Callaway Plant Unit 2

Combined License Application

Part 7: Departures and Exemption Requests

This COLA Part is completely site-specific.

Revision 1
February 2009

1.0 DEPARTURES AND EXEMPTION REQUESTS

1.1 DEPARTURES

This Departure Report includes deviations in the Callaway Plant Unit 2 COL application FSAR from the information in the U.S. EPR FSAR, pursuant to 10 CFR Part 52. The U.S. EPR Design Certification Application is currently under review with the NRC. However, for the purposes of evaluating these deviations from the information in the U.S. FSAR, the guidance provided in Regulatory Guide 1.206, Section C.IV.3.3, has been utilized.

The following Departures are described and evaluated in detail in this report.

1. Safe Shutdown Earthquake (SSE)
2. Idealized Site Soil Profile
3. In-structure Response Spectra (ISRS)
4. TSC/OSC Location

1.1.1 SAFE SHUTDOWN EARTHQUAKE (SSE)

Affected U.S. EPR FSAR Sections: Tier 1 Table 5.0-1 and Tier 2 Sections 2.0, 3.7.1, 3.10, Appendix 3C, and Attachment E to Appendix 3D

Summary of Departure:

The U.S. EPR FSAR identifies the SSE acceleration as the certified seismic design response spectra (CSDRS) shapes anchored to a peak ground acceleration of 0.3g. The corresponding Callaway Plant Unit 2 design ground motion response spectra are identified in FSAR Section 3.7.1.

Scope/Extent of Departure:

This Departure is identified in Part 2 FSAR, Sections 2.0, 2.5.2.6, 3.7.1, 3.10, Appendix 3C, and Attachment E to Appendix 3D.

Departure Justification:

This departure is justified using the U.S. EPR FSAR Section 2.5.2.6 seismic reconciliation guidelines. Callaway Plant Unit 2 site-specific in-structure response spectra (ISRS) are developed from the Callaway Plant Unit 2 site-specific ground motion response spectra (GMRS) and soil profiles and are compared with the U.S. EPR design certification ISRS. For most building locations, the Callaway Plant Unit 2 site-specific ISRS are confirmed to result in the amplitude of the site-specific ISRS not exceeding the ISRS for the U.S. EPR by greater than 10 percent in accordance with Step 8 of U.S. EPR FSAR 2.5.2.6. For building locations where the site-specific ISRS exceed the design ISRS by more than ten percent, evaluations of safety-related structures, systems, and components (SSC) were performed in accordance with Step 9 of U.S. EPR FSAR 2.5.2.6. These evaluations confirm the SSCs are not affected.

Departure Evaluation:

This Departure, associated with the SSE, has been evaluated in accordance with the U.S. EPR FSAR Section 2.5.2.6 seismic reconciliation guidelines and determined to not affect the safety function of the safety-related SSCs of the U.S. EPR at the building locations where Callaway

Plant Unit 2 site-specific ISRS exceed the ISRS for the U.S. EPR design certification by more than 10%.

Accordingly, this Departure does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific FSAR;

2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific FSAR;

3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific FSAR;

4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific FSAR;

5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific FSAR;

6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific FSAR;

7. Result in a design basis limit for a fission product barrier as described in the plant-specific FSAR being exceeded or altered; or

8. Result in a departure from a method of evaluation described in the plant-specific FSAR used in establishing the design bases or in the safety analyses.

This Departure does not affect resolution of a severe accident issue identified in the plant-specific FSAR.

Therefore, this Departure has no safety significance.

1.1.2 IDEALIZED SITE SOIL PROFILE

Affected U.S. EPR FSAR Sections: Tier 2 Section 3.7.1

Summary of Departure:

The U.S. EPR FSAR identifies the idealized site soil profile as the U.S. EPR design certification 10 generic soil profiles. The corresponding idealized Callaway Plant Unit 2 site soil profile is identified in Callaway Plant Unit 2 FSAR Section 3.7.1.

Extent/Scope of Departure:

This Departure is identified in Part 2 FSAR, Sections 2.5.2.6 and 3.7.1.

Departure Justification:

This departure is justified using the U.S. EPR FSAR Section 2.5.2.6 seismic reconciliation guidelines. Callaway Plant Unit 2 site-specific in-structure response spectra (ISRS) are developed from the Callaway Plant Unit 2 site-specific ground motion response spectra (GMRS) and soil profiles and are compared with the U.S. EPR design certification ISRS. For most building

locations, the Callaway Plant Unit 2 site-specific ISRS are confirmed to result in the amplitude of the site-specific ISRS not exceeding the ISRS for the U.S. EPR by greater than 10 percent in accordance with Step 8 of U.S. EPR FSAR 2.5.2.6. For building locations where the site-specific ISRS exceed the design ISRS by more than ten percent, evaluations of safety-related structures, systems, and components (SSC) were performed in accordance with Step 9 of U.S. EPR FSAR 2.5.2.6. These evaluations confirm the SSCs are not affected.

Departure Evaluation:

This Departure, associated with the idealized site soil profile, has been evaluated in accordance with the U.S. EPR FSAR Section 2.5.2.6 seismic reconciliation guidelines and determined to not affect the safety function of the safety-related SSCs of the U.S. EPR at the building locations where Callaway Plant Unit 2 site-specific ISRS exceed the ISRS for the U.S. EPR design certification by more than 10%.

Accordingly, the Departure does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific FSAR;

2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific FSAR;

3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific FSAR;

4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific FSAR;

5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific FSAR;

6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific FSAR;

7. Result in a design basis limit for a fission product barrier as described in the plant specific FSAR being exceeded or altered; or

8. Result in a departure from a method of evaluation described in the plant-specific FSAR used in establishing the design bases or in the safety analyses.

This Departure does not affect resolution of a severe accident issue identified in the plant-specific FSAR.

Therefore, this Departure has no safety significance.

1.1.3 IN-STRUCTURE RESPONSE SPECTRA (ISRS)

Affected U.S. EPR FSAR Sections: Tier 2 Section 3.7.2

Summary of Departure:

The U.S. EPR FSAR identifies ISRS at representative locations of the NI Common Basemat Structures, EPGB, and ESWB. The corresponding Callaway Plant Unit 2 ISRS are identified in Callaway Plant Unit 2 FSAR Section 3.7.2.

Scope/Extent of Departure:

This Departure is identified in Part 2 FSAR, Sections 2.5.2.6 and 3.7.2.

Departure Justification:

This departure is justified using the U.S. EPR FSAR Section 2.5.2.6 seismic reconciliation guidelines. Callaway Plant Unit 2 site-specific in-structure response spectra (ISRS) are developed from the Callaway Plant Unit 2 site-specific ground motion response spectra (GMRS) and soil profiles and are compared with the U.S. EPR design certification ISRS. For most building locations, the Callaway Plant Unit 2 site-specific ISRS are confirmed to result in the amplitude of the site-specific ISRS not exceeding the ISRS for the U.S. EPR by greater than 10 percent in accordance with Step 8 of U.S. EPR FSAR 2.5.2.6. For building locations where the site-specific ISRS exceed the design ISRS by more than ten percent, evaluations of safety-related structures, systems, and components (SSC) were performed in accordance with Step 9 of U.S. EPR FSAR 2.5.2.6. These evaluations confirm the SSCs are not affected.

Departure Evaluation:

This Departure, associated with ISRS, has been evaluated in accordance with the U.S. EPR FSAR Section 2.5.2.6 seismic reconciliation guidelines and determined to not affect the safety function of the safety-related SSCs of the U.S. EPR at the building locations where Callaway Plant Unit 2 site-specific ISRS exceed the ISRS for the U.S. EPR design certification by more than 10%.

Accordingly, the Departure does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific FSAR;

2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific FSAR;

3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific FSAR;

4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific FSAR;

5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific FSAR;

6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific FSAR;

7. Result in a design basis limit for a fission product barrier as described in the plant specific FSAR being exceeded or altered; or

8. Result in a departure from a method of evaluation described in the plant-specific FSAR used in establishing the design bases or in the safety analyses.

This Departure does not affect resolution of a severe accident issue identified in the plant-specific FSAR.

Therefore, this Departure has no safety significance.

1.1.4 TSC/OSC LOCATION

Affected U.S. EPR FSAR Sections: Tier 2 Section 13.3

Summary of Departure:

U.S. EPR FSAR Section 13.3 recognizes that a COL applicant needs to provide a site specific emergency plan in accordance with 10 CFR 50.47 and 10 CFR 50 Appendix E. However, as stated in U.S. EPR FSAR Section 13.3, Emergency Planning, the standard U.S. EPR design includes facilities suitable for a Technical Support Center (TSC) and an Operational Control Center (OSC). Both facilities comply with Revision 1 of NUREG-0654/FEMA REP-1. AmerenUE has chosen not to utilize the U.S. EPR standard design related to the TSC and OSC facilities. Rather, existing Callaway Plant Unit 1 emergency response facilities will be utilized to support the emergency response preparedness needs of Callaway Plant Units 1 and 2.

Scope/Extent of Departure:

This Departure is identified in Part 2 FSAR, Section 13.3, and in Part 5, Emergency Plan.

Departure Justification:

The TSC in the U.S. EPR standard design is located adjacent to the main control room (MCR) location. The OSC in the U.S. EPR standard design is provided within the Access Building. Both the TSC and OSC are provided with the necessary communications and computer support equipment.

The existing Callaway Plant Unit 1 TSC contains adequate space to also house the OSC. This arrangement which combines TSC and OSC functions into a single facility has proven effective for many years in demonstrating effective communication between team members and in dispatching Emergency Teams in a timely fashion. The existing TSC facility for Callaway Plant Unit 1 is of sufficient size to accommodate the TSC and OSC emergency response needs for both units. The existing TSC is located sufficiently close to Callaway Plant Unit 2 to ensure the required emergency response time can be met. Modification of the existing TSC to accommodate the communication infrastructure needs for the Callaway Plant Unit 2 emergency response plan will ultimately result in a more effective Emergency Response Organization than if separate facilities were maintained.

A more detailed description of the proposed Emergency Plan is provided in COLA Part 5, Emergency Plan.

Departure Evaluation:

This departure is for a non-safety related system, and the alternate locations of the TSC and OSC meet applicable requirements.

Accordingly, the Departure does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific FSAR;

2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific FSAR;

3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific FSAR;

4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific FSAR;

5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific FSAR;

6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific FSAR;

7. Result in a design basis limit for a fission product barrier as described in the plant specific FSAR being exceeded or altered; or

8. Result in a departure from a method of evaluation described in the plant-specific FSAR used in establishing the design bases or in the safety analyses.

This Departure does not affect resolution of a severe accident issue identified in the plant-specific FSAR.

Therefore, this Departure has no safety significance.

1.2 EXEMPTION REQUESTS

These exemption requests have been developed assuming approval and issuance of a design certification for the U.S. EPR and are based on the current version of the U.S. EPR FSAR.

AmerenUE request the following exemptions related to:

1. Safe Shutdown Earthquake (SSE),

2. Fitness for Duty Program,

3. Use of M5^{TM} Advanced Zirconium Alloy Fuel Rod Cladding,

4. Dedicated Containment Penetrations, and

5. Use of 2004 Edition of the ASME Code.

The exemption requests associated with Use of M5^{TM} Advanced Zirconium Alloy Fuel Rod Cladding, Dedicated Containment Penetrations, and Use of 2004 Edition of the ASME Code are the same as those previously requested by AREVA in support of the U.S. EPR Design Certification Application.

Discussion and justification for each of the above exemption requests are provided in the following pages.

1.2.1 SAFE SHUTDOWN EARTHQUAKE (SSE)

Applicable Regulation: 10 CFR Part 52

The U.S. EPR FSAR Tier 1 Table 5.0-1 and Tier 2 Sections 2.0 and 3.7.1 identify the SSE acceleration as the certified seismic design response spectra (CSDRS) shapes anchored to a peak ground acceleration of 0.3g. The corresponding Callaway Plant Unit 2 design ground motion response spectra are identified in Callaway Plant Unit 2 FSAR Section 3.7.1.

Pursuant to 10 CFR 52.7, 10 CFR 50.12 and 10 CFR 52.93, AmerenUE requests an exemption from compliance with the U.S. EPR FSAR Tier 1 and 2 requirements associated with the SSE.

Discussion:

The U.S. EPR FSAR Tier 1 Table 5.0-1 and Tier 2 Sections 2.0 and 3.7.1 identify the SSE acceleration as the certified seismic design response spectra (CSDRS) shapes anchored to a peak ground acceleration of 0.3g. The corresponding Callaway Plant Unit 2 design ground motion response spectra are identified in Callaway Plant Unit 2 FSAR Section 3.7.1. This departure is justified using the U.S. EPR FSAR Section 2.5.2.6 seismic reconciliation guidelines. Callaway Plant Unit 2 site-specific in-structure response spectra (ISRS) are developed from the Callaway Plant Unit 2 site-specific ground motion response spectra (GMRS) and soil profiles and are compared with the U.S. EPR design certification ISRS. The Callaway Plant Unit 2 site-specific ISRS are confirmed to lie within the envelope of the U.S. EPR design certification ISRS or evaluations confirm that safety-related structures, systems, and components of the U.S. EPR at the building locations where Callaway Plant Unit 2 site-specific ISRS exceed the ISRS for the U.S. EPR design certification by more than 10% are not affected.

The exemption is not inconsistent with the Atomic Energy Act or any other statute. As such, the requested exemption is authorized by law.

This change does not result in a departure from the design and does not require a change in the design described in the U.S. EPR FSAR. In addition, an evaluation has been conducted and concludes that safety-related structures, systems, and components of the U.S. EPR at the building locations where Callaway Plant Unit 2 site-specific ISRS exceed the ISRS for the U.S. EPR design certification by more than 10% are not affected. Therefore, the requested exemption will not present an undue risk to the public health and safety.

The change does not relate to security and does not otherwise pertain to the common defense and security. Therefore, the requested exemption will not endanger the common defense and security.

Consistent with 10 CFR 50.12(a), a special circumstance is present that requires an exemption in that the Callaway Plant Unit 2 site-specific GMRS exceed the U.S. EPR CSDRS. Evaluations confirm that safety-related structures, systems, and components of the U.S. EPR at the building locations where Callaway Plant Unit 2 site-specific ISRS exceed the ISRS for the U.S. EPR design certification by more than 10%. However, evaluations also confirm that this exceedance does not affect the safety related function of the safety-related SSCs of the U. S. EPR. As such, application of the regulation for this particular circumstance would not serve the underlying purpose of the rule and is not required to achieve the underlying purpose of the rule.

This requested exemption does not require a change in the design described in the U.S. EPR FSAR. Therefore, this exemption will not result in any loss of standardization.

For these reasons, AmerenUE requests approval of the requested exemption from compliance with the U.S. EPR FSAR Tier 1 and 2 requirements associated with the SSE.

1.2.2 FITNESS FOR DUTY PROGRAM

Applicable Regulation: 10 CFR 52.79(a)(44)

Specific wording from which a schedule exemption is requested:

> (a) The application must contain a final safety analysis report that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components of the facility as a whole. The final safety analysis report shall include the following information, at a level of information sufficient to enable the Commission to reach a final conclusion on all safety matters that must be resolved by the Commission before issuance of a combined license:
>
> (44) A description of the fitness-for-duty program required by 10 CFR part 26 and its implementation.

Pursuant to 10 CFR 52.7 and 10 CFR 52.93, AmerenUE requests a schedule exemption from the requirement of 10 CFR 52.79(a)(44) to provide a "description of the fitness-for-duty program required by 10 CFR part 26 and its implementation" in its application for a combined license for Callaway Plant Unit 2. AmerenUE proposes to provide the Fitness for Duty (FFD) Program description required by 10 CFR 52.79(a)(44) based on the revised 10 CFR Part 26 regulations that are expected to be promulgated and become effective in early 2008 since these are the regulations that are expected to be in effect at the time of implementation of the program.

Discussion:

In an April 17, 2007, affirmation session (ADAMS ML071070361), the Commission approved a final rule amending FFD regulations in 10 CFR Part 26 for both the construction and operating phases for a new nuclear plant. The new and revised Part 26 regulations are expected to be promulgated and become effective in 2008. Implementation of a fitness for duty program at this station is not expected to be required until after 2008.

The construction phase of the Fitness for Duty Program as applied to new plants is not required to be implemented until the commencement of on-site construction of safety or security-related systems, structures and components. AmerenUE will not begin these activities until after the amendments to 10 CFR Part 26 regulations are expected to take effect. The operational phase of the FFD Program is required to be implemented prior to fuel load.

In view of the near-term effectiveness of new FFD regulations, it would be more efficient for AmerenUE and the NRC to submit the FFD Program description required by 10 CFR 52.79(a)(44) based on the revised Part 26 rules rather than the rules currently in effect. Accordingly, AmerenUE submits a request for a schedule exemption from current Part 52 regulations pursuant to 10 CFR 52.7, "Specific Exemptions," and 10 CFR 52.93, "Exemptions and Variances."

Granting this request, which is authorized by law, would allow the NRC to conduct its acceptance review of the Callaway Plant Unit 2 COL Application based on the revised rules that will become effective in the near future. AmerenUE does not expect the NRC to issue the requested COL until the revised FFD rules take effect. For this and other reasons, granting this

exemption request will not present an undue risk to the public health and safety, and is consistent with the common defense and security.

The pending amendments to Part 26 create "special circumstances," as defined in 10 CFR 50.12 (Specific Exemptions) that warrant granting this exemption. Applying the current Fitness for Duty regulations in reviewing the FFD Program description required by 10 CFR 52.79(a)(44) would not serve, and is not necessary to achieve, the underlying purposes of the rule. Further, the underlying purpose of 10 CFR 52.79(a)(44) can be satisfied by meeting the requirements of the revised FFD regulations that will become effective in the near future.

Moreover, compliance with the current rule would cause undue hardship for AmerenUE and would also be inefficient and burdensome for the NRC staff. That approach would require AmerenUE to prepare, and NRC to review, information based on Fitness for Duty regulations that will soon be superseded by Part 26 amendments, and then (presumably) complete a similar submittal under the revised FFD rules.

For these reasons, AmerenUE requests approval of the requested schedule exemption from the Part 52 requirements to provide a description (in the FSAR) of the fitness for duty program that meets the current Part 26 Fitness for Duty regulations.

1.2.3 USE OF M5™ ADVANCED ZIRCONIUM ALLOY FUEL ROD CLADDING

Applicable Regulations: 10 CFR 50.46 and 10 CFR 50, Appendix K

Pursuant to 10 CFR 52.7 and 10 CFR 52.93, AmerenUE requests an exemption from the requirements of 10 CFR 50.46, Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors, and 10 CFR 50, Appendix K, ECCS Evaluation Models, paragraph I.A.5, regarding the use of Zircaloy or ZIRLO as fuel cladding material. This exemption request is related to the proposed use of the M5™ advanced zirconium alloy for the Callaway Plant Unit 2 fuel rod cladding and fuel assembly structural material.

Discussion:

In accordance with 10 CFR 52.7, the Commission may grant exemptions from requirements of the regulations of 10 CFR 52 and that the NRC consideration is governed by 10 CFR 50.12. 10 CFR 50.12 states that the NRC may grant an exemption provided that: 1) the exemption is authorized by law, 2) the exemption will not present an undue risk to public health and safety, 3) the exemption is consistent with common defense and security, and 4) special circumstances, as defined in 10 CFR 50.12(a)(2) are present. The requested exemption to allow the use of advanced zirconium alloys other than Zircaloy and ZIRLO for fuel cladding material for Callaway Plant Unit 2 satisfies these requirements as described below.

The NRC has approved similar exemption requests for other nuclear power plants; in particular, fuel with M5™ cladding is used in several operating plants in the United States.

The fuel that will be irradiated in the Callaway Plant Unit 2 contains cladding material that does not conform to the cladding material designations explicitly defined in 10 CFR 50.46 and 10 CFR 50, Appendix K. However, the criteria for these sections are satisfied for the Callaway Plant Unit 2 core containing M5™ fuel rod cladding and fuel assembly structural material. Therefore, the requested exemption is authorized by law.

The M5™ fuel rod cladding and fuel assembly structural material have been evaluated to confirm that the operation of this fuel product does not increase the probability of occurrence or the consequences of an accident. The evaluation also concluded that no new or different

type of accident will be created that could pose a risk to public health and safety. In addition, appropriate safety analyses have been performed to demonstrate that this fuel type does not present an undue risk to the public health and safety. NRC approved safety analyses methods are used for the Callaway Plant Unit 2 core which contains M5™ fuel rod cladding and fuel assembly structural materials.

The M5™ fuel rod cladding is similar in design to the cladding material used in operating plants. The special nuclear material in this fuel product will be handled and controlled in accordance with approved procedures. It has been confirmed through evaluation that M5™ fuel rod cladding and fuel assembly structural material will not endanger the common defense and security.

The special circumstance necessitating the request for exemption to 10 CFR 50.46 and 10 CFR 50, Appendix K is that neither of these regulations allows the use of M5™ fuel rod cladding material. The underlying purpose of 10 CFR 50.46 is to ensure that nuclear power facilities have adequately demonstrated the cooling performance of the Emergency Core Cooling System (ECCS). Topical Report BAW-10227P-A, Evaluation of Advanced Cladding and Structural Material (M5™) in PWR Reactor Fuel, approved by the NRC by letter dated February 4, 2000, demonstrates that the effectiveness of the ECCS will not be affected by a change from Zircaloy fuel rod cladding to M5™ fuel rod cladding.

The underlying purpose of 10 CFR 50, Appendix K, paragraph I.A.5 is to ensure that cladding oxidation and hydrogen generation are appropriately limited during a LOCA and conservatively accounted for in the ECCS evaluation model. Specifically, 10 CFR 50, Appendix K requires that the Baker-Just equation be used in the ECCS evaluation model to determine the rate of energy release, cladding oxidation, and hydrogen generation. Appendix D of BAW-10227P-A demonstrates that the Baker-Just model is conservative in all post-LOCA scenarios with respect to the use of M5™ advanced alloy as a fuel rod cladding material.

Therefore, the intent of 10 CFR 50.46 and 10 CFR 50, Appendix K is satisfied for the planned operation with M5™ fuel rod cladding and fuel assembly structural material. Issuance of an exemption from the criteria of these regulations for the use of M5™ fuel rod cladding and fuel assembly structural material in thCallaway Plant Unit 2 core will not compromise safe operation of the reactor.

For these reasons, AmerenUE requests approval of the requested exemption from the 10 CFR 50.46 and 10 CFR 50, Appendix K, requirements regarding the use of Zircaloy or ZIRLO as fuel cladding material.

1.2.4 DEDICATED CONTAINMENT PENETRATIONS

Applicable Regulation: 10 CFR 50.34(f)(3)(iv)

Pursuant to 10 CFR 52.7 and 10 CFR 52.93, AmerenUE requests an exemption from the requirements of 10 CFR 50.34(f)(3)(iv) with respect to providing a dedicated containment penetration. The specific requirement is as follows.

> Provide one or more dedicated containment penetrations, equivalent in size to a single 3-foot diameter opening, in order not to preclude future installation of systems to prevent containment failure, such as filtered vented containment system.

Discussion:

In accordance with 10 CFR 52.7, the Commission may grant exemptions from requirements of the regulations of 10 CFR 52 and that the NRC consideration is governed by 10 CFR 50.12. 10 CFR 50.12 states that the NRC may grant an exemption provided that: 1) the exemption is authorized by law, 2) the exemption will not present an undue risk to public health and safety, 3) the exemption is consistent with common defense and security, and 4) special circumstances, as defined in 10 CFR 50.12(a)(2) are present. The requested exemption relative to not utilizing a dedicated containment penetration for Callaway Plant Unit 2 satisfies these requirements as described below.

This requested exemption is not precluded by law.

The Callaway Plant Unit 2 design does not utilize a dedicated containment penetration. The severe accident assessment (U.S. EPR FSAR Tier 2 Section 19.2), the Probabilistic Risk Assessment (U.S. EPR FSAR Tier 2 Section 19.1) and the containment analysis (U.S. EPR FSAR Tier 2 Section 6.2) demonstrate that a dedicated containment penetration is not required. Specific containment overpressure protection is provided through its large size and strength and through the availability of 47 Passive Autocatalytic Recombiners (PARs) and Severe Accident Heat Removal System (SAHRS) for the removal of hydrogen and steam, respectively, the principle contributors to high containment pressure during a severe accident. The functions of these systems are described in U.S. EPR FSAR Tier 2 Section 19.2.3.3.2. Therefore, the requested exemption does not present an undue risk to the public health and safety.

The severe accident assessment, the Probabilistic Risk Assessment and the containment analysis demonstrate that a dedicated containment penetration is not required. As such, the requested exemption will not endanger the common defense and security.

The special circumstance necessitating the request for exemption is that the severe accident assessment, the Probabilistic Risk Assessment and the containment analysis demonstrate that a dedicated containment penetration is not required, as previously discussed. Therefore, application of the rule is not necessary to achieve the underlying purpose of the rule.

For these reasons, AmerenUE requests approval of the requested exemption from 10 CFR 50.34(f)(3)(iv) with respect to providing a dedicated containment penetration.

1.2.5 USE OF 2004 EDITION OF THE ASME CODE

Applicable Regulation: 10 CFR 50.55a

Pursuant to 10 CFR 52.7 and 10 CFR 52.93, AmerenUE requests an exemption from the requirements of 10 CFR 50.55a with respect to the edition of the ASME Code to be applied in the Callaway Plant Unit 2 COL Application.

10 CFR 50.55a codifies the ASME code as part of the NRC requirements and currently specifies the use of the 2001 Edition through the 2003 Addenda of the ASME Code. Consistent with NRC policy, 10 CFR 50.55a is amended periodically to incorporate newer editions and addenda of the ASME Code and Code Cases. The current proposed rulemaking (72 FR 16731 dated April 5, 2007) will incorporate the 2004 Edition of the ASME Code. This exemption is only necessary until such time as the rulemaking is finalized and becomes effective.

Discussion:

The 2004 Edition of the ASME Code (no addenda) is applied in the Callaway Plant Unit 2 COL Application, consistent with the NRC proposed rulemaking to endorse and incorporate the

newer edition and addenda. The use of the 2004 Edition of the ASME Code will not take precedence over any ASME Code modifications or limitations currently outlined in 10 CFR 50.55a. This is dictated under the assumption that all modifications and limitations to the 2001 ASME Code and up to the 2003 Addenda as outlined currently by 10 CFR 50.55a will remain valid upon NRC endorsement of the 2004 Edition of the ASME Code. Until such time as an exemption is granted, reconciliation has been conducted with the latest ASME Code edition endorsed by the NRC.

In accordance with 10 CFR 52.7, the Commission may grant exemptions from requirements of the regulations of 10 CFR 52 and that the NRC consideration is governed by 10 CFR 50.12. 10 CFR 50.12 states that the NRC may grant an exemption provided that: 1) the exemption is authorized by law, 2) the exemption will not present an undue risk to public health and safety, 3) the exemption is consistent with common defense and security, and 4) special circumstances, as defined in 10 CFR 50.12(a)(2) are present. The requested exemption to permit the use of the 2004 Edition of the ASME Code for Callaway Plant Unit 2 satisfies these requirements as described below.

This requested exemption is not precluded by law.

10 CFR 50.55a codifies the ASME code as part of the NRC requirements and currently specifies the use of the 2001 Edition through the 2003 Addenda of the ASME Code. Consistent with NRC policy, 10 CFR 50.55a is amended periodically to incorporate newer editions and addenda of the ASME Code and Code Cases. The current proposed rulemaking will incorporate the 2004 Edition of the ASME Code and issuance of the final rule is expected in April 2008. Therefore, the requested exemption does not present an undue risk to the public health and safety.

10 CFR 50.55a codifies the ASME code as part of the NRC requirements and currently specifies the use of the 2001 Edition through the 2003 Addenda of the ASME Code. Consistent with NRC policy, 10 CFR 50.55a is amended periodically to incorporate newer editions and addenda of the ASME Code and Code Cases. The current proposed rulemaking will incorporate the 2004 Edition of the ASME Code and issuance of the final rule is expected in April 2008. As such, the requested exemption will not endanger the common defense and security.

The special circumstance necessitating the request for exemption is that the current rulemaking will incorporate the 2004 Edition of the ASME Code and issuance of the final rule is expected in April 2008. The acceptability of the 2004 Edition of the ASME Code in terms of public health and safety is recognized by virtue of the proposed rulemaking, and compliance with the existing edition of the ASME Code in the intervening months is not necessary to achieve the underlying intent of the rule.

For these reasons, AmerenUE requests approval of the requested exemption from 10 CFR 50.55a with respect to the edition of the ASME Code to be applied in the Callaway Plant Unit 2 COL Application.