Attachment 1

Marked-up Technical Specification Pages

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REVISION 1

REFUELING OPERATIONS

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE FACILITY

LIMITING CONDITION FOR OPERATION

3.9.7 Loads in excess of 2250 pounds shall be prohibited from travel over fuel assemblies in the spent fuel storage facility, except for the spent fuel pool transfer gates which may be moved over fuel assemblies in the spent fuel pool for refueling activities, fuel handling system maintenance, and transfer gate seal replacement.

APPLICABILITY: With fuel assemblies in the spent fuel storage facility.

ACTION:

a. With the requirements of the above specification not satisfied, place the crane load in a safe condition.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.7 Crane interlocks and physical stops which prevent crane travel with loads in excess of 2250 pounds over fuel assemblies shall be demonstrated OPERABLE within 7 days prior to crane use and at least once per 7 days thereafter during crane operation.

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine and auxiliary hoist ensure that: (1) manipulator cranes will be used for movement of drive rods and fuel assemblies, (2) each crane has sufficient load capacity to lift a drive rod or fuel assembly, and (3) the core internals and reactor vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE FACILITY

The restriction on movement of loads in excess of the nominal weight of a fuel and control rod assembly and associated handling tool over other fuel assemblies in the storage pool areas ensures that in the event this load is dropped: (1) the activity release will be limited to that contained in a single fuel assembly, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is consistent with the activity release assumed in the safety analyses.

INSERT A

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that: (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to maintain a 1000 gpm flowrate ensures that there is adequate flow to prevent boron stratification. The RHR flow to the RCS will provide adequate cooling to prevent exceeding 140°F and to allow flowrates which provide additional margin against vortexing at the RHR pump suction while in partial drain operation.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and at least 23 feet of water above the reactor vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

3/4.9.9 CONTAINMENT VENTILATION SYSTEM

The OPERABILITY of this system ensures that the containment purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

INSERT A

The spent fuel pool transfer gates are excluded from this restriction because with a limited gate lift height, the spent fuel pool racks will absorb the impact of a dropped gate without damage to fuel assemblies. In addition, redundant trolleys and supports are used when moving the gates to preclude dropping a gate on the spent fuel racks, the time and distance the gates are moved over fuel is minimized as much as practical, and gate travel over fuel assemblies containing RCCAs is prohibited. The spent fuel pool transfer gates are only moved for refueling activities, fuel handling system maintenance, and to change gate seals.

Attachment 2

Retyped Technical Specification Pages

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REFUELING OPERATIONS

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE FACILITY

LIMITING CONDITION FOR OPERATION

3.9.7 Loads in excess of 2250 pounds shall be prohibited from travel over fuel assemblies in the spent fuel storage facility, except for the spent fuel pool transfer gates which may be moved over fuel assemblies in the spent fuel pool for refueling activities, fuel handling system maintenance, and transfer gate seal replacement.

APPLICABILITY: With fuel assemblies in the spent fuel storage facility.

ACTION:

a. With the requirements of the above specification not satisfied, place the crane load in a safe condition.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.7 Crane interlocks and physical stops which prevent crane travel with loads in excess of 2250 pounds over fuel assemblies shall be demonstrated OPERABLE within 7 days prior to crane use and at least once per 7 days thereafter during crane operation.

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine and auxiliary hoist ensure that: (1) manipulator cranes will be used for movement of drive rods and fuel assemblies, (2) each crane has sufficient load capacity to lift a drive rod or fuel assembly, and (3) the core internals and reactor vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE FACILITY

The restriction on movement of loads in excess of the nominal weight of a fuel and control rod assembly and associated handling tool over other fuel assemblies in the storage pool areas ensures that in the event this load is dropped: (1) the activity release will be limited to that contained in a single fuel assembly, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is consistent with the activity release assumed in the safety analyses.

The spent fuel pool transfer gates are excluded from this restriction because with a limited gate lift height, the spent fuel pool racks will absorb the impact of a dropped gate without damage to fuel assemblies. In addition, redundant trolleys and supports are used when moving the gates to preclude dropping a gate on the spent fuel racks, the time and distance the gates are moved over fuel is minimized as much as practical, and gate travel over fuel assemblies containing RCCAs is prohibited. The spent fuel pool transfer gates are only moved for refueling activities, fuel handling system maintenance, and to change gate seals.

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that: (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to maintain a 1000 gpm flow rate ensures that there is adequate flow to prevent boron stratification. The RHR flow to the RCS will provide adequate cooling to prevent exceeding 140°F and to allow flowrates which provide additional margin against vortexing at the RHR pump suction while in partial drain operation.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and at least 23 feet of water above the reactor vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

3/4.9.9 CONTAINMENT VENTILATION SYSTEM

The OPERABILITY of this system ensures that the containment purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the safety analysis.

3/4.9.12 SPENT FUEL ASSEMBLY STORAGE

The restrictions placed on spent fuel assemblies stored in Region 2 of the spent fuel pool ensure inadvertent criticality will not occur.

3/4.9.13 EMERGENCY EXHAUST SYSTEM

The limitations on the Emergency Exhaust System ensure that all radioactive materials released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. ANSI N510-1975 will be used as a procedural guide for surveillance testing.

Attachment 3

Nuclear Safety Evaluation

SAFETY EVALUATION

This amendment application requests a change to Technical Specifications (T/S) 3/4.9.7 on Crane Travel-Spent Fuel Storage Facility and its associated Bases. This specification is revised to allow for movement of the transfer gates over fuel assemblies in the spent fuel pool for plant refueling, fuel transfer system maintenance, and for transfer gate seal replacement.

Background

The spent fuel storage facility is located within the fuel building and provides onsite storage for spent fuel elements. Spent fuel storage racks are located in the spent fuel pool, which is constructed of reinforced concrete with a stainless steel lining and is an integral part of the fuel building. The spent fuel pool provides a cooling and shielding medium for the spent fuel. The facility provides protection for spent fuel assemblies under conditions such as tornadoes, earthquakes, and flooding and provides an efficient method for safe and reliable fuel handling operations within the spent fuel pool.

Adjacent to the spent fuel pool are two small pools and a washdown pit. One pool is the fuel transfer canal which is connected to the refueling pool by the fuel transfer tube. A leaktight gate is provided to separate the spent fuel pool and the fuel transfer canal. This allows the fuel transfer canal to be drained for maintenance of the fuel transfer system mechanism.

The second pool is the spent fuel shipping cask loading pit. It is designed for loading spent fuel assemblies into spent fuel shipping casks and provides a means for moving new fuel into the spent fuel pool. A leaktight gate is provided to separate the spent fuel pool from the cask loading pit in the event that the cask loading pit is drained.

Both transfer gates must be moved for fuel handling operations associated with the plant refuel to take place, for maintenance on the fuel handling system, and for gate seal replacement. However, these gates each weigh approximately 5200 pounds and a strict interpretation of T/S 3/4.9.7 (which prohibits travel of loads in excess of 2250 pounds over fuel assemblies) would not permit these gates to be moved. This could cause a technical specification compliance situation due to a potertial inability to meet T/S 3/4.9.7.

Proposed Change

This amendment application requests a revision to Technical Specification LCO 3.9.7 to allow the spent fuel pool transfer

gates to be moved over fuel assemblies in the spent fuel pool. Bases 3/4.9.7 is revised to include discussion which details the controls used when moving transfer gates.

Safety Analysis

Revising T/S 3.9.7 to permit movement of the transfer gates over fuel assemblies in the spent fuel pool does not impact plant safety because:

1) Testing and analysis of the racks shows they can absorb energy equivalent to dropping a gate from a height of 15 inches with no fuel damage occurring. Since administrative controls are used at Callaway to limit gat lift height to less than 12 inches and redundant slings are used when moving the transfer gates, a gate drop is enveloped by the fuel handling accident as discussed in Chapter 15 of the Callaway FSAR.

2) The distance from the installed location of the transfer gates to their storage locations is approximately 6 feet. The storage locations are located adjacent to the installed locations so the time a gate may be suspended over fuel is very short.

3) Gate seal replacement only occurs every 5 to 6 years. When the gates are moved for seal replacement, redundant slings are utilized and lift height is limited to 12 inches.

4) Any items stored in fuel assemblies which may stick up above the fuel racks, such as RCCAs, are avoided.

5) NRR reviewed and approved the Callaway position on use of the spent fuel pool bridge crane in Callaway Safety Evaluation Report, Appendix H (NUREG-0830, Supplement No. 3). As discussed in this document, Callaway uses a redundant support (sling) when moving the gates to preclude dropping a gate on the spent fuel racks. This position was found to satisfy the criteria of NUREG 0612 by NRC.

Evaluation

The proposed change to Technical Specification 3/4.9.7 does not involve an unreviewed safety question because operation of the Callaway Plant with this change would not:

1. Increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report. There is no increase in the probability of occurrence or the consequences of an accident previously evaluated in the safety analysis report. The fuel racks are able to

withstand a transfer gate drop from 15 inches above the racks with no damage to stored fuel.

2. Create a possibility for an accident or malfunction of a different type than any previously evaluated in the safety analysis report. This change revises the Technical Specifications to allow for transfer gate movement to support plant refueling activities, fuel handling system maintenance, and replacement of gate seals. The Technical Specifications and administrative controls will assure that the transfer gates will not be dropped on the racks in a manner which can damage fuel. Therefore, there is no new type of accident or malfunction created.

3. Reduce the margin of safety as defined in the basis for any Technical Specification. Technical Specifications and administrative controls will assure that the gates will not be dropped on the racks in a manner which can damage fuel. Therefore, no margin of safety as defined in the basis for any technical specification has been reduced.

Given the above discussions as well as those presented in the Significant Hazards Evaluation, the proposed change does not adversely affect or endanger the health or safety of the general public or involve a significant safety hazard.

Attachment 4

Significant Hazards Evaluation

SIGNIFICANT HAZARDS EVALUATION

This amendment application requests a revision to Technical Specification 3/4.9.7 and its associated Bases. This specification is revised to allow movement of the transfer gates over fuel assemblies in the spent fuel pool for plant refueling activities, for fuel handling system maintenance, and for replacement of the transfer gate seals.

The proposed change does not involve a significant hazards consideration because operation of Callaway Plant with this change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated. The Callaway Safety Analysis Report has been reviewed and been found to be unaffected by this proposed change. The design of the plant assumed gate movement to support plant refuel and fuel handling system maintenance. Allowing gate movement over the spent fuel pool will not increase the consequences of any accident or malfunction of equipment since the fuel racks have been shown to be able to withstand a transfer gate drop from 15 inches above the racks with no damage to stored fuel.

2. Create the possibility of a new or different kind of accident from any previously evaluated. Technical specifications and administrative controls will assure that the transfer gates will not be dropped on the racks in a manner which can damage fuel. Therefore, there is no new type of accident or malfunction created.

3. Involve a significant reduction in a margin of safety. The margin of safety remains unaffected since the Technical Specifications and administrative controls will assure that the gates will not be dropped on the racks in a manner which can damage fuel.

As discussed above, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated or create the possibility of a new or different kind of accident from any previously evaluated. This change does not result in a significant reduction in a margin of safety. Therefore, it has been determined that the proposed change does not involve a significant hazards consideration.

Attachment 5

Environmental Consideration

ENVIRONMENTAL CONSIDERATION

This amendment application requests a revision to Technical Specification (T/S) 3/4.9.7 and associated Bases to allow for movement of the spent fuel pool transfer gates over fuel assemblies in the spent fuel pool

The proposed amendment involves changes with respect to the use of facility components located within the restricted areas as defined in 10 CFR Part 20. Union Electric has determined that the proposed amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22 (c)(9). Pursuant to 10 CFR 51.22 (b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.