ENCLOSURE 1

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 1, 2, AND 3

FACILITY CHANGES IMPLEMENTED IN 1993

INDEX

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 1

FACILITY CHANGES

MMP 1-3606.01SM Rev. 0

Title: Unit 1 Spent Fuel Pit Pump G-5A

Description:

This modification implements licensing commitments, thereby improving the operability, reliability, and maintainability of the system. This modification includes the following changes:

1. Install permanent safety related electrical power supply for Spent Fuel Pit (SFP) pump G-5A from Motor Control Center 1. This provision upgrades SFP pump G-5A from temporary operation to permanent capability, and it improves the reliability of the system.

2. Add two check valves, one at the each SFP pump discharge. This will enable either pump to be on standby without manual valve isolation by the operator to prevent backflow through the idle pump.

3. Relocate the existing globe valve SFP-303 to the downstream of both SFP pumps. This will enable the operator to throttle the SFP cooling flow from either pump.

4. Relocate one line to make room for the check valve installation of pump G-5.

5. Add a manual isolation valve immediately downstream of the pump G-5 check valve for isolation purposes.

This modification will enhance the operability of the system in the following two areas:

(a) Ability to utilize the purification loop for pump G-5A.

(b) Ability to properly throttle pump G-5A flow.

Safety Evaluation:

This modification improves the ability to react to a cooling pump failure. The addition of the valves to the system will not cause the pumps or heat exchangers to fail. License changes associated with this modification were approved by the NRC.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

FCE 1-93-001 Rev. 0

Title: Post Core Offload Operations & Maintenance Transition Plan

Description:

This Facility Change Evaluation (FCE) provides an evaluation of the plant systems configuration following core offload. The objective of this FCE is to establish an acceptable configuration of the Unit 1 systems for the interim period between core offload and approval of the permanent Shutdown Technical Specifications.

In general, those systems which are no longer required to be operable were drained, isolated, and deactivated. The reactor coolant system was drained and vented. The steam generator, residual heat removal pumps, heat exchanger, pressurizer relief tank, excess letdown and the regenerative heat exchanger were also drained and vented. The containment sump was pumped dry.

The electric motors in the containment were de-energized and components containing significant amounts of oil or other flammable material were drained or removed to reduce the fire hazard. Fluid supplies to the containment were isolated and equipment such as lights were deenergized. The containment vent was opened to provide a vent path to the plant stack.

The equipment associated with the turbine generator was deenergized. The condenser hotwell was drained. The feed and condensate system including the condensate storage tank were drained.

The reactor auxiliary building equipment required for maintaining boron concentration in the core was deenergized. The radioactive material in the liquid radwaste systems was processed, packaged and either stored or removed.

Safety Evaluation:

The probability of occurrence of a loss of offsite power (LOP) is unaffected by the permanent defueling of the plant. Administrative controls were implemented to ensure the availability of the existing Mode 6 provisions for providing offsite power from either the Edison or San Diego Gas and Electric transmission networks.

No changes were made to the existing requirements or procedures for fuel handling operations, and thus the probability of a fuel handling accident does not increase once the plant is in the defueled condition.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created

as a result of this change. The margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change. Technical Specification changes associated with the plant shutdown and core offload have been approved by the NRC.

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2

FACILITY CHANGES

DCP 2-6553.01BM Rev. 0

Title: Installation of a Diverse Emergency Feedwater Actuation System

Description:

This modification installs a Diverse Emergency Feedwater Actuation System (DEFAS) to mitigate the effects of an Anticipated Transient Without Scram (ATWS) operational occurrence. An ATWS is the result of an Anticipated Operational Occurrence (AOO) such as loss of feedwater, main condenser isolation, and loss of all offsite power, accompanied by a common cause failure which prevents the Reactor Protection System (RPS) from scramming the reactor and the Emergency Feedwater Actuation Signal (EFAS) from initiating Auxiliary Feedwater (AFW). This modification is required to comply with the requirements of Title 10 CFR 50.62, "Requirements for Reduction of Risk from Anticipated Transients Without Scram (ATWS) Events for Light-Water-Cooled Nuclear Power Plants."

Safety Evaluation:

The change involves the installation of a Diverse Emergency Feedwater Actuation System (DEFAS) to mitigate the effects of an ATWS operational occurrence. The DEFAS is a mitigating system and can not interact with any other system to cause an accident since the system uses qualified 1E to non-1E isolation devices between QCIII/ATWS and other QCII devices.

In advertent actuation of the DEFAS could add AFW to the steam generators and have the potential for feeding a bad steam generator during a steam generator pressure boundary rupture. To preclude this from occurring, the DEFAS is provided with inhibit logic and inadvertent actuation features to assure that DEFAS is active only during an ATWS event. Thus, DEFAS provides AFW to the steam generators only during an ATWS operational occurrence and does not increase the probability of accidents or malfunctions previously analyzed as initiating events.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2-6554.33TM Rev. 0

Title: Cooling Water Makeup Line for Train A Diesel Generator

Description:

This modification installed an emergency water supply header to the Train A diesel generator. This enhances the ability to maintain acceptable engine cooling water inventories and temperatures during an Appendix R scenario when the Diesel Generator trips on high temperature. This results in a loss of cooling water from the expansion tanks overflow lines. Consequently, the Diesel Generator restarts with a low cooling water inventory which will introduce air into the cooling system, causing hot spots within the system.

The modification consists of the following changes:

a. Installation of 1" schedule 80 piping from the fire protection header to the drain line of the expansion tanks for both Train A engines.

b. Provide two in line flow restriction orifices to regulate flow of cooling water supplied to both engines.

c. Provide pressure safety valves (PSVs) downstream of the flow orifices to safeguard the system against high pressure.

d. Provide ball drip valve between the two added supply header isolation valves for visual leak detection,

e. Provide fill valves upstream of the PSVs to control flow of cooling water to the engines.

Safety Evaluation:

This modification enhances the operation of the emergency diesel generators during Appendix R scenarios. Since it has no effect on the diesel generators during non-Appendix R emergency operations, there is no decrease in safety due to this modification.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2-6605.1 SJ Rev. 0

Title: Control Room Human Factors Modifications

Description:

This modification modified (1) the Reactivity Systems Panel 2CR-50/51/58, (2) modified the Steam Generator Water Level/Feedwater/Condensate Panel 2CR-52/53, (3) the Turbine Generator/Saltwater/Component Cooling Water Panel 2CR-54/64, (4) the Plant Protection System Panel 2CR-56, (5) the Engineered Safety Features Panel 2CR-57, (6) the Recorder Panel 2CR-59, and (7) the Remote Shutdown Panel 2L-042.

Safety Evaluation:

This change revises the above mentioned panels to improve operator performance and eliminate potential errors caused by deficiencies in human factors design.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2-6674.OBJ Rev. 0

Title: FWIV, FWBV and MSIV Control System Modification

Description:

This design change package replaced the Marotta dump valves on the Feedwater Isolation Valve (FWIV) and Feedwater Block Valve (FWBV) with Paul Munroe dual solenoid operated dump valves. It replaced three-function pushbutton control handswitches for the dump valves with new four-function handswitches. It adds a voltage reducing device to each solenoid circuit and a current sensing module to every solenoid coil. It adds local status indicating lights and test pushbutton switches on the Paul Munroe hydraulic power unit junction boxes. It revises the control power circuits so that each solenoid of each dual solenoid dump valve is powered from a separate DC breaker. It provides a separate power source for the auto/sequence of the hydraulic pump controls for the Main Steam Isolation Valves (MSIVs), FWIVs and FWBVs.

Safety Evaluation:

This modification increases the reliability of the MSIVs, FWIVs and FWBVs by reducing the number of inadvertent closures. The control circuits for the dump valves which control these valves have been modified to provide diversity and improve reliability.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2-6683.03SP Rev. 0

Title: Snubber Reduction Program - Phase IV

Description:

This modification removed safety-related snubbers, non-safety related snubbers, and spring hangers from Unit 2. This modification used an approach that used stress calculations to delete snubbers with the use of higher damping values (Code Case N-411 which was approved for use by the NRC in Regulatory Guide 1.84, June 1986) for the seismic response spectra which results in lower acceleration levels. The higher damping factors, along with other criteria were approved by the NRC and incorporated into the UFSAR. This modification also deleted pipe supports subject to Inservice Inspection.

This change reduces the number of snubbers in Unit 2, which reduces the amount of surveillance work as well as radiation exposure during normal Inservice Inspection (ISI) of existing mechanical snubbers. This modification did not change the design function of selected piping in the RC, VC, SI, ST, CS, CC, FW, and BM systems containing the removed or replaced with rigid struts. with rigid struts. The optimized configurations of the 23 Unit 2 pipe stress and 12 pipe support calculations have been verified by stress analysis in accordance with the NRC approved criteria and the ASME Code.

Note:

Abbreviation	System
SI	Safety Injection
CC	Component Cooling Water
BM	Boric Acid Make-up
RC	Reactor Coolant (outside of primary loop)
CS	Containment Spray
ST	Main Steam
FW	Feedwater
VC	Chemical and Volume Control

Safety Evaluation:

The proposed modifications, when implemented, will not change the design function of selected piping in the RC, VC, SI, ST, CS, CC, FW, and BM systems containing the removed/ replaced snubbers with rigid struts. No piping has been modified or added by this MMP.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2-6742.05SM Rev. 0

Title: Backup Nitrogen Supply for Component Cooling Water Surge Tank

Description:

The Component Cooling Water System (CCW) is a flow network system which functions to remove heat from plant equipment and components and to transfer the heat to the Salt Water Cooling System which discharges to the Ultimate Heat Sink (UHS). The CCW system may be subject to waterhammer under certain postulated events. These events are:

(1) Safe Shutdown Earthquake (SSE).

(2) A hypothetical case is postulated where the SSE is followed by a LOCA just before LO-LO level is reached in the surge tank.

The potential for void formation is minimized by maintaining the system pressurized above the minimum pressure. This is accomplished by adding a Safety Related, Seismic Category I, Backup Nitrogen Supply (BNS) to each Critical Loop Surge Tank.

Safety Evaluation:

This modification is being implemented to enhance the design and minimize the potential for waterhammer resulting from a CCW pump trip and restart transient and which may challenge the CCW system integrity. The function of the BNS is to inject nitrogen at a sufficient rate to maintain pressure in the surge tank. The net effect is to minimize the potential for system voiding to preclude waterhammer from occurring following the postulated events. The addition of the Backup Nitrogen Supply does not change or alter the CCW system function.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2-6792.00SJ Rev. 0

Title: Seismic Monitoring System Upgrade

Description:

This modification upgrades the current seismic instrumentation for San Onofre Nuclear Generating Station (SONGS). The previous seismic instrumentation included a Response Spectrum Analyzer (RSA), which does not give repeatable results and is too conservative. The actual method of analysis does not include the RSA. Currently, data stored on the magnetic tapes are printed out on strip charts and are sent offsite for an analysis. This modification will remove the RSA and a Solid State Accelerograph and a power supply will be installed. Following a seismic activity, this modification will allow engineers to complete a data analysis on site and provides for remote dial-up capability for data transfer.

Safety Evaluation:

The RSA was included in the design only for performing the post earthquake evaluation and analysis in order to determine the exact magnitude of an earthquake. Based on the results of analysis and evaluation, the need for Unit shutdown and the operability of the systems important to safety can be determined. The upgraded Response Spectrum Analysis system including the accelerograph and the PC work station will function as the existing RSA was designed to perform, but in a more effective and timely manner.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2-6863.00SN Rev. 0

TITLE: Cross-Connection of the Shutdown Cooling System And Spent Fuel Pool Cooling System to the Containment Spray Pump Suction/Discharge Headers

Description:

This modification provides a flow path between the suction side of the Low Pressure Safety Injection (LPSI) pumps to the suction side of the Containment Spray (CS) pumps. This modification also cross connects CS Train A and Train B downstream of the Shutdown Cooling Heat Exchangers to the Spent Fuel Pool return line. The cross-over is designed to provide an independent and segregated path for simultaneous Shutdown Cooling and SFP cooling operations, when needed. Installation of the crosstie is designed to provide the capability to utilize the CS Pumps in lieu of LPSI pumps to perform:

i) Spent Fuel Pool Cooling during MODES 5 and 6 (with RCS fully depressurized and vented) as an alternate to the LPSI Pumps for operational and maintenance flexibility.

ii) Shutdown Cooling in MODES 5 and 6 (with RCS fully depressurized and vented) as an alternate to the LPSI Pumps for operational and maintenance flexibility.

This modification provides the capability to continuously monitor the CS Pump(s)(CSP) motor currents, and provides Shutdown Cooling System (SDCS)/Midloop Trouble alarm annunciation, through the Critical Function Monitoring System (CFMS), when the CSP(s) are employed to perform shutdown cooling.

Alignment of CS Pumps for SFP Cooling or for shutdown cooling will be through manually operated valves.

Safety Evaluation:

Detailed hydraulic analyses have been performed to demonstrate the system's capability to perform its intended functions during shutdown operations in Modes 5 and 6 and SFP cooling.

Both the SDC and CS systems are postulated to initiate accidents in the UFSAR. SDC piping ruptures are evaluated for moderate energy critical cracks (FSAR Q&R 212.132) and flooding consequences (UFSAR 3.4); however, all affected piping continues to meet the applicable stress criteria and maximum system operating pressure remains unchanged. Spurious CS system actuation is evaluated for containment external pressure consequences (UFSAR 6.2); however, the spray actuation logic is unaffected by the proposed modification and the maximum spray system flow remains unchanged. As such, the probability of SDC or CS initiated events currently analyzed in the UFSAR/FSAR is not increased.

DCP 2-6863.00SN Rev. 0 (Continued)

The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2-7001.02BE Rev. 0

Title: Unit 2 Digital Fault Recorder System

Description:

This modification installed a Digital Fault Recording System for Unit 2 (Hathaway) in the Units 2/3 Relay Room in the Control Building (elevation 9') and removed the existing oscillograph and associated equipment. The Digital Fault Recording (DFR) System includes Data Acquisition Units (DFR #1 and #2), Independent Printer Units (2), Power Filtering Panel, Telecommunication Modem, Current Shunts and Test Switches. The Unit 2 DFR System is capable of communicating with the Recording System Master Station located in the Electrical Test Shop in the Control Building (elevation 70'). The Master Station includes a CRT for display of fault information.

The previous Oscillograph was outdated, unreliable and no longer provided useful data for analysis of the SONGS Electrical Power System under abnormal and/or fault conditions.

Safety Evaluation:

This modification replaced an outdated analog instrument with a digital instrument. This equipment is nonsafety-related and has no impact on plant safety.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 3

FACILITY CHANGES

MMP 3-875.0P Rev. 1

Title: Chemical and Volume Control System Upgrades

Description:

This modification replaced the letdown control valves with drag type valves to reduce cavitation and steady the flow at various modes of operation of the plant. In addition, this modification replaces 4 Kerostest packless valves with Kerotest packed valves and installed additional isolation valves and drains to allow for maintenance on the control valves without shutting down the system. The piping upstream and downstream of the letdown heat exchanger were modified to incorporate the above changes. Because of the room size, these changes also required modifying 4 reach rods.

Safety Evaluation:

This change involves upgrading of the Chemical and Volume Control System. The replacement of components will alleviate operational problems and increase system reliability.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6238.1N Rev. 0

Title: Add Instrumentation to Charging Pumps and Add Remote Accumulator Fill System

Description:

This modification installs additional instrumentation to the charging pump, adds a remote charging pump accumulator fill system, and relocates the charging pump instrumentation for ALARA considerations.

Safety Evaluation:

This modification installs additional charging pump instrumentation and adds a charging station in the pump corridor. It eliminates the need to enter the charging pump to check or recharge the accumulator.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6354.0E Rev. 0

Title: Blowdown System Flow Indication Input to Plant Modification System Computer

Description:

The flow indicator loops for the flow transmitters were not providing analog inputs to the Plant Monitoring System (PMS) computer to indicate the flow in the Steam Generator Blowdown System. This modification made changes to the internal wiring of instrument panel 3L-158, and two 2-conductor cables were installed from the PMS analog computer cabinet to instrument panel 3L-158. This change provides steam generator blowdown system flow indication to the Unit 3 PMS computer.

Safety Evaluation:

The addition of the blowdown signal to the PMS computer provides the operator information that was not available on the steam generator blowdown/secondary steam system water on a possible main condenser inleakage or primary-to-secondary leakage.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6553.01SM Rev. 0

Title: Installation of a Diverse Emergency Feedwater Actuation System

Description:

This modification installed a Diverse Emergency Feedwater Actuation System (DEFAS) to mitigate the effects of an Anticipated Transient Without Scram (ATWS) operational occurrence. An ATWS is the result of an Anticipated Operational Occurrence (AOO) such as loss of feedwater, main condenser isolation, and loss of all offsite power, accompanied by a common cause failure which prevents the Reactor Protection System (RPS) from scramming the reactor and the Emergency Feedwater Actuation Signal (EFAS) from initiating Auxiliary Feedwater (AFW). This modification is required to comply with the requirements of Title 10 CFR 50.62, "Requirements for Reduction of Risk from Anticipated Transients Without Scram (ATWS) Events for Light-Water-Cooled Nuclear Power Plants."

Safety Evaluation:

The change involves the installation of a Diverse Emergency Feedwater Actuation System (DEFAS) to mitigate the effects of an ATWS operational occurrence. The DEFAS is a mitigating system and can not interact with any other system to cause an accident.

In advertent actuation of the DEFAS could add AFW to the steam generators and have the potential for feeding a bad steam generator during a steam generator pressure boundary rupture. To preclude this from occurring, the DEFAS is provided with inhibit logic and inadvertent actuation features to assure that DEFAS is active only during an ATWS event. Thus, DEFAS provides AFW to the steam generators only during an ATWS operational occurrence and does not increase the probability of accidents or malfunctions previously analyzed as initiating events.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6553.0J Rev. 0

Title: Installation of an Anticipated Transient Without SCRAM (ATWS)/Diverse Scram System (DSS)

Description:

This modification installed an Anticipated Transient Without Scram (ATWS)/Diverse Scram System (DSS) to Control Element Drive Mechanism Control System (CEDMCS) equipment room in the 37' Radwaste Building. Four pressure transmitters were installed in the Containment, which share pressure sensing lines with the existing Plant Protection System (PPS) Potential Transformers (PTs), including retubing of the existing PTs. Signals or alarms to the Critical Function Monitoring (CFMS) through multiplexers located in the DSS cabinet (31675) and panel 31-551 in the penetration building. The power is supplied from two DSS (120 VAC from two separate non 1E UPS power panels).

Safety Evaluation:

This modification was done to comply with 10 CFR 50.62, "Requirements for Reduction of Risk from ATWS for Light Water Cooled Nuclear Power Plants," which requires that the reactors manufactured by Combustion Engineering Owners Group (GEOG) shall have a DSS that is independent and separate from the existing RPS.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6605.01BJ Rev. 0

Title: Control Room Human Factors Modifications

Description:

This change modifies and relocates instruments and controls in the Unit 3 Main Control Room on the Reactivity Systems Panel 3CR-50/51/58; Steam Generator Water Level Control and Feedwater and Condensate Panel 3CR-52/53; Turbine Generator, Saltwater & Component Cooling Water Panel 3CR-54/64; Common Systems Panel 2/3CR-61; Plant Protection System Panel 3CR-56; the Engineered Safety Features Panel 3CR-57; Recorder Panel 3CR-59, and the Remote Shutdown Panel 3L-042. Four nameplates on HVAC panel CR-60 were replaced.

Safety Evaluation:

This change revises the above mentioned panels to improve operator performance and eliminate potential errors caused by deficiencies in human factors design.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6629.OBP Rev. 0

Title: Component Cooling Water Area Sump and Pumps and Storage Tank Area Sump

Description:

This DCP provides details for modification to the existing area drain for SONGS 2&3. Piping and valves are added to divert the nonradioactive drains to the Blowdown Processing System (BPS) sump. From there water is discharged into the outfall through an existing radiation monitor. The new piping consists of a 3-inch stainless steel pipe with manual valves from the Safety Equipment Building to the BPS sump in the Turbine Building.

The existing area drains from the tank area sump and the CCW area sump flow to the radwaste sump system, resulting in unnecessary processing cost and overloading the liquid radwaste system as these drains are normally nonradioactive. This modification will relieve the overloading condition in the liquid radwaste system and will also reduce the processing cost of the waste. In the event of radioactive contamination, the drains can still be sent to the radwaste sump system.

Safety Evaluation:

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 3-6683.03SP Rev. 0

Title: Snubber Reduction Program - Phase IV

Description:

This modification removed safety related snubbers, non-safety related snubbers, and spring hangers from Unit 3. This modification used an approach that used stress calculations to delete snubbers with the use of higher damping values (Code Case N-411 which was approved for use by the NRC in Regulatory Guide 1.84, June 1986) for the seismic response spectra which results in lower acceleration levels. The higher damping factors, along with other criteria were approved by the NRC and incorporated into the UFSAR. This modification also deleted pipe supports subject to Inservice Inspection.

This change reduces the number of snubbers in Unit 2, which reduces the amount of surveillance work as well as radiation exposure during normal Inservice Inspection (ISI) of existing mechanical snubbers. This modification did not change the design function of selected piping in the RC, VC, SI, ST, CS, CC, FW, and BM systems containing the removed or replaced with rigid struts. with rigid struts. The optimized configurations of the 23 Unit 2 pipe stress and 12 pipe support calculations have been verified by stress analysis in accordance with the NRC approved criteria and the ASME Code.

Note:

Abbreviation	System
SI	Safety Injection
CC	Component Cooling Water
BM	Boric Acid Make-up
RC	Reactor Coolant (outside of primary loop)
CS	Containment Spray
ST	Main Steam
FW	Feedwater
VC	Chemical and Volume Control

Safety Evaluation:

The modifications did not change the design function of selected piping in the RC, VC, SI, ST, CS, CC, FW, and BM systems containing the removed/ replaced snubbers with rigid struts. No piping has been modified or added by this MMP.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6742.05SM Rev. 0

Title: Backup Nitrogen Supply For the Component Cooling Water Surge Tanks

Description:

The Component Cooling Water System (CCW) is a flow network system which functions to remove heat from plant equipment and components and to transfer the heat to the Salt Water Cooling System which discharges to the Ultimate Heat Sink (UHS). The CCW system may be subject to waterhammer under certain postulated events. These events are:

(1) Safe Shutdown Earthquake (SSE).

(2) A hypothetical case is postulated where the SSE is followed by a LOCA just before LO-LO level is reached in the surge tank.

The potential for void formation is minimized by maintaining the system pressurized above the minimum pressure. This is accomplished by adding a Safety Related, Seismic Category I, Backup Nitrogen Supply (BNS) to each Critical Loop Surge Tank.

Safety Evaluation:

This modification is being implemented to enhance the design and minimize the potential for waterhammer resulting from a CCW pump trip and restart transient and which may challenge the CCW system integrity. The function of the BNS is to inject nitrogen at a sufficient rate to maintain pressure in the surge tank. The net effect is to minimize the potential for system voiding to preclude waterhammer from occurring following the postulated events. The addition of the Backup Nitrogen Supply does not change or alter the CCW system function.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 3-6748.OPE Rev. 0

Title: Unit 3 Temporary Facility Modification Conversion To Permanent Modifications

Description:

This change converts ten Unit 3 Temporary Facility Modifications (TFMs) into permanent plant modifications. The ten TFMs are as follows:

1. Nitrogen Injection

   This modification installed permanent piping, valves and flowmeters to replace the temporary hoses and fittings used in the temporary installation.

   Four existing condenser penetrations are being used as injection ports. Each injection station has its own regulating valve and flowmeter to monitor the injection process.

2. Turbine Building Sump System

   This modification provides a new connection and Y-strainer for the radiation monitor inlet lines to relieve clogging, a new in-line flowmeter, and drainage catch basins to existing floor drains. The 7-5/8" diameter impellers on four Turbine Building sump pumps are being replaced with new 8-1/2" impellers, and the 3 horsepower motors are being replaced with 5 horsepower motors.

3. Unit 2/3 Liquid Bins

   This modification provides permanent installation of the electrical power service and plant piping for the liquid hydrazine "bins" utilized for secondary plant oxygen scavenging in Unit 2, Unit 3, and in a common area that serves both Units 2 and 3.

4. Caustic Storage Tank 3T-195

   This DCP replaces the Caustic Storage Tank Level Indicating transmitter 3-LIT-3813 Foxboro Model E11GM with a Foxboro Model E17DM transmitter and installs permanent vent and drain valves and associated fittings and flanges between the Caustic Storage Tank level sensor 3-LIT-3813 and tank isolation valve 3-BMA-R028.

5. Gland Seal Control

   This modification replaces the original steam pressure sensor and controller with electronic units, adds an electro-pneumatic converter and an auto-manual station, replaces the valve's actuator springs with stiffer models, and removes the interlocks between manual bypass and automatic isolation Motor Operater Valves (MOVs).

DCP No. 3-6748.OPE Rev. 0 (Continued)

6. Third Point Heater Drain Tank

   This modification installed a control system which overrides the normal control circuit for the Third Point Heater Drain Tank's high level dump valve and automatically opens the valve following a turbine trip. In addition, this modification added a timeout feature to return control of the high level dump valve to the normal control system after a fixed time has elapsed.

7. Condensate Pump Seal Alarm

   Rewires four condensate pump bearing seal water trouble alarms so that they are enabled only when the condensate pumps are not operating.

8. Main Turbine Generator Vibration

   Provides permanent anchorage for the proximeter modules at each bearing housing, flex conduit protection of the vibration sensor cables between the proximeter housing and the General English Control installed cable trays, and installs 120VAC receptacle, supplied from local lighting panel

9. Shadow Load Limiter (SLL) Removal

   Removes the Shadow Load Limit (SLL) module from the electric turbine governor.

10. 3HV-4048 Hydraulic Piping

    This DCP completes the documentation which installed a new piping configuration to eliminate hydraulic leakage.

Safety Evaluation:

These modifications affect only non-safety related equipment. There is, therefore, no impact on plant safety.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT 2&3

FACILITY CHANGES

MMP 2/3-1304.01BM Rev. 0

Title: Radwaste Control Panels Room Air Conditioning Unit Addition

Description:

This modification installed an air conditioning system for the Radwaste Control Panels Room (513) which consists of a recirculation air conditioning unit with a chilled water cooling coil, a three-way mixing valve for controlling the room temperature, chilled water piping, valves, ductwork, non-safety related electrical power, control components and wiring, temperature controller, supports, condensate drain piping, insulation for the chilled water lines and condensate drain line and other required accessories.

The purpose of this change is to maintain the temperature in the Radwaste Control Panels Room at a level that permits continuous personnel comfort throughout the year. All components will be designed per the existing design criteria for SONGS 2&3.

Safety Evaluation:

The possibility of creating an accident of a different type than previously evaluated in the safety analysis report will not occur due to the installation of the recirculating air conditioning unit in the Radwaste Control Panels Room. All piping, conduits, ductwork, supports and accessories will be installed per the existing design requirements. All penetrations through fire area boundaries will be sealed per the existing Appendix R requirements. The Radwaste Control Panels Room air conditioning system does not interface with any equipment important to safety nor with any equipment that if they malfunction would contribute to increased radiological consequences.

Therefore, the proposed activity will not create the possibility of an accident of a different type than any evaluated previously in the safety analysis report

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2&3-6191.00BJ Rev. 0

Title: Addition of Low Flow Alarms to Liquid Radiation Monitors

Description:

This modification provides a positive indication in the control room of a blocked Liquid Effluent Radiation Monitor sample line. A flow metering device is installed in the sample lines for each monitor to provide local flow indication, and a low flow alarm output signal. The existing Foxboro loops were upgraded to Spec 200 Micro Configuration. In addition, remote grab sample instrumentation, valves, and tubing at the radiation monitors was removed, and the grab sample wiring was abandoned for use in this modification. (Since the grab sample equipment and valves are the greatest point of sample line restriction, removal further reduces the incidence of sample line clogging. The grab sample equipment was provided by the vendor as part of the standard radiation monitor equipment package with intentions to provide automatic grab sample capability on High radiation. Grab samples are presently collected manually at the radiation monitors process or discharge streams and not in the radiation monitor's sample line. Therefore, the grab sample equipment at the radiation monitors sample lines are not required.

The modification reduces the manual surveillance that must currently be performed to check for low sample flow or a blocked sample line condition.

Safety Evaluation:

The design basis for the affected plant systems or radiation monitoring equipment is not being changed as a result of this modification. No new seismic or safety concerns are being created due to the installation of the flow switches, control room wiring, or Foxboro circuit card installation.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2/3-6587.01BP Rev. 0

Title: Unit 2/3 Spent Fuel Pool Crosstie with Connect to Radwaste Primary Storage Tank

Description:

This modification provides a permanent crosstie between the Units 2&3 spent fuel pool (SFP) purification systems with a connection to the radwaste primary storage tanks (RPSTs) to permit water transfers as necessary to support current refueling, maintenance, transshipment and any other activity within the SFP which may require significant water level changes.

The refueling water storage tanks (RWSTs) do not provide sufficient surge or storage capacity to support current refueling, maintenance, transshipment and any other activities which may require significant water level changes in the Refueling Pool (RFP).

The overall objective of this modification is to provide a permanent crosstie between the Units 2 & 3 spent fuel pool purification systems (SFPPS) with a connection to the radwaste primary storage tanks (RPSTs) .

The crosstie will provide capability to transfer water between spent fuel pool (SFP), refueling water storage tanks (RWSTs) of Units 2 & 3 and RPSTs utilizing the available system pumps.

Safety Evaluation:

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2&3-6605.08SJ Rev. 0

Title: Control Room Panel 2/3 CR-63 Human Factors

Description:

This modification provides a human factors modification and partial compliance with Licensing Event Report 89-2-14. This design change relocates, deletes, or replaces Diesel Generator controls. Safety indicators replaced diesel generator non-safety related analog indicators. Switches and lights are combined and relocated or are replaced with new switches or lights. These changes reduced a mirror image layout on the panel, except the mirror image is eliminated in the diesel generator controls layout on the panel. These changes on the control room panels will help the operators to operate the electrical system with significant reduction in the potential from design induced human error. New digital meters replaced the analog meters and are provided in the Diesel Generator panel area to improve the operator's system interface, but the Diesel Generator's surveillances will continue to be completed using the computer outputs.

Safety Evaluation:

This modification improves the usability of the Diesel Generator controls. since the function and performance of the equipment is not affected or is improved, there is no reduction in safety due to this modification.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2/3-6711.00SE Rev. 0

Title: Station Blackout

Description:

This modification installed cross-tie provisions to provide the capability to support Modes 1-4 operation of the companion unit as well as its own unit's Load Group A (or B) operability during Modes 5-6 when battery A (or B) is inoperable for extended periods of time during maintenance or cell replacement. Cross-connection of buses D1-D3 and D2-D4 will enable the affected DC bus (D1/D2) to be operable, thereby ensuring the availability of the second preferred source of offsite power to the companion unit. The cross-tie provisions may be utilized in the future to provide capability for Load Groups A and B DC bus loads to cope with the 4-hour Station Blackout (SBO) duration (although at present each 1E battery independently has sufficient capacity to supply its respective load during SBO, batteries A and B at some point in time may not be able to provide for its associated load group requirements for the 4-hour SBO coping duration as a result of future load additions).

In addition, this design modification installed additional emergency lights to provide availability of adequate lighting to support local manual operator actions during the 4-hour station blackout duration.

Safety Evaluation:

Since the cross-tie operation will only be in Modes 5-6, there is no impact on Modes 1-4 normal operation. Operation of C and D batteries with the DC buses cross-tied during Modes 5-6 or during a station blackout will not create any adverse effects on any safety related system and/or component. The dc bus cross-tie components are selected and designed in accordance with Quality Class II, Seismic Category I. Batteries C and D and their associated DC system components have been analyzed to be adequate to provide for the load requirements under either a Loss of Voltage Signal (LOVS) or SBO event.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2&3-6716.00SJ Rev. 0

Title: Replacement of the Unit 2 and Unit 3 Plant Monitoring Computer and Core Operating Limit Supervisory System (COLSS) Backup Computer Central Processing Units

Description:

The Unit 2 and Unit 3 Plant Monitoring Systems (PMS) are utilized to scan significant plant parameters. The data is processed into engineering units and then displayed on Cathode Ray Tube's, recorders, indicators and line printers. The PMS contains a Central Processing Unit (CPU) which is used to calculate composed data points and process data for display.

This design modification corrects the over heating problem inside the Unit 2 and Unit 3 computer rooms. This change reduces the heat produced in the computer room by replacing the Central Processing Unit (CPU) within the PMS with a CPU that uses less power. The power required to run the upgraded CPU is less than half of that required by the present CPU. In addition, this modification upgrades the COLSS Backup Computer (CBC) by adding the same CPU, disks and Tape drive that are going into the PMS.

This modification provides a CBC Input/Output (I/O) to support a G2 computer preprocessor. Software will be developed for the CBC to communicate to the G2 and the new historical data tape and disk devices. The larger capacity hard disk is added to allow for about a days worth of historical data storage. Because the CBC uses software similar to that running on the Plant Monitoring System (PMS), this improvement will make the PMS and CBC software interchangeable (except for the G2 interface software patches and database size).

Safety Evaluation:

The PMS and the CBC systems are non-safety related and do not control plant operating functions (however, they do inhibit control rod out motion when control rods are moved out of group sequence or out of individual subgroup alignment). The PMS and CBC systems also monitor core power through the Core Operating Limit Supervisory System (COLSS) and report a conservative power limit to the operators via alarms and control board indicators. The COLSS Program is required to operate the plant (See the Technical Specifications limiting Conditions for Operation 3.1.3.2, 3.1.3.4, 3.1.3.6, 3.2.1, 3.2.2, 3.2.3, 3.2.4, and 3.2.7 for the CEA position and COLSS nuclear parameters limits and specific requirements).

The UFSAR was reviewed and the PMS/CBC COLSS program is mentioned in Chapter 15 accident analysis section (15.4) regarding the adjustment of the COLSS constants to account for the control rod drop times. The COLSS power margin is adjusted whenever control rod drop times determined by testing are outside of the times assumed in the accident analysis. This MMP change will not effect these control rod drop times and the COLSS will not run any different as a result of this MMP (pre-operational testing of COLSS will be performed or a

COLSS operability test will be done in accordance with Station Procedure S023-V-4.29.1 prior to declaring the COLSS program operable with the new processor's boards).

The modification will increase the availability of the PMS and the CBC computers by its compressed design. The HVAC loads on the emergency HVAC and the Normal Control Room system will be reduced. The requirement to secure the PMS because of Control Room system will be reduced.

The change does not reduce the margin of safety as defined in the fore mentioned Technical Specifications. SONGS 2 & 3 does have Technical Specifications associated with its COLSS operation. However, these Technical Specifications can be satisfied by either the CBC or the PMS computers. The changes in this MMP will have very little effect on the CBC operation, other than the addition of a new ethernet I/O interface (not being used in the PMS software) and will essentially result in the CBC software operating in the same manner as the PMS software).

Therefore, the probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2&3-6742.07SM Rev. 0

Title: Component Cooling Water (CCW) System

Description:

This modification provides a safety related, Seismic Category I makeup to support operation of the CCW system. The makeup system is designed to supply water to the CCW trains following loss of normal CCW makeup from the nuclear service water system. It will be train-oriented and will provide sufficient water inventory to accommodate a maximum allowable leakage from both CCW trains for seven (7) days. The CCW makeup system will be an integral part of the CCW system. This design change will eliminate any reliance of the CCW system on the seismic fire tankers. Because of its function, the CCW safety related makeup system is a safe shutdown system.

The CCW makeup system for each Unit will consist of a common makeup water storage tank and two makeup transfer trains, each supplying the associated CCW train. Each transfer train includes a 100% capacity makeup pump, pump discharge solenoid valve, check valve, isolation valves and interconnecting suction and discharge piping.

Safety Evaluation:

The design change adds a safety related makeup system whose design function is to support operation of the CCW system. Although this modification physically affects the CCW system and the Primary Plant Makeup Water system, it does not impact their design functions or the manner in which they operate. The only impact of the proposed modification on the plant operation is that it limits the PPMST inventory available for non-safety related use (for primary plant makeup). The change does not create any permanent or temporary, direct or indirect interactions with other systems whose malfunction or failure could result in a precursor to a previously analyzed accident. Consistent with the above, failure of this supporting system can not, by itself, create a precursor to any of the analyzed accidents.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2/3-6751.00SM Rev. 0

Title: Modification to Post-Accident Sampling System

Description:

The below modifications make the PASS system easier to operate and maintain by reducing the complexity and congestion of the system. Thus, the availability and operability of the system will be greatly improved.

1. Removal of the Paramagnetic Oxygen Analyzer (AI-A 505)

The current PASS has two oxygen analyzers. AI-A 505 measures the reactor coolant off-gas and AI-A 507 (made by Orbisphere) measures the reactor coolant directly. Since AI-A 507 is the more reliable one of the two analyzers, AI-A 505 is no longer needed and will be deleted. The associated heat tracing of the inlet and outlet tubing and the associated calibration gas bottle will also be removed. This change eliminates the duplication and simplifies the system.

2. Replacing the Hydrogen Analyzer (AI-A 504) With A New Type Analyzer

The current RCS hydrogen measurement is done by a phase separation process. The gas is separated from the RCS liquid and then analyzed by a hydrogen analyzer (AI-A 504). Phase separation is an elaborate process and involves many components. Any component failure in the process will render the hydrogen analysis unavailable.

This new instrument has been proven more reliable in actual operation and it meets or exceeds the NUREG 0737 requirement on hydrogen analysis. This proposed modification will improve the operability, the reliability, and the maintainability of the hydrogen analysis.

3. Deletion of the Total Gas Requirements

With the installation of the new hydrogen analyzer as described above, the total gas measurement is no longer necessary and will be deleted. This deletion will simplify the regulatory record keeping requirement. This item does not involve physical work. The total gas apparatus will be retained and used only to convert the hydrogen concentration from "percent" to "cc/kg" when the hydrogen is analyzed by the manual grab sampling method.

4. Deletion of "CASK" Requirement

With this modification, chloride analysis with an accuracy that meets the NUREG 0737 requirement will be analyzed on-site from diluted samples. This will not only allow more frequent chloride analysis with faster turn-around, but it will also reduce the potential hazards associated with handling undiluted RCS samples. Since the chloride requirement will be met by analyzing a diluted RCS grab sample on site with the new diluted grab sample station, it is no longer necessary to ship the RCS sample off-site for chloride analysis.

5. Deletion of the Requirement of "Collecting an Undiluted Sample as a Backup"

Along with the modification, a Dionex Ion Chromatograph, Model 2000i/Sp will be used to perform the low level chloride analysis. The unit can detect a chloride concentration as low as 2 ppb with an accuracy of +7%. With a dilution ratio of 250 to 1, the reactor coolant chloride level can be detected as low as 0.5 ppm. Since the performance of the modified system will meet or exceed the existing criteria for chloride analysis; concentration between 0.5 and 20.0 ppm chloride with an accuracy of +10%, it is no longer necessary or desirable to continue collecting undiluted samples of reactor coolant for off-site chloride analysis. The only other use of this undiluted sample is to serve as a backup to the in-line pH analyzer, since the measurement of pH is only appropriate from an undiluted sample. pH is an indication of the potential for long term corrosion. Thus, it can be safely delayed several hours. There is time to take the necessary action to return the pH analyzer to service even if it was not operational at the start of the accident.

6. Replacing the Existing RCS Liquid Diluted Grab Sample Station With A New Design

The existing dilution system is rather complicated and inaccurate. In order to identify the exact cause(s) of the inaccuracy, a thorough test program would have to be established, implemented, and the results carefully evaluated before recommendations on repair can be made. This is not only time consuming, but the final product will not offer any relief in the complexity and congestion of the existing system. This new system improves the accuracy, operability, reliability, and maintainability of the dilution system due to its simplicity.

7. Addition of a Temperature Controller to Maintain the RCS Sample Temperature And Replacement or Relocation of HV-A207

Presently, the RCS liquid sample inlet temperature is maintained by throttling the cooling water outlet plug valve (HV-A207). Maintaining a stable temperature has been a constant problem for PASS operations due to the size and type of the throttle valve. This modification will change-out HV-A207 from a plug valve to a globe valve (TV-AS02), relocate the valve to the outside of the sample skid, and add a temperature controller to adjust and maintain the sample temperature automatically.

8. Removal of Containment Atmosphere Hydrogen Analyzer (AI-A 506)

As required by NUREG-0737 Item II.B.3, the current PASS of Units 2 and 3 has a hydrogen analyzer (AI-A 506) which indicates the hydrogen concentration in the containment atmospheres. However, Units 2 and 3 also have environmentally qualified, safety-related, dual train inside containment hydrogen monitors (2AI-8108-A1 & 2AI8118-A2 for Unit 2, and 3AI-8108-A1 & 3AI-8118-A2 for Unit 3) in accordance with NUREG-0737, item II.F.1.

9. Redirecting the Surge Vessel (V021) Drain Line

Currently, the surge vessel drain line "533-3/8" is tied into line "532-3/8" at the upstream of various instruments. As a result, when the surge vessel (V021) is drained before restoration after use, the instruments get contaminated after being flushed clean. By redirecting drain line "533-3/8" into line "532-3/8" downstream of valve HV-A206 which is located downstream of the various instruments, the instruments are kept out of the drain line flow path and the contamination problem will be eliminated.

10. Re-plumbing of Reactor Coolant Inlet Valves (HV-0535A.B.C & HV-0536)

The RCS liquid sample inlet valves for PASS (HV-0535A,B,C & HV-0536) are currently a mixture of pipe and tube fittings that have developed several leaks between the pipe to tube fittings. These leaky valves have been responsible for the majority of recent PASS "inoperable" periods. By replacing the existing pipe and tubing mixture with an all tubing and Swagelock fitting design (approximately 20ft) the leaks can be eliminated.

11. Replacement of Selector Switches and Indicating Lights on the PASS Mimic Control Panel (L013B)

The PASS mimic control panel (L013B) backlit push button switches and indicating lights are poorly installed and require frequent maintenance. Light bulb replacement is difficult and time consuming. A change-out of the push button switches and indicating lights with the Master Specialties Company switches.

12. Relocation of HVAC Charcoal Filter and Addition of HVAC Return Register

For the PASS exhaust system to function properly, the existing charcoal filter was removed from the current location, and a new charcoal filter was added downstream of the existing High Efficiency Particulate Air Filter (HEPA) filter. A new pre-filter will be installed inside of the existing charcoal filter enclosure to remove particulate matter. In addition, a new transfer grill was installed adjacent to the existing transfer grill of the skid to enhance air flow through the skid. A new exhaust register will be added to the exhaust system to remove radioactive gases around the sample inlet valves.

13. Supplying Power for Lighting and Receptacles inside Panels

Currently, there are lights and receptacles installed inside panel 2/3 L13B, D, and E. However, there is no power supplied to them. By supplying power to the panel skid, it will aid the calibration or maintenance of the system greatly.

DCP 2/3-6751.00SM Rev. 0 (Continued)

Safety Evaluation:

This modification does not add any additional lines that penetrate containment between the RCS and the PASS sample skid. This modification will not affect the PASS sample flow path integrity and nor will it affect the basic method of PASS operation. This modification will be installed in accordance with the applicable quality class and seismic requirements of the PASS. This change was approved by the NRC and it was determined to not affect identified or potential accidents scenarios.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2&3-6754.00SP Rev. 0

Title: Pre-Lubrication Modification, Units 2&3 Diesel Generator Lube Oil Systems

Description:

This modification provides an improved lube oil circulating system for each diesel engine in the Units 2 and 3 Emergency Diesel Generator Systems. The proposed modification provides constant prelubrication to the main crankshaft bearings in addition to the turbocharger before and during engine starts. NRC IE Information Notice No. 85-32 was issued on 04/22/85 to alert recipients of engine failures due to inadequate lubrication during fast starts.

The method used added a new 6-gpm AC Lube Oil Circulating Pump and a new 3-gpm Turbocharger Pump (driven by a common motor) to the lube oil circulating system to replace the previous 6-gpm AC Circulating Oil pump which has a split flow path between the turbocharger and the main oil filter or cooler. The new design dedicates a 3 gpm pump to the turbocharger and a 6 gpm pump to the main oil filter or cooler. A gravity feed line is provided to keep the main lube oil gallery, crankshaft and main/connecting rod bearings flooded with oil.

Accordingly, the overall performance of the lube oil circulating system is improved. The design basis of the lubrication system is not affected by the modification.

Safety Evaluation:

This modification does not alter the function of the lubricating system, nor does it introduce additional abnormal engine lube oil conditions. Functional and operational independence is maintained. The pumps are similar to the pump utilized for the previous lube oil circulating system and will not create the possibility of any types of failure not previously evaluated.

In addition, the probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2/3-6772.00SJ Rev. 0

Title: Addition of Reactor Water Level Probe (RWLP), Shutdown Cooling System/Midloop Trouble Alarm and In-Containment Area Lights to SONGS Units 2 and 3

Description:

This modification provides an independent RCS water level indication with low level alarm capability and a visual and audible Shutdown Cooling System (SDCS) trouble alarm in the control. This modification fulfills the commitment Edison made in a letter (dated February 21, 1989) to the NRC. The addition of the new reactor water level monitoring instrumentation, based on an operating principle which is different from the existing Refueling Water Level Instruments (RWLI) will meet the requirement of two independent level indications required by Generic Letter 88-17, it will also provide more reliable level information for operators to rely on during reduced inventory operations. An in-core instrument assembly (ICI) in each unit was permanently removed to make room for the installation of the new Reactor Water Level Probe (RWLP). In addition, two permanent area lights in the proximity of the refueling water level transmitter sensing line and the RCS hot leg tie-in location provides additional illumination to facilitate the installation and removal of the Refueling Water Level Transmitter sensing lines during refueling operations.

Safety Evaluation:

The removal of ICI assembly will not result in Technical Specification violation because there are still sufficient margin of operable ICI locations and CETs in the core to satisfy the requirements of the Technical Specification Limiting Condition for Operation. Since the change does not affect any other safety related equipment or system previously evaluated in the UFSAR, the consequences of a malfunction of equipment important to safety previously evaluated will not be increased by the change.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2/3-6775.00SM Rev. 0

Title: Auxiliary Boiler System Decommissioning

Description:

This change decommissioned the permanent auxiliary boiler system from SONGS Units 2 & 3. The scope of demolition includes the auxiliary boiler, which is in need of extensive repair. In addition, the furnace system and combustion control, the blowdown separator, the deaerator, the feedwater pumps, the chemistry control system, the fuel oil system except for the two underground (UG) fuel oil tanks, the automatic fire suppression system and all associated equipment peripherals piping, tubing, instruments, control panels and cables within the plant area 3T11 between column 24 & 27 and between column A and the west road.

Future portable boiler will be on an "as needed" basis. Its operation will be manual and from the local panel. In addition, the changes are also intended to leave the plant such that future trailer-mounted rental boilers can be connected to the Auxiliary Steam System in a timely manner.

Safety Evaluation:

The auxiliary boiler system is a Quality Class IV (non-safety related) system. This non-essential system has no interaction with safety-related equipment.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2/3-6783.00BP Rev. 0

Title: Auxiliary Feedwater Check Valve Modification

Description:

This modification relocated the Auxiliary Feedwater Check Valves (including new vent and drain valves) and implemented a snubber reduction for the AFW lines. This modification removed snubbers and one spring hanger from the two AFW lines inside containment and replaced a total of three of the snubbers with rigid struts. The purpose of this modification is to prevent excessive wear (due to valve instability) at the valve's hinge pins, hinge pin bushings and seats requiring repair every outage. These changes will ensure achieving check valve stability during no flow condition and reduce the consequences of low flow disc instabilities.

Safety Evaluation:

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2/3-6808.00SJ Rev. 0

Title: Removal of Movable Incore Detector System

Description:

This modification removes all the remaining critical equipment associated with the Moveable In-core Detector System (MICDS) from the **Unit 2** containment, recognizes the revised Fixed In-core Detector System (FICDS) design for future use, and determinates and abandons in place Unit 2 and 3 MICDS equipment outside containment. This change will document the disconnection of all 56 guide tubes from their respective In-core Instrumentation (ICI) calibration tubes (including the guide tubes to the rotary transfer assemblies) and keep the pressure seal cap on the calibration tubes that were installed per the TFM. These pressure caps will remain until the new ICI assemblies are procured with the guide tubes capped internally. These new ICI assemblies and the existing capped ICI assemblies will no longer have the capability to perform the calibration function of the MICDS design. The new ICI assemblies interface with the existing accident qualified Core Exit Thermocouple (CET) and Self Powered Neutron Detector (SPND) MI cable system. There are no changes being made by this MMP package to the MI cabling for these instruments (CET, SPND). The only items being affected by the MMP are the redesigned ICI's (which house the CETs and SPNDs for a given core location), which will be installed in successive outages.

Safety Evaluation:

This modification does not change the design bases of the fixed in-core instrumentation system, nor does it introduce any new functions or interaction. Chapter 15 accident analyses were reviewed. The review indicates that the in-core instruments are used to detect fuel loading errors or misalignment of fuel assemblies during start-up testing and do not initiate any accident analyzed in UFSAR Chapter 15.

The in-core instrumentation system is used to confirm core power and temperature distributions, perform periodic calibrations of the ex-core flux measurement system, and provide inputs to the core operating limit supervisory system.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2/3-6808.01SJ Rev. 0

Title: Removal of Movable Incore Detector System

Description:

This modification removes all the remaining critical equipment associated with the Moveable In-core Detector System (MICDS) from the **Unit 3** containment, recognizes the revised Fixed In-core Detector System (FICDS) design for future use, and determinates and abandons in place Unit 2 and 3 MICDS equipment outside containment. This change will document the disconnection of all 56 guide tubes from their respective In-core Instrumentation (ICI) calibration tubes (including the guide tubes to the rotary transfer assemblies) and keep the pressure seal cap on the calibration tubes that were installed per the TFM. These pressure caps will remain until the new ICI assemblies are procured with the guide tubes capped internally. These new ICI assemblies and the existing capped ICI assemblies will no longer have the capability to perform the calibration function of the MICDS design. The new ICI assemblies interface with the existing accident qualified Core Exit Thermocouple (CET) and Self Powered Neutron Detector (SPND) MI cable system. There are no changes being made by this MMP package to the MI cabling for these instruments (CET, SPND). The only items being affected by the MMP are the redesigned ICI's (which house the CETs and SPNDs for a given core location), which will be installed in successive outages.

Safety Evaluation:

This modification does not change the design bases of the fixed in-core instrumentation system, nor does it introduce any new functions or interaction. Chapter 15 accident analyses were reviewed. The review indicates that the in-core instruments are used to detect fuel loading errors or misalignment of fuel assemblies during start-up testing and do not initiate any accident analyzed in UFSAR Chapter 15.

The in-core instrumentation system is used to confirm core power and temperature distributions, perform periodic calibrations of the ex-core flux measurement system, and provide inputs to the core operating limit supervisory system.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2&3-6826.00SJ Rev. 0

Title: 1. MSIS Cycling Relays and ESF Test Pushbutton Modifications

2. Engineered Safety Features Actuation System (ESFAS) Enhancements

Description:

This change completed the below modifications to both Units 2 and 3:

1. Main Steam Isolation Signal (MSIS) Cycling Relay Modification

This change rewires all MSIS cycling relays to non-cycling subgroup relays. The affected relays are K623 and K723 in each of the L034 and L035 ESFAS cabinets. This change also adds test relays (K626 and K726) and related Test Module wiring in L034 and L035 for each of the affected relays to maintain similarity of test features of other subgroup relays. Following this change, these MSIS subgroup relays will be individually tested during semi-annual subgroup relay testing. The need to use the MSIS manual trip pushbutton switch for cycling relay testing and the resulting partial trip of all MSIS subgroup relays will be eliminated. Therefore the vulnerability to inadvertent MSIS actuation will be reduced. The above changes do not affect the auxiliary feedwater controls, including EFAS logic and override of MSIS.

2. ESFAS Test Switch Modification

This change replaces the ESFAS Test Module Initiate Actuation Switch (S1) push button operator with a key operated two position maintained selector switch operator. The operator will use the same contact block that is installed presently. The left position of the selector will be designated OFF and the right position TEST. The key will be removable in the OFF position only. The key operated switch will be installed in the same location as the pushbutton switch.

This change will eliminate the requirement for the operator to apply the considerable and constant pressure needed to maintain the S1 switch contacts in their correct position throughout the subgroup relay test.

Safety Evaluation:

This modification does not affect the function of the ESFAS and does not change the technical specification basis for control system surveillance or operating parameters of safety related equipment which define the margin of safety in the Technical Specifications. This modification will not interact directly or indirectly with any other equipment previously evaluated the FSAR.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

DCP 2&3-6827.00SJ Rev. 0

Title: Plant Protection System (PPS) and Engineered Safety Features Actuation System (ESFAS)

Description:

This modification addresses changes related to the Plant Protection System (PPS) and Engineered Safety Features Actuation System (ESFAS) as described below:

1. ESFAS Partial Trip Alarms

   This change adds partial Engineered Safety Features actuation alarms in the main control room on panel CR 57. A single common partial ESFAS actuation alarm will be added on annunciator UA-0057A for train A and on annunciator UA-0057B for train B. In addition, inputs will be provided for partial actuation of each ESFAS function for each train to the plant computer (PMS).

   These changes provide the partial ESFAS trip alarms that have been lacking in the control room. The operators will be advised immediately of a partial ESFAS actuation without leaving the main control room area, and can identify the specific ESFAS function affected via the PMS.

2. Add External Loss of Load Test Switches

   This change installed Loss of Load Trip test switches on the front of each PPS bay; there is one key locked switch and one pushbutton switch. The test switches are located on the blank panel to the right of the Core Protection Calculator (CPC) test panel.

3. Channelize PPS Test Power

   This change added a single eight position two deck selector switch to the PPS Test Power Panel located in channel A.

4. Replace PPS MTM Relay Hold Pushbuttons with Rotary Selector Switches.

Safety Evaluation:

These modifications do adversely affect any safety related functions of the PPS or ESFAS actuation logic circuits; and they do not directly or indirectly interface with any other equipment designed to mitigate the consequences of an accident. The functional capability of these systems is not affected.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2&3-6831.01SP Rev. 0

Title: Heating & Ventilating System HI/LO Temperature Alarm Addition Class to 1E Battery Rooms

Description:

This modification provides local temperature indication and a high temperature alarm for the Vital Power System (VPS) Inverter Rooms. A temperature indicating switch (TIS) and a key operated bypass hand switch (HS), mounted on a tube steel stand, was installed in each VPS Inverter Room. The modification will provide local temperature indication and a high temperature alarm annunciation in the Main Control Room.

Safety Evaluation:

The system involved in this change is not previously addressed in the UFSAR accident analysis nor does it affect any systems previously evaluated. The high temperature alarm circuits and temperature switches do not interface with the control circuits for the VPS invertors, battery chargers, or power distribution panels.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2&3-6835.00SJ Rev. 0

Title: Condenser Air Ejector and Plant Vent Stackwide Range Gas Monitors Upgrade

Description:

This modification upgraded the control computer firmware on the Condenser Air Ejector Wide Range Gas Monitor (CAE WRGM) and the Containment Purge/Plant Vent Stack Wide Range Gas Monitor (CP/PVS WRGM), and the stack flow signal processing unit on the CAE WRGM. The CAE WRGM (2(3)RE-7870-1) and the CP/PVS WRGM (2(3)RE-7865-1) were installed to comply with the requirements of Item II.F.1 (Additional Accident Instrumentation) of NUREG 0737.

This modification: (1) improved the performance, operability and maintainability of the CAE and CP/PVS WRGM's, (2) corrected the problem of the CAE WRGM Kurz flowmeter inaccuracy in the low flow range, and (3) eliminated manual user actions for changes in Condenser Air Removal System (CARS) effluent flow rate for the CAE WRGM.

Safety Evaluation:

Since the CAE WRGM is one of the instruments to provide information indicative of steam generator tube rupture, the improved performance of the WRGM under low effluent flow and low radioactivity count rate conditions will enhance the capability of the WRGM to detect primary to secondary leak in the early stage. The CAE WRGM is a monitoring instrument without controlling any system important to safety. As such the effect of the change proposed by this MMP is confined in the physical boundary of the WRGM and is bounded by the results of the previous analysis.

Although the CP/PVS WRGM upon detection of high radiation, will close the gaseous discharge header control valve FV-7202 when aligned to the plant vent stack, and when aligned to the containment purge stack, will close the purge isolation valves, HV-9821, 9825, 9948 and 9951 by closing their associated non-safety related control air supply valves HY-9821A, 9825A, 9948A and 9951A, the replacement of the firmware will not adversely impact these valve closure functions because the new software does not alter these functions. In addition, these valve closing functions are non-safety related control functions and are not credited in the FSAR transient or accident analyses.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2/3-6842.00SM Rev. 0

Title: Addition of Aftercooler to Respiratory/Service Air System

Description:

The purpose of this modification is to cool breathing air for by installing a water-cooled aftercooler in the existing Respiratory or Service Air (RSAS) System. The RSAS is common to both Units 2 and 3 and is used to support station personnel breathing requirements and support the use of various pneumatic tools. The Turbine Plant Cooling Waster (TPCW) will act as a coolant to the aftercooler, which will be located in the Northeast end of the Unit 3 Turbine Building. In addition to the aftercooler, this modification includes installation of additional piping and supports, several valves, and local instrumentation associated with the aftercooler.

Safety Evaluation:

The systems impacted by this modification are non-safety related and do not interact with any safety related systems.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2/3-6853.00SJ Rev. 0

Title: Emergency Response Data Computer

Description:

This Minor Modification Package will provide an Emergency Response Data System (ERDS) computer that will link the inputs of the Unit 2 and 3 San Onofre Nuclear Generating Station (SONGS) Critical Function Monitoring System (CFMS) and the Health Physics (HP) computer (with site Meteorological Data) into a common system to provide the NRC ERDS parameters from SONGS for all three Units. This Emergency Response Data System Computer will provide the NRC ERDS parameters through unit specific phone modem connections to the NRC Emergency Response Data System network.

This design uses a Microvax Series III computer to receive its input from the CFMS and HP computers (including Meteorological Data) and then sorts the data into Unit specific ERDS outputs to the modems for transmittal to the NRC.

The power source for the ERDS will be from an UPS Supply. The ERDS computer will be powered from the CFMS UPS through power panel 2Q071 and has an alternate power source (MCC BY) during outage of the inverter located at the turbine building (this is already a part of 2Q071s static transfer switch).

Safety Evaluation:

The Emergency Response Data System (ERDS) being added by this MMP is a multi-computer data gathering system which does not interface to any Safety Related equipment. The information when it is gathered is formatted for the NRC Modem and transmitted to the NRC Emergency Operation Center in Maryland.

Its interface to the Unit 2 and 3 CFMS and the HP computer will not hinder the source computers (HP and CFMS) operation nor can it cause a fault that would halt these computers. These computers are required for safety in the UFSAR but are not Safety Related.

Units 2 and 3 Main Steam Line Radiation Monitors, which are a Technical Specification parameter, are affected by this MMP. The portion of the instruments affected are isolated from the Technical specification required portion of the Instrument loops. The ERDS points are also a computer display of Technical Specification parameters, but their display in the computer is not necessary to meet the Technical Specification requirements.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2&3-6858.00SN Rev. 0

Title: Low Pressure Safety Injection (LPSI)/Motor Modifications

Description:

This modification modifies the existing LPSI pumps to allow mechanical seal maintenance/replacement without requiring the pump motor to be removed. The changes involved the addition of (1) a separate pump element shaft, (2) a removable spacer coupling between the pump and motor shafts, (3) a radial bearing on the pump shaft, and the use of a cartridge type mechanical seal. These changes allow a mechanical seal or motor bearing replacement without requiring separation of the pump casing and removal of the pump impeller. Additionally, this change improves the mechanical seal reliability due to the ease of installation and due to the additional stability of the pump shaft at low flow, which is provided by the new pump radial bearing.

Safety Evaluation:

This change does not change the Design Bases of the Safety Injection System, Shutdown Cooling System, or Component Cooling Water System, nor does it introduce any new system functions or interactions.

Therefore, the probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2&3-6869.00SM Rev. 0

Title: Auxiliary Feedwater Pump Turbine Overspeed Trip Units 2/3

Description:

This modification modifies the steam supply piping to: 1) ensure a source of dry steam for the AFW turbine steam supply, 2) eliminate piping sneak circuits, and 3) add a level sight gauge and two temperature indicators in the AFW turbine drain circuit low points to indicate condensate accumulation.

These modifications (1) minimize the possibility for Auxiliary Feedwater pump turbine overspeed trips, (2) minimize the possibility of water intrusion into the AFW steam supply piping, valves, and fittings, and (3) increase the operational life of the check valves.

Safety Evaluation:

The modifications reduce the potential for condensate accumulation in the AFW steam line and thus reduce the potential for system waterhammer and the probability of steam system piping failure. As such, the change does not adversely affect the probability of accidents previously analyzed in the UFSAR. The piping modifications are bounded by previous evaluations of pipe break and component missile scenarios for the main steam systems. These modifications improve the reliability of the turbine driven AFW pump for mitigating the consequences of other accidents.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

MMP 2&3-6917.00SN Rev. 0

Title: SDC System Hi-Pressure Alarm Setpoint Change, Respan of the Pressurizer Channels, Safety Injection Tank Wide Range Pressure Alarm Setpoint Change and Safety Injection Tank Outlet Valve Close per Setpoint Change.

Description:

This modification modifies those setpoints which are controlled by the low range pressurizer pressure loops to values recommended in the Total Loop Uncertainty (TLU) calculations, which have been performed on the four channels of pressurizer low range pressure.

Shutdown Cooling (SDC) High Pressure Alarm Setpoint Changes

This change reduces the Shutdown Cooling SACS suction high pressure alarm setpoint (Open Permissive Interlock reset) with any of the four SACS suction isolation valves open. The lower alarm setpoint is based upon the new standard and methodology for calculating the setpoint by including loop uncertainties.

Respan of the Pressurizer Pressure PMS Inputs

This change respans the two low range Pressurizer pressure indicators inside the control room at panel CR-58, respans the input to the PMS for the low range Pressurizer pressure point identifications, and recalibrates the pressurizer pressure transmitter range to provide a uniform scale to all four pressure channels.

Safety Injection Tank Wide Range Pressure Alarm

This change modifies the Safety Injection Tank (SIT) wide range low pressure alarm setpoint, which is based on the new standard and methodology for calculating the setpoint by including loop uncertainties. The analytical limit for this change is based upon the lowest analyzed SIT pressure required to mitigate the worst LOCA event.

Safety Injection Tank Outlet Valve Close Permissive

This changes the Safety Injection Tank (SIT) Outlet Valve close permissive setpoint. This control function allows closure of the SIT outlet valves when pressurizer pressure drops below the permissive setpoint.

Shutdown Cooling Administrative Pressurizer Pressure Limits

This modification provides recommended administrative limits for the SACS to be incorporated into applicable Operating Instructions in order to prevent inadvertent lifting of the Low Temperature Overpressure Protection (LTOP) relief valve.

MMP 2&3-6939.00SJ Rev. 0

Title: Add Safety Related T-Hot and T-Cold Temperature Indications on Remote Shutdown Panel (L-042) & Upgrade Remote Shutdown Monitoring Instrumentation (RSMI)

Description:

This modification installed redundant safety-related Seismically Qualified wide range temperature indicators in Remote Shutdown Panel L-042 for RCS T-Hot & T-Cold loops and to replace local pressure gauges with qualified gauges for Auxiliary Feedwater Water (AFW) & Boric Acid Makeup Tank (BAMU) pumps suction pressure to meet quality class, seismic category and redundancy requirements of NUREG 0800 Standard Review Plan Section 7.4 for remote shutdown instrumentation.

In order to correct the deficiencies identified in NCR 91070147 & 91070148, which for SONGS Unit 2 and 3, respectively, identified that there is a lack of redundant, Quality Class II, Seismic Category I, T-Hot & T-Cold temperature indicators on the Remote Shutdown panel 2(3)L042. The following modifications to the Remote Shutdown Panel instrumentation for each unit were required:

- Install redundant, Quality Class II, Seismically Qualified RCS wide range T-Hot & T-Cold temperature indication on Remote Shutdown Panel L-042.
- Provide Class 1E power and qualified cable or wiring to install the above instruments.
- Replaced the existing AFW & BAMU pump suction local pressure gauges with Quality Class II, Seismic Category I pressure gauges.

Safety Evaluation:

The change has no impact on function since the proposed modification performs the same function as the original indicators and cannot generate any new events. Qualified safety-related isolation cards are used in circuitry such that any electrical faults will not result in impairment of existing loops. The modification enhances the reliability of temperature indication in panel L-042.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

PFC 2/3-83-870

Title: Enhance and Improve Process Sampling System & Operations

Description:

This modification extends sample points from High Radiation Areas out to low radiation areas and provides better and safer access to these liquid sample stations. This modification also enhances the plant's process sampling system by providing new sample points, thus increasing system sampling capabilities. The purpose of this modification is to minimize personnel safety hazards and reduce occupational radiation exposure. Local liquid sampling capabilities exist on various systems in the primary and secondary plant to allow monitoring of fluids for abnormal or out of specification chemical and radiological conditions, to ensure efficient plant operations. Sampling was complicated in various locations by the lack of drainage for purging, high radiation environments, restricted movement when sampling hot fluids and limited access to sample points. In addition, various existing sample points could not be utilized due to vacuum and elevated temperature conditions inside the process line, and acceptable means of sampling existed in areas where it was desired for enhanced process sampling capabilities.

Safety Evaluation:

Local liquid sampling stations have no plant safety significance. The changes incorporated by this DCP do not impact the function or operability of existing systems, structures, or components involved.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

PFC 2/3-87-017

Title: Polar Crane Alternate Access Platform and Ladder

Description:

This modification provides an alternate polar crane egress. Previously, when the polar crane was rotated away from its home position there was no egress for the crane operator from the crane. This will be accomplished by adding a platform and ladder on top of the elevator shaft to the existing polar crane access structural steel. This change allows operators to exit the crane or a allows a relief operator to enter without having to rotate the crane to its home position.

Safety Evaluation:

This change does not modify the function of any safety related equipment. The polar crane alternate access platform has been evaluated for Seismic Class II/I. Thus, seismic interaction with any safety related equipment or system has been appropriately considered.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-125

This changes the description of the Health Physics and Chemistry Computers to support upcoming replacement of this equipment. Changes specific references to the outdated existing Model ND-6685 Processor/Computer to the new replacement "Gamma Spectroscopy" computer (Canberra ND9900) system.

Safety Evaluation:

This a replacement of supporting non-safety related Health Physics analytical equipment to enhance reliability and maintainability. The systems do not interface with or affect any plant systems.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-184

This change describes the capability of the radiation monitoring systems governed by Technical Specification 3.4.5.1, "RCS Leakage Detection Systems," to satisfy the requirements of Regulatory Guide 1.45. Section 5.2, "Detection of Leakage Through Reactor Coolant Pressure Boundary," does not exist as described in this section. The present language of the UFSAR is misleading on two issues: 1) noble gas detection of RCS leakage, and 2) conversion of monitor readings to leak rate. This UFSAR change is recommended to better describe SONGS compliance with regulatory guide

Safety Evaluation:

This changes UFSAR descriptive information, but does not change plant equipment or method of operation. The equipment involved is not relied upon for accident prevention or mitigation.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-185

This change updates the UFSAR to reflect the new combustible gas control calculation. Minor changes have been made in the values presented in UFSAR 6.2.5. The most significant change is the inclusion of margin in the zinc and aluminum inventories used in the combustible gas control calculation (to allow future design changes to be made without revising this section of the UFSAR). The conclusions of the new calculation are essentially the same as the previous analysis in that hydrogen control measures are not required until approximately 14 days after the LOCA occurs, and one Hydrogen recombiner or the purge system provides adequate hydrogen control.

Safety Evaluation:

No changes are involved with plant designs or procedures. Reanalysis of events resulted in conclusions which were essentially the same as the previous analysis.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-187

Based on Generic Letter 91-15, which identified problems with Solenoid Operator Valves (SOVs) having a low maximum operating differential pressure (MOPD). A failure of the control valve air set regulator could cause the control valve to move from its Post-Accident position. Edison performed an evaluation of all the SOVs in all three units and determined that some of the SOVs would have to be replaced with units having an MOPD that was high enough to withstand the maximum air pressure available to the control valve in the event of a regulator failure. Therefore, the SOVs was replaced on Main Steam Bypass Valves (HV8202, HV203) to ensure that a failure of the air-set regulator for these valves will not cause the HVs to move from their Post-Accident position. Specified stroke time for the valves was changed to reflect new equipment.

Safety Evaluation:

The increased stroke time was analyzed to have no effect on the probability or consequences of a Steam Generator Tube Rupture event, which is the only accident analysis which would be encompassed.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-190

This change incorporates the use of CASMO-3/SIMULATE-3 and the related reload physics design activities in the SONGS 2&3 UFSAR. Upon the NRC approval of SCE-9001-A, Edison acquired the capability to perform various reload physics design activities using CASMO-3/SIMULATE-3. This UFSAR change incorporates a new section (4.3.3.5, "Core Reload Physics Design Activities") that describes the approved reload physics design activities.

Safety Evaluation:

The use of this computer program was previously reviewed and approved by the NRC.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-197

This changes the Units 1, 2 & 3 FSAR to eliminate the requirement that every individual entering a protected or restricted area receive a Thermoluminescent Dosimeter (TLD). A change to the wording to include "generally required" about issuing TLDs to individuals entering a protected or restricted area. 10CFR202(a)(1) requires an individual to be monitored if they are likely to receive dose in excess of 25% of the quarterly limit. SONGS allows Truck Drivers and Family Tours who are escorted by an individual wearing a TLD to enter the protected or restricted area without a TLD.

Safety Evaluation:

This change involves an updated description of Health Physics administrative controls. No plant equipment functions or operating procedures are involved.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-205

This change corrects discrepancies in the UFSAR regarding Post-Accident Monitoring Instrumentation. The UFSAR Tables are being updated to reflect the installed instrumentation that is credited for use following an accident per SCE commitments to the NRC with regard to Regulatory Guide 1.97. There are no changes to plant hardware or procedures.

Safety Evaluation:

This is an administrative change to the UFSAR to correct discrepancies in information shown. No changes were made to plant hardware or procedures.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-252

This change updates LOCA accident radiological dose analysis to reflect the latest results. The changes consist of a reduction in the Control Room whole-body dose due to shine from the CR HVAC intake charcoal filter, report negligible doses on Tables 15.6-23 and 15.6-23A as <0.01 Rem, rather than as a numerical value, and revise the description of the ESF Recirculation Leakage section to make it consistent with the PASS Leakage section.

Safety Evaluation:

The change only involves analysis of an event with no changes to plant equipment or procedures. Analysis shows results that are less severe than the previous analysis.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-258

This change corrects UFSAR Table 3.11-1, Normal, Accident and Design Environmental Conditions (Sheet 1), Control Room Cabinet Area Post-Accident Temperature to 82°F. Currently, UFSAR Table 3.11-1 indicates the Control Room Cabinet Area Post-Accident Temperature to be 80°F.

Safety Evaluation:

This is a correction to information on Control Room temperature to accurately reflect the governing calculation. No changes to plant equipment or procedures are involved.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-264

Add discussion of Safety Injection Tank (SIT) availability during Station Blackout per NCR 93080012. The purpose of this change is to clarify that the limiting condition for SIT availability is during a Station Blackout event.

Safety Evaluation:

This is additional information on SIT availability during a Station Blackout which is not a design basis event. SIT operability and surveillance requirements addressed in Technical Specifications are unaffected.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.

UFSAR23-268

The ASME Code Section XI Edition and Addenda have been changed for the second inservice inspection interval from the 1977 Edition, Summer 1979 Addenda and the 1974 Edition, Summer 1975 Addenda to the 1989 Edition with no addenda.

This change will remove all references to the ASME Section XI Code. The updated code requirements for the second ten year inspection interval are defined in subsections 5.2.4 and 6.6.

Safety Evaluation:

This is an update to the referenced ASME Code Edition. The new Code requirements are equal to or better than previous Code requirements.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. The margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change. Affected Technical Specification changes have been approved by the NRC.

UFSAR23-279

This change updates the UFSAR to incorporate previously approved (NRC) Amendments. These changes consist of the (1) elimination of the requirement for Particulate/Iodine monitoring of the Fuel Handling Building Monitor, (2) elimination of the requirement for the Waste Gas Header Monitor and transferred its control function to Plant Vent Stack Monitor and Plant Vent Stack/Containment Purge Stack Wide Range Gas Monitors, and (3) installation of a shielding insert to be installed during normal operations. The insert reduces the monitor's sensitivity to the process radiation level.

Safety Evaluation:

These changes were previously submitted to the NRC. In the Safety evaluations, the role of the affected radiation monitors was determined to not adversely affect identified or potential accident scenarios. Affected Technical Specification changes have been submitted and approved by the NRC.

The probability of occurrence of an accident, or malfunction of any equipment important to safety previously evaluated in the UFSAR will not increase as a result of this change. The possibility of either an accident or malfunction of a different type than previously evaluated in the UFSAR will not be created as a result of this change. This change has no effect on either the existing Limiting Conditions for Operation or the Surveillance Requirements in the Technical Specifications; thus, the margin of safety as defined in the bases for the Technical Specifications will not be reduced as a result of this change.