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March 9, 1994

PG&E Letter DCL-94-045

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Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
10 CFR 50.59 Report of Facility Changes, Procedure Changes, Tests, and Experiments During the March 23, 1992 - May 2, 1993 Report Interval

Gentlemen:

Pursuant to 10 CFR 50.59, enclosed is the 10 CFR 50.59 Report of Facility Changes, Procedure Changes, Tests, and Experiments for Diablo Canyon Power Plant, Units 1 and 2 for the reporting interval of March 23, 1992 to May 2, 1993. This is the same reporting interval for the Units 1 and 2 Final Safety Analysis Report Update, Revision 9.

The enclosed report provides a brief discussion and a summary of the safety evaluations for each 10 CFR 50.59 item. The Plant Staff Review Committee has reviewed each item and determined that none of the items involved an unreviewed safety question or a change to the Technical Specifications.

Sincerely,

Gregory M. Rueger

cc: Mary H. Miller
Kenneth E. Perkins
Sheri R. Peterson
Diablo Distribution (w/o Enc.)

Enclosure

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ENCLOSURE

10 CFR 50.59 REPORT OF FACILITY CHANGES, PROCEDURE CHANGES, TESTS AND EXPERIMENTS MARCH 23, 1992 - MAY 2, 1993

Pacific Gas and Electric Company
Diablo Canyon Power Plant, Units 1 and 2
Docket Nos. 50-275 and 50-323

9403220201

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actuation changeover were coordinated efforts. After implementation of the CVI actuation changeover, there was no need for the PVRMS to be PG&E Instrument Class IA. The new system, therefore, is Instrument Class IB, Type E, Category 2, in accordance with Regulatory Guide 1.97.

Safety Evaluation Summary

The PVRMS does not provide a source for initiation of any design-basis type accident. The new system only provides monitoring and sampling capabilities to assist in the assessment of conditions before, during and after an accident (i.e., to meet the NUREG-0737 and Regulatory Guide 1.97 requirements). The previous containment ventilation isolation function is now performed by two new radiation monitoring channels, RM-44A/B, as installed and implemented by DCP J-45480, DCP J-46480, DCP J-47031, and DCP J-48031, respectively. The CVI actuation function changeover to RM-44A/B occurred concurrently with the implementation of the monitoring and sampling capability installed by this DCP. Hence, the current change does not increase the probability of occurrence of previously evaluated accidents.

The consequences of accidents evaluated in the FSAR Update cannot be increased by this change, as the FSAR Update takes no credit for accident mitigation by the PVRMS. DCPs J-47031 and J-48031 addressed the safety implications of the CVI function changeover.

The replacement PVRMS equipment is installed in a room in the auxiliary building where it does not pose a hazard of any type to equipment important-to-safety. The equipment requires reliable power, per Regulatory Guide 1.97. Where a Class 1E power supply is used as the reliable power source, the power connections to the equipment are routed through double Class 1E breakers, as required for circuit protection of the Class 1E power supplies.

The replacement digital PVRMS equipment more reliably performs the same monitoring and sampling functions performed by the analog equipment it replaced. Hence, the new equipment's operation does not produce any adverse effects on equipment important to safety.

Plant Vent Radiation High-Range Monitor RE-29, whose operation is intended to satisfy the requirements of Technical Specification Section 3.3.3.6, is not affected by this change. The replacement radiation monitors are not governed by any Technical Specifications. The CVI actuation changeover to RM-44A and RM-44B, as approved by the NRC, is governed by Technical Specification Section 3.3.3.1, and is not affected by the current change.

b. The previous CVI actuation capability was implemented with the feature that a CVI would be initiated whenever power was lost to either the radiation monitor, or the rotary relays which were interposed between the radiation monitor and the Solid State Protection System. For the new digital system, a loss of power to either the radiation monitor or the interposing relays is annunciated in the control

room, but a CVI is not initiated. The impact of this change is most significant for Mode 6 conditions where the Technical Specifications require only one of the two redundant channels to be operable. A fuel handling accident (FHA) inside containment, a Mode 6 event, is one of the design bases accidents discussed and analyzed in the FSAR Update, and reviewed and accepted by the NRC Staff in Supplement 6 to the Diablo Canyon SER.

Safety Evaluation Summary

Replacement of the CVI initiation capability was performed concurrent with other monitoring capability changes. In addition, the monitors do not contribute to causing a FSAR evaluated accident. Hence, these changes do not increase the probability of occurrence of a previously evaluated accident.

These radiation monitors are intended to assist in the mitigation of a FHA inside containment, which is one of the design bases accidents discussed and analyzed in the FSAR Update. The potential consequences of this type of accident were evaluated assuming that a monitor failure occurred but did not automatically initiate a CVI, but was annunciated in the control room. This evaluation, which assumes manual initiation of a CVI following the annunciation, shows that the resultant off-site doses for this scenario are less than the off-site doses determined for the design basis accident scenario included in the FSAR Update. This FSAR design basis case evaluation was the basis for the NRC's review and acceptance of the basic CVI initiation design (SSER No. 6). Hence, the consequences of an accident previously evaluated in the FSAR Update would not be increased by this change.

The replacement CVI initiation capability is installed and maintained as safety-related equipment, and is powered from the appropriate vital power sources. The equipment does not adversely impact, nor pose a hazard of any type to, equipment important-to-safety.

The replacement CVI initiation capability was demonstrated to have greater availability and higher reliability than the original system. Additionally, a probabilistic risk assessment evaluation identified the incremental risk from a loss of power to the operable monitor concurrent with a FHA and shows that the increase in overall plant failure is insignificant. Hence, operation of the replacement equipment would not produce an adverse effect on equipment important-to-safety.

3. Condenser Steam Jet Air Ejector Radiation Monitoring System RE-15 Replacement DCP J-43488 Rev. 0 (Unit 1) and DCP J-44488 Rev. 1 (Unit 2)

These DCPs replaced the existing Westinghouse radiation monitoring system (RMS) detector channel RE-15, which serves the Steam Jet Air Ejector (SJAE) discharge, with Victoreen detector channels RE-15 and RE-15R. The channel RE-15R is redundant to RE-15. This replacement was necessary because of obsolescence, high cost of maintenance, and unavailability of replacement parts for the existing

Westinghouse system. The original RE-15 channel was replaced by a state-of-the-art dual-channel system, consisting of a Dual Detector Skid, a Dual Sampling Pump Skid, local radiation processors and panel-mounted radiation display units in the control room.

Safety Evaluation Summary

The relevant accident analysis to this change is a Steam Generator Tube Rupture (SGTR). In this accident scenario, the air ejector monitor will alarm to indicate a sharp increase in radioactivity in the secondary system. These monitor replacements neither affect the radiation monitoring capability of the RMS, nor contribute to the occurrence of an SGTR.

This change replaces the original radiation detector RE-15 with equivalent redundant detectors. These new detectors perform the same function as the single detector replaced. Evaluations were performed to assure that this change would not produce any new seismic interactions, or any other safety concerns (i.e., separation, fire hazards, etc.).

There is no Technical Specification requirement for this radiation monitoring system in Technical Specification Sections 3.3.3.1 or 3.3.3.6 and, as such, the bases of the Technical Specifications are unaffected.

4. Upgrade Steam Generator Blowdown System
   DCP N-43752 Rev. 1 (Unit 1) and DCP N-44752 Rev. 1 (Unit 2)

The steam generator blowdown (SGBD) system was upgraded to increase the flow capacity of the recycle portion of the system, thereby reducing the overall plant makeup water demand. This change required the replacement of the existing system flash tank with a larger, higher capacity tank. System piping, valves, and instruments serving the new flash tank, as well as other components in the recycle portion of the system, were also replaced with components appropriately resized to accommodate the higher system flow rates. In order to improve the reliability and reduce the maintenance frequency of components in this system, components replaced as part of this system upgrade were replaced with ones of more erosion/corrosion resistant materials.

Safety Evaluation Summary

The only accident previously evaluated in the FSAR Update that relates to the changes made by this system upgrade is a minor secondary system pipe break. Neither the consequences nor the probability of occurrence of this accident have been increased. Likewise, the probability of occurrence of previously evaluated malfunctions of equipment important-to-safety, as well as the consequences of these postulated malfunctions, are not increased by this change. The various system hardware changes made have not changed the design concept of the blowdown system, nor have they changed the parameters (i.e., pressure, flow, and temperature) of the steam generators' blowdown process stream. Rather, this facility change simply increased

the capacity of the Design Class II recycle portion of the SGBD system by adding a larger flash tank, piping, and valves. No factors have been introduced which would end to increase either the likelihood or the consequences of an accident or malfunction.

The design of the upgraded SGBD system was evaluated to ensure that no new design-basis type accidents, or any new malfunctions of equipment important-to-safety, had been created by the changes implemented. New postulated high-energy line breaks were evaluated to ensure that no single break would cause an automatic shutdown of the plant, or prevent the attainment or maintenance of a safe shutdown condition should it otherwise be required. New seismically induced system interaction concerns created by this change, particularly those associated with the larger replacement flash tank, were also analyzed to ensure that no safety-related or safe shutdown structures, systems, or components would be adversely affected during or following a design basis seismic event.

Since this modification has not affected the existing capability to monitor the SGBD system fluid streams for radioactivity, no margins of safety defined in the bases of the Technical Specifications have been reduced.

5. Replace the Existing RHR Valves and Actuators
   DCP M-44100 Rev. 3 (Unit 2) and DCP N-45952 Rev. 1 (Unit 1)

This change replaced the existing RHR system butterfly valves HCV-637, 638 and 670 and their actuators with Neles-Jamesbury Q-ball valves with Bettis actuators and adjustable stops. Valves HCV-637 and HCV-638 were also relocated. The purpose of the changes is to avoid cavitation induced vibration problems in the RHR piping system. Adjustable stops are used to set the maximum valve-open positions to prevent air entrainment during mid-loop operation, excess post-LOCA energy addition, and pump runout in the event one of the HCVs fails to its maximum open position.

Safety Evaluation Summary

The replacement ball valves are designed to perform the same function as the original butterfly valves, with the additional enhancement of providing adjustable stops to ensure the RHR pumps are adequately protected. The flow characteristics of the new valves were reviewed to ensure that (1) the minimum flow required for core cooling and Technical Specification requirements are satisfied, and (2) valve cavitation problems during low-flow operation are reduced/eliminated. The replacement valves and piping conform with all applicable codes and standards and QA requirements. Based on the above, neither the probability nor the consequences of previously evaluated accidents are increased as a result of this change.

Seismic integrity of the new valves and piping system, potential seismically induced system interaction concerns, vital bus load impact, and fire protection issues have been adequately addressed. Hence, the changes made have not created the possibility of new types of accidents or malfunctions.

The replacement valves do not alter the operability or availability of the RHR system as required in Technical Specification Sections 3/4.4.1.4.1, 3/4.4.1.4.2, 3/4.5.3 and 3/4.9.8, nor reduce the functional requirements defined in the bases of these Technical Specifications.

6. Modify the Turbine Building to Accommodate the Sixth Diesel Generator Addition DCP C-44290 Rev. 2 and DCP C-44295 Rev. 1 (Unit 2)

In order to accommodate the addition of the new sixth emergency diesel generator (EDG), the Unit 2 portion of the turbine building, originally configured to house only two EDGs, had to be modified to accept a third EDG. Transformation of turbine building areas adjacent to and north of EDG 2-1 to house new EDG 2-3 required the following:

- Demolition/removal of structural and architectural items in the original document storage area at turbine building elevations 85 ft, 96 ft, and 107 ft.
- Deletion of the HVAC, lighting and electric power, telephone and public address, plant security, and fire protection system components serving the document storage area.
- Modification of mechanical and electrical components and commodities located in the demolition area (or otherwise affected by the demolition work) that served adjacent plant areas.
- Addition of structural/architectural features to the turbine building as required by the new EDG.
- Addition of new floor drain piping at turbine building elevations 85 ft and 107 ft to permit drainage of liquid wastes from the new EDG equipment areas.

Safety Evaluation Summary

The modifications made to the Unit 2 portion of the turbine building have not increased the failure modes of any structure, system, or component whose failure might result in any of the accidents or equipment malfunctions previously evaluated in the FSAR Update. The changes implemented have also not compromised the design of the turbine building, nor reduced the ability of other structures, systems, or components (required to mitigate the consequences of previously evaluated accidents or equipment malfunctions) to perform their respective design functions. During their implementation, work activities were carefully sequenced and appropriate compensatory measures were provided to ensure that existing design features temporarily compromised during the course of the construction activities did not affect structures, systems, or components important-to-safety. For those activities performed in close proximity to safety-related or safe-shutdown equipment, special precautions were taken to ensure that the work did not affect this equipment. Thus, neither the consequences nor the likelihood of occurrence of any previously evaluated

accidents or malfunctions of equipment have been increased by the changes made to the turbine building.

None of the changes made, once implemented, introduced any conditions that could conceivably result in a new type of equipment malfunction or accident. The structural and architectural design of the new sixth EDG equipment compartment is consistent with that of the existing EDG equipment compartments, and will not result in any new accidents. No new fire, seismically induced system interaction, or tornado/missile hazards have been created by the various changes made, thus eliminating the possibility of any new accidents or equipment malfunctions occurring as a result of such hazards. Proper sequencing of the work during implementation of this change also helped to ensure that no conditions were introduced that would create the possibility of a new type of accident or malfunction. Certain portions of the building demolition and reconstruction work did pose heavy-load handling and structural loading concerns during performance of the work. However, appropriate restrictions were invoked on heavy-load handling, as well as the location and magnitude of live and laydown loads, to prevent damage to structural elements and embedded commodities.

This facility change did not reduce or otherwise adversely affect the margins of safety defined in the bases for any Technical Specifications. Technical Specifications requirements in effect at the time of implementation of this change did require that certain compensatory measures be taken as result of temporarily disabling certain fire protection design features during performance of the work. Thus, the scope of work included appropriate measures to ensure that these Technical Specification requirements were complied with, so as to not compromise the operability or functionality of either safety-related or safe-shutdown components.

7. <u>Containment Recirculation Sump Enhancements</u>
   DCP N-44919 Rev. 1 (Unit 2)

The containment recirculation sump provides the source of water during the recirculation phase of emergency core cooling and containment spray during a loss of coolant accident (LOCA). The sump screen assembly prevents debris larger than 3/16-inch in size from entering the sump, as well as preventing vortexing and air entrainment in the RHR pump suction. The Unit 2 containment recirculation sump was modified by:

- Replacing the carbon steel lower screen assembly, flow straightening vanes, grating, and fasteners with stainless steel components to limit corrosion from borated water,

- Replacing the lower screen assembly divider plate with a 3/16-inch mesh screen sandwiched between two sections of stainless steel grating to provide an internal flow path, while still maintaining separation,

- Adding protective grating over the external screens to prevent damage during maintenance,

- Adding a 1-inch drain line to the bottom of the sump to aid in removing accumulated water, and

- Removing two unnecessary vent lines to simplify the sump screen design.

These modifications are similar to the Unit 1 modifications previously reported in DCL-93-043, and were made as a result of commitments made to the NRC in the December 19, 1989 Enforcement Conference, in PG&E letter DCL-90-005, "Comments Regarding Inspection Report Nos. 50-257/89-35 and 50-523/89-35," dated January 5, 1990, and in Licensee Event Report (LER) 1-89-014-01, "Potential Degradation of the Containment Recirculation Sump Due to Inadequate Procedures," dated January 19, 1990.

Safety Evaluation Summary

The modifications to the containment recirculation sump are enhancements to the sump and sump screens to improve access for inspection and maintenance, to prevent damage to the screens during these activities, and to limit corrosion that may degrade the sump screen structure. These changes do not affect the ability of the sump to supply adequate strained water during LOCA-ECCS recirculation mode and adequate NPSH for the ECCS pumps, nor affect the ability of the sump to prevent vortexing. These modifications do not interfere with the sump level instrumentation or its ability to detect sump level during or after a LOCA. The operability and surveillance requirements in the Technical Specifications for accident monitoring instrumentation, ECCS equipment, and Containment Spray equipment are not affected by any of these modifications.

8. Enhance 125 Vdc Control Power Circuitry for Emergency Diesel Generators
   DCP E-45132 Rev. 0 (Unit 1) and DCP E-46132 Rev. 1 (Unit 2)

The Class 1E 125 Vdc control power supply transfer circuitry for the starting controls of each emergency diesel generator (EDG) was revised to improve the reliability of the EDG starting systems following a single Class 1E 125 Vdc battery or dc electrical bus failure. As originally designed, a single battery or dc bus failure would have prevented one EDG from starting, while at the same time disabling one of the two 100 percent-capacity starting air trains of one other EDG. Although this original design was acceptable, the new control power circuit design limits the effects of a single dc power supply failure to the same EDG electrical train. Thus, should a single battery or dc bus failure occur, the EDG trains unaffected by the failure would still be able to use both of their respective 100 percent-capacity starting air trains.

Requirements for safe shutdown of the plant following a fire in either the main control room (MCR) or the cable spreading room (CSR) require that the EDGs still be capable of being controlled from their respective local control panels. To remedy inadequacies in the electrical separation of the EDG control circuits (Ref. LER 2-92-001-02), additional isolation fuses were added to EDG starting circuits to properly segregate the MCR/CSR circuits from the local control circuits.

To further ensure that a fire in the CSR does not disable the EDG local controls, manual fuse selector switches were added to each EDG local control panel.

In addition to the changes made to the EDG starting systems, the availability of the EDG was further enhanced by alarming high differential pressure across the EDG primary fuel oil filters at both the local and control room annunciators.

Safety Evaluation Summary

Neither the consequences nor the probability of occurrence of any accident previously evaluated in the FSAR Update have been increased by this facility change. The EDG starting system control circuits and fuel oil system annunciation circuitry are not the source of any design basis accidents previously evaluated in the FSAR Update. On the contrary, these electrical circuits, as part of the diesel engine generator system, are associated with the mitigation of various design basis accidents. The changes made do not jeopardize the functionality of the EDGs, or reduce the ability of the EDGs, or any other structures, system, or components (required to mitigate the consequences of previously evaluated accidents), to perform their accident mitigation function.

The new EDG starting system controls and fuel oil filter alarm circuitry have been designed to ensure that: (1) none of the equipment/component failure modes associated with the facility's original design have been adversely affected, and (2) no new failure modes have been created. The changes made also do not increase the challenges to the EDGs or degrade their performance. The revised facility design still meets all required design criteria, including those governing vital electrical bus loading, seismic qualification, and electrical redundancy, separation and isolation. Thus, neither the EDGs nor any other equipment important-to-safety are more likely to fail as a result of these facility changes. In the unlikely event that one of the components affected by these changes should fail, the consequences of such a failure are still bounded by the consequences of previously evaluated equipment malfunctions.

The new electrical circuit designs are sufficiently similar to the original designs to avoid introduction of a different type of equipment malfunction. Likewise, none of the differences between the new and original designs could conceivably introduce any conditions which could result in a new type of design basis event. The new circuit designs were also reviewed to ensure that no new fire hazards or potential seismically induced system interactions had been created, thus eliminating the possibility of any new accidents or equipment malfunctions occurring as a result of hazards introduced by this facility change.

The electrical circuit changes made do not adversely affect the capability of either the EDGs or the plant's vital dc electrical sources to meet their respective requirements in Technical Specification Section 3/4.8. Thus, the margins of safety as defined in the bases of the Technical Specifications have not been reduced.

9. Relocate the GM Detectors and Their Positioning Tubes Closer to the 28-inch Diameter Main Steam Lines
   DCP J-45169 Rev. 1 (Unit 1) and DCP J-46169 Rev. 1 (Unit 2)

This change moved the detectors closer to the monitor side facing the 28-inch main steam lines (MSLs), replaced the N116 GM Tubes with larger N117-1 GM Tubes, replaced the existing top-entry preamp boxes of RE-71 and RE-72 with bottom-entry preamp boxes, and moved the pig (lead block assembly) a small distance away from the MSLs and installed thermal insulation to shield the detectors from the MSLs' radiant heat. MSL radiation monitoring is a Regulatory Guide 1.97 commitment for post-accident monitoring. This change improves the isotopic response sensitivities of the MSL post-accident radiation monitoring equipment.

Safety Evaluation Summary

The relevant accident analysis to this system is a Steam Generator Tube Rupture (SGTR). Neither the radiation monitoring system (RMS) nor the changes made to this system contribute to the occurrence of an SGTR accident -- only to the detection/mitigation of the consequences of an SGTR accident.

The RMS detectors RE-71 through RE-74 are designed to detect an SGTR by monitoring the radioactivity level in the main steam flow. The modifications included in this change do not compromise the response of the detectors. Operator actions, based on detector performance, remain consistent with assumptions in the SGTR analysis and simulator confirmation testing. The new detector range (10^1 to 10^3 micro-curies/cc) is consistent with Regulatory Guide 1.97 guidance, and envelopes the SGTR analysis values.

This change enhances the isotopic sensitivities of the MSL post-accident radiation monitors. The modified detectors perform the same function in the same way as the original detectors. This change was determined to not adversely impact seismically induced system interaction exclusion criteria, separation requirements, fire hazards, or vital power supplies.

This change does not impact the relevant requirements of Technical Specification Section 3.3.3.6 or Table 3.3-10, or their bases.

10. Eliminate Blind Flange with a Hose-Bib Connection Requirement from the Overflow Line of the Condensate Storage Tanks
    DCP N-45389 Rev. 0 (Unit 1) and DCP N-46389 Rev. 0 (Unit 2)

This change revised the pertinent drawings to reflect deletion of a note and the requirement for the installation of a blind flange with hose-bib connection from the overflow lines of the condensate storage tanks (CSTs), originally intended to allow transfer of the tanks' contents to the miscellaneous equipment drain tanks should the condensate become radioactively contaminated.

Safety Evaluation Summary

The blind flange with hose-bib connection is not required for the control of radioactive waste. Operating procedures manually isolate the condensate reject line in the event of a steam generator tube rupture (SGTR), to limit the flow of condensate to the CST.

The blind flange with hose-bib connection on the overflow line of the CSTs is not involved in nor the cause of any accident, nor does it affect the consequences of any accident.

None of the structures, systems or components covered by the Technical Specifications or their bases are affected by the modifications described in this change.

11. Shorten the Spent Fuel Handling Tool Lifting Bail
    DCP N-46869 Rev. 0 (Unit 2)

The lifting bail (handle) on the spent fuel handling tool used in the spent fuel pool was shortened by 4 inches. This was done to provide additional clearance during fuel handling operations. The identical change was made to Unit 1 and reported to the NRC in PG&E letter DCL-92-069, dated March 20, 1992.

Safety Evaluation Summary

The structural integrity of the tool has been maintained. The design configuration for use of the tool during fuel handling operations is also maintained. Therefore, the analyzed fuel handling accident (FHA) is no more likely. The minimum, committed shielding depth of borated water, while moving fuel, is still maintainable with the shorter bail. The onsite and offsite dose consequences from the FHA are, therefore, not increased.

The tool is a passive, structural element between the spent fuel bridge crane and a fuel assembly. This modification will not impair operation of the crane, storage or use of the tool, or the integrity of fuel assemblies. A malfunction during the fuel handling operation will not (measurably) increase the onsite (crane operator) dose consequence above that already analyzed.

Existing accidents and malfunctions associated with use and failure of this tool bound all credible, potential events, such that no different events are created.

Technical Specification Sections 3.9.10 through 3.9.14 define the requirements for spent fuel handling, storage, and protection. None of these requirements is compromised by this change.

12. Remove Chlorine Monitors in the Control Room Ventilation System from Service
    DCP J-47011 Rev. 0 (Unit 1) and DCP J-48011 Rev. 0 (Unit 2)

This change permanently removed from service the chlorine monitors in both the control room ventilation system (CRVS) normal air intake, and the control room pressurization system (CRPS) air intake for the CRVS. These same monitors had been previously temporarily removed from service, as reported in PG&E letter DCL-93-043, dated February 23,1993. The affected components are isolated from the HVAC process and Class 1E power so as to prevent any possibility of a chlorine monitor

interfering with safety-related CRVS operation. The monitors have been abandoned in-place.

Safety Evaluation Summary

The facility no longer uses gaseous chlorine as a biofouling agent, and storage of gaseous chlorine is limited to volumes below the maximum allowable volume required to maintain the control room as a Type I control room. Since the postulated accidents related to gaseous chlorine within the site boundary have been eliminated, the probability of occurrence and consequences of such accidents previously evaluated in the FSAR Update are eliminated.

Removing the site chlorine monitors from service isolates them from the important-to-safety equipment still required to operate in the CRVS.

The sources of a chlorine gas accident, as defined in the FSAR Update, have been removed from the site. Regulatory Guide 1.95 specifies the volume, distance, and required control room response to minimize the chlorine gas accident's impact on control room habitability. Since the plant is not exceeding the limits as defined by Regulatory Guide 1.95, removing the chlorine monitors from service does not create any possibility of a different type of accident than any of those already evaluated in the FSAR Update.

Technical Specification Section 3.3.3.7 states that availability of the chlorine monitors is dependent on whether or not bulk chlorine gas is stored within the site boundary. Since the chlorine source has already been removed by DCP N-45918, as previously reported in PG&E letter DCL-93-043, Technical Specification Section 3.3.3.7 is not applicable. Thus, this change does not impact the Technical Specifications or their bases.

13. Raise the 4.16kV Second Level Undervoltage Relay Settings
    DCP E-47079 Rev. 0 (Unit 1)

Class 1E power sources are provided with protective relays to prevent undervoltage conditions from existing on vital buses. Sustained undervoltage conditions on the 4.16kV buses are prevented by second level undervoltage relays (SLUR). These relays assure that nominal/rated voltages greater than 90 percent are maintained at the 4.16kV buses. The relay settings were raised to assure that acceptable voltages are maintained at the 4.16kV, 480V, and 120V levels to meet the NRC's SLUR requirements. The SLURs were installed at DCPP in response to the Millstone Unit 2 event described in the NRC's letter of June 6, 1977 and PG&E's commitment to comply with NRC Branch Technical Position PSB-1. These changes were reported previously for Unit 2 by DCL-93-043, dated February 23, 1993.

Safety Evaluation Summary

The Class 1E SLURs provide a protective function for vital power sources and are not associated with the cause of any accidents. This modification assures voltage integrity at the 4.16kV, 480V, and 120V levels of the vital power system during

sustained degraded voltage conditions, and reduces the possibility of any undesirable trip or malfunction of vital equipment.

Increasing the setpoint may result in a very slight increase in emergency diesel generator start frequency, under certain offsite power supply configurations; whenever starting the reactor coolant pumps. This potential, slight increase in the number of diesel starts, however, is compensated for by the increased assurance of 480V and 120V vital power components to receive adequate voltage for sustained operation. Since all systems and components are assured to function as assumed in the various analyses, this modification has no effect on the consequences of any previously evaluated accident or malfunction.

Technical Specifications Sections 3.8.1 and 3.8.2 govern the operability of the vital power systems of DCPP. Though not specifically stated in the Technical Specification Bases, adequate voltage from these sources is required to maintain the operability of safety-related equipment. This design change assures that margins of safety associated with these power supplies are not reduced. Emergency diesel generator operability is not compromised by the slightly-increased potential start frequency.

14. Strengthen Safety-Related Masonry Block Walls
    DCP C-47097 Rev. 1, C-47300 Rev. 0, C-47301 Rev. 1, C-47372 Rev. 0, C-47374 Rev. 0 (Unit 1) and C-48374 Rev. 0 (Unit 2)

This design change modified certain safety-related block walls in the Unit 1 and 2 portions of the turbine building and in the Unit 1 and 2 portions of the auxiliary building.

The modifications added steel cover plates and columns/beams attached to the face of the walls, and also added strengthening, as necessary, at top and bottom wall connections to ceiling and floor slabs. These modifications were made to qualify the affected block walls for design basis Hosgri earthquake loads using elastic criteria conforming to that given in PG&E letter DCL-91-026 to the NRC. The modifications required the use of steel thru-bolts to attach the carbon steel cover plates, beams or columns to one or both faces of the walls. Structural members added to strengthen the top and bottom wall-to-ceiling/floor connections also utilized thru-wall bolting.

Safety Evaluation Summary

For each affected wall, maximum displacements were evaluated and found to have no adverse impact on any nearby commodities.

The modifications do not affect any accident analyses discussed in the FSAR Update. Also, the modifications do not affect or interface with any systems used for the mitigation of the consequences of previously evaluated accidents. Detailed fire hazards analyses have determined that the modifications do not adversely affect the integrity of rated fire barriers, or degrade their ability to prevent the spread of a design basis fire from one area to another. In addition, the modifications are passive in nature and do not affect any pressure boundary functions.

Fire detection and suppression systems exist in the affected areas; these fire systems are unaffected by the modifications. Evaluations indicate that unacceptable thermally-induced stresses or loadings on the walls will not be created in the event of a fire. Thus, the ability to shutdown the plant safety as analyzed in the FSAR Update is not compromised. The original design basis of the affected walls for fire propagation prevention/minimization is still maintained. Therefore, margins of safety as defined in the basis of the Technical Specifications are not affected.

15. Modify Boric Acid Evaporator Controls to Processes 4 percent Boric Acid Solution
    DCP N-47110 Rev. 1 (Unit 1) and DCP N-48110 Rev. 1 (Unit 2)

This change modified the controls of the boric acid (BA) evaporators to allow them to process 4 percent boric acid solution in the continuous mode of operation. In order to achieve this, the BA evaporator density meter (ANT-759) was modified to increase its sensitivity. Switches associated with FCV-759 were reset so that the valves open upon boric acid concentration reaching 4.5 percent, and close upon the concentration decreasing to 4.1 percent. The HI-HI concentration alarm and trip has been reset to occur at a 6 percent concentration. The scale for ANR-759 also had to be changed to read 0 to 8 percent concentration.

Safety Evaluation Summary

The boron recycle system is not a safety-related system. The components modified in this change are not part of any previously analyzed accident scenarios in the FSAR Update. Altering the processing of the boric acid evaporators from 12 percent to 4 percent boric acid solution results in improved system operation, maintainability and reliability. This system is not part of any accident mitigation systems.

The boric acid evaporators are not considered important to safety.

The modifications made in this change, including the new setpoints for altering the boric acid evaporator processing to produce 4 percent boric acid solution, cannot produce new types of accidents or malfunctions not previously analyzed in the FSAR Update.

The BA evaporators are not addressed by any Technical Specification.

16. Provide 1-Inch Bypass Piping and Manual Isolation Valves Around FCV-23 and FCV-24
    DCP N-47146 Rev. 0 (Unit 1) and N-48146 Rev. 0 (Unit 2)

This change provided 1-inch bypass piping and manual isolation valves around FCV-23 and 24 to allow draining of condensate accumulated in piping upstream of MSIVs FCV-43 and 42 following certain accidents, in the event loss of instrument air prevents operation of FCV-23 and 24. FCV-23 and 24 have no manual operating devices (hand wheels); thus, a main steam isolation signal or a loss of instrument air supply renders FCV-23 and 24 inoperable. As a result, condensate may accumulate in piping upstream of the MSIVs. Condensate present in the main steam lines may cause

an overspeed of the turbine-driven auxiliary feedwater (AFW) pumps. This change provided FCV-23 and 24 with the desired manual bypass capability to drain any accumulated condensate.

Safety Evaluation Summary

The MSIVs and their bypass valves are not part of any accident initiation scenarios in the FSAR Update. The installed 1-inch manual bypass valves and their associated upstream piping have the same code and quality classifications as those of the MSIVs, and the values are locked closed during normal plant operation to maintain containment integrity. The addition of the 1-inch manual bypass valves prevents potential water hammer effects in the main steam lines and the loss of operability of the turbine-driven AFW pumps. Hence, there is no increase in the probability or the consequences of previously analyzed FSAR Update accidents or malfunctions of equipment important to safety.

The added 1-inch manual bypass valves remove the potential cause for an AFW pump turbine overspeed due to condensate buildup in the main steam lines. Since these manual valves are containment isolation valves, they will be locked closed and placed under administrative control during normal plant operation. Therefore, no possibility of new accidents or malfunctions are created due to this change.

This change does not impact the requirements of Technical Specification Section 3/4.6.3 for containment isolation valves. All containment manual isolation valves continue to receive the same surveillance, under Technical Specification Section 4.0.5, as was required before this change.

17. Remove the Meteorological Data System Main Control Room and Technical Support Center Printer Terminals
    DCP J-47232 Rev. 0 (Units 1 and 2)

This change removed the main control room (MCR) and technical support center (TSC) printer terminals, and the primary and backup Automet V/RTU processors and magnetic tape recorders. The meteorological data system signals from the primary and backup meteorological data are now connected to both the Unit 1 and 2 Plant Process Computers (PPCs). After connections to the PPCs were verified, the old meteorological equipment in the MCR and TSC was removed. The old printer power (Class 1E) and signal cables were abandoned in-place to allow possible future reuse of the circuits.

Safety Evaluation Summary

The meteorological data system monitors the meteorological conditions at the site. It is not part of any FSAR Update-analyzed accidents, and has no accident mitigation functions.

The meteorological data system is separated from plant systems which are safety-related. The modified equipment is not connected to any safety-related

equipment. The availability of both the primary and backup meteorological tower data signals increases the information available to the operating personnel. The serial data for the primary block house and the TSC uses distinct and separate circuits in routing to the Unit 1 or Unit 2 PPCs. The intent is to provide meteorological data to the shift foreman for use during accident conditions by using the PPC for display and logging on both Unit 1 and Unit 2 simultaneously from the primary and backup meteorological towers. The availability, operability, or functional requirements of meteorological equipment governed by Technical Specification Section 3.3.3.4 are not affected, nor are their bases impacted by this change.

18. MOV Modifications to Meet Generic Letter 89-10
DCP J-47277 Rev. 3 (Unit 1)

This modification:

- replaced stems, stem nuts, gears, and increased the operator motor-size of certain MOVs to increase the available operating thrust;
- changed the logic to position-control for double-disk gate valves;
- changed spring packs on certain operators to permit higher stem thrust;
- installed limiter plates on all Limitorque MOVs to ensure that torque switch settings do not exceed motor or spring pack capabilities;
- installed a position indication rod in the operator for Valve 8112;
- permanently installed M&TE devices (Quicktest cable sets) to facilitate obtaining MOV test data;
- established new torque switch and limit switch setpoints for all rising stem MOVs;
- changed the gears ratios on certain high-speed SMB-2 operators;
- incorporated the latest Limitorque bolt torque requirements to enable increased operator ratings;
- revised setting for circuit breakers and starter overload relays at the MCCs; and
- corrected engineering drawings to show as-built conditions for MOVs 1-8716A/B.

Safety Evaluation Summary

The new stroke times for affected valves were evaluated and found to be within allowable system requirements for stroke times assumed in the accident analyses. An increase of 30 seconds in the switch-over time of 8 minutes 55 seconds from ECCS injection mode to recirculation mode, plus an additional 20 seconds assumed for an increase in sump level response time, was found to be acceptable. This is within the

10 minute switch-over time assumed in FSAR Update Section 6.3.1.4.4.2, which was demonstrated during startup testing and was accomplished in 6 minutes 16 seconds. Stroke times for containment isolation valves were all within the requirements of Technical Specification Section 3.6.3. Since these changes are within the accident analysis parameters, the consequences of any accident or malfunction of this equipment are not affected.

New and replacement gear sets, stems, stem nuts, motors, spring packs, and limiter plates are of equal quality to that of the originally supplied equipment. These changes do not affect the valve or operator function, and were made to increase the valve reliability. The increase in motor size of certain valves was evaluated for the effects of the increased weight on both the valve and associated piping. The evaluation checked for valve operation as well as seismic capability; the evaluation results were found to be acceptable. Also for the larger motors, thermal overload devices were resized and the vital bus loading was reviewed and found to be acceptable. The M&TE devices are monitoring devices that do not affect the operation, function or control of the valves, and therefore do not introduce a new failure mechanism.

The use of position-control rather than torque-switch control to seat the six parallel disk gate valves introduced the potential failure of the new switches in place of the old switches. However, the failure of the new switches does not result in any new or different failure modes for these valves than those previously evaluated.

These valves are not the cause of, or involved in the initiation of any accident. The modifications do not change the function of any valve in any Technical Specification, nor affect the stroke times assumed in Technical Specification Section 3.6.3, or its bases.

19. <u>Provide Higher Capacity Replacements for 125 Vdc Batteries 12 and 21</u>
DCP E-47281 Rev. 0 (Unit 1) and DCP E-48281 Rev. 0 (Unit 2)

This modification replaced existing Class 1E 125 Vdc Batteries 12 and 21 with higher capacity batteries in order to support the future EAGLE 21 process protection system (PPS) upgrade. The capacity of the batteries replaced did not meet the expected load demands of the new EAGLE 21 system. Battery 12 feeds instrument inverters IY12 and IY14, which will, once the PPS upgrade is complete, provide vital instrument power to Unit 1 EAGLE 21 Protection Sets II and IV, respectively. Likewise, the future needs of Unit 2 EAGLE 21 Protection Set I will be met by Battery 21, which feeds instrument inverter IY21. The scope of this modification was generally limited to replacement of the existing batteries with batteries having a higher ampere-hour capacity, and in no way changed the electrical configuration of either unit's existing dc power system.

<u>Safety Evaluation Summary</u>

Replacement of these batteries with higher capacity units did not compromise the independence or redundancy of the existing battery design, or change the overall configuration of the dc power system. Should a postulated loss-of-offsite-power

(LOOP) accident occur, the replacement 125 Vdc batteries are still capable of providing power to the required vital loads, both before and after the PPS upgrade. The design of the replacement batteries does not introduce any factors that would tend to increase the likelihood of a LOOP accident. The replacement batteries will also, with their higher ampere-hour capacity, continue to provide the required accident mitigation support following the PPS upgrade. Thus, neither the consequences nor the probability of occurrence of any accident previously evaluated in the FSAR Update have been increased.

The new batteries have been designed to ensure that neither the consequences, nor the probability of occurrence of a previously evaluated malfunction of equipment, are increased by this equipment replacement. As with the equipment they replace, the new battery design has been tested to demonstrate that the batteries meet existing seismic design criteria. The seismic design of the structure that houses the batteries, as well as that of other safety-related equipment that could conceivably be seismically affected by this change, were also reviewed to verify that no adverse effects had been created. Review of the electrical characteristics of the new batteries showed that the calculated short-circuit current of the new batteries is higher than that of the equipment they replace; however, the current is still within the short-circuit duty limit of the existing dc equipment. Therefore, no adverse electrical effects have been created by this battery replacement. Since the new batteries are, with the exception of ampere-hour capacity, similar in design to the equipment they replace, no new failure modes are introduced by this equipment replacement. Thus, this design change does not create the possibility of a new type of accident or equipment malfunction.

Although the new batteries are of a higher ampere-hour capacity than the equipment they replace, they are still designed to meet the applicable criteria of Technical Specification Section 3/4.8. The dc power system configuration, equipment redundancy, and other aspects of the design governed by this Technical Specification section are unchanged by this equipment replacement. Thus, no margin of safety as defined in the bases for this Technical Specification is reduced.

20. <u>Replacement of Positive Displacement Charging Pump Pulsation Dampers</u>
DCP N-47303 Rev. 1 (Unit 1) and DCP N-48303 Rev. 1 (Unit 2)

A series of cracks had been identified in the suction of the discharge piping associated with the positive displacement charging pump (PDP) over a period of time. The root cause of this history of piping cracks was identified, via the non-conformance process, as being excessive pulsation in the piping associated with the PDP due to inadequate pulsation damper performance.

This facility change replaced the existing PDP suction stabilizer and discharge pulsation damper with Helmholtz type "All Liquid Acoustic Filter Dampers." These dampers have been specifically optimized for DCPP's charging system to maximize their filtering effect, while limiting their associated pressure drop to acceptable values.

This design change also added a vent for the suction pulsation damper that discharges to the PDP suction, and added restricting orifices to the suction and discharge of the

PDP to attenuate pulsations in the PDP suction and discharge manifolds resulting from acoustic resonance at these locations.

Safety Evaluation Summary

The addition of the new pulsation dampers increases pressure drop in the suction to the PDP, and increases discharge system resistance. However, the effects of increased pressure drop are offset by reductions in dynamic pressure variations caused by the original ineffective pulsation dampers. In addition, verification of acceptable post-modification pulsation levels and process conditions in the PDP suction and discharge piping has been performed and documented. The addition of a "constant vent" on the suction pulsation damper provides assurance that a large accumulation of non-condensable gases will not form. The vent is equipped with a restricting orifice sized to limit the void fraction due to gas flow from the top of the suction damper. This design change also added restricting orifices to the suction and discharge of the PDP. These orifices serve to attenuate the pulsations present in the PDP suction and discharge manifolds that are created by the presence of an acoustic resonance. The purpose of these design changes is to provide effective pulsation damping to reduce the vibration levels in the associated piping. Such a reduction may be expected to decrease the probability of cracking or rupture of the piping during operation of the PDP. Since the operational reliability of the PDP is not adversely affected by these changes, but is instead enhanced by them, neither the probability of occurrence nor the consequences of previously evaluated accidents or malfunctions of equipment are increased. Furthermore, the changes made to the PDP piping do not introduce any conditions that could conceivably result in a new type of accident or malfunction of equipment.

While the PDP may be credited as the charging pump that provides boration flow for compliance with Technical Specification Sections 3.1.2 and 3.5.3, the modifications made by this design change in no way adversely affect the performance of the PDP, and are expected to increase its availability. Thus, the reliability of the charging system for performing its boration function is enhanced. Therefore, the margins of safety as defined in the bases for the applicable Technical Specifications are not reduced.

21. Install Pyrocrete Fire Barrier Enclosures for Diesel Generator Emergency Stop Switches and CO_2 System Manual Actuation Switches
DCP A-47386 Rev. 0 (Unit 1) and DCP A-48386 Rev. 0 (Unit 2)

Thermo-Lag enclosures were originally provided for the emergency diesel generator (EDG) emergency stop switches located at the 85 foot elevation of the turbine building. These enclosures were intended to provide a 3-hour rated fire barrier to preclude a single fire from tripping the diesels. The Thermo-Lag enclosures were installed to comply with 10 CFR 50, Appendix R, Section III.G. It was discovered during a field inspection that the originally installed enclosures were not adequate, in that they did not comply with manufacture's design installation requirements. This design change replaced the Thermo-Lag enclosures with Pyrocrete enclosures. In

addition, fireproofing of the associated CO_2 system manual actuation switches located in the same area as the stop switches was also completed under this change.

Safety Evaluation Summary

This change provides a 3-hour rated fire barrier enclosure for all EDG emergency stop switches so that a fire in the EDG corridor will not disable any of the diesels. Also, the CO_2 system manual actuation switches are protected to prevent a fire in the turbine building from adversely affecting the diesels.

22. Conversion of Spare Electrical Containment Penetrations to Mini-Equipment Hatches
DCP N-47450 Rev. 1 (Unit 1) and DCP N-48450 Rev. 1 (Unit 2)

This modification converted two spare electrical (containment) penetrations (46E and 47E) to mini-equipment hatches (58 and 60). This was done to facilitate the passage of electrical cables and compressed air/water hoses into containment during refueling outages to support maintenance activities associated with the steam generators and reactor vessel. Employment of the flange assemblies was required to prevent a direct path between the containment area and areas outside containment.

During normal operation, each penetration consists of blind flanges bolted onto the inboard and outboard ends of the penetration pipe sleeves, with double O-Rings on the inboard containment flange to form an isolation boundary. The inboard containment blind flange used during normal operation is provided with pressure test connections to permit pressure testing between the O-Rings. A temporary configuration, consisting of blind flange assemblies with service connections, is employed during plant outages to provide for containment closure. The flange assemblies include connections for routing hoses and cables into containment, and are designed to function as pressure boundaries while the inboard containment blind flanges are removed from service.

Safety Evaluation Summary

The permanently modified penetrations have been seismically qualified to Design Class I requirements to assure that the penetrations will function under all operating conditions. The increased weight load placed on the associated piping and the containment structure has also been evaluated and found to be acceptable.

The penetrations are designed to maintain the same degree of leaktight integrity as the containment structure itself during all modes of operation. These permanent modifications to the penetrations meet the requirements for ASME B&PV Code, Section III, 1986 Edition, Subsection NC - Class 2 components. The O-Rings are rated for design basis accident containment pressures, temperatures, and radiation, and thus ensure that containment integrity is maintained. Therefore, the radiological effects associated with a fuel handling accident are not affected by this modification, and the consequences of any accident previously evaluated in the FSAR Update are not increased as a result of this design change. Similarly, the consequences of a

malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The temporary blind flange assemblies, and associated piping components are designed to provide for containment closure during refueling outages. In the event that a process hose connected to a flange assembly becomes severed during maintenance operations, the resulting hose whip/jet impingement would not result in forces significant enough to damage any adjacent structures, equipment, or components. Also, the flange assemblies are designed with valves to isolate flow paths and thus maintain containment closure. Therefore, the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR Update is not created, as no new failure modes are introduced as a result of this change.

A continuous roving fire watch is provided whenever the penetrations are in a modified configuration during refueling operations, which satisfies the requirements of the Technical Specifications. Also, the modified configuration during refueling operations meets the requirements of Technical Specification Sections 3.9.4 and 3.9.9. During normal plant operations, blind flanges are bolted onto both sides of the penetrations with double O-Rings on the inboard containment flange to form a double containment isolation boundary for containment closure, as required by Technical Specification Section 3.6.1. Therefore, this modification will not reduce the margin of safety as defined in the basis for any Technical Specifications.

23. Revise FSAR Update to Reflect Hosgri Report Seismic Requirements for Valves
DCP N-47546 Rev. 0 (Units 1 and 2)

In accordance with the commitments made in LER 1-92-015-00, the FSAR Update and other appropriate design documents were revised to the reflect the seismic qualification requirements for valves required for safe plant shutdown following a postulated Hosgri seismic event. More specifically, FSAR Update Table 3.9-9, List of Active Valves, was updated to reflect the following types of changes:

- Entries in the "Valve Position for Safe Shutdown" column of the list were revised to properly reflect actual valve positions required for accident mitigation or plant safe shutdown.

- Valves not serving a safe shutdown or accident mitigation function, and not required to support post-Hosgri plant shutdown, were removed from the list.

- Valves whose operation is required for safe shutdown, but are incorrectly shown as not being required for safe shutdown, were corrected accordingly.

- Valves required for accident mitigation or safe shutdown, but erroneously omitted from the list, were added to reflect their actual safety significance.

In addition to FSAR Update changes related to inadequacies addressed in LER 1-92-015-00, the text of FSAR Update Chapter 3 was revised to correct and clarify

wording defining design classifications, seismic qualification classifications, and the relationship between them.

None of the above changes to the FSAR Update resulted in any physical changes to the plant.

Safety Evaluation Summary

None of the changes made affect the operation of the plant as currently licensed. Thus, the corrections made to the FSAR Update to reflect the actual design and operation of the plant, or to properly depict the accident mitigation or safe shutdown functions of existing equipment, have not increased the likelihood of occurrence of previously evaluated accidents or malfunctions of equipment important to safety. Since all changes reflect the assumptions made in previous accident analyses and equipment malfunction evaluations, the consequences of previously evaluated accidents and equipment malfunctions are also not increased or otherwise affected. Those valves deleted from the group of valves previously indicated in the FSAR Update as being required for safe shutdown or accident mitigation do not create a safety concern, since they were never actually credited with performing these functions in previous analyses.

Since no equipment is either added or deleted by these changes, and no system's operation is changed, there are no conditions created that could result in a new type of accident or malfunction of equipment. Likewise, no margins of safety defined in the bases of the Technical Specifications are reduced or otherwise adversely affected by these changes.

24. Remove Radiation Monitor RE-27 from Steam Generator Blowdown Tank Vent
DCP J-47556 Rev. 1 (Unit 1) and DCP J-48556 Rev. 1 (Unit 2)

This modification removed radiation monitor RE-27 from the steam generator blowdown tank vent. As part of the plant's original steam generator blowdown (SGBD) system design, radiation levels within the system were monitored by several diverse radiation monitors. As part of this radiation monitoring function, RE-27 was used to monitor gaseous effluents being discharged to the environment through the SGBD tank vent. Upon detection of elevated radiation levels in the effluent stream, RE-27 was designed to isolate various SGBD system fluid paths as necessary to terminate the unacceptable release of radioactive materials to the environment. However, review of the overall design of the radiation monitoring function provided for the SGBD system concluded that the radiation detection and effluent isolation functions provided by RE-27 were already adequately satisfied by other radiation monitoring devices.

Although this monitor, by its deletion, is no longer available for assessing the gaseous effluent released through the SGBD tank vent, this capability can still be provided through the use of periodic sampling and analytical methods.

Safety Evaluation Summary

Of the accidents previously evaluated in the FSAR Update, only a primary-to-secondary system leak or a steam generator tube rupture are postulated to result in the presence of radioactive material in the SGBD system. The removal of RE-27 from the SGBD tank gaseous effluent release point will not increase the probability of occurrence of either of these accidents, or any other previously evaluated accidents, since the monitor is not part of the initiation scenario of any accident. The consequences of previously evaluated accidents will also not be affected by the deletion of this monitor, since neither of the pertinent accident scenarios take credit for either the monitoring or the isolation functions associated with this instrument.

The removal of this radiation monitor will not have any adverse effect on either the consequences or the likelihood of a malfunction of equipment important to safety. The detection of high radioactive material levels and the isolation of effluent discharge paths of the SGBD system are still provided by other available radiation monitoring devices. The removal of this monitor will also not affect the operation of the SGBD system, including its valves' ability to perform their process and effluent path isolation functions. By removal of this device, no new conditions exist that could result in the creation of a new type of accident or equipment malfunction.

The requirement for monitoring of the effluent release path defined by the SGBD tank atmospheric vent is not specifically governed by the Technical Specifications. However, compliance with the programmatic requirements of Technical Specification Section 6.8.4.g, which specifies the elements of the Radioactive Effluents Control Program, is not affected by this change. Thus, the margins of safety as defined in the bases for any Technical Specifications are not reduced by this change.

25. Modify 125 Vdc Control Circuitry for 4.16kV Safe Shutdown Components
DCP E-47591 Rev. 0 (Unit 1) and DCP E-48591 Rev. 1 (Unit 2)

Review of the 125 Vdc control circuitry for 4.16kV safe shutdown components identified that a postulated fire in either the main control room (MCR) or the cable spreading room (CSR) could potentially damage the ability to control safe shutdown component 4.16kV breakers at the hot shutdown panel (HSP) and/or the local 4.16kV breaker control switches at the 4.16kV switchgear (Ref. LER 2-92-001-02). To correct the inadequacies in the original design, the 125 Vdc control circuitry was re-configured with additional fusing and new isolation switches, to ensure that safe shutdown equipment controls in the MCR/CSR are adequately segregated from their local-control counterparts at the HSP and 4.16kV switchgear. Existing equipment control transfer switches at the HSP and 4.16kV switchgear were re-configured to ensure that a fire in the vicinity of the HSP would not result in inadvertent transfer of control of safe shutdown equipment away from the control room. A mode selector switch was also added to the HSP to allow manual isolation of safe shutdown equipment auto-initiation control circuits in the MCR/CSR from equipment control circuits at the HSP/4.16kV switchgear in the event of a fire in MCR/CSR.

Safety Evaluation Summary

This facility change does not affect any equipment whose failure is an initiating event for any accidents previously evaluated in the FSAR Update. The safe shutdown control circuits affected by this change are, instead, used for the mitigation of previously evaluated accidents. The various circuit modifications made have not, however, degraded the performance of any equipment or systems required to mitigate the consequences of any accidents. Furthermore, the changes made to the 125 Vdc control circuits for the safe shutdown equipment 4.16kV breakers ensure that, should a fire in either the MCR/CSR occur, local control of the required safe shutdown equipment from the HSP and/or the 4.16kV switchgear is available.

The additional fuses and new switches incorporated into the design of the safe shutdown equipment controls are of the same quality and meet the same design criteria as components in the original design. The revised circuit configuration also meets existing criteria with respect to electrical separation, redundancy, and isolation. The circuitry changes do not add any postulated points of failure whose consequences are not already addressed in the FSAR Update. No new combustibles or ignition sources are added by these changes; the likelihood of equipment failure due to fire is not increased. Thus, neither the consequences nor the probability of occurrence of a malfunction of equipment previously evaluated in the FSAR Update have been increased by this change. The 125 Vdc control circuit changes are also such that they do not create the possibility of a new type of accident or equipment malfunction.

This facility change ensures that the operability of various 4.16kV safe shutdown equipment is not compromised following circuit failures that might occur due to a fire in the MCR/CSR. The new mode selector switch added to the HSP, when operated in conjunction with the new transfer switches at the 4.16kV switchgear, is intended to provide positive isolation of faulted circuits, including those associated with auto-initiation of safe shutdown equipment, that occur as a consequence of a MCR/CSR fire. However, the design of this selector switch is such that automatic equipment start features can only be bypassed by this switch if equipment control has already been transferred away from the MCR to the HSP/4.16kV switchgear. Thus, inadvertent mispositioning of this selector switch during normal plant operation (with equipment controlled from the MCR) will not affect safe shutdown equipment. Since the ability of the plant to combat a design basis accident is not affected, the margins of safety as defined in the bases of the Technical Specifications that govern the safe shutdown systems and equipment are not reduced.

26. Revise Valve Operator Design Classifications
    DCP J-47625 Rev. 0 (Unit 1) and DCP J-48625 Rev. 0 (Unit 2)

The design classifications for various air and motor operators of valves affected by the changes made in DCP N-47546 have been revised to reflect actual seismic qualification requirements for the valve operators. As with changes made by DCP N-47546, none of the valve operator design classifications changes made by this DCP resulted in any physical modifications to the plant.

Safety Evaluation Summary

Since none of the valve operator design classification changes made resulted in any physical modifications, the valves and the systems of which they are a part will continue to function as originally intended. Actions credited in previous analyses for the affected valves are unchanged. Valves required to operate to support the mitigation of previously evaluated accidents or malfunctions of equipment important to safety will continue to function as required by these analyses. Therefore, neither the consequences nor the probability of occurrence of any previously evaluated accidents have been increased by these valve operator design classification changes.

Since no hardware changes were made as a consequence of these classification changes, there are no conditions introduced that would tend to increase the likelihood of previously evaluated failures of equipment important to safety. The seismic adequacy of the affected valve operators has not been compromised by these changes; seismic qualification previously performed for the equipment remains valid. A review of the maintenance histories of the affected valve operators was also performed to ensure that the equipment had been maintained commensurate with their new design classifications. The results of this review showed that the quality of the valve operators had not been compromised by previous maintenance activities. Thus, those valve operators required to function or retain their structural integrity during a seismic event will continue to do so.

Since none of the changes made either add new equipment or affect the operation or availability of existing equipment or systems, no new accidents or malfunctions of equipment are created. Likewise, the design classification changes made do not change or have a negative impact on the existing availability or surveillance requirements of any Technical Specifications. Therefore, no margins of safety as defined in the bases of the Technical Specifications are reduced by these changes.

27. Development of Component Cooling Water System Flow Balance Basis
DCP M-47872 Rev. 0 (Units 1 and 2)

No physical changes were made or required. Engineering analyses of the component cooling water (CCW) system were performed to develop information to aid the plant in balancing the system's flows to assure that actual cooling water flows to vital components are consistent with the performance assumptions and requirements of the system. Use of the flow balance information for operation of the facility will further ensure that assumptions embedded in the accident analyses of record are maintained.

Safety Evaluation Summary

Use of the developed flow balance information for operation of the CCW system will not increase either the consequences or the probability of occurrence of previously evaluated accidents. The CCW system is not the source or cause of any previously evaluated design/licensing-basis accidents, but is instead intended to provide support for mitigation of such accidents. The specific flow rates to vital equipment during accident conditions have been analyzed and shown to be adequate to maintain the

operating parameters within existing design basis assumptions. Furthermore, operation of the CCW system in accordance with this flow balance does not represent a change to any analysis assumption that is related to the initiation of an accident.

Redundancy, reliability, and integrity of the CCW system are unaffected by operation in accordance with the established flow balance. Cooling water flow rates specified by the flow balance do not create additional stresses in the CCW system components, or the vital equipment it serves, that would make failure of any component more likely. In the event a malfunction of equipment previously in the FSAR Update should occur, operation of the CCW system in accordance with the flow balance will in no way increase the severity of the consequences of the malfunction. There are also no required system equipment or alignment changes associated with the balanced flow operation that could create a new type of accident or malfunction. No new failure modes need to be postulated, since there are no operational changes.

The CCW flow rates associated with balanced flow operation of the system will ensure that minimum containment heat removal requirements are met. Analyses also show that the CCW system will not overheat due to excessive heat input from the containment fan cooling units (CFCUs) during an accident. Therefore, the margins of safety defined in the bases of the Technical Specification will not be reduced by balanced flow operation of the CCW system.

28. Fireproofing of Redundant Emergency Diesel Generator Cables K2469 and K2519
    DCP A-48449 Rev. 0 (Unit 2)

Unit 2 emergency diesel generator safety-related conduits K2469 and K2519 located in a non-fire-protected area are redundant and were not separated properly by either distance or fire barriers. A Technical Specification violation was filed. This change provided 3-hour rated fireproofing for both conduits and the adjacent pull box and junction boxes.

Safety Evaluation Summary

This change provided fireproofing for redundant conduits, as well as a related pull box and junction boxes, located in corridor east of the Unit 2 emergency diesel generators (EDGs). Thus, it reduced the potential for adversely affecting the EDGs during an accidental fire, and increased the margin of safety by fireproofing the conduits and related pull box and junction boxes.

29. Strengthen Safety-Related Masonry Block Walls in the Diesel Generator Silencer Area
    DCP C-48520 Rev. 0 (Unit 2)

The design change modified safety-related concrete masonry walls T2-107-28 through 35, and T2-107-38 and 40 in the diesel generator silencer areas at elevation 107 ft. in the Unit 2 portion of the turbine building. The modifications utilized steel plates, columns, and beams attached to the face of the affected walls, and also strengthened the top and bottom wall connections to the area ceilings and floors. The changes

modified the block walls to qualify them to withstand design basis Hosgri earthquake loads using elastic criteria conforming to that given in PG&E letter DCL-91-026 to the NRC. As with the modifications reported above for DCP C-48374, the modifications used steel thru-bolts to attach the steel plates, beams and columns to affected wall faces, as well as at strengthened wall-to-floor/ceiling connections.

Safety Evaluation Summary

PG&E committed to upgrade the applicable block walls to qualify them to the design basis earthquake per PG&E letter DCL-91-026. No other Design Class I components are affected by the modifications. Potential system interactions were evaluated and found to be of no concern. Safe shutdown capacity and accident analyses are not affected.

The modifications are passive in nature and do not affect any pressure boundary functions, and do not introduce new fire hazards for the affected fire zones. Fire hazards analyses show that the behavior of the block walls with a thru-bolt modification will not affect the ability of the wall to prevent the design basis fire from propagating from one fire area to another. In addition, these modifications do not affect or interface with any systems required for mitigation of the consequences of previously evaluated accidents.

The integrity of safety-related components (silencers, cooling fans, crankcase exhaust lines, and day tank vent lines) in the vicinity of the modifications is maintained, since the structural integrity of the fire barriers is maintained. These conclusions are based on detailed fire hazards evaluations.

No Design Class I commodities are installed on or immediately adjacent to these walls; thus, the revised maximum wall displacements (during an earthquake) do not adversely affect any such commodities. Emergency response equipment or security access are also unaffected.

Seismic design margins are increased due to the use of more conservative (elastic) criteria. Although the physical modifications were done in the vicinity of the diesel generators' silencer area, review of the Technical Specifications governing the operability of the EDGs concluded that the margins of safety as defined in the Bases of these Technical Specifications are not affected.

30. Add a Time Delay Function on the Manual SI Reset and the Auto SI Block Set Function and Replace SI Reset Switch and Remove an Unused Relay
DCP J-48855 Rev. 0 (Unit 2)

This change added a short, off-delay time to the safety injection (SI) reset function to prevent a relay race from occurring (between the solid-state protection system (SSPS) SI reset time delay relay and the SSPS slave relay) when an SI is manually reset either during surveillance testing or following an SI event. The function of the off-delay is to delay the disabling of the Manual SI Reset and the Auto SI Block Set functions until all SI slave relays have been reset and the Auto SI Block function is established. If these

actions are not delayed, all SI slave relays may not reset, and the Auto SI Block function may not be established. Also, the SI reset time delay relay was replaced with a qualified electronic relay, and the main control board SI reset switch was replaced with a device designed to reliably switch low-level logic signals. An unused time delay relay was removed to make room for the new off-delay relay.

Safety Evaluation Summary

The addition of the off-delay time to the SI reset function in the SSPS does not change the SI actuation logic or time response nor delay the manual resetting of an SI condition. The length of the time delay is not critical and will be in the range of 1.5 to 5 seconds. Although an additional component is introduced into the SI reset logic, the new and replacement components are qualified for the application and will have negligible effect on the failure rate, nor introduce any new failure modes than the original SSPS SI reset design. The SI reset function is not the cause of or involved in the initiation of any accident. These changes do not affect the consequences of any accident or malfunction of equipment nor affect any actuation setpoints or time response that are used as the basis for any Technical Specifications. Westinghouse has reviewed this modification and determined there is no impact on any FSAR Update accident analysis.

B. Fire Hazards Appendix R Evaluations (FHAREs)

1. Non-Rated Steel Hatches
   FHARE 7 Rev. 2 (Units 1 and 2)

A non-fire-rated, ¼-inch-thick, 2 ft by 4 ft steel hatch is provided in the barrier separating Fire Area 14-E (CCW heat exchangers) from the 104 ft elevation of Fire zone 14-A. A second non-fire-rated, ¼-inch-thick, 2.5 ft by 1.5 ft steel hatch is provided in the ceiling separating Fire Area 19-E from the 104 ft elevation of Fire Zone 19-A. The barriers were not identified in the FSAR Update as having non-rated hatches. An engineering evaluation was completed to determine if the current plant configuration represents a decrease in the level of fire protection.

Safety Evaluation Summary

The combustible loading, both in-situ and transient, in Fire Areas 14-E and 19-E and all three levels of Fire Zones 14-A and 19-A, equates to a fire duration of less than one hour.

The fire protection features in Fire Areas 14-E and 19-E consist of automatic sprinklers and smoke detection that provide area-wide coverage, except for the alcove. Portable fire extinguishers and hose stations are also available. Major individual fire hazards within the fire zone (i.e., hydrogen seal oil unit and feedwater pump turbines) are provided with water spray systems. Portable fire extinguishers and hose stations are also available. On the basis of the combustible loading and the fire protection features within the affected areas, it can be concluded that propagation of a fire across the existing non-rated steel hatches will not occur. In the unlikely event that a fire

propagated from one fire area/zone to another, safe shutdown would not be affected because the safe shutdown functions located in Fire Zones 14-E and 19-E are not redundant to those located in Fire Areas/Zones 14-A and 19-A, respectively. Therefore, no safe shutdown redundancy exists between the two areas/zones, and the presence of either non-rated steel hatch does not increase the probability of occurrence or the consequences of a fire previously evaluated in the FSAR Update.

The lack of combustible loading in the immediate vicinity of either non-rated steel hatch precludes the possibility of a fire propagating past the fire area boundary and subsequently affecting equipment important-to-safety. Due to the low combustible loading and absence of redundant safe shutdown functions, the presence of the non-rated steel hatches will not increase the probability of occurrence or consequences of a malfunction of equipment important to safety previously evaluated in the FSAR Update.

A fire would most likely be suppressed before it could penetrate the ceiling of Fire Areas 14-E and 19-E. Additionally, no safe shutdown redundancy exists between Fire Areas 14-E and 19-E and Fire Zones 14-A and TB-7/19-A. On the basis of the above, it is concluded that the possibility of an accident or a malfunction of equipment important to safety of a different type than previously evaluated in the FSAR Update is not created.

In the unlikely event that a fire propagated from one fire area/zone to another, safe shutdown would not be affected. The damage to safe shutdown equipment in Fire Areas 14-E and 19-E or in Fire Zones 14-A and 19-A will not adversely affect the capability to achieve and maintain safe shutdown. Thus, the margins of safety as defined in the bases for the Technical Specifications are not reduced.

2. Block Walls Modified in the Diesel Generator Silencer Area
   FHARE 99 Rev. 3 (Units 1 and 2)

The block walls separating Fire Zones 11-A-2, 11-B-2, 11-C-2 and Fire Area 13-E (Unit 1) and Fire Zones 22-A-2, 22-B-2, 22-C-2 and Fire Area 24-E (Unit 2) were modified to qualify them for the design basis Hosgri earthquake loads using elastic criteria conforming to PG&E letter DCL-91-026 to the NRC. This modification involved using thru-bolts to install carbon steel cover plates on each side of the walls, beams or columns to strengthen the walls, and its connections to the floor and ceiling. Although the modification structurally enhanced the safety-related walls, an evaluation was completed to determine if the modification reduced the fire rating of the wall, or if propagation of the fire and/or heat through the modified fire barrier could potentially allow redundant systems to be affected by a single fire.

Safety Evaluation Summary

The modifications made to the block walls by adding two steel plates bolted together or steel beams and columns bolted to the wall will not degrade the existing fire barriers' fire endurance capabilities. The amount of combustibles is so small as not to cause unacceptable, thermally-induced stresses or loading on the walls in the event of

a design basis fire. The heat transferred through the thru-bolts and steel members will not degrade the integrity of the barrier or create a path for smoke and/or flame to propagate to the opposite side of the barrier. Therefore, the ability to safely shut down the plant as analyzed in the FSAR Update is not compromised. Thus, the probability of occurrence or the consequences of an accident previously evaluated in the FSAR Update are not increased.

This modification did not relocate any Design Class I components. Therefore, the probability of occurrence or consequences of a malfunction of equipment important to safety, previously evaluated in FSAR Update, are not increased. Similarly, the possibility of an accident or malfunction of equipment of a type different than any already evaluated in the FSAR Update is not created.

In addition, FHARE No. 99 Rev. 3 evaluated the modifications made to the block walls, and concluded that the ability of the fire barrier to prevent the design bases fire from propagating between fire areas is not affected. Therefore, the margins of safety as defined in the Bases of the Technical Specifications are not affected.

3. Diesel Generator Exhaust Air Plenum Floor Openings
   FHARE 103 Rev. 0 (Units 1 and 2)

FHARE 103 evaluates the exhaust air plenum floor openings at the 107-foot elevation of the Unit 1 turbine building diesel generator intake and exhaust rooms (Fire Zones 11-C-2 and 11-B-2) that communicates to the common exhaust plenum (Fire Zone 11-A-2). This FHARE also evaluates the exhaust air plenum floor opening at the 107-foot elevation of the Unit 2 turbine building diesel generator intake and exhaust rooms (Fire Zones 22-C-2 and 22-A-2) that communicates to the common exhaust plenum (Fire Zone 22-B-2).

Safety Evaluation Summary

Based on the lack of combustible materials in the diesel intake and exhaust silencer rooms, and the torturous fire path between redundant diesel generators and associated safe shutdown circuits, it is highly unlikely that the postulated fire will affect redundant diesel generators. The combustible loading in the intake and exhaust silencer rooms is insignificant (e.g., less than 1 minute in-situ and 2-minute transient fire duration). Therefore, if the fire is initiated in this area, it is expected to be small and to not propagate to the adjacent areas.

Furthermore, heat detection is available in the diesel generator rooms where the majority of the combustible materials are located. In the event a fire originates inside the diesel generator room (fire areas 11-A-1, 11-B-1, 11-C-1, 22-A-1, 22-B-1, or 22-C-1), the heat detector will promptly activate the CO_2 suppression system and automatically close the 3-hour rated roll-up fire doors. Actuation of the detection system and suppression system is annunciated in the main control room. Operators would be aware of a fire occurring during its incipient stages, and would promptly notify the fire brigade to commence fire-fighting activities. In addition to the CO_2

suppression system, fire extinguishers and fire hose stations are available for use by the fire brigade.

The configuration evaluated in FHARE 103 does not introduce new fire hazards (combustible materials or ignition sources) into the diesel generator rooms or the intake and exhaust silencer rooms. Therefore, the probability of occurrence or the consequences of a fire or accidents previously evaluated in the FSAR Update are not affected.

The configuration evaluated in FHARE 103 does not affect the function of equipment important to safety, and does not introduce new fire hazards (combustible loading or ignition sources) that may affect the function of equipment important to safety. Therefore, the probability of occurrence or the consequences of a malfunction of equipment important to safety as previously evaluated in the FSAR Update are not affected.

FHARE 103 determined that the ability to safely shut down the plant using at least two diesel generators, as committed in Section 9.5.1 of the FSAR Update, will not be affected in the event of a fire. This condition evaluated in the FHARE does not affect the function of equipment important to safety, and does not introduce new fire hazards (i.e., combustible materials or ignition sources). Therefore, the possibility of on accident or a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR Update is not created. In addition, the results of FHARE 103 indicate that the conditions evaluated do not decrease the level of fire protection capability in the diesel generator rooms and intake and exhaust silencer rooms, as committed in the fire protection conditions of the Operating License for DCPP, because the ability to safely shut down the plant in the event of a fire will not be affected. Therefore, the margin of safety as defined in the basis of any Technical Specification is not affected.

4. <u>Fireproofing on Structural Steel for Block Walls</u>
   FHARE 104 Rev. 0 (Units 1 and 2)

Various existing block walls were modified to qualify them for the design basis Hosgri earthquake. The walls were modified by the addition of structural steel beams and/or columns attached to the walls with thru-bolts or by steel plates attached to both sides of the walls with thru-bolts. The connections for the columns, beams and plates utilize slotted holes that preclude stress that could be induced in the block walls by thermal expansion of the steel in a fire. Slotted connections could not be used in some portions of the configuration of the structural steel modifications to Walls A-4A, A-7A and A-7B. In these cases, fireproofing was applied to the structural steel to preclude stress that could be induced in the block walls by thermal expansion of the steel. Because of congestion in the area, one-hour rated fireproofing was provided for portions of the structural steel modifications for Walls A-7A and A-7B. This fireproofing was applied to portions of the structural steel located in Fire Zone 7-B, the Unit 2 cable spreading room. Three-hour rated fireproofing was applied to portions of the structural steel modification for Wall A-4A. The fireproofed modifications are located in Fire Zone 5-A-3, the Unit 1 480V vital switchgear room. Because of

interferences, it was not possible to apply the required thickness for a three-hour rating in nine small, localized sections of the structural steel. In one small area, under a two-inch conduit, no fireproofing was applied.

Safety Evaluation Summary

A fire in either the Unit 1 or Unit 2 cable spreading room would be quickly detected by the smoke and heat detectors and suppressed in its incipient stage by the CO_2 system before sufficient heat is developed to cause expansion of the steel. The tops of the anchor bolts and the nuts that are unprotected by fireproofing will not affect the block walls because of the small size of the unprotected portions, and because the dimensional changes caused by thermal expansion would not transfer stresses directly to the block walls.

Similarly, a fire in the 480V vital switchgear room would be quickly detected by the smoke detectors in the area. The main control room would be alerted and the fire brigade would respond quickly to suppress and extinguish the fire in its incipient stages before significant heat is developed.

Even though several small areas of steel do not have sufficient thickness for a three-hour rating, the ¼-inch of fireproofing that has been applied will provide a ½-hour protection commensurate with the hazard. Thus, the fireproofing applied to the structural steel, in conjunction with the fire protection features available in the areas, provides sufficient protection to preclude stress being induced in the block walls by expansion of the steel due to a fire.

The incomplete application of fireproofing does not introduce an additional ignition source or increase the combustible loading. Therefore, it does not increase the probability of a previously evaluated fire in either fire area. In addition, the ability of block walls to perform as fire barriers will not be adversely affected by a fire in the fire areas involving the structural steel modifications. The safe shutdown analyses evaluated the consequences of loss or malfunction of equipment in these fire areas. Because a fire in either area will be contained within the area, the consequences of malfunction of equipment are unchanged and the possibility of an accident or of a malfunction of equipment of a different type is not created.

Since the walls will prevent a fire from propagating to adjacent areas, the margin of safety as defined in the basis of the Technical Specifications is not been reduced by these barriers. These walls were previously controlled under Technical Specification 3/4.7.10, "Fire Barrier Penetrations," but are now controlled under the fire protection Equipment Control Guideline (ECG) 18.7.

5. Block Walls Modified in the 4.16kV Switchgear Area
   FHARE 106 Rev. 2 (Units 1 and 2)

The block walls separating Fire Areas/Zones 12-E, 12-A, 13-A, 13-B, 13-C, 13-D, 13-E, and 13-F (Unit 1) and 23-E, 23-A, 24-A, 24-B, 24-C, 24-D, 24-E, and 25 (Unit 2) were modified to qualify them for the design basis Hosgri earthquake.

The modifications involved using thru-bolts to install steel cover plates on each side of the block wall, and/or beams or columns and associated connections to the floor and ceiling to strengthen the wall. The purpose of this evaluation was to determine whether the addition of steel cover plates, beams, columns, and thru-bolts will adversely affect the ability of the block walls to perform as fire barriers.

Safety Evaluation Summary

The largest combustible loading in the subject fire areas/zones is equal to a fire duration of less than 10 minutes. It is expected that a fire in any of the areas/zones with detection would be detected quickly by the smoke detectors. The fire brigade would be alerted and would respond quickly to put out a fire in its incipient stages. Fire Zones 12-E and 23-E do not have detection, but the combustible loading in these areas is very low (less than 5 minutes duration) and do not pose a severe hazard. Detection systems are also not provided for Fire Area 13-F and Fire Zone 25, but these areas are equipped with automatic wet sprinklers. Actuation of these sprinkler systems would limit the exposure to the structural members, and flow switches would annunciate in the main control room for a rapid response by the fire brigade. Given the short duration of the fire expected and the difficult path for the fire, it is highly unlikely that a fire in any of the areas/zones under consideration would degrade the block walls.

Thus, the modifications made to the block walls do not introduce new fire hazards to the fire zones, decrease the integrity of the fire barriers, or degrade their ability to prevent a design basin fire in one area from spreading to an adjacent area. Therefore, the probability of occurrence and the consequence of an accident previously evaluated in the FSAR Update are not increased.

The modification does not affect the ability to safely shut down the plant in the event of a fire in either zone. In addition, the modification does not affect equipment important to safety. Therefore, the probability of occurrence and the consequences of a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased. Similarly, the possibility of an accident or a malfunction of equipment important to safety of a different type than any previously evaluated in FSAR Update is not created.

Since the integrity of the fire barriers is not reduced by the modifications and the ability of the fire barriers to prevent the design basis fire from propagating between fire areas is not affected, the margin of safety as defined in the basis for any Technical Specification is not reduced.

6. Fire Hazards Analysis - Appendix 9.5A
(Units 1 and 2)

The changes made to Section 9.5.1 of the FSAR Update reflect the safe shutdown analysis performed under the Appendix R Documentation Enhancement Project. The safe shutdown analysis credits the operation of existing equipment and does not

physically affect the equipment. Appendix 9.5A of the FSAR Update was revised to provide:

- A standard format and consistent level of detail on a fire-area basis.
- A more detailed discussion of power supply losses and its impact on safe shutdown on a component-level basis.
- The results of an evaluation of spurious equipment operation on a fire-area basis. A rigorous circuit analysis was performed and identified specific fire areas where postulated fires could result in spurious equipment operation.

In addition, this section was also revised to include as-built information to correct the barrier description of Fire Area 5-A-4 and Fire Zone 3-J-3. The fire area table of contents was also revised to identify additional fire areas containing an Appendix R analysis and the new fire area identification for stairwells in the fuel handling building. The new fire area identification for the stairwells was made to be consistent with other stairwells (in the auxiliary building and turbine building) having their own fire area number.

Safety Evaluation Summary

The changes made to Section 9.5.1 of the FSAR Update reflect the safe shutdown analysis performed under the Appendix R Documentation Enhancement Project. The safe shutdown analysis credits the operation of existing equipment and does not physically affect the equipment. Because additional safe shutdown circuits were identified to address spurious operation concerns, the safe shutdown analysis section was extensively revised to identify additional components affected in the fire area. The accident of concern is a design basis fire that could adversely affects DCPP's ability to achieve and maintain safe shutdown. The FSAR Update changes do not add combustible materials or affect existing fire protection equipment. Therefore, the probability of a fire occurring is not increased by these FSAR Update changes. In addition, because the changes reflect the existing design of the plant, the probability of design basis accident as described in Chapter 15 of the FSAR Update is not increased. Also, the consequences of a design basis accident are not increased. The changes do not affect the design of equipment important to safety. Therefore, the operation of equipment important to safety and the probability of occurrence of a malfunction remains the same. Similarly, the consequences of a malfunction of equipment important to safety as previously evaluated in the FSAR Update are not increased.

7. Alternative and Dedicated Shutdown Capability - Appendix 9.5E (Units 1 and 2)

The changes made to Section 9.5.1 of the FSAR Update reflect the safe shutdown analysis performed under the Appendix R Documentation Enhancement Project. The safe shutdown analysis credits the operation of existing equipment and does not physically affect the equipment.

Appendix 9.5E of the FSAR Update was revised to describe the alternative shutdown requirements and the methods of compliance, and does not result in any physical changes to the plant. The specific details describing operation of components from the hot shutdown panel, and instrumentation credited from the dedicated shutdown panel were deleted. Reference to the specific shutdown methodology for Fire Areas 7-A (Unit 1 cable spreading room), 7-B (Unit 2 cable spreading room), and 8-C (main control room) in Appendix 9.5A was added. This was done to alleviate redundant information describing the alternative shutdown capability, and to provide reference (Appendix 9.5A) for the specific components and operator actions credited for alternative shutdown.

Post-fire safe shutdown is carried out from outside the main control room using control and monitoring functions provided at the remote hot shutdown panel (HSP), the dedicated shutdown instrument panel (DSP), local indications, 4.16kV and 480V switchgear, local control panels, or locally at the required valves. Operating Procedures OP AP-8A and -8B implement the post-fire safe shutdown capability. The repair actions credited involve manually aligning valves necessary to operate auxiliary spray for RCS depressurization. The repair actions are included in OP AP-8A and OP AP-8B.

Safety Evaluation Summary

The changes to the FSAR Update reflect the current method of compliance with the requirements of Appendix R Sections III.G and III.L. The changes provide more detail on the safe shutdown methodology to give the user information on equipment credited to shut down the plant for a fire in a given fire area. Therefore, the FSAR Update change does not decrease the effectiveness of the Fire Protection Plan.

The accident of concern is a design basis fire that could adversely affects DCPP's ability to achieve and maintain safe shutdown. The FSAR Update changes do not add combustible materials or affect existing fire protection equipment. Therefore, the probability of a fire occurring is not increased by this FSAR Update change. In addition, because the changes reflect the existing design of the plant, the probability of a design basis accident as described in Chapter 15 of the FSAR Update is not increased.

The revised safe shutdown analysis demonstrates the ability to safely shut down the plant in the event of a fire occurring in any fire area. Therefore, the consequences of an accident previously evaluated in the FSAR Update will no be increased. The FSAR Update changes do not affect the design of equipment important to safety. Therefore, the probability of occurrence of a malfunction or consequences of malfunction of equipment important to safety as previously evaluated in the FSAR Update will not be affected or increased.

The changes made to the FSAR Update reflect the results of the safe shutdown analysis and as-built configurations. The FSAR Update change reflects the current list of safe shutdown equipment. Therefore, no new accidents will be created by this FSAR Update change. The FSAR Update changes do not affect the design of safe

shutdown equipment or involve a test or experiment. Therefore, the FSAR Update changes do not affect the margin of safety as defined in the basis for any Technical Specification.

8. Equipment Required for Safe Shutdown - Appendix 9.5G
(Units 1 and 2)

The changes made to Section 9.5.1 of the FSAR Update reflect the safe shutdown analysis performed under the Appendix R Documentation Enhancement Project. The safe shutdown analysis credits the operation of existing equipment and does not physically affect the equipment.

Appendix 9.5G of the FSAR Update was revised to include the latest list of safe shutdown equipment identified in Revision 6 of Calculation M-680, and to provide clarification with respect to component functions and available redundancies. The changes reflect the results of the safe shutdown analysis for a fire in every fire area of the plant that evaluates additional circuits that were not previously identified, and demonstrate the ability to safely shut down. The end result of the analysis is enhanced guidance to operators regarding potential equipment losses due to a postulated fire and a concurrent loss of offsite power.

Safety Evaluation Summary

The changes made to the FSAR Update reflect the current method of compliance with the requirements of Appendix R, Sections III.G and III.L. The changes made provide more detail on the safe shutdown methodology to give the user information on equipment credited to shut down the plant for a fire in a given fire area. Therefore, the FSAR Update changes do not decrease the effectiveness of the Fire Protection Plan.

The accident of concern is a design basis fire that could adversely affect DCPP's ability to achieve and maintain safe shutdown. The FSAR Update changes do not add combustible materials or affect existing fire protection equipment. Therefore, the probability of a fire occurring is not increased by this FSAR Update change. In addition, because the changes reflect the existing design of the plant, the probability of a design basis accident as described in Chapter 15 of the FSAR Update is not increased, and the consequences of a design basis accident are not increased. Similarly, the probability of occurrence or consequences of a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The changes made to the FSAR Update reflect the results of the safe shutdown analysis and as-built configurations. Manual operation of equipment credited for safe shutdown is within the design operation of the component. The FSAR Update change reflects the current list of safe shutdown equipment. Therefore, no new accidents will be created by this FSAR Update change and will not create a different type of malfunction of equipment important to safety than those previously evaluated in the FSAR Update.

The FSAR Update changes do not affect the design of safe shutdown equipment or involve a test or experiment. The safe shutdown analysis does not affect normal operation or testing of safe shutdown components. Therefore, the FSAR Update changes do not affect the margin of safety as defined in the basis for any Technical Specification.

C. Temporary Plant Modifications, Electrical Jumpers and Lifted Leads; Mechanical Jumpers and Bypasses

1. Mechanical Bypass, Bypass the Auxiliary Building Supply Fan Controllers, Unit 1

The jumper will bypass the auxiliary building supply fan controllers and cause the inlet vanes on the fans to open when the fan is on and closed when the fan is off. There will be no flow modulation with the jumper in place. The jumper will allow for trouble shooting and maintenance while maintaining the system in an operable condition.

Safety Evaluation Summary

The auxiliary building ventilation is not considered to be a source or initiator of an FSAR Update accident and the design airflow to the ECCS components is maintained with the jumper in place. Therefore, the probability of occurrence of an accident or the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The system design is maintained as the inlet vanes for the auxiliary building supply fans are in the failed open position and the fan actuation and design flow rates to the ECCS equipment are maintained. Therefore, the consequence of an accident or of a malfunction of equipment important to safety, previously evaluated in the FSAR Update is not increased.

The loss of an auxiliary building supply fan(s) does not provide a means of creating an accident and the malfunction of the inlet vanes to "fail open" is per design. Therefore, the possibility of an accident or a malfunction of equipment important to safety is not created.

Design flows and fan operation are maintained. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

2. Electrical Jumper, Jumper Power Supply for Fire Protection Computer System, Unit 1

Jumper the fire protection computer system to non-vital power through a 30-minute, battery-backed, uninterruptable power supply (UPS), instead of vital power while maintenance is performed on the vital power bus.

Safety Evaluation Summary

The use of non-vital power for the fire protection computer, instead of vital power, does decrease the reliability of the power however, design considerations for the vital power supply allows for loss of power to the UPS for the Fire Protection Computer System. Therefore, the probability of occurrence of an accident or of a malfunction of equipment important to safety is not increased.

The fire protection computer provides processing of fire alarms from the plant fire alarm computer panels to the control room annunciator. Loss of this capability due to loss of power to UPS will not change the consequences of any accident or malfunction of equipment important to safety previously evaluated in the FSAR Update.

Loss of power to the UPS would be alarmed in the control room resulting in appropriate compensatory actions being taken to satisfy the Technical Specifications. Therefore, the possibility of an accident or of a malfunction of equipment important to safety previously evaluated in the FSAR Update is not created.

The compensatory measures required by the fire protection Technical Specifications envelop the failures that may result from the change from vital to non-vital power. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

3. Electrical Lifted Lead, Main Turbine Generator Anti-Motoring Protection, Unit 1

The turbine generator anti-motoring protection will be defeated to prevent spurious actuation of a Unit trip during troubleshooting and repair activities.

Safety Evaluation Summary

Motoring of the turbine generator is not an FSAR Update evaluated accident. The jumper is for turbine generator protection only and the turbine generator is not important to safety. Therefore, the probability of occurrence of an accident or of occurrence of a malfunction of equipment important to safety, previously evaluated in the FSAR Update, is not increased.

An accident involving motoring of a turbine generator is not evaluated in the FSAR Update. An accident involving motoring of a turbine generator is not an initiator or contributor in any accidents evaluated in the FSAR Update. Therefore, consequences of an accident or of a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The jumper does not affect the backup turbine generator protection for the anti-motoring trip and the turbine generator is not important to safety. Therefore, the possibility of an accident or of a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

Anti-motoring protection of the turbine generator is not taken credit for in the basis of any Technical Specification. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

4. Mechanical Jumper, Install Temporary Secondary Screen in the Auxiliary Saltwater Forebay Inlet Channel, Unit 1

This jumper allows installation of a stationary debris screen in the suction train of the Unit 1 auxiliary saltwater (ASW) system as a temporary replacement for the auxiliary saltwater traveling screen.

Safety Evaluation Summary

The ASW debris removal system, including the traveling water screens, is not required for accident mitigation or safe operation of the plant, and the ASW system should perform as designed with the temporary screen installed. The screen is maintained and cleaned and instruments are used to monitor the system. Therefore, the probability of occurrence of an accident or of a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The saltwater debris removal system is not included in the evaluation of any design bases accident analyses, and the temporary screen is designed similar to the traveling water screen. The use of the temporary screen will not alter the operation and functional design of the ASW system. Therefore, the consequences of an accident or of a malfunction of equipment important to safety will not be increased.

The temporary screen shall function similarly to the existing traveling water screen for filtering debris. It is designed of materials suitable for temporary service and shall maintain its structural integrity. The use of the temporary screen will not create a different type of malfunction in the ASW than previously evaluated in Chapter 9 of the FSAR Update: Therefore, the possibility of an accident or a malfunction of equipment important to safety is not created.

There is no change in the ASW design, operation or surveillance as the result of this change. The temporary screen performs the same function as the traveling screen. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

5. Electrical Lifted Lead and Jumper, Connect a Circuit Breaker Test Set to 1E 480 Volt AC Power, Unit 2

This lifted lead/jumper temporarily removes the 1E 480 Volt power to the swing backup battery charger and connects it to a circuit breaker test set during Mode 6 or a defueled non-mode condition.

Safety Evaluation Summary

The breaker test set will introduce no potentially adverse effects on the 1E 480 Volt bus and the 1E 480 Volt bus remains operable for the duration of the temporary jumper. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The 1E 480 Volt bus will be fully operable while the jumper is installed, and primary battery chargers, which are backed-up by the swing charger remain operable, and the jumper is installed during Mode 6 or a non-mode condition. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The 1E 480 Volt buses will be maintained operable during the jumper installation and the defense-in-depth, outage safety schedule for the DC bus electrical systems will be maintained during the Mode 6 and non-mode condition. The breaker test set presents significantly less load to the 1E 480 Volt bus that the normally connected load. Also two series breakers protect important plant equipment while the jumper is installed. Therefore, the possibility of an accident or a malfunction of equipment of a different type than already evaluated in the FSAR Update is not created.

Technical Specifications require only one DC Bus and associated battery charger in Modes 5 and 6. The plant will maintain two DC buses and their battery chargers during the installation of the jumper. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

6. Mechanical Jumper, Install a Temporary Vent Line for Reactor Vessel Refueling Level Indication System (RVRLIS) Level Transmitter, Unit 2

This mechanical jumper is a vent installed on the process side of the RVRLIS level transmitter for the Unit 2, 2R5 refueling effort. The vent will allow entrained gases in the transmitter process tubing to rise up and out of water-solid leg providing improved reliability and availability of the instrument channel.

Safety Evaluation Summary

The installation of this jumper will provide improved reliability and accuracy of the wide-range level indication for RVRLIS. The jumper is flexible tubing that is of relatively light weight even when full and does not pose a seismically induced system interaction concern. Therefore, the probability of an accident or of a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The worst-case failure of this jumper is a rupture of the flexible tubing that would result in a leakage path for the reactor coolant system (RCS). This leakage has been analyzed as part of the design basis of the plant. The flow transmitter the jumper is connected to is out of service when the jumper is connected and the jumper does not

interface with any other important-to-safety equipment. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The worst-case failure that would result in a small RCS leakage path during refueling conditions and the potential malfunctions of important-to-safety equipment have been considered. This jumper will not introduce any different type of accident or malfunction of equipment important to safety. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The installation of the jumper will provide better assurance that Technical Specification required water levels are maintained during refueling outages. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

7. Electrical Jumper and Lifted Lead, Provide Vital PY Panels Backup Power During the 480 Volt Bus G Outage

This jumper will provide the Vital PY Panels, which normally receive their backup power from the 480 Volt Bus G, with backup power from the 480 Volt Bus F during a 480 Volt Bus G outage.

Safety Evaluation Summary

This jumper will be in effect in Modes 5 and 6. Only the fuel handling accident analysis for Mode 5 and 6 accidents addresses use of the PY Panels. The fail-safe design of the active component fuel handling equipment is such that loss of power to the fuel handling equipment will terminate in a stable mode. The compensating effect of the plant being in Mode 5 and 6 offsets any increase in the probability of equipment malfunction. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The jumper installation will have no impact on the consequences for the four types of accidents described in the FSAR Update. Radiological consequences of a malfunction of equipment important to safety are not affected by the jumper installation. The Technical Specification minimum bus requirement for Mode 5 and 6 and the outage safety plan will be met at all times. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The types of accidents and malfunctions of equipment associated with the jumpering are electrical fault, overvoltage, undervoltage, and overloading have been analyzed in the FSAR Update. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR Update is not created.

The Technical Specifications Bases do not specifically define the margins of safety. The Technical Specifications do imply that the minimum electrical busses are specified such that the action statements are commensurate for the level of degradation to the electrical busses. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

8. Electrical Jumper, RVLIS Isolator Narrow-Range Level Remote Alarm Relay, Unit 2

The level indicating switches on the three hydraulic isolators on Train A RVLIS have a contact connected in series to provide a common Train A isolator trouble alarm in the control room. One of the level indicating switches had gone into an alarm condition, however the local indicator for that level switch still functioned. The jumper will defeat the remote alarm function of the level indicating switch that has alarmed and maintain the alarm capability of the other two Train A isolators. The jumper will not affect the local indicator.

Safety Evaluation Summary

The redundant Train B of RVLIS, the physical function of the isolator, and the local indication at the isolator are not affected by the jumper. The jumper will not directly affect the actuation of any equipment important to safety. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The function of the isolator is unaffected by disabling its remote alarm and the alarm function does not have any accident mitigation function. Redundant Train B is not affected by the jumper. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The types of accidents evaluated in the FSAR Update do not address the remote alarm that is disabled by this jumper. The alarm function is to alert the operator to check the local indication. The local indicators are periodically checked by a surveillance test procedure. The redundant RVLIS train and any equipment important to safety are unaffected by the jumper. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The installation of the jumper does not change any requirements in the Technical Specifications, does not affect the redundant train, and it does not render the level indicating switch inoperable. Therefore, the jumper does not reduce the margin of safety as defined in the basis of any Technical Specification.

D. Temporary Shielding Requests

1. Temporary Shielding Requests: For RHR Exchangers Outlet Cross-Tie and Residual Heat Exchanger Bypass Header
   TSR 92-003 and TSR 93-039, Unit 1;

Temporary Shielding Requests: For Safety Injection Loop 1 & 2 Hot Leg Pipes
TSR 92-031 and TSR-032, Unit 1;

Temporary Shielding Request: For RHR Pump 1-2 Injection Cold Leg
TSR 92-033, Unit 1;

Temporary Shielding Request: Loop 4 Hot Leg to RHR Pumps
TRS 92-038, Unit 1;

Temporary Shielding Request: Accumulator Injection Loop 3 and RHR Pump 1-2 Injection Cold Leg 3
TRS 92-053, Unit 1;

Temporary Shielding Request: For RHR Supply to Spray Headers 1 and 3, Residual Heat Exchanger 2 Outlet, RHR Exchangers Outlet Cross-Tie, RHR to Refueling Water Storage Tank and Piping Supports
TSR 92-107 and TSR 92-108, Unit 2;

The temporary lead shielding will be installed on the RHR exchangers outlet cross-tie and the residual heat exchangers bypass header on the 100' elevation during plant operating Mode 1; on the safety injection loop 1 and 2 Hot Leg pipes in containment during plant operating Modes 5 and 6 only; on the RHR Pump 1-2 injection cold leg in containment during plant operating Modes 5 and 6 only; on the Loop 4 Hot Leg to the RHR pumps in the containment during plant operating Modes 5 and 6 only; on the accumulator injection loop 3 line and the RHR Pump 1-2 injection cold leg 3 in containment during plant operating Modes 5 and 6 only; on the RHR supply to spray headers 1 and 2, residual heat exchangers outlet cross-tie, RHR to the refueling water storage tank lines and restraints on the 85' and 100' elevations during plant operating Mode 1. The shielding is required for ALARA concerns.

The piping and restraints are required to be operational during the presence of the shielding.

Safety Evaluation Summary

The additional weight of the shielding had been evaluated for its impact on the piping and piping restraints seismic qualification and was found to be acceptable. The shielding is secured to prevent it from falling, sliding, or swinging so as not to create a new seismic induced systems interaction concern. Therefore, it is concluded:

1. The probability or consequences of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

2. The possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

A review of the piping, applicable supports, and component stresses has verified that the additional shielding weight will not adversely affect the piping integrity. The shielding will be installed on the exterior of the piping and will not interfere with any active components. The function and performance of the system will be maintained. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

2. Temporary Shielding Request: For Letdown Heat Exchanger
   TSR 92-047, Unit 1

This temporary lead shielding will be installed on the letdown heat exchanger. The shielding is required for ALARA concerns. The shielding will be installed in plant operating Mode 6.

Safety Evaluation Summary

The reactor coolant system (RCS) will be isolated from the heat exchanger and the component cooling water (CCW) system will remain operational during the time the temporary shielding is in place. The additional weight of the shielding has been evaluated for impact on the heat exchanger seismic qualification and the potential overstress of the heat exchanger or the concrete floor in the area. It was determined that the addition of the shielding will not adversely affect the heat exchanger, the concrete floor in the area of the heat exchanger, or the performance of the CCW system. A seismic induced systems interaction review of the shielding installation was performed and it was found that no new failure modes were created by the installation of the shielding. Therefore, it is concluded:

1. The probability or consequences of occurrence of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update are not increased.

2. The possibility of an accident or malfunction of equipment important to safety of a different type any already evaluated in the FSAR Update is not created.

The addition of letdown heat exchanger shielding will not adversely affect the letdown heat exchanger, the CCW system, or the auxiliary building structure. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

E. Procedures

1. Operating Procedure: Coastdown Operation, For Unit 1 Cycle 5
   OP L-4, Unit 1, Revision 27

A T-avg/power coastdown is planned at the of the Unit 1 Fuel Cycle 5. This operation is not included in the existing plant design basis. Operating Procedure OP L-4 required changes to implement this coastdown. It is planned to include a generic T-avg/power coastdown in the design basis for accident analysis and NSS systems/components to facilitate future coastdowns for both units.

Safety Evaluation Summary

The T-avg/power coastdown will have no affect on structural integrity of the components or on plant systems. The coastdown program does not adversely affect any safety system or pose a challenge to installed safety systems. The original design criteria established in the FSAR Update and ASME Section III continue to be met and no new performance requirements are being imposed. Therefore, the probability of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The coastdown program will not have any impact on the accident analysis, plant accident scenarios, or equipment availability assumptions. The offsite doses are expected to remain well within the acceptance limits. The original design criteria of the FSAR Update and ASME Section III continue to be met and no new performance requirements are imposed. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

No new failure modes or scenarios have been created and the initiating events are the same as the design basis analysis. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The results of this evaluation indicate the design cyclic heatup and cooldown limits are not expected to change, and the analysis acceptance criteria for the containment integrity accident would continue to be met. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

2. Abnormal Operating Procedure: Control Room Inaccessibility - Establishing Hot Standby
   OP AP-8A, Revision 3, Unit 1

The revision of the procedure was required by changes to the 125 Vdc control transfer switches for the diesel generators and the 480V motor control center transformer breakers that allow complete isolation from the effects of a fire in the control room or cable spreading room.

Safety Evaluation Summary

The change does not modify any of the equipment or systems whose failure is an initiating event in accidents previously evaluated in the FSAR Update. The modification is to the same quality and design requirements as the existing configuration. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The procedure revision provides guidance to operators regarding the positioning of the control transfer switch on the 4 kV switchgear and the mode selector switch on the

hot shutdown panel. Hardware changes are made in accordance with appropriate design considerations such that they do not provide additional postulated points of failure whose consequences are not already evaluated in the FSAR Update. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The modification and procedure revision ensures the ability to safely shutdown following a design basis fire in the control room or cable spreading room. All components added are safety-related and compatible with existing equipment and circuitry. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

Because of the equipment modification, the existing plant design, and the revised procedural guidance, the ability to combat a design basis accident is not impacted. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

3. Administrative Procedure: Process Control Program
   AP C-253, Revisions 19 and 20, Units 1 and 2

   Administrative Procedure: Mobile Service Operating Procedures for Low-Level Radioactive Waste Processing
   AP C-257, Revision 25, Unit 1 and 2

The procedures were revised to reflect the changes in vendor procedures to enable radwaste solidification using vinyl ester-styrene. These procedures are required to meet new site disposal criteria.

Safety Evaluation Summary

Since the waste transfers occur in the same location and the mobile radwaste processing system configuration is unchanged, the probability of a spill is unchanged. This procedure revision does not affect safety-related equipment. Therefore, the probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

These procedure changes involve the use of a different binder material (vinyl esterstyrene). The change is within the bounds of the NRC-approved Topical Report for the VERI process. The changes do not affect safety-related equipment. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The Process Control Program has been removed from the Technical Specifications. The changes to the Process Control Program do not affect the quality of the waste form. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

4. Administrative Procedure: Radiological Monitoring and Controls Program
AP A-81, Revision 1, Units 1 and 2

All references to RE-27 were removed from the procedure to reflect the removal of RE-27 from the system by a plant modification. For the period of this change, the containment ventilation isolation actuation function performed by 1RM-14A&B and 1RM-28A&B will be transferred to the containment purge exhaust monitors 1RM-44A&B, as previously evaluated and granted under License Amendment No. 70. Also 1RM-33 will assume the responsibility for monitoring the noble gas and particulate releases and providing the alarm actuation functions of 1RM-14A&B and 1RM-28A&B.

Safety Evaluation Summary

The alarm provided by 1RM-33 has no associated system actuation function and the monitoring capability of 1RM-33 is not used for evaluation of off-site doses. The functional use of 1RM-33 in the role as a replacement monitor and alarm generator for 1RM-14A&B and 1RM-24A&B does not involve any interconnection to any equipment important to safety.

Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The interim use of 1RM-33 is to provide the noble gas monitoring and alarm capability for the plant vent. The FSAR Update accident analyses do not take credit for human response to radiation monitor alarms as a means to mitigate the accident consequences. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

During the interim use of 1RM-33 in a passive role with no interface to safety-related equipment, there is no manual operator action which would be taken in response to a plant vent high radiation alarms that would that affect the operation of equipment important to safety. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The interim use of 1RM-33 to provide noble gas monitoring and alarm capability for the plant vent, 1RM-33, will be to preform any function specified in the Technical Specifications. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

5. Chemical Analysis Procedure: Off-Site Dose Calculations
CAP A-8 Revisions 11 and 12, Units 1 and 2

Revision 11 to procedure CAP A-8 was prepared to accommodate the changeover period when the containment ventilation isolation (CVI) radiation monitors are changed from the old to the updated monitors. Based on License Amendments 70 for Unit 1

and 69 for Unit 2, Revision 12 to Procedure CAP A-8 was prepared to reflect the removal of the steam generator blowdown tank radiation monitor RE-27.

Safety Evaluation Summary

Revision 11

The procedure does not involve accident scenarios, their probability of occurrence, or their consequences. Therefore, the probability of occurrence or the consequences of an accident previously evaluated in the FSAR Update is not increased.

Erroneous containment ventilation isolations caused by the radiation monitors are reduced to ⅓ by the radiation monitoring upgrade. Therefore, the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Revision 12

Only a primary-to-secondary leak or a steam generator tube rupture would result in the presence of radioactivity in the steam generator blowdown tank. Also, the blowdown sample line, tank inlet, and liquid effluent path isolation functions are also provided by other instrument channels. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety is not increased.

No credit is taken in the accident scenarios evaluated in the FSAR Update for monitoring or isolation functions associated with the RE-27 instrument channel. The removal of the RE-27 instrument channel will not affect the operations or the effluent isolation functions of the steam generator blowdown system. Therefore, the consequences of an accident or the malfunction of equipment important to safety are not increased.

The radiation monitor itself would not create an accident, and no credit is taken in the FSAR Update for its accident mitigation function. The isolation function provided by the RE-27 instrument channel will still be accomplished by other diverse means associated with the blowdown system. The capability to assess the gaseous effluent being released will be maintained through sampling and analytical methods. Therefore, the possibility of an accident or the malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

Specific requirements for monitoring the steam generator blowdown tank vent are not in the Technical Specifications. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

6. Chemical Analysis Procedure: Plant Demineralizer Media
CAP 0-10, Revision 0, Units 1 and 2

This procedure specifies and controls the volume, manufacturer and type of resin to be used in each plant demineralizer with the exception of the condensate polishers and portable or temporary demineralizers. One of the two deborating Chemical and Volume Control System demineralizers are filled with mixed bed resin to remove radionuclides during forced oxidation per the CAP 0-10 procedure.

Safety Evaluation Summary

The resin used in deboration does not affect accident occurrence an no equipment is affected by a resin change. Therefore, the probability of occurrence of an accident or a malfunction of equipment important previously evaluated in the FSAR Update is not increased.

Accident analysis not address the type of resins used and no equipment is affect by a resin change. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Mixed resin is already used in the system and any failure to deborate would provide a margin of safety and no equipment is affected by a resin change. Therefore, the possibility of an accident or a malfunction of equipment of a different type than already evaluated in the FSAR Update is not created.

Failure to deborate would increase the margin of safety. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

7. Operating Procedure: Instrument AC System - Transfer of Panel Power
OP J-10: IV, Revision 11 XPR, Unit 2

This change is a temporary change that will be in effect only in operating Modes 5 and 6. It provides instructions to place an instrument AC distribution panel on the backup source when the backup source is the digital rod position indicator (DPRI) transformer. The backup source from the DPRI transformer is fed from the 480Vac Bus 2F instead of the usual source, the backup supply transformer fed from the 480 Vac Bus 2G.

Safety Evaluation Summary

For, operating Modes 5 and 6, four types of accidents have been evaluated in the FSAR Update; they are:

- Uncontrolled rod cluster control assembly, (RCCA), bank withdrawal from subcritical condition
- Uncontrolled boron dilution

- Inadvertent loading of a fuel assembly in an improper position

- Fuel handling accident

Any uncontrolled RCCA withdrawal accident would be the result of operator error or rod control system malfunction and would be unaffected by instrument distribution panel loss. The uncontrolled boron dilution accident analysis assumes the introduction of unborated water into RCS by the makeup portion of the CVCS. Dilution requires two separate operations. The completion of those actions is not affected by the source of power to the instrument distribution panel. A fuel loading accident would be caused by an error in the fuel loading sequence only. The fail-safe design of the active component fuel handling equipment is such that loss of power to the fueling equipment will terminate in a stable mode. Because the DPRI transformer is not Class 1E, the possibility may exist for increasing the probability of malfunction to the instrument distribution panel. However, the compensating effect of the plant being in Mode 5 or 6 offsets any increase in the probability.

Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Powering the instrument distribution panel from an alternate backup source will have no impact on the consequences of the four types of accidents described in the FSAR Update. The Mode 5 and 6 minimum vital AC panels OPERABLE will be maintained. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The electrical fault, overvoltage undervoltage and overloading types of failures that may be induced as the result of implementation of this procedure would not create a new or different type of accident or malfunction of equipment. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

No margin of safety is mention in the basis for LCOs 3/4.8.1, 3/4.8.2, and 3/4.8.3. Having the instrument distribution panel energized through a non-Class 1E transformer only makes the associated loads FUNCTIONAL and not OPERABLE. The loads are being energized for operational activities in order to conduct outage related activities. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

8. <u>Maintenance Procedures: Containment Evacuation Alarm Jumper Installation and Removal</u>
   MP I-1.37-3, Revision 0 and 1 for Unit 1 and Revision 0 for Unit 2

The new and revised procedures provide the administrative controls to jumper the automatic actuation of the containment evacuation alarm during plant outages to prevent spurious actuation of the alarm. Manual actuation of this alarm from the control room is not affected. No credit is taken for the automatic actuation of this alarm for boron dilution events as analyzed in the FSAR Update. Operator actions

required when the automatic actuation is jumpered are addressed in the Annunciator Response Manual.

Safety Evaluation Summary

This jumper removes the automatic actuation of containment evacuation alarm and places reliance for actuation of the alarm on manual actuation. Manual actuation of the alarm is not affected. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Sufficient time is available and the appropriate indications are monitored to ensure that the consequences associated with a boron dilution event and the consequences of jumpering out the automatic actuation of the alarm do not increase. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The jumper placed by the procedure only affects the automatic actuation of the containment evacuation alarm and previously analyzed events are not changed. Therefore, the possibility of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not created.

All features provided by the source range instruments of the nuclear instrumentation system will still be functional. Only the automatic actuation of the containment evacuation alarm will be affected. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

9. Temporary Procedure: Implementation of DCP E-47281 Battery 12 Replacement TP TA-9201, Revision 0, Unit 1

Energizing vital DC Bus 12 and its associated loads from non-vital battery 17 to keep some loads operational during battery replacement.

Safety Evaluation Summary

The battery replacement will be performed during operating Mode 6. The mode 6 accidents described in the FSAR Update include inadvertent loading of a fuel assembly in an improper position and fuel handling accidents. Powering the DC Bus 12 1E loads from non-vital battery results in no increase in the probability of these accidents. The temporary non-vital power from battery 17 when jumpered to the DC bus will interface with important-to-safety equipment. The possibility may exist for increasing the probability of occurrence of a malfunction of important-to-safety equipment (the loss of vital DC bus). The loss of vital power in Mode 6 does place operational concerns, but does not affect nuclear safety. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Powering vital DC Bus 12 from non-vital battery 17 has no impact on the consequences for the two types of accidents evaluated in the FSAR Update. Should the temporary non-vital power from battery 17 fail to DC Bus 12 or its loads, the effects do not increase the consequences of a malfunction on the vital DC Bus 12 or its loads. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

Electrical faults, overvoltages, undervoltages,and overload conditions that could result from the implementation of this procedure have been analyzed. It has been determined that no new type of accident or malfunction is created Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The Technical Specification Base does not specifically define the margin of safety. The powering of vital DC Bus 12 and its load will be FUNCTIONAL and not Technical Specification OPERABLE. The loads are being energized for operational activities in order to conduct outage related activities. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

10. Temporary Procedure: Diesel Generator 2-3 Fuel Oil Isolation Valves Operation
    TP TO-9202, Revision 0, Unit 2

Two manual isolation valves are being installed as part of the new Diesel Generator 2-3 tie-in to the diesel fuel oil system. The manual isolation valves will be locked closed and administratively controlled by this procedure.

Safety Evaluation Summary

The overall system performance is not affected in a manner that could increase the probability of occurrence of an accident previously evaluated in the FSAR Update. A security guard will be placed at the security barrier when it is unlocked and an operator will be at the valves at all times when they are unlocked. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Administrative controls required by the procedure station an operator at the valves whenever they are unlocked or open. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

No new accident types or malfunction of equipment important to safety are created by the installation of these valves. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update are not created.

A review of Technical Specification 3/4.8, "Electrical Systems" determined no reduction in the margin of safety. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

11. Temporary Procedure: MOV Flow Test - Miscellaneous ECCS Valves In Post-LOCA Recirculation Configuration
TP TB-9205, Revision 0, Unit 2 and TP TB-9206, Revision 0, Unit 1

The implementation of these procedures operate ECCS equipment in the normal injection mode and in a simulated post-LOCA recirculation alignment during plant operating Mode 6. Simulated Post-LOCA alignment is required to satisfy testing requirements of the NRC Generic Letter 89-10.

Safety Evaluation Summary

All equipment is operated within their design parameters. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not created.

The components being tested are not required to perform their ECCS function in Mode 6. RHR operation is not affected adversely by the test and the RCS cooling is maintained. The ECCS component operation is within their design parameters. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The test does not create any new accident scenarios. It simulates already evaluated operation in post-LOCA recirculation alignments and normal injection alignments. No material changes are being made and equipment operation is within existing design parameters. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

A review of all Technical Specification basis resulted in the determination that this test does not reduce the margin of safety as defined in the basis of any Technical Specification.

12. Temporary Procedure: MOV Flow Test - Containment Spray Valves CS-9001A/B and CS-9003A/B
TP TB-9218, Revision 0, Unit 2

This procedure tests the containment spray (CS) system valves CS-9001A/B and CS9003A/B at or near maximum design differential pressure. Valves CS-9001A/B and CS-9003A/B are cycled for data acquisition. This procedure operates the CS and the residual heat removal (RHR) systems in an abnormal configuration. The two item that require a safety evaluation for this procedure are:

- Installation of jumpers to defeat open permissive interlocks for CS/RHR crosstie valves CS-9003A/B.

- Flowpath for the test is from the refueling water storage tank, motive force from a CS pump, through the CS/RHR crosstie and injecting into the reactor coolant system/reactor cavity through the RHR piping.

Safety Evaluation Summary

All equipment and systems are operated within their design parameters. The test uses installed instrumentation with additional test instrumentation, of equal or greater accuracy than installed instrumentation, to supplement the available data. RCS cooling is maintained in the test alignment and the possibility of inadvertent flooding of the RHR sump is avoided. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Each train is tested separately using the associated RHR train. The components are not required to perform their ECCS function during core off loading or Mode 6 when the test will be performed. In Mode 6, required RCS cooling is maintained by the alternate RHR train. The RHR train being tested is not considered inoperable. The failure of an MOV to perform its safety-related function can be evaluated and corrected prior to entering an operating mode where the component must be operable Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

No new accident scenarios are created and no material changes are made to the systems being used for testing. Equipment operation is within the existing design. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

It was determined from a review of all Technical Specification bases that the margin of safety as defined in the basis of any Technical Specification is not reduced.

13. Temporary Procedure: Implementation of DCP E-48281 Battery 21 Replacement
    TP TA-9301, Revision 0, Unit 2

Energizing vital DC Bus 21 and its associated loads from non-vital battery is required to keep some loads operational during battery replacement.

Safety Evaluation Summary

The procedure will be implemented during plant operating Modes 5 and 6. Mode 5 accidents analyzed in the FSAR Update include uncontrolled rod cluster control assembly bank withdrawal from a subcritical condition and uncontrolled boron dilution. Mode 6 accidents described in the FSAR Update include inadvertent loading of a fuel assembly in an improper section and a fuel handling accident. In a Mode 5 uncontrolled rod cluster withdrawal accident, the rod cluster control assembly drive is powered from a motor-generator set. Loss of control power to the motor-generator set will not cause a controlled rod cluster accident. In a Mode 5 and 6 uncontrolled boron dilution accident it, is assumed the accident is the result of the introduction of unborated water to the reactor coolant system (RCS) by the makeup water transfer pump. The makeup pump and its control are powered from the 480 Vac bus. In Mode 6, a fuel handling accident would be caused by an error in the core

unloading/reload sequence. For the Mode 6 fuel handling accident, the fail-safe design of the active component fuel handling equipment is such that a loss of power to the fuel handling equipment will terminate in a safe mode. The temporary non-vital DC power from battery 27, when jumpered to the vital DC Bus will interface with important-to-safety equipment. The possibility may exist for increasing the probability of occurrence of a malfunction of equipment. The loss of the vital DC Bus does creat operational concerns but does not affects nuclear safety. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

Powering the vital DC Bus from non-vital power battery has no impact on the consequences for the four types of accidents evaluated in the FSAR Update. The effect of loss of the vital DC Bus and its loads is the same as when it is configured to be powered from its battery and battery charger or the temporary non-vital battery. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The Mode 5 and 6 accidents and equipment malfunctions associated with implementing this procedure were analyzed. It has been determined that no new type of accident or malfunction is created. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The Technical Specification does not specifically define margins of safety . The powering of the vital DC Bus from a non-vital battery will be functional and not Technical Specification OPERABLE. The loads are being energized for operational activities in order to conduct outage related activities. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

F. Test and Experiments

1. Surveillance Test Procedure: 10 Year ISI Hydrostatic Test of CCW Supply and Return Headers A, B, and C and Associated Components
   STP X-310, Revision 0, Unit 1; STP X-310. Revision 0, Unit 2

Procedure STP X-310 is used to perform the 10 year ISI hydrostatic pressure test of vital CCW supply and return headers A and B, miscellaneous CCW supply and return header C, and associated components. The test is performed with the CCW system in normal service with the plant operating in Modes 5 or 6.

Safety Evaluation Summary

The plant will be in operating Mode 5 or 6. The CCW is not the source or cause of any of the previously evaluated accidents. None of the equipment malfunctions of previously evaluated in the FSAR Update is more likely to occur because the CCW system and components will be tested within their design pressure. The thermal performance of the CCW system is not adversely affected and all the functions required to support the safety function of the CCW system are maintained. Therefore,

the probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The performance of this test does not alter any existing accident analysis, create the need for a new analysis or affect system operation. No credible damage or failure can result from this test that will result in the loss of all function of the CCW system or any other important-to-safety equipment serviced by the CCW system. Therefore, the possibility of an accident or a malfunction of equipment important to safety of different type than any already evaluated in the FSAR Update is not created.

The preparation for, the configuration for, and the performance of the hydro test will not cause the need to compromise the Technical Specification requirements for operability, continuing CCW system support for reactivity control and decay heat removal, and RCS fluid mixing capability. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

2. Surveillance Test Procedure: Portable Detection System Installation, Testing, and Operation Procedure
   STP I-34J, Revision 0, Units 1 & 2

The Portable Detection System (PDS) is a self-contained portable fire detecting system. Upon installation, the PDS will be tested in accordance with this procedure. This procedure also provides instructions for care and maintenance while the PDS is in storage status.

Safety Evaluation Summary

The PDS may be used as a means of fire detection when impairments require entrance into the action statement of Technical Specification 3/4.7.10. The PDS will utilize 120 Vac and a telephone line for operation, and will not interact with equipment important to safety or its support equipment. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The PDS will not affect operation of equipment important to safety. If an accident previously evaluated occurs, equipment which was expected to mitigate the consequences of the accident will be available. No new accidents will be created by the use of the PDS and an hourly fire patrol. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The PDS is not a fire hazard. The PDS and detectors are not seismically qualified. Attention is given to the location of the detectors and connecting cables to ensure that in the event of an earthquake, the detectors and cables will not affect seismically induced systems interaction targets. Usage of the 120 Vac power source and existing telephone line will not impact the operation of equipment important to safety. Therefore, the possibility of an accident or of a malfunction of equipment important to

safety of a different type than any previously evaluated in the FSAR Update is not created.

The PDS, in conjunction with the hourly fire patrol and administrative controls, will be used as a compensatory measure for inoperable fire barriers that require entry into a Technical Specification action statement. Use of the PDS will maintain the margin of safety as described in the basis of Technical Specification 3/4.7.10. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

3. Surveillance Test Procedure: Indoor Fire Hose Operability and Hydrostatic Test STP M-80B, Revision 8, Unit 1 & 2

The procedure revises the format, replaces references to the Technical Specification with reference to Equipment Control Guidelines (ECG), and reduces the test pressure of the ECG hoses from 300 psig to 150 psig to conform to NFPA 1962, Chapter 5.

Safety Evaluation Summary

The lowered test pressure conforms to the test standard set by the fire codes. The lower test pressure reduces the probability of occurrence of an accident or a malfunction of equipment important to safety. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The new test pressure meets the design, construction, and material applicable to the fire hose. Therefore, the consequences of an accident previously evaluated in the FSAR Update are not increased.

The Technical Specification requirements for fire hose testing have been transferred to ECGs. The required ECG test pressure for fire hoses is set to 150 psig to conform to NFPA 1962, Chapter 5. Therefore, the margin of safety as defined in the basis for any ECG requirement is not reduced.

4. Surveillance Test Procedure: Diesel Fuel Oil Storage Tanks Inspection and Cleaning STP M-91A, Revision 0, Units 1 and 2

This procedural plant modification involves the following:

- Install blinds in the suction and recirculation lines for a diesel fuel oil storage tank (DFOST),
- Draining the DFOST,
- Route a hose to allow recirculation and relief capability for the transfer pump in the train with the drained DFOST.
- Align the control switches for a transfer pump to "off" position, thereby removing the automatic start on emergency diesel generator day tank low level.

Safety Evaluation Summary

No FSAR Update analyzed accident is dependent upon the operation or malfunction of the diesel fuel oil transfer system. The "OPERABLE" DFOST function is not degraded by the crosstie, the second transfer pump is tested in the modified configuration, the test equipment rating exceeds the maximum test pressure, and an ISLT is performed at maximum pressure conditions. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update is not increased.

The modifications have no affect on the ability of the emergency diesel generators (EDGs) to meet the required functions. The manual start of the second pump or the transfer system realignment can be performed in the one hour noted in the FSAR Update. The test changes do not alter the effect the loss of the EDG function would have on the plant. To minimize potential effects, plant loads are restricted and offsite power and surveillance frequency are increased. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

In ability to transfer fuel as required remains the method the Diesel Fuel Oil transfer system can degrade the Emergency Diesel Generator function. Inadequate flowrate or total amount of fuel remain the failure modes. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The test meets all restrictions including fuel delivery, additional on-site temporary fuel oil storage, and offsite power/MODE limitations. Therefore, the margin of safety as defined in the basis for any Technical Specifications is not reduced.

G. Equipment Control Guidelines

1. Fire Suppression Systems
   ECG 18.1, Revision 1, Units 1 and 2

During the performance of surveillance test procedures, fire pumps 0-1 and 0-2 failed to demonstrate a flow rate required by ECG 18.1.7, "Fire Suppression Systems/Fire Suppression Water Systems Surveillance Requirements." Analysis of the failures determined that the test acceptance criteria in ECG 18.1.7 did not accurately reflect the fire water design and performance requirements and did not include margins to accommodate normal system wear. The ECG acceptance criteria were revised to utilize a baseline pump performance curve instead of a single point and to allow a maximum of 10 percent degradation from the baseline pump performance curve to be acceptable. The introduction of a degradation from baseline curve values meets the original intent of the requirements, while still maintaining the capability of the pumps to perform their intended function.

Safety Evaluation Summary

Assuming a 10 percent reduction of the pump operating characteristics, a minimum flow of 2050 gpm at greater than 80 psig would still be available. The maximum flow of the fire pumps far exceeds that of the most conservatively required system flow estimates. The pumps will be tested and monitored in the same manner as before and, with the exception of the maximum flow rate achieved during testing, parameters will remain the same. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The modification of the acceptance criteria of the fire pumps does not reduce the ability of the pumps to perform their intended fire protection function. The demands on the system are still within the capability of fire pumps 0-1 and 0-2. The fire pumps were originally sized conservatively in anticipation of future additions and new requirements. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The fire pumps will continue to operate at or above a performance level which, based upon system design, exceeds system demand. The effect of wear to pumps was part of the original design consideration. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR Update is not created.

The fire pumps and fire system requirements are no longer contained in the Technical Specifications. If the fire pumps were still addressed in the Technical Specifications, the modification of the fire pump acceptance criteria would not have reduced the margin of safety as defined in the basis for any Technical Specification.

2. Fire Hose Stations
   ECG 18.2, Revision 1, Units 1 and 2

Revise section "Surveillance 18.2.6 to require a fire hose hydrostatic test at 150 psig (vs 300 psig) or at least 50 psig above the maximum main firewater operating pressure, which ever is greater.

Safety Evaluation Summary

A fire hose is not involved with the initiation of an accident analyzed in the FSAR Update. The fire protection systems are built to a nominal 150 psig rating and the maximum operating pressure of credited hose reels is less than 150 psig. Therefore, the probability of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased

The "in service" test criteria conform to the NFPA Code and do not represent a decrease in availability or reliability of the fire hoses. The fire hose system malfunction is limited to hose failure and water spray damage. The "in service" test pressure

criteria are greater than the nominal operating pressure of the fire suppression system. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The fire suppression hose systems are nominal 150 psig operating systems. The in service testing at the reduced pressure of 150 psig would verify the hoses are capable of performing their function. Testing to 150 psig meets the NFPA Code and is standard for "in service" testing and does not decrease the availability of the fire suppression equipment. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The hose reels were relocated from the Technical Specifications to ECG 18.2. The basis for ECG 18.2 is the same as those of the Technical Specifications. The 150 psig testing criterion is consistent with NUREG 0452, Revision 5 (Draft) and the NFPA Code. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

3. Air Ejector Gaseous Effluent Monitors
   ECG-39.2, Revision 1, Units 1 and 2

This revision replaces RM-15, the steam jet air ejector radioactive gas discharge monitor, with RM-15/RM-15R. This replacement adds redundancy to the system. The addition of RM-15/RM-15R improves the reliability of the original system.

Safety Evaluation Summary

Changes in this revision will not affect the ability of the air ejector gaseous effluent monitor system to perform its intended safety function. The change administratively reflects the addition of a redundant component to the system without changing the previous requirements. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

This revision does not make any of the previous equipment control methods less conservative and does not affect the ability of the air ejector gaseous effluent monitors to perform their intended safety functions. Therefore the consequences of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update are not increased.

The implementation of this revision does not change the configuration or parameters governing normal operations. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR Update is not created.

This revision does not change the configuration of Units 1 and 2 such that the margin of safety as defined in the basis for any Technical Specification is reduced.

4. Air Ejector Gaseous Effluent Monitors
ECG 39.2, Revision 2, Unit 2

This change is part of the digital rad-monitor upgrade. The change adds redundant monitors for the condenser air ejector.

Safety Evaluation Summary

This change is a plant betterment. The equipment added is not involved with a postulated accident initiation. The addition of the equipment reduces the probability of a malfunction affecting the ability to monitor air ejector effluent, thereby improving the information to the operator for steam generator tube rupture assessment. Therefore, the probability of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The addition of redundant monitors are a plant betterment. They are qualified and isolated as required for steam generator tube rupture assessment. The added capability of the redundant monitors enhances the identification of steam generator tube leaks and decreases the potential for error in the assessment of air ejector effluent due to error and unavailability. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The added redundant monitors are not involved with the initiation of an accident and aid operators with improved assessment capability following a postulated steam generator tube rupture. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The monitors are not relied upon for any basis of the Technical Specifications. The addition of the redundant monitors is a plant betterment to improve the assessment capability during and following a steam generator tube rupture event. Therefore, the margin of safety as defined in the basis of any Technical Specification is not reduced.

5. Radioactive Gaseous Effluent Monitoring Instrumentation
ECG 39.4, Revision 1, Units 1 and 2

The administrative controls for radiological effluent monitoring were relocated from the Technical Specifications to the Equipment Control Guidelines by license amendments. This revision only corrects the equipment numbers.

Safety Evaluation Summary

No relaxation was made to the relocated Technical Specifications. This revision only corrects equipment numbers. Therefore, the probability of occurrence of or the consequences of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update are increased; the possibility of an accident or a malfunction of equipment important to safety of a different type than any

previously evaluated in the FSAR Update is not created; and the margin of safety as defined in the basis for any Technical Specification is not reduced.

6. Radioactive Gaseous Effluent Monitoring Instrumentation
   ECG 39.4, Revision 2, Unit 1 and 2

This revision removes the RM-27 requirements, the continuous monitoring capability associated with the steam generator blowdown tank vent, from the ECG. This change is required because RE-27 has been removed from service.

Safety Evaluation Summary

The RM-27 monitor is not part of any evaluated accident initiation scenario. The blowdown sample line, tank inlet and, liquid effluent path isolation functions associated with this monitor are also performed by two other instrument channels, which monitor the common header for the steam generator blowdown system sample lines and the steam generator blowdown tank liquid discharge line. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update is not increased.

No evaluated accident scenario takes credit for the monitoring or isolation functions associated with the removed monitor. The removal of RM-27 will not affect the operation of the steam generator blowdown system or the ability of the valves associated with the system to perform their process and effluent path functions. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased and the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The specific requirement for monitoring of the steam generator blowdown tank vent path is not in the Technical Specifications. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced by the removal of RM-27.

7. Radioactive Gaseous Effluent Monitoring Instrumentation
   ECG 39.4, Revision 3, Unit 1

The Radiation Monitoring System Upgrade Project replaces radiation monitors with improved equipment. This ECG revision utilizes 1RM-33, the plant vent noble gas monitor (mid-range), as a temporary plant vent gaseous effluent monitor during the transition period.

Safety Evaluation Summary

The plant vent gaseous effluent monitor equipment (old, temporary or new) is involved with the initiation of an accident. The permanently installed 1RM-33 monitor with its alarm capabilities and with compensatory channel and function testing fulfills all the requirements of the Technical Specifications and offsite dose calculation procedure.

Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

During this revision period, the plant vent gaseous monitor functional capabilities are maintained. The 1RM-33 role during this revision period is a passive function. The passive function provides no means for interaction with equipment important to safety. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in FSAR Update are not increased.

This interim substitution will occur only after the deletion of the containment vent isolation (CVI) actuation function from the plant vent monitors. Consequently, 1RM-33 is needed only to fulfill monitoring and alarm functions. The 1RM-33 monitor during the revision period has no interface with safety-related equipment and there are no manual operator actions that would be taken in response to plant vent high radiation alarms which would affect the operation of equipment important to safety Therefore, the possibility of an accident or malfunction of equipment important to safety, of a different type than any already evaluated in the FSAR Update is not created.

The period of interim plant vent monitoring using 1RM-33 will only begin when the CVI actuation function, specified in the Technical Specifications, has been removed from 1RM-14A and B (the old plant vent radioactive gas monitors). Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

8. Radioactive Gaseous Effluent Monitoring Instrumentation
   ECG 39.4, Revision 4, Units 1 and 2

This change is part of the Radiation Monitoring System Upgrade Project; it replaces selected radiation monitors with improved equipment performing the same required functions.

Safety Evaluation Summary

The new equipment performs the same required functions while offering enhanced monitoring and operator information that improves response to abnormal conditions. Therefore, the probability of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

The new improved equipment offers enhanced monitoring and equipment status reporting to the plant operators while maintaining the functions of the replaced equipment. Therefore, the consequences of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update are not increased.

The new equipment is not involved with the initiation of a postulated accident. The possibility of a malfunction is reduced by the upgraded equipment with enhanced capability to monitor and alert plant operators to abnormal conditions. Therefore, the

possibility of an accident or a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR Update is not created.

This ECG implements changes to the radiation monitoring equipment previously described in the Technical Specifications. The margins of safety in this change have improved by the installation of the new equipment with enhanced monitoring and alarm capabilities. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

9. Radioactive Gaseous Effluent Monitoring Instrumentation
   ECG 39.4, Revision 5, Unit 2

The Radiation Monitoring System Upgrade Project replaces radiation monitors with improved equipment. This ECG revision utilizes 2RM-33, the plant vent noble gas monitor (mid-range), as a temporary plant vent gaseous effluent monitor during the transition period.

Safety Evaluation Summary

The plant vent gaseous effluent monitor equipment (old, temporary or new) is not involved with the initiation of an accident. The permanently installed 2RM-33 monitor, with its alarm capabilities and with compensatory channel and function testing fulfills all the requirements of the Technical Specifications and offsite dose calculation procedure. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

During this revision period, the plant vent gaseous monitor functional capabilities are maintained. The 2RM-33 role during this revision period is a passive function. The passive function provides no means for interaction with equipment important to safety. Therefore, the consequences of an accident or a malfunction of equipment important to safety previously evaluated in FSAR Update are not increased.

This interim substitution will occur only after the deletion of the containment vent isolation (CVI) actuation function from the plant vent monitors. Consequently, 2RM-33 is needed only to fulfill monitoring and alarm functions. The 2RM-33 monitor during the revision period has no interface with safety-related equipment and there are no manual operator actions that would be taken in response to plant vent high radiation alarms that would affect the operation of equipment important to safety Therefore, the possibility of an accident or malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The period of interim plant vent monitoring using 2RM-33 will only begin when the CVI actuation function, specified in the Technical Specifications, has been removed from 2RM-14A and B (the old plant vent radioactive gas monitors). Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

10. Radioactive Gaseous Effluent Monitoring Instrumentation
ECG 39.4, Revision 6, Unit 2

This revision as part of the radiation monitoring system upgrade project replaces the analog plant vent radiation monitoring system with an improved digital version. It also removes from use 2RM-33 (the plant vent noble gas monitor) and its temporary use as the plant vent gaseous effluent monitor.

Safety Evaluation Summary

This revision does not provide a source for any accident. The new system will only provide monitoring to assess conditions before, during and after an accident. The system is being installed so as not to pose a hazard of any type to any equipment important to safety. If any of the required "reliable" power for this new equipment is taken from a 1E power supply, the 1E power supplies will be protected by double breakers. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increased.

No credit is taken for accident mitigation by the plant vent radiation monitoring system. The new equipment will perform the same functions performed by the system it replaced with the exception of the containment vent isolation function has been moved to the containment purge exhaust monitors. Therefore, the consequences of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update are not increased.

The new system is not the source of an accident nor can any manner of operation of this system cause an accident. The only interface with equipment is discussed above. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The new plant vent radiation monitoring system will not affect or be affected by any of the Technical Specification bases. The relocation of the CVI function to the containment purge exhaust monitor is a precondition to changing the plant vent radiation monitoring system. Therefore, the margin of safety as defined in the basis for any Technical Specification is not reduced.

H. Fuel Cycle 5

1. Core Operating Limits Report
Cycle 5, Revision 1, Unit 2

This revision changes the "Nuclear Enthalpy Rise Hot Channel Factor" F^N_{AH} at rated thermal power from 1.56 to 1.50.

Safety Evaluation Summary

The over temperature ΔT (OTDT) reactor trip is not involved in the initiation of any accident or malfunction of equipment important to safety. Therefore, the probability of occurrence of an accident or a malfunction of equipment important to safety, previously evaluated in the FSAR Update is not increased.

It has been determined that if the F^N_{AH} were close to the Technical Specification limit of 1.56 and an accident resulting in large axial offsets or an equipment malfunction, such as a control rod withdrawal, were to occur, the DNBR limit could potentially be violated, thereby increasing the consequences of an accident or malfunction. However, it is physically not possible for the F^N_{AH} of the Westinghouse standard fuel to be in the range of concern. Therefore, the consequence of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update is not increase.

The OTDT reactor trip is not involved in the initiation of any accident or the malfunction of any equipment important to safety. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

It is not possible for the F^N_{AH} for Unit 2 standard fuel to exceed the administrative limit of 1.50 defined by Westinghouse. This precludes violation of the DNBR limit following any postulated Condition I and II accidents. Therefore, the margin of safety as defined in the basis for any Technical Specifications is not reduced.

2. Cycle 5 Coastdown
   Unit 2

This change updates the Unit 2 Cycle 5 Reload Safety Evaluation (RSE) to include reduced T_{avg} operation during coastdown.

Safety Evaluation Summary

The Unit 2 Cycle 5 has been analyzed in accordance with established methodologies. It was determined that the probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the FSAR Update are not increased.

The Unit 2 Cycle 5 RSE concluded that the Cycle 5 reload design will have no adverse effect on the safety evaluation of the Diablo Canyon Power Plant and on the potential for failure of equipment important to safety. Therefore, the possibility of an accident or a malfunction of equipment important to safety of a different type than any already evaluated in the FSAR Update is not created.

The Unit 2 Cycle 5 RSE concluded that the margin of safety as define in the basis for any Technical Specification is not reduced.