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April 19, 1994
C311-94-2034

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Dear Sir:

Subject: Three Mile Island Nuclear Station, Unit I (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
10 CFR 50.59 Report for 1992 and 1993

In accordance with the requirements of 10 CFR 50.59, enclosed are summaries of the changes to TMI-1 systems and procedures, which were effected during the period of January 1992 - December 1993. Attachment 1 of this report addresses those activities which directly affected systems/components described in the SAR. Attachment 2 addresses those activities for which GPU Nuclear performed a safety evaluation, due to the potential for the activity to impact nuclear safety or safe plant operations but which would not directly impact SAR systems/components.

Sincerely,

T. G. Broughton
Vice President & Director, TMI

WGH

Attachments

cc: Administrator, Region I
TMI-1 Senior Project Manager
TMI Senior Resident Inspector

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Activities Directly Affecting Systems/Components
Described in the Safety Analysis Report

I. Tests and Experiments

Test: Cycle 9 HSPS Modification (STP 1-92-0004)

Description of Test: The Special Temporary Procedure provided guidance for the set-up, modification, and testing of HSPS trains A and B after completion of mini-mod 218.

Safety Evaluation Summary: The probability of occurrence or consequences of an accident or malfunction were not increased since the test was confined to an inoperable train and necessary precautions were taken to remove the potential for testing to impact safe plant operation. Operators, in communication with the control room, were stationed locally to return components to an operable condition if necessary. One train of MFW isolation was operable at all times during performance of the procedure and testing. One train of HSPS was capable of isolating FW to either or both OTSG's. No margin of safety as described in the basis of a Tech Spec is reduced. The test was determined to involve no Unreviewed Safety Question and have no environmental impact.

Test: Intermediate Building Ventilation Test (STP 1-92-0008)

Description of Test: The Special Temporary Procedure provided guidance for the purpose of collecting data to evaluate the appropriate size opening in the Intermediate Building needed to prevent an excessive ΔP between the Intermediate Building and the outside when running AH-E-6A with its discharge damper open to the Intermediate Building. AH-E-6A had been previously run in the described configuration using electrical jumpers and temporary mechanical modifications to verify the feasibility of the method to provide supplemental cooling.

Safety Evaluation Summary: An evaluation of the test procedure found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the test. No Unreviewed Safety Question or environmental impact resulted from the test.

II. Procedure/Document Changes

Document: TMI-1 Cycle 9 Reload Design

Description of Change: The Cycle 9 reload design, operating limits, and operation of TMI-1 Cycle 9 incorporated the use of the four W Lead Test Assemblies (LTA's) and thirteen B&W Fuel Company replacement Extended-Life Control Rod Assemblies (ELCRA'S) during Cycle 9 operations. Thirteen initial-core Mark B CRA's which would have exceeded their design lifetime fluence accumulation criteria during Cycle 9 were replaced with the ELCRA's.

Safety Evaluation Summary: Cycle 9 is a typical B&W extended-cycle design similar to others being operated with no unusual consequences. The cycle design, analysis and operating limits were derived using standard B&W methods. They neither assume nor allow any unusual or unsafe operating conditions. The four LTA's and thirteen ELCRA's have been shown to be compatible with existing fuel and plant components and to conform to all existing UFSAR and Technical Specification design criteria and safety limits. The TMI-1 Technical Specifications and the UFSAR accidents for Cycle 9 conditions remain bounded by previous analyses, including dose results. An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

Document: TMI-1 Cycle 10 Reload Design

Description of Change: The Cycle 10 reload design, operating limits, and operation of TMI-1 Cycle 10 incorporated the use of the advanced Mark B9 fuel assemblies and uranium-gadolinia integral burnable poison fuel. During the 10R outage, inspection of the four W Lead Test Assemblies (LTA's) detected leaking fuel rods. The core reload was redesigned to eliminate the reuse of the W LTA's and replace them with four Cycle 9 Batch 11C assemblies having nuclear characteristics similar to those of the LTA's.

Safety Evaluation Summary: The core redesign was evaluated by BWFC to verify that the mechanical, nuclear, thermo-hydraulic and safety analyses conclusions of the Cycle 10 Reload Report remain valid, i.e., that all design and safety criteria are preserved, and that the base Cycle 10 protective and operating limits in the COLR and all Tech Spec limits remain applicable. An evaluation of the document found that for the reasons above, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced. No Unreviewed Safety Question or environmental impact resulted from the Cycle 10 core design.

Document: Removal of the TMI-1 Protective & Setpoint Limits from the Technical Specifications to the Core Operating Limits Report (BA 135400)

Description of Change: In accordance with NRC Generic Letter 88-16 cycle dependent variables were allowed to be removed from the Technical Specifications (TS) to the Core Operating Limits Report (COLR) to avoid the frequent TS change requests associated with the update of operating limit values. The application of the concept was extended to cycle dependent and maximum allowable setpoint limits among others. Therefore, the following limits, setpoints and peaking factors have been removed to the COLR:

- Axial Power Imbalance Protective Limits,
- Trip Setpoint for Nuclear Overpower Based RCS Flow,
- Protection System Maximum Allowable Setpoints for Axial Power Imbalance,
- Design Nuclear Power Peaking Factors, and
- Maximum Allowable Local Linear Heat Rate Limits

The limits and setpoints will continue to be developed using NRC approved methodologies. No core or fuel design or safety criteria are changed and will continue to be preserved. The change is administrative in nature. No plant equipment or operating procedures are changed.

Safety Evaluation Summary: An evaluation of the document change found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the document change since the change was administrative. No Un-reviewed Safety Question or environmental impact resulted from the document change.

Procedure: Radwaste Processing from OTSG Chemical Cleaning Activities
(BA 128128 / JO 51958)

Description of Procedure: Sludges consisting primarily of iron oxides removed from the OTSGs during chemical cleaning were processed to reduce volume and immobilized to meet the criteria of the Federal Government and Low Level Radwaste Burial Site at which it will be buried. The system controlled by the operating procedure was a temporary configuration assembled for the specific task and then removed. While operating, the OTSG Radwaste System operates almost independently of the rest of the TMI site, being connected only by a non-1E electrical supply and a drain line to the IWTS plant. It can not affect any system or component impacting a margin of safety defined in the FSAR. Approximately 30,550 gallons of distillate and 44,800 to 56,000 gallons of treated rinse water were released as a result of the activity. All water released was in compliance with release standards imposed by the NRC and NPDES permits. The releases were monitored. The OTSG Radwaste System was exempted from Pennsylvania Bureau of Air Quality controls because of the low expected chemical releases to the air.

Safety Evaluation Summary: An evaluation of the process procedure found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the process procedure since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the process.

Document: Feedwater Venturi Fouling Correction Program

Description of Change: Plant data indicated that the plant was experiencing feedwater venturi fouling. This caused indicated feedwater flow to the steam generators to be greater than actual flow. Since reactor thermal power level is a function of indicated feedwater flow, the actual reactor power level

would be less than that indicated. A method to quantify the amount of fouling was developed and the indicated feedwater flow was corrected using the fouling factor.

Safety Evaluation Summary: The procedure change was evaluated and found not to adversely affect nuclear safety or safe plant operation since the corrected heat balance uncertainty will remain no greater than 2% full power as required by REG GUIDE 1.49 and the FSAR Accident Analysis. The Fouling Coefficient Monitoring Program and the demonstrated stability of the primary and secondary parameters used in the feedwater flow correction factor methodology provides a consistent indication of feedwater flow and reactor power throughout the operating cycle.

There was neither an increase in the probability of occurrence or consequences of an accident or malfunction nor a different type of accident or malfunction created due to the implementation of this procedure change. No margin of safety was reduced since instrumentation uncertainty does not exceed 2% and associated core thermal power determinations do not exceed 102% of the indicated (calculated) value.

Therefore, the change was determined to involve no Unreviewed Safety Question and have no environmental impact.

Procedure: AP 1009 TMI-1 Organization (PCR 1-MD-93-0002)

Description of Change: The procedure change was made to reflect the elimination of the Manager Radiological Health and Rad Training Coordinator positions and the realignment of responsibilities within the Radiological Controls Department.

Safety Evaluation Summary: Elimination of the specified positions had no affect on nuclear safety or safe plant operation, or increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the SAR. The probability of a new or different type of accident or malfunction was not created and no margin of safety as defined in the Technical Specifications was reduced. The positions are not assumed in any analysis and the responsibilities have been appropriately apportioned to the TMI Training and Radiological Controls Departments. The change was evaluated and no Unreviewed Safety Question or environmental impact was found to exist.

Procedure: AP 1009 TMI-1 Organization (PCR 1-MD-93-0006)

Description of Change: The procedure revision was made to change the name of the Plant Materiel Department to the Plant Maintenance Department.

Safety Evaluation Summary: The existing Plant Material Department was renamed as the Plant Maintenance Department. The department's management titles were similarly renamed. All departmental functions and individual responsibilities remain the same under the new department name. The administrative change has no adverse affect on nuclear safety or safe plant operation. There is also no increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated or the possibility of an

accident or malfunction of a different type that previously evaluated created as a result of this change. No margin of safety is reduced. Therefore, the procedure change involved no Unreviewed Safety Question or environmental impact.

Procedure: AP 1038 Administrative Controls Fire Protection Program
(PCR-EG-92-0002)

Description of Procedure: The procedure revision incorporated several administrative items initially identified as making changes in procedures described in the SAR or Technical Specifications. The most important items include:

- non-safety deluge test associated with the main and auxiliary transformers were changed from an 18 month frequency to refueling to match the "refueling" interval and
- the frequency of the operability check on the non-regulatory Fire Protection Program required emergency lighting was extended from quarterly to every six months.

Safety Evaluation Summary: The changes resulting from the PCR have no affect on TMI-1's ability to achieve maintain and monitor safe shutdown in the event of fire at the plant. The changes described above were determined to have no adverse affect on nuclear safety or safe plant operation. There is also no increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated or the possibility of an accident or malfunction of a different type that previously evaluated created as a result of this change. No margin of safety is reduced. Therefore, the procedure change involved no Unreviewed Safety Question or environmental impact.

Procedure: AP 1038 Administrative Controls Fire Protection Program
(PCR-EG-92-0012)

Description of Procedure: The procedure revision incorporated several administrative items initially identified as making changes in procedures described in the SAR or Technical Specifications. The most important items include:

- the fire pump capacity testing interval was shortened from 18 months to 12 months to meet NFPA Codes and insurance recommendations,
- the CO₂ system functional test for the Relay Room was revised from 18 to 24 months to minimize the effect of any test error causing a plant trip or transient and
- revise the asbestos survey frequency to annually to be consistent with the administrative procedure controlling the effort.

Safety Evaluation Summary: The changes resulting from the PCR have no affect on TMI-1's ability to achieve maintain and monitor safe shutdown in the event of fire at the plant. The changes described above were determined to have no adverse affect on nuclear safety or safe plant operation. There is also no increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated or the possibility of an accident or malfunction of a different type that previously evaluated created

as a result of this change. No margin of safety is reduced. Therefore, the procedure change involved no Unreviewed Safety Question or environmental impact.

Procedure: AP 1038 Administrative Controls Fire Protection Program
(PCR-EG-93-0024)

Description of Procedure: The procedure revision incorporated the following items:

- deletion of the AO advisor position for fire brigade responses to TMI-2 after TMI-2 enters PDMS,
- reflected completion of modifications BA 412616 and 412636 removal of the ModComp Halon and associated components,
- placing 2/FS-P-1 in wet layup,
- revision of the fire barrier inspection program to a sampling inspection program per STS,
- update recent changes to the Ops Surveillance program and procedure references and
- addition of an NFPA Code usage note.

Safety Evaluation Summary: The changes resulting from the PCR have no affect on TMI-1's ability to achieve maintain and monitor safe shutdown in the event of fire at the plant. The changes described above were determined to have no adverse affect on nuclear safety or safe plant operation. There is also no increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated or the possibility of an accident or malfunction of a different type that previously evaluated created as a result of this change. No margin of safety is reduced. Therefore, the procedure change involved no Unreviewed Safety Question or environmental impact.

Procedure: AP 1038 Administrative Controls Fire Protection Program
(PCR-EG-93-0043)

Description of Procedure: The procedure revision implements TMI-1 control over the Fire Service program requirements for TMI-2 in PDMS. Specific requirements of the TMI-2 procedures were factored into sections of AP 1038. TMI-1 specific changes include reference to the GPUN Medical Plan which addresses the fire brigade physical examinations, the ability to take credit in the annual surveillance for cycling particular Fire Service valves and the requirement to change Fire Service pump batteries as needed.

Safety Evaluation Summary: The changes resulting from the PCR have no affect on TMI-1's ability to achieve maintain and monitor safe shutdown in the event of fire at the plant. The changes described above were determined to have no adverse affect on nuclear safety or safe plant operation. There is also no increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated or the possibility of an accident or malfunction of a different type that previously evaluated created as a result of this change. No margin of safety is reduced. Therefore, the procedure change involved no Unreviewed Safety Question or environmental impact.

Procedure: AP 1038 Administrative Controls Fire Protection Program
(PCR-EG-93-0045)

Description of Procedure: The procedure change modifies the status of 2/FS-P1 from "in wet layup" to "abandoned." The remaining three pumps provide the capacity required to meet system and license design base flow rates. References to procedures which control the testing of non-supervised fire detection circuits in TMI-2, the location of self contained breathing apparatus and an outline of PDMS controls were included in the revision.

Safety Evaluation Summary: The changes resulting from the PCR have no affect on TMI-1's ability to achieve maintain and monitor safe shutdown in the event of fire at the plant. The changes described above were determined to have no adverse affect on nuclear safety or safe plant operation. There is also no increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated or the possibility of an accident or malfunction of a different type that previously evaluated created as a result of this change. No margin of safety is reduced. Therefore, the procedure change involved no Unreviewed Safety Question or environmental impact.

Procedure: N 1957.2 Henry's Law RCS Total Gas (PCR 1-CH-92-9002)

Description of Change: The procedure provides the process by which the total gas concentration of the Reactor Coolant System (RCS) can be calculated from the makeup tank gas concentrations provided the plant is at steady state power by using Henry's Law. The procedure implements a process used for several years to evaluate the effectiveness of the gas stripping technique previously employed.

Safety Evaluation Summary: The Henry's Law total gas calculation generally produces total gas results higher, more conservative, than those obtained from the gas stripping technique. The process uses existing plant sampling systems and has been effective at determining total gas concentrations. Valid results below 100 cc/kg assure that the control rod drive mechanisms will be protected against gas buildup affecting cooling water flow. The probability of occurrence or consequences of an accident or malfunction of equipment previously evaluated in the SAR will not be increased by the implementation of the new process as controlled by the procedure. The Technical Specification margin of safety in section 3.1.10 was not reduced. Therefore, no Unreviewed Safety Question exists and no environmental impact will result from implementing the procedure.

Procedure: OP 1101-2.1 Radiation Monitoring System Setpoints
(PCR 1-RC-90-0028)

Description of Change: The change to the procedure was initiated because the methodology for calculating the setpoints for RM-L12 was not in accordance with that advocated by the NRC. The change in methodology has the monitor window in the open position and requires a revision to the set points because of a variation in I-131 sensitivity.

Safety Evaluation Summary: Recalculating the RM-L12 set point based on a 100 KeV to ∞ had no an adverse affect on nuclear safety and safe plant operation. The Technical Specification sensitivity requirements have been maintained with the new energy settings applied. No Unreviewed Safety Question or environmental impact was found to be associated with the revision to the procedure.

Procedure: OP 1101-4 Balance of Plant Setpoints

Description of Change: The procedure change revised turbine plant condensate and feedwater sampling alarm pH upper limit setpoints from 9.6 to 9.75. The revision was necessary because higher system pH resulting from the use of morpholine for pH control yielded nuisance alarms at the old upper limit setpoint.

Safety Evaluation Summary: The change was consistent with EPRI PWR Secondary Water Chemistry Guidelines, the B&W Water Chemistry Manual and the GPUN Specification SP 1101-28-002 for TMI-1 Secondary Water Chemistry which establish no upper limit for feedwater pH. High pH will not cause a corrosive environment that will cause damage resulting in a reduction of nuclear safety. Since corrosion or an associated failure was not increased, the probability of an accident or a malfunction will not be increased. Feedwater quality is not specifically addressed by Technical Specifications and as a result no margin of safety is decreased. No Unreviewed Safety Question or environmental impact was determined to result from the procedure revision.

Procedure: OP 1104-29E Bleed and Feed Processes (TCN 1-93-0016 and PCR 1-OS-93-0183)

Description of Change: The procedure was revised to prevent the inadvertent draining of the Boric Acid Mix Tank (BAMT) while pumping a Reclaimed Boric Acid Tank to the Reactor Coolant Bleed Tanks. It also prevents taking a suction from a Concentrated Waste Storage Tank. Procedural guidance was added to monitor the BAMT level and describes the action to be taken should a decrease in level be observed.

Safety Evaluation Summary: The change was determined to have no adverse affect on nuclear safety or safe plant operation since Technical Specification compliance is assured by establishment of a time clock and the verification of a flow path for the BAMT. The procedure change involved no Unreviewed Safety Question or environmental impact.

Procedure: OP 1106-1 Turbine Generator (PCR 1-OS-93-0054)

Description of Change: The procedure change revises the requirements for operation of Moisture Separator drain pumps during the performance of Combined Intermediate Valve (CIV) testing.

Safety Evaluation Summary: The procedure change was determined to have no affect on nuclear safety or safe plant operation since the main turbine is not nuclear safety related and not required for safe plant shutdown. The main condenser pressure boundary and heat sink capacity were unchanged.

The original basis for the required operation of the Moisture Separator drain pumps is believed to be the ability to provide maximum water removal capability during CIV testing thereby minimizing the risk of a trip from drain tank high level. A similar margin is maintained by close observation of drain tank levels during the test. An unanticipated turbine trip is the only malfunction that might result from the activity and it was previously evaluated. No Unreviewed Safety Question or environmental impact were determined to exist as a result of this procedure change.

Procedure: OP 1107-8 Substation Emergency Power (PCR 1-OS-93-0059)

Description of Change: The procedure change allowed powering the 230Kv substation from the Engineered Safeguards Motor Control Center (ESMCC). Limiting the addition of other temporary loads on the 480v ES buses and the duration of the line-up to the ESMCC makes the revised procedure consistent with the assumptions and controls of the applicable load study.

Safety Evaluation Summary: Temporarily powering the 230Kv substation from the ESMCC was reviewed and determined to have no adverse affect on nuclear safety or safe plant operations. No increased possibility or consequence of a previously evaluated accident or malfunction was identified. No new accident or malfunction was found to be created as a result of the change. No Unreviewed Safety Question or environmental impact was found to be associated with the revision to the procedure.

Procedure: RP 1507-2 Fuel Handling Building Crane Operation (TCN 1-93-0017)

Description of Change: The revision to the procedure was made to provide instruction for the safe lifting and handling of Spent Fuel Pool (SFP) 'A' storage racks in support of the re-rack project. The procedure change meets the requirements of NUREG-0612. The load path for movement of racks is prohibited over any irradiated fuel stored in the fuel pools. Minimum lateral clearances and maximum vertical lift height were designated to preclude close approach to racks containing fuel and ensuring that the maximum drop is bounded by previously analyzed accidents.

Safety Evaluation Summary: The change was determined not to adversely affect nuclear safety since compliance with the designated fuel clearance and lift height is required. The designated load path does not impact existing restrictions on safety-related equipment areas. Neither the probability and consequences of an accident or malfunction previously evaluated nor the probability or consequence of an accident or malfunction of a different type is increased since the heavy load lifting is consistent with current practices and NUREG-0612. The procedure change was determined not to involve an Unreviewed Safety Question or an environmental impact.

Procedure: SP 1302-17.4 RM-L-12 Calibration (PCR 1-MT-92-8594)

Description of Change: The procedure change augmented the existing RM-L-12 calibration details with an electronic alignment and detector linearity check

to satisfy actions specified in Licensing Action Item 92-9010 resulting from NRC Inspection Report 91-15. The half-life of Ba-133 was changed to reflect the change from 10.7 to 10.5 years due to revision of the value in the Rad Health Handbook. The ratemeter was reset to operate with an "open" (integral) detection window rather than in the I-131 single channel analyzer mode. Finally the change incorporated use of the radioactive decay formula in lieu of the Universal Decay Tables to simplify the expected source reading calculations.

Safety Evaluation Summary: The procedure change results in increased monitor sensitivity. The requirements of Tech Spec sections 3.2.1.1 and 3.2.2.1 are still met. No increased possibility or consequence of a previously evaluated accident or malfunction was identified. No new accident or malfunction was found to be created as a result of the change. No Unreviewed Safety Question or environmental impact was found to be associated with the revision to the procedure.

Procedure: 1000-ADM-7330.01 Management of Potential Safety Concerns
(BA 361700)

Description of Change: The procedure change clarifies existing portions of the Potential Safety Concern (PSC) process, adds a screening stage to the PSC initiation form, incorporates the application of recognized corrective action programs and processes to identified safety concerns, adds flexibility to procedural time constraints, and creates a Licensing rejection option for PSCs.

Safety Evaluation Summary: Addition of the Licensing rejection option could have an adverse impact on nuclear safety by suppressing the identification of a safety concern. Other avenues and reviews exist by which the rejected PSC would be evaluated outside the PSC process and be resubmitted to the PSC process upon correction of identified PSC submittal deficiencies. Five checks prevent the rejection and subsequent non-evaluation of a rejected PSC and the NRC can be contacted directly to identify perceived safety concerns.

The procedure change was evaluated and based on this argument, the Licensing rejection option does not suppress the identification of a safety concern and therefore does not adversely affect nuclear safety or safe plant operations. Similarly, no increased possibility or consequence of a previously evaluated accident or malfunction was identified. No new accident or malfunction was found to be created as a result of the change. No Unreviewed Safety Question or environmental impact was found to be associated with the revision to the procedure.

Procedure: 6610-ADM-4100.01 TMI Radiological Controls Safety Review and Approval of Procedures and Other Documents
(PCR 1-92-0002)

Description of Change: The revision to the procedure was made to reconcile it with the revised GPUN Radiation Protection Plan. The Radiation Protection Plan was revised to require strict compliance with radiological control procedures which reduces the verbatim compliance delineated in FSAR Section

11.5.8.1. The action was taken in recognition of the maturation of personnel as responsible radiation workers.

Safety Evaluation Summary: The change was determined not to adversely affect nuclear safety since strict compliance still requires that all steps of the procedure be completed and the intent of the procedure be followed.

Procedure: 6610-ADM-4250.10 Radiological Controls/Chemistry Actions
When RMS Malfunctions (PCR 1-RC-93-0008)

Description of Change: The procedure revision was required because of a modification to the TMI-2 radiation monitors. The existing HP-R-219, an Eberline unit with associated grab sample equipment was replaced with a Victoreen unit to enhance performance, reliability and maintainability during the Post Defueling Monitored Storage phase at TMI-2. The Victoreen unit has no associated grab sample equipment and as a result station vent grab sampling must be accomplished at the HP-R-219 grab sample rack.

The procedure as revised provides directions for taking grab samples from the HP-R-219 grab sample rack.

Safety Evaluation Summary: As revised the procedure identifies the location for taking grab samples which is different than that originally specified. Nuclear safety or safe plant operation was not affected by this change to the procedure. The change was evaluated and it was determined that no Unreviewed Safety Question or environmental impact resulted from the implementation of the procedure change.

III. Modifications

Modification: Removal of Inverter 3KVA CVT (BA 123317 / JO 09450)

Description of Modification: The modification removed the 3KVA Constant Voltage Transformer (CVT) and associated wiring from each of the five inverters. The CVT converted the square wave signal, generated by the silicon controlled rectifier switching circuit, to a smooth sine wave output signal. They also provided a regulated output voltage from input voltage fluctuations being transmitted to the output signal. Removing the 3KVA CVT reduced the inverter output from 15 to 13 KVA.

Removal of the CVT and subsequent reduction in inverter output did not impact the operational characteristics of the inverter. The inverters continue to provide vital AC power in accordance with the plant FSAR and Technical Specifications. Heat load within the inverter cabinet was reduced. Circulating currents between the two CVTs are prevented and the chance of a transformer fire caused by a failure of the 3KVA CVT was eliminated.

Reducing the maximum output power rating of the inverters did not affect their ability to supply reliable voltage to their respective vital buses during normal and emergency plant conditions. The auto transfer scheme of the 1A and 1E inverters was not affected. The margin of safety is not reduced since the

120VAC Vital Power System is not specifically mentioned in the Technical Specifications.

Safety Evaluation Summary: The modification was evaluated and it was found for the reasons above, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Primary Sample System Upgrade (BA 123320 / JO 61519)

Description of Modification: The modification upgraded the primary sample system by: 1) upgrading the sampling valves and re-configuring sample line tubing and lead shielding to make sampling and system maintenance more convenient, 2) permanent installation of the Hydrogen Analyzer used to trend Reactor Coolant System H₂ concentrations during plant start-up and shutdown, and 3) permanent installation of the on-line gas stripping unit to eliminate the need to remove the sample bomb for sample analysis.

Upgrading the sample valves and eliminating the need to remove the sample bomb reduced the probability of leakage past valve stem packing and past the fittings associated with the sample bomb. The need for maintenance and the radiological exposure to personnel attributed to maintenance activities on the system were reduced as a result of the modification.

Permanent installation of the on-line gas stripping unit and the H₂ Analyzer reduces radiation exposure to personnel performing sampling activities.

Safety Evaluation Summary: Nuclear safety and safe plant operation were not affected by the modification since the replacement valves and tubing and permanent installation of the previously temporary hardware meet the pressure and temperature requirements of the Primary System. A malfunction or accident of a different type than previously evaluated in the SAR was not created. No margin of safety is reduced by completion of the modification since the hardware is not specifically identified in the basis of any Technical Specifications. No Unreviewed Safety Question or environmental impact was found to exist as a result of making the modification.

Modification: Spent Fuel Pool Partial Re-racking (BA 412076 / JO 53691)

Description of Modification: The modification encompasses the work activities necessary to increase the storage capacity of the A Spent Fuel Pool (SFP) with new high density racks. Included in the work scope was the removal of the existing racks, removal of wall and floor obstructions, design, fabrication and installation of the new racks.

The new free-standing high density spent fuel storage racks installed will store fuel in two discrete regions of the SFP. Region I includes two modules containing a total of 195 storage cells. Each cell in Region I is designed

for storage of fresh or irradiated fuel assemblies with U^{235} initial enrichments up to 5.0 weight% while maintaining the required subcriticality. Region II includes ten modules having a total storage capacity of 1296 cells. These cells are available for storage of spent fuel assemblies with sufficient burnup such that storage in Region I is not required. Of the 1296 storage cells planned for Region II, only 648 were installed during the first phase of the project.

Safety Evaluation Summary: The evaluation of the possible fuel assembly misplacement, by placing it in an inadmissible location, found the NRC mandated subcriticality limit of stored fuel assemblies was met. As a result, nuclear safety and safe plant operations were not adversely affected by the modification. Review of the potential accident and malfunction scenarios determined that design, existing fuel cask movement prohibitions, equipment failures resulting in fuel assembly drop and seismic events did not involve an increase in the probability or consequences of an accident or malfunction previously evaluated. Since appropriate precautionary measures were exercised during the installation effort and no unproven technology was utilized, no accident or malfunction of a different type than previously identified was created. Margins of safety related to nuclear criticality, structural integrity and material compatibility were consistent with Technical Specification requirements. The increase in the pool bulk temperature limit and reduction in the time-to-boil resulting from the re-racking modification were well within the SAR specifications. No Unreviewed Safety Question or environmental impact was found to exist as a result of the modification.

Modification: Removal of the Chlorine Detection System (BA 412570 / JO 53727)

Description of Modification: The Chlorine Detection System (CDS) was originally installed to interface with Control Building Ventilation System to isolate the Control Room in the event of a postulated on-site chlorine gas release. Since the Circulating Water and River Water Gaseous Chlorination Systems were replaced with non-chlorine gas based systems, chlorine cylinders >150 lb are administratively prohibited from the site and the only remaining application for chlorine is at the sewage treatment facility (which uses 150 lb cylinders and is greater than 100 meters from the air intake structure), the CDS was dismantled. The Control Building Ventilation System was restored to the configuration that existed prior the installation of the CDS.

Safety Evaluation Summary: An evaluation of the modification found that, based on the action taken to remove the CDS, there was no adverse impact on nuclear safety or safe plant operation. The safety function of the associated systems was not affected. The implementation of the administrative controls and the physical location of the low volume chlorine containers remaining in use at the site reduces the impact of a leak. Therefore, there was no impact on the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none exists which was affected by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Removal of RM-L10 and the RM-L11 High Radiation Trip Interlock (BA 412594 / JO 36620)

Description of Modification: RM-L10 and its high radiation trip interlock were removed from the Turbine Building sump pump control circuits. The RM-L11 high radiation trip interlock was removed from the Powdex sump pump circuit. Radiation monitor RM-L10 had become prone to repeated failure and was difficult to maintain because of varying Turbine Building water levels. RM-L12, installed via a previous modification in the Industrial Waste Treatment System (IWTS) discharge line, prevents an inadvertent discharge of contaminated liquid to the environment.

Safety Evaluation Summary: RM-L10 was installed to monitor Turbine Building Sump (TBS) discharge to ensure that TBS contribution to IWTS would not result in IWTS effluent that exceeded 10CFR20 MPC limits. Subsequently, a separate Technical Specification effluent monitor (RM-L12) was installed on the IWTS discharge line. RM-L12 provides a high radiation trip signal to the IWTS pumps to prevent contaminated liquid discharge to the river which exceeds 10CFR20 limits.

The implementation of the modification did not adversely affect nuclear safety or safe plant operation in that the original RM-L10 and 11 design bases are satisfied by administrative controls on the TBS/Powdex sump discharges and the Technical Specification IWTS effluent monitor RM-L12.

There was no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the TMI-1 FSAR. Accidents described in the FSAR do not rely upon RM-L10 or RM-L11 to prevent the occurrence or reduce the consequences. The monitors did not perform a post-accident functions. Accidents or failures of a different type are not possible since operation of the monitors was not relied upon for accident prevention or malfunction prevention. The modification did not decrease a margin of safety as defined in the basis for any Technical Specification. As a result, the modification did not involve an unreviewed safety question or an adverse affect on the environment.

Modification: Circulating Water Chlorinator Demolition and Biocide System Installation (BA 412594 / JO 55284)

Description of Modification: The modification removed components, controls and piping associated with both the existing, out-of-service, Circulating Water (CW) Chlorine Injection system and the temporary CW Biocide system from the plant. A permanent biocide injection system, installed at the location of the original equipment, will be used to treat CW system water to inhibit biological growth.

Safety Evaluation Summary: The possibility of toxic gas release resulting from the rupture of one or more of the one-ton liquid chlorine cylinders associated with Chlorine Injection system operation was eliminated when the system was taken out of service and the liquid chlorine cylinders were removed.

The systems being demolished and installed have no safety related functions. For this reason, completion of this modification had no adverse affect on nuclear safety or safe plant operation. There was no increase in the proba-

bility of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the TMI-1 FSAR. The modification did not decrease a margin of safety as defined in the basis for any Technical Specification. As a result, the modification did not involve an unreviewed safety question or environmental impact.

Modification: Replacement of EIM Motor Actuators (BA 412611 / JO 55281)

Description of Modification: The EIM motor actuators installed on valves DR-V1A/B and NR-V4A/B were replaced with comparable Limitorque brand actuators because the EIM actuators could not be diagnostically tested as required by GL 89-10 and safety grade replacement parts for the EIM actuators were not readily available. Switch covers were also placed over the open and close switches for NR-V18 and 19 to prevent inadvertent mispositioning as defined in GL 89-10.

System performance for both the DR and NR valves was not affected by the replacement of the actuators. The replacement actuators provide the same torque as the originals and the opening and closing times for the modified valves remained the same. Replacing the actuators did not involve any modification to the fluid system or pressure boundary. The replacement actuator motors load on the 480V AC electrical system is slightly lower than that required for the original actuator motors. No margins of safety were identified that would be affected by the conversion to the replacement actuators.

Installation of the switch guards did not modify the function of the switch. The guards prevent inadvertent actuation of the switches involved and requires that a deliberate operator action be taken before switch actuation can occur.

Safety Evaluation Summary: Evaluation of the modification found that for the reasons above, there was no adverse affect on nuclear safety or safe plant operations. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Installation of a New Permanent Demineralizer System (BA 412612 / JO 70282)

Description of Modification: The modification proposed the replacement of the existing Epicore-II demineralizer system, located in the Chemical Cleaning Building, with a new permanent demineralizer system. The new system will be capable of processing radwaste from the following: TMI-1 Miscellaneous Radwaste System, TMI-2 miscellaneous water, and in the event of a TMI-1 primary to secondary leak, secondary water from the condensate system and the turbine building sump. Work completed was limited to completing five piping tie-ins for the new system.

The existing demineralizer system processes water to limits within the existing discharge limitations of the plant Technical Specifications. The

Limitations of the modification work have not affected the existing system. There are no credible accident or malfunctions which would result from system operation other than system leakage and burial liner/HIC processing upsets. System leakage is an operating basis for the floor drains where they exist and where they do not exist, conservative calculations have found that the whole body dose to the public would be many orders of magnitude less than allowable limits. Since the system is neither directly nor indirectly involved in any safety function any concern with plant margins of safety is eliminated.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons above, there was no adverse affect on nuclear safety or safe plant operation to result from the modification. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: ModComp Halon System Demolition (BA 412616 / JO 63790)

Description of Modification: The modification included hardware replacement to allow removal of the Halon fire suppression system. The system protected the ModComp computer and its associated wiring beneath the solid raised floor. The Halon fire suppression system is no longer required because the computer and wiring have been removed. The modification also removed the cable trench in the Control Room and the miscellaneous wiring remaining, after removal of the computer related wiring, was run through conduit.

Safety Evaluation Summary: Nuclear safety and safe plant operations were unaffected by performance of the modification. Interfaces with nuclear safety related systems were reviewed and appropriate actions, such as resealing fire barriers penetrated to maintain fire zone isolation, were taken to assure that safety was not adversely affected. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. For the reasons above, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. Similarly, no Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Pressurizer/Letdown Sample Line Modification (BA 412616 / JO 72966, JO 77200)

Description of Modification: The modification rerouted the primary sample line tubing for pressurizer sample points from CE 105 and CE 106 and the RCS letdown sample point CE 104. Previously, CA-V-1, 3 and 13 were the containment isolation valves inside the reactor building for these primary system sampling lines. The tubing modification left CA-V-13 as the sole containment isolation valve inside the reactor building for these primary system sampling lines. CA-V-2 is the primary system sampling containment isolation valve outside containment. Six manual valves, two on each of the sample lines mentioned above, were added outside the 'D' rings. The existing valves at

CA-V-2 and 13 were replaced with new globe valves. A new air operator was installed on CA-V-2 and the existing motor operator was reinstalled on the new CA-V-13.

The piping involved is classified as N-2/S-I and all work and new components complied with the requirements of the classifications. The addition of several valves improved the capability to isolate the RCS. A configuration with a single isolation valve inside containment is consistent with that for other systems that penetrate the containment. The new valve operator installed is of the type currently used to operate containment isolation valves. No system functions were changed as a result of the modification only the valve manipulations necessary to take a sample were revised.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons presented above, there is no adverse affect on nuclear safety or safe plant operation. Similarly, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: NI Source Range Upgrade Phase II (BA 412626 / JO 67992)

Description of Modification: The 10 R outage portion of Phase II of the modification involved replacing the existing bistables in the NI-11 and NI-12 signal processors with adjustable deadband type bistables, installation of NI-11a and NI-12a signal amplifiers, signal processors, required conduit and electrical cable from the signal processors to the NI/RPS cabinets A and B, and the sub panel installation in the NI/RPS cabinets A and B. Fused terminal boxes fed from distribution panels VBA and VBB were installed in the NI-11a and NI-12a electronics respectively. The existing control power circuits to the Post Accident Hydrogen Monitors were rerouted and connected via fuse distribution panels VBA-1 and VBB-1.

The remaining portions of the Phase II upgrade to make the two men channels of instrumentation functional will not be completed until the 12R outage. The existing NI-1 and NI-12 will remain functional during Cycle 10 until they are replaced by NI-11a and NI-12a during 11R.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons above, there was no adverse impact on nuclear safety or safe plant operations. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety is reduced by the modification since the required number of operable monitors is maintained and enhanced by the capability to use backup instrumentation. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: HPI Piping Support Upgrade (BA 412633 / JO 69769)

Description of Modification: The modification to upgrade supports in the High Pressure Injection (HPI) piping system for the high temperatures experienced during operation was initiated as an action resulting from review and evaluation of the content of NRC Information Notice 89-36. The increased temperatures were found to exceed the previously designated design temperature of 300°F. The increased temperature was caused by RCS cold leg backflow to the HPI system via leaking RCS check valve(s). The supports as modified meet the new design temperature of 554°F which corresponds to the maximum cold leg operating temperature.

The modification was limited to HPI piping supports and restraints. The components are passive and there was no affect on the HPI piping therefore, the integrity of the Makeup and Purification system was not degraded. The safety function of the hangers in scope of the modification, to mitigate the effects of a seismic event and/or provide structural support to the piping, was not changed. As a result, the safety function of the Makeup system was not affected. Normal plant operation is enhanced by removal of some support restraint directions to allow the thermal piping stresses to satisfy B31.1 requirements.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons above, there was no adverse impact on nuclear safety or safe plant operation. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased by the completion of the modification. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: RCP Seal Injection Leak-off Provision (BA 412635 / WO 67433)

Description of Modification: Leak-off connections were installed on each of the seal injection lines to the four Reactor Coolant Pumps (RCP). The new leak-off lines are to be used only while the plant is in a shutdown or refueling condition. There is no affect on normal operation of the Make-up and Purification System or on safe shutdown of the reactor. The modification allows maintenance of the RCP seals while the pumps are backseated. Any leakage past the pump seating surface is drained via hoses attached to the leak-off connections. The new permanent connection to the seal injection lines eliminated the need to remove flanged sections of seal injection piping whenever maintenance was performed.

Safety Evaluation Summary: An evaluation of the modification found that the modification as completed had no adverse affect on nuclear safety or safe plant operations. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Removal of the Mod Comp Room Air Conditioner (BA 412636 / JO 69065)

Description of Modification: The modification removed the air conditioning unit, AH-E108, which provided temperature and humidity control for the computer room. The computer was previously removed from the room and the air conditioner was no longer required.

To ensure that the modification would not have an adverse affect on nuclear safety or safe plant operations, the structures and systems remaining were restored in accordance with seismic support and fire protection criteria. As a result the work scope included supporting a relocated domestic water line in accordance with seismic anti-falldown requirements, resealing existing fire barriers and sealing in-wall duct work with 3 hour rated fire seals.

Safety Evaluation Summary: An evaluation of the modification found that because of the efforts described above, there was no adverse affect on nuclear safety or safe plant operation. No situations were identified that would directly or indirectly affect the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

Modification: Reactor Building Emergency Cooler Leak Detection Instrumentation Removal (BA 412636 / JO 72114)

Description of Modification: The modification removed from service the Reactor Building (RB) Emergency Cooler inlet flow transmitters, the cooler outlet temperature RTD's and associated electronic hardware. The leak detection instrumentation was originally installed to detect leaks which could dilute the RB sump boron concentration. Analysis determined that the RB Emergency Coolers are not at risk of pipe whip or jet impingement from a LOCA and that secondary passive failure to the coolers beyond a LOCA need not be assumed. For this reason a leak detection system is not required during an emergency mode.

Safety Evaluation Summary: The operability of the RB Emergency Cooler leakage is determined through use of the Reg Guide 1.97 instrumentation. Therefore, there is no adverse affect on nuclear safety or safe plant operation. Leak detection capability is maintained by regular, periodic observation of FI-76 rotometer readings and/or abnormal increases in RB sump level. Elimination of the need for the leak detection system after evaluation found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Replacement of ICCW Pump Discharge Check Valves
(BA 412642 / JO 65228)

Description of Modification: The modification replaced the existing ICCW check valves at the discharge of the ICCW pumps to eliminate the chatter that occurred due to the valve internals instability during operation with the old oversized valves.

Operation of the system was not changed by the replacement of the discharge valves: the available flowrate in the system and the cooling capacity of the system remained the same. No margin of safety is identified for the system other than redundancy which was unchanged by the modification.

Safety Evaluation Summary: An evaluation of the modification found that nuclear safety or safe plant operations were not adversely affected since the ICCW system operation was not degraded. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Loose Parts/ Neutron Monitoring System Upgrade (BA 418771 / JO 53724)

Description of Modification: The modification replaced the B&W Loose Parts/ Neutron Noise Monitoring System with a digital system fabricated by Siemens Nuclear Power Services. The digital monitoring system provides the capability to store alarm event data and the associated software package permits performance of diagnostic routines. Neutron Noise data can be acquired without the on-site support of a vendor representative.

Safety Evaluation Summary: Replacement of the B&W Loose Parts/ Neutron Noise Monitoring System with the Siemens digital system was evaluated and determined to have no adverse impact on nuclear safety or safe plant operations. Since no Technical Specification is associated with the equipment involved in the modification, no margin of safety as defined in the basis of any Technical Specification has been reduced. No Unreviewed Safety Question or environmental impact were found to exist as a result of the modification.

mods above

change mods below

Modification: Relocate FS-PS-220 and Install Isolation Valve (CMR 89-099)

Description of Modification: The modification relocated FS-PS-220 outside the 480V FS-P-2 control center cabinet along with its associated tubing. The original location inside the cabinet made calibration of the pressure switch difficult. A pressure switch, of the same make and model, but with a weather-resistant housing replaced the original pressure switch. The function of the switch remains the same. A valve was installed in the sensing line to permit isolation of the pressure switch as necessary during calibration activities.

Safety Evaluation Summary: An evaluation of the modification found that there was no adverse affect on nuclear safety or safe plant operation. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. A revision to FSAR section 9.9.5.2 was necessary to delete the text specifying the location of FS-PS-220. No Unreviewed Safety Question or environmental impact resulted from the change.

Modification: Containment Isolation Test Connection Upgrade (CMR 90-154)

Description of Modification: The change added Local Leak Rate Testing (LLRT) connections to maximize efforts of personnel necessary to drain, vent and test the respective system penetrations and minimize personnel exposure and the time required to perform the testing. The additional test connections were added outside the Reactor Building. Small bore piping, valves and compression type end caps associated with the additional connections maintain a passive pressure boundary during power operations. The connections comprising the change are highly reliable.

Safety Evaluation Summary: An evaluation of the change found that there was no adverse affect on nuclear safety or safe plant operations. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the change.

Modification: Replacement of the EG-Y-1A/B Gear Box Lubricant Heaters (CMR 90-175)

Description of Modification: To eliminate breakdown of the oil from localized overheating and prevent sludge buildup in the gear box, the existing 300 watt emersion heater was replaced with a reduced wattage heater. The gear box heater thermostat was reduced to 45°F but still maintain the oil temperature above 30°F. LER 89-002 root cause investigation identified the failure of right angle gear drive bearing to sludge plugging the oil line. The sludge resulted from the localized overheating of the oil. The replacement heater is within the original design envelope for operation of the fan gear drive box.

Safety Evaluation Summary: An evaluation of the modification found no adverse affect on nuclear safety or safe plant operation. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the change because of the additional assurance of an adequate supply of oil to the gear box and fan drive bearings. No Unreviewed Safety Question or environmental impact resulted from the change.

Modification: Heat Trace Installation on CA13-LT (CMR 91-18)

Description of Modification: Field readings found that the temperature of the sensing line for CA13-LT on the Boric Acid Mix Tank was insufficient to prevent boron crystallization in the line. Chemelex heat trace was installed on the line to maintain the temperature at or above 120°F and eliminate line plugging by the crystallized boron and allow the level transmitter to perform its design function.

Safety Evaluation Summary: Installation of heat trace on the CA13-LT level transmitter increases the reliability and operability of the transmitter by eliminating the crystallization of boric acid in the sensing line. The heat trace increased the total steady state loading of the electric power supply by approximately 0.5 amps. The new loading did not result in exceeding either the 2000 hour rating of the Diesel Generator or the 300KW load limit. An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Reactor Building Penetration Test Connections (CMR 91-126)

Description of Modification: Valved and capped LLRT test connections were installed on air and gas system RB penetrations at seven locations outside the Reactor Building (RB), between the inner and outer containment isolation valves, to facilitate concurrent ILRT/LLRT testing. Performing the tests concurrently, with the entire Reactor Building pressurized for the ILRT, is ideal for application of LLRT test pressure to individual containment isolation valves in the accident test direction.

Safety Evaluation Summary: The additional test connections do not fall outside the established system design envelope and do not affect the overall function or performance of the respective systems. The test connections' safety function during emergency conditions and normal plant operation is to maintain a passive system pressure boundary. Failure of the new connections to satisfy their pressure boundary function is considered extremely unlikely due to the design, construction and lack of significant hazard to their integrity. Leakage testing will be performed periodically to verify containment isolation boundary leakage is <0.6 La as required by the Technical Specifications. An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Removal of PCL Panel Recorders (CMR 92-041)

Description of Modification: The main generator MW and MVAR recorders and the 230KV Bus voltage recorders on PCL Control Room Panel were disconnected and removed. The reasons for the action include the difficulty experienced

maintaining the recorders and the fact that the same points are monitored by either the plant computer or the 230KV Substation Digital Fault Recorder. The existing Class IE Diesel Generator KW recorder and associated watt transducer were removed since they are no longer required. The changes were determined not to seismically degrade the PCL Control Room Panel. No safety devices were deleted and the design envelope of the substation, main generator and emergency diesel generator systems was not affected.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

IV. Temporary Mechanical Modifications, Lifted Leads, and Jumpers

Modification: Removal of the Chlorine Detection System from Service
(LL 1, 2, 3 and 4)

Description of Modification: The elimination of bulk chlorine use at the site eliminated the need for chlorine detection system operability. Use of the 150# containers at the sewage treatment plant are below the Technical Specification limits identified in section 3.5.6. The containers are also stored at a distance greater than 100 meters from the air intake which eliminates a chlorine gas hazard to the control room as defined in the SAR.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Reactor Building Page Phone Communications
(LL 11, 12 and 51)

Description of Modification: As a result of noise interference coming from the Reactor Building on lines 1 and 3 of the page phone communication system a lead was lifted until the next outage, when repairs can be completed. Line 2 was designated as the correct line to used during Reactor Building entries. All entry personnel were instructed of the change. The lifted lead does not affect emergency announcements in any part of the plant.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No

Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Feedwater Demand Signal Noise Reduction (LL 34)

Description of Modification: A deadband filter was installed on the ΔT_c error signal supplied to the ΔT_c integral and proportional controllers for the purpose of reducing the noise in loop feedwater demand signals. The ICS feedwater control circuits have no accident prevention features. The ICS feedwater control logic is not changed as a result of the temporary modification.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Alternate Feedwater Pump 1B Speed Indication (LL 37 and 38)

Description of Modification: Both a Bentley Nevada tachometer module and a computer point were connected in place of the failed GE tachometer generator signal to provide speed indication for the 1B feed pump. The lifted leads did not affect plant operation since they had no control function and were used for monitoring purposes only.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Alternate Feedwater Pump 1B Speed Indication
(LL 39, 40, 47, 48 and 49)

Description of Modification: The input/output signal wires from the FW-P1B speed card in the TSI cabinet were lifted so that both a Bentley Nevada tachometer module and a computer point were connected in place of the failed GE tachometer generator signal to provide speed indication for the 1B feed pump. The lifted leads did not affect plant operation since they had no control function and were used for monitoring purposes only.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different

type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Filter Water Pump Manual Operation (LL 41 and 42)

Description of Modification: Manual operation of the filtered water pumps WT-P5A/B was permitted while the level switches in the automatic level control circuit were being replaced. The filtered water pumps were allowed to be operated manually by lifting leads or opening sliding links in the makeup pretreatment panel to disconnect LS-164 and 165 from the pump control circuits. Two jumpers were installed in the pretreatment panel to maintain the control power to permit manual operation of the pumps. The water supplied to several plant systems is not required by Technical Specifications. Since the work was planned to coincide with a FS-P1 outage, there was no impact on the water supply requirements to the Fire Service system.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Reduction of RCP-1A Vertical Proximity Probe Output Voltage (J 1)

Description of Modification: The electrical jumper was installed to prevent the RCP vibration monitoring equipment from shutting down because of a high gap voltage. The equipment is diagnostic in nature and has no effect on plant operation. The diode installed on the probe output eliminated the high DC voltage caused by the large probe gap.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Defeat the WDL-V535 Closure Interlock (J 1)

Description of Modification: A jumper was installed on WDL-V535 to defeat the operator level closure interlock, permitting the valve to remain open with no level in the RB sump so that the sump might be cleaned. The jumper only affected the low level interlock. The automatic closure on high radiation level initiated by RM-A9 and RM-G21 remained operable. Containment isolation on and ES signal also remained operable during the period that the jumper was

installed. Containment integrity requirements were maintained while fuel handling operations were in progress.

Safety Evaluation Summary: An evaluation of the temporary modification found from the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Addition of a DAS Points at RC4A-TT1 (J 1 and 2) and RC4B-TT1 (J 5 and 6) Bridge Output Signals

Description of Modification: An additional ICS Data Acquisition System (DAS) point was added and tested for evaluation of its loading effect on the ICS. Spare DAS cables in cabinet 14 were connected to the T_{hot} ICS location. The DAS module inputs are buffered to prevent feedback and have a high input impedance to prevent loading of the signal. ICS/NNI operation are therefore, by design and the test results, shown not to be impacted by the change.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Addition of a DAS Points at RC4A-TT4 (J 3 and 4) and RC4-TTB (J 7 and 8) Bridge Output Signals

Description of Modification: An additional ICS Data Acquisition System (DAS) point was added and tested for evaluation of its loading effect on the ICS. Spare DAS cables in cabinet 14 were connected to the T_{hot} ICS location. The DAS module inputs are buffered to prevent feedback and have a high input impedance to prevent loading of the signal. ICS/NNI operation are therefore, by design and the test results, shown not to be impacted by the change.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Provide an Air to AH-VID to Maintain the Valve Open (J 5)

Description of Modification: The air supply jumper maintained AH-VID in the open position during the 125/250 VDC 1E distribution panel outage to permit RB purging to continue. Failure of the air jumper would have resulted in the closing of the valve which is a conservative position since the RB would be isolated and any purge in progress would have been terminated. Maintaining one operable valve in the supply line capable of being closed by an operable interlock from RM-A9 satisfies Technical Specification requirements.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Install a Sliding Link to Power RM-L6 (J 5)

Description of Modification: A wire jumper was temporarily installed at position 3 on TB-308 to replace the broken sliding link at that location. The jumper fulfilled the purpose of the original link in providing power to RM-L6 until a replacement link could be obtained. There was no change in system design or function as a result of the temporary modification.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Addition of a DAS Points in the MU-V32 Control Circuitry- P and I Controller Output (J 9, 10, 11 and 12)

Description of Modification: An additional ICS Data Acquisition System (DAS) points were added and tested for evaluation of their loading effect on the ICS. Spare DAS cables were connected to the MU-42-FIC proportional and integrated controller to monitor flow demand, flow rate and flow error. The DAS module inputs are buffered to prevent feedback and have a high input impedance to prevent loading of the signal. Headset communications were maintained during the soldering of the connections and the valve control was "in-hand" as a safety precaution. ICS/NNI operation are therefore, by design and the test results, shown not to be impacted by the change.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No

Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Addition of a DAS Points in the MU-V32 Control Circuitry-Square Root Extractor Output (J 13 and 14)

Description of Modification: An additional ICS Data Acquisition System (DAS) point was added and tested for evaluation of its loading effect on the ICS. Spare DAS cables were connected to the MU-42-FIC proportional and integrated controller. The DAS module inputs are buffered to prevent feedback and have a high input impedance to prevent loading of the signal. Headset communications were maintained during the soldering of the connections and the valve control was "in-hand" as a safety precaution. ICS/NNI operation are therefore, by design and the test results, shown not to be impacted by the change.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Feedwater Demand Signal Noise Reduction (J 41)

Description of Modification: A deadband filter was installed on the ΔT_c error signal supplied to the ΔT_c integral and proportional controllers for the purpose of reducing the noise in loop feedwater demand signals. The ICS feedwater control circuits have no accident prevention features. The ICS feedwater control logic is not changed as a result of the temporary modification.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Manual Operation of Altitude Tank Filtered Water Pumps (J 41 and 42)

Description of Modification: The level switches in the automatic control circuit which controlled operation of the Altitude Tank filtered water pumps, WT-P5A/B, were disabled. This was done to permit manual pump operation and a continued supply of filtered water to various systems while the level switches were being replaced. The task was performed during the FS-T1 outage and had no impact on water supply requirements to the Fire System.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Alternate Feedwater Pump 1B Speed Indication
(J 81, 82 and 83)

Description of Modification: Both a Bentley Nevada tachometer module and a computer point were connected in place of the failed GE tachometer generator signal to provide speed indication for the 1B feed pump. A current dropping resistor was installed on FW-SR7. The jumpers did not affect plant operation since they had no control function and were used for monitoring purposes only.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Use of an O-ring Made of a Non-designated Material on EG-Y2
(TMM 7)

Description of Modification: Due to the unavailability of an O-ring made of the proper material to minimize fuel oil leakage on EG-Y2, an O-ring of the proper size and rating was temporarily installed.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Installation of Temporary Tubing Isolation Valves in Series with CA-V1 and 3 (TMM 7 and 8)

Description of Modification: The appearance of bubbles in the primary system liquid samples collected after startup for Cycle 9 has interfered with Tech Spec required periodic sampling and analysis. Attempts to close CA-V1 and 3 tighter did not have the desired effect and temporary tubing isolation valves were installed in series with each of the valves until such time as the valves are repaired and permanent manual isolation valves are installed. Installation of the new valves enhance containment integrity. The valves will be closed and opened only during sampling activities.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Prevent Closure of AH-D19 (TMM 9)

Description of Modification: To prevent the full closure of AH-D19 and the possibility of it staying in that position, the output air signal line to the damper operator was disconnected and the port blocked with a tube plug. The temporary modification was initiated to permit additional trouble shooting of the static pressure controller on the damper. The damper is required to remain open for system operation during the period. The damper is a fail-open damper and the purpose and operating characteristics were not changed by the modification.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: East Fuel Transfer Carriage (TMM 9)

Description of Modification: While the limit switch which controls the stopping location for the east fuel transfer carriage was out of service, a timer was installed to provide a similar function. The timer was not used during the transfer of irradiated fuel from the Reactor Building. Since the transfer carriage limit switch remained operable on the Reactor Building side, irradiated fuel was transferred into the Reactor Building continued using the east carriage.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Provide Temporary Power to WDL-LR 0115 and 0119 (TMM 11 and 12)

Description of Modification: Loss of the normal power source for WDL-LR-0115 and 0119 required that a temporary power source be provided until the cause

was determined. The recorders were unplugged from their usual power strip and plugged into a similar power supply using extension cords. Power supply protection were provided by use of an appropriate extension cord and fuses already wired into the recorders.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Post Outage ΔP Testing of MS-V2A (TMM 21)

Description of Modification: To support the post outage ΔP testing of MS-V2A, a pressure transducer was connected at a tee downstream of the valve. The output of the transducer was used by the MOV diagnostic equipment to measure/monitor steam pressure during valve stroking. The sensor and connecting fitting were rated in excess of system design pressure. Had a main steam leak had occurred at the transducer while in service, it would have been isolated via upstream instrument isolation valves.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Addition of the Capability to Read Pressure and Drain Samples at RM-A7 (TMM 25)

Description of Modification: A bypass sampling loop was installed at RM-A7 to permit reading pressures at the inlet and outlet of the sampler. The temporary modification also installed a drain to permit collection of a representative sample. Normal operation of the radiation monitor was not degraded as a result of the temporary modification.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: RCS Dissolved Hydrogen Analyzer (TMM 67)

Description of Modification: A Whittaker Dissolved Hydrogen Analyzer was installed for the purpose of RCS Hydrogen analysis and result display. The unit was installed near the post accident sample panel in the inlet and return tubing line downstream of the CA-C1 sample cooler. Use of the new analyzer will not preclude sampling via the sample bomb method. Existing systems are used to valve in the new analyzer and the sampling process is controlled by procedure. The equipment involved is designed to meet RCS temperature and pressure specifications.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Installation of a Backup Recorder for AH-TR-665 (TMM 75)

Description of Modification: A backup recorder was installed to read Reactor Building ambient temperature as required by Technical Specifications while the existing AH-TR655 in the Control Room was out of service. The temporary recorder provides plant operators with the required data to continue plant operation until the normally installed recorder is repaired or permanently replaced.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Activities For Which A Safety Evaluation Was Performed
But Did Not Impact SAR Systems/Components

I. Tests and Experiments

Test: TMI Asiatic Clam Chemical Treatment (STP 1-92-0011 and 0021)

Description of Test: In accordance with GL 89-13, nuclear power plants are required to monitor and treat for asiatic clams. 1987. The chemical treatment with a non-oxidizing biocide checks clam growth before their entry into plant systems which are highly susceptible to fouling. The chemical treatment using Betz CT-1/C-74 has been previously performed with no adverse effect. The chemical's concentration has been corrosion tested on a variety of plant materials. It was demonstrated that there was no detrimental effect on the materials of construction used in the TMI-1 river water systems. Equipment operated for the special temporary procedure was cycled as it would be during normal operations.

Safety Evaluation Summary: An evaluation of the chemical treatment process found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Test: Leak Test of Spent Fuel Pool Linear Welds (STP 1-92-0014)

Description of Test: Spent Fuel Pool (SFP) Linear Welds numbered 19, 21, 22, and 24 exhibited minor leakage between 1983 and 1987. Leak testing the welds with air via the leak detection lines during the Spent Fuel Pool re-rack project provided an opportunity to locate and repair leaks.

Safety Evaluation Summary: The probability of occurrence or consequences of an accident or malfunction were not increased since the test was conducted in a similar manner to that which was part of the original SFP liner installation test. The air pressure used during the test was limited to 2 psi differential across the welds of the 1/4" thick liner. No margin of safety as described in the basis of a Tech Spec is reduced. The test was determined to involve no Unreviewed Safety Question and have no environmental impact.

Test: Replacement of Nalco 41L with Molybdate Based Corrosion Inhibitor in the Closed Cooling Water Systems (STP 1-92-0019)

Description of Test: Nalco 41L was replaced with a Molybdate based corrosion inhibitor in the Secondary Services Closed Cooling Water and the Service Building Closed Cooling Water systems. The feed and bleed of the cooling water systems was conducted in a controlled manner such that the makeup capabilities of the systems was not exceeded. The chemicals were added in controlled amounts with key parameters monitored to ensure continued safe operation. The concentration of Nalperse dispersant used to dissolve the Nalco sludge was not a problem to normal system operation while being used.

Safety Evaluation Summary: An evaluation of the process found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the change of corrosion inhibitor since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the change over.

II. Procedure/Document Changes

Procedure: Decay Heat Closed Cooling System Nalco 41L Removal
(STP 1-93-0009)

Description of Procedure: A controlled feed and bleed was established to ensure proper system volume was maintained. The drain rate was maintained such that it would not exceed the make-up capabilities of the system. The water drained from the DHCCWS was directed to the Turbine Building Sump and was subsequently processed by the IWTS and released. Three system volume flushes were completed to eliminate Nalco from the system. A molybdate-based corrosion inhibitor is being used in place of Nalco.

Safety Evaluation Summary: An evaluation of the procedure found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity since the system/component are not defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the activity.

Procedure: Replacement of Nalco 41L with Powerline 3200 in the SSCCW System (STP 1-93-0021)

Description of Procedure: Nalco 41L was replaced as the chemical corrosion inhibitor in the Secondary Services Closed Cooling Water System and the Service Building Closed Cooling Water Systems. The activity was performed while the plant was in a cold shutdown condition to prevent any impact on safe plant operation. The feed and bleed of the plant systems was performed in a controlled manner such that the drain rate did not exceed the capability to makeup. Chemicals were added in controlled amounts with key parameters monitored during the activity.

Safety Evaluation Summary: An evaluation of the procedure found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity since the system/component are not defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the activity.

Procedure: ICCWS Nalco 41L Removal (STP 1-93-0025)

Description of Procedure: Nalco 41L was flushed from the Intermediate Closed Cooling Water System with demineralized water. At the time the activity was performed, the system was not necessary for normal plant operation. The feed and bleed of the ICCWS was performed in a controlled manner such that normal level was maintained in the ICCW surge tank. Chemicals were added in controlled amounts with key parameters monitored during the activity.

Safety Evaluation Summary: An evaluation of the procedure found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity since the system/component are not defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the activity.

Procedure: NSCCW Nalco 41L Removal (STP 1-93-0030)

Description of Procedure: Nalco 41L was flushed from the Nuclear Services Closed Cooling Water System with demineralized water. At the time the activity was performed, the plant was in a cold shutdown condition and the system was not required to be in operation. The draining of the NSCCW system was performed in a controlled manner such that the makeup capabilities of the system would not be exceeded and normal level was maintained in both the NSCCW surge tank and chilled water expansion tank. The dispersant chemicals were added in controlled amounts with key parameters monitored during the activity.

Safety Evaluation Summary: An evaluation of the procedure found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity. No Unreviewed Safety Question or environmental impact resulted from the activity.

Procedure: Flush OTSG A/B Upper Tubesheets (STP 1-93-0031)

Description of Procedure: The A and B OTSG upper tubesheets were flushed with demineralized water to reduce the radiation levels in the OTSG's in support of 10R outage inspection and maintenance activities. Flushing with demineralized water, <5000 gallons total, was evaluated via calculation C3320-93-003 and determined not to present a boron dilution or reactivity addition concern. The water used by the activity was drained to the Liquid Radwaste System to permit installation of the cold leg dams during 10R. Therefore the unborated water did not remain in the OTSG's or cold leg piping to pose a later deboration risk during refueling or operation activities.

Safety Evaluation Summary: An evaluation of the activity found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity. No Unreviewed Safety Question or environmental impact resulted from the modification.

Procedure: Fuel Assembly Holddown Spring Replacement (STP 1-93-0036)

Description of Procedure: A B&W Field Change to replace holddown springs in the MK-B8 Fuel Assemblies with the B5 type upper end fittings was appended to a procedure to perform the activity. The work performed consisted of the removal and subsequent replacement of the upper end fitting stop pins and replacement of the holddown springs. The replacement parts are of the same size, type and manufactured to the same QA standards as the original. The fuel assembly design characteristics, description and operating procedures were not changed as a result of the replacement parts installation.

Safety Evaluation Summary: An evaluation of the activity found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity. No Unreviewed Safety Question or environmental impact resulted from the modification.

Procedure: ICCWS Nalsperse Cleaning and Removal (STP 1-93-0039)

Description of Procedure: Nalsperse was added to the Intermediate Closed Cooling Water System to remove Nalco 41L residue from the system. The system was not required for normal operation at the time the dispersant was added. The dispersant suspended the oily Nalco film layer in the system in solution allowing removal of both by the feed and bleed process. Since Nalsperse had no effect on Nalco sludge, accessible portions of the system were inspected and no sludge was found. The feed and bleed of the ICCWS was performed in a controlled manner such that normal level was maintained in the ICCW surge tank.

Safety Evaluation Summary: An evaluation of the procedure found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity since the system/component are not defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the activity.

Procedure: Polar Crane Main Hook Mechanical Brake Test (STP 1-93-0042)

Description of Procedure: The Polar Crane Main Hook Mechanical Brake was tested in accordance with the vendor's recommendation after difficulties were experienced during a Reactor Vessel Head lift. The test load was one of the missile shields. It was raised and suspended approximately two to three inches above temporary cribbing installed as a precautionary measure. The purpose of the test was to ensure that the mechanical brake was adjusted properly to hold the load stationary on release of the solenoid brake. The test was performed away from safety related equipment and the load was handled in the designated load path for missile shields.

Safety Evaluation Summary: An evaluation of the activity found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the activity.

Procedure: RC-RV1B Manual Lever Exercise (STP 1-93-0047)

Description of Procedure: In an attempt to reseal RC-RV1B which lifted during an RCS pressure test (SP 1303-8.1), the manual lift lever was used to slightly lift the valve stem. This action opened the valve to increase flow past the valve seat to clear any debris from the seat which had the potential to interfere with the resealing of the valve. Operation of the manual lever is within the design of the valve and did not physically alter the valve or its relief setpoint. An analysis was performed and determined that operation of the manual lift lever would yield an audible sound at the point that "simmersing" occurred. The operator performing the action was thereby alerted to the fact that he had reached the limit of travel and he released the lever. The valve stem could not be lifted more than .028 inches because of the gag bolt setting. Had the valve stuck in the open position, the gag bolt could have been run down forcing the valve to reseal within the time constraints for the Reactor Coolant Drain Tank to quench the pressurizer discharge, without blowing out the tank rupture disk. Performing the activity with the plant in a hot shutdown condition allowed for preparations to be made for the plant personnel to respond to the success or failure of the valve to reseal.

Safety Evaluation Summary: An evaluation of the activity found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the activity. No Unreviewed Safety Question or environmental impact resulted from the activity.

III. Modifications

Modification: Use of B&W Rolled and Ribbed Plugs in the TMI-1 OTSGs
(BA 123290 / JO 63329)

Description of Modification: B&W rolled and ribbed plugs are used to remove defective OTSG tubes from service. The plugs are used to establish an adequately leak tight pressure boundary between the OTSG primary and secondary sides. The adequacy of plug design and qualification testing was assessed based on plant design conditions and the OTSG functional requirements. The plugs are qualified for the 40 year design life of the OTSG by both test and analysis. Acceptable primary to secondary leak rates were demonstrated and as was plug retention capability under normal and postulated accident conditions. The plugging was performed in accordance with a plug qualification program and installation operations that ensure that OTSG performance was not degraded beyond previously analyzed limits.

Safety Evaluation Summary: An evaluation of the modification found no adverse affect on nuclear safety or safe plant operations. For the reasons addressed above, it was determined that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

Modification: Heat Sink Protection System Rewiring and Diode Installation
(BA 123313 / JO 52455)

Description of Modification: The modification corrected power supply wiring errors for HSPS Train B, nests A2-C-6 and A2-C-7. The inability to take manual control of the EFV-30 control valves during the depowering of specific logic cards was also corrected.

Safety Evaluation Summary: The modification eliminated one failure mode which would result in inadvertently feeding EFW to the steam generators and provides the operator with an increased capability to use the manual control mode for the EFV-30s during certain degraded HSPS scenarios. The modification had no adverse effect on nuclear safety or safe plant operation. Since the capability of HSPS to ensure EFW initiation in the event is unaffected and the operator's ability to respond to inadvertent initiations is increased, the modification did not increase the probability or consequences of an accident or malfunction previously evaluated or of a different type. Review of the Technical Specifications identified that sections 3.5 and 4.1 both address the HSPS. The review determined that no violation of Technical Specifications or no increase in a Technical Specification margin of safety would result from the modification. The modification has no effect on the plant's environmental interfaces and determined not to represent an Unreviewed Safety Question.

Modification: Minor Modifications Resolving SQUG Outliers (BA 128108 / JO 72412)

Description of Modification: Discrepancies and deficiencies identified during SQUG walkdowns performed as part of the resolution of USI A-46 were classified as outliers. Each outlier was addressed and may have resulted in a modification. These modifications deal exclusively with the seismic performance of plant equipment; discrete components and elements of structures. They were passive and minor in nature in that they did not affect any electrical circuits, pressure or fluid boundaries or relocate or change the function of any support for a pressure or fluid boundary. As a result the modifications did not affected systems' characteristics, function and operability. The modifications provide additional dependability on the seismic performance and reliability of the affected equipment. The individual modifications involved were limited to those detailed in specific change documents or MNCRs posted against and within the scope of the budgeted activity. Major outliers are being repaired via the capital modification process, ref BA 412552.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons above, there was no adverse impact on nuclear safety or safe plant operation. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Removal of the Control Building Chiller Overload (BA 128149 / JO 53716)

Description of Modification: The modification eliminated the AH-C-4A and 4B chiller motor reduced voltage starters. The starters were eliminated by adjusting the chiller feeder breaker long delay pickup setting on the Westinghouse Amptector solid-state trip devices to provide the overload protection. After the elimination of the starters and replacement of the 500 MCM cable with 4/0 interlocked cable, direct connection between the overload relays and the chiller compressor motors was completed.

Safety Evaluation Summary: Removal of the overload relays and resetting the Amptector trip devices did not alter the operation of the Control Building chillers as described in Section 9.8 of the FSAR. Adequate overload protection is provided by the Amptector trip units. The 4/0 interlocked armor cable was adequately sized and qualified Class 1E for flammability requirements only. The margin of safety as defined in the basis for any Technical Specification is not reduced. Nuclear safety and safe plant operation are not affected, and the probability of occurrence of an accident or malfunction of equipment important to safety or the probability of an accident or malfunction of a different type than previously evaluated in the SAR are not increased because there is no change to the designed operation of the system. No new components were added by the modification. Since the affected circuits do not monitor or control releases or interfere with systems that do so, there is no effect on the environment. No Unreviewed Safety Question or environmental impact were found to exist as a result of the modification.

Modification: Fire Service Altitude Tank Level Control (BA 128149 / JO 61266)

Description of Modification: The level switches used to maintain the Fire Service (FS) Altitude Tank level by starting and stopping the selected filtered water pump were relocated and replaced. The modification was performed to reduce calibration problems resulting from the style of switch used and their location.

Safety Evaluation Summary: The modification was evaluated and found to have no impact on nuclear safety or safe plant operations. The FS Altitude Tank level switches nor the tank in which they are installed are not safety related components. The replacement electronic level switches and level transmitter are reliable and maintain tank level as required. For these reasons, safe plant operation and nuclear safety were not affected by the modification. The modification did not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously

evaluated in the SAR. The possibility of an accident or malfunction of a different type than previously evaluated was not created and no margin of safety defined in the basis of the Technical Specifications was reduced. This modification did not constitute an Unreviewed Safety Question.

Modification: Solenoid Valve and Limit Switch Replacement (BA 128155 / JO 53717)

Description of Modification: Thirty-two limit switches and 16 solenoid valves associated with various Nuclear Safety Related (NSR) valves and qualified devices were replaced by the modification. The devices were replaced because: vendors would not qualify the commercial grade EQ devices or provide qualified replacement parts, insufficient information was made available by vendors to permit equipment upgrade to NSR through commercial grade dedication or the vendors no longer supply replacement parts.

The modification did not alter the safety function of any of the impacted systems. Existing commercial grade limit switches and solenoid valves were replaced with NSR qualified devices with equivalent form, fit and function as the units being replaced. There was also no effect on the pneumatic or control functions. Since instrument air pressure was unaffected, the pneumatic valve operators functioned as designed. No previously evaluated accident situations were directly or indirectly affected by the modification.

Safety Evaluation Summary: An evaluation of the modification found no adverse affect on nuclear safety or safe plant operations. For the reasons above, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Main Annunciator Re-powering (BA 128156 / JO 55279)

Description of Modification: The Main Annunciator System has redundant instrumentation for processing alarms. One string is powered by a vital power distribution panel VBC while the second string was powered by a non-vital power supply. The modification provided vital power to the second string from panel VBD. Power cable was installed from distribution panel VBD to the main annunciator and the existing non-vital power feed was spared.

Safety Evaluation Summary: An evaluation of the modification found that there was no adverse impact on nuclear safety or safe plant operations since the system operation was enhanced by tie-in to a more reliable power supply. Since the electrical load added to distribution panel VBD and the emergency diesels were evaluated and found acceptable, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Upgrade of IWT Conductivity Cells and Flowmeters (BA 412511 / JO 5136)

Description of Modification: The modification was performed to improve the response time to changes in concentration of both dilute acid and caustic. The conductivity cells were changed from local cells at the sampling sink to in-line cells. New flowmeters with indication and totalizer replaced the obsolete flowmeters on the anion and mixed bed demineralizer.

Safety Evaluation Summary: The changes made improved system performance and had no adverse affect on nuclear safety or safe plant operation. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased since the upgraded equipment installed serves the same function as the original equipment and operates with the previous interlocks. No Technical Specification margin of safety is reduced by the modification since the conductivity sample points and the flowmeters are not defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Installation of Intermediate Building Platforms (BA 412541 / JO 9155)

Description of Modification: Platforms were installed at the Main Steam Safety Valve in support of specialized maintenance activities at the valves. Four platforms are located between the 355' and 339' elevations in the Intermediate Building.

Safety Evaluation Summary: The platforms are passive components that do not interface directly with any existing plant system or component interactions with existing components are therefore either non-existent or negligible. The platforms were designed to maintain their structural integrity under all postulated load conditions. The additional load to the Intermediate Building slabs and walls was analyzed and found acceptable. The modification had no impact on the ability to bring the plant to a safe shutdown. Based on the above, the modification was found not to have adverse impact on nuclear safety or safe plant operation. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased because of completion of the modification. No Technical Specification margin of safety is reduced since such platforms are not defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Seismic Anchorage of Equipment (BA 412552 / JO 76548)

Description of Modification: The modification corrected seismic mounting deficiencies noted during the Seismic Qualification Utilities Group (SQUG) walkdowns completed in March 1993. The modifications to the anchorage of the 1C-480V-ESV Motor Control Center panel, the Liquid Waste Disposal System panel and the Sub Station panel did not affect system performance, function or

operability except to make the systems more reliable during and after a Safe Shutdown Earthquake.

Safety Evaluation Summary: An evaluation of the modification found that there was no affect on nuclear safety or safe plant operations. Further, for the reasons stated above, it was also determined that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Intermediate Building and BWST Platform Modifications
(BA 412577 / JO 40432)

Description of Modification: Seismically designed platforms were installed to provide access to the main turbine exhaust check valves EX-V2A and 2B, at the 336' elevation of the Turbine Building and the 299' elevation for access to DH-DSP-0914 in the BWST tunnel. The platforms serve as permanent work areas to support the specialized maintenance needs of the valves and switch. The structural integrity of the walls and floors supporting the platforms was maintained and their safety function was not impacted. Minor rerouting of Instrument and Service Air lines to accommodate the new platforms was required. The platforms, being passive components, have structural loadings, interfaces and interactions with existing components that are negligible.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Fuel Handling Bridge Equipment Upgrade (BA 412580 / JO 51306)

Description of Modification: Changes to the Spent Fuel Handling Bridge completed as a result of this modifications include:

- Replace the existing hydraulic rod drive system with a hoist driven mechanical rod drive system,
- replace the fuel handling and control handling mast grapples with grapples capable of handling a Mark B4 fuel assemblies with either Mark B4 or B5 control components installed,
- replace the existing Dillon load sensing system with a new Sensotec load cell with a remote digital read out in the control console face,

- replace the existing control console and control center (the console has programmable logic including all safety circuits and status lights, quick disconnects from the control center; the control center is enhanced by variable frequency control),
- install a programmable geared limit switches for indication of vertical position and vertical position interlocks on the inner mast elevation,
- install a new video bridge positioning system,
- install a fixed lighting to assist in reading the ZZ tape positions and position scribe marks on the bridge operating floor,
- and install "Inching" modifications.

Safety Evaluation Summary: The fuel handling equipment system which were designed and constructed to minimize the time required to perform the fuel handling operation during refueling and prevent damage to the fuel. This modification made improvements to the individual components within the system and resulted overall improvement: increased the reliability of system components and decreased equipment maintenance for the fuel handling system. The interlocked controls provided with key bypasses may only be bypassed with the permission of the SRO in charge of fueling operations.

The modification did not increase the probability of occurrence or consequences of an accident or malfunction either previously evaluated or of a new or different type. Since the modification did not affect the basis for any Technical Specification and the operating modes and equipment system controls remained the same, the modification did not decrease the margin of safety as defined in the basis of any Technical Specification. The modification had no impact on the environment and did not constitute an Unreviewed Safety Question.

Modification: Diesel Generator Meter Upgrade (BA 412616 / 56779)

Description of Modification: The obsolete control room meters and frequency transducers for the Emergency Diesel Generators (EDG) and SBO Diesel meters were replaced with more state of the art equipment. Problems encountered during calibration and the unavailability of technical manuals crucial to maintaining the original equipment necessitated the replacement.

Safety Evaluation Summary: Evaluation determined that neither nuclear safety and safe plant operations, nor increased probability or consequences of accidents or malfunctions of a new type or previously evaluated, nor a decrease in a Technical Specification margin of safety resulted from completion of this modification. Operation of the EDG's was not affected by modification of the EDG metering circuit. The new meters and frequency transducers are isolated from the potential transformer by existing fuses and the current transformer by existing transducers. The replacement of the SBO meters does not violate any GPUN commitment to Reg Guide 1.155, Station Blackout. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Installation of a Shielding Support Structure for the High Rad Material Staging Area (BA 412616 / JO 65256)

Description of Modification: The modification at the 281 elevation of the Neutralizer Tank Room, in the Fuel Handling Building, provided permanent supports for shielding blankets around a newly designated high rad material staging area. Structural steel was erected to support approximately 22 linear feet of lead blanket shielding.

The modification involved only passive hardware changes. The addition of the support structure and the shielding constituted a negligible increase in the mass of the structure. The integrity of the reinforced concrete walls of the structure was not degraded by the use of concrete expansion anchors. The shielding support structure does not serve to support any other system, component or structure. The design considered seismic issues and potential for interaction with safety components and structures in the general area. Neither the shielding structure as a whole nor as part was determined to become a missile during a postulated SSE. No margin of safety is involved with the installation of the shielding structure.

Safety Evaluation Summary: Evaluation of the modification found that for the reasons above, there was no adverse impact on nuclear safety or safe plant operations that resulted from the installation of the structure. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Pageable Alarm CRT (412616 / JO 68375)

Description of Modification: During planned and unplanned plant transients, alarms occur in numbers which surpass the capacity of the alarm CRTs at the computer console and operating console. Overflow was diverted to a second CRT at both consoles. The modification adds paging capability to the alarm CRT to enhance the ability review, acknowledgement and silencing of alarms and eliminates overflow to the second CRT.

Two paging keys were installed in the computer console left to permit simultaneous paging of the computer and operating alarm CRTs.

Safety Evaluation Summary: The modification to the plant computer did not affect its operation since only a capability to screen page forward and backward was provided. As a result the modification did not adversely affect nuclear safety or safe plant operation, increase the probability or consequences of an accident or malfunction previously evaluated, or create an accident or malfunction of a different type. No margin of safety is associated with the equipment modified. The evaluation concluded that no Unreviewed Safety Question or environmental impact resulted from completing the modification.

Modification: RPC Vibration Monitoring Upgrade (BA 412616 / JO 69074)

Description of Modification: The original RCP vibration monitoring equipment, besides being difficult to calibrate, required multiple pump starts when calibration was necessary and had been the cause of numerous spurious high vibration alarms. The system, consisting of: a Robertshaw Vibraswitch mounted on the motor frame, two IRD pickups located 90° apart at the top of the motor stand which are coupled with IRD pickups requiring manual readings in the relay room, two proximity switches, located 90° apart, at the pump shaft which are coupled with dual-plane radial vibration monitors at the Bentley Nevada rack in the control room, was modified to improve reliability.

Four additional dual-plane radial vibration monitors were installed in the control room and the IRD seismic velocity pickups were replaced with Bentley Nevada vibration pickups for compatibility. Four new computer alarm points were added to alarm on any alarm at the Bentley Nevada rack in the control room. The vibraswitches were removed along with their reset push button and associated computer points.

The RCP vibration monitoring system is passive in nature and does not control or effect the operation of any safety related system. They have no safety function. The monitors are classified Seismic II and were mounted in accordance with seismically approved mounting details. The vibration monitoring upgrade enables Operations to more effectively identify and deal with RCP motor high vibration should it occur and help prevent potential damage to reactor coolant system components.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons above, there was no adverse affect on nuclear safety or safe plant operation. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Main Generator Computer Points (BA 412616 / JO 69104)

Description of Modification: The main generator output voltage and generator frequency recorders were removed from control panel PCL. Voltage, frequency and current transducers were installed in the PCL to provide isolation and the required signal levels to the Plant Process Computer (PPC).

Safety Evaluation Summary: Completion of the modification did not adversely affect nuclear safety or safe plant operations since the changes were passive and do not affect plant computer operation. Signal converters provide isolation from the main generator metering circuits. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since the inputs to the PPC involved are not defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Interim Solid Waste Staging Facility Upgrade (BA 412620 / JO 60268)

Description of Modification: The Interim Solid Waste Staging Facility (ISWSF) was constructed to fulfill the need to store solid or solidified radwaste generated as a result of the cleanup effort at TMI-2 and that routinely generated in Unit 1. The purpose of the modification is to increase storage capacity at TMI-1 for low level solid radwaste to prepare for the lack of off-site disposal facilities during the period bounded by the closure of the current national low level radwaste facilities and opening of the regional facilities accessible to TMI.

The scope of the modification includes: reconfiguration of interior and exterior concrete block shield walls, installation of shielding, elimination of openings allowing access to birds, demolition of sump heating systems and filling the sumps with gravel and miscellaneous painting.

Safety Evaluation Summary: The facility's safety function is to achieve occupational radiation exposures ALARA and to control on-site and off-site doses within the limits specified by 10CFR20 and 40CFR190. All Regulatory Required work was completed in accordance with applicable codes and standards and the GPUN Operational Quality Assurance Plan.

The modification did not increase the probability of occurrence or the consequences of an accident or malfunction previously evaluated in the FSAR. The modification also does not create the possibility of occurrence of an accident or malfunction of a different type than previously evaluated in the FSAR. No margin of safety as defined in the basis of the Technical Specifications is applicable to this modification and therefore, none is reduced. The modification did not involve an unreviewed safety question or impact the environment.

Modification: OTSG Tube Sleeving (BA 412622 / JO 63060)

Description of Modification: Thermally treated Alloy 690 mechanical sleeves were installed in the lane and wedge area which has a high potential for high cycle fatigue failure. Improved corrosion resistance was also obtained through use of the Alloy 690 sleeves. The design and operating conditions for the OTSGs were used for the design of the sleeves. OTSG design transients were used to establish sleeve loading values during transient conditions. The structural adequacy of the sleeve was evaluated for the minimum required thickness for both internal and external pressure in accordance with ASME Code, Section III. The sleeves provide structural integrity which is better than that of the original Alloy 600 tubes. Curved sleeves were slowly straightened by power drive rollers during insertion. The upper end of the sleeve is roll expanded. After a successful upper roll, the lower end of the sleeve is expanded below the 15th tube support plate. The effect of sleeve installation on OTSG performance found that OTSG steam superheat was still maintained.

The modification minimizes the likelihood for tube leak or tube rupture from high cycle fatigue. Plant reliability is enhanced by the sleeving of the lane wedge tubes. The margin of safety of the sleeves is equivalent, based on normal operating design pressure and minimal wall thickness, to that of the OTSG tubes.

Safety Evaluation Summary: An evaluation of the modification found no adverse impact on nuclear safety or safe plant operation. For the reasons above, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: IOR Transmitter Replacement (BA 412623 / JO 55278)

Description of Modification: The modification replaced eleven existing Foxboro transmitters and four existing Rosemount transmitters with Rosemount transmitters including mounting brackets, tubing and fittings. The transmitters are being replaced because of problems with drifting, drift tolerances and obsolescence. The safety function of each replacement transmitter in its associated system (HSPS, ESAS, RPS and OTSG) is not changed by the transmitter replacement. The accuracy and response time of the new transmitters was evaluated and found to be appropriate for the intended applications. All tubing and fittings and transmitter mountings are qualified as Seismic Class I; equivalent to the original. Calculations show that transmitter loop accuracies are less than the error values required by design documents.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Foxboro Recorder Replacement (BA 412625 / JO 61522)

Description of Modification: Maintenance of Foxboro, Sparling and selected TI recorders was becoming difficult due to their age and the inability to obtain spare parts. The recorders were replaced with Yokogawa or Westronic recorders. Numerous plant systems were affected by the recorder replacement. None of the recorders replaced performs a nuclear safety related function. Their function is passive and involves indicating and recording their respective system process parameters. The new recorders are of equal or better quality than those replaced.

Safety Evaluation Summary: Replacement of the recorders was determined to have no adverse impact on nuclear safety or safe plant operations. Based on the discussion above, an evaluation of the modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: HSPS Upgrade (BA 412627 / JO 69424)

Description of Modification: The modification made numerous design improvements to the Heat Sink Protection System (HSPS) which included the following actions:

- separate fusing of circuits associated with MS-V13A/B and the auxiliary relays for FW-V16A and 17A,
- modification of the EF-V30B/C enclosure to reduce cable stress,
- elimination of the individual solenoid valves upstream of FW-V16A/B and 17A/B positioners with two solenoid valves downstream of the positioner,
- replacement of the FW control valve positioners and lock-up valves with more reliable equipment,
- installation of volume tanks to assure adequate air is available to close FW-V16A/B and 17A/B on HSPS actuation,
- replacement of the existing HSPS FW isolation relays with the appropriate 125VDC model and
- installation of MS-V13A/B status lights to eliminate the need for additional instrumentation during HSPS surveillance testing.

Upon completion of the modification, the capability of the HSPS to ensure FW isolation and EFW initiation in the event of an accident is unaffected and FW and MS valves will still actuate as requires on receipt of an HSPS signal. Technical Specification Section 3.5 specifies conditions requiring automatic initiation of EFW and isolation of main feedwater to maintain RCS cooling following loss of OTSG integrity. The basis of the Technical Specifications specifies that no single failure of either HSPS train will prevent the other HSPS train from operating. These functional capabilities were unaffected by the modification. The failure mode for FW-V16A/B and FW-V17A/B on loss of instrument air remains "fail as-is." HSPS actuation capability remains operable on a loss of Instrument Air. No new plant equipment failure modes were introduced. The use of volt meters during HSPS surveillance testing was eliminated by installation of the status lights on MS-V13A/B. This reduced the potential for an inadvertent FW isolation or HSPS actuation associated with the use of the instrumentation.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons above, there was no adverse affect on nuclear safety or safe plant operation that resulted from the modification. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Fuel Handling Bridge Equipment Upgrade (BA 412629 / JO 67693)

Description of Modification: The modification made to the Main Fuel Handling Bridge replaced the existing motor control center (MCC) with a new MCC which utilizes a variable frequency motor driver. The variable frequency drive system improves bridge reliability and results in smoother operation. Quick disconnects on the MCC allow its removal and storage in a mild environment during periods of plant operation.

The mast rotation device for the Spent and Main Fuel Handling Bridges' fuel hoist mast was also replaced. The new design is heavier and provides more leverage to ease mast rotation.

Safety Evaluation Summary: An evaluation of the modification found that the changes described above did not change the operating modes and system controls. It did enhance the performance of the Fuel Handling Bridges and improve reliability, as a result there is no adverse affect on nuclear safety or safe plant operations. The probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased because of increased equipment reliability and reduced maintenance. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

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Modification: Replacement of Dampers AH-D19 and 24 (BA 418743 / JO 65797)

Description of Modification: Replacement dampers were installed to replace malfunctioning dampers at AH-D19 and 24. The dampers perform no safety function. Their purpose is to maintain a slight negative pressure in the Auxiliary and Fuel Handling Buildings. The modification did not change the basic system functions and did not interface with any nuclear safety related systems. To facilitate installation of AH-D19, its location was moved approximately two feet. The integrity of the Auxiliary Building structure was maintained during installation of the duct wall and ceiling supports. Installation of the new dampers improved system performance and eliminated conditions affecting exhaust flow throughout the plant which had the potential to collapse sections of associated ducting. There were no changes to the system operating procedures required.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

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Modification: Data Acquisition System (DAS) Installation (BA 418764 / JO 46576)

Description of Modification: DAS was installed to accomplish on-line system diagnostics and assist in tuning the Integrated Controls System/Non-Nuclear Instrumentation (ICS/NNI). Monitoring the ICS/NNI with the DAS has no effect on its operation. The analog points connected to the DAS are buffered to prevent feedback or loading problems. Digital input is provided by existing spare contacts or new relays. Electrical loading was evaluated and found acceptable. No safety related control functions were added or deleted as a result of the modification.

Safety Evaluation Summary: An evaluation of the modification found that for the reasons above, the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type has not been increased. No Technical Specification margin of safety is reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Conversion of Reactor Coolant Pumps with Standard Seals to Cartridge Seals (BA 418800 / JO 73246)

Description of Modification: The original design Reactor Coolant Pump (RCP) seal packages were replaced with cartridge seal packages. The original standard seal design sealed the RCP shaft in three stages. The #1 seal is a controlled leakage film riding face seal. Whereas, the #2 and #3 seals are mechanical rubbing face seals. The cartridge seal is similar in function and performance to the original equipment, providing the same sealing function with the added advantage of allowing easier maintenance. Minor changes in piping configurations for leakoff lines and the #3 seal purge line, supports and restraints were completed in accordance with applicable codes and standards for design, installation and testing.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since it does not impact any safety system nor the bases of any Technical Specification. No Unreviewed Safety Question or environmental impact resulted from the modification.

mods above

change mods below

Change Modification: MS-V9A/B Disc Holes (CMR 91-114)

Description of Modification: MS-V9A and B chatter during plant operation causing wear on the disc hanger mechanism. The response to the change mod request directed the drilling of low-flow vent/drain holes through the discs of each of the swing check valves, MS-V9AB. The disc nut cotter pins were also eliminated after welding between the disc nut and disc stud. Calculations were performed which showed that a relatively small amount of steam will leak through the holes and that the holes do not significantly weaken it or permit water induction by the pump. Therefore safety function of the check valves, EF-P1 and other safety related equipment is maintained. In combination, the disc holes and disc nut welds improve valve reliability and condensate drainage.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

Change Modification: Cask Load Pit Platform Installation (CMR 89-116)

Description of Modification: A temporary cask load pit platform installed to perform fuel assembly repairs during the 8R outage was made permanent. The structural steel and grating platform was evaluated and found to be easily supported by the cask pit structure. It would not adversely affect the integrity or alter the function of the spent fuel pool or the process of storing fuel assemblies. The platform is not linked to any operational component of the plant.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

Change Modification: Molded Case Circuit Breaker Replacements (CMR 90-116)

Description of Modification: Due to the unavailability of qualified 400 and 100 amp frame size ITE molded case circuit breakers for the 9600 series ITE motor control centers, qualified Westinghouse breakers were purchased and installed on an equivalent as needed basis. No safety design or functional aspects were changed. Therefore, there is no cause for equipment to malfunction in a different manner. The Westinghouse circuit breakers will maintain circuit integrity, respond to commands from protective devices, maintain their ability to shutdown the reactor, and keep it in a safe shutdown condition as did the ITE circuit breakers. System coordination and component protection will be maintained.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

Change Modification: HR-R-1A/1B Expansion Joints (CMR 90-117)

Description of Modification: Replacement of the metal bellows on the thermal Hydrogen Recombiners (HR-R-1A/1B) with solid pipe was determined to be appropriate after small leaks were found in the bellows expansion joint after a system surveillance. The expansion joint manufacturer was no longer in business and the replacement was done in lieu of seeking out a replacement supplier. The replacement was in accordance with the original construction code and the GPUN Repair Program. The original purpose of the expansion joints was eliminated by their permanent installation at TMI-1. Tie rods prevent axial movement and the permanent piping restricts lateral and/or torsional movement. Thermal growth as a result of piping heatup to operating

temperature was evaluated and pipe loading changes were found to be insignificant.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

Change Modification: Reactor Building Basement Monorail Installation
(CMR 90-124)

Description of Modification: A monorail was installed in the basement of the Reactor Building, outside the elevator, to facilitate transfer of heavy equipment and materials from the elevator platform to the basement floor. An 8WF21 beam was installed from the Reactor Coolant Drain Tank Room east wall to a structural member over the elevator platform. The design was classified as Seismic Class II for anti-fall down. The monorail serves no safety function. The design provides adequate support under seismic loads and is sufficiently restrained to prevent it from becoming a missile.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

Change Modification: FS-P2 Relief Valve Modifications (CMR 90-151)

Description of Modification: The change modification included two items: a paddle orifice plate was installed in the discharge of the electric fire pump relief valve and additional support and modification to the trim piping valves FS-V248, FS-V249 and FS-R-1. Installation of the paddle orifice plate will decrease the high ΔP across the valve which has resulted in severe cavitation damage which is evidenced by pin hole leaks in the valve body and damage to the internal components. The effectiveness of the system is not reduced by the plate installation; the valve's reliability is improved. Assuring fire suppression capability ensures the ability to achieve and maintain safe shutdown in case of fire. The trim piping improvements to the other valves eliminated the high vibration tubing failures previously experienced. The performance and function of the system were not affected.

Safety Evaluation Summary: An evaluation of the modifications found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modifications since none are defined in the Technical

Specification or Administrative Procedure 1038. No Unreviewed Safety Question or environmental impact resulted from the modifications.

Change Modification: Reactor Vessel Support Skirt Access Ports (CMR 91-044)

Description of Modification: Eight 12" diameter holes were made in the Service Structure Support Skirt as authorized by B&W in accordance with Field Change Authorization 04-46230-00. The reason for the holes is to improve access to the top surface of the Reactor Vessel Closure Head for the purpose of allowing inspection and cleaning of the Closure Head top surface if removal of boric acid, resulting from CRDM leakage, is necessary. B&W has certified by the FCA and demonstrated by stress analysis that the change meets the structural requirements of ASME Section III. Pressure boundary components were not affected by the change. The integrity of the Support Skirt is maintained and the access hole covers were evaluated and found to remain in position under the applicable OBE, SSE and LOCA loadings. Neither the access ports nor the Support Skirt Structure have a safety function.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Change Modification: Additional Isolation Valves for CA-V1/3 (CMR 92-017)

Description of Modification: Suspected leakage past CA-V1 and CA-V3 had brought into question, the representativeness of the liquid RCS sample. As a result manual isolation valves were installed upstream of CA-V1 and CA-V3 to allow the taking of pressurizer water space and/or letdown samples without the interference of gas bubbles and to isolate the sample lines and permit maintenance to be performed on CA-V1 and CA-V3. The valves will also allow LLRT during plant operation without extreme ALARA concerns. Whether maintained open or closed, the potential failure of the valves as a system boundary or flow limiting device does not affect the safety analysis. The new valves act as leakage barriers for their associated containment isolation valves when closed.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since the potential system leakage from the valves or their associated tubing is insignificant when compared to that assumed for a Small Break LOCA. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Increasing the CA-V3 Gear Ratio (CMR 93-012)

Description of Modification: The gear ratio on CA-V3 was increased because it was determined, through a calculation, that the valve had insufficient margin to develop the required motor torque at degraded voltages. As a result, gearing was installed to provide a higher gear ratio and the torque switch limiter plate size was increased. Both actions provided the increased margin. Neither motor operator nor valve torque or thrust limits were exceeded by the change. The valve functions as before and has more torque margin at degraded voltage conditions. The increased stroke time does not have an adverse effect on plant coolant inventory since the manner in which the valve works was unchanged. The normal and emergency operation of CA-V3 was not changed as a result of the modification.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Replacement of the SS1 Switches on the RCP Power Monitors (CMR 93-022)

Description of Modification: The modification improves the operation of test switch SS1 in the RCP Power Monitor test circuit. The modification involves making SS1 a make-before-break contact for the purpose of switching from Normal to Bypass and back. Eight switches were replaced to complete the modification. Nuclear safety and safe plant operations were not adversely affected since the new switches are equivalent to the originals with the exception that they incorporate the make-before-break contacts so that the bypass connection is made before the normal contact is broken. The probability of inadvertent trips due to switch operation is eliminated, since momentary trip signals will no longer be sent to all four RPS channels simultaneously. There is no margin of safety identified in the Technical Specifications for the RCP Power Monitor.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

IV. Temporary Mechanical Modifications, Lifted Leads, and Jumpers

Modification: Silence Local N₂ Low Pressure Alarm at the Mechanical Draft Cooling Tower (LL 5)

Description of Modification: Leads for Fire Service pressure switch 646E were lifted to silence the local alarm for low N₂ pressure at the mechanical draft cooling towers. The alarm was disabled until repairs to the N₂ leaks were repaired.

Safety Evaluation Summary: The temporary modification was evaluated and it was determined that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Defeat of Nuisance Alarm (LL 5 and 6)

Description of Modification: The Mechanical Draft Cooling Tower "C" cell was without deluge protection due to a N₂ leak. The lifted lead defeated the constant alarm resulting from the low N₂ pressure. This temporary modification did not have the potential to adversely affect safe plant operations or nuclear safety since the system components involved have no impact on either. Discharge of Fire Service water into this normally wet environment has no consequences per FSAR section 9.9. The Fire Protection Engineer notified the insurance company representative of the impairment as required by procedure.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the modification.

Modification: Exciter Field Breaker Electrical Isolation (LL 6 and 7)

Description of Modification: Electric isolation of the exciter field breaker during the 10R outage was temporarily provided to protect personnel working on the exciter and still permit breaker testing. The generator excitation system, of which the exciter and field breaker are a part, is not safety related or addressed in either the FSAR or the Technical Specifications.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Disabling of the FWP Trips during 10R Outage (LL 8 and 9)

Description of Modification: The plant interlock trip signals to the FWP trips were disabled to permit resetting the trip during the 10R outage to allow valve stroking and control system testing. The leads were lifted after plant shutdown and replaced prior to startup.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Disable Cold Leg Dam "D" High Pressure Alarms (LL 14 and 15)

Description of Modification: Leads were lifted to disable the Cold Leg Dam "D" High Pressure Alarms which were in a constant alarming condition due to high "D" annulus pressure. Annulus pressure was monitored twice per shift during the period that the alarm was disabled. Other "B" cold leg nozzle dam alarms were restored to operation.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Defeat the Trip of CW Pumps on Hi Waterbox Pressure 'A' Side (LL 19, 20, 21, 22, 30, 33, 63, 64, 65, 66, 67 and 68) and the 'B' Side (LL 41, 42, 43, 44, 45, 46, 91, 92, 93, 94, 95 and 96)

Description of Modification: The trip of CW Pumps on Hi Waterbox Pressure 'A' Side was defeated to eliminate the risk of an inadvertent CW pump trip which also trips the Turbine and Reactor. The high pressure CW pump trip was initially installed to reduce the potential for damage from plastic deformation of the condenser tube sheet as a result of pressure exceeding 50 psig. The damage would not appear in the form of a catastrophic failure but it could cause tube to tube sheet leaks. The shutoff head of the CW pumps is approximately 55 psig and administrative controls prevent inadvertent valve closure. Blockage of the tubes or tube sheet would also have the potential to cause high pressure. An alarm provides warning of increased pressure and fouling would not increase at a rate at which operator action could not be taken before the 50 psig limit would be reached. Based on the low probability of an event causing pressure to increase above 50 psig and the relatively low consequence of the postulated damage, it was determined that the risk of

inadvertent trip out weighs the protection provided by the feature. Removal of the feature will not adversely affect the availability of the condenser for post trip heat removal; including those accompanied by OTSG leaks.

Safety Evaluation Summary: An evaluation of the modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the modification.

Modification: Rad Waste Control Power (J 1)

Description of Modification: Until repairs were completed to the 1B Rad Waste Disposal MCC, an alternate power supply was established via a jumper between the 1B Rad Waste Disposal MCC and the disconnect switch. The alternate supply provided a similar power feed and equipment protection.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Temporary Power to the Epicore Building (J 2)

Description of Modification: Temporary power was provided to the Epicore building for the purpose of heating the building until such time as permanent power is available.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Temporary Power to AH-E6A/B and 7A/B (J 2 and 3)

Description of Modification: Jumpers were installed to permit continuation of Reactor Building purge operations in support of refueling activities during the ICES valve MCC bus outage. Appropriate fire watches were established for the purge supply and exhaust filter banks in accordance with AP 1038 to compensate for the loss of fire protection features.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Re-connect DAS Point for the FW/Rx Cross Limit Signal
(J 2, 3, 4, 6, 8 and 16)

Description of Modification: The modification re-connected the ICS Data Acquisition System (DAS) point for the FW/Rx Cross Limit Signal and the tested loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the FW/Rx Cross Limit Signal was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Re-connect DAS Point for the ΔT_c Calibrating Integral Input Signal (J 2 and 3)

Description of Modification: The modification re-connected the ICS Data Acquisition System (DAS) point for the ΔT_c Calibrating Integral Input Signal and the tested loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the ΔT_c Calibrating Integral Input Signal was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Re-connect DAS Point for Feed Water Pump Speed Demand
(J 2, 3, 4 and 16)

Description of Modification: The modification re-connected the ICS Data Acquisition System (DAS) point for the Feed Water Pump Speed Demand Breakpoint Signal and tested the loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the Feed Water Pump Speed Demand Breakpoint Signal was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-

energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Temporary Power for 480V Switchgear 1N (J 3)

Description of Modification: Temporary power was supplied to the 480V switchgear 1N from the 480V switchgear 1G with the 1N feeder breaker (1N-02) open. The jumper was installed with the equipment energized. Both the 1N and 1G buses were fed from the auxiliary transformers. A precaution was established limiting the current on the bus to 500 amps steady state. The plant was in a shutdown condition when the action was taken. All work was on balance of plant components with no ties to safety related systems or components.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Re-connect DAS Point for the RC Flow Error Signal to ΔT_c Multiplier (J 4 and 5)

Description of Modification: The modification re-connected the ICS Data Acquisition System (DAS) point for the RC Flow Error Signal to ΔT_c Multiplier and tested the loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the RC Flow Error Signal to ΔT_c Multiplier was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Temporary Power to TD-V4B (J 5)

Description of Modification: Temporary power was supplied to TD-V4B from FA-7 in XPL. The jumper temporarily establishes the original power supply for the valve that existed before completion of a change modification.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed

Safety Question or environmental impact resulted from the temporary modification.

Modification: Re-connect DAS Point for the FW Valve Δ P Error Breakpoint Signal to FWP Speed Controller (J 5, 6, 7 and 8)

Description of Modification: The modification re-connected the ICS Data Acquisition System (DAS) point for the FW Valve Δ P Error Breakpoint Signal to FWP Speed Controller and tested the loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the FW Valve Δ P Error Breakpoint Signal to FWP Speed Controller was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Re-connect DAS Point for the Neutron Demand Breakpoint Signal (J 5 and 7)

Description of Modification: The modification re-connected the ICS Data Acquisition System (DAS) point for the Neutron Demand Breakpoint Signal and tested the loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the Neutron Demand Breakpoint Signal was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Re-connect DAS Point for the FW Temperature Error Signal to FW Demand Multiplier (J 6 and 7)

Description of Modification: The modification re-connected the ICS Data Acquisition System (DAS) point for the FW Temperature Error Signal to FW Demand Multiplier and tested the loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the FW Temperature Error Signal to FW Demand Multiplier was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Re-connect DAS Point for the Total FW Controller Output
(J 8 and 16)

Description of Modification: The modification re-connected the DAS point for the Total FW Controller Output and tested the loading affect on the ICS when DAS was de-energized.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the Total FW Controller Output was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Addition of a DAS Points at B Feedwater Demand Circuitry
(J 12, 13 and 14)

Description of Modification: An additional DAS point was added and tested for evaluation of its loading effect on the ICS. Spare DAS cables in cabinet 14 were connected to the module test jacks. The DAS module inputs are buffered to prevent feedback and have a high input impedance to prevent loading of the signal. ICS FW control circuit operation was therefore, by design and the test results, shown not to be impacted by the change.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Temporary Power to Computers (J 15)

Description of Modification: Non-essential balance of plant power was used to supply temporary power to two computers at the radiological controls check-point.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: ESAS 30# Pressure Switch Channel Actuation (J 15 and 16)

Description of Modification: A jumper was installed in PS-286 to actuate the channel since it failed to operate during performance of SP 1303-4.14. The jumper remained as installed until the pressure switch was repaired. Installation of the jumper placed the unit in a one-out-of-two actuation state for the "A" train 30 psig Reactor Building Pressure trip. The margin of safety was not reduced because the jumper actuates one channel of the "A" train.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Re-connect DAS Point for FWP Speed Demand Breakpoint Signals (J 16)

Description of Modification: The modification re-connected the DAS point for the FWP Speed Demand Breakpoint Signals and tested the loading affect on the ICS when DAS was de-energized. Headset communications were maintained with the control room and preparations were made to take the FWP's in "hand" control if necessary.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Re-connection of the FWP Speed Demand Breakpoint Signals was performed because the DAS loading affect on the ICS that occurs with DAS points with high megohm external resistors or high DAS module input impedance were not present in this circuit. Testing verified that the ICS was not affected when DAS was de-energized. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: FS-V143 Hose Reel Removal (TMM 1)

Description of Modification: The existing hose reel was removed temporarily from its permanent location because of load path interference during movement of the new and old spent fuel racks. The hose was attached to a close nipple installed at the reel connection joint. The operation of the Fire System was not affected. The fire risk to the plant resulting from the temporary modification was minimal. A two hour in-service operational test was performed to verify the integrity of the piping during the modified period.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Temporary Power to a Portable Air Conditioner (TMM 1)

Description of Modification: Temporary power was provided via the 1A Turbine Plant H&V MCC Unit 2D to operate a portable air conditioning unit. Air conditioning was necessary to provide a more suitable work environment for personnel working in the main condenser, cleaning tubes, with the plant at 50% power. The power supply used was a BOP source and the additional load of the AC unit was insignificant. Appropriate breaker protection was provided.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Alternate Makeup Flow from Fire Service to the Industrial Coolers (TMM 2, 10, 11, 27 and 34)

Description of Modification: An alternate source of makeup flow was provided to the Industrial coolers from the Fire Service system. A 1 1/2" fire hose connected between the discharge of FS-V119 and WT-V733 was temporarily installed while: a 6" flange was being installed on the WT-P5A/B discharge, a piping leak near WT-V137 was repaired, the piping ID near WT-V765 was inspected, and a tie-in was made to the new "DO" system. During the temporary modification, fire protection capability in the area was not significantly reduced since water to extinguish a fire could be provided by extending a nearby hose. Air cooling capability was maintained by manual control of the hood dampers. Therefore, loss of the spray side coolers on the industrial coolers did not eliminate all Reactor Building cooling. Reactor Building Emergency Cooling was unaffected by the temporary modification.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Provide Makeup to AH-C1B While Makeup Lines are Removed for Modification (TMM 2)

Description of Modification: During modification to the makeup lines to AH-C1B it was necessary to provide an alternate means of makeup supply to the industrial cooler. A fire hose connected between the fire service system and the industrial cooler provided makeup at a rate < 25 gpm.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Although the normal

makeup supply is filtered water, short term makeup from the Fire Service system will not affect operation. The 25 gpm draw rate from the Fire Service pumps was inconsequential since the pumps operate at 3000 gpm. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Physically Isolate of CW-PS-740B/C from the CW System (TMM 2 and 6)

Description of Modification: The branch of the tubing tee which supplies system pressure to CW-PS-740B/C was capped. The pressure switches were physically separated from the CW system to facilitate their permanent removal from service at a later date.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Installation of Probes for Measuring FW-PIA/B Shaft Vibration (TMM 3)

Description of Modification: Bentley Nevada vibration monitoring probes were installed on each side of the FP couplings to monitor shaft vibration. Installation of the vibration monitoring units did not affect the operation of the pumps. The units were external non-intrusive devices whose failure would not affect plant operation.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Installation of a Gag on HD-V14B (TMM 5)

Description of Modification: As a result of leakage past HD-V14B, the valve was gagged. HD-V14A provides sufficient over pressure relief protection for the system. The valve was tested in place and it was found to be lifting low. The spring was determined to be damaged and corrective maintenance was scheduled. The set point was raised to 318 psig and lift tested there with repeatability. The gag was left off the valve.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or

used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Mechanical Prevention of Valve Stem Back-out on HD-V3B
(TMM 5)

Description of Modification: A clamp was installed beneath the jam nuts but above the split nut coupling. The purpose of the clamp was to mechanically bind the components thereby preventing the HD-V3B stem from backing out of the split nut coupling.

Safety Evaluation Summary: The temporary modification was made to a valve which is not important to safety. The clamp insured that the valve operator and stem would not separate. The operation of HD-V3B was not affected by the modification. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Installation of a Temporary Valve Downstream of CA-V172
(TMM 5)

Description of Modification: The modification was performed to control leakage from CA-T1 through CA-V172 by installation of a temporary valve downstream of the leaking valve.

Safety Evaluation Summary: The modification had a positive effect on plant operation in that the CA-T1 leakage was eliminated. The valve remained in place until the completion of post maintenance testing of the repairs to CA-V172. The temporary modification did not constitute an Unreviewed Safety Question.

Modification: Bypass for the Turbine Building Sump during the Powdex Sump Discharge to IWTS Modification (TMM 6)

Description of Modification: A hose was installed from SD-V60 to a line on the IWT waste collection sump to bypass the Turbine Building sump. The bypass was installed to keep the Turbine Building sump operational during the modification of the Powdex backwash recovery piping to the IWTS. All materials used in the temporary modification meet or exceed the design pressures and flow rates of the existing system. The installation was tested prior to use to assure that no failure would occur during operation.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Bypass the Solenoid at WDL-V71 and Provide a Direct Air Supply (TMM 6)

Description of Modification: An "air" jumper was installed on WDL-V71 to maintain the valve in the open position until the replacement of the valve operator solenoid.

Safety Evaluation Summary: The modification had no adverse effect on safe plant operation. It did not change the intent or function of the component or system. The temporary modification did not constitute an Unreviewed Safety Question.

Modification: Provide Makeup to AH-T4 While the Normal Supply Line is Removed for Modification (TMM 6)

Description of Modification: During modification to the supply line to AH-T4, it was necessary to provide an alternate means of makeup supply to the tank. A fire hose connected between the fire service system and the tank provided a makeup volume of between 5 and 25 gallons as necessary.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. Although the normal makeup supply to RB Cooling is filtered water, short term makeup from the Fire Service system will not affect operation. The fire hose was isolated when the tank was not actively being filled to prevent over pressurization of the tank. The rate of draw from the Fire Service pumps was inconsequential since the pumps operate at 3000 gpm. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Elimination of VA-P1C Oil Losses (TMM 9)

Description of Modification: A powered mist collector was installed to eliminate oil losses along the rotor shafts and out the breather cap of VA-P1C. The unit was installed to determine its effectiveness and removed after a trial period. It was connected at the inboard and outboard breather caps. The unit was self contained, required only 100VAC power and minimal fittings to support connection to VA-P1C. Installation of the unit did not introduce or increase any fire hazard.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Elimination of VA-PIC Oil Losses (TMM 9)

Description of Modification: A static mist collector was installed to eliminate oil losses along the rotor shafts and out the breather cap of VA-PIC. The unit was installed to determine its effectiveness and made permanent via EER 92-0364. It was connected at the inboard and outboard breather caps. The unit was self contained, required only minimal fittings to support connection to VA-PIC and no external power supply. Installation of the unit did not introduce or increase any fire hazard.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Un-reviewed Safety Question environmental impact resulted from the temporary modification.

Modification: Provision for Drain Capability during LO-F2A/A and 2A/B Filter Cleaning Operations (TMM 11 and 12)

Description of Modification: Pipe nipples, valves, plugs and caps were installed on the lower pipe threaded fittings of the LO-F2A/A and 2A/B filter housings to permit drainage of the housing during filter cleaning operations. The temporary modification is necessary because of leak through at the transfer valve which prevents isolation of the filter during filter changes. Installation of the piping components described had no effect on the operation of the system or its normal protective devices .

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Use of Fire Service Water for Cooling Water for the Chemtrack Testing of SP 8A/B-FE (TMM 11 and 15)

Description of Modification: FS-V119 and 126, in the Intermediate and Turbine Buildings respectively, were tied in-line prior to the Chemtrack sample carts for the purpose of providing cooling water to the test equipment. A 25-30 gpm flow rate for the period of approximately one hour for each loop was determined not to have a detrimental effect on the Fire Service System. There was no potential for cross contaminating the non-radioactive system. Temporary removal of the hose reels from service did not significantly reduce fire suppression capability in the area. The temporary hose connection could be quickly removed and normal fire suppression capabilities restored.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Provide Fire Service Water to Temporary Trailers on the Turbine Operating Floor during the 10R Outage (TMM 13, 27 and 34)

Description of Modification: Fire Service System water was supplied to temporary trailers on the Turbine Building operating floor for sprinklered fire protection devices in the trailers. A tool trailer, sanitary trailer and machine shop trailer were so supplied by connections made at FS-V130, 136 and 139 respectively. The temporary systems were leak tested and fire brigade personnel made aware of changes to system operation at the affected hose reel locations. Fire exposure risk to the plant caused by the temporary installation of the trailers is minimized by these TMMs.

Safety Evaluation Summary: An evaluation of the temporary modifications found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modifications since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modifications.

Modification: Heater Drain Pump Vibration Monitoring (TMM 17)

Description of Modification: An IRD vibration monitoring system was installed to measure Heater Drain Pump vibrations at each pump bearing at the casing. Installation of the passive monitoring equipment had no effect on the operation of the pumps.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reason above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Install Valves on AH-T4 (TMM 21)

Description of Modification: Valves were installed on AH-T4 to facilitate adding or bleeding air for the purpose of maintaining a proper air bubble in

the tank. Maintaining an air bubble minimizes the probability of tank over-pressure events and damage to system expansion joints due to thermal expansion when the water side of the system is solid. Two 1/2" ball valves were installed in place of RB-V113 and into the spare plug opening on top of the tank. Installation of the valves did not affect the normal operation/recirculation of the tank.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Additional Makeup to the "DO" Head Tank (TMM 27)

Description of Modification: A 2" rubber hose was run from WT-V644 at the carbon filter outlet to DO-T1 for the purpose of supplying additional makeup capability while the new "DO" well was being tied into the system. The supply replaces FS-T1 as the normal makeup to DO-T1.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Monitoring "A" HPI Line Temperature (TMM 28)

Description of Modification: Two thermocouple junctions were attached to the "A" HPI line at MU-H43 to permit trending HPI line temperature from outside the Reactor Building. The measurements obtained were for "information only". The materials in contact with system piping were compatible with stainless steel and their weight did not impact the stress analysis results for the piping.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Alternate Make-up Flow to the Industrial Coolers from the Fire Service System (TMM 28)

Description of Modification: To support the repair of WT-V72B, it was necessary to provide alternate make-up to the industrial coolers from the Fire Service System. A hose was temporarily connected from the reel at FS-V119 to a vent valve WT-V733 in the Intermediate Building "D" Main Steam Cubicle. The temporary connection was used only as necessary. Fire protection capabilities in the area were not significantly reduced since the hose from a nearby station could be extended if required. Loss of the spray side of the industrial coolers would not have eliminated all Reactor Building heat removal since the air side remains effective for short time periods.

Safety Evaluation Summary: An evaluation of the temporary modification found for the reasons above, that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Sampling OTSG Secondary Side at the Nuclear Sample Room (TMM 32 and 33)

Description of Modification: Iodine concentrations in the OTSG secondary sides has made it necessary to collect these samples in the Nuclear Sample Room. Valves CA-V111A/B were fouled and were removed to permit sampling via this pathway. Removing the sample valves and replacing them with SS tubing eliminated the component prone to fouling. Throttling will still be accomplished using the remaining system valves.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Provide an Alternate Supply of Filtered Water to IWT (TMM 34)

Description of Modification: During replacement of the filtered water supply to the IWT, it was necessary to provide an alternate filtered water supply to the IWT. A hose connected between the filtered water supply and the IWT provided sufficient makeup volume to continue system operation.

Safety Evaluation Summary: The temporary modification was evaluated and found to have no adverse affect on safe plant operations. This temporary modification did not constitute an Unreviewed Safety Question.

Modification: Installation of a Temporary Clamp on HD-V3B to Prevent Stem Rotation (TMM 35)

Description of Modification: Rotation of the valve stem during operation would eventually cause separation. A clamping device holds both the lock nut and the split coupling nuts preventing rotation and possible stem separation.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the temporary modification. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.

Modification: Operation of the OOB Fire Panel (TMM 69)

Description of Modification: The Operations Office Building Fire Panel, located on the 355' elevation of the Turbine Building was made operational by repositioning leads landed on the K6 relay terminals to the K5 terminals. The K5 relay is an identical spare to the K6 relay which did not operate properly. The K5 relay operates as originally designed and the system operates as intended.

Safety Evaluation Summary: An evaluation of the temporary modification found that the probability of occurrence or consequence of an accident or malfunction either previously analyzed or of a new or different type was not increased. No Technical Specification margin of safety was reduced by the modification since none of the systems/components are defined or used in the basis of any Technical Specification safety limit. No Unreviewed Safety Question or environmental impact resulted from the temporary modification.
