MMP 86-03-005 H2, Rev. 1

REPLACEMENT OF HYDROGEN DRYER PIPING

Description and Purpose

This minor modification replaced 1/2" supply and return piping to the Main Turbine Generator Hydrogen Dryers with 1" lines. Problems with maintaining an acceptable dew point temperature in the generator hydrogen system has led to the determination that 1/2" lines do not allow sufficient flow through the hydrogen dryers. Calculations performed (IP3-CALC-H2-290) indicate that the 1/2" lines are undersized and that 1" piping consistent with the connections on the hydrogen dryer unit will allow full utilization of the dryers capacity. To ensure adequate flow to the dryers, an inline flow meter will be installed in the 1" lines. This modification is complete with the exception of the flow meter installation.

Summary of Safety Evaluation

This modification enhances the function of the hydrogen dryers with increased reliability, it is not safety related. It does not increase the probability or possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR. The FSAR was changed to incorporate the change in the flow path and the new flow meter on Flow Diagram H2 and CO2 Fig. 10.2 - 24.

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NSE 88-03-050 SG, Rev. 1

REPLACEMENT OF BLOWDOWN AND SHELL DRAIN PIPING ADJACENT TO STEAM GENERATORS

Description and Purpose

This modification changed the existing 2" carbon steel blowdown piping adjacent to the steam generators and common 2" blowdown piping from steam generator 34 to the cranewall penetration with 2 1/2" and 4" stainless steel piping, respectively. The larger piping is capable of handling intermittent increased blowdown flow rates (up to 3% feedwater flow) without flashing occurring in the piping. The material of construction was changed from carbon steel to TP 316L stainless steel for improved erosion resistance. In addition, the existing 1" carbon steel shell drain piping was replaced with 1" TP 316L stainless steel piping. This modification is partially complete, Steam Generators #32 and #33 will be done at a later time, #31 and #34 are complete.

Summary of Safety Evaluation

This modification did not increase the probability of an occurrence or consequences of an accident or malfunction of structures, systems or components important to safety previously evaluated in the FSAR since the materials of the new piping are superior to the existing material of construction and the piping design meets or exceeds the original. The operating plant response to a break in the upgraded blowdown piping is enveloped by the "Loss of Feedwater" and "LOCA" transient analysis already included in the FSAR. The results of a "High Energy Line Break Analysis" show that a break in the upgraded piping will not adversely affect the shutdown capability of the plant.

MOD 88-03-077 COND, Rev. 1

CONDENSATE POLISHER INSTALLATION OF DEAERATION SYSTEM ON SERVICE VESSEL RINSE DOWN WATER

Description and Purpose

The purpose of this modification was to install a recovery and deaeration line from the Condensate Polisher to the condensers. Revision 1 of the modification completed installation of the recovery and deaeration line and associated equipment between the tie-in points installed under Rev. 0 to this modification.

Summary of Safety Evaluation

The installation of a deaeration line reroutes the purge rinse water to the condensers to remove the dissolved oxygen and conserve hot well inventory. The modification has no impact on, nor is it located near any safety related equipment. Therefore, it does not affect the safety analysis of the FSAR. The modification does not create the probability of occurrence or create the possibility of an accident or malfunction of a different type than any other previously evaluated in the FSAR.

NSE 88-03-242 CCW, Rev. 2

COMPONENT COOLING WATER HEAT EXCHANGER REPLACEMENT

Description and Purpose

This modification replaced the two existing component cooling water (CCW) heat exchangers which had extensive tube plugging and corrosion damage. The new heat exchangers had minimum impact on the existing piping arrangements while increasing the surface area available for heat transfer.

Summary of Safety Evaluation

During the handling of the CCW heat exchangers, the plant was in the cold shutdown and refueling modes. The FSAR and Design Basis requirement to maintain spent fuel cooling at all times was met and enhanced by the utilization of a temporary standby spent fuel pool cooling system.

The new heat exchangers provide improved performance characteristics and longer service life. They were designed and built to the same or higher standards as the original and meet or exceed the performance capability of the original heat exchangers. This modification did not create the possibility of an accident or malfunction of safety-related structure, systems, or components of a different type than any previously evaluated in the FSAR. The new heat exchangers are the same type components as the original. The modification did not affect the environmental impact of the plant or involve an unreviewed environmental question. The old vessels were radiologically checked and sealed prior to removal for disposal.

MMP 89-03-226 SWS, Rev. 0

REPLACEMENT OF SWN-27-1,2; SWN-28-1,2; SWN-70-1,2

Description and Purpose

This modification removed existing service water isolation valves on the Instrument Air closed cooling system heat exchangers and replaced them with butterfly valves. The original valves were gate valves. Some piping replacement, flange installation, hanger improvements and reorientation of relief valve were also included.

Summary of Safety Evaluation

The new valves do not affect the Final Safety Analysis Report. The new butterfly valves have demonstrated good reliability in similar applications in the Service Water System.

NSE 89-03-231 CVCS, Rev. 0

CHARGING PUMPS SI LOCKOUT ELIMINATION

Description and Purpose

The charging pumps which are used to initiate an emergency boration and reactor coolant pump seal cooling, are stripped and a sustained trip applied when an SI (Safety Injection) signal occurs. This did not allow the plant to emergency borate during an ATWAS (Anticipated Transient Without A Scram) condition for at least two minutes after actuation. Prior to this modification it could take up to 15 minutes for the operators to perform their alignment activities before they could reset the SI signal. The purpose of this modification was to reduce this time delay from 15 minutes to 48 seconds. This was accomplished by installing a new time delay in the charging pump control circuitry. On an SI signal the relay times out (48 second delay) and allows the charging pump to start if needed.

Summary of Safety Evaluation

This modification provides the plant operators with more flexibility to respond to emergency situations and at the same time retained the existing protective features. It allows the charging pumps to start after a time delay of 48 seconds under sustained SI signal. The modified circuit maintains the existing design features under an undervoltage signal. All loads important to safety were not in any way compromised by the added feature of the time delay relays and since they present a design enhancement, no new scenarios are created if they fail. Therefore, this modification did not increase the probability or possibility of an accident or malfunction of any type other than those previously evaluated in the FSAR.

NSE 89-03-237 SG, Rev. 0

STEAM GENERATOR BLOWDOWN FLOWMETER REPLACEMENT

Description and Purpose

The purpose of this modification was to provide accurate flow measurement and indication of Steam Generator Blowdown (SGBD) from each steam generator and of total blowdown in the SGBD recovery system. The blowdown flow rate in each individual line will be monitored using new venturi type flowmeters and temperature elements. This method of measurement provides for accurate control of each steam generator blowdown flow which directly affects the stability of steam generator chemistry. A new flow element in the recovery line provides for accurate reading at the required flow range. Process conditions in each of the steam generator blowdown lines are not consistent. Flow measurement is required at a wide range of flows at high operating temperatures. The existing vortex flowmeters performed adequately at 50 gpm flow rate but produced unacceptable results for all other flows above and below this point. The new installation is designed to respond and calculate a true flow in each SGBD line using instantaneous changes in process flow and temperature.

Summary of Safety Evaluation

This modification replaced the existing vortex flowmeters (FE-545 thru FE-548) in the SGBD piping with venturi type flowmeters and temperature instrumentation. It also replaced the existing orifice plate in the flow element (FE-506) which measures total SGBD flow to the recovery system. The modification significantly increases the accuracy of blowdown flow measurement and provides for more accurate steam generator chemistry control The modification does not increase the probability of occurrence or create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR.

NSE 90-03-011 RCS, Rev. 1

MID-LOOP ULTRASONIC LEVEL MEASURING SYSTEM

Description and Purpose

This modification installed a Westinghouse Ultrasonic Level Measuring System (ULMS) to provide indication of water level in the reactor coolant piping during non-power operations in an effort to mitigate the possibility of loss of decay heat removal as a result of air ingestion by the residual heat removal pumps during mid-loop operation.

Summary of Safety Evaluation

This modification provided the second of two independent RCS water level indications recommended by NRC Generic Letter 88-17, Loss of Decay Heat Removal, (10CFR50.54 (f)) for use during reduced inventory conditions. The ULMS provides indication only to the control room operators and provides no safety related functions. The modification enhances the control room operator's awareness of plant conditions by providing indication of the water level in the RCS piping and aids to mitigate the possibility of a loss of decay heat removal as a result of air ingestion by the RHR pumps. It does not increase the probability or create the possibility of an accident or malfunction of any type other than previously evaluated in the FSAR.

NSE 90-03-031 RMS, Rev. 0

R-20 AND BANTAM 11 UPGRADE

Description and Purpose

This modification replaced the old R-20 in-line Waste Gas Radiation Monitor with a new adjacent-to-line radiation monitor. It moved the location of R-20 from the Waste Gas analyzer line in the 15' of the PAB to the suction line of the Waste Gas compressors in the Compressor Room (55' PAB). The Bantam 11 Radiation Monitor Computer was also modified to replace the dual floppy disc drive with a cartridge tape drive.

Summary of Safety Evaluation

The new radiation monitor allows monitoring radiation on any Gas Decay tank presently being filled (small or large). Alarm and indication are still available in the Control Room. Reliability and longevity of the instrument have been increased by placing the microprocessor for R-20 in a controlled temperature environment (Radiation Monitor Room).

NSE 90-03-037 RMS, Rev. 1

REPLACEMENT OF R-11/R-12 -
CONTAINMENT PARTICULATE & GAS RADIATION MONITOR

Description and Purpose

This modification replaced the Containment Particulate and Gas Rad Monitor skid. The old R-11/R-12 skid had multiple failures due to age and design. A new skid was installed and a new microprocessor was installed in the Radiation Monitoring Room.

Summary of Safety Evaluation

The new R-11/R-12 Radiation Monitors will have increased reliability and longevity due to the microprocessors being installed in a controlled temperature environment (Radiation Monitoring Room). All alarms and functions associated with the old R-11/R-12 skid will still be operable with the new radiation monitors.

MMP 90-03-116 EDG, Rev. 0

SETPOINT CHANGES FOR THE EMERGENCY DIESEL GENERATOR FUEL OIL STORAGE TANKS, LEVEL SWITCHES LC-1204S, LC-1205S, LC-1206S

Description and Purpose

The purpose of this modification was to evaluate and document the setpoint changes provided in calculation No. IP3-CALC-EG-0217, Rev. 0 (Oct. 1991). This calculation redefined the Fuel Oil Storage Tanks Level Switches setpoints. This was accomplished by removing LC-1204s, LC-1205S, AND LC-1206S from their respective storage tanks and adjusting their float positions. Both the Control Room alarm for "Low Fuel Oil Level" and the transfer pumps "Low Level Pump Cut Off" were affected by this change. The low level alarm now annunciates at 6165 gallons as opposed to 5676 gallons (previous setpoint) insuring the vendor recommended submerge of 12 inches for the transfer pump. These changes provide the FSAR Section 8.2 specification requirement of 5238 gallons of usable fuel from each storage tank at all times when the reactor is above cold shutdown.

Summary of Safety Evaluation

This minor modification ensures the required minimum amount of usable fuel (5238 gallons) is available at all times when the reactor is above cold shutdown. It also provides protection for the transfer pump by maintaining proper pump submergence to avoid any catastrophic damage due to suction vortexing. The modification does not increase the possibility of an accident or malfunctions different from any type previously evaluated in the FSAR.

NSE 90-03-117 CVCS

FREEZE SEALING OF LINE 218 TO EFFECT REPAIRS OF VALVE CH-281

Description and Purpose

The purpose of this Nuclear Safety Evaluation (NSE) was to evaluate the freeze sealing of line 218 (Charging Pump common relief/recirculation line) to permit the repair of diaphragm valve CH-281 with the Volume Control Tank (VCT) in service. Valve CH-281 is in 3/4" line 218 which is the common pressure relief/recirculation line back to the VCT for all three charging pumps. Line 218 does not possess any additional isolation besides the failed valve. Therefore, to effect the required valve repair with the VCT in service, a temporary freeze seal had to be established in the line. The freeze seal installation and maintenance was performed in accordance with QA Category I criteria and NYPA PORC approved procedure PIP-002-GEN, Rev. 0. All other applicable procedures were followed in the performance of this task which included the freeze seal process and valve repair.

Summary of Safety Evaluation

The freeze sealing of line 218 allowed the repair of valve CH-281 while permitting the continued operation of Charging Pumps 31 and 32. The evaluation of various factors concluded that no detrimental effects would be imposed on the Charging System or on the rest of the plant by the sealing process. The pipe material, austenitic stainless steel, does not suffer a significant loss of ductility until a temperature of below -400°F is reached. Since the liquid nitrogen used in the freeze jacket was held at -320°F, the piping was not subjected to brittle fracture during the process.

The freeze sealing of the Charging Pump common relief/recirculation line 218 did not increase the probability of an occurrence or create the possibility of an accident or malfunction of a different type than any other previously evaluated in the FSAR. Leakage from a hypothetical failure of line 218 is enveloped by FSAR analysis referenced in FSAR Section 9.2.

NSE 90-03-124 MBFP, Rev. 1

MBFP OIL ACCUMULATORS

Description and Purpose

The purpose of this modification is to reduce the number of inadvertent plant trips caused by the Main Boiler Feed Pump (MBFP) Turbine Control/Lube Oil System. Failure of either one of the two Main Oil Pumps of the MBFP Turbine Oil system can cause a sudden drop in system pressure, causing a MBFP turbine trip and possible plant trip. With the installation of oil accumulators (lube oil surge tanks) in the high pressure control oil system, system pressure will stabilize to preclude sudden transients from tripping the MBFP turbine before the backup main oil pump has an opportunity to start. Two 80 gallon oil accumulators fitted with flexible bladders were installed. Each is nearly filled to capacity with 76 gallons of oil. The accumulators suppress pressure transients by making use of nitrogen gas on the gas side of the flexible bladder exerting pressure on the oil in the system. This will reduce control oil system pressure variations by permitting volumetric changes in the nitrogen gas charge.

Summary of Safety Evaluation

The changes and/or additions made under this modification have no impact on, nor are they located in the proximity of any nuclear safety related equipment; therefore, they have no effect on the FSAR safety analyses. The installation is Category M with Non-Category I boundaries. The modification does not increase the probability of occurrence or create the possibility of an accident or malfunction of a type different from any previously evaluated in the FSAR.

NSE 90-03-125 MBFP, Rev. 3

MBFP TURBINE CONTROL SYSTEM UPGRADE (LOVEJOY)

Description and Purpose

The purpose of this modification was to improve the reliability of the IP3 Main Boiler Feed Pump (MBFP) Turbine Control / Lube Oil System to reduce the number of MBFP trips. This was accomplished by adding controls to upgrade the ability of the system to discern between those conditions that pose a realistic threat of equipment damage and those that do not. This was accomplished by replacing the existing mechanical low bearing oil pressure trip device with an electrical trip network with a two-out-of-three "voting" logic. The existing high feed pump discharge pressure trip of 1450 psig was supplemented by the addition of circuitry designed to reduce pump speed when the discharge pressure exceeds 1300 psig, thereby returning the pump to normal operating condition avoiding an impending trip. A "first-out" sequence-of-events recording microprocessor network was added to help determine the underlying causes when a MBFP trip does occur.

The "Low Bearing Oil Pressure Trip," actuated by a mechanical trip device was replaced with an electrical low bearing oil trip network provided by Lovejoy Controls Corp. (LCC). The network is configured in a two out of three arrangement. A 2/3 network was also added to provide a "High MBFP Discharge Pressure Runback" feature which "runs back" the MBFP turbine upon sensing a high discharge pressure of 1300 psig. The "First-Out" trip and alarm reporting network replaced the existing trip alarm status indication box.

Summary of Safety Evaluation

The changes and/or additions made under this modification had no impact on nuclear safety related equipment and therefore, no effect on the FSAR safety analyses. The modification did not increase the probability of occurrence or create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR.

MMP 90-03-144 MULT, Rev. 0

ADDITION OF HOSE CONNECTIONS TO CITY WATER AND TO SW SIDE OF THCCW HEAT EXCHANGERS

Description and Purpose

The purpose of this modification was to add inlet connections to the service water side of the turbine hall closed cooling water heat exchangers #31 and #32 to allow an alternate, temporary water supply during plant service water system Maintenance Outages. This method is favored over the practice of direct feed and bleed of city water system water into the closed cooling water piping which has resulted in equipment crud and corrosion problems as well as water chemistry difficulties.

Summary of Safety Evaluation

This minor modification will have no impact or effect on the Service Water System (SWS), Turbine Hall Closed Cooling Water system (THCCW), or City Water System (MW) during normal operation.

The new connection method will increase the life and maintainability of the THCCW system while having no impact on the SWS. The alternate supply to the heat exchangers will only be needed during outages and thus will not disrupt SWS operability.

The piping used in this modification is Non-Category I, Seismic Class III and is located on the ground floor of the Turbine Building, away from any safety related equipment. The materials used are compatible with the existing SWS and MW systems. The modification does not increase the probability or create the possibility of an accident or malfunction of a different type than any evaluated previously in the safety analysis report. The modification does not change the function of the system, nor does it create any new conditions requiring analysis in the FSAR.

MMP 90-03-220 SI, Rev. 0

REMOVAL OF GEMS LEVEL COLUMNS LT-938, -939, -940 AND -941

Description and Purpose

The purpose of this modification is to remove the Gems level columns LT-938, -939, -940 and -941 and their associated control room level indicators LT-938, -939, -940 and -941. The level columns proved to be unreliable and their task is performed by analog transmitters LT-1251, -1252,-1253, -1254, -1255 and -1256 which were previously installed through modification 80-03-052 ESS. The level columns are located inside containment on top of the recirculation sump and the containment sump and shall be removed along with all of their supports with the exception of the support for switches 940 and 941. This support will be modified as per drawing E-SI-SK-051 in order to maintain support of the Containment Sump Overflow Level Sensor (Princo alarm probe) which will remain intact. In the control room, level indicating lights on Safeguards Panel SBF-1 were disconnected. This portion of the control room work in this modification has been completed. The remainder of this modification will be completed at a later date.

Summary of Safety Evaluation

This modification requires changes to the FSAR since section 7.5 deals with the containment sump and references the level transmitters that will be removed. The same is true of section 6.2 which deals with the reactor sump. This modification will not increase the probability of an accident or reduce the safety of the plant or public. The function of monitoring Containment Building water level was left intact through the use of the previously installed analog transmitters. The NRC Regulatory Guide 1.97 requirements are still maintained.

NSE 90-03-289 RMS, Rev. 0

STEAM GENERATOR BLOWDOWN RADIATION MONITOR

Description and Purpose

This modification upgrades the R-19 Steam Generator Blowdown Radiation Monitor while maintaining the existing control functions. The microprocessor for this rad monitor was moved to a temperature controlled environment in the Radiation Monitoring Room in the Plant Auxiliary Building.

Summary of Safety Evaluation

This modification will not change or affect the performance of R-19 with regard to its effectiveness in monitoring the radioactivity of the blowdown from the steam generators. The longevity and reliability of the microprocessor will be increased considerably due to its relocation to a temperature controlled environment. The signal input for flow was rewired to FT-538 (the Blowdown Flash Tank Liquid Discharge Flow Transmitter). This will provide a more accurate assessment of effluent releases. Previously R-19 used an input from the Blowdown Flash Tank Vent Flow. NRC guidelines for calculating effluent releases from this type of process recommend measurement of the liquid flow with a given percentage of this volume assumed to be release through the vent.

NSE 90-03-290 RMS, Rev. 2

REPLACEMENT OF R-16 & R-23
SERVICE WATER EFFLUENT RADIATION MONITORS

Description and Purpose

This modification removed R-16 and R-23. These were Service water return from containment fan cooler unit radiation monitors. R-16A and R-16B were installed to monitor containment fan cooler unit service water return lines. These monitors were installed in an area (15' PAB) with a lower background radiation level. R-23 Rad monitor was installed to monitor Service water return lines from component cooling water heat exchangers. Microprocessors for all three new rad monitors were installed in the Radiation Monitor Room (55' PAB).

Summary of Safety Evaluation

This modification increases the radiation monitoring capability of the Service Water System. Previously there was no Rad monitor for the service water return lines from the component cooling water heat exchangers. Reliability and longevity of all three rad monitors were increased by placing the microprocessors in a temperature controlled environment (Radiation Monitor Room).

Alarm functions and digital displays for all three rad monitors increase operators ability to monitor these components in the Control Room. These new rad monitors are adjacent to line type monitors.

NSE 90-03-291 RMS, Rev. 0

REPLACEMENT OF R-15 CONDENSER STEAM JET AIR RADIATION MONITOR

Description and Purpose

This modification removed the old R-15 steam jet air ejector radiation monitor. A new R-15 Rad Monitor was installed in a new location further downstream in the same piping. Multiple failures from the old R-15 due to design, age, and environment was the basis of the replacement. A new micro processor was installed on the 15' of the turbine hall. A new drain valve was installed upstream of the detector to enable draining of moisture in vent line.

Summary of Safety Evaluation

All alarm, indication and control function capabilities, are still available with the new Radiation Monitor. The new Radiation Monitor will have increased reliability and longevity due to relocation of the microprocessor to the 15' of the turbine building. This area has a lower ambient temperature more suited for electronics. The radiation Monitor was relocated on the 53' of the turbine building; this gives a lower ambient temperature environment and easier access to the monitor for maintenance. This monitor measures radiation of a gaseous water vapor mixture. Prior to this modification there was no drain line upstream of the R-15 detector. Moisture in the detector often caused erroneous readings. The drain installed allows removal of moisture from the line.

NSE 90-03-292 RMS, Rev. 0

REPLACEMENT OF R-18 LIQUID WASTE RADIATION MONITOR

Description and Purpose

This modification replaced R-18, the Liquid Waste Effluent Radiation Monitor, with a newer more reliable model. It relocated the Radiation Monitor to the discharge of the monitor tank pumps. The microprocessor for R-18 was installed in the Radiation Monitor Room.

Summary of Safety Evaluation

The new Liquid Waste Effluent Radiation Monitor will indicate and alarm in the control room. It also has a control function of closing RCV-018 to stop radioactive discharges if radiation levels are detected that would exceed release limits. All of these capabilities were available with the old R-18 Rad Monitor. Reliability and longevity of this Rad Monitor has been increased by placing the microprocessor in a temperature controlled environment (Radiation Monitoring Room). The new location of R-18 allows monitoring radiation levels of monitor tanks on recirculation prior to discharge. This was not previously a capability.

NSE 91-03-010 NIS, Rev. 2

EXCORE POWER RANGE DETECTOR REPLACEMENT

Description and Purpose

The purpose of this modification was to increase the neutron sensitivity of the Power Range Detectors to enable easier reading, calibration, and maintenance of the existing Control Room equipment. The existing detectors, high voltage power supplies, and the inside containment Nuclear Instrumentation (NIS) cables were all replaced since they were approaching the end of their service life.

The modification replaced the existing excore power range neutron detectors with new detectors equipped with new power range moderators which enhance the detector sensitivity to thermal neutrons. The in containment NIS electrical cables and connectors, and the power range detector high voltage power supplies located in the CCR were removed and replaced with equivalent units.

Summary of Safety Evaluation

The existing excore power range neutron detectors were required to operate at the extreme low end of their range because of the low flux leakage fuel being used in the reactor. The new detectors are equipped with new power range moderators which enhance the detector sensitivity. The modification does not change the way the NIS operates. It does not increase the probability of occurrence or create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR. The new detectors are designed and built to the same or higher standards as the original detectors and with the new power range moderators, exceed the performance capability of the original detectors.

NSE 91-03-027 SP, Rev. 1

POST ACCIDENT H2 MONITORS REPLACEMENT

Description and Purpose

The purpose of this modification was to replace the existing two redundant hydrogen monitors (Train A and Train B) with two monitors that are of an improved design. The existing hydrogen monitors had experienced difficulties providing reliable data under heavy moisture conditions with water carry-over into the detector units. The new monitors are capable of performing their design function with high moisture content being carried through the sample lines. Each of the monitors include a hydrogen concentration measurement cabinet and a remote control panel.

The condensate drain pots on the sample intake and discharge lines installed under MMP 91-03-211 VCHA will be retained but relocated due to the removal of the existing hydrogen analyzer cabinets.

Summary of Safety Evaluation

This modification provides the CCR operators with post-LOCA hydrogen concentration indication. It also improves the containment hydrogen monitoring reliability since any moisture carry-over will not adversely affect the analyzer performance. The modification simplifies the hydrogen monitoring system by eliminating the need for a reagent gas.

The modification does not increase the probability of an occurrence or create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR. The new monitoring system uses detection technology which is tolerant to moisture that may be present in the containment vapor samples. This upgrade provides microprocessor technology which provides for greater accuracy and minimizes system drift through automatic system calibration updates. The new system provides indication and an alarm for two hydrogen levels, whereas the existing system provided only one high hydrogen alarm.

MMP 91-03-072 IVSW, Rev. 0

REROUTE OF IVSW HEADER TO SGBD CIVs

Description and Purpose

The purpose of this modification was to re-route the SGBD (Steam Generator Blowdown) seal water supply to line #541A which supplies the SGBD sample line isolation valves. This was done to prevent cross contamination of SGBD from higher pressure primary systems via the IVSW (Isolation Valve Seal Water) system.

Previously, the IVSW system supplied seal water to the SGBD lines, reactor coolant sample lines, and the pressurizer sample lines through a common header. Report number OERG-IP3-014-90 attributed contamination of the SGBD lines to reactor coolant back leakage into the IVSW system through the IVSW check valves. These check valves have been replaced in the past. However, to prevent a recurrence of this problem, this modification isolates seal water supply to the SGBD lines from any high pressure radioactive process fluid systems.

Summary of Safety Evaluation

This modification did not change the design basis or any component of the IVSW system. It did not change or affect the IVSW system design basis or operating function and it does not change system parameters stated in IP3 Technical Specifications. Therefore, it did not involve an unreviewed safety question.

NSE 91-03-101 HR, Rev. 1

R62 SIGNED INPUT INTO THE QUALIFIED SAFETY PARAMETER DISPLAY SYSTEM (QSPDS)

Description and Purpose

The purpose of this modification was to upgrade Radiation Monitoring Channels R62A-D. The monitors were reconfigured so that R62A-D correspond to Main Steam 1 through 4 respectively. Signals were provided from R62A-D as inputs to the QSPDS which fulfills the intention of NYPAS's Safety Parameter Display System Safety Analysis Report (SPDS SAR). New scales replaced the existing scales on the analog meters for R62. The new scales measure the correct engineering units for reporting radiation in a process line. Four new isolation amplifies were installed in the Control Room Rack D3 to amplify the existing R62-RM23A output signals for use with the QSPDS and the new R62 recorders. A new normal/supervisory key switch was installed and wired to R62-RM23A to prevent unauthorized database setpoint changes to the channel.

Summary of Safety Evaluation

This modification did not change or degrade the detector measurement ranges or functional requirements of the plant Radiation Monitoring Channel R62A-D with regard to monitoring the Main Steam Line radioactivity. The modification improved the radiation monitoring reliability of channels R62A-D by providing Main Steam Line Radiation Monitor signal inputs to the Qualified Safety Parameters Display System and enhances the channel data status and reliability, including operator interface. The modification does not increase the probability of occurrence or create the possibility of an accident or malfunction of a type different from any previously evaluated in the FSAR.

NSE 91-03-128 SWS, Rev. 1

SERVICE WATER STRAINER DELTA-P ALARM RESTORATION AND AUTO BACKWASH ELIMINATION

Description and Purpose

The purpose of this modification was to restore the service water strainer differential pressure indication with improved gauges, restore the high differential pressure alarm to the existing control room annunciator, and remove the high differential pressure automatic backwash feature of the strainer control circuit. The automatic backwash feature was replaced with frequent timed backwash of the service water pump strainers. This modification corrects previous instrument problems by providing instrumentation capable of indication in the optimum range of differential pressure, 0-10 PSID, with the ability to withstand pressure spikes of up to 500 PSI.

Summary of Safety Evaluation

This modification restores the high differential pressure (ΔP) to the trouble alarm in the control room to alert operators to investigate and take manual action to improve the service water strainers condition when it becomes necessary. The high ΔP automatic backwash control removal is compensated for by frequent, short duration, ($\approx$ 5 minutes every 2 hours) timed backwash of the strainers, maintenance of the strainer high ΔP alarm, and continued reliance on periodic operation inspection to assure proper operation for each header. The service water system and service water strainers are described in the FSAR section 9.6.1. This modification does not change the description of the strainers but will change the associated figure, 9.6-1A.

MMP 91-03-146 IS, Rev. 0

DEMOLITION OF INTAKE STRUCTURE SACRIFICIAL ANODES

Description and Purpose

This modification removed the remaining cathodic protection equipment/materials from the intake structure. Specifically, the sacrificial anodes associated with the old intake structure cathodic protection system were cut and removed along with any associated supports. Since these anodes no longer served a purpose and represented a potential hazard to the new traveling water screens, circulating water pumps impellers, and the safety related service water pumps, they had to be removed.

Summary of Safety Evaluation

The modification did not change the operation of the traveling screens, the circulating water pumps, or the service water pumps. The anodes were not required for the safe operation of these systems and their elimination reduced a potential hazard which could damage equipment.

NSE 91-03-149 RCS, Rev. 2

RELOAD CORE FOR CYCLE 9

Description and Purpose

The purpose of the Cycle 9 Reload Core modification was to establish control on reload fuel selection and Cycle 9 core design to ensure compliance with Power Authority procedures and energy requirements. Fuel and core design allows for plant operations within the bounds of all safety evaluations in the IP-3 Technical Specifications (Tech. Specs.), the core Operating Limits Report (COLR), and the FSAR.

Summary of Safety Evaluation

The Cycle 9 reload core did not increase the probability or create the possibility of an accident or malfunction of safety related structures, systems, or components of a different type other than previously evaluated in the FSAR. Each accident covered in the FSAR was addressed in light of the Cycle 9 design. All accidents involving operation at cold shutdown were addressed in the Cycle 9 Reload Safety Evaluation which was issued by Westinghouse prior to core reload. Cycle 9 operation with missing/straightened fuel alignment pins on the Upper Core Plate have also been addressed. All changes to IP-3 Technical Specifications (Tech. Specs.) were submitted to the NRC, approved and issued. Submittals were prepared to provide adequate safety margins in light of a 24 month cycle.

MMP 91-03-175 ESS, Rev. 0

FEEDWATER ISOLATION DEFEAT SWITCH INSTALLATION

Description and Purpose

The purpose of this modification was to provide a means of blocking Feedwater Isolation as required by Emergency Operating Procedure FR-H.1 during a loss of secondary heat sink scenario. This was accomplished by installing key switches on the doors of control room racks G-4 and G-6 which will break the required relay connections to open the feedwater regulator valves in accordance with Emergency Operating Procedure FR-H.1.

Summary of Safety Evaluation

This modification does not involve an unreviewed safety question. It provides a means for completing Emergency Operating Procedure FR-H.1 in a safe manner. It does not increase the probability or create the possibility of an accident or malfunction of a different type than any evaluated previously in the safety analysis report. The modification provides a means for assisting in rectifying a loss of secondary heat sink event.

MMP 91-03-201 SI, Rev. 0

MOV-856A, -D, -F, AND -K REPLACEMENT WITH MANUAL VELAN OPERATORS

Description and Purpose

This modification removed the electrically disconnected Limitorque Motor Operators from the subject valves and replaced them with manual handwheel operators, a mechanical stem stop and local position indicator. Prior to initial plant startup a Con Edison modification electrically disconnected the motor operators on the valves in response to AEC/ACRS flooding concerns. These valves are below the design basis containment flood level and it was determined that their remote operation was not required to perform their safety function. With the motors electrically disconnected, neither an inadvertent operator action, nor a spurious signal (flood induced or otherwise) could change the throttled position of the valves. This is of particular importance because the throttled and set position of these valves ensure balanced HHSI (High Head Safety Injection) flow into the four reactor cold legs during design basis accidents and maintain the SIS (Safety Injection System) pressure boundary.

Summary of Safety Evaluation

The original electrical lead disconnection as well as the operator changeout were permissible since these valves had no design basis need for remote actuation. The replacement with the direct acting manual handwheel operator represents a decrease in failure probabilities as well as a decrease in possible mechanical component failures and can be considered an enhancement to plant safety and reliability. The probability of operator adjustment errors decreases by virtue of the elimination of uncertainty in the declutching lever action and internal motor to manual clutch engagement when using the motor operator in the "manual" mode. The suspected problem of stem drift (discussed in letter IP-91-050) was also eliminated with the new position lockable handwheel.

This modification did not create the possibility of an accident or malfunction of a different type than any previously evaluated in the safety analysis report. Changing the operators of the cold leg throttle valves did not increase the existing single failure analyses for the SIS trains or create additional accident scenarios.

MMP 91-03-211 SMPL

INSTALLATION OF CONDENSATE POTS AT THE V.C. HYDROGEN MONITOR

Description and Purpose

The purpose of this modification was to install condensate drip pots at each inlet and outlet line to the two redundant Hydrogen Monitors (train A and B) located in the Primary Auxiliary Building. The condensate drip pots will alleviate the chronic difficulties with the monitors caused by the water carry-over into the detector units under heavy moisture conditions. The monitors were subsequently replaced under modification 91-03-027 SP, Rev. 1 with monitors of an improved design. The condensate pots were retained but relocated due to the removal of the existing hydrogen analyzer cabinets.

Summary of Safety Evaluation

The condensate pots at the containment atmosphere hydrogen monitoring cabinets will remove bulk moisture from the sample stream prior to the analyzer. This will enhance the function of the system and improve system reliability. The new additions are designed and installed to the same specifications as the original system. The modification is an enhancement of the plant and does not pose any unreviewed safety questions. It does not increase the probability of occurrence or create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR.

NSE 91-03-217 SFPC, Rev. 1

TEMPORARY STANDBY SPENT FUEL POOL COOLING SYSTEM

Description and Purpose

The purpose of this modification was to install a Standby Spent Fuel Pool Cooling System (SSFPCS) to be available, if required, during the replacement of the two Component Cooling Water Heat Exchangers (CCWHX's). During the CCWHX replacement, the temporary SSFPCS will remain in a standby mode to be operated as needed. The SSFPCS was removed upon completion of the CCWHX replacement.

Summary of Safety Evaluation

The temporary SSFPCS is physically independent of the existing Spent Fuel Pool Cooling system. It provides an additional degree of assurance that cooling of the Spent Fuel Pool will be maintained at all times. The modification does not increase the probability of an occurrence or create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR. The temporary system serves as backup to the existing Spent Fuel Pool Cooling System and its associated heat removal system (i.e. Component Cooling Water System and Service Water System). The installation of this system does not involve a change in or "relax" any existing Technical Specification requirements imposed on these systems.

NSE 91-03-220 MULT, Rev. 0

IP3 SITE REORGANIZATION

Description and Purpose

This safety evaluation was to describe and evaluate a management reorganization designed to improve operations at the plant by creating functional lines of responsibility and to document that the organizational changes did not involve an unreviewed safety question.

Summary of Safety Evaluation

The reorganization does not alter the Power Authority's commitment to maintain a management structure that contributes to the safe operation and maintenance of the plant. The changes do not involve equipment, structures, systems or components.

The reorganization includes position title changes and the creation and deletion of positions, and the reassignment of position responsibilities. Title changes were administrative in nature and of no operational significance. All new positions meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions. The distribution of responsibilities has changed but the responsibilities themselves have not been diminished. In most cases, responsibilities have been reassigned to a higher management level.

The creation of General Manager positions were designed to improve communication, responsiveness, and effectiveness of operations by creating specific functional lines of responsibility. The General Manager positions are senior management positions functionally equivalent to the previous Superintendent of Power. Several new manager positions were created to support the General Managers in accomplishing administrative and functional responsibilities. Manager positions are functionally equivalent to the previous Superintendent level.

MMP 91-03-231 FHS, Rev. 0

FUEL HANDLING TOOL RACKS

Description and Purpose

The purpose of this modification was to provide additional fuel handling tool racks in the spent fuel pit. The additional racks became necessary after the fuel storage racks were modified to increase storage capacity in accordance with modification 89-03-253 FHS. After the reracking of the spent fuel pool, fuel handling tools could no longer be stored in their original brackets. Three new brackets were designed and located around the south-west corner of the spent fuel pit. Unlike the original brackets, the new ones were not welded to the pool liner. They were bolted to the concrete door and hung against the liner into the pool.

Summary of Safety Evaluation

Due to the location and size of the brackets, if the tools were to come loose, they would not achieve physical contact with the stored fuel. Therefore, this modification does not represent a safety hazard for the spent fuel. The only possible failure would cause the brackets to fall to the bottom of the pool. The tools in turn, would lean either on the edge of the pool or on one side of the spent fuel rack, in which case, no damage to the fuel is possible. Section 9.5.2 of the FSAR had to be modified since this modification alters the floor plan drawing.

MMP 92-03-010 480V, Rev. 0

MODIFICATION TO PREVENT INADVERTENT CLOSURE OF 480V BUS TIE BREAKERS 52/2AT5A and 52/3AT6A (NRC EDSFI OPEN ITEM NO. 91-80-15

Description and Purpose

The purpose of this modification is to prevent the inadvertent closure of 480V Bus Tie Breakers 52/2AT5A and 52/3AT6A. These breakers are required to be open whenever the plant is above cold shutdown per IP-3 Technical Specification, Section 3.7. This modification procedurally requires the breakers to be racked out in the "Test" position (with breakers open and control fuses removed) whenever the plant is above the cold shutdown condition. The modification prevents the inadvertent closure of the Bus Tie Breakers which could connect two live 480V safety buses of unsynchronized power sources.

Summary of Safety Evaluation

The procedural action of this modification will prevent the inadvertent closing of Bus Tie Breaker 52/2AT5A or 52/3AT6A, which could have connected two live buses of unsynchronized power sources; buses 2A and 5A or 3A and 6A. This would result in a possible loss of safety related switchgear. Since no new failure mechanisms or scenarios are introduced, this modification did not create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR.

CLAS 92-03-020 SWS, Rev. 0

BOUNDARY DESCRIPTION: 31, 32, 33 EDG L.O./S.W. HEAT EXCHANGER DELTA P GAUGES

Description and Purpose

The purpose of this Classification is to classify a number of valves and instruments that are to be added to the existing service water system in accordance with modification 91-03-161 SWS. The modification does not permit the classification of new components therefore, a separate classification is required. Pressure indicators PID-1495, 1496, and 1497 and root isolation valves SWN-224 through SWN-229 were classified as Category I based on the NS5 Code. This code is described in MCM-6B, Classification of Structures, System, Components, and Subcomponents. Downstream of these root isolation valves is a series of un-numbered instrument isolation valves which were also classified as Category I.

Summary of Safety Evaluation

This classification does not increase the probability or possibility of an accident or malfunction of any type other than those previously evaluated in the FSAR. The service water system is unaffected by the addition of these components. The component classification of Category I provides added assurance that the system is capable of performing its intended function.

NSE 92-03-049 MULT, Rev. 0

NUCLEAR OPERATIONS DIVISION RE-ORGANIZATION

Description and Purpose

The purpose of this safety evaluation was to describe and evaluate the management reorganization of the Nuclear Operations Division and to document that the organizational changes did not involve an unreviewed safety question. The reorganization involved the reassignment of duties and position responsibilities by function. The changes did not in any way alter the Power Authority's commitment to maintain a management structure that contributes to the safe operation and maintenance of the plant.

The prior responsibilities of the Directors - Nuclear Operations and Maintenance have been divided along the functional lines of Operations and Maintenance rather than the previous responsibilities of PWR and BWR activities. The two Directors now have the responsibility for operations and maintenance activities at both of the Authority's nuclear facilities, respectively. The duties and responsibilities of the Division have not changed, they have been reallocated along functional lines to the appropriate Director within the division. Position title changes were necessitated by the reorganization. The position of Director - Nuclear Operations and Maintenance (PWR) has been replaced by that of Director - Nuclear Operations. The position of Director - Nuclear Operations and Maintenance (BWR) has been replaced by that of Director - Nuclear Maintenance. Both of these positions continue to report directly to the Vice President - Nuclear Operations.

Summary of Safety Evaluation

The reorganization does not alter the Power Authority's commitment to maintain a management structure that contributes to the safe operation and maintenance of the plants. Since the changes do not involve equipment, structures, systems or components of any kind, the reorganization does not increase the probability of occurrence or create a different type than any previously evaluated in the FSAR. It does, however, affect subchapter 12.1 of the IP-3 FSAR.

NSE 92-03-072 MULT, Rev. 0

NUCLEAR ENGINEERING DIVISION REORGANIZATION

Description and Purpose

The purpose of this safety evaluation was to describe and document that the organizational changes to the Nuclear Engineering Division do not involve an unreviewed safety question.

Summary of Safety Evaluation

Although the distribution of responsibilities has changed, the responsibilities themselves have not diminished. All functions previously performed continue to be performed. The level of management responsibility has not been reduced. The reorganization of the Nuclear Engineering Division was designed to better concentrate accountability for design changes in support of plant needs and to enhance Division capability with the establishment of the Site Engineering and Planning and Scheduling Groups. Also to allow for concentration on configuration management issues. The changes did not involve an unreviewed safety question.

Subchapter 12.1 of the FSAR required revision to reflect the reorganization.

CLAS 92-03-089 COMM, Rev. 0

NRC EMERGENCY TELECOMMUNICATIONS SYSTEM

Description and Purpose

The purpose of this classification was to establish a QA classification for the NRC Emergency Telecommunications System to be upgraded by modification MMP 92-03-011 COMM.

Summary of Safety Evaluation

The NRC Emergency Telecommunication System is a means of exchanging technical information and plant status between the plant operating and emergency plan personnel, resident NRC inspectors and the NRC headquarters. It is not vital to safe plant operation, nor is it needed to mitigate the consequences of an accident at the plant. The failure of this system would not cause or contribute to an accident because of its complete independence from safety related equipment or systems. It has therefore been classified as Non-Category I because the system does not increase the probability of an occurrence or create the possibility of an accident or malfunction of any type other than those previously evaluated in the FSAR.

MMP 92-03-113 480V, Rev. 0

REPLACEMENT OF 480V BUS UNDERVOLTAGE ALARM RELAYS AND VOLTMETERS

Description and Purpose

The purpose of this modification was to replace the existing 480V bus undervoltage alarm relays with a type providing more accurate monitoring of the bus voltage on 480V busses 2A, 3A, 5A, and 6A. The modification also installed four analog/digital voltmeters (A/DVM) replacing the existing voltmeter switch/voltmeter combination to allow for constant monitoring of each 480v bus.

Summary of Safety Evaluation

The function of these relay is to monitor the 480V safeguards busses and alert operators via an alarm when bus voltage has degraded to a pre-selected setpoint. The alarm provides the initial warning of a degraded voltage condition but does not automatically initiate any safety related function or equipment.

The system has been analyzed for seismic interaction, electrical stability, channelization, and separation, and setpoint change with positive results. The equipment has been classified as Category M and is connected to and isolated from Category I switchgear via Category I fuses.

NSE 92-03-121 SI, Rev. 0

HIGH HEAD SAFETY INJECTION FLOW CHANGES

Description and Purpose

The purpose of this safety evaluation was to assess a change to the High Head Safety Injection (HHSI) flow balancing criteria and the associated changes to the HHSI flows used in various safety analyses, to ensure that the changes will not adversely affect the safety analyses or safe plant operation. During the cycle 8/9 refueling outage, flow measurement orifices were installed in the HHSI injection lines and the system flow was balanced to ensure the validity of the revised HHSI system performance analyses. New flow balancing criteria were met for total indicated cold leg injection header flow, maximum indicated cold leg injection line imbalance, minimum total indicated hot leg injection flow, and maximum total indicated injection header flow (hot and cold leg). The revised HHSI flows resulted in changes to the IP3 licensing basis acceptance criteria for LOCA analysis, steam generator tube rupture, containment integrity and ultimate heat sink service water temperature effect.

Summary of Safety Evaluation

The safety significance of the change in HHSI flows does not constitute an unreviewed safety question because the change does not increase the probability of occurrence or create the possibility of an accident or malfunction of a different type than any evaluated in the FSAR. The change in HHSI safety analyses flows is not associated with events involved in initiating any accident evaluated in the FSAR. Subchapters 6.2 and 14.3 of the FSAR required revision to reflect the revised HHSI flow balancing criteria and Technical Specification (T.S. 4.4.A.2) required incidental change.

NSE 92-03-124 SG, Rev. 0

CYCLE 8/9 EVALUATION OF STEAM GENERATORS #31, #32, #33 AND #34 SECONDARY SIDE LOOSE OBJECTS

Description and Purpose

The purpose of this safety evaluation was to address the safety consequences of operation without removing identified loose objects in all four new steam generators. The objects have been seen and video recorded fiberoptically. Retrieval efforts were unsuccessful in removing all the observed objects. The objects are comprised mostly of flexitallic gasket material, a small amount of wire, and a possible sludge formation the size of a small pebble (approx. 3/8" diameter). The objects were first identified during a routine visual inspection of the annulus area after sludge lancing.

Summary of Safety Evaluation

This evaluation was based on a structural analysis and evaluation performed for a larger and heavier loose object left in the original steam generator #32. That evaluation was documented in NSE 86-03-060 SG. Based on Westinghouse test results, the energy imparted to a tube from the object during a collision is insufficient to significantly dent a tube in one impact or to sever a tube due to repeated impacts over a long period of time. Based upon the significantly lower weight and size of the present objects in the steam generators, the weight of the largest loose part is estimated to be approximately twenty times lighter than that analyzed in 1986. The formal 1986 analysis clearly bounds the case of the objects in steam generators #31, #32, #33, and #34.

Therefore, the operation of Indian Point #3 with the presence of the loose objects on the secondary side of the new steam generators will not adversely affect continued safe operation and does not represent a potential unreviewed safety question. These loose parts will not increase the probability of occurrence or create the possibility of an accident or malfunction of any type other than those previously evaluated in the FSAR.

NSE 92-03-129 DCPWR, Rev. 2

REPLACEMENT OF 125VDC CIRCUIT BREAKERS WITH FUSES IN DC POWER PANEL 31 (PP31) AND POWER PLANE 32 (PP32)

Description and Purpose

The purpose of this modification was to address concerns regarding inadequate selective coordination between 125VDC power panel 31 and 32 circuit breakers and upstream battery fuses, and between distribution panels 31, 32, 33, 34 branch circuit breakers and upstream feeder breakers located in the DC power panels. It also addressed the concern of inadequate selective coordination of unseparated non-safety circuits from DC power panels 31 and 32 that are routed in the same tray and in the same panels. In addressing these concerns, existing fuses for batteries 31 and 32 were replaced with upgraded fuses. The molded case circuit breakers in 125VDC power panel 31 (PP31) feeding DC distribution panels 31 and 33 and the molded case circuit breakers in 125VDC power panel 32 (PP32) feeding DC distribution panels 32 and 34 were replaced with molded case switches. Fuses were added in separate boxes to provide protection for circuits with molded case switches. Fuses were also added to selective circuits feeding DC distribution panels 31 and 33, and 32 and 34 from PP31 and PP32 to assure coordination with the new battery fuses.

Summary of Safety Evaluation

This modification enhances plant safety by isolating any faults on the modified circuits and preventing a fault from disrupting electrical service to other circuits fed from the same power panels as these circuits. This modification also enhances the separation between and establishes a Category I boundary for circuit 19 in PP31 and circuits 17 and 18 in PP32 as these circuits are run in a common tray to non-safety loads.

The modification does not increase the probability of occurrence or create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR. It does not reduce the margin of safety as defined in the basis of the Technical Specifications because it corrects a design deficiency and provides for adequate selective coordination for selected electrical components of the 125VDC electrical system.

MMP 92-03-137 CVCS, Rev. 1
CHEMICAL AND VOLUME CONTROL SYSTEM (CVCS)
PIPING MODIFICATION

Description and Purpose

The purpose of this modification was to eliminate low temperature alarms observed in 2" Chemical Volume and Control System (CVCS) injection line 208. The configuration of this line at its intersection with 4" CVCS charging line 200 was revised to prevent the thermal siphoning effect that has caused low temperature alarms in heat tracing circuit #42A. The heat tracing for line 208 was modified to include the new piping configuration via DEM 88-03-230 EHT.

Spurious low temperature alarms were experienced from CVCS line 208. This line is filled with borated water and is, except for emergencies, normally stagnant. The line is heat traced and connects to the bottom of 4" CVCS charging pump suction line 200. Due to the difference in temperatures of the two lines and their configuration, a "thermal siphon" was occurring between them. This modification changed the configuration of line 208 to provide a "thermal block" of the siphoning effect. This allowed the heat tracing to maintain the temperature of line 208 above the low-alarm set point of 155° F, which is read by permanent thermocouples.

Summary of Safety Evaluation

The new configuration provides a "thermal block" of the siphoning effect. Cooler water migrating into line 208 will now be blocked by a column of warmer water in the vertical run of pipe. The density gradient in the vertical portion is sufficient to confine the mass transfer to only the first 3 feet of line 208. The "cold" section of pipe could not be entirely eliminated because there is a warm line in contact with a cooler line. The "cold" section however, was reduced from 12 to 3 feet. Points upstream of the thermal block see temperatures above the low alarm point.

Based on the examination and analysis of four scenarios (normal operation, MOV-333 leakage, emergency boration, and the period following emergency boration) there is no significant concern for boric acid precipitation in the cooler section of pipe. With the appropriate heat tracing installed (per DEM 88-03-230 EHT) and with the addition of proper insulation, precipitation of boric acid will not occur to any detrimental extent along the entire length of line 208. BRC calculations (6649-06-15-1, -2, -3) indicate that with proper heat trace circuit function, conditions in line 208 (near its interface with line 200) are naturally generated to preclude boric acid crystallization under the worst-case scenario evaluated. This allows the "loop seal" portion of line 208 to be included in the FSAR analysis of non-heat traced lines which may temporarily contain, during emergency
situations, highly concentrated boric acid solutions.

CLAS 92-03-139 480V, Rev. 1

BOUNDARY DESCRIPTION: 480V BUS UNDERVOLTAGE ALARM RELAYS ANALOG/DIGITAL VOLTMETERS AND CATEGORY M, PROTECTIVE FUSES AS CATEGORY I BOUNDARY

Description and Purpose

This classification establishes a QA classification for new 480V bus undervoltage alarm relays na analog/digital voltmeter with power supplies, a terminal block, and associated protective fuses.

Summary of Safety Evaluation

The function of these relays is to monitor the 480v safeguards busses and alert operators via an alarm when bus voltage has degraded to a pre-selected setpoint. This setpoint is above the degraded grip trip point that automatically starts the emergency diesel generators. The relays do not automatically initiate any safety function or start safety related equipment.

The relays and the new analog/digital voltmeter were classified as Category M, however, they are connected to potential transformers (one per bus) that are Category I. Isolation is therefore required and provided by a set of new Category I protective fuses. All Category M components in the circuit are downstream of the Category I fuses.

The modification to the FSAR involved Fig. 8.2.4 in chapter 8. This figure showed the degraded voltage alarm relays as type 47, the ANSI device number for a reverse phase voltage relay. The new relays are voltage sensing types and have the ANSI device number of 27.

MMP 92-03-146 IA, Rev. 1

ADDITION OF A 750 SCFM HEATLESS DESICCANT DRYER TO THE CONTROL BUILDING INSTRUMENT AIR SYSTEM

Description and Purpose

The purpose of this modification is to ensure the ability of the instrument air system (IA) to consistently provide acceptable instrument air quality. This modification temporarily installed a new dryer and filter skid in the Control Building which parallels the existing drying system. The 750 SCFM capacity of the new dryer exceeds the capacity of both IA compressors 31 and 32 combined (450 SCFM). The parallel arrangement will allow the existing system to be bypassed for repairs. The modification was installed in two phases. Phase one installed the piping tie-in points. Phase two installed the new dryer, filters and connections necessary to complete the modification. This is a temporary installation since the entire dryer system will be upgraded at a later time.

Summary of Safety Evaluation

The Instrument Air Supply System was originally a Category I, Class 1 Seismic System. This section of the system was reclassified to Category M by RECLAS 89-03-013 IA. The new equipment falls under the boundaries of this RECLAS. Because of the method of operation and the high reliability of the new equipment, there are no expectations of Instrument Air System interruption and thus, no consequential increase in accidents due to switching to safety related Instrument Air backup systems. The new addition adds current technology and reliability to the IA System without increasing the risk of accident or reducing the ability to safely shut down the plant. The installation of the new desiccant dryer will be a significant improvement to the IA System and addresses regulatory agency concerns (GL 88-14) and industry standards (ISA S7.3).

MMP 92-03-164 MULT, Rev. 0

PLANT ELECTRICAL SYSTEMS FUSE UPGRADE

Description and Purpose

The purpose of this modification was to correct discrepancies and inconsistencies in the application of 480V electrical system fuses for safety and non-safety related equipment. Specific system component fuses were replaced in phases. Subsequent replacements will be accomplished by Engineering Change Notices (ECN's) to this modification.

An electrical system fuse walkdown and subsequent fuse evaluation study indicated that some fuses had to be replaced with different type and/or size fuses to accomplish their intended function to protect the feeders and allow the load to fulfill its intended function and coordinate with other protective devices in the circuit.

Example of the basis inconsistencies found were: different size fuses and fuses with different protection characteristics for the different phases of the same power circuit; and inadequate or oversized fuses for the protected loads.

Summary of Safety Evaluation

This modification was based on design input from fuse walkdown program No. ENG-488A and a systematic review of each circuits performance on appropriate electrical coordination adequacy forms (ECAF) and electrical fuse adequacy forms (EFAF). The design process for modification considered applicable codes and standards. The modification was classified as Category I and design verification was performed in accordance with DCM-4. This modification did not involve an unreviewed safety question.

NSE 92-03-165 DCPWR, Rev. 1

REPLACEMENT OF #31 AND #32 BATTERIES

Description and Purpose

The replacement of all cells in the 31 and 32 battery configuration was required due to the fact that the existing Gould Model NCX-2550 cells previously installed under modification 81-03-030 EL, Rev. 0 had reached their end of life. They were replaced with Exide Model GC-33 which provides an increased 8 hour ampere hour rate for increased loading capabilities while utilizing the existing battery space. The battery cables were replaced wherever the cables could not be reused due to the new cell configurations or damage.

Summary of Safety Evaluation

The replacement cells provide adequate capability for carrying the loads associated with 31 and 32 batteries as described in the FSAR Section 8.2. The increased ampere hour rate ensures that the new cell arrangements provide a service which is equal to or better than the Gould cells with respect to present or increased loading.

The replacement of the cells did not involve an unreviewed safety question. The change was in full compliance with both the Technical Specifications and the FSAR with respect to station battery requirements. The FSAR Section 8.2 Figure 8.2-6 was changed to show the specifications in accordance with the new configuration and cable.

The Exide battery capabilities are equal to or better than those possessed by the Gould cells. The modification does not increase the probability of occurrence or create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR.

MMP 92-03-172, Rev. 0

480V FUSE FOR MCC #38 FEEDER

Description and Purpose

The purpose of this modification was to ensure that an electrical fault at MCC-38 which is located inside the Containment Building, would not damage containment penetration H57. This was accomplished by equipping the feeder for MCC-38 with a backup protection fuse installed in series with the existing circuit breaker and resetting the trip settings on 480V circuit breaker 20C in 480V Switchgear Bus 5A.

An evaluation of the electrical penetration capabilities indicated that penetration H57 which brings the power to MCC-38 could be damaged if the feeder breaker at 480V bus 5A fails to trip during an electrical fault. If the main bus breaker is used as back-up protection for the MCC feeder, the preliminary coordination curves show that the penetration capabilities are exceeded.

In-line fuses were added to the MCC-38 feeder to provide back-up protection and assurance that a potential fault at the MCC is cleared before the penetration is damaged.

Summary of Safety Evaluation

The safety evaluation ensured that new fuses do not change the function of the feed equipment to MCC-38 but provides additional assurance that failures of primary electrical protection equipment will not affect the integrity of penetration H57. Since the new fuses decrease the probability of an accident and raise the level of safety, they do not create the possibility of an accident or malfunction of a different type than evaluated previously in the safety analysis report.

NSE 92-03-184 CVCS

FREEZE SEALING OF LINE 220 TO EFFECT REPAIRS ON VALVE CH-276

Description and Purpose

The purpose of this Nuclear Safety Evaluation (NSE) was to evaluate the freeze sealing of line 220 (Charging Pump #32 relief/recirculation line) to permit the repair of diaphragm valve CH-276 with the Volume Control Tank (VCT) in service. Valve CH-276 is in 3/4" line #220 which is the pressure relief/recirculation line back to the VCT for Charging Pump 32. Line 220 does not possess any additional isolation besides the failed valve, therefore, to effect the required valve repair with the VCT in service, a temporary freeze seal had to be established in the line. The freeze seal installation and maintenance was performed in accordance with QA Category I criteria and NYPA PORC approved procedure PIP-002-GEN. All other applicable procedures were followed in the performance of this task which included the freeze seal process and valve repair.

Summary of Safety Evaluation

The freeze sealing of line 220 allowed the repair of valve CH-276 while permitting the continued operation of Charging Pumps 31 and 33. The evaluation of various factors concluded that no detrimental effects would be imposed on the Charging System or on the rest of the plant by the sealing process. The pipe material, austenitic stainless steel, does not suffer a significant loss of ductility until a temperature of below -400°F is reached. Since the liquid nitrogen used in the freeze jacket was held at -320°F, the piping was not subjected to brittle fracture during the process.

NSE 92-03-198 RCS

FREEZE SEALING OF LINE 84 TO EFFECT REPAIRS ON VALVE RC-515A

Description and Purpose

The purpose of this Nuclear Safety Evaluation (NSE) was to evaluate the freeze sealing of line #84 (Reactor Coolant System loop 34 intermediate leg drain line) to permit the repair of valve RC-515A. The valve is in 2" line #84, which is the first isolation valve. To effect the required valve repair with fuel in the reactor and the Reactor Coolant System (RCS) full, a temporary freeze seal in the line had to be established. The freeze seal installation and maintenance was performed in accordance with QA Category I criteria and NYPA-PORC approved procedure PIP-002-GEN, Rev. 3. All other applicable procedures were followed in the performance of this task which included the freeze seal process and valve repair.

Summary of Safety Evaluation

The freeze sealing of line #84 allowed the repair of valve RC-515A while permitting the RCS to remain intact. The evaluation of various factors concluded that no detrimental effects would be imposed on the RCS or on the rest of the plant by the sealing process. The pipe material, austenitic stainless steel, does not suffer a significant loss of ductility until a temperature of below -400°F is reached. Since the liquid nitrogen used in the freeze jacket was held at -320°F, the piping was not subjected to brittle fracture during the process.

The freeze sealing of line #84, the RCS loop 34 intermediate leg drain line, did not increase the probability of an occurrence or create the possibility of an accident or malfunction of a different type other than any other previously evaluated in the FSAR. Leakage from a hypothetical failure of line #84 is enveloped by the reduced inventory operating procedures.

NSE 92-03-221 RM, Rev. 1

EVALUATION OF TEMPORARY MODIFICATIONS ON THE CP-4 PANEL AND R-45, R-47

Description and Purpose

The purpose of this safety evaluation was to evaluate leaving temporary modifications 92-02789-00, 92-02789-02, and 92-02789-03 in place until permanent modifications are prepared and installed. The temporary modifications were installed to remove all alarms to the CP-4 category alarm in the Central Control Room with the exception of R-46 failure and high radiation alarms (required by Radiological and Environmental Technical Specifications) and to remove from service R-45 and R-47. R-45, -46, -47 are the Administration Building Vent particulate, gas, and iodine radiation monitors, respectively.

Summary of Safety Evaluation

The installation of these temporary modifications has no adverse impact on plant safety. They do not degrade the Administration Building exhaust vent radiation monitoring and there is no accident or malfunction evaluated in the FSAR that uses the Administration Building exhaust vent as a release path. Therefore, the temporary modifications may be left in place until the permanent modifications are prepared.

NSE 92-03-246 CVCS, Rev. 0

FREEZE SEALING OF LINE #219 TO EFFECT REPAIRS ON VALVE CH-273

Description and Purpose

The purpose of this nuclear safety evaluation was to evaluate the freeze sealing of line 219 (Charging Pump #31 relief/recirculation line) to permit the repair of diaphragm valve CH-273 with the Volume Control Tank (VCT) in service, valve CH-273 is in 3/4" line #219 which does not possess any additional isolation besides the failed valve. Therefore, to perform the required valve repair with the VCT in service, a temporary freeze seal had to be established in the line. The freeze seal installation and maintenance was performed in accordance with QA Category I criteria and NYPA-PORC approved procedure PIP-002-GEN. All other applicable procedures were followed in the performance of this task which included the freeze seal process and valve repair.

Summary of Safety Evaluation

The freeze sealing of line 219 allowed the repair of valve CH-273 while permitting the continued operation of Charging Pumps #32 and #33 and the VCT in service. The evaluation of various factors concluded that no detrimental effects would be imposed on the Charging System or on the rest of the plant by the sealing process. The pipe material, austenitic stainless steel, does not suffer a significant loss of ductility until a temperature of below -400°F is reached. Since the liquid nitrogen in the freeze jacket was held at -320°F, the piping was not subjected to brittle fracture during the freeze sealing process.

The freeze sealing of line #219, Charging Pump #31 recirculation/relief line, did not increase the probability of an occurrence or create the possibility of an accident or malfunction of a different type than any other previously evaluated in the FSAR. Leakage from a hypothetical failure of line 219 is enveloped by FSAR analysis referenced in FSAR Section 9.2.

NSE 92-03-272 DI, Rev. 0

RETIREMENT IN PLACE OF THE INTAKE STRUCTURE DE-ICING SYSTEM

Description and Purpose

The purpose of this safety evaluation was to evaluate the acceptability of retiring in place the Intake Structure De-icing System. Major improvements in the Intake Structure equipment and operation have essentially replaced the function of the De-icing System. Ice buildup conditions for which the De-icing System would be required to keep the intake clear have not been experienced at Indian Point #3 since the time of commercial operation and, therefore the system has not been required to be placed in operation for icing considerations. This evaluation addresses the suitability of the improved Intake Structure's capability for the removal of ice as well as issues and potential impacts on plant operation and shutdown surrounding the retirement in place of the De-icing System.

Summary of Safety Evaluation

The De-icing System is a Non-Category I system which is not safety related. The existence of the system is acknowledged in Sections 9.6.1 and 10.2.4 of the FSAR.

Beneficial operation of this system is restricted to those periods of time when either or both of the Indian Point units are in operation as waste heat from the steam cycle of the plants is required to have warm water in the discharge canal for circulation. The purpose of the De-icing System was to allow continued operation of the plant during severe winter conditions if icing were to occur which would potentially restrict the flow of river water into the Intake Structure. Based on a lengthy history of not experiencing the type of ice blockage or buildup which would require use of the De-icing system coupled with the features available and measures that could be taken to mitigate against a bay flow reduction/blockage situation, it has been determined that this system can be retired in place. However, should this occur, the plant can be safely shutdown in accordance with existing Operating Procedures utilizing the back-up Service Water Pumps.

The lack of this system does not increase the probability of occurrence or create the possibility of an accident or malfunction of any type other than those previously evaluated in the FSAR.