10 CFR 50.59 Safety Evaluation Summary Report
for Callaway Nuclear Plant

Union Electric Company
05/17/94

Reference Key

MP # Modification Package (Design Change)

- CMP # Callaway Modification Package
- EMP # Exempt Modification Package
- RMP # Restricted Modification Package

CN # FSAR Change Notice

ETP # Engineering Test Procedure

OL # Technical Specification Change (Operating License)

OTO # Off-Normal Operating Procedure

OTS # Special Operating Procedure

RFR # Request For Resolution

TM # Temporary Modification

Note: FSAR and Technical Specification changes are also reported under 10 CFR 50.71 and 10 CFR 50.90 as applicable.

CMP 88-1025

Retire in Place Waste Gas Flowmeter

Retire in place waste gas flowmeter (HAFT1094) from VCT to waste gas compressor skid. Flowmeter monitors off-gassing during load reduction prior to an outage. Modification retires in place equipment not used for years. Alternate methods are used to off-gas VCT and RCS prior to outage or load reduction. Modification simply removes electrical power to flowmeter and does not affect or interface with any safety-related equipment.

No piping analysis is affected by modification since equipment is left in place. Flowmeter and associated equipment is not used in any accident analysis and does not interface with any safety-related equipment, either electrically or mechanically.

CMP 88-1051

Modify Computers, Remove Old ERFIS, BOP, RRIS, NSSS, SPDS

Replace the BOP, NSSS, RRIS, SPDS, AND ERFIS computers with a single system. Electrical and physical isolation between new computer equipment and monitored equipment meets or exceeds replaced equipment. Fiber optic cable will provide additional electrical isolation. The new system decreases overall electrical and heat loading.

There is no adverse impact on the calculations performed by the current computer system. The new system will not have any adverse effect on the ability of operators to obtain required data. Computer points dealing with Tech Spec surveillance activities will be verified operational prior to use on new system. Seismic II/I requirements are met.

CMP 88-2010

Condenser Water Box Vent

Add 3" pipe cap to condenser water box vent valves that are used during drain and fill evolution of the water boxes. The condenser water box vent valve is used when the water box is isolated and drained for maintenance or inspection. Vent valves are opened to ensure complete draining and filling of the water box occurs prior to opening up for maintenance or restoring to service. Water box vent valves are manually operated valves. Since the pipe cap is located 6" from the valve, the equipment operator knows to remove the pipe cap prior to opening the vent valve.

The modest increase in mass due to the 2-1/2 pound pipe cap does not increase the stress on the weld joint between the vent pipe and water box above the yield point. The circulating water system has no safety design basis nor serves any safety-related equipment.

CMP 88-2016

Nitrogen Sparge System on CST

Install nitrogen sparge system on condensate storage tank (CST) to facilitate oxygen removal and replace temporary sparging line. Materials and equipment are compatible with nitrogen. Auxiliary boiler room is well ventilated and will not become an oxygen deficient atmosphere in event of nitrogen leak. CST vent and vacuum breaker will not allow any pressure buildup inside tank which could result in either false level indication or overpressurization of tank. Distance from nitrogen inlet to CST and auxiliary feedwater pump (AFP) suction nozzle is sufficient to prevent nitrogen entrainment and gas binding of AFPs even if pressure regulator fails. Condensate Storage and Transfer System and Service Gas System are not safety-related and have no safety functions.

CMP 88-2022

Installation of Flanges on AF System Piping

Install slip-on flanges on three spool pieces of AF system piping to allow access to check valves. AF system is Feedwater Heater Extraction, Drains, and Vents System. Check valves provide isolation to terminate heater drain tank from backing up into moisture separator. AF system is nonsafety-related. Stress levels due to increased weight on line has been evaluated. Stress levels have been verified. Hanger loading is acceptable.

CMP 88-3005

Upgrade Potable Water and Fire Protection Pipe

Upgrade to permanent plant status temporary pipeline for potable water and fire protection services to the Stores No. 2 facility. Also provide fire alarm annunciation at guardhouse. Function of pipeline is unchanged by this modification. Modification requires trenching. Final Environmental Evaluation indicates there are no environmental concerns. Modifications originated by this change are outside the "special scope" portion of the fire protection system.

CMP 89-1004

Add Local Indication to Diesel Generator Crankcase Oil Temperature Switches

This modification changes the temperature switches on the diesel generator crankcase oil system to temperature indicating switches with local indicators on the front of each diesel. Previously, the operators had no way of knowing if the Lube Oil Keep Warm loop was operating correctly.

The temperature switches provide no safety related function. They do not control the keep warm heater, but merely supply an annunciator.

CMP 89-1025

Permanent Reactor Cavity Seal/Neutron Shield

Install permanent reactor cavity seal/neutron shield. Replace foamglass insulation with nukon blankets and stainless steel support panels. Install "neutron shielding cans" to eliminate streaming.

Installation is allowed under GDC-4. Seal/shield design basis includes consideration of materials, neutron attenuation, dimensions, environmental conditions, and loadings. Specification also requires seismic Category I design including hydrodynamic loading, fuel assembly drop calculation, AISC requirements for material stress allowables, polished surface finish to ease decontamination, CMTRs for all material. Seismic Category I design requirements bound II/I criteria. Eight access hatches are double O-ringed for redundant sealing. Leak tight sealing was verified in shop mock-up testing. Dimensional tolerances in original removable seal ring design calculations are not exceeded. Safety factor calculated for uninflated seal remains valid. Number of seal supports is increased.

CMP 89-1033

Remove Dry Waste Compactor from Containment

Compactor performs no function related to safe shutdown of the plant, and its failure does not adversely affect any safety-related system or component.

CMP 89-1039

CCW Supply Check Valves to RCP Thermal Barrier

Install second check valve on component cooling water (CCW) supply to the thermal barriers of each of the four reactor coolant pumps (RCPs) to correct design deficiency that could allow an intersystem LOCA outside containment in event of rupture of thermal barrier and failure of upstream isolation valve. Check valves have an active safety function to isolate any reactor coolant that might enter the CCW system in the event of a thermal barrier rupture. New check valves constructed in accordance with 1986 ASME code within guidelines of ASME XI IWA-7210. Maximum loading the valves must withstand is same as the original installation. Second valve is installed in series with the first. Line size of check valves is reduced to allow more reliable operation of the valves. Sufficient range in downstream throttle valve exists to compensate for increased line resistance.

CMP 90-1002

Vent on RHR Cross Connect Line to CCP Discharge

Install manually operated high point vent line and associated vent valve on residual heat removal (RHR) "A" train cross connect line to centrifugal charging pump (CCP) discharge header. Permits venting of hydrogen gas in ECCS piping to preclude possibility of gas binding of CCPs. Installation meets requirements of ASME III, Section ND, 1974.

CMP 90-1030

Add Velocity Pick-Ups to ESW Pump Motors

Install two velocity pick-ups on top of each essential service water (ESW) pump motor to allow velocity and displacement measurements required by ASME Code Section XI. ESW pumps supply cooling water for plant components which require cooling for safe shutdown of the plant and provide emergency makeup water to spent fuel pool and component cooling water systems. Pick-ups installation ensures no metal particles fall into the motor. There is no adverse seismic effects due to insignificant added weight of probes. Electrical conduit is installed using II/I installation details. ESW vibration monitoring system has no safety design basis.

CMP 90-1042 FCN-01

Concrete Staging Area for Non-compacted, Low Level, Dry Radioactive Waste

Install a concrete slab with an enclosed fence on the Plant West side of the Radwaste Building. The purpose of this area is to provide a permanent access-controlled outside area for assemblage of low-level radioactive waste within SeaLand Containers (cargo boxes) prior to its shipment to an offsite radwaste treatment, processing, or disposal facility. Radwaste articles may be put into the SeaLands or removed from them as shipment needs require.

There will be no free standing liquid allowed to be stored outside within the SeaLand Containers. Staging of the low-level radwaste poses no additional adverse radiological impacts. No permanent plant piping, tanks, etc. is added by this change.

CMP 90-1053

Replace Refueling Pool Cavity Gate Valve

Replace gate valve EC7129 with full ported plug valve to reduce potential for crud accumulation thereby reducing personnel exposure. Valve EC7129 serves as a pressure boundary for integrity of the lower refueling pool cavity. Qualifications of plug valve are equal to or greater than requirements of original gate valve. Valve is designed and purchased to requirements of ASME Section III, class 3. Change in valve style has no affect on the possible consequences from any accident.

CMP 91-1002

RV Head Vent Valve Sealing Configuration

Replace Conax Electrical Conductor Seal Assembly (ECSA) with Namco Quick Disconnects (QD) on reactor vessel (RV) head vent valves. Namco QD provide equivalent environmental seal with advantage of quick determination/retermination during outages. No additional seismic stresses result from use of Namco QD due to its similar weight and configuration to Conax ECSA. No excessive seismic stress is induced on conduit or junction boxes installed in these configurations. Namco QD environmental evaluation approves use of Namco QD for use throughout plant including inside containment. Added junction box and conduit have no environmental impact.

CMP 91-1008

Revise SG Level Trip Logic

Interlock Environmental Allowance Modifier (EAM) and Trip Time Delay (TTD) to bypass steam generator (SG) low level trip time delay when adverse containment condition exists. By bypassing the timers the existing adverse setpoint remains bounded by current analysis. Modification does not change any seismic analysis or separation criterion already established for any of the EAM/TTD system.

CMP 91-1014

Enlargement of ESW Flow Orifices

Enlarge essential service water (ESW) flow orifices upstream of manual butterfly valves EFV0108 and EFV0117 to account for pipe fouling. These orifices maintain pressure in containment coolers above saturation pressure at design LOCA temperatures. Backpressure is maintained by throttling of downstream manual valves in conjunction with enlarged orifice. Valves are placed in locked throttle position. Downstream butterfly valves in conjunction with enlarged orifices are capable of maintaining sufficient back pressure on containment coolers during a LOCA. With valves in locked throttled position, failure of valves is same type of passive failure as assumed for orifices.

CMP 91-1016

Reroute Reactor Vessel Head Vent

Reroute reactor vessel head vent system piping downstream of second isolation valve in each path to remove concern for overstressing pipe due to thermal expansion if only one vent path were opened. Stress analysis was performed on pipe connections to reactor vessel head, CRDM support platform, cooling shroud and lift lug. Modified routing creates a second discharge path perpendicular to the existing path and 12" away. Modified routing has no impact on closest equipment, cables going to control rod drive mechanism, including effect of discharge jet. Revised piping configuration has been verified to meet all Code allowable stresses under all potential loading conditions. Pipe supports prevent pipe from whipping into other equipment when the system is used. Dual isolation valves are still in place and continue to function as designed. Fluid jet impingement forces have been reviewed and will not impact any equipment important to safety.

CMP 91-1017

Reroute RCS Low Flow Protection System Tubing

Reroute reactor coolant loop flow transmitter tubing to remove hazard to personnel access through the area and reduce potential for damage to tubes. All stresses are below Code allowable limits. Flow transmitters will continue to function as originally designed. Modifications to tubing routing do not affect any functions (e.g., response time, setpoint, accuracy) of the transmitters.

CMP 91-1020

Removal of ESW and SW Radiation Monitors

Permanent removal of process radiation monitors in Service Water (SW) and Essential Service Water (ESW) systems. Radiation monitors detect inleakage from potentially radioactive systems and components served by the SW/ESW systems. Monitors are removed due to redundant purpose of the monitors, maintenance problems, and inability of the monitors to detect leakage from a potentially radioactive system. If the entire volume of Component Cooling Water (CCW) was contaminated to the alarm setpoint of the CCW system and leaked into the ESW/SW system, the SW or ESW radiation monitors' minimum detectable level would not be reached. There are no safety design bases associated with the SW or ESW radiation monitors. The monitors do not perform automatic termination of the SW/ESW flow to or from components.

CMP 91-1022A

Install New Fuel Assembly Gripper On Refueling Machine

The Refueling Machine is a nonsafety-related seismic category II/I component. The modifications to the gripper assembly will not reduce or change its classification. The new parts will be designed to the same requirements as the original. Failure of the gripper resulting in a dropped fuel assembly accident has already been analyzed in the FSAR. Since this modification will not cause a reduction in safety or any unanalyzed event, no unreviewed safety question exists.

CMP 91-1023

Modifications to Support SG Shot Peening

Modify three existing spare pipe penetrations to support steam generator (SG) shot peening by providing access for routing of air and control lines into the containment building. Penetrations consist of closed blind flanges inside and outside containment during modes 1-4 and midloop operations. Air line penetrations consist of modified blind flanges with air line connections and isolation valves during modes 5-6 and core alterations. Electrical penetrations are sealed with foam to ensure leaktight condition. Modified penetrations provide access for control cables and air lines during modes 5-6 and core alterations. During modes 1-4 the penetrations are sealed with blind flanges and meet all requirements to serve as containment isolation barrier.

CMP 91-1032

Modification for Pressurizer Pressure Control System

The PORV circuit for BBPCV0455A will be modified to provide the input to BBPB0455E from input to BBPC0455A. This will allow the bistable to actuate independently, preventing the PORV inoperability and false pressure actuation from the controller. This instrument is part of the pressurizer pressure control system.

The pressurizer pressure control system is not required for safety.

CMP 91-1054

Retire Existing Capillary Sensing Elements

This modification retires (in place) the current two temperature indicating switches near the Letdown Heat Exchanger and the Letdown Reheat Heat Exchanger. Both of these sensors are located in high radiation areas and periodic recalibration involves significant exposure. Instead, nearby existing RTDs will be utilized to provide the same functions as the originals.

The only safety function associated with any of the instruments mentioned is to ensure that the thermowells used by the various sensors maintain the required pressure boundary. There will be no adverse effect on this function.

CMP 91-1059

Removal of Main Control Board Recorders

Remove and retire various recorders from main control board (MCB). Recorders record 8 ion chamber signals from excore detectors, flux signals for each power range channel during overpower excursions, control rod bank measured position, and low-low insertion limit alarm setpoint for each four control banks.

Deleted recorders have no safety design basis. Recorders are nonsafety-related and do not interact with any safety-related equipment except physically through attachment to MCB and electrically through isolation amplifiers. Wiring to recorders is nonsafety-related.

CMP 92-10025

Modification to Refueling Machine

Minor modification to refueling (RF) machine to remove tips of auxiliary hoist trolley beam, relocating cable support, and relocating last 10 ft. of two conduit runs. Ends of trolley beam are outboard of the beam supports; therefore, the capacity of the beam is not affected. The beam and electrical changes remove interferences with the CRDM ductwork.

RF machine will receive functional test after the modification as stated in the Testing Requirement Determination Record. RF machine is not safety-related, but is designed to seismic II/I criteria. Modification has no affect on the structural capacity of the machine.

CMP 92-1003

Modifications to Various MOVs

This modification adds larger operators to valves EM-HV-8807 A/B, EM-HV-8923 A/B and EG-HV-0062. It was desired to add excess margin to these operators. Additionally, power is removed from EM-HV-8924. The Code design report for the valves has been updated to reflect the new operators. The existing piping and supports have also been verified to be acceptable with the added weight. The existing power cable will provide adequate power to the operators, and the breakers and overload heaters were replaced to allow them to perform their safety function.

CMP 92-1009

Add Isolation Relays to Allow Trip of Main Feedwater Pump from MFIS

This change allows for the trip of both Main Feedwater Pumps (turbine driven) on a feedwater isolation signal. This will only trip the MFPs a few seconds earlier than would normally occur when the Main Feedwater Isolation Valves close.

It will not alter the consequences of accidents previously evaluated since it will not decrease the feedwater temperature nor will it increase the feedwater flow. The MFPs and their controllers are not safety related.

CMP 92-1015

Add a Third RCS Mid-Loop Level Indication

This change adds a third RCS mid-loop level indicating channel in the control room. It also re-spans all three channels to the same range and replaces the existing narrow range mid-loop meters with wide range digital meters.

The modification provides assurances that RCS pressure integrity is maintained. The control room level indication enhancements are improvements over the original modification (CMP 88-1040) for complying with Generic Letter 88-17.

CMP 92-1033A

Replace Feedwater Flow Venturis

This modification involves the replacement of the main feedwater flow elements with similar units fabricated entirely from stainless steel. The existing flow elements have experienced flow induced erosion damage to the carbon steel piping which contains the venturi flow element. The replacements have been evaluated to provide equal or better performance with no adverse impact to the plant.

CMP 92-1040A

Install Manual Bypass Switch on Refueling Machine

Install a manual bypass switch on the refueling machine control console to allow the operator to bypass the hoist speed interlocks when in open water in the core area. Also change the hoist speed selector circuitry such that the gripper will move in creep speed when the bottom nozzle of the fuel is in the vertical region encompassed by the core plus 10" above the top of the core and the open water bypass circuit is not being used.

The fuel will move slower in the core than it has in previous core alterations. Over open water, the fuel may be raised and lowered at a faster rate than is otherwise possible, so the time required to perform refueling operations will be reduced. Administrative controls will be implemented to prevent the use of this switch when the fuel being moved is not in open water. When in open water, the fuel is well away from any adjacent fuel assemblies or core baffle walls. Therefore, there is no possibility of adjacent fuel assembly grids interacting with each other.

CMP 93-1053A

Change of BDMS Flux Multiplication Setpoint

This represents a change to the flux multiplication setpoint of the Boron Dilution Mitigation System. This system aids in performing mitigating functions associated with the Inadvertent Boron Dilution event.

A review and evaluation of all information on the BDMS flux multiplication setpoint has determined what is believed to be reasonable and bounding estimates for the instrument uncertainties. Callaway specific Cycle 5 Inverse Count-Rate Ratio data has also been incorporated into the analysis.

CN 91-13

Change Requirement for Shutting Down RCP on Low Oil Level Alarm

This change deletes the requirement to shut down a Reactor Coolant Pump in the event of a low oil level alarm. There is only one level instrument per oil reservoir. Therefore, a faulty level switch in the lower oil reservoir or a faulty level transmitter in the upper reservoir would now require shutting down the RCP. This allows the operator to monitor additional parameters to verify that an oil problem exists prior to shutting down the pump.

A trip of an RCP motor due to a faulty level switch would also cause an immediate reactor trip if the plant was above 48% power. This change merely calls for validation of the alarm to eliminate an unnecessary transient on the plant.

CN 91-56

Changes Requirements for RCS Overpressure Event Consideration

This FSAR change adds a paragraph to ensure that any plant change which may affect RCS overpressure events consider the presence of the loop seal on the pressurizer safety valve.

There is no change to the plant. This does not impact safety, but simply incorporates a manufacturer recommendation.

CN 92-05

Change in Enrichment vs. IFBA curve

This changes the enrichment vs. Integral Fuel Burnable Absorber (IFBA) curve contained in the FSAR. Callaway's second reload core (Cycle 3) introduced the Westinghouse Vantage 5 Fuel (V5) option, with IFBAs, as a mix with the Westinghouse Standard Fuel Assemblies (STD) and Optimized Fuel Assemblies (OFA). Beginning with cycle 6, Callaway will utilize IFBAs with increased B-10 loadings and enriched boron. The within-assembly IFBA patterns for V5 fuel have also been revised.

Supplemental analyses were performed to support storage of the V5 fuel with the new IFBA design.

CN 92-19

Spent Fuel Cask Loading Procedure

This changes the description of the spent fuel shipping cask loading procedure to indicate that the cask is "sealed" vs. "capped" in the loading pool before removal for decontamination. It partially rescinds a previous FSAR change which substituted the word "capped" for "sealed".

This brings the FSAR back into accord with the existing design basis cask handling accident. By requiring that the shipping cask be sealed in the cask loading pool prior to removal for decontamination, radiological releases are precluded.

CN 92-32

Adds Compensatory Measures for Inoperable Fire Barriers

This change adds compensatory measures for inoperable fire barriers/radiant energy heat shields inside Containment and provides the basis for those measures. The existing requirements of an hourly or continuous fire watch cannot be carried out inside Containment during power operations.

This change also adds compensatory measures for inoperable fire barriers inside various rooms in the Auxiliary and Control Buildings.

CN 92-42

Use 100% Cation Resin in Upstream Steam Generator Blowdown Demins

This change will allow plant Chemistry and Radwaste the flexibility to utilize the most effective types of ion exchange material available to improve secondary plant chemistry and to minimize the generation of radwaste.

Specifically, this revision will allow for the use of cation resin in the upstream beds. When this resin becomes exhausted, the resin can be removed, regenerated and reloaded, which will significantly extend the service life of the upstream beds and the downstream mixed-beds, therefore reducing the quantity and costs associated with radwaste resin disposal.

CN 92-45

Radwaste Treatment System Changes

Along with FSAR change notices 92-38 and 92-43, this change notice revises the FSAR to reflect the actual mode of operation for the Radwaste Treatment Systems. These changes better describe the operation of the radwaste systems and also provide the Radwaste Department with the flexibility to determine the most economical method to process the liquid waste water and solid waste generated by the plant.

None of the changes cause the revised systems to exceed the analyzed accidents of FSAR Chapter 15. The failure of these systems will not compromise any safety related equipment.

CN 92-48

Circulating Water System

This change allows more flexibility in the chemical treatment of the Circulating Water System. Chemicals other than sodium hypochlorite and organic phosphonates may be used to control copper corrosion, pH, scale, and organic growth. Plant operating concentrations and feed rates of products are controlled by the plant National Pollutant Discharge Elimination System (NPDES) permit.

CN 92-55

Additional Combustible Loadings in the Control Building

This change installs carpeting in the Health Physics Access Area and installs metal cabinets in the Count Room. The combustible loading additions as a result of the carpeting and cabinets have been evaluated and determined to not exceed the fire protection provisions in the area with sufficient safety margin. The ability of the plant to achieve and maintain safe shutdown in the event of a fire has not been adversely affected.

CN 92-59

Work Permit Survey for Fire Watch Personnel

This change allows any hot work fire watch personnel, in addition to the responsible foreman or supervisor, to perform the survey of the work area.

The training received by foremen and supervisors that qualifies them to perform surveys of the work area is also received by all hot work fire watch personnel.

CN 92-64

Incorporates Revised 10 CFR 20

This was submitted primarily to address the implementation of the revised 10CFR20. Specific references to 10CFR20.1-20.601 were deleted. References to existing and new regulatory guides were also modified as necessary to address the commitments for the new regulation. The posting and entry requirements for Very High Radiation Areas (VHRA) were revised to be in compliance with the new definition of VHRA. Setpoints for the Control Room ventilation monitors and Fuel Building ventilation monitors were revised using the methodology incorporated in the revised 10CFR20.

Other editorial changes include deletion of redundancy between Chapters 12 and 13 in the area of health physics personnel responsibilities. Tables 12.3-2, 12.5-1 and 12.5-2 were updated to reflect current use of health physics instrumentation.

CN 93-01

Implement Periodic Fire Damper Drop testing in Lieu of Visual Inspections

Performance of a periodic fire damper drop test and lubrication surveillance in lieu of the existing visual inspection surveillance will provide functional verification requirements, and will not involve an unreviewed safety question.

CN 93-05

ESW System Revisions

This revises the FSAR to make it consistent with design basis calculations and plant operating procedures. The changes deal with Ultimate Heat Sink levels, heat loading, temperatures, and volumes. These changes have been verified by analysis and do not involve an unreviewed safety question.

CN 93-11

Changes Responsibility of Superintendent, Instrument and Controls

Currently, FSAR-SA paragraph 9.5.1.7.7 places the Superintendent, I&C responsible for "developing and implementing fire protection instrument and controls preventive maintenance and calibration procedures." Since fire protection instrument and control procedures do not exist and are not needed, the Superintendent has no responsibility to develop or implement this type of document. The Superintendent does, however, have the responsibility to maintain and supply measuring and test equipment required for the performance of Fire Protection surveillances, and for implementing preventive maintenance on selected fire protection systems. Since no actual change in responsibilities is taking place, no impact to safety exists.

CN 93-32

Changes Requirements for Postulated High Energy Line Breaks

This removes the requirement to postulate arbitrary intermediate high energy line break locations for Class 2 and 3 piping.

NRC Branch Technical Paper MEB 3-1, Revision 2 issued in 1987 removed the requirement to postulate arbitrary intermediate break locations. The Callaway FSAR was written using the criteria in the original MEB 3-1 as its basis for selecting break locations. As given in NRC Generic Letter 87-11, licensees may eliminate the requirement to postulate arbitrary intermediate break locations without prior NRC approval.

CN 93-37

Install Breakaway Locks for KC Isolation and System Control Valves

Replace all locks on the isolation and control valves of the KC (fire protection) control and isolation valves with breakaway locks. The breakaway locks will allow emergency operation of these valves when a key is not readily available.

The locks will be periodically inspected for damage or defects. Due to the fact that the locks are protecting only KC system valves, which are non-safety, the proposed modification will not affect the consequences of a malfunction of equipment important to safety. The only physical parameter that is being changed is that the hasp will be able to be disabled in an emergency situation.

EMP 89-3022

Heater Drain Tank Level Sight Glass

Replace the heater drain tank level gauge with more reliable model using a float with magnetic flags instead of a glass covered chamber. New sight glass reduces steam leaks associated with this component. If the float is damaged, the debris will not enter feedwater system because there is insufficient flow out of the chamber to carry debris into the heater drain tank. Debris would be trapped at bottom of the sight gauge. Feedwater heater drains system is non safety-related and serves no safety function.

EMP 90-3020

Add Pressure Regulators to Bulk Chemical Air Unloading Stations

This change add pressure regulators to two separate locations to aid in the unloading of bulk chemicals. The current system pressure of 125 psig is too high for unloading purposes.

Both the plant air system and the demineralizer air system, which are affected by this change, are non-safety related. No safety related components are affected.

ETP-AE-03001, REV 0

Steam Generator Pressure Pulse Cleaning

This establishes pressure pulse cleaning (PPC) as acceptable method of cleaning the secondary side of the steam generators without using chemical soaks. The PPC system uses high pressure nitrogen to induce a pressure pulse in the water on the secondary side of the S/G. This tends to break up and remove deposits on the tube bundle assembly internals and crevices.

The mechanical stresses placed on the tubes and other S/G components by the PPC was evaluated. This evaluation demonstrates that the integrity of the tube bundle will be maintained following PPC.

ETP-AQ-ST003, REV 0

Ethanolamine Test Program

This procedure tests the effectiveness of ethanolamine (ETA) over ammonia for reduction of iron transport to the steam generators. New EPRI guidelines for iron transport limits iron transport to less than 5 ppb. Current program only reduces iron transport to 6-7 ppb.

The evaluation of the compatibility of ETA with secondary-side materials is based on available information from laboratory corrosion studies and limited plant experience. To date, a synergistic effect from ETA has not been observed other than its contribution towards the achievement of target pH levels to control corrosion.

ETP-ZZ-ST008, REV 0

RCS pH Transient Test

This procedure varies Reactor Coolant System (RCS) pH in an attempt to remove crud from the fuel clad surface. RCS pH will be changed by the removal and addition of lithium by normal operating procedures using the Chemical and Volume Control System (CVCS).

The issues evaluated included the effect of a crud burst on RCS and CVCS components and core reactivity, Axial Offset, and Quadrant Power Tilt Ratio.

ETP-ZZ-ST009, REV 0

Load Swing Test

The only difference between this test and any other planned load reduction is that AFD will be allowed to swing in a positive direction during the early phases of the test without moving control rods. However, the accumulated time during which the core is allowed to deviate from the HFP target axial power distribution will be small enough such that unacceptable transients are avoided. The plant will be operated in full compliance with the Technical Specifications throughout the entire test. In particular, core axial flux difference (AFD) will be maintained within the applicable RAOC bands. Furthermore, a power reduction strategy will be followed that minimizes oscillations and provides for a stable, easily-controlled return-to-power. Such strategy is based on detailed 3D reactor physics calculations using Nuclear Fuel models that account for the AFD anomaly.

MP 90-6736

Condenser Vacuum Pump HX Relief Valve Exhaust

Modification of condenser vacuum pump heat exchanger relief valve exhaust pipe to facilitate drainage and prevent water buildup downstream of the relief valve by drilling a 1/4" drain hole. Modification will bring relief valve installation in compliance with ASME Section VIII Div. 1 Part UG-135(3). Modification does not affect relieving capacity of the relief valve or reduce the structural integrity of the exhaust line. Drainage of water from the exhaust line during relief valve actuation or seat leakage will not create any equipment or personnel safety hazards due to the location of the relief valves and floor drains in the immediate area. Condenser vacuum system serves no safety function and has no safety design basis.

MP 91-10022

Install Splice Fitting on Unistrut Hanger

Hanger item has been previously cut and rewelded in previous refuelings to allow movement of tool boxes and equipment to lower SG elevations without interference. This minor modification provides a splice fitting to avoid cutting and rewelding in the future. Hanger functions to provide support to a wide and narrow range level instrument tubing line adjacent to SG C. Cutting of hanger and installation of the splice does not affect the overall configuration nor the manner in which the tubing fastens to the hanger. Splice fitting is structurally equivalent to the original unistrut prior to cutting. All components of the splice assembly are qualified as safety-related stock inventory items. Structural integrity is maintained without altering the hanger support configuration.

MP 91-8942

1/2-Ton Jib Crane in Turbine Building

Minor modification installs a 1/2-ton jib crane in Turbine Building. No nuclear safety-related systems, components, or structures are impacted by this modification.

MP 91-9023

Removal of Rotor Temperature Trip on CWP

Rotor temperature trip device removed to prevent inadvertent trip of Circulating Water Pump (CWP) motor. Device detects rotor excess temperature. Circulating water system (CWS) serves no safety-related function. CWS is assumed not to be available or in operation during any design basis event. A CWP trip runs the turbine back to 70% load, turbine runbacks have occurred in the past with no affect on any safety or safety-related system, function or component. Removal increases the reliability of the CWPs due to the unreliability of the rotor temperature detectors and the possibility of a false trip for the units. Removal is also recommended by the motor manufacturer.

MP 91-9343

Modify Ion Track Explosive Detectors

Modification of ion track explosive detectors to use Pump Part No. 350-002 in place of Pump 420-001. Gas flow path is revised to accommodate pump 350-002. Filter media is added to the primary air flow to aid in cleanliness. These enhancements increase the reliability of explosive detectors. Explosive detectors provide no safety function. Failure of explosive detectors do not affect safety-related systems or prevent safe shutdown.

MP 91-9416

Camera for RF Machine Hoist Elevation Display

Add camera to refueling (RF) machine to display the tape readout for hoist elevation to enhance operations of the RF machine while engaging and disengaging fuel assemblies. A 2-way switch is installed to select between display of bridge index marks and hoist elevation. Providing both displays at control console increases operator awareness and response to abnormal load and hoist elevation conditions.

Modification makes no changes to existing loads that will be lifted by the RF machine, nor does it add any loads for the RF machine to lift. Modification does not affect ability of RF machine to remain intact following any postulated hazards of fire, internal missiles, or pipe breaks. Camera is mounted Seismic II/I to prevent droppage. Modification reduces probability of a fuel handling accident and will not create the possibility of an accident which is different than any previously evaluated.

MP 92-10024

Modify Duct Supports

Change a welded connection to a bolted connection on deadweight supports for a nonsafety-related portion of the CRDM cooling system. Components and work are not safety-related and not seismic II/I. Bolted joint will provide adequate strength to support the duct weight.

MP 92-10031

Equipment Hatch Breaker Replacement

Install larger breaker (15A to 30A) in the motor control center (MCC) for the reactor building equipment hatch hoists. MCC breaker supplies power to the equipment hatch hoists and protects hoist and associated power circuit from damage if an equipment malfunction should occur. Existing power circuit are protected by the 30A breaker. 30A breaker allows the equipment hatch hoist to function as required without nuisance tripping during operation. Hoist, MCC and associated circuitry are not safety-related. MCC and hoists are located inside containment so no electrical penetration through the containment boundary exists. The larger load on the MCC does not affect existing MCC bus coordination.

MP 92-10059

Removal of Grout Adjacent to UHS Bypass Valves

Remove grout at Ultimate Heat Sink (UHS) wall penetration to permit removal of valve EFHV0066. Grout provides a "seal" against outside air and to prevent possible bird habitation. Annular penetration area from which the grout is removed is not a numbered penetration nor is it shown on any design drawing. Its removal has no affect on piping stress concerns. Grout only provides a "weather seal" from the adjoining room. Seal is maintained by re-filling the space with silicone RTV foam. There is no safety-related equipment nor II/I concerns if the seal were to "fail" for any reason.

MP 92-10063

Replacement of Snubber with Rigid Strut

Replace snubber EJ03-013/111 with rigid strut. Snubber experienced two failures due to water hammer in RHR system. Restraint prevents overstress of RHR pump miniflow line during a dynamic event (seismic event or operational transient). Thermal movement of snubber is less than 1/8", and its movement is less than the installation tolerance of the system restraints.

A rigid strut may be installed without a reanalysis of the system thermal loads. New strut is designed in accordance with ASME III, Subsection NF to resist calculated transient forces. Operational transient forces will govern over any seismic forces which could occur. New strut meets all requirements and is classified as an approved ASME XI replacement component.

MP 92-10099

CRDM Microphone System Terminal Box

Minor modification to trim small portion (approx. 1") of terminal box (TVSF06) support to provide clearance to the rigging port. Rigging access port provides access for installation of the vessel head guide pins. The access port is not absolutely required for rigging access, but does make the rigging easier and could save man-hours and prevent possible cross threading of the guide pins. Support to be trimmed provides a seismic II/I support to hold the terminal box in place. Junction box is not required to perform any safety-related function or interface with any safety-related equipment. Box support is seismic II/I. Trimming of the end of the support tube steel does not affect any load supporting portion of the support. Modification requires that the cut does not interfere with the existing welds on the support.

MP 92-10120

Remove CRDM Monitoring System

Remove Control Rod Drive Mechanism (CRDM) microphone monitoring system. System has not been used since startup testing. Junction boxes (TVSF05 and 06) have interfered with installation of the reactor seal ring, bladder, and the reactor head lifting rig guide pins. There is no longer a need for the system. CRDM microphone system is not required to perform any safety-related function. System does not interface with any safety-related equipment. There are no power or safety bases listed in the FSAR or Tech Specs for this system.

MP 92-10166

Fuel Transfer Tube Leak Detection

Change leak detection connection on the fuel transfer tube to Swagelok compatible fitting to minimize amount of time spent in the pool to perform the LLRT. Current flange does not provide needed surface for good LLRT on penetration 17, i.e., transfer tube O-rings. This minor modification removes existing piping in its entirety and replaces it with a single fitting. Swagelok fitting allows ability to connect directly to the connection with LLRT rig. Rating and design of fitting exceeds the design requirements of the existing piping for temperature and pressure. Compression fittings used in the application meet the requirements ASME Section III, NC-3600. Installation of single fitting minimizes local stresses on the transfer tube since LLRT piping is no longer cantilevered off a 1/4" pipe. Compression fitting weighs significantly less than existing piping thereby reducing those loads from other than seismic conditions. Seismic loading is also reduced since the fitting is rigid by inspection and does not contain a cantilever arm which is more easily influenced by seismic loading.

MP 92-10204

Circulating Water Line Vent

Vent lines on the circulating water supply line to the condenser are leaking. Weld plate to inside of vent lines to blank off the vent line to terminate leak. Circulating water system is nonsafety-related, serves no safety-related function, and has no safety design basis. Circulating water system is not associated with any accident analysis. Elimination of the downstream circulating water supply line vent by the installation of a welded plug will not increase the probability of any accident previously evaluated in the FSAR because no failures of this system were previously evaluated.

MP 92-9740

Lead Shielding on SJ Sample Drain Line

Minor modification to install permanent lead shielding on SJ sample drain line between sample sink and drain system. Lines are nonsafety-related. Stress analysis insures requirements of ANSI B31.1 are satisfied, and all stresses are below code maximum limits.

MP 92-9835

UHS Cooling Tower Monorail

Install rigging monorail for temporary hoist to remove and reinstall valves in UHS cooling tower. Valves are not affected by installation of rigging beams. Design loads for rigging beam are not exceeded. Loads applied during hoisting, removing and installing valves is far greater than what the rail will receive as a result of a seismic event; therefore, no seismic II/I concern is created. Rigging monorail is not safety-related.

OL 1068

Revised LCO and Surveillance Requirement in Tech Spec 3.0 and 4.0

Revised LCO and surveillance requirements in sections 3.0 and 4.0 of the Tech Specs. The revisions addressed problem areas in Generic Letter 87-09. Approved by the NRC via Amendment 78, 02/25/93.

OL 1089

Containment Integrity and Containment Leakage

Revise Technical Specifications 3/4.6.1.1, 3/4.6.1.2, 3/4.6.3, and Bases 3/4.6.1.2 which address containment integrity, containment leakage, and containment isolation valves.

Changes maintain consistency with existing Technical Specifications by providing an action statement for containment leak rate testing in modes 1 through 4. No design change is made that would create possibility for an accident or malfunction of equipment. Approved by NRC via Amendment 75, 12/16/92.

OL 1108

Revise LCOs for PORVs

Revise TS 3/4.4.4 and 3.4.9.3 to address the recommendations of Generic Letter 90-06 that were committed to by UE. Approved by the NRC via Amendment 83, 08/05/93.

OL 1117

Maximum Room Temperature for Electrical Penetration Rooms

Revise Technical Specifications ("Tech Specs") to increase maximum room temperature for Electrical Penetration Rooms in Table 3.7-4 from 104 deg F to 106 deg F.

Area temperature limits ensure safety-related equipment will not be exposed to temperatures in excess of their environmental qualification temperatures. Calculations show that raising the normal maximum temperature of the Electrical Penetration Rooms will have a negligible effect on the surrounding rooms. Increased heat loads are insignificant (<2% increase). Post-accident cooling loads are only increased by 0.2%. Weighted average room temperature should not exceed 104 deg F; however, the EQ life for the equipment will be re-evaluated to a weighted average room temperature of 106 deg F. Approved by the NRC via Amendment 70, 06/18/92.

OL 1118

Pressure/Temperature Limits

Modify the plant heatup and cooldown curves and the cold overpressure protection, as found in Tech Spec figures 3.4-2,3.4-3, and 3.4-4. Additionally, remove the reactor vessel surveillance capsule removal schedule from the Tech Specs. Approved by the NRC via Amendment 76, 12/24/92.

OL 1119

ESFAS Instrumentation Trip Setpoints

Revise the trip setpoint, allowable value, total allowance, sensor error, and "z" value of the "4 kv Undervoltage - Grid Degraded Voltage" protection function in Tech Spec Table 3.3-4, Functional Unit 8.b, to agree with the required design values. Approved by the NRC via Amendment 74, 12/16/92.

OL 1120

Relaxed Axial Offset Control

Revise Tech Specs and associated Bases in order to implement relaxed axial offset control (RAOC) for Cycle 6 at Callaway. Approved by the NRC via Amendment 72, 08/05/92.

OL 1121

Minimum Shift Crew Composition

Revise Tech Specs to permit an individual with a valid Senior Reactor Operator (SRO) license and who is qualified as a Shift Technical Advisor (STA) to assume the control room command function during any absence of the Shift Supervisor (SS) from the control room. Approved by the NRC via Amendment 71, 07/17/92.

OL 1128

Crane Travel - Spent Fuel Storage Facility

Allows the fuel pool transfer gates to travel over fuel assemblies in the spent fuel pool for refueling activities, fuel handling system maintenance, and transfer gate seal replacement.
Approved by the NRC via Amendment 81, 06/29/93.

OL 1129

Containment Leakage

Requests a one-time schedular exemption to Tech Spec 4.6.1.2.a, that requires three Type A tests (Containment Integrated Leakage Rate Test or CILRT) be performed at 40 +/- 10 month intervals during each 10 year service period. Approved by the NRC via Amendment 77, 02/22/93.

OL 1132

Spent Fuel Assembly Storage

Revise Figure 3.9-1 of Tech Spec Section 3/4.9.12 to reflect a maximum initial enrichment of 4.45 w/o U-235 for fuel storage in Region 2 of the Callaway spent fuel pool. Approved by the NRC via Amendment 82, 07/07/93.

OL 1134

Emergency Change to Surveillance

This change proposes a one time extension to the surveillance interval specified for Tech Spec Surveillance 4.3.1.1, Table 4.3-1, Functional Unit 1 (Manual Trip). The surveillance of the manual reactor trip switch contacts and wiring for the shunt trip and undervoltage trip circuits would be deferred until the next entry into Mode 3. Approved by the NRC via Amendment 73, 08/21/92.

OL 1137

AC Sources - Diesel Fuel Oil System Test

This deletes the requirement for a pressure test of those portions of the diesel fuel-oil system that are designed to Section III, Subsection ND of the ASME Code. This is covered by another existing Tech Spec which imposes the equivalent surveillance requirements for inservice inspection and testing of ASME Code Class 1, 2, and 3 components. Approved by the NRC via Amendment 80, 06/21/93.

OL 1139

Snubber Surveillance Extension

Revise Tech Spec Surveillance Requirement 4.7.8.d to allow a one-time schedule extension for the snubber transient event inspection. Approved by the NRC via Amendment 79, 04/27/93.

OL 1141

Revise OTDT AFD Penalty Function

Change Tech Spec Tables 2.2-1 and 4.3-1 and the associated Bases to revise the Axial Flux Difference (AFD) penalty function f1 (Delta-I) for the Overtemperature Delta-T reactor trip function. This change will be accommodated by the use of available DNBR margin and by a reduction in the recalibration tolerance for the incore vs. excore AFD comparison surveillances. Approved by the NRC via Amendment 84, 11/08/93.

OTO-EA-00001, REV 1

Loss of All Service Water

Loss of flow through the Service Water system may occur if all the service water pumps trip. This would lead to a plant trip. This procedure provides for starting the ESW pumps to supply cooling water through the service water system.

This alignment will only last until SW flow can be restored, which is expected to be less than one hour. Tech Specs are unchanged, which will ensure that the UHS level does not go below its minimum level. An SI signal or operator manual intervention can restore the ESW system to its safety lineup.

OTS-AE-00004, REV 0

Feed Pump Turbine Speed Control Testing (also RMP 92-2007a)

This modification revises the MFP speed control circuitry to allow operators to automatically control delta-P between the feedwater and steam headers at low power.

OTS-BB-00002, REV 1

Draining Steam Generator U-Tubes Using Nitrogen Injection

Performing steam generator u-tube draining using nitrogen injection will be allowed while fuel is in the core during Modes 5 or 6. Because the RCS is vented to atmosphere at this time, no possibility of overpressurization exists. Nitrogen is injected at a point which prevents it from entering the RHR suction and eliminates the potential for gas entrainment of the RHR pumps.

RFR 05471C

Install Permanent Racks on Top of Containment Coolers for Storage of Lower CRDM

Add permanent racks on top of Containment Coolers SGN01A and SGN01C. These racks allow for the storage of CRDM ductwork sections that have been removed from around the reactor vessel during a refueling outage. These racks are not loaded during normal plant operations and Calculation ZZ-86 analyzed the effect of these racks on the coolers. The evaluation determined that an unreviewed safety question did not exist.

RFR 08653G

Outside Interim Storage of Mixed Radwaste

Construct a storage area adjacent to the Plant Southwest side of the Radwaste Building, between the building and the Discharge Monitoring Tank facility. The storage area generally consists of a fenced-in concrete pad with access gates. This is an interim storage area for storage of hazardous radioactive (mixed) wastes from a radiological and environmental standpoint. Mixed waste will be stored in drums, overpacks, and bin boxes.

Onsite transport, transfer, and storage of mixed waste poses no increased risks, or significant radiation exposure hazards to plant workers or members of the general public. The Solid Radwaste System itself performs no functions related to the safe shutdown of the plant, and a failure of a drum would not adversely affect any safety-related system of component. The use of the additional concrete slab on which the binboxes are to reside poses no significant increases in risk to any safety-related structure, system, or component.

RFR 08971B

Storage of Clean Oil and Grease in the Radwaste Tunnel

Additional combustible materials in the form of clean oil and grease are to be added to the Radwaste Tunnel (Room 7133) to improve the processing of clean oil and grease within the RCA. The oil and grease will each be stored in approved, metal, combustible liquid storage cabinets.

The area contains no safe shutdown or safety related equipment and there are no seismic II/I concerns.

RFR 09082B

Relocate Service Air connection for KAV0110 MMOD 91-4016

Change the physical routing of the connection point for service air that is isolated by KAV0110 to circumvent the obstruction created by a thermostat in the service building.

The P&ID that is to be modified is included in the FSAR and thus constitutes a proposed change to the facility as described in the FSAR. However, the non-safety related system improvements do not affect or increase the probability of occurrences or consequences of an incident as evaluated by the FSAR.

RFR 09204B

Retire in Place the Local Level Indicator for the Condensate Storage Tank

The Condensate Storage Tank (CST) has no safety function and has no safety design basis.

Local level indication is not utilized in operations involving the CST. Redundant indication of compliance to Technical Specification 3.7.1.3 (required minimum CST water volume) exists through other means.

RFR 09220C

Install an Above Ground Diesel Fuel Storage Tank

Install a new 1000 gallon diesel fuel storage tank plant west of the Stores building. This fuel is for operating plant vehicles and miscellaneous non-plant equipment.

This tank is located at least 100 feet from any building and near a larger fuel oil tank. The accident discussed in the FSAR is associated with a 300,000 gallon fuel oil tank, so the new tank will have no impact on safety.

RFR 09616C

Lift Alarm Jumpers for Valves KJHV-1,2,101,102

This minor modification will lift alarm jumpers in the motor control centers of the subject valves. This will disable the loss of power alarms associated with these valves so they can be closed and powered down. These valves are not needed in the system.

An ESF signal causes these valves to run to the closed position. The valves will be left inoperable in the closed position until their removal from the system.

RFR 09757A

Cycle 6 Documentation, Reload, Burnup Extension

Revision A of this RFR documents the cycle 6 reload design for Callaway Plant, and includes the Reload Safety Evaluation (RSE) which establishes the acceptability of the design. This RFR also includes a safety evaluation for the reuse of reconstituted fuel assembly G87.

Revision H provides changes to the Nuclear Design Report (NDR) and PCNDR to increase the available end of cycle 6 shutdown margin.

Revision K documents the extension of the maximum cycle 6 burnup from 20,700 MWD/MTU to 21,000 MWD/MTU, and is supported by a Westinghouse revision to the RSE.

Revision L documents the impact of the increased isotopic inventories of the cycle 6 burnup extensions and their impact on the core offload, specifically the fuel handling accident.

RFR 09780C

Doors Between Aux and Fuel Bldg with Negative Pressure

With the Auxiliary Building Supply Unit, SLG01, and the Fuel/Auxiliary Building Normal Exhaust Fans, CGL03A/B, in OFF, Doors 11194, 14081 and 15071 may remain open between the Fuel Building and the Auxiliary Building provided the latest results of OSP-GG-00005 using the most limiting Emergency Exhaust Train is at least .40 IWG negative pressure and the latest results of OTS-GL-00001 using the most limiting train of Emergency Exhaust is at least .50 IWG negative pressure.

RFR 09846A

Oil Sample Storage in Room 3102

Additional combustible materials in the form of oil are to be stored on the 1974' elevation of the Communication Corridor Room 3102 to allow oil samples to radioactively decay. This oil will be stored in an approved, metal, combustible liquid storage cabinet constructed in accordance with NFPA 30.

The area contains no safe shutdown or safety related equipment and there are no seismic II/I concerns.

RFR 09873B

Add Chain Operator on FV0681

This modification adds an external chain operator to the hand wheel of the valve. The modification does not alter the location or orientation of the valve or make changes to the system. The type of valve design precludes any adverse impact from stresses of the chain operator. All new stresses from using the operator will be transmitted through the yoke of the valve body and not the valve stem. The valve is only used during start up to vent the Heater Drain Tank. The system and associated components are all non-safety related and not used or implied in any safety analysis.

RFR 09893A

Storage of 20 Sets of Fire Brigade Gear in the Comm Corridor

This evaluation addresses the addition of 20 sets of fire brigade clothing to be stored on a shelf in a stairway landing in the Communications Corridor. This will result in a slight increase in the combustible loading in that room.

The overall combustible loading in the area is still very low. Room 3103 is not a safety related area and contains no safe shutdown or safety related equipment. There are no seismic II/i concerns.

RFR 09937A

Boron Dilution Reanalysis

Subject of safety evaluation is the time from actual flux doubling until the automatic signal to isolate and reborate is generated in the Boron Dilution Mitigation System (BDMS). Current licensing basis boron dilution event analysis assumes this time is instantaneous whereas the actual equipment has a finite delay due to the 1-minute intervals used in the algorithm. Also, current safety analyses assume continuous monitoring of the core flux and an immediate signal upon reaching a flux multiplication condition. Microprocessor does not respond this way, and an additional time delay must be assumed prior to the automatic actuation of the BDMS.

An increase in the total response time delay and changes to the RCS boron concentration limits 1) pose no change to the initiating event mechanism for this transient nor 2) affect the function of any equipment important to safety nor 3) alter the analysis assumption of this event or any other licensing basis event presented in the FSAR. There is sufficient time for operation of the BDMS to prevent a loss of plant shutdown margin; thus, the minimum DNBR remains well above the safety analysis limit values. The analyses of this transient, assuming an increase in the total time delay and changes to the RCS boron concentration limits, result in the applicable response time acceptance criteria being satisfied.

RFR 10036A

Permanent Storage of Frisker Shields

This allows for the permanent storage of three 400 pound reinforced concrete frisker shields to be stored in the Reactor Building. Two will be stored near stairways on the 2000' (ground) elevation and one will be on the 2047' elevation.

The shields are secured such that they will not be displaced during a seismic event. The shields do not introduce flammable materials in the area.

RFR 10060A

Determine Maximum Component Cooling Water Temperature Post LOCA

This RFR provides the maximum supply temperature that the Component Cooling Water (CCW) system will reach after a Loss Of Coolant Accident (LOCA) and the associated minimum required ESW flowrate to the CCW heat exchangers. The maximum temperature is 131 degrees F as opposed to 126 degrees F previously.

The effect of the new maximum temperature was evaluated for the effect on each of the loads on the CCW system. In each case, operation at the higher temperature is acceptable.

RFR 10263B

Snubber Reduction Program

Low movement snubbers at Callaway will be replaced with rigid struts. The function of a snubber is to provide system flexibility for thermal growth, and rigidity for a seismic or a transient event. Callaway has developed a conservative methodology to replace low movement snubbers with rigid struts. The justification for replacing low thermal deflection snubbers (<0.066") with rigid restraints is that a typical support assembly (pipe clamp, pin connections, end bracket and 1/16" over size bushing hole in the strut paddle) will have 1/16" positive gap for the thermal growth, thus minimizing the impact due to thermal growth. Snubbers with small thermal movements, if replaced with rigid restraints, will have minimal impact on the pipe stresses and support loads because of inherent piping flexibility and free play in the restraint hardware.

The replacement of low movement snubbers with rigid struts does not impact or invalidate existing stress runs or support calculations. The original design parameters for the piping system are not impacted in any form or shape by the replacement of snubbers with struts, therefore replacing snubbers with rigid struts does not create an unreviewed safety question or concern.

RFR 10416A

Change the Plant Building Siding and Fastener Requirements

This RFR changes the plant building siding and fastener requirements since the ESWS pumphouse inlet openings have been recently modified with additional barriers for security reasons.

Previously, potential blockage of the ESWS pumphouse forebay inlets resulted in restrictions to plant building siding and fasteners. With the new inlet barriers, no restrictions are necessary. Each ESWS bay can undergo 80% blockage and still maintain pump operability.

RFR 10557B

Install Chain Operators on HEV0048 and HEV0058

The Boron Recycle System serves no safety function and the failure of the BRS does not result in the release of radioactivity in excess of established guidelines or prevent the reactor from being shut down in the event of a design basis accident. The failure of the BRS does not compromise the capability of any safety-related feature to mitigate the consequences of a design basis accident.

RFR 10598B

Change Valves From Globe to Ball

Change Diesel Fuel Oil Storage Tank Sample Valves JEV0057 & 58 from globe valves to ball valves. Tech Spec 4.8.1.1.2.E states that the sample should be taken in accordance with ASTM Standard 2276 - 1978 which requires the sample valves be either a ball or plug type.

The valves are approximately equal in size and weight and exceed the design pressure and temperature limits of the piping. The valves are stainless steel and are equivalent to the globe valves which were used for the application.

RFR 10786A

Operability of SWGR #3 and Batt #3

This evaluation demonstrates the operability of 'A' train Vital Batteries and DC Switchgear without design cooling flow to the equipment rooms. The rooms' temperatures have been evaluated and determined to stay within a suitable range for equipment operation during a design basis accident with design summer conditions.

RFR 10805B

Allow Removal of Heat Trace and Insulation

This allows the removal (without reinstallation) of heat trace tape and associated insulation from the safety injection "EM" system piping associated with the Boron Injection Tank (BIT). The removal creates no unreviewed safety questions since the final detailed design of the plant (as discussed in FSAR section 6.3.2.2) determined that the boron concentration of the RWST is sufficient for plant safety considerations and the heat tracing provisions would not be operated.

RFR 13176A

SGG04B-Determine Proper Sheave Size for 3500 CFM

The motor sheave for SGG04B can be changed to a sheave with an approximate outside diameter of 7.25 inches to achieve the design flow rate of the air handling unit of 3500 cfm without exceeding the design brake horsepower, critical fan speed or seismic qualification. Sufficient conservation has been used to assure operability of the associated room equipment. There is no change to the design basis and no unreviewed safety question exists.

RFR 13177B

Installation of Access Door Panels in HVAC Ductwork

Access doors will be installed in Power Block and UHS/ESW HVAC ductwork in order to obtain access to fire dampers and other components.

Access doors are of the same material construction and configuration as those supplied and installed originally for component access. The doors are designed for various system pressure ratings. HVAC system flow and pressurization requirements will not be affected by this change.

RFR 13528A

Evaluate Storage of Equipment in Auxiliary Bldg.

Permanent storage of non-plant items to support normal plant operations, in locations designated within the Auxiliary Bldg., will not adversely affect the Fire Protection Program.

RFR 13696A

Evaluate Storage of Equipment in Fuel Bldg.

Permanent storage of requested non-plant equipment in designated location in the Fuel Bldg. is allowed. This change will not adversely affect the Fire Protection Program nor will it result in a seismic II/I concern.

RFR 13775A

Provide Temporary Storage of Dry Active Radioactive Waste South of Radwaste Bldg

The Interim Storage Yard, south of the Radwaste Building, will be approved for temporary storage of Dry Active Radioactive Waste (DAW) in either SeaLand boxes or LSA boxes. This would provide better access control to the materials and would also allow material to be stored outside the RCA to allow for decay of short-lived isotopes and subsequent material release.

This yard has been evaluated for storage of much higher levels of radioactivity (in spent resins and filters) as well as for storage of mixed wastes.

RFR 13785A

Evaluate On-Line Freeze Seal

A freeze seal will be used to facilitate repair of valve ECV0001. The seal will be placed between the spent fuel pool and the valve. Of concern is the malfunction which could cause a freeze seal failure, and subsequent loss of spent fuel pool level.

Pressure at the freeze seal will be <7.5 psig. No fuel movement will be allowed while the freeze seal is installed. Personnel in attendance at the seal will constantly monitor the temperature of the seal and control room operators will be ready to mitigate the consequences of a seal failure should it occur.

RFR 13795A

Install Coat Rack/Allow Storage of Lab Coats at the Aux. Bldg. Sample Sink

Provide coat racks for storage of lab coats in room 1311 of the Aux Bldg. The rack may contain up to 40 pounds of lab coats (combustible material).

This change will not adversely affect the Fire Protection Program and no seismic II/I concern will result due to permanent storage of the coats. The coat rack will be anchored to the wall.

RFR 13836A

Install Steam Suit Locker Outside Area Five

Permanent storage of requested non-plant equipment in designated location in the Auxiliary Building is allowed. This change will not adversely affect the Fire Protection Program nor will it result in a seismic II/I concern.

RFR 13860A

Clay Blanket Classification and Backfill Requirement

The two foot thick clay blanket underground is considered non-safety and is therefore not subject to the compaction requirements of the Category I Cohesive Backfill.

The purpose of the clay blanket is to limit seepage of surface water into ground water which existed prior to any construction. Due to the nature of the underlying geology, groundwater is very slow to migrate down-gradient, therefore it is desirable to limit the amount of surface water entering the groundwater. The plant structures are designed for a saturated condition with the ground water at elevation 1999'-6", therefore even if the clay blanket were not in place allowing the groundwater to rise to elevation 1999'-6" it would not create the possibility of an accident different than already evaluated.

RFR 13908A

Determine the Maximum Acceptable Letdown Flow Rate

Determine the maximum allowable letdown flow rate from the RCS in order to facilitate clean up of the RCS because of high Dose Equivalent Iodine readings.

A maximum letdown flow rate change from 120 gpm to 130 gpm for a short period of time was approved. The increased flow rate was evaluated for: 1) the ability of the letdown and charging subsystems to maintain a constant pressurizer level, 2) the exposures associated with a letdown line break outside of the containment building, 3) the ability of the charging pumps to maintain pressurizer level should the line break at the elevated flow rates, and 4) an inadvertent dilution of the RCS during Modes 1,2,3,4,5 or 6 of operation. All evaluations found that no unreviewed safety question exists for this method of operation.

RFR 13915A, B, C

Documentation of Cycle 7 Reload Design

These safety evaluations apply to the Cycle 7 reload design, and includes operation through Mode 1. The Cycle 7 reload design satisfies all of the applicable safety parameter limits and acceptance criteria, and has been evaluated using standard reload design and approved fuel rod design models and methods.

RFR 13922A

CO2 Decon Facility During Refuel 6

This allows the use of pelletized CO2 to provide the method of decontaminating tools and other hardware during Refuel 6.

The radiological inventory of the CO2 pellet cleaning facility is small. Usually this inventory consists of bagged tools and other hardware awaiting cleaning and the HEPA filters and prefilters that trap the radioactive particulates removed from the components during cleaning. The activity in the trailers will not exceed the levels evaluated in the FSAR. This facility has no interface with any other safety related equipment.

RFR 14132A

Evaluate Storage of Equipment in Hot Machine Shop

Permanent storage of requested non-plant equipment in designated location in the Hot Machine Shop is allowed. This change will not adversely affect the Fire Protection Program nor will it result in a seismic II/I concern.

RFR 14154A

Storage of Spray Additive Tank Recirc Pump

Allow permanent storage of the Spray Additive Tank Recirc Pump between the encapsulation valve covers on the plant east side of the 2000' level of the Aux Bldg. This will result in an increase in combustible loadings in the area (Corridor 1314).

The additional loadings were analyzed and documented through the Combustible/Electrical Fire Hazards Analysis Program and are not considered significant. As the pump will be secured properly, no seismic II/I concern exists.

RFR 14251A

NES Nozzle Dams Usage in Steam Generators

During Refuel 6, nozzle dams may be placed in both the hot and cold legs of the steam generators to isolate them from the reactor with the refueling cavity filled.

The dams consist of two inflatable seals and one passive seal. They have been evaluated for radiation exposure levels and have been hydrostatically tested. The worst case leakage rate is 5 gpm, which is far less than the available makeup.

RFR 14514A

Evaluate Nuclear Power Range Detector 44

During initial startup after Refuel 6, it was discovered that both NIS channel N44 detectors were reading approximately twice as high as the other three channels. After extensive equipment testing, it was determined that the probable cause was water in the vicinity of the detector well, which provided additional moderation and increased the thermal flux in the vicinity of the detector resulting in increased detector currents. It is likely that the cause will clear itself slowly as the water evaporates.

It was determined that the equipment was operating correctly and that no unreviewed safety question exists provided that the channel responds normally to changes in flux.

..MP 90-2005

Auto-Start of Standby RMW Transfer Pump

Remove standby reactor makeup water (RMW) transfer pump auto-start feature of RMW control system when dilution water is needed at the CVCS blending tee. Change time delays for auto-starting standby RMW transfer pump due to low discharge pressure to reduce starts due to momentary pressure signals. RMW system performs no safety function. Modification involves no safety-related components. Slight change in availability of dilution water at the boric acid blending tee would not increase severity of consequences of boron dilution accident.

RMP 90-2007

DP Indicator on Main Control Board

Install differential pressure (DP) indicator on control panel RL005 to display DP between feedwater header and main steam header. Indicator is installed in location previously occupied by feedwater header pressure indicator. Control room displays are nonsafety-related and are not associated with any safety functions. Reconfiguration of the displays does not create any adverse concerns with the control circuits with which they interface. Human factors review concludes the reconfiguration achieves an overall improvement, and there is no loss of existing displays to the operator.

RMP 90-2017

Add Air Conditioning to Count Room

Add air conditioning to count room to maintain room temperature and humidity within acceptable range. New air conditioning equipment installed in the count room is a stand-alone system and independent of existing cooling equipment. All equipment is located in non-II/I area which precludes adverse impact on plant safety systems. Circuits added are in nonsafety-related separation group 6. Combustible loading is negligible.

RMP 91-2004

Install Breathing Air Stations in Fuel Building

Install breathing air hose stations in Fuel Bldg. Breathing air system provides dedicated source of respirable air for use during maintenance operations and during abnormal entry into areas having potentially high concentrations of airborne radioactive contaminants. Breathing air system is nonsafety-related and has no safety function except for containment isolation which is unaffected by this modification. Penetration seals specified on design drawings ensure that the new holes in the auxiliary and fuel building exterior wall will not leak during an accident. Failure of new piping during a seismic event will not damage any safety-related equipment nor initiate any accident addressed in FSAR.

RMP 91-2012

Low Pressure Feedwater Heater Modification

Add resistance temperature detector (RTD) to drain line from each of the twelve low pressure (LP) feedwater (FW) heaters. Add sightglass to LP heaters for visual indication of level and as a reference so that controller measuring level from the normal level tap in heater controls normal level control valve. High level controller measures level from high level tap and controls high level dump valve. Create new computer points on BOP computer to calculate heater levels at east end of heaters. Include new setpoint data for calibration of level transmitters and high-high level switches. All components installed and/or affected by this modification are non-safety. There is no functional change to LP heaters.

RMP 92-2007

Main Feed Pump Speed Control Change

Change the Main Feed Pump Speed Control Circuitry to allow operators to automatically control differential pressure between the feedwater and steam headers at low power.

The MFP speed control circuitry is non-safety related and does not adversely affect any safety design bases.

RMP 93-2012A

Install Isolation Valve on Drain Lines from Air Compressors CKJ01A,B,C,& D

This modification will allow one train of the air compressor skid for the Diesel Generator Air Start System to be taken out for maintenance without taking both trains out. Failure of the new valves would not result in the failure of any safety related equipment nor would it prevent the Air Start System from performing its design function.

TM 93-M007

UHS Pumpdown System

The installation of a temporary pumpdown system in the UHS will have no effect on the ability of the UHS or ESW systems to perform their safety design functions. Operation of the temporary pumpdown system will decrease the operation of the safety related ESW pumps for UHS level control.

TM 93-M008

Install Blank Flanges on Inlet and Outlet of One Coil of Contain. Cooler SGN01C

Based upon the conclusion of RFR 4398G, up to 15% reduction per cooler is allowable. This is equivalent to plugging 50 passes per cooler. Installing the blank flanges on the third from the bottom, plant west coil, will be the equivalent of plugging 32 passes which is below the 15% margin. The design cooling capacity, the seismic qualification and environmental qualification of the cooler is maintained, and the code pressure boundary is maintained.

TM 93-M012

Open Ductwork Access Cover to Prevent Accumulation of Noble Gasses

Temporarily open the access cover to a section of the Fuel/Auxiliary Bldg. suction ducting to mitigate the spread of noble gasses from a leaking valve stem.

Based upon the fact that this section of ducting will be isolated from safety related ductwork by closing dampers upon the receipt of an SIS or FBIS and based upon the results of the data when the access cover was fully opened, the access cover may be fully opened without affecting any functional requirements. The negative pressure in the Fuel Building will be maintained during normal power operations as well as Emergency lineups following a FBIS or SIS. The ventilation opening will be covered by a screen to prevent the entry of foreign materials into the ducting.

Records printed: 135