Note that this value credits the core damage probability averted due to not shutting down and restarting the plant. This valve is expected to operate properly as discussed previously in this section.

#### **D. Unreviewed Safety Question Determination and No Significant Hazards Consideration Evaluation**

##### 10CFR50.59 Evaluation

Based on the information provided in Item C above, the following 50.59 evaluation is provided:

- (1) Involve an increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR.

Overall protection system performance will remain within the bounds of the previously performed accident analyses since no hardware changes are proposed. The protection systems will continue to function in a manner consistent with the plant design basis. This request does not result in a condition where the design, material, and construction standards that were applicable prior to the request are altered. The time response MODELing assumptions used in the FSAR Chapter 15 (see Table 15.0-4) safety analyses remain the same. The proposed request will not modify any system interface. The proposed request will not affect the probability of any event initiators. There is an incremental but insignificant increase in the probability of an undetected failure of the valve interlock function due to the one time increase of the surveillance interval. There will be 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 will be no change to normal plant operating parameters or accident mitigation performance.

The proposed request will not alter any assumptions or change any mitigation actions in the radiological consequence evaluations in the FSAR.

The enforcement discretion prevents MODE 1 testing, or unit shutdown that could result in a reactor transient and an unwarranted challenge of safety-related systems.

Therefore, the proposed request involves an insignificant increase in the probability of a malfunction of equipment important to safety. There is no increase in the consequences

of an accident or malfunction of equipment important to safety. There is no increase in the consequences of a malfunction of equipment important to safety.

- (2) Create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR.

There are no hardware changes nor are there any changes in the method by which any safety-related plant system performs its safety function. This request will not affect the normal method of plant operation. No performance requirements will be affected.

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

This request does 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 proposed request does not create the possibility of a new or different type of accident or malfunction from any previously evaluated in the FSAR.

- (3) Reduce margin of safety as defined in the Basis for any Technical Specification.

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

Therefore, the proposed request does not involve a reduction in the margin of safety as defined in the Basis for any Technical Specification.

**Conclusion:**

Based upon the preceding information, it has been determined that the proposed request does not involve any undue risk to the health and safety of the public. This change will require NRC approval.

### No Significant Hazards Consideration Evaluation

In accordance with 10CFR50.92(c), UE's evaluation of the proposed enforcement discretion for significant hazards concludes the request would not:

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

Overall protection system performance will remain within the bounds of the previously performed accident analyses since there are no hardware changes. The Reactor Trip System (RTS) and ESFAS instrumentation will be unaffected. These protection systems will continue to function in a manner consistent with the plant design basis. All design, material, and construction standards that were applicable prior to the request are maintained.

The proposed request will not affect the probability of any event initiators. There will be 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 will be no change to normal plant operating parameters or accident mitigation performance.

The proposed request will not alter any assumptions or change any mitigation actions in the radiological consequence evaluations in the FSAR.

Therefore, the proposed change does 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 are no hardware changes nor are there any changes in the method by which any safety-related plant system performs its safety function. This request will not affect the normal method of plant operation. No performance requirements will be affected.

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

This request does 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 proposed request does not create the possibility of a new or different kind of accident from any previously evaluated.

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

There will be no effect on the manner in which safety limits or limiting safety system settings are determined nor will there be any effect on those plant systems necessary to assure the accomplishment of protection functions. There will be no impact on the overpower limit, departure from nucleate boiling ratio limits, heat flux hot channel factor ( $F_Q$ ) nuclear enthalpy rise hot channel factor ( $FN/\Delta H$ ), loss of coolant accident peak cladding temperature (LOCA PCT), peak local power density, or any other margin of safety. The radiological dose consequence acceptance criteria listed in the Standard Review Plan will continue to be met.

Therefore, the proposed request does not involve a significant reduction in any margin of safety.

Conclusion:

Based on the preceding information, it has been determined that the proposed request meets the requirements of 10CFR50.92(c) and does not involve a significant hazards consideration.

#### **E. Environmental Evaluation**

This request for enforcement discretion meets eligibility criteria for categorical exclusion set forth in 10CFR51.22(c)(9) as specified below:

- (1) Involves no significant hazards consideration

As demonstrated in Section D above, this request does not involve any 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 request would not adversely affect the operation of the reactor, and would not affect any system that would affect occupational radiation exposure. The proposed request does not create additional exposure to utility personnel nor affect radiation levels that are present. The enforcement discretion request will not result in any increase in individual or cumulative occupational radiation exposure.

Based on the above, it is concluded that there will be no impact on the environment resulting from the request, and that the request meets the criteria specified in 10CFR51.22 for a categorical exclusion from the requirements of 10 CFR 51.21 relative to requiring a specific environmental assessment by the Commission.

#### **F. Compensatory Actions**

A sensitivity calculation (based on conservative times obtained from Callaway training simulator exercises) has been performed which demonstrates there is sufficient time for manual operator action to close BNHV8812A and B while following the EOPs to complete the switchover to the recirculation phase for ECCS. Heightened operator attention will be assured by issuing a night order explaining the issue of BNHV8812A not being tested within the required frequency. Just in time training will also be conducted with operating crews covering the existing contingency steps in Emergency Operating Procedure ES-1.3 should BNHV8812A fail to close.

#### **G. Justification for Duration Requested**

The requested NOED would provide an extension until an exigent license amendment is approved that extends the surveillance interval until the next MODE 5 shutdown. This surveillance test requires that EJHV8811A be stroked fully open. This valve is encapsulated and is tested only during plant shutdown (MODES 5 or 6) conditions during IST testing. The NRC-reviewed IST Cold Shutdown Frequency Justification EJ-06, which discusses the cold shutdown frequency justification for this encapsulated valve, concludes that the additional risks encountered and amount of time to test the encapsulated valves on-line do not justify the small incremental assurance gained by the testing. The ability to remotely operate BNHV8812A from the Control Room will continue to be tested quarterly in accordance with Callaway's Pump and Valve Program.

#### **H. Onsite Review Committee Review and Approval**

The Callaway Plant Onsite Review Committee approved this NOED request on September 7, 2000.

#### **I. Justification for Submitting a Request for Enforcement Discretion**

In Accordance with NUREG 1600, "General Statement of Policy and Procedures for NRC Enforcement Actions," Section VII, "Exercise of Discretion," Subsection "C," Notice of Enforcement Discretion for Power Reactors and Gaseous Diffusion Plants."

"For an operating reactor, this exercise of enforcement discretion is intended to minimize the potential safety consequences of unnecessary plant transients with accompanying operational risks and impacts."

SR 3.5.2.5 assures that the required automatic equipment actuations occur for ECCS systems, including the switchover to the recirculation phase. The "B" train of ECCS is operable. The "A" train of ECCS is considered to be inoperable from a Technical Specification perspective only because the surveillance has not been completed within the last 18 months. However the circuit has been completely tested within the last 30 months. There is no reason to believe the "A" train is incapable of performing its safety function

**J. Need for License Amendment and Impact of TS Line-Item Improvements on Request**

An exigent Technical Specification change will be requested to extend the surveillance interval for SR 3.5.2.5 for valve BNHV8812A after approval of this NOED request. Attachment 3 is the proposed draft of the Technical Specification page changes. The requested extension will cover the period from March 4, 2000 until startup from the first shutdown to MODE 5 occurring after September 8, 2000, but no later than June 1, 2001.

EJ-06

COLD SHUTDOWN JUSTIFICATION

**VALVE:** EJHV8811A, B

**CATEGORY:** B

**CLASS:** 2

**FUNCTION:** Provides containment isolation. Opens to provide flow path from containment recirculation sump to suction of RHR pump.

**TEST REQUIREMENT:** Exercise valve (full stroke) to the position required to fulfill its function and stroke time every 3 months.

**BASIS FOR RELIEF:** Opening valve (full or partial stroke) during operation would drain the RHR suction header into the containment sump rendering the RHR pumps inoperable. Current procedures isolate and drain the suction header prior to stroking. This requires significant time. An alternative is to allow the water to go into the sumps which then would require removal to decrease containment humidity. Another concern is the additional risk of not getting the system fully vented. Requirements currently exist requiring ECCS systems be vented monthly due to problems encountered. The additional risks encountered and amount of time to perform testing do not justify the small amount of additional assurance gained by the testing.

**ALTERNATE TESTING:** Valves will be exercised (full stroke) and stroke timed during cold shutdown when the proper precautions may be taken without impacting operation.

\*This was previously transmitted by ULNRC 03043 dated July 14, 1994.

DRAFT

**SURVEILLANCE REQUIREMENTS (continued)**

SURVEILLANCE		FREQUENCY												
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months *												
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	18 months												
SR 3.5.2.7	Verify, for each ECCS throttle valve listed below, each mechanical position stop is in the correct position.  <div style="text-align: center;"><u>Valve Number</u></div> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>EMV0095</td> <td>EMV0107</td> <td>EMV0089</td> </tr> <tr> <td>EMV0096</td> <td>EMV0108</td> <td>EMV0090</td> </tr> <tr> <td>EMV0097</td> <td>EMV0109</td> <td>EMV0091</td> </tr> <tr> <td>EMV0098</td> <td>EMV0110</td> <td>EMV0092</td> </tr> </table>	EMV0095	EMV0107	EMV0089	EMV0096	EMV0108	EMV0090	EMV0097	EMV0109	EMV0091	EMV0098	EMV0110	EMV0092	18 months
EMV0095	EMV0107	EMV0089												
EMV0096	EMV0108	EMV0090												
EMV0097	EMV0109	EMV0091												
EMV0098	EMV0110	EMV0092												
SR 3.5.2.8	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	18 months												

\* Verification of the automatic closure function of BNHV8812A shall be performed prior to startup from the first shutdown to MODE 5 occurring after September 8, 2000, but no later than June 1, 2001.