1901 Chouteau Avenue
Post Office Box 149
St. Louis, Missouri 63166
314-554-2650

UNION ELECTRIC

Donald F. Schnell
Senior Vice President
Nuclear

February 17, 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

Gentlemen: ULNRC-2960

DOCKET NUMBER 50-483
CALLAWAY PLANT
ECCS ACCUMULATOR ALLOWED OUTAGE TIME

References:
1. ULNRC-2679 dated August 6, 1992, Request for Regional Waiver of Compliance
2. ULNRC-2703 dated September 29, 1992, Callaway IPE
3. NRC Generic Letter 93-05 dated September 27, 1993
4. NUREG-1431 dated September 1992, Standard Technical Specifications for Westinghouse Power Plants

Union Electric Company herewith transmits an application for amendment to Facility Operating License No. NPF-30 for the Callaway Plant.

This amendment application includes changes to Technical Specification 3/4.5.1 as well as Bases Section 3/4.5.1. A new Action Statement a is added to Specification 3.5.1 to provide a 72 hour allowed outage time (AOT) for one accumulator inoperable due to its boron concentration not meeting the 2300-2500 ppm band. If an accumulator is inoperable for any other reason, Action Statement b must be followed. This approach is consistent with NUREG-1431 (Reference 4). The AOT for Action Statement b is 24 hours in lieu of the current AOT of 1 hour. The 1 hour AOT is too short to perform maintenance and restoration on the accumulator subsystems. This led to a request for discretionary

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enforcement in Reference 1. The PRA performed in support of the Callaway IPE, submitted in Reference 2, has been revised to account for a 100 hour per year accumulator unavailability. There was only a very insignificant effect on the overall core damage frequency (CDF) reported in Reference 2. Surveillances 4.5.1.1.a.1) and 4.5.1.1.b are revised and Surveillance 4.5.1.2 is deleted from the Technical Specifications. These surveillance changes are compatible with plant operating experience and are consistent with the guidance of NRC Generic Letter 93-05 (Reference 3). Surveillance 4.5.1.2 shall be retained in FSAR Chapter 16, as requested in Reference 3. Bases Section 3/4.5.1 is revised to discuss the 72 hour and 24 hour AOTs for Action Statements a. and b. above.

The revised LCO is consistent with that given in Reference 4, except for the 24 hour AOT for Action Statement b which is based on a plant-specific PRA evaluation. PG&E (Diablo Canyon) has been identified by the WOG as the lead plant for this Technical Specification improvement. They plan to submit an amendment request that will be similar to ours except for plant-specific AOT considerations based on their PRA.

The Callaway Plant Onsite Review Committee and the Nuclear Safety Review Board have reviewed this amendment application. Attachments 1 through 4 provide the Safety Evaluation, Significant Hazards Evaluation, Environmental Consideration, and proposed Technical Specification revisions, respectively, in support of this request. It has been determined that this amendment application does not involve an unreviewed safety question as determined per 10CFR50.59 nor a significant hazard consideration as determined per 10CFR50.92. Pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

If you have any questions on the attachments, please contact us.

Very truly yours,

Donald F. Schnell

Donald F. Schnell

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Attachments: 1 - Safety Evaluation
2 - Significant Hazards Evaluation
3 - Environmental Consideration
4 - Proposed Technical Specification Revisions

STATE OF MISSOURI)
)   S S
CITY OF ST. LOUIS)

Donald F. Schnell, of lawful age, being first duly sworn upon oath says that he Senior Vice President-Nuclear and an officer of 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 Donald F. Schnell
Donald F. Schnell
Senior Vice President
Nuclear

SUBSCRIBED and sworn to before me this 17th day of February, 1994.

Barbara J. Pfaff
BARBARA J. PFAFF
NOTARY PUBLIC — STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1997
ST. LOUIS COUNTY

cc: T. A. Baxter, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, D.C. 20037

M. H. Fletcher
CFA, Inc.
18225-A Flower Hill Way
Gaithersburg, MD 20879-5334

L. Robert Greger
Chief, Reactor Project Branch 1
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

Bruce Bartlett
Callaway Resident Office
U.S. Regulatory Commission
RR#1
Steedman, MO 65077

L. R. Wharton (2)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
1 White Flint, North, Mail Stop 13E21
11555 Rockville Pike
Rockville, MD 20852

Manager, Electric Department
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

Ron Kucera
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

ATTACHMENT ONE

SAFETY EVALUATION

INTRODUCTION

This amendment application includes changes to Technical Specification 3/4.5.1 as well as Bases Section 3/4.5.1. A new Action Statement a. is added to Specification 3.5.1 to provide a 72 hour allowed outage time (AOT) for one accumulator inoperable due to its boron concentration not meeting the 2300-2500 ppm band. If an accumulator is inoperable for any other reason, Action Statement b. must be followed. This approach is consistent with NUREG-1431 (Reference 4). The AOT for Action Statement b. is 24 hours in lieu of the current AOT of 1 hour. The 1 hour AOT is too short to perform maintenance and restoration on the accumulator subsystems. The PRA performed in support of the Callaway IPE, submitted in Reference 2, has been revised to account for a 100 hour per year accumulator unavailability. There was only a very insignificant effect on the overall core damage frequency (CDF) reported in Reference 2, as further discussed below. Surveillances 4.5.1.1.a.1) and 4.5.1.1.b are revised and Surveillance 4.5.1.2 is deleted per the guidance of NRC Generic Letter 93-05 (Reference 3). Surveillance 4.5.1.2. shall be retained in FSAR Chapter 16, as requested in Reference 3. Bases Section 3/4.5.1 is revised to discuss the 72 hour and 24 hour AOTs for Action Statements a. and b. above.

DESIGN CONSIDERATIONS

The accumulators are pressure vessels partially filled with borated water and pressurized with nitrogen gas. During normal operation, each accumulator is isolated from the RCS by a motor operated isolation valve (open during power operation with power locked out) and two check valves in series. Should the RCS pressure fall below the accumulator pressure (nominally 600 psig), the check valves open and borated water is forced into the RCS. One accumulator is attached to each of the cold legs of the RCS. Mechanical operation of the swing-disc check valves is the only action required to open the injection path from the accumulators to the core via the cold legs.

The accumulators are passive components, since no operator or control actions are required in order for them to perform their function. Internal accumulator tank pressure is sufficient to discharge the accumulator contents to the RCS, if RCS pressure decreases below the accumulator pressure.

Connections are provided for remotely adjusting the level and boron concentration of the borated water in each accumulator during normal plant operation, as required.

Accumulator water level may be adjusted either by draining to the recycle holdup tank or by pumping borated water from the RWST to the accumulator. Samples of the solution in the accumulators are taken periodically for checks of boron concentration.

Accumulator pressure is provided by a supply of nitrogen gas, and can be adjusted, as required, during normal plant operation. However, the accumulators are normally isolated from this nitrogen supply. Gas relief valves on the accumulators protect them from pressures in excess of design pressure. Accumulator gas pressure is monitored by indicators and alarms. Solenoid-operated vent valves are provided to depressurize the accumulators during emergency cold shutdown conditions.

The accumulators are located within the containment but outside of the secondary shield wall which protects the tanks from missiles generated from a postulated LOCA.

ECCS ANALYSIS DISCUSSION

A LOCA is defined as a rupture of the RCS piping or of any line connected to the system from which the break flow exceeds the flow capability of the normal makeup/charging system. Ruptures of small cross-sections will cause expulsion of the reactor coolant at a rate which can be accommodated by the centrifugal charging pumps maintaining an operational water level in the pressurizer, permitting the operator to execute an orderly shutdown.

The maximum break size for which the normal makeup system can maintain the pressurizer level is obtained by comparing the calculated flow from the RCS through the postulated break against the centrifugal charging pump makeup flow at normal RCS pressure, i.e., 2,250 psia. A makeup flow rate from one centrifugal charging pump is adequate to sustain pressurizer level at 2,250 psia for a break through a 0.375-inch-diameter hole. This break results in a loss of approximately 17.5 lb/sec (127 gpm at 130°F and 2,250 psia).

For the analyses reported in FSAR Chapter 15, a major pipe break (large break) is defined as a rupture with a total cross-sectional area equal to or greater than 1.0 square foot (ft^2), up to and including the double-ended rupture of the largest RCS line. This event is considered an ANS Condition IV event, a limiting fault, in that it is not expected to occur during the lifetime of the plant but is postulated as a conservative design basis.

The ECCS Acceptance Criteria are described in 10CFR50.46 as follows:

a. The calculated peak fuel element clad temperature is below the requirement of 2,200°F.

b. The amount of fuel element cladding that reacts chemically with water or steam does not exceed 1 percent of the total amount of Zircaloy in the reactor.

c. The clad temperature transient is terminated at a time when the core geometry is still amenable to cooling. The localized cladding oxidation limit of 17 percent is not exceeded during or after quenching.

d. The core remains amenable to cooling during and after the break.

e. The core temperature is reduced and decay heat is removed for an extended period of time. This is required to remove heat from the long-lived radioactivity remaining in the core.

Should a pipe break occur, depressurization of the RCS results in a pressure decrease in the pressurizer. Reactor trip occurs and the safety injection system is actuated when their respective pressurizer low pressure trip setpoints are reached. Reactor trip and safety injection system actuation may be initiated by a high containment pressure signal, depending on the actual break size. These countermeasures will limit the consequences of the accident in two ways:

a. Reactor trip and borated water injection provide additional negative reactivity insertion to supplement void formation in causing rapid reduction of power to a residual level corresponding to fission product decay heat. However, no credit is taken during the LOCA blowdown for negative reactivity due to the boron content of the injection water.

b. Injection of borated water ensures sufficient flooding of the core to prevent excessive clad temperatures.

During blowdown, heat from fission product decay, hot internals, and the vessel continues to be transferred to the reactor coolant. At the beginning of the blowdown phase, the entire RCS contains subcooled liquid which transfers heat from the core by forced convection with some fully developed nucleate boiling. Thereafter, the core heat transfer is based on local conditions with transition boiling, film boiling, and forced convection to steam as the major heat transfer mechanisms.

The heat transfer between the RCS and the secondary system may be in either direction, depending on the relative temperatures. In the case of continued heat addition to the secondary, secondary system pressure increases and the atmospheric relief and/or main steam safety valves may actuate to limit the pressure. Makeup water to the secondary side is automatically provided by the auxiliary feedwater system. The safety injection signal actuates a feedwater isolation signal which isolates normal feedwater flow by closing the main feedwater isolation valves and also initiates auxiliary feedwater flow by starting the auxiliary feedwater pumps. The secondary flow aids in the reduction of RCS pressure.

When the RCS depressurizes to 600 psia, the cold leg accumulators begin to inject borated water into the reactor coolant loops.

The blowdown phase of the transient ends when the RCS pressure (initially assumed at a nominal 2,280 psia) falls to a value approaching that of the containment atmosphere. Prior to or at the end of the blowdown, the mechanisms that are responsible for the bypassing of emergency core cooling water injected into the RCS are no longer in effect. At this time (called end-of-bypass), refill of the reactor vessel lower plenum begins. Refill is complete when emergency core cooling water has filled the lower plenum of the reactor vessel, which is bounded by the bottom of the fuel rods (called bottom of core recovery time).

The reflood phase of the transient is defined as the time period lasting from the end-of-refill until the reactor vessel has been filled with water to the extent that the core temperature rise has been terminated. From the later stage of blowdown and then the beginning-of-reflood, the safety injection accumulator tanks rapidly discharge borated cooling water into the RCS, contributing to the filling of the reactor vessel downcomer. The downcomer water elevation head provides the driving force required for the reflooding of the reactor core. The centrifugal charging, safety injection, and RHR pumps aid in the filling of the downcomer and subsequently supply water to maintain a full downcomer and complete the reflooding process.

The accumulators are assumed OPERABLE in both the large and small break LOCA analyses at full power. In performing the LOCA calculations, conservative assumptions are made concerning the availability of ECCS flow. In the early stages of a LOCA, with or without a loss of offsite power, the accumulators provide the sole source of makeup water to the RCS. The assumption of loss of offsite power conservatively imposes a delay wherein the ECCS pumps cannot deliver flow until the emergency diesel generators start, come to rated speed, and go through their timed loading sequence. In cold leg break scenarios, the entire contents of one accumulator are assumed to be lost through the break.

The limiting large break LOCA is a double ended guillotine break at the discharge of the reactor coolant pump. During this event, the accumulators discharge to the RCS as soon as RCS pressure decreases to below accumulator pressure.

As a conservative estimate, no credit is taken for ECCS pump flow until an effective delay has elapsed. This delay accounts for the diesels starting and the pumps being loaded and delivering full flow. The delay time is conservatively set with an additional 2 seconds to account for SI signal generation. During this time, the accumulators are analyzed as providing the sole source of emergency core cooling. No operator action is assumed during the blowdown stage of a large break LOCA.

The worst case small break LOCA analyses also assume a time delay before pumped flow reaches the core. For the larger range of small breaks, the rate of blowdown is such that the increase in fuel clad temperature is terminated solely by the accumulators, with pumped flow then providing continued cooling. As break size decreases, the accumulators and centrifugal charging pumps both play a part in terminating the rise in clad temperature. As break size continues to decrease, the role of the accumulators continues to decrease until they are not required and the centrifugal charging pumps become solely responsible for terminating the temperature increase.

For both the large and small break LOCA analyses, a nominal contained accumulator water volume is used. The contained water volume is the same as the deliverable volume for the accumulators, since the accumulators are emptied, once discharged. For small breaks, an increase in water volume is a peak clad temperature penalty. For large breaks, an increase in water volume can be either a peak clad temperature penalty or benefit, depending on downcomer filling and subsequent spill through the break during the core reflooding portion of the transient. The analysis makes a conservative assumption with respect to ignoring or taking credit for line water volume from the accumulator to the check valves.

The minimum boron concentration setpoint is used in the post-LOCA boron concentration calculation. The calculation is performed to assure reactor subcriticality in a post-LOCA environment. Of particular interest is the large break LOCA, since no credit is taken for control rod assembly insertion. A reduction in the accumulator minimum boron concentration would produce a subsequent reduction in the available containment sump concentration for post-LOCA shutdown and an increase in the maximum sump pH. The maximum boron concentration is used in determining the cold leg to hot leg recirculation switchover time and minimum sump pH.

The large and small break LOCA analyses are performed at the minimum nitrogen cover pressure, since sensitivity analyses have demonstrated that higher nitrogen cover pressure results in a computed peak clad temperature benefit.

The maximum nitrogen cover pressure limit prevents accumulator relief valve actuation, and ultimately preserves accumulator integrity.

The effects on containment mass and energy releases from the accumulators are accounted for in the FSAR Chapter 6 containment analyses.

The accumulators satisfy Criterion 3 of the NRC Policy Statement.

CALLAWAY PRA STUDIES

The total core damage frequency (CDF) reported in the Callaway IPE, Reference 2, is 5.846E-5 per reactor year. This total includes internal flooding events. In support of the new Action Statement b. AOT of 24 hours, it was chosen to assess the effect on the Callaway CDF of an accumulator test and maintenance (TM) unavailability of 100 hours per calendar year. Based on prior operating experience, this provides a conservative upper bound on TM unavailability for the accumulators. The probability of non-large LOCA sequence cutsets containing accumulator TM basic events was found to be far below the sequence quantification truncation value used in the Callaway IPE. This was expected since the proposed AOT increase did not result in a discernible increase in the overall accumulator injection unavailability for non-large LOCA sequences. For large LOCA sequences the proposed AOT increase does result in an increase in the overall accumulator injection unavailability. As such, core damage sequence AS04 of the large LOCA event tree, Figure 3.1.3-13 of the Callaway IPE, was requantified. This sequence is comprised of only two events: a large LOCA and failure of accumulator injection. All other large LOCA event tree sequences model successful accumulator injection. The frequency of sequence AS04 as originally reported in the Callaway IPE was 3.00E-9 per reactor year. The frequency of sequence AS04 was requantified to be 3.87E-9 per reactor year with the 100 hour per year TM unavailability, for an increase of 8.7E-10 per reactor year. It is noted that when added to the overall CDF of 5.846E-5 per reactor year, there is no effect given the number of significant digits reported. This conclusion supports the finding below that this Technical Specification change does not increase the consequences of an accident or equipment malfunction.

It is noted that the Callaway PRA models successful accumulator injection for large break LOCA events as 2 of 3 intact accumulators injecting into the RCS cold legs. This success criterion as well as the increase in the accumulator allowed outage time are supported by a series of successful MAAP code runs for large break LOCAs, up to and including double-ended large break LOCAs. Sensitivity studies on the total peaking factor and on RHR flow rate were performed. These MAAP runs, in addition to the MAAP runs performed for the Callaway IPE, support the success criterion of 2 intact accumulators injecting into the RCS cold legs. The Modular Accident Analysis Program (MAAP) was used in the Callaway IPE to evaluate severe accident progression, to assist in quantifying the containment event tree (CET), and for estimating source terms. MAAP is capable of modeling a wide range of possible severe accident behavior. Model parameters are used both as inputs to a given physical model and to select between alternative descriptions of a phenomenon. The MAAP code is further described in Section 4.2 of the Callaway IPE. Most PRAs performed by Westinghouse for Westinghouse 4-loop plants have been successful assuming less than 3 intact accumulators for large break LOCA based upon the MAAP code. In some cases, successful results have been achieved assuming no intact accumulators for large break LOCA in the IPEs.

We are aware that some utilities have extended the accumulator AOT based upon MAAP runs and the results of the IPE, using the change in core damage frequency as the basis. The above discussion is not intended to be in conflict with the deterministic LOCA analyses in FSAR Section 15.6.5. The existence of an AOT, regardless of whether it is 1 or 24 hours, limits accumulator inoperability such that a design basis accident is not postulated to occur while operating under the AOT. Limiting the AOT to an acceptably low value ensures that the three intact accumulators will inject during the FSAR design basis large break LOCA. The above PRA discussion does not eliminate the actions required when one accumulator is inoperable. It does show that the consequences of extending the AOT to 24 hours are acceptable.

DETERMINATION OF NO UNREVIEWED SAFETY QUESTION

The proposed changes to the Technical Specifications do not involve an unreviewed safety question because the operation of Callaway Plant in accordance with these proposed changes would not:

(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 accident analyses documented in FSAR Chapter 15, WCAP-10961-P, and WCAP-11883 since no hardware changes are proposed.

The safety injection (SI) accumulators are credited in FSAR Section 15.6.5 for large and small break LOCA. There will be no effect on these analyses, or any other accident analysis, since the analysis assumptions are unaffected and remain the same as discussed in FSAR Section 15.6.5. Design basis accidents are not assumed to occur during allowed outage times covered by the Technical Specifications. As such, the ECCS Evaluation Model equipment availability assumptions made in FSAR Section 15.6.5 remain valid.

The SI accumulators will continue to function in a manner consistent with the above analysis assumptions and the plant design basis. As such, there will be no degradation in the performance of nor an increase in the number of challenges to equipment assumed to function during an accident situation.

These Technical Specification revisions do not involve any hardware changes nor do they affect the probability of any event initiators. There will be no change to normal plant operating parameters, ESF actuation setpoints, accident mitigation capabilities, accident analysis assumptions or inputs. Therefore, these changes will not increase the probability of an accident or malfunction.

It is noted that the calculated accumulator injection unavailability increases by 28 percent due to the increase in AOT from 1 hour to 24 hours.

However, the corresponding increase in core damage frequency is insignificant. Pursuant to guidance in Section 3.5 of NSAC-125, the increase in AOT does not "degrade below the design basis the performance of a safety system assumed to function in the accident analysis," nor does it "increase challenges to safety systems assumed to function in the accident analysis such that safety system performance is degraded below the design basis without compensating effects." Therefore, it is concluded that these changes do not increase the probability of occurrence of a malfunction of equipment important to safety.

As discussed above, these changes will not increase the consequences of an accident or malfunction, given the number of significant digits in the total CDF reported in the Callaway IPE.

(2) Create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR. As discussed above, there are no hardware changes associated with these Technical Specification revisions nor are there any changes in the method by which any safety-related plant system performs its safety function. The normal manner of plant operation is unaffected.

No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures are introduced as a result of these changes. There will be no adverse effect or challenges imposed on any safety-related system as a result of these changes. Therefore, the possibility of a new or different type of accident is not created.

There are no changes which would cause the malfunction of safety-related equipment, assumed to be operable in the accident analyses, as a result of the proposed Technical Specification changes. No new mode of failure has been created and no new equipment performance burdens are imposed. Therefore, the possibility of a new or different malfunction of safety-related equipment is not created.

(3) Involve a reduction in the margin of safety as defined in the basis for any Technical Specification. There will be no change to the DNBR Correlation Limit, the design DNBR limits, or the safety analysis DNBR limits discussed in Bases Section 2.1.1.

As discussed previously, the performance of the SI accumulators will remain within the assumptions used in the large and small break LOCA analyses, as presented in FSAR Section 15.6.5.

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 DNBR limits, F_Q, F-delta-H, LOCA PCT, peak local power density, or any other margin of safety.

Based on the information presented above, the proposed amendment does not involve an unreviewed safety question and will not adversely affect or endanger the health or safety of the general public.

ATTACHMENT TWO

SIGNIFICANT HAZARDS EVALUATION

SIGNIFICANT HAZARDS EVALUATION

This amendment application includes changes to Technical Specification 3/4.5.1 as well as Bases Section 3/4.5.1. A new Action Statement a. is added to Specification 3.5.1 to provide a 72 hour allowed outage time (AOT) for one accumulator inoperable due to its boron concentration not meeting the 2300-2500 ppm band. If an accumulator is inoperable for any other reason, Action Statement b. must be followed. This approach is consistent with NUREG-1431 (Reference 4). The AOT for Action Statement b. is 24 hours in lieu of the current AOT of 1 hour. The 1 hour AOT is too short to perform maintenance and restoration on the accumulator subsystems. The PRA performed in support of the Callway IPE, submitted in Reference 2, has been revised to account for a 100 hour per year accumulator unavailability. There was only a very insignificant effect on the overall core damage frequency (CDF) reported in Reference 2. Surveillances 4.5.1.1.a.1) and 4.5.1.1.b are revised and Surveillance 4.5.1.2 is deleted per the guidance of NRC Generic Letter 93-05 (Reference 3). Surveillance 4.5.1.2 shall be retained in FSAR Chapter 16, as requested in Reference 3. Bases Section 3/4.5.1 is revised to discuss the 72 hour and 24 hour AOTs for Action Statements a. and b. above.

The proposed changes to the Technical Specifications do not involve a significant hazards consideration because operation of Callaway Plant in accordance with these changes 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 accident analyses documented in FSAR Chapter 15, WCAP-10961-P, and WCAP-11883 since no hardware changes are proposed.

The safety injection (SI) accumulators are credited in FSAR Section 15.6.5 for large and small break LOCA. There will be no effect on these analyses, or any other accident analysis, since the analysis assumptions are unaffected and remain the same as discussed in FSAR Section 15.6.5. Design basis accidents are not assumed to occur during allowed outage times covered by the Technical Specifications. As such, the ECCS Evaluation Model equipment availability assumptions made in FSAR Section 15.6.5 remain valid.

The SI accumulators will continue to function in a manner consistent with the above analysis assumptions and the plant design basis. As such, there will be no degradation in the performance of nor an increase in the number of challenges to equipment assumed to function during an accident situation.

These Technical Specification revisions do not involve any hardware changes nor do they affect the probability of any event initiators. There will be no change to normal plant operating parameters, ESF actuation setpoints, accident mitigation capabilities, accident analysis assumptions or inputs. The effect on the Callaway core damage frequency has been quantified as insignificant. Therefore, these changes will 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 previously evaluated.

As discussed above, there are no hardware changes associated with these Technical Specification revisions nor are there any changes in the method by which any safety-related plant system performs its safety function. The normal manner of plant operation is unaffected.

No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures are introduced as a result of these changes. There will be no adverse effect or challenges imposed on any safety-related system as a result of these changes. Therefore, the possibility of a new or different type of accident is not created.

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

There will be no change to the DNBR Correlation Limit, the design DNBR limits, or the safety analysis DNBR limits discussed in Bases Section 2.1.1.

As discussed previously, the performance of the SI accumulators will remain within the assumptions used in the large and small break LOCA analyses, as presented in FSAR Section 15.6.5.

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 DNBR limits, F_Q, F-delta-H, LOCA PCT, peak local power density, or any other margin of safety.

Based upon the preceding information, it has been determined that the proposed changes to the Technical Specifications do not involve a significant increase in the probability or consequences of an accident previously evaluated, create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed changes meet the requirements of 10CFR50.92(c) and do not involve a significant hazards consideration.

ATTACHMENT THREE

ENVIRONMENTAL CONSIDERATION

ENVIRONMENTAL CONSIDERATION

This amendment application includes changes to Technical Specification 3/4.5.1 as well as Bases Section 3/4.5.1. A new Action Statement a. is added to Specification 3.5.1 to provide a 72 hour allowed outage time (AOT) for one accumulator inoperable due to its boron concentration not meeting the 2300-2500 ppm band. If an accumulator is inoperable for any other reason, Action Statement b. must be followed. This approach is consistent with NUREG-1431 (Reference 4). The AOT for Action Statement b. is 24 hours in lieu of the current AOT of 1 hour. The 1 hour AOT is too short to perform maintenance and restoration on the accumulator subsystems. The PRA performed in support of the Callaway IPE, submitted in Reference 2, has been revised to account for a 100 hour per year accumulator unavailability. There was only a very insignificant effect on the overall core damage frequency (CDF) reported in Reference 2. Surveillances 4.5.1.1.a.1) and 4.5.1.1.b are revised and Surveillance 4.5.1.2 is deleted per the guidance of NRC Generic Letter 93-05 (Reference 3). Surveillance 4.5.1.2 shall be retained in FSAR Chapter 16, as requested in Reference 3. Bases Section 3/4.5.1 is revised to discuss the 72 hour and 24 hour AOTs for Action Statements a. and b. above.

The proposed amendment involves changes with respect to the use of facility components located within the restricted area, as defined in 10CFR20, and changes surveillance requirements. Union Electric has determined that the proposed amendment does not involve:

(1) A significant hazards consideration, as discussed in Attachment 2 of this amendment application;

(2) A significant change in the types or significant increase in the amounts of any effluents that may be released offsite;

(3) A significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10CFR51.22(c)(9). Pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.