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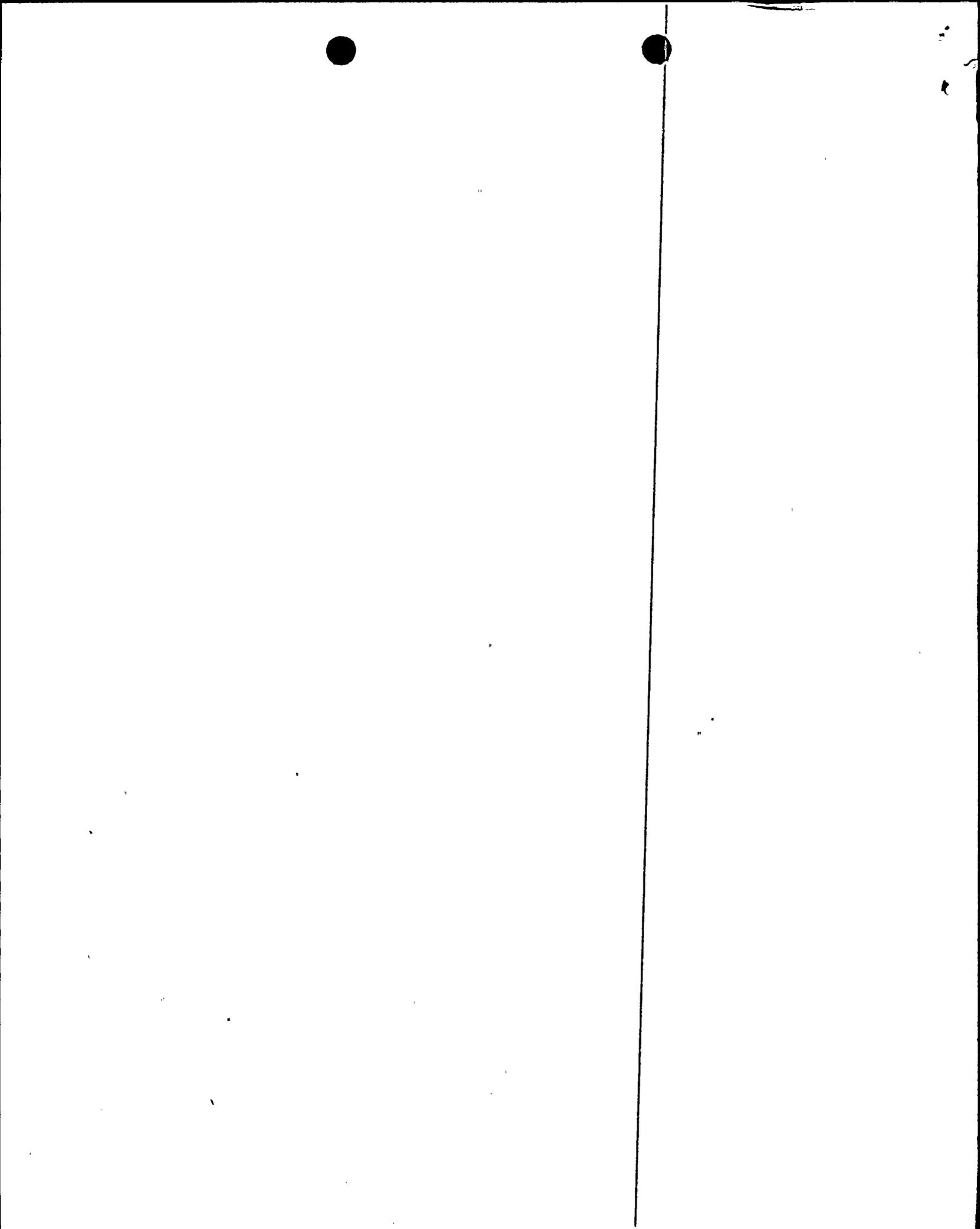
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United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
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SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
REPORT IN ACCORDANCE WITH 10 CFR 50.59

Gentlemen:

In accordance with 10 CFR 50.59(b)(2), the following report is submitted for the period of February 1, 1993 through July 11, 1994, which includes the Harris Plant Refueling Outage No. 5. This report contains brief summaries of changes to the plant and procedures, which change the facility as it is described in the FSAR, or tests and experiments that are not described in the FSAR.

Questions regarding this matter may be referred to Mr. R. W. Prunty at (919) 362-2030.

Sincerely,

W. R. Robinson

SDC/sdc

c: Mr. S. D. Ebnetter
Mr. S. A. Elrod
Mr. N. B. Le

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Title: PCR-0420, Reactor Coolant System RTD Bypass Manifold Elimination

Functional Summary:

This modification removes the resistance temperature detector (RTD) bypass piping from all three reactor coolant system (RCS) loops, welds thermowells into the main RCS pipe, and welds caps on the RTD bypass return lines. Fast response RTDs were placed in the thermowells which provide the same temperature measurements as did the RTDs in the bypass manifolds.

Safety Summary:

The net response time for the modified system is similar to that of the original design. Changes in individual response time constants have been incorporated into the Cycle 6 reload analysis. The new RTDs meet the same accuracy and drift requirements as the manifold RTDs. Total loop uncertainties associated with the RCS temperature measuring loops were verified to have no significant changes as a result of this modification. The added thermowells are similar to existing thermowells and meet applicable ASME codes. Failure of an RTD or a thermowell is bounded by the original design and accident analysis. The modification does not adversely affect the design basis of the reactor protection system or the reactor coolant system.

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Title: PCR-0516, Diesel Generator Building Exhaust Fan speed reduction.

Functional Summary:

The modification reduced the speed of the diesel generator building exhaust fans by approximately 6% to avoid the potential of exceeding the fan motor ratings during cold weather operation if the unit heaters are unavailable (i.e., during a loss of offsite power).

Safety Summary:

The reduced air flow through the silencer and day tank rooms remains sufficient to meet Technical Specification requirements. By reducing the fan motor load in cold weather operation, this modification reduces the possibility of occurrence of malfunction of equipment important to safety. This modification has no effect on accident initiating factors, accident mitigation, or the potential consequences of any Chapter 15 analyzed accident

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Title: PCR-0557, Refueling Water Storage Tank Sample Line Modification

Functional Summary:

This modification extends the Refueling Water Storage Tank local sample line to Sample Room #10 in the Reactor Auxiliary Building. Previously, samples were drawn from the line at the RWST. The additional tubing and supports conform to ASME Section III, class 2, seismic Category I requirements. The sample valves, both existing and added are administratively controlled for assurance of RWST level maintenance. The basic function of the RWST has not changed since the modification only provides for sampling at a more convenient location. RWST level alarms are not affected and will continue to provide assurance that the system will be available for accident mitigation as originally designed.

Safety Summary:

The RWST is not an initiating system for any Chapter 15 accident, but rather, as part of the ECCS system is used to mitigate design basis accidents. The existing local sample valves are normally closed to maintain RWST inventory. The new valves will assume the normally closed position and will be under the same administrative controls as the previous isolation valves. Equipment materials added by this modification are qualified and supported sufficiently to extend the safety/non-safety boundary to the new isolation valves. In that this modification only extends the sample point to a more convenient location and that the material qualifications, function; controls and safeguards for the RWST inventory remain unaffected, this modification does not adversely affect the ECCS's ability to perform its design function.

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Title: PCR-1275, Sample Point for Waste Evaporator "B"

Functional Summary:

This modification reroutes the Waste Evaporator "B" concentrates sample tubing to the Waste Evaporator "A" sample sink. The modification also provides for sample recirculation and demineralized water for cooling, flushing and rinsing.

Safety Summary:

This modification eliminates the use of a temporary sample sink. The new sample point provides for sample collection inside an enclosed sample sink which is vented to the plant exhaust. The modification has no effect on any safety related equipment and has no effect on any accident initiating or mitigating equipment. Tubing, valves and supports are non-safety related and non-seismic.

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Title: PCR-1347, Containment Atmosphere Purge Exhaust System

Functional Summary:

Pressure Differential Transmitter PDT-01CP-7611S and its associated control circuitry is used in maintaining Containment pressures negative with respect to the Reactor Auxiliary building pressures. Because PDT-01CP-7611S sensed pressure between Containment and the RAB, upsets in RAB pressures tended to influence Containment pressures and promote control system instability. The intent of this modification was to relocate the RAB reference leg for PDT-01CP-7611S to an area less susceptible to pressure swings to enhance system stability and to reduce make-up fan trips.

Safety Summary:

This modification ensures operation of the purge makeup systems per the original design intent, and through the use of qualified materials and supports ensures no adverse impact to the operation, availability or reliability of any system important to plant safety or accident mitigation.

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Title: PCR-2029, Turbine Building Condensate Polishing Demineralizer Area Ventilation System

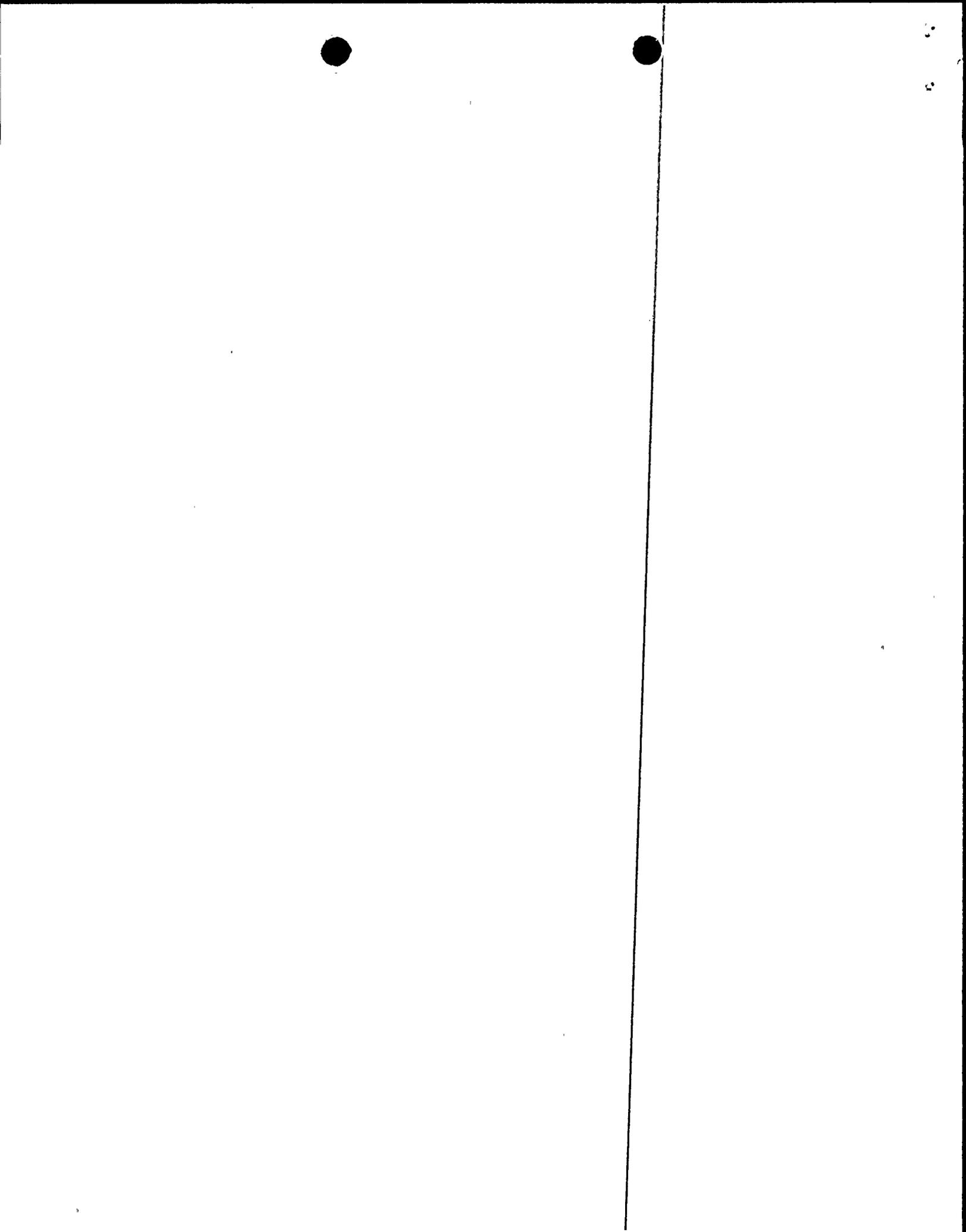
Functional Summary:

High temperatures in the Turbine Building Condensate Polishing Demineralizer (CPD) area are due to high heat producing components. Ventilation system air flows and directions were not removing heat effectively. This modification revised air flow quantities and directions so that air is supplied to personnel occupied and accessed areas and is exhausted through areas of heat producing components. These changes involved the addition of ductwork runs, elbows and exhaust registers, and the rebalancing of HVAC supply and exhaust systems. Implementation of the changes provide a controlled environment suitable for plant personnel.

Safety Summary:

The CPD System and the related portion of the Blowdown System are designed non-safety, non-seismic and are not required for safe shutdown. The CPD area ventilation system will not adversely impact any safety related systems. In addition, the system is not an accident initiating or mitigating system and is not required to operate during accident conditions. The changes maintain FSAR design basis to supply air to clean areas and exhaust air into potentially radioactive areas and through air filtration units.

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Title: PCR-2417, EAC-1X Drain Water

Functional Summary:

This modification redirects the drain water from the Heating and Ventilation Air Washer and Fan EAC-1X from the Reactor Auxiliary Building floor drains to the HVAC Condensate Transfer tank.

Safety Summary:

The drain system is non-Q and non-seismic. The equipment is not needed for safe shutdown of the plant.

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Title: PCR-2498, Condensate Storage Tank Level Setpoints

Functional Summary:

The CST level alarm and interlocks setpoints have been revised from twenty-seven feet to twenty-seven feet and six inches.

Safety Summary:

The revised level maintains increased margin between the new setpoints and the technical specification minimum required level. This modification has no safety impact on the initiation or mitigation of an accident.

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Title: PCR-2512, Service Air Regulators to Chiller Expansion Tank

Functional Summary:

This modification installs additional equipment on the service air makeup lines to the essential chilled water expansion tanks to provide improved tank pressure control. Reducing tank pressure perturbations allows the essential services chilled water pumps to operate more efficiently.

Safety Summary:

This modification will improve service air makeup pressure control to the essential chilled water expansion tanks during normal operation. Since service air to the expansion tanks is assumed to fail and is therefore isolated during accident conditions, this modification will not increase the probability of an accident or equipment malfunction, or the consequences of any accident or malfunction. Malfunction of the installed equipment will only result in a loss of service air to the ESCW expansion tanks.

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Title: PCR-3175, Penetration Seals

Functional Summary:

This modification installed a new mechanical seal on the Waste Evaporator non-nuclear safety Concentrate Pumps 1 and 2A. The new seals utilize heated and pressurized seal water which prevents seal damage caused from the crystallization of boron in the pumped fluid.

Safety Summary:

This design change does not adversely impact any accident mitigating or initiating systems nor are the bases to any Technical Specification affected.

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Title: PCR-3176, Mechanical Seals

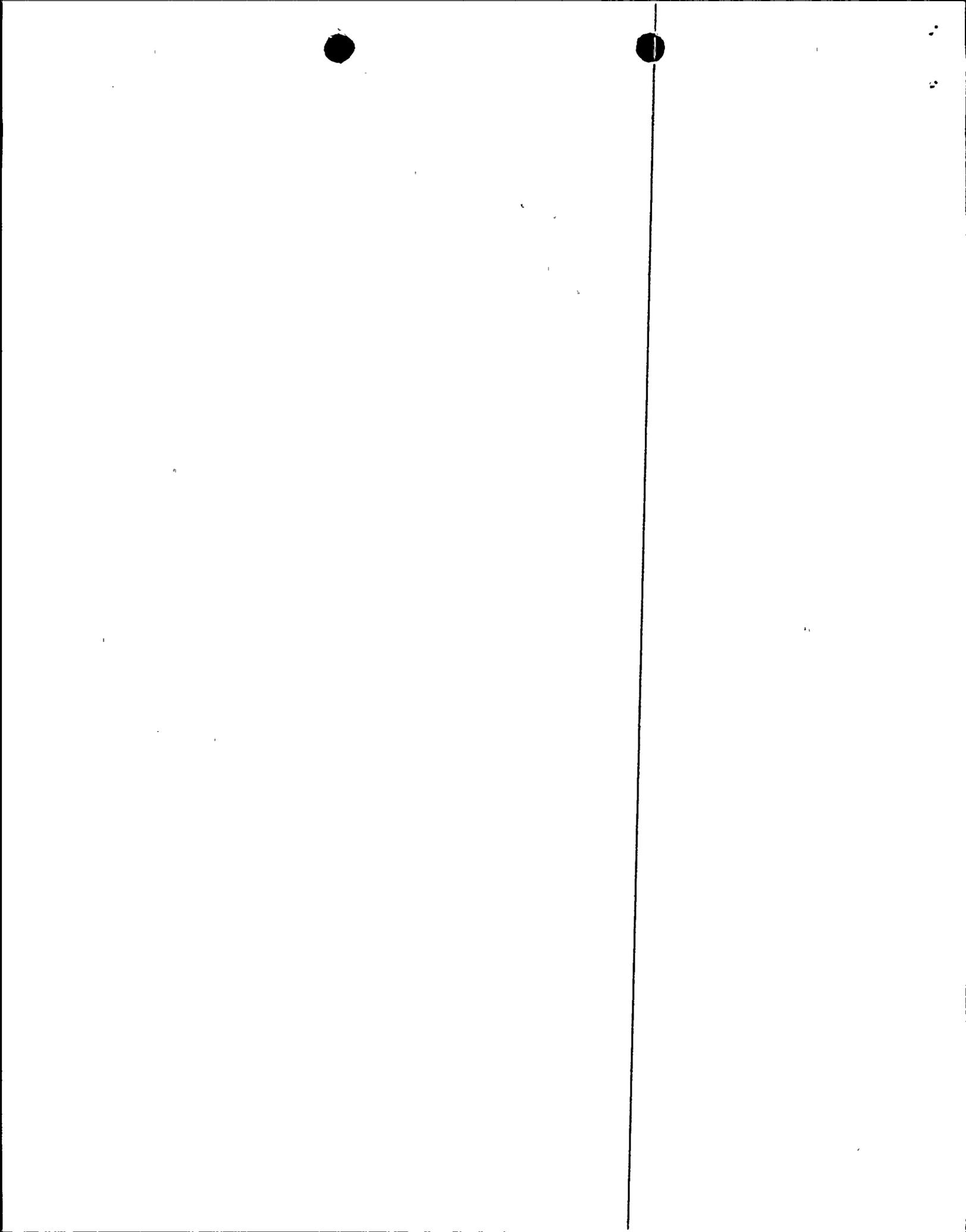
Functional Summary:

This modification installs new mechanical seals on multiple Crane Deming Model 3065 A05 pumps in the Secondary Waste and Floor Drain systems. The modification included routing demineralized water to the new seals for seal water. The new seals requires seal water at a pressure of 15 psig above the stuffing box pressure. This ensures inleakage into the seal and pumped fluid. The demineralized water system is also protected from backflow by a check valve.

Safety Summary:

Although the Liquid Waste Processing System is a system related to the initiation of FSAR analyzed accidents, the secondary waste treatment system pumps included in this modification are not associated with any of the analyzed accidents. This modification does not adversely impact any accident mitigating or initiating system nor does this modification adversely affect the basis to any technical specification.

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Title: PCR-3204, Deletion of Safety-Related Radiation Monitor

Functional Summary:

This modification deleted the Containment Post LOCA radiation monitors RM-1CR-3563A-SA and RM-1CR-3563B-SB from the Radiation Monitoring System. These monitors, located in the Reactor Auxiliary Building (outside containment), were used in the original plant design to estimate the post-LOCA radiation levels inside the reactor containment building. These monitors were to measure the radiation field through the concrete containment wall and provide an estimate of the actual radiation field. These monitors have been functionally replaced by high range area monitors RM-1CR-3589-SA and RM-1CR-3590-SB which are located inside the containment.

Safety Summary:

Radiation monitors RM-1CR-3563A-SA and RM-1CR-3563B-SB do not affect any initiating or mitigating systems. Deleting these two monitors will not increase the probability or consequences of an accident or radioactive release, because they perform no mitigating functions, and a better method of monitoring the same parameter exists. Area monitors RM-1CR-3589-SA and RM-1CR-3590-SB are Q class 1E and are qualified for LOCA conditions.

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Title: PCR-3315, Containment Temperature Monitoring

Functional Summary:

This modification provides supports in the RAB Elevation 261' for mounting a data logger for use in measuring and recording temperatures inside the SHNPP containment building. The data logger utilizes the existing Integrated Leak Rate Test (ILRT) cables. In addition, this modification relocates a fire extinguisher from the west side of column FZ-22 to the west side of column FX-22 to avoid interference with the data logger support bracket.

Safety Summary:

The data logger support bracket design has been evaluated to be appropriate for the intended function with regard to seismic events. The support and fire extinguisher relocation have no impact on the probability of occurrence of any previously analyzed accident, have no impact on the mitigation or consequences of previously analyzed accidents nor present a possibility for creating new accidents or equipment malfunctions.

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Title: PCR-3392, Addition of Shower & Eye Wash Station to the Sewage Treatment Plant

Functional Summary:

This modification added a shower and eye wash station to the sewage treatment plant along with a concrete pad to support it. The supply for the eye wash station is potable water.

Safety Summary:

The potable water system is neither an accident initiation or mitigating system and has no impact on any accident scenario discussed in Chapter 15 of the FSAR.

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Title: PCR-3430, Treated Laundry & Hot Shower Tank Discharge

Functional Summary:

This modification adds flanges with a pancake (blank) as a second isolation at the Treated Laundry and Hot Shower Tank Discharge path to the Waste Neutralization System. This second isolation provides a back-up to valve 3LHS-302 to prevent an inadvertent discharge to the Waste Neutralization System.

Safety Summary:

This modification is on a portion of the Liquid Waste Processing System which is an initiating system. The modification has no effect on the accident analysis since the system is assumed to fail as the result of a safe shutdown earthquake. The system integrity is not changed by this modification since the material is the same type, grade, schedule and rating as the original components. The increased weight also does not affect the existing supports. The modification has no effect on any other systems. It provides additional assurance that the Treated Laundry and Hot Shower Tank discharge will not be aligned to the Waste Neutralization System.

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Title: PCR-3431, Waste Monitor Tank Discharge to Waste Neutralization System

Functional Summary:

This modification adds flanges with a pancake (blank) as a second isolation at the Waste Monitor Discharge to the Waste Neutralization System. This second isolation provides a back-up to valve 3FD-426 to prevent an inadvertent discharge to the Waste Neutralization System.

Safety Summary:

This modification is on a portion of the Liquid Waste Processing System which is an initiating system. The modification has no effect on the accident analysis since the system is assumed to fail as the result of a safe shutdown earthquake. The system integrity is not changed by this modification since the material is the same type, schedule and rating as the original components. The increased weight also does not affect the existing supports. The modification has no effect on any other systems. It provides additional assurance that the Waste Monitor Tank discharge will not be aligned to the Waste Neutralization System.

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Title: PCR-3543, Temperature Monitoring Instrumentation

Functional Summary:

This modification rolls-over to a permanent installation a temperature monitoring system which uses thermocouples and associated extension leads routed as exposed bundles within the reactor containment building and reactor auxiliary building. As part of the Safety Injection Stratification Monitoring Program sixteen non-safety, non-seismically thermocouples were mounted to several sections of safety injection piping.

Safety Summary:

The rollover to permanent plant equipment has no effect on any accident initiating systems, nor does it affect any mitigating function of any mitigating systems. It only supports non-safety related performance monitoring trend of safety injection and chemical and volume control process piping lines. All the equipment of the installation is non-Q, non-safety related. No quality classes, seismic qualifications, or environmental qualifications of equipment are changed or affected by the rolled-over installation.

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Title: PCR-3581, Main Feedwater Header Flange Removal

Functional Summary:

This modification removed a flanged connection in the bypass piping from the condenser to the main feedwater heater piping and installed a welded pipe spool piece. This segment of pipe allows recirculation of the fluid from the condenser without the water going to the steam generator. This recirculation path is utilized during startup to facilitate proper water chemistry. During normal operation, this recirculation line is isolated. This piping does not provide a safety function.

Safety Summary:

The Feedwater System is the subject of two Chapter 15 accident analyses: Loss of Normal Feedwater and Feedwater System Pipe Break. Replacement of the flanged spool piece with a welded spool piece does not adversely impact the probability nor the consequences of either accident. Also, the replacement does not involve the creation of different malfunctions of equipment.

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Title: PCR-3886, Recycle Evaporator Sampling

Functional Summary:

This modification reroutes three Boron Recycle Sample points to the Primary Sample Panel 1B-NNS.

Safety Summary:

This change affects the Boron Recycle Sample points. It does not affect any initiating or mitigating system. Failure of this system will only affect the operation of the Boron Recycle Evaporator and the ability to sample the Recycle Hold-up Tank. The affected equipment will not prevent the safe shutdown of the plant.

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Title: PCR-3922 Blowdown Heat Recovery and Clean-up, Phase 1
PCR-6224 Blowdown Heat Recovery and Clean-up, Phase 2

Functional Summary:

Phase 1 removed the Electro-Magnetic Filter (EMF), EMF settling tank, settling tank pumps and all associated piping and instrumentation in preparation for the blowdown heat recovery and cleanup system. The modification included installation of piping connections, valves, etc. which would allow the blowdown system to remain operational following the modification. Phase 2 installed process tie-ins to the blowdown, feedwater and condensate systems in preparation for the (future) installation of the blowdown heat recovery and cleanup system.

This modification does not affect the blowdown system's capability to control steam generator chemistry.

Safety Summary:

The removal of the EMF sub-system does not affect the ability to control steam generator chemistry. Without the EMF, the particulate matter that would have otherwise been removed by the filter will now enter the condenser where it is to be removed by the condensate polishers. The additional solids loading on the polishers will shorten their run times by a small amount. Due to this new operating alignment, there is no safety impact nor is there any increased likelihood of a steam generator degradation. These modifications do not affect the ability to sample the steam generators. The safety related portion of the blowdown system is unaffected by these modifications.

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Title: PCR-3995, Emergency Diesel Generator Starting Air Modification

Functional Summary:

This modification to the EDG starting air system replaces the dryer skid inlet coalescing filter and outlet filter, and installs a separator/coalescer between the compressor after-cooler and the dryer skid. All components are non-safety related, seismic supported. The separator/coalescer contains condensate drains level and differential pressure instrumentation.

This modification also downgrades the starting air compressors and all system piping up to but excluding the dryer outlet check valve. The check valve and all equipment located downstream continue to be safety related and seismically supported.

The equipment added by this modification does not alter the capability to start the EDGs. These changes should improve the moisture removal capability of the starting air dryers and subsequently improve the reliability of the diesels by



reducing the amount of contamination introduced to the starting and control air. The starting air system up to and excluding the dryer outlet check valve is not credited with functioning in order to meet the starting requirements for the EDGs.

Safety Summary:

This modification is designed to improve the EDG starting air quality, thus making the diesel generators more reliable. The reduction in moisture and contamination in the starting air will prolong the service life of components that communicate with this air, reduce the frequency of slow starts and reduce the potential of failures attributable to airborne contamination. The probability of occurrence of an accident is not increased since there is no reduction in the capability to meet the starting criteria as defined in the Technical Specifications or to start the EDG in the required time. The equipment being added or replaced remains seismically supported to ensure that two over one criteria is met. There are no credible scenarios where the non-safety portion of the starting air system can fail and cause a failure of the essential portion of the system. A failure of a dryer outlet filter would result in the release of particulate contamination into the air receivers. This should not constitute an increase in the consequences in malfunction since point of use filters are located at critical locations throughout the diesel starting control network to ensure that the particulate contamination does not affect the function of the diesel.

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Title: PCR-4155, Emergency Diesel Generator Lube Oil Simplified Flow Diagram

Functional Summary:

This PCR changes drawing CPL-2165-S-644S01, Emergency Diesel Generator Lube Oil Simplified Flow Diagram, to show the installation as exists in the field. The revision includes the actual orientation of the sightglass and orifice, the addition of a prelube system, lube oil heater thermostats and pressure differential switches.

Safety Summary:

The change properly documents existing plant configuration. Proper documentation serves as an aid to operations, maintenance and support personnel. Therefore this change had no affect on accidents, accident mitigation, equipment malfunction, equipment malfunction consequences or margin of safety.

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Title: PCR-4343, Revision to FSAR Post-Accident Accessibility Maps

Functional Summary:

The PCR revised the Equipment Qualification Zone Maps by subdividing large zones into smaller zones. It also revised the integrated equipment dose in Zone 7 to include dose contribution from piping on the mezzanine. These revisions to the equipment dose maps did not require any equipment in the affected zones to be reclassified environmentally. All equipment remains environmentally qualified. Consequently, this modification required no field work and is a document change only.

Safety Summary:

Because the environmental qualification of equipment was not affected and no field changes were made, there was no adverse safety impact.

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Title: PCR-4418, Chemical and Volume Control System Chemical Mixing Tank Level Indication

Functional Summary:

This modification added a local sightglass level gauge for the CVCS Chemical Mixing Tank. As part of the CVCS, the Chemical Mixing Tank is used to introduce chemicals into the Reactor Coolant System in order to maintain RCS chemistry.

Safety Summary:

The CVCS is an accident initiating system, However, the Chemical Mixing Tank and associated piping are non-safety components. Installation of the sightglass will not impact any initiating system or mitigating system evaluated in any chapter 15 accident.

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Title: PCR-4445, Pressure Transmitters PT-6027A and PT-6027B

Functional Summary:

This modification makes various design changes to the Waste Evaporator Condensate System, including the relocation of primary taps associated with Waste Evaporator Condensate pump discharge pressure transmitters, as well as modifications to the Auxiliary Relay Panels and Waste Processing Analog Control cabinets.

Safety Summary:

The components affected by this modification are not safety related and are not required to operate during a design basis accident. The components introduced by this modification possess no greater failure potential than that of existing system component. The design basis of the Waste Evaporator System is maintained such that any failure of electrical equipment affected by this modification will not have any adverse effect on the performance of safety related equipment.

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Title: PCR-4507, Instrument Air System / Service Air System Crossover

Functional Summary:

Due to air compressor unreliability under continuous duty, this modification disables crosstie valve IIA-648 and deletes the associated pressure controls to allow for a continuously open flow path between the Instrument Air and Service Air Systems. This modification improves the reliability of the compressed air system by providing a flow path which will allow more even use of the air compressors. The Compressed Air System is non-nuclear safety related and is not required for the initiation of any emergency safeguards features system, safe shutdown system or safety-related air operated valves.

Safety Summary:

The FSAR accident analyses do not assume the Compressed Air System is operable and does not take credit for the system. Failure of the CAS has does not impact any safety related equipment. This modification enhances the system operability; it does not degrade the integrity of the CAS

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Title: PCR-4517, Rerack of "B" Spent Fuel Pool - Use of New BWR Spent Fuel Pool Storage Rack Design

Functional Summary:

CP&L has purchased five new spent fuel racks for the SHNPP spent fuel pool. The new racks are designed to hold BWR fuel assemblies and were designed to be direct replacements for the original design BWR fuel racks.

Safety Summary:

The new BWR 11x11 Spent Fuel Rack design meets all governing code requirements for structural concerns such as stress and deflection. No structural margins of safety are reduced by the new rack design. The new rack center to center spacing, cell opening, envelope, etc. are the same as the previous design racks. The new design does have two major improvements: the poison material is Boral with a higher B¹⁰ loading and the poison material is on all four sides of every cell. These changes result in a greater B¹⁰ loading per rack. Given that the other rack dimensional parameters are the same, the criticality analysis remains valid.

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Title: PCR-4699, Fire Protection System

Functional Summary:

This FSAR revision addresses additional permanent non-fixed combustibles and transient combustibles in various fire zones in the Reactor Auxiliary Building, Waste Processing Building, Turbine Building, and Fuel Handling Building. These combustibles are used to support routine and outage operations.

Safety Summary:

The combustibles have been determined to be acceptable for the intended locations, in light of the amount and configuration of the combustible, the available active and passive fire protection features including fire brigade response, and the impact on equipment required for safe shutdown in the event of fire. The additional permanent and transient combustibles in designated storage locations will not cause potential single failures to become common mode failures, nor cause events previously considered incredible to become credible.

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Title: PCR-4853, Generic Use--Patel Thread Sealant P-1 (Grafoil Paste)

Functional Summary:

This PCR evaluated the generic use of PATEL thread sealant P-1 (Grafoil Paste) at SHNPP.

Safety Summary:

The P-1 thread sealant has been subjected to qualification testing and/or analysis which envelopes all postulated environments at SHNPP. The results justify the use of this material in all temperature, radiation, pressure and moisture environments postulated in the SHNPP FSAR.

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Title: PCR-4964, Tool Room Renovation

Functional Summary:

In this modification the temporary tool room on elevation 236'-0" was reconstructed as a permanent facility with installed lighting, receptacles, fire detection, ventilation and unit heaters. Two light fixtures were added to the Normal/Emergency AC lighting system. These lights are non-safety related, however, they are fed from safety related MCC 1&4A33-SA, and in the case of loss of power they are loaded on the emergency diesel generator 1A-SA. Calculations show that the addition of the two light fixtures will not degrade the AC distribution system.

Safety Summary:

The air handling unit is non-nuclear safety related and interacts only with non-nuclear safety related equipment. The lighting system is non-nuclear safety related except as discussed above. The concrete slab floor upon which the tool room is located has sufficient margin to accommodate the added loading. The area where the tool room is located contains no safety related equipment. Therefore, this modification affects no FSAR analyzed accident initiating or mitigating systems and has no impact on the consequences of any Chapter 15 accident analysis.

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Title: PCR-5004, Turbine Generator Hydrogen Pressure Regulator Filter

Functional Summary:

A line filter has been added to the Turbine Generator Hydrogen Supply line to remove any particles in the flow stream equal to or larger than 0.1 micron in size.

Safety Summary:

The hydrogen system is non-safety related and non-seismic in its service to the generator. The addition of the filter and associated components are to enhance the system by removing foreign particles to prevent malfunctions of the regulator to the generator and to keep this debris from entering the generator gap/void areas. The turbine/generator trip is an analyzed event and the addition of the filter does not change the results of the analysis. Equipment reliability is improved by the addition of the filter since the hydrogen will be free of the particles when it enters the regulator and generator. The hydrogen system does supply gas to the volume control tank. A check valve prevents backflow from the VCT if the hydrogen pressure is lost.

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Title: PCR-5074, Pass Chiller Skid Relocation

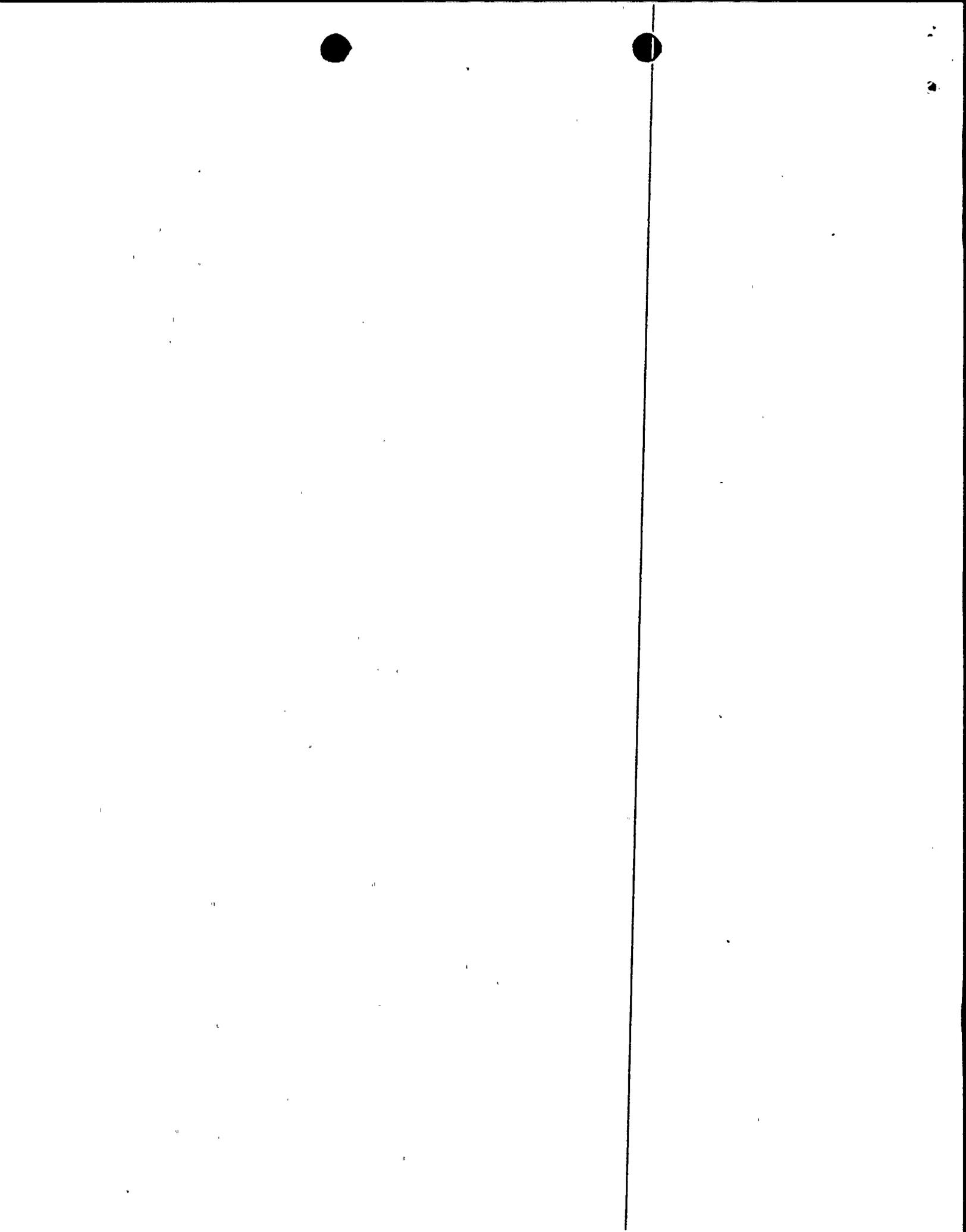
Functional Summary:

This modification relocates the Post-Accident Sample System chiller 2'-4" from the back wall in order to allow access to the rear of the chiller for maintenance. This modification also changes the normally closed service water system supply valves 1SW-673 and 1SW-674 to normally open. This modification meets the design material and construction standards applicable to the PASS system. The physical relocation of the chiller skid does not affect its operation. There are no safety-related effects as a result of the relocation. Changing the normal valve position of the service water supply valves (closed to open) could potentially reduce the Emergency Service Water flowrate to all components downstream of the PASS chiller by as much as 143 gpm in the event of a break in the ESW supply line to the PASS chiller. However, the effect has been determined to be minimal due to the small reduction in actual flow as seen by each downstream component.

Safety Summary:

In that this modification maintains the original design qualifications (with regards to physical modifications associated with the skid relocation) and the effect of changing the ESW supply valve position has been determined to be of insignificant effect, this modification does not increase the probability of occurrence or the consequences of any analyzed accidents. Nor does this modification impact the probability of malfunction of equipment important to safety.

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Title: PCR-5104, SA Crosstie to E&E Center Hydropneumatic Tank

Functional Summary:

This PCR changed the motivating air for the Potable Water (Hydropneumatic Tank) supply to the Harris Plant E&E Center. The air supply was changed from instrument air to service air. This change was due to a contamination of the instrument air system that had occurred.

Safety Summary:

The system function of each of the three systems involved was not changed. Each system's reliability was maintained. No safety systems or equipment were affected by the change.

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Title: PCR-5256, Under-Voltage Relay Drift

Functional Summary:

This modification revised the 6.9KV safety bus degraded voltage relay setpoints based on new electrical calculations E2-005.09 & E-6000. The new setpoints include a factor for setpoint drift that was not included in the original setpoints. FSAR Chapter 8 changes were required as a result of the revised setpoint values and the new calculations.

Safety Summary:

The accuracy of the degraded voltage relay setpoints was improved by this modification. The degraded voltage relay setpoint values were removed from the FSAR since they are controlled by the electrical calculations and plant design documents. Several other editorial changes were also made to FSAR Chapter 8 that were identified during development of this modification.

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Title: PCR-5296, Target Rock Valve Replacement

Functional Summary:

This modification replaced Target Rock solenoid-operated valves in the sampling system with air operated Anchor Darling double disk valves. These valves perform the containment isolation function for the sampling lines from the Reactor Coolant System and the Steam Generators. The replacement valves, existing pipe, supports and associated equipment have been designed/analyzed to be able to safely carry all dead loads, thermal loads and seismic/dynamic loads to be placed on them. The replacement equipment is environmentally qualified for the environment in which it was installed. Valve control circuit modifications have not resulted in a change to valve control logic or system operation.

Safety Summary:

The modification enhances system reliability by replacing existing equipment with air operated valves of a proven design. The valve replacement improves the performance and reliability of the valves, therefore no initiating or mitigating systems are adversely affected by this modification.

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Title: PCR-5380, Deletion of Turbine Building Acid and Caustic Transfer Pumps

Functional Summary:

The two turbine building acid and caustic transfer pumps are seldom used. The mechanical seals on the pumps experience routine failures. Frequent seal failure increases the risk of personnel injury and environment discharge permit violations. This modification removes the pumps as well as the pump discharge pressure indicators at the turbine building tank locations. The acid tank is raised 30" at its present location to supply the head necessary to eliminate the need for the pumps. The controls, both local and remote for the pumps are removed.

Safety Summary:

Malfunction of Turbine Building Acid and Caustic System has no affect on accidents, accident mitigation, equipment malfunction, equipment malfunction consequences or margin of safety. It does not interface with any safety related equipment. The removal of the acid and caustic transfer pumps will reduce maintenance of mechanical equipment, risk of personnel injury and risk of environment discharge permit violations.

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Title: PCR-5447, Control Room HVAC SLB Windows

Functional Summary:

This modification changed the functional engraving of windows 8-2, 8-3 and 8-4 of Status Light Boxes 5 and 6. These boxes provide position indication for Control Room HVAC equipment.

Safety Summary:

The changes implemented by this design change affect passive components which possess no credible failure mechanisms. This modification does not adversely affect the ability of the safety related Status Light Boxes to provide position indication of Control Room HVAC equipment. Neither the Control Room HVAC System nor the Annunciator System is related to the initiation of any accident analyzed in the FSAR. This modification does not cause either system to be operated outside its design limit and does not adversely affect the overall performance of either system.

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Title: PCR-5451, Moisture Separator Drain Tank Drain Flow Element Relocation

Functional Summary:

This modification reroutes the drain piping from the Moisture Separator Drain Tank in order to provide head pressure to the flow elements. The added head pressure will prevent flashing in the flow elements to improve the flow measurement.

Safety Summary:

The Heater Drain System is considered a part of the Feedwater System. The function of the HD System is to maintain the proper water level in the FW heaters and the moisture separator/reheater drain tanks. The changes in this modification have no effect on this function. The modification improves the flow indication. The piping changes used the same type, schedule, and rating materials as the original system components. This portion of the system is non-safety, non-seismic and has no impact on any safety related equipment/system.

Title: PCR-5502, Sample Reclamation System

Functional Summary:

This modification installed a sample reclamation system which accepts and stores sample water. It also discharges the liquid back to the condenser for reuse or pumps it to radwaste as determined by water quality. The reclamation system is non-seismic and non-safety related. The pumps, valves, tank, fittings and piping are designed to meet or exceed the service environment (temperature, pressure and water quality) in which they are exposed.

Safety Summary:

Failure of these connections would result in sample liquid being spilled on the turbine building. This leakage would be captured by either the industrial waste sump or radwaste drains. Air leakage into the condenser from failure of the sample liquid discharge piping would result in impurities entering the condensate system. These impurities would be removed by hydrazine and the condensate polishers prior to entering the steam generators.

This modification involves a secondary system which has no active interface with systems or equipment related to accident initiation. It is not required for safe shutdown and has no accident analysis associated with it. The subject modification does not degrade any accident mitigating systems or features and does not impact initial conditions concerning radiological consequences. The consequences of a malfunction of equipment installed by this modification are bounded by existing analyses.

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Title: PCR-5505, Condensate Storage Tank Sample System

Functional Summary:

This modification replaces the present CST carbon steel sample line with stainless steel, and installs specific conductivity, cation conductivity, ph and oxygen inline instrumentation. The sample line and instrumentation are non-seismic and non-safety related. The new lines and equipment are designed to meet or exceed the service environment (temperature, pressure, flow) in which it is installed. Failure of the sample line or instrumentation could result in draining the CST to just above its safety related minimum liquid level requirement.

Safety Summary:

Given that the modification does not alter the basic design, function and protection features of the sample line, i.e., the sample line tie-in elevation to the CST is unaffected, this modification does not adversely affect the consequences to safe operation or safe shutdown of the plant.

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Title: PCR-5506, Chemistry Data Acquisition System

Functional Summary:

This modification installs an enclosure around the secondary sample system located on elevation 240' of the turbine building and provides a nitrogen source for the ion chromatograph. The primary effect of this modification on the FSAR is the addition of a new fire detection zone, ionization detectors, a single action manual pull station and an annunciator window for LFDCP-8.

Safety Summary:

The enclosure and the nitrogen are both non-nuclear safety related and non-seismic. This equipment is not required for the safe operation, shutdown or during an accident situation. Failure of these components would not create an accident of a different type.

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Title: PCR-5514, Sample Conditioning System

Functional Summary:

This modification installed in the Secondary Sampling System a sample conditioning rack, a cooling water isolation skid and a temperature control unit. This equipment will control sample temperature, pressure and flow rate, allowing sample instrumentation to provide proper analysis.

Safety Summary:

The components of the sample conditioning rack are non-nuclear safety related and are not required for safe startup, shutdown or post accident situations. None of the mechanical equipment impairs the operability of accident initiating or mitigating systems or equipment. Mechanical leakage or failure of any of the sample conditioning rack equipment will not affect equipment important to safety. The water spilled because of sample conditioning rack failure would be captured by radwaste and processed accordingly.

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Title: PCR-5547, Condenser Effluent Moisture

Functional Summary:

The purpose of the Condenser Vacuum Pump Effluent Treatment System (CVPETS) modification is to reduce the potential for moisture intrusion into the CVPETS unit during periods of non-operation and to facilitate the removal of condensate in the effluent piping which occurs during normal operation. This is accomplished by replacing the CVPETS inlet and outlet isolation valves LAE-22 and LAE-41 with models that have better sealing characteristics than the existing valves. This modification also installs a piston operator on the CVPETS demister drain valve 1CVD-1 which will open automatically with LAE-22 when the CVPETS unit starts. Additionally, the slope of the CVPETS effluent piping is changed to allow any condensation which occurs during normal operation to drain from the system. Drain piping has been installed in the bottom of the duct to assist in condensate removal.

Safety Summary:

The overall function of the CVPETS does not change as a result of this modification. This modification is intended to remove excess moisture which lessens the effectiveness of the carbon to absorb the radioactive materials during events where activity may be present in the condenser. This modification does not change the conditions in which the CVPETS is initiated nor change the removal capability of the carbon absorber. This modification does not increase the probability of accidents or malfunctions previously analyzed in the FSAR. Common cause mechanisms are not created and different types of malfunctions are not created.

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Title: PCR-5582, pH Adjustment

Functional Summary:

This PCR added acid and caustic supply to liquid waste tanks to allow pH adjustment of the fluid in these tanks. This change allowed flexibility in processing of the liquid waste.

Safety Summary:

The integrity of the waste processing system has not been degraded by the change. The system function has been maintained. No safety systems or equipment were affected by the change.

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Title: PCR-5583, Turbine Building Drain Composite Sample

Functional Summary:

This modification adds a continuous composite sample unit to the Turbine Building Industrial Waste Sump discharge pipe which is part of the Oily Waste Collection/Separation System.

Safety Summary:

The Turbine Building Industrial Waste sump collects waste effluent from floor drains, equipment drains, and curbed area oil collection drains in the Turbine Building. The sump discharge is routed to Oily Waste System and as an alternate path to secondary Waste System. The Automatic Liquid Sample Unit (ALSU) is installed on the sump discharge pipe. All systems associated with this design change are non-nuclear safety related. No systems involved are required for any type of Chapter 15 accident mitigation. This change does not affect any safety related system operation. No radwaste collection systems will be altered in any manner by this modification.

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Title: PCR-5597, Continuous ERFIS Calorimetric Software Changes

Functional Summary:

This modification added software to the plant process computer to calculate reactor power. Four different calculations were added. The first two calculations, QCORE1 and QCORE2, determine reactor based on SG feedwater and steam flows respectively. QCORE3 measures reactor power by calculating the change in enthalpy and mass flow rate across the reactor. This uses only primary parameters, RCS flow and temperatures. QCORE4 is not used. QCORE5 determines reactor power based on turbine first stage pressure. QCOREs 2 and 5 are considered "estimates" of reactor power.

Safety Summary:

The software installed by this modification determines reactor power by four different means. The values determined by these calculations are used as four of many diverse indications of reactor power. The results of these programs will not be utilized as a primary indication of reactor power. The plant continues to use daily surveillance test OST-1004 to determine reactor power and adjust the excore nuclear instrumentation. By providing additional diverse indications of reactor power to the Control Room Operators, this modification should enhance plant safety.



Title: PCR-5676, Cooling Tower Basin Low Level Setpoint

Functional Summary:

This modification increased the operating band for the water level in the cooling tower basin by lowering the low level set point of LS-01-CW-1931 and raising the elevation of the cooling tower weir. These changes allowed reduction of discharge from the cooling tower basin.

Safety Summary:

The elevation change of the weir plate and the level control set point increased the operating band for the water level in the cooling tower basin. The FSAR Chapter 15 accident analyses are not impacted by the cooling tower basin level. Neither the cooling tower nor the circulating water system are addressed in Chapter 15. The tower basin water elevation change has no impact on any system which is relied upon for accident mitigation.

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Title: PCR-5740, AEP-1 Essential Chilled Water Valve Indication

Functional Summary:

Essential chilled water valve indication on the main control room Auxiliary Equipment Panel AEP-1 status light box (SLB) windows SLB-9 and SLB-11 have been revised to use the operations personnel preferred simplified flow diagram designations instead of the Ebasco engineering valve numbers. The new engravings and window lenses have been specified pursuant to human factors design guides.

Safety Summary:

In that the modification is limited to an improvement in valve identification on the status light boxes, the modification can have no effect on initiating or mitigating components or systems considered in the Chapter 15 accident analyses. There are no new equipment failure modes or accident initiation mechanisms nor has the margin of safety been reduced.

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Title: PCR-5741, Single Component Cooling Water Pump Operation to Two Spent Fuel Heat Exchangers

Functional Summary:

This modification removes the requirement to have two CCW pumps in service when providing cooling flow to two spent fuel pool heat exchangers. This mode of operation has the potential of causing a runout condition to exist if one of the pumps trips. The requirement resulted from having a minimum pump flow alarm setpoint based on flow requirements for the design basis heat load. The pools produce a fraction of the heat that the heat exchangers are capable of removing and this setpoint was excessively high. The modification lowered this setpoint.

Safety Summary:

The lowered setpoint is above that required for reliable pump operation. It does not alter the cooling capability of the CCW system. It improves pump availability by removing the potential for causing a runout condition to exist if one of the pumps trips. Control Room and local alarms are provided to alert the operator of high temperature in the fuel pool and thus assure proper cooling flow is being supplied.

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Title: PCR-5767, FHB Cask Handling Crane Bridge Pendant

Functional Summary:

Control Chief Model MD 8400 microprocessor digital radios for remote operation have been installed to control operation of both the twelve ton auxiliary crane and the 150 ton Cask Handling crane located in the Fuel Handling Building.

Safety Summary:

The microprocessor digital radios only provide an alternate method of providing a control signal to the remaining body of crane controls and safety interlocks. The existing loading limits, travel limits, allowable stresses, safety factors, logic and redundancy will not be changed or bypassed as a result of utilizing this alternate method of control. Therefore, this modification does not represent a reduction on the margin of safety currently afforded.

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Title: PCR-5772, Seal Table Room Ladders and Tool Box

Functional Summary:

This modification evaluates the acceptability of storing ladders and a tool box for local use in the seal table room. The ladders when not in use are hung on non-seismic supports mounted to the wall. The tool box will sit on the floor in the corner of the room.

Safety Summary:

To assure that the ladders will not damage any nearby safety-related components during a seismic event, they are hung on the wall so that if they fall they will hit only the floor. It is not credible that a seismic event could cause the tool box to move across the floor in one continuous direction far enough and with enough force to damage any safety-related piece of equipment. The ladders, when in use by craft personnel, will be standing near safety-related components for very short periods of time. The short times of use represents a negligible risk in terms of a seismic event occurring during these in use times. The storage of the ladders and tool box does not increase the probability of any type of accident, increase potential accident consequences, or contribute to the malfunction of equipment.

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Title: PCR-5936, Temperature Maintenance System/Heat Tracing for REM-1LT-3502

Functional Summary:

This modification removes from service (spares) the heater cables on radiation monitor lines REM-1LT-3502A-SA-I-518 and REM-1LT-3502A-SA-O-T519 which are located inside the containment building Elevation 236' and connected to REM-1LT-3502A-SA located in the RAB Elevation 236'. The Temperature Maintenance System is a non-class 1E system. It is designed to maintain pre-determined operating temperature of selected piping systems. Heat tracing was provided to protect Radiation Monitor REM-1LT-3502A-SA instrument lines from condensation, but as the air heated in the lines it caused a drop in the indicated flow rate which eventually led to the radiation monitor going into alarm. Since the heat tracing for this radiation monitor has been turned off for some time without recurrence of the condensation problem, the heat tracing has been removed from service.

Safety Summary:

The radiation monitoring system is a Class 1E system, but not required for safe shutdown of the plant. Eliminating heat trace protection of the instrument lines this modification will not increase the probability of occurrence or consequences of an accident. For this application, "sparing" the heat tracing will actually decrease the probability of malfunction of equipment important to safety. Removing the heat tracing from service does not create the possibility of a new accident of equipment malfunction than those previously analyzed.



Title: PCR-6010, Fire Detection Input/Output Computer

Functional Summary:

A database of design information was compiled to provide a cross reference of input/output interfaces between the local fire detection control panels (LFDCP), the main fire detection information center (MFDIC), and the Emergency Response Facility Information System (ERFIS) computer.

This FSAR revision identifies a report (MFDIC I/O REPORT) which is generated from the database. The report will be utilized by the Operations Fire Protection Unit to better analyze and disperse fire brigade personnel during alarm conditions. Operations I&C maintenance will utilize the report in the performance of maintenance periodic testing and any miscellaneous trouble shooting associated with the Fire Detection System.

Safety Summary:

The creation of the database and report does not effect the existing configuration, capability or reliability of the LFDCPs, MFDIC computer, or ERFIS computer. Creation and utilization of the database and report presents no potential safety hazards or unreviewed safety questions.

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Title: PCR-6015, Leakage of 1HD-25 & 1HD-325

Functional Summary:

Valves 1HD-25 & 1HD-325 serve as emergency dumps to the condenser for the Main Steam Reheater Drain Tanks. The valves are also capable of providing level control for the MSRDTs. The existing valves have experienced significant through-wall erosion. This modification replaced the subject six inch Fisher control valves with eight inch valves from Control Components Incorporated.

Safety Summary:

The heater drain and vent system is not an accident initiating or mitigating system. The system is not associated with any accident mitigating system. The subject valves dump their flow to the condenser. Loss of condenser vacuum is an analyzed event. However, the valves should not experience any situation to cause a loss of condenser vacuum under normal conditions of operation. The new valves have a tighter shutoff capability as well as a trim design which prevents flashing in the valve. These features decrease the possibility of through-wall erosion of the valve bodies. No new accident schemes are created by the valve replacement.

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Title: PCR-6054, Containment Penetration Breaker Analysis

Functional Summary:

This modification replaced nineteen safety-related and twelve non-safety related molded case circuit breakers (MCCB) identified as marginal with MCCBs which have acceptable time current characteristics or a fuse to provide protection for the containment penetration conductors. This change was required to support a revised NEMA AB-4 standard that allowed expanded test margins for field testing of circuit breakers.

Safety Summary:

This modification does not affect the methods or operational features of any of the affected systems. The replacement breakers meet the original seismic and design requirements. The replacement breakers do not create any new failure modes because the design characteristics are unchanged. Changes made by this modification do not reduce the margin of safety defined in the technical specifications.

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Title: PCR-6106, Waste Gas Traps (WL-T3,T4,T5,T6)

Functional Summary:

This modification changes the vent path from the Gaseous Waste Processing System traps (T3 - T6). The new path is to the compressor suction. This is the same path as the vent upstream of the traps. This modification also added flanges upstream of the traps for maintenance accessibility.

Safety Summary:

The Waste Gas System is one of the accident initiating systems analyzed in Chapter 15 of the FSAR. The changes in this modification have no effect on the Chapter 15 analysis since it affects the gas traps flow path only. The modification does not affect any mitigating systems. The change decreases the possibility for release of radioactivity by the change in the vent path since the new path is back to the compressor suction. The components used for this modification are the same type, grade, and ratings as the existing components, therefore the materials installed are compatible.

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Title: PCR-6161, Repetitive Failure of ISP-979

Functional Summary:

This modification made various changes to the Post-Accident Sampling System (PASS) to enhance the flow/pressure control of the system and provide more stable stripped gas sampling results. The changes included replacing obsolete equipment, adding needle valves to assist in system flow balancing, relocating the flow control valve, and adding a selector switch to choose between RCS sampling and RHR sampling.

Safety Summary:

The PASS is isolated from the reactor coolant pressure boundary and containment, and therefore is non-nuclear safety, non-seismic. The PASS is not required to assure the integrity of the RCPB, the capability to shutdown the reactor and maintain it in a safe condition, or the ability to prevent or mitigate the consequences of analyzed accidents. All changes made to the system were internal to the PASS, i.e., no new system interfaces were created. All specified equipment is compatible with system requirements, and in many cases is identical to equipment already used in the system. Therefore, no new failure modes were introduced.

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Title: PCR-6228, Engineering Safeguards Features Actuation System Relay Setpoint Error

Functional Summary:

This modification revises the FSAR to agree with the relay setpoint document 2166-B-508. The subject relays are in the Containment Ventilation Isolation System circuit and the Control Room Ventilation Isolation System circuit. The subject relays have a three second time delay whereas the FSAR was shown as one second. The three second value is more conservative than the one second value in the FSAR. The FSAR value has been revised to three seconds. The design basis described in the FSAR remains valid with the three second setpoint.

Safety Summary:

The single-shot actuation control circuitry for CVIS and CRVIS is not an accident initiating circuit. The single shot circuit duration is increased by this modification but initiation of the CVIS and CRVIS signals remains unaffected. This modification has no effect on the probability of occurrence of an accident previously analyzed in the FSAR. Likewise, there is no impact on the consequences or on mitigating systems.

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Title: PCR-6291, Main Feedwater Pump Balance Drum Line Pressure Indicator

Functional Summary:

This modification installed pressure indicators, and associated sensing lines and hangers, to the main feedwater pump "A" and "B" balancing drum leakoff lines for trending data. Data trending will allow for determination of balanced drum clearances during operation. This modification will not alter system operation, will allow for early detection of possible mechanical failure due to incorrect balance drum location. All of the equipment involved is classified as non-safety related.

Safety Summary:

Rupture of the tubing or indicator pressure boundary connected to the main feed pump balance line could result in MFP failure or shut down of the affected pump due to loss of pressure to the balance drum. "Loss of Normal Feedwater Flow" is an analyzed accident that bounds the failure of a MFP. In addition the feedwater system is designed such that breaks in system piping will not result in adverse effects on the functional performance or essential systems or components.

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Title: PCR-6336, Potable water & sewage connections for the Outage Trailer

Functional Summary:

This modification added Potable Water and Sanitary Sewage piping to a location to serve the outage trailer. The new piping connects to the existing systems in the yard underground.

Safety Summary:

These systems are neither initiating nor mitigating systems. The changes to these systems do not change the function or reliability of the systems. These system modifications do not change the way they interface with safety systems. The potable water line and the sanitary sewer line are designed using the same materials, type, grade, and schedule as the existing systems.

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Title: PCR-6344, Deletion of Snubber SI-H-1114

Functional Summary:

This modification replaces the motor operator on Safety Injection System valves 2SI-V505 SB-1 and 2SI-V506 SA-1.

Safety Summary:

The new operators are larger and weight more than the previous operators. The affected piping and pipe supports were evaluated for the increased operator weight as well as the permanent removal of existing pipe support SI-H-1114 (snubber) and demonstrated acceptable stress levels for the required code conditions. The piping and supports will, therefore, perform their design function for all code conditions and there is no impact on other safety related systems, equipment, or components.

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Title: PCR-6463, Potable Water System Modifications

Functional Summary:

This design change modified the SHNPP potable water system to facilitate compliance with revised State of North Carolina regulations governing public water facilities. The chlorine addition point of the system was moved upstream in the process by relocating sodium hypochlorite metering pumps 1-4A-NNS and 1-4B-NNS. Modifications to the potable water 480V motor control center and potable water metering pump local control station were necessitated by these changes.

Safety Summary:

The changes to this system were intended to improve the efficiency of the SHNPP potable water system. New instrumentation meets the monitoring and performance criteria, adopted by the Surface Water Treatment Rule, to assure water treatment effectiveness.

All of the equipment affected by this modification is classified as non-safety related. The potable water system serves no safety function, is not required for accident mitigation, and is not related to the initiation of an accident as analyzed in the FSAR. All components of the potable water system are non-safety and the failure of any system component cannot adversely affect the operation of any important-to-safety equipment or system. Additionally, there are no Technical Specifications which govern the operation of the potable water system.

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Title: PCR-6488, Reactivity Computer

Functional Summary:

This modification rolled over to permanent status a temporary modification. The modification removes unused axial power distribution monitoring system equipment and uses the main control room panel to mount the reactivity computer. This modification also provides signals needed while the reactivity computer is in use to the main control room panel, and also replaces the failed detector with a power range nuclear instrument detector and cable configuration.

Safety Summary:

The equipment removed was never in service not required at SHNPP. The new equipment installed is used only for testing and is calibrated prior to use. The new equipment configuration creates no adverse impact to the operation, availability or reliability of any system important to plant safety or accident mitigation.

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Title: PCR-6502, Auxiliary Feedwater Flow Control

Functional Summary:

This modification changes the operating logic of AFW flow control valves 1AF-49, -50 and -51 to provide an automatic open feature which fully opens the valves automatically upon receipt of any of the following AFW initiation signals: safety injection actuation; loss of offsite power; AMSAC; low-low steam generator level; or loss of the main feed pumps. This modification also adds new isolation valves to the AFW system to aid in periodically testing the AFW pumps. This modification introduces auto open features to the AFW flow control valves for the purpose of allowing the AFW system to be declared operable and utilized as an alternative to the Feedwater system during modes 1, 2 and 3 without requiring a voluntary LCO. The auto open initiation signals being added to the flow control valves are identical to the actuation signals presently utilized to automatically start the AFW motor driven pumps.

Safety Summary:

The AFW system is an accident mitigating system. The modifications meet the original design specifications of the AFW design basis. This modification does not reduce system/equipment redundancy or independence. The flow control valves continue to fail open. AFW system availability is unaffected and no new failure mechanisms are introduced by this modification.

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Title: PCR-6520, Tie-In Connection for Back-up Plant Air Compressor

Functional Summary:

A tie-in point and blank flange were added during RFO #4 as a temporary modification to the Compressed Air System to facilitate the hookup of a temporary (backup) compressor. This modification converts that temporary modification to permanent plant equipment. The tee, blind flange and pipe used as a part of the modification are in accordance with the material specification for the compressed air system. The change to the configuration is minor and insignificant. This modification will not affect the operability or reliability of the compressed air system.

Safety Summary:

The compressed air system is not safety related except for some safety related pressure containing components. The CAS is not required for the initiation of any engineered safety feature system, safe shutdown system or any other safety related systems. Chapter 15 accident analyses do not take credit for the system. This modification will not increase the probability of occurrence or the consequences of any accident or malfunction of equipment previously evaluated in FSAR Chapter 15, nor will the possibility of an equipment failure of a different type than already evaluated in the FSAR be created.

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Title: PCR-6526, Train "A" Load Centers LK Breaker Replacement

Functional Summary:

This modification replaced nineteen ABB type LK breakers, cradles and trip units in the Safety Train "A" 480V Power Centers 1A1-NNS (Seismic), 1A2-SA & 1A3-SA with Siemens RLN type breakers, cradles and Static Trip III units. In addition, miscellaneous fuses, fuse blocks, fuse mounting plates, terminal block mounting plates and mounting hardware were also replaced. The replacement equipment meets or exceeds the ratings necessary to perform in a manner to protect the equipment serviced and the cable routed to the equipment. The existing system configuration remains unchanged and no additional externally routed cables are required. Electrical separation is unaffected by this modification.

Safety Summary:

Replacement of existing components and protective devices with correctly specified replacement devices of the same quality class and function will maintain the overall reliability of the system. Therefore, this modification does not increase the probability of occurrence, to consequences of, or the ability to mitigate accidents or equipment malfunctions analyzed in the FSAR.

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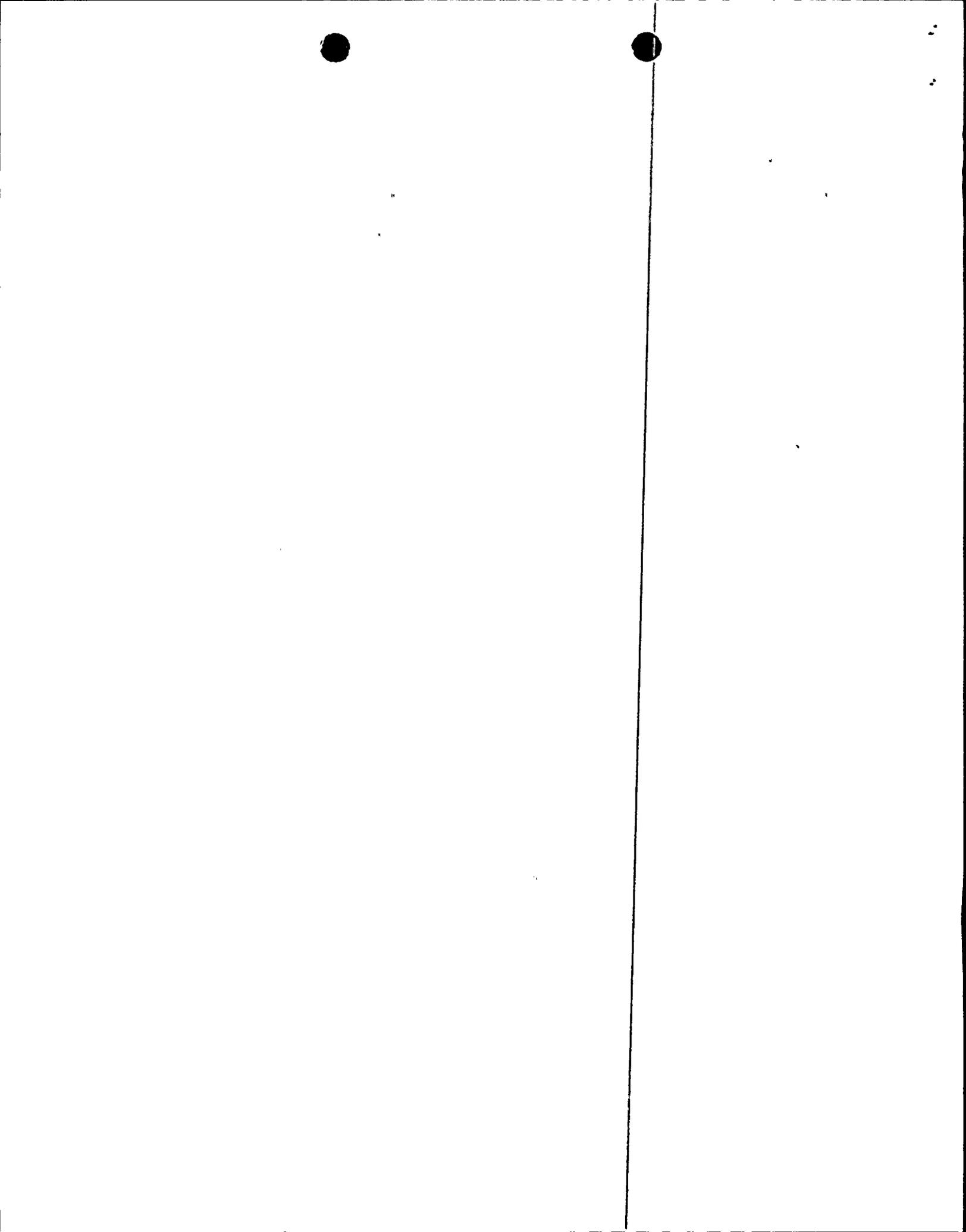
Title: PCR-6527, 60 KVA Non-Safety Inverter ByPass

Functional Summary:

The 60kVA inverter is considered part of the non-safety Vital AC Power Supply. This supply is used to power non-safety instrumentation and controls circuits, fire detection and radiation monitoring systems. The 60 KVA UPS had several characteristics which required modification. When in maintenance by-pass mode, there were components in various bays that were still energized which presented a personnel safety problem. The modification installed several breakers and an ammeter which created a fully de-energized by-pass while leaving the internal distribution panel energized. Additionally, a spare static switch was removed to create space for the modification.

Safety Summary:

In the non-modified configuration with the unit in the maintenance by-pass mode, there are no automatic transfer functions. The operator must manually transfer to a different source. This alignment is unchanged in the new configuration. The modification provided additional physical separation required for maintaining this equipment without endangering personnel and also allow equipment to be removed and replaced without disrupting 120V Vital AC.



This modification does not negatively impact the function of the UPS or the 120v Vital AC distribution panel, but rather enhances the reliability of the distribution panel by enabling maintenance of the UPS to be performed without power disruption from the panel. The 60kva inverter is not responsible for the mitigation of any accidents, nor will this activity introduce the possibility of any new failure modes.

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Title: PCR-6593, Replacement of Blowdown Flow Control Valves and Blowdown Bypass Flow Control Valves

Functional Summary:

This modification replaces the following blowdown valves: 1BD-14, 1BD-18, 1BD-33, 1BD-37, 1BD-52, and 1BD-56. These are the blowdown flow control and flow control bypass valves which are located in the 240' elevation of the Turbine Building. In addition to these valves, the blowdown piping adjacent to these valves has been replaced with low alloy steel material that is more erosion resistant. Several pipe supports are affected by this modification due to the changes in piping configuration.

Safety Summary:

All pipe supports are non-seismic/non-safety related. This was a non-safety related modification and the valves replaced have been purchased to B31.1 requirements. This portion of the blowdown system is part of the Radioactive Waste Management System, and the replacement valves meet applicable sections of NRC Regulatory Guide 1.143, for pressure boundary only. The valves are fail close on loss of air and loss of power to the actuator solenoid valve. This close feature is part of the design for mitigation of line breaks and it is not changed by this modification. All supports installed or modified by this modification have been evaluated against acceptable standards for strength and deflection. Therefore, the modification, installation or function of these components cannot initiate any type of accident.

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Title: PCR-6655, Emergency Diesel Generator Starting Air Compressor Air Tower Drain Trap Assembly

Functional Summary:

This modification installed Sarco drain traps to the bottom of each starting air dryer tower to aid in the removal of moisture/condensation from the air towers. The traps remove moisture accumulation in the diesel starting air dryer towers to improve the quality of the starting air for the EDGs.

Safety Summary:

The dryers are seismic, non-safety related equipment. The air dryers are not required for operation of the diesel generators. The diesels are started from the stored energy in the receiver tanks which are separated from the non-safety portion of the starting air system by means of check valves. The in-line strainers and Sarco drain traps were evaluated and qualified by means of a commercial grade dedication review. Installation of the drain assemblies did not impact the seismic qualification of the diesels. Since no modification was made to the air receiver tanks the ability of the receiver to furnish the volume of air necessary for the required five starts is not diminished. Several of these drain trap assemblies are used at other locations in the diesel generator starting air system to remove unwanted moisture, therefore no new equipment function was introduced by this modification. The operational and control logic of the diesel generators has not been modified or reduced as a result of this modification and the plant Technical Specifications are not affected.

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Title: PCR-6686, Non-Safety Medium Voltage Cable Repairing or Splicing

Functional Summary:

Design control documents were revised to provide details to allow splices of medium voltage nonsafety related cables in cable trays. All such splices will be evaluated on a case by case basis.

Safety Summary:

The existing medium voltage cable trays are installed in accordance with the separation requirements of IEEE-384. The cable tray fills are calculated and controlled (including any splices) to maintain cable fill requirements. Approval on a case by case basis and installation of splices of non-safety related medium voltage cables in cable trays with materials approved for splices of those cables will not have an adverse impact on safety.

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Title: PCR-6714, Frequently Cycled Non-Safety LK Breakers

Functional Summary:

This modification replaced sixteen ABB type LK breakers, cradles and trip units in the Non-Safety Train "A" 480V Auxiliary Bus 1D1-NNS and 480V Auxiliary Bus 1D2-NNS and Non-safety Train "B" Section 2, 480V General Service Bus 1-4B1-NNS and 480V General Service Bus 1-4B103-NNS with Siemens RLN type breakers, cradles and Static Trip III units. In addition, miscellaneous fuses, fuse blocks, fuse mounting plates, terminal block mounting plates and mounting hardware were also replaced. The replacement equipment meets or exceeds the ratings necessary to perform in a manner to protect the equipment serviced and the cable routed to the equipment. The existing system configuration remains unchanged and no additional externally routed cables are required. Electrical separation is unaffected by this modification.

Safety Summary:

Replacement of existing components and protective devices with correctly specified replacement devices of the same quality class and function will maintain the overall reliability of the system. Therefore, this modification does not increase the probability of occurrence, the consequences of, or the ability to mitigate accidents or equipment malfunctions analyzed in the FSAR.

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Title: PCR-6721, Auxiliary Feedwater Pipe Wall Thinning

Functional Summary:

This modification changed portions of the AFW preheater bypass piping from carbon steel to chromium alloy (P-22) material to provide erosion/corrosion resistance. The replacement is based on the erosion rate and pipe wall measurements.

Safety Summary:

The Auxiliary Feedwater System serves as a backup system for supplying feedwater to the secondary side of the steam generators at times when the normal feedwater system is not available, thereby maintaining the heat sink capabilities of the steam generators. The AFW system is directly relied upon to prevent core damage in the event of transients such as loss of normal feedwater or secondary system pipe rupture. The material changes of this modification ensure the system's reliability by the material's resistance to erosion/corrosion. The material change is compatible with the system fluid and existing materials. Stress analysis also shows that the material changes are also acceptable. Pipe wall thicknesses were kept the same as originally designed. Pipe routing and sizes also remain unchanged. Therefore, the system flow capabilities are unchanged.

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Title: PCR-6724, Snubber Reduction Program

Functional Summary:

Based on revised pipe stress analysis (part of the effort under the snubber reduction program) fourteen existing pipe supports which employed snubbers have been redesigned and modified to delete the snubbers and replace them with rigid struts. Additionally, six supports have been deleted.

Safety Summary:

The new pipe stress analyses and revised pipe support calculations for snubber deletions show that the piping and supports involved comply with code requirements for stresses and deflection, just as they did before this modification. As a result, no accident probabilities are increased by this activity. Likewise, there are no increases in accident consequences or probability of equipment malfunction.

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Title: PCR-6745, Plant & Turbine Building Vent Stack Drains

Functional Summary:

This modification reroutes the plant vent stack drain and the turbine building stack drain to the floor drain system and the Industrial Waste System respectively. The original tie-in points to the storm drain system were capped.

Safety Summary:

The portions of the Storm Drains Systems, the Radioactive Floor Drains System and the Industrial Waste System affected by this modification are classified as non-safety related and are neither accident initiating nor accident mitigating. Additionally, the failure of the affected portion of the systems will not affect the operation of safety related equipment.

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Title: PCR-6831, "A" & "B" Charging/Safety Injection Pump Rotor Replacement

Functional Summary:

The pump rotating elements for both Charging/Safety Injection Pumps (CSIP) 1A-SA and 1B-SB were changed out prior to the unit being returned to service for RFO 5. The "B" CSIP was replaced during cycle 5 due to shaft failure and was left out of service until required testing during RFO 5. The "A" CSIP was replaced due to damage of the shaft during inspection during RFO 5.

Safety Summary:

Both of the replacement rotating elements are stronger, i.e., provide more flow, than the elements that were replaced. The fact that the pumps are now stronger affects, primarily, the Steam Generator Tube Rupture event. To accommodate for "Margin to Overfill" a new setpoint was derived for the TDAFW Pump flow controller. The change also resulted in minor increases in the offsite dose during a Steam Generator Tube Rupture, but this increase consumes only about 10% of the existing margin to the NRC acceptance limits.

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Title: PCR-6851, Spare Cell for Each Safety Battery

Functional Summary:

This modification installed a spare battery cell adjacent to each train of 125 VDC Safety Battery to ensure that corrective action capabilities will be available in the event that a station battery cell degrades below the acceptable Technical Specification limits. This modification installed two battery chargers, two battery cells, one located in each safety battery room 1A-SA and 1B-SB, and the associated wiring to allow the spare battery cells to remain on a float charge until such time that the spare battery cells are required to be put into service. The battery cells, battery chargers and all conduit was installed Category I, seismically supported. The installation of the spare battery cells is designed to be equal to, or better than, the standards applicable to the station safety batteries. When a spare cell is connected to the safety battery, the battery charger and associated cables will be electrically disconnected and physically separated from the battery cell. Electrical separation is maintained. The battery room ventilation system capacity is sufficient to account for the added hydrogen production from the spare cells.

Safety Summary:

The installation of the spare battery cells and associated chargers have no interface with the electrical distribution system credited for achieving and maintaining post-fire safe shutdown, since the new battery charger is powered

from non-safety shutdown 120VAC power sources. This modification results in no detrimental impact on the electrical distribution system. Based on the above, installation of spare battery cells for the safety batteries would not increase the probability of occurrence or the consequences of any analyzed accident. Nor would installation of spare battery cells affect the probability or consequences of malfunction of equipment important to safety.

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Title: PCR-6879, Removal of Cement Storage Tank

Functional Summary:

The cement silo on the east side of the Waste Processing Building is presently abandoned in place. This modification permanently removes the cement silo.

Safety Summary:

The cement silo is part of the abandoned Waste Processing System and is classified as non-safety related equipment. Permanent removal of the silo will not have any impact on structures, systems, or equipment important to nuclear safety. This modification does not reduce the margin of safety in the technical specifications.

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Title: PCR-6894, 60 KVA / 7.5 KVA Annunciator Split

Functional Summary:

This modification splits annunciator ALB-15, window 1-4 into two annunciator windows. ALB-15, window 1-4 is the trouble annunciator for the non-safety related 120 VAC UPS. This includes the 60 KVA UPS and the 7.5 KVA UPS. This modification split the annunciator window so that ALB-15 window 1-4 is the trouble annunciator for the 60 KVA UPS and annunciator window 1-15 is the annunciator for the 7.5 KVA UPS.

Safety Summary:

The main control room annunciator system is non-safety related. This modification only affects the annunciator system. All alarms for safety related systems are isolated from safety related circuits by the isolation cabinets. This modification changes a common alarm for the non-nuclear safety UPS and splits it into two alarms, one for the 60 KVA non-nuclear safety UPS, and one for the 7.5 KVA non-nuclear safety UPS. These changes only affect the location of alarm windows on ALB-15. No safety related equipment is affected. The annunciator system is neither an accident initiating or mitigating system, and modification of the annunciator windows has no impact on the consequences of any analyzed accident.

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Title: PCR-6901, Condensate Storage Tank

Functional Summary:

This modification reinstalls a diaphragm that was removed during refueling outage No.4 and installs a new mounting ring that allows better conformity between the tank and the diaphragm. The new diaphragm is constructed of a superior material and has built in flotation in the bladder's floor. This modification also removes non-ASME relief valves to eliminate a potential air inleakage path, installs a lifting beam above the CST, and partially removes the CST roof vent to allow access for rigging.

Safety Summary:

The bladder mounting ring is seismically designed to prevent its failure from disabling the AFW system. If the diaphragm develops a tear/hole, the built-in flotation cells will keep the diaphragm from blocking the AFW pump suction. Removal of a portion of the roof vent has no effect on the seismic qualification of the CST. The lifting beam was seismically qualified so that it can remain in place for future diaphragm modifications. All materials used in the modification meet original design and construction standards applicable to the system. This modification does not change, degrade or prevent actions necessary to mitigate an accident.

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Title: PCR-6920, Refueling Water Storage Tank Transmitter change-out (LT-01CT-0991 IIW)

Functional Summary:

As a result of calibration problems, the Barton Model 752 differential Pressure Transmitter used for the Refueling Water Storage Tank Transmitter LT-01CT-0991IIW, is being replaced by a Rosemount Transmitter Model 1153DB5RA. LT-0991IIW is associated with the Containment Spray System and Engineered Safety Features Actuation System. This level transmitter is one of four that monitor the level of the Refueling Water Storage Tank. These transmitters provide input signals to the solid state protection system as well as control signals used for indication and annunciation. Instrument loop accuracy, range and qualification was determined to be acceptable with the new transmitter. The Rosemount transmitter was mounted on a new seismic support.

Safety Summary:

Since no change to the protection channel is implemented other than the replacement of the field sensor, no affect to the protection channel circuitry is incurred. No new type of failure is introduced by the changeout.



Title: PCR-6925, Removal of Motor Operators from Auxiliary Feedwater Pump Recirculation Valves

Functional Summary:

This modification removed the motor operators from recirculation (bypass) valves 3AF-V187SA-1 and 3AF-V188SB-1 and replaced them with manual operators. (Note: The automatic function of these valves was deleted in PCR-6211 as reported in the May 28, 1993 report.) In addition, all the electrical control features associated with the recirculation valves including the main control board and auxiliary control board switch modules and annunciation have been removed. The valves will now be manually operated. System operation will not be changed by this modification.

Safety Summary:

The motor operators did not have a safety function. Removal and replacement with manual operators has no impact on any accident analyses. Motor operators removal reduces the load on the piping and is acceptable from a pipe stress calculation standpoint. Operator replacement has no effect on any other safety related equipment. Nor does the operator replacement impact the recirculation function of the lines in which they are installed.

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Title: PCR-6950, Post-Accident Sampling System Modifications

Functional Summary:

This modification implemented various changes to stabilize the Post Accident Sampling System degassifier operations. The changes include replacement of the level/flow controller with a programmable unit, replacing the electric actuator of valve 1SP-978 with pneumatics to allow conversion of the control loop operation to an analog configuration, and replacement of phase separator level transmitter LT-7466 with a similar transmitter having a sealed high pressure leg.

Safety Summary:

The Post Accident Sampling System does not function to perform any of the following conditions: the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, the ability to prevent or mitigate the consequences of an accident. The PASS is not an accident initiating system, nor is it required to prevent or mitigate the consequences of an accident. Failure of the PASS will not adversely affect safety related equipment.

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Title: PCR-6980, Uprate Design Pressure of Reactor Makeup Water System

Functional Summary:

This modification increased the design pressure of a portion of the Reactor Makeup Water System (primary makeup) from 150 to 200 psig. This change accommodates pressure surges experienced within the primary makeup water system resulting from actuation of control valve LCS-151. The modifications included resetting the relief valve LPM-89 to the higher design pressure and replacement of relief valve LPM-94 with a spool piece and blank flanges. The components in the primary makeup system are non-safety-related but are seismically supported. The flanged spool piece that replaced valve LPM-94 ensures that the seismic capability of the line is retained.

Safety Summary:

The portion of the Reactor Makeup Water System that experiences the higher pressures is capable of withstanding the higher pressures with an insignificant reduction in design margin. Therefore, the higher design pressures will not increase the possibility of primary makeup system component malfunction or cause a malfunction of equipment serviced by the primary makeup system. The makeup system is not credited with accident mitigation or safe shutdown operations. Therefore, the consequences of malfunction are bounded by other events having greater consequences. The remaining relief valve is sized to accommodate the revised system configuration. Further, there are no accident scenarios postulated for the primary makeup system of a different type than those previously analyzed.

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Title: PCR-7039, Control Rod Drive System - Rod Withdrawal Limits

Functional Summary:

This modification revised the all rods out parked position. The previous parked position was 228 steps withdrawn. The revised position varies from 222 to 231 steps withdrawn depending on the cycle. The purpose of this modification was to increase the life of the RCCAs by preventing localized wear of the rodlets at locations corresponding to the support points where the rodlets interface with the upper internals guide tube cards. This modification affects the control rod drive system and the rod cluster control assemblies. The control rod drive system is non-safety related quality class E. The rod cluster control assemblies (RCCAs) are nuclear safety related, quality class A. This modification affects the control rod drive system logic cabinets by changing the bank overlap switch positions. This modification affects the RCCAs by changing their parked position.

Safety Summary:

This modification does not affect the ability of the RCCSs to perform their safety functions. Changing the parked position does not affect the ability of the RCCAs to provide negative reactivity and shut down the reactor. The control rod drive system and the rod cluster control assemblies are accident initiating systems. However, this modification does not affect the control rod drive system or the RCCAs in a way that could result in an uncontrolled rod withdrawal. This modification has no effect on any assumptions or initial conditions for the FSAR analyzed accidents involving rod control. This change does not result in the increased probability, or consequences of accidents previously analyzed.

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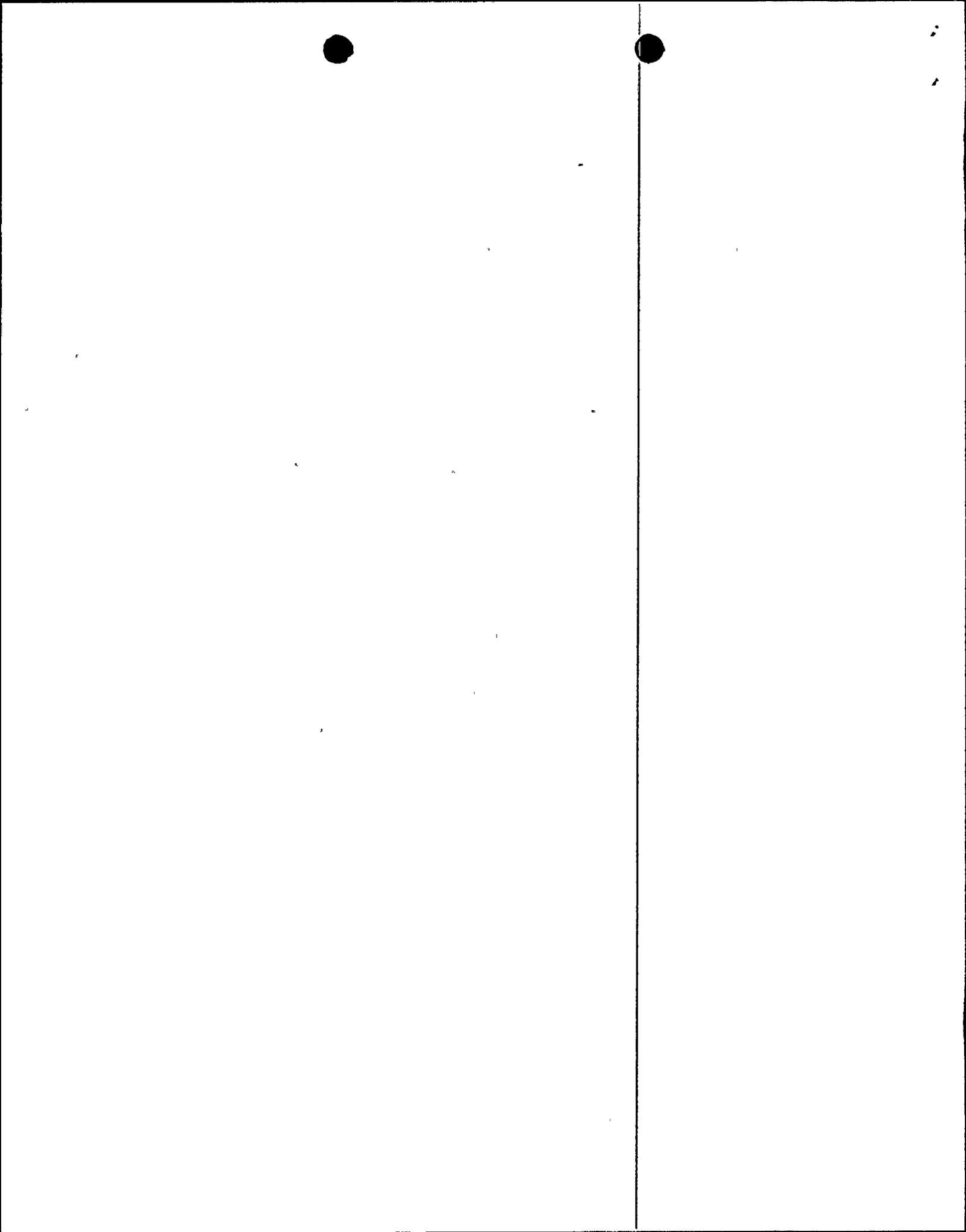
Title: PCR-7148, Heater Drain and Vents System Valve Replacement and Reorientation

Functional Summary:

Heater Drains and Vents System valves 1HD-13 and 1HD-313, 12" Valtek Model Mark Eight Y-style valves, have been replaced with 10" Valtek Model Mark One T-style valves. Also, valves 1HD-15 and 1HD-315 were rotated to eliminate interferences with the valve operators.

Safety Summary:

The Heater Drains and Vents System is not an accident initiating or mitigating system. The system is not associated with any accident mitigating system. The HD&V System is not safety-related nor is the system seismically supported. There is no equipment in the vicinity of these valves that is associated with safe



shutdown. The discharge from the valves 1HD-13 and 1HD-313 becomes part of the main feedwater pump suction flows. The rapid closure of these valves might cause the main feedwater pumps to trip. If the valves were to fail open, the level in the No.4 feedwater heater(s) will trip the heater drain pump(s). However, loss of the pumps is already analyzed. No new events are created by the scope of this modification.

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Title: PCR-7163, Temperature in Outlying Buildings

Functional Summary:

This PCR evaluated the equipment in four of the yard buildings - the Emergency Service Water Structure, the ESW Screening Structure, the Emergency Diesel Generator Building, and the EDG Fuel Storage Building - to determine the sensitivity of the equipment to extreme low temperatures. The evaluation identified equipment that may be damaged or rendered inoperable by low temperatures, and determined the limiting temperature for that equipment. Based on this evaluation, the FSAR text was amended/clarified regarding the minimum temperatures for equipment in the subject areas.

Safety Summary:

This evaluation and the clarifying FSAR text changes do not affect any initiating or mitigating system for Chapter 15 accident analyses. The evaluation results will help to maintain margin for operability, and to assure that equipment needed for operability is not damaged by low temperatures. There is no adverse effect on system performance, operability, availability, or maintainability, and no change in safety margin to any technical specification.

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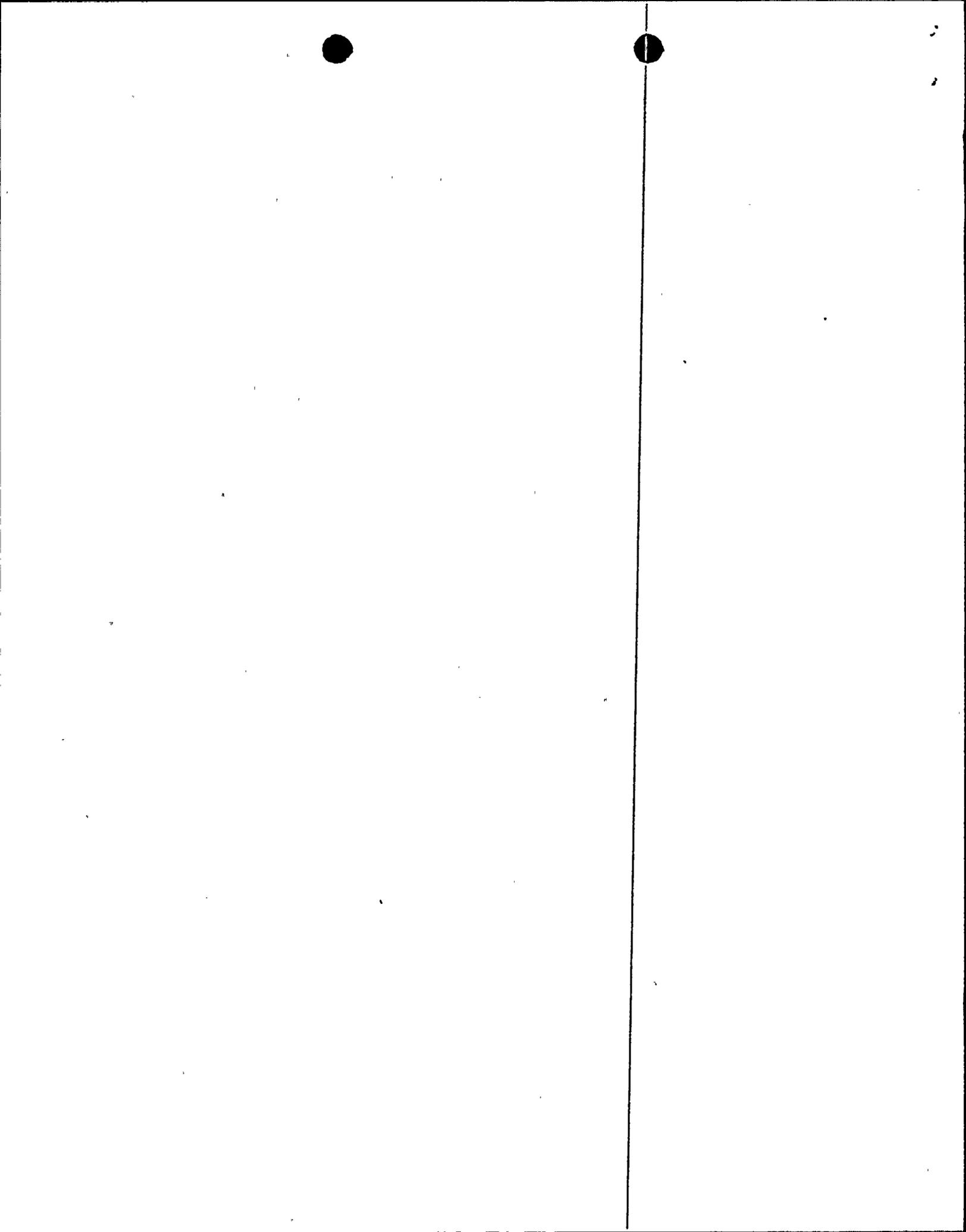
Title: PCR-7181, Replacement of 1SW-21 & 1SW-24

Functional Summary:

Due to valve erosion problems, PCR-7181 modified the Emergency Service Water strainer discharge piping for both Safety Trains "A" and "B" systems by removing the three inch isolation gate valves 1SW-21 and 1SW-24 just downstream of the strainer control valve. 1SW-21 and 1SW-24 served as isolation valves to facilitate maintenance on the strainer control valve. The gate valves were replaced by pipe spool pieces of the same pipe material.

Safety Summary:

The ESW strainer subsystem is a mitigation system. However, 1SW-21 and 1SW-24 had no mitigation function. The spool pieces which replaced the valves maintained the integrity of the piping system. Any failure of the implemented



changes would not create a new accident or increase the probability of occurrence of an accident previously evaluated in the FSAR.

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Title: PCR-7296, Leak Repair of IRC-7

Functional Summary:

This modification was a leak repair of valve IRC-7. The method of repair was to install a fully qualified cap on the valve bonnet which will encapsulate the leak. This repair leaves the valve in the closed position. The valve body and the bonnet remain the primary pressure retaining parts with the cap as a backup providing full pressure retaining capability. Seismic effects due to the additional weight are offset by the removal of the handwheel.

Safety Summary:

The valve body and bonnet integrity, i.e., the pressure retaining boundary, have not been altered by this modification. Capping this valve has no effect on the probability of failure of this valve nor does it create a new failure mechanism. Therefore, the probability of an accident as a result of valve failure has not changed. Valve IRC-7 has no automatic response function for accident mitigation. Leaving the valve in the closed position has no impact on the consequences of an accident.

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Title: RAF-1815 Electric Power: Offsite Power Supply & Grid Descriptions

Functional Summary:

These FSAR changes reflect minor updates to the offsite power supply & grid descriptions. The specific changes were: 1) the number of direct interconnections between CP&L and neighboring utilities is revised from 30 to 33, 2) the thermal capacity of the Wake 230kV line was increased from 637.4 MVA to 796.7 MVA, and 3) Figure 8.1.1-1 was revised to show the addition of a 500 kV line from the Wake substation to the Cumberland substation. All three changes make improvements to the stability and capability of the transmission system to transmit power. The increase in the number of direct interconnections to neighboring utilities increases the amount of power which can be transmitted between CP&L and the rest of the Eastern Area Interconnection. This improves CP&L's ability to withstand loss of internal generation by importing power from neighboring utilities. The increased thermal capacity of the Wake 230 kV line improves the ability of this line to transmit power to and from the SHNPP switchyard. The completion of the 500 kV backbone strengthens the transmission system and enables larger amounts of power to be transmitted into, out of, and through the region.



Safety Summary:

These changes have, if anything, a small positive affect on the reliability of offsite power. They have no effect on accident initiation, a beneficial effect on accident mitigation in terms of slightly improved offsite power reliability, and no effect on the consequences of any Chapter 15 accident analyses.

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Title: RAF-1826, Auxiliary Feedwater System Venting

Functional Summary:

The FSAR and the AFW operating and operations surveillance test procedures required the AFW System be vented prior to pump/system startup. The purpose of the operations surveillance test is to demonstrate the AFW Systems operability. Venting the system prior to performing the surveillance test procedure results in not testing the system in the "as-found" condition. This is contrary to the philosophy of the OST. This change clarifies FSAR Section 10.4.9.2.1 and the procedures by revising them to say that - vent lines are opened prior to system startup where the system may have been drained to vent any trapped air.

Safety Summary:

Revising the FSAR and operating procedures as described above is in alignment with the intent of the operations surveillance test program to show that equipment, when tested in the "as-found" state, is capable of performing it's design function. Venting upon each system/pump startup is contrary to that philosophy. In addition, the system's operating history shows that there have been no problems with air trapped in the lines during pump testing.

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Title: RAF-1866, Loss of MCR Annunciator

Functional Summary:

The FSAR was amended to incorporate reference to a new procedure, AOP-037, Loss of Main Control Room Annunciation. This AOP was written to provide guidance to the plant operators in terms of a general description of the annunciator system, symptoms indicating a loss of annunciation, automatic actions that occur upon loss of power supply to the annunciators, and operator actions to respond to a loss of annunciators.

Safety Summary:

The actions specified in AOP-037 are limited to normal testing of annunciators, increased monitoring of plant equipment, inspections to determine status, referencing other plant documents, and requesting maintenance assistance. No new



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actions are specified nor action which can affect any equipment/component alignment or operation. Therefore, AOP-037 does not affect the boundaries of existing safety analyses.

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Title: RAF-1867, Fire Protection

Functional Summary:

This FSAR revision modifies the FSAR description regarding how the fire brigade is dispatched in response to single fire alarms so that it accurately reflects the SHNPP operating procedures. The FSAR description of "dispatching" the fire brigade has been revised to "notifying". The fire brigade is not dispatched into containment under power without first assessing the alarm. After the fire brigade has assessed the alarm, the determination is made as to the manual fire fighting efforts needed, if any. This does not cause an unacceptable delay in going into containment to fight a fire. This will, however, keep the fire brigade from unnecessary exposure to radiation.

Safety Summary:

In that the change is only a revision to the FSAR description of the procedures followed in response to a single alarm fire, this change does not have any impact on the plant, accident initiation or mitigating systems or the consequences of analyzed accidents.

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Title: RAF-1878, Containment Vacuum Breaker Analysis

Functional Summary:

The containment vacuum breaker analysis has been revised to reflect "as-built" component loss coefficients, delay times, initial containment pressure and humidity, and reactor auxiliary building humidity. As a result of the individual parameter changes, there is no change in the calculated external pressure differential.

Safety Summary:

The reanalysis does not implement any physical plant changes or modifications. The vacuum breaker system is a mitigation system which protects or maintains the integrity of the containment boundary. It is not connected or related to any plant control system. Any failure or malfunction of any vacuum relief system component would not initiate an accident. The changes in assumptions of the analysis or "as-built" conditions will not create or initiate an accident. The reanalysis has no impact on the consequences of any analyzed accident.

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Title: RAF-1911, Fire Protection System use in Non-Fire Related Activities

Functional Summary:

This FSAR change documents a revision regarding level of approval authority necessary for using the Fire Protection System for non-fire related purposes. The approval by the Plant General Manager has been revised to the Shift Supervisor - Nuclear. This change places the day-to-day usage of the site Fire Protection System with the Shift Supervisor - Nuclear. The Shift Supervisor - Nuclear, pursuant to Technical Specification 6.1.2, is responsible for the control room command function. This change places the control of the fire protection non-fire related usage under the command of the Shift Supervisor - Nuclear.

Safety Summary:

This change does not affect any accident or malfunction of equipment as set forth in the FSAR. The Fire Protection System is currently allowed to be used for non-fire related purposes. A change to the organizational position for approval authority has no impact on the system's performance. Therefore, the probability or consequences of an accident or malfunction of equipment important to safety has not increased. Use of the Fire Protection System is coordinated through the Shift Supervisor - Nuclear so an accident or malfunction of equipment important to safety has not been created nor has a margin of safety been effected.

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Title: RAF-1912 Combustible Loading Changes to Fire Areas

Functional Summary:

This FSAR revision is to update combustible loading due to cable insulation in rased floor raceway or cable tray in fire zones 12-A-6-CR, 1-A-CSRA, and 1-A-CSR B in the Reactor Auxiliary Building. Fire Zone 12-A-6-CR in Fire Area 12-A-CRC1 was revised to quantify combustible loading due to cable insulation within a cable trench underneath a raised floor. Fire Areas 1-A-CSRA and 1-A-CSR B were revised to reflect current cable tray combustible loading with a 10% margin for future growth.

Safety Summary:

The combustibles have been determined to be acceptable in light of the amount and configuration of the combustible, the available active and passive fire protection features including fire brigade response. The additional cable insulation will not cause potential single failures to become common mode failures, nor cause events previously considered incredible to become credible.

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Title: RAF-1920/1 Accident Analyses Updated to Incorporate Siemens Fuel

Functional Summary:

The revision of FSAR Chapters 4 and 15 describes methodologies used and the results of analyses performed to disposition the transition from Westinghouse to Siemens Fuel at SHNPP. Methodologies previously reviewed and approved by the NRC, as documented in SHNPP Technical Specification, were used to verify that the transition was acceptable with respect to the licensing bases outlined in FSAR Chapters 4 and 15.

Safety Summary:

The Safety Analysis showed that the transition from Westinghouse to Siemens fuel did not result in an Unreviewed Safety Question with respect to the HNP licensing bases. The Safety Analysis included the disposition of FSAR Chapter 15 events, an evaluation of the impact of Siemens' fuel on the HNP Spent Fuel Pool Reactivity, and an assessment of the mechanical and thermal hydraulic compatibility of the Siemens' fuel in a transition core.

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Title: RAF-1922, OnSite Meteorological Measuring Program

Functional Summary:

This FSAR text change documents a change in the manner in which CP&L conducts the OnSite Meteorological Measuring Program. Some of the functions previously performed by CP&L are now performed by outside consultants under contract.

Safety Summary:

The change from in-house to contract support for the OnSite Meteorological Measuring Program has no effect on the plant, its operation, or the SHNPP Emergency Plan and Implementing Procedures.

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Title: EPT-126T, Turbine Volumetric Test Mode: 1

Functional Summary:

Industry data indicates that Steam Generator tube life can be prolonged through a reduction in the Reactor Coolant Hot Leg Temperature. EPT-126T was run to determine the magnitude of T_{avg} reduction caused by each incremental increase in Turbine Governor Valve position. Also, busbar power was recorded for each incremental reduction in T_{avg} . This data was then used to form the bases for the optimum T_{avg} based on the appropriate economic balance between lost megawatts and prolonged Steam Generator Tube life.

The procedure reduced T_{avg} in approximately 2 °F increments maintaining a power slightly less than full power. The excore power range detectors were calibrated after each incremental reduction in power to account for the reduction in measured versus actual power associated with a reduction in T_{avg} . The test was limited to a maximum reduction in T_{avg} of 10 °F.

Safety Summary:

The proposed test was evaluated against the plant design basis to determine any impact of the test on Chapter 15 events, Containment Analysis, Hydraulic Forces Resulting from a LBLOCA, and Equipment Design. The 50.59 evaluation concluded that there were no Unreviewed Safety Questions.

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