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SVP-98-328

October 30, 1998

U.S. Nuclear Regulatory Commission
Washington, DC 20555

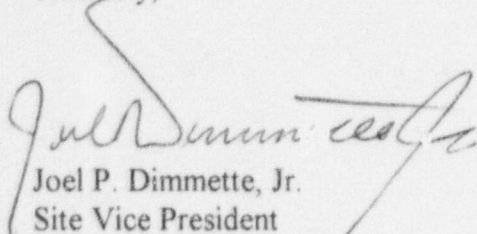
Attention: Document Control Desk

Subject: Quad Cities Nuclear Power Station Units 1 and 2
Summary Report of Changes, Tests, and Experiments Completed
Facility Operating License Numbers DPR-29 and DPR-30
NRC Docket Numbers 50-254 and 50-265

Enclosed please find those 50.59 Safety Evaluations associated with Quad Cities Station, Units 1 and 2, DPR-29 and DPR-30. A summary of the safety evaluations is being reported in compliance with 10 CFR 50.59 and 10 CFR 50.71(e). These safety evaluations cover the period of October 1, 1997 through July 15, 1998.

If you have any questions or comments concerning this letter, please refer them to Mr. Charles Peterson, Regulatory Assurance Manager, at (309) 654-2241, extension 3609.

Sincerely,


Joel P. Dimmette, Jr.
Site Vice President
Quad Cities Station

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Attachment: "Summary Report of Changes, Tests, and Experiments Completed"

cc: Acting Regional Administrator, Region III
Senior Resident Inspector, Quad Cities

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PDR ADOCK 05000254
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SUMMARY REPORT OF CHANGES, TESTS AND
EXPERIMENTS COMPLETED

ATTACHMENT A

SVP-98-328

SAFETY EVALUATION
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Safety Evaluation Number: None

Type of Safety Evaluation: Exempt Change

Evaluation Reference Number: E04-0-93-049; ECN 04-01032M; DCP 9300010

Title: LTD Building-Gaseous Monitoring System Tie-in

DESCRIPTION:

The proposed design change will exhaust air flow from the LTD building to be routed to the gaseous monitoring system. The Decon room exhaust fan ½-5799-33 will be taken out-of-service and the existing ductwork capped. Laundry room exhaust fans ½-A(B)-5798-32 ductwork will be capped as these fans are currently out-of-service. Air flow measuring station (AFMU) in the filter room exhaust duct and the laundry room exhaust fan ½-5798-33 duct will be removed to improve system performance. Duct access panels will be installed by the gaseous monitoring exhaust fan OV-01/02 AFMU in the suction ductwork to facilitate AFMU cleaning.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this change has no affect on equipment important to safety. The gaseous monitoring system and the plant stack sampling system including their interrelated systems are non-safety related and do not contain equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this change does not impact systems or functions of the gaseous monitoring system and plant stack sampling system as to create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: None

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9400006 (E04-0-94-199)

Title: Record Storage Building HVAC Replacement

DESCRIPTION:

This design change replaced the HVAC for the Station's Record Storage Building. The new HVAC is capable of heating, cooling, and dehumidifying the building. Local and control room alarms for fire protection and HVAC trouble are still present.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the Record Storage Building contains no contaminated equipment, nor is it designed to contain contamination released by an accident. Therefore, it does not affect the consequences of any accident or malfunction of equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no equipment important to safety is located in or near the Record Storage Building. Therefore, the possibility of an accident or malfunction not previously evaluated, is not created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Record Storage Building, and its HVAC system, has no effect on any Technical Specification bases.

Safety Evaluation Number: None

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCPs 9500166, 9500167, 9500168, 9500169, 9500170

Title: 250 VDC MCC Replacement Breakers

DESCRIPTION:

Replaces obsolete Westinghouse breakers at 250 VDC MCCs with new breakers.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the new breakers are equivalent replacement breakers to the obsolete breakers. The new breakers are seismically and environmentally qualified to the levels required for the MCCs.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the operation of the new breaker is the same as the existing breaker. There are no new failure modes or system interactions.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this does not affect any parameters that the Technical Specifications are based on.

Safety Evaluation Number: SE-96-115

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9600037

Title: 1/2 EDG Instrument Upgrade

DESCRIPTION:

Adds new instruments to monitor Air Box Pressure, Crankcase Vacuum and Fuel Oil Filter Inlet and Outlet Pressure to the 1/2 EDG.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the new instruments will not affect the operation of the EDG. The new instruments and sensing lines are designed to maintain the safety-related pressure boundary and seismic qualification of the EDG.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the new instruments perform a passive function and are used to provide for monitoring for normal diesel operating parameters. The failure modes of these instruments are not any different than instruments already installed on the diesel generator. The sensing lines and instruments meet the safety-related material requirements for this application.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this does not affect any parameters that the Technical Specifications are based on.

Safety Evaluation Number SE-97-069

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700017

Title: Modify Indicating Light Circuit Portion Of The HPCI AO 1-2301-7 Testable Check Valve

DESCRIPTION:

Remove the existing indicating lights for the HPCI AO 1-2301-7 testable check valve at the 901-3 main control room panel and the local indicating light. The circuit's magnetic switch will also be removed. The test circuit relay will be spared and left in place. The associated internal wiring for the specific test circuit components will be removed. Cable 12371 will be abandoned in place.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the abandonment of the valve position indication circuit has no impact on the component's safety-related function. The indication circuit is not considered part of the HPCI system for purposes of operability. It is merely a test circuit for position indication used once every refueling cycle. Operations may test this check valve manually using a torque wrench and has preferred this to the current unreliable test circuit. The HPCI system will continue to perform its safety-related function as designed. Therefore, there is no increase in the probability of a malfunction of equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this design change will result in the deletion of the HPCI testable check valve indication circuit. The abandonment of the indication circuit will not adversely impact the control circuit logic for the subject valve, nor will this design change result in an inability of any other components within the HPCI system to perform its design function. The possibility of an accident or malfunction of a type different from those evaluated in the SAR is not created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-97-074

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Revision to the Fire Hazards Analysis Report Revision 97-02 (Fire Protection Report, Volume 1)

DESCRIPTION:

The activity is an update of the FHA, as contained in Volume 1 of the Quad Cities Fire Protection Report. The Fire Protection Report is incorporated into the SAR by reference in Section 9.5.1 of the UFSAR. Overall organization of the FHA is not changed. Major headings have been revised to accommodate the revision. This FHA revision corrects the description of certain aspects of the facility to "As-Built" conditions, but does not cause or propose physical modification to the facility.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because no accident types or sequences other than a postulated fire are affected by the change. License Condition h.3.F allows changes to the fire protection program without prior NRC approval if the changes do not adversely affect the ability to achieve and maintain safe shutdown in the event of fire. This safety evaluation addresses only the probability and potential consequences of a postulated fire to determine if the change can be implemented in accordance with License Condition h.3.F.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the FHA revision corrects the description of certain aspects of the facility to "As-Built" conditions, but does not cause or propose physical modification to the facility. Therefore, the proposed change does not introduce new failure modes to any plant systems required to achieve or maintain safe shutdown. No accident types or consequences other than those previously postulated and evaluated by the UFSAR are created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-082

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCP 9700018, DCN 001484E; UFSAR-97-R5-042

Title: Abandon Position Indication for Unit 2 HPCI AO 2-2301-7 Valve

DESCRIPTION:

Remove the existing indicating lights for the HPCI AO 2-2301-7 testable check valve at the 902-3 main control room panel and the local indicating light. The circuit's magnetic switch will also be removed. The test circuit relay will be spared and left in place. The associated wiring for the specific test circuit components will either be removed where practical, or for internal wiring lifted at the point of termination and spared. Figure 6.3-15 in the UFSAR will be revised to delete the indicating lights.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the abandonment of the HPCI testable check valve 2-2301-7 position indication circuit has no significance in an accident scenario. Therefore, this modification is a non-impact factor for the purpose of evaluating the increased probability of an accident.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this design change will result in the deletion of the HPCI testable check valve indication circuit. The abandonment of the indication circuit will not adversely impact the control circuit logic for the subject valve, nor will this design change result in an inability of any other components within the HPCI system to perform its design function.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-098

Type of Safety Evaluation: Modification; UFSAR Revision

Evaluation Reference Number: DCP 9300138 and DCP 9300292; UFSAR-97-R5-066

Title: Install A Permanent Feedwater Oxygen Injection System On Unit 1 And Unit 2 To Replace Existing Temporary Alterations

DESCRIPTION:

These DCPs installed permanent stainless steel tubing and oxygen cylinders to provide oxygen into the Feedwater piping. The injection point is into the turbine building sample panel, which then injects into the condensate pump suction header below the hotwell. The UFSAR has been updated to add a description of this system.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the Feedwater oxygen injection system is designed to maintain the Feedwater oxygen rates within the EPRI and Technical Specification guidelines to minimize the corrosion rates of the Feedwater piping. There are no negative system interactions.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the Feedwater oxygen injection system is designed to maintain the Feedwater oxygen rates within the EPRI and Technical Specification guidelines to minimize the corrosion rates of the Feedwater piping. There are no negative system interactions.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because Technical Specification 3.6/4.6 was reviewed and is not affected by this change.

Safety Evaluation Number: SE-97-103

Type of Safety Evaluation: Temporary Alteration

Evaluation Reference Number: DCP 9700242

Title: Taping Edges of Fire Doors 307 & 308

DESCRIPTION:

Fire Doors 307 & 308 in the Auxiliary Electric Room will be sealed from the cable tunnels below by applying duct tape along the edges. The tape will be installed and controlled by a Temporary Alteration until the Fire Doors are either repaired or replaced. The tape will help to minimize air leakage out of the Auxiliary Electric Room, which is part of the Control Room Emergency Zone.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the tape will be located outside the plant in the Auxiliary Electric Room and will improve the ability of the Control Room Emergency Ventilation System to maintain adequate differential pressure.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the tape will not create any new functions or system interactions. The tape has been analyzed for the increased combustible fire load in the Auxiliary Electric Room.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-104

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-063

Title: Control Room Emergency Ventilation System

DESCRIPTION:

Changed Sections in the UFSAR: 6.4.2.2, 6.4.2.3, 6.4.2.4, 6.4.4.1, 6.4.4.2.2, 6.4.4.3, 6.5.1.2, 6.5.1.3, 9.4.1.2, 9.4.3.2, 15.6.5.5.3.3 to:

- (1) Specify that the +1/8 in. w.g. over-pressure requirement for the Control Room applies only when Train A and Train B of the Control Room Emergency Ventilation System (CREVS) is operated in the Emergency mode. CREVS will still be required to provide a slight positive pressure in the Control Room when operated in the Normal mode.
- (2) Specify that the humidification system for Train A of the CREVS is no longer used.
- (3) Clarifies the Radwaste ventilation supply and exhaust fan configuration.
- (4) Editorial changes for clarification without changing intent.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because changes associated with this activity are for systems that do not initiate accidents (Accidents with Radiological consequences).
 - (1) Do not result in a physical plant change, change in design requirements, or a change to any station operating procedure which would make any accident more likely to occur (Fire and Toxic Gas).

Consequences of an accident are not increased because:

- (1) Changes associated with this activity will not result in a change in the requirements for pressurizing the Control Room to its required level of over-pressure following a DBA (CREVS pressurization change),
- (2) Are not associated with systems used to mitigate the off-site or Control Room dose (Radwaste and steam humidifier changes).

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this activity will not result in a physical change to any SSC, deviation from any design requirement, or operating procedure (CREVS pressurization and Radwaste ventilation changes). Discontinued use of Train A CREVS steam humidifier will not impact any SSC, since the use of a steam humidifier is not required to maintain relative humidity levels within design requirements. For these reasons, there is no deviation from any SAR document and no increase in the possibility of an accident not previously evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the only applicable Technical Specification Safety Margin associated with this activity is the +1/8 inch w.g. over-pressure criteria for the Control Room. This Safety limit only applies when the CREVS is operated in the Emergency mode. Since the activity only applies to CREVS operation in the Normal mode, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-111

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700204, DCP 9700239

Title: Replace Existing Fuel Pool Cooling Flow Control Valves

DESCRIPTION:

Replace existing fuel pool demineralizer flow control valves with high performance valves.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because Fuel Pool cooling is not assumed to mitigate the consequences on any DBA accident. The replacement butterfly valves will not prevent operation of any other system. The valves are being replaced in accordance with the original design specification and piping design tables.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because these are functionally the same as previously installed valves. New valves will improve leak tightness and flow control of the system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-112

Type of Safety Evaluation: Modification

Evaluation Reference Number: DCP 9700248

Title: Modification of a Feedwater Pump Ventilation Damper Operator

DESCRIPTION:

The Station will modify the damper operator for the Reactor Feed Pump Motor Ventilation System Intake Damper, 1-5772-24C. An obsolete coupling will be replaced with a locking collar to secure the operator to the damper blade pin.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the modification only replaces an obsolete component, but does not change the function of the component. The new locking collar performs better than the old component. Therefore, the probability and consequences of any accident have not increased.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no new interfaces with plant equipment are created by this modification. The locking collar's only function is to connect the operator to the blade pin. This function has not changed and no new functions have been added to the damper operator.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-114

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700201

Title: Revise Setpoint Of EDG Output Breaker Time Delay

DESCRIPTION:

Changes the time delay setpoint for relay 27XTD from 2 seconds to 3 +/- 0.15 seconds. If the time delay were to actuate below 2 seconds, then potential damage could occur to either the diesel generator or ECCS pumps. There are two other DCPs associated with this safety

evaluation that have not yet been op authorized. They will be included in the summary report once they are op authorized.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the setpoint will not interfere with the required starting time of the diesel. The worst case delay is still within the criteria for the DG auto start/energization of the emergency bus of 10 seconds.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the setpoint is enveloped by the time for the diesel getting up to rated speed and rated voltage permissive contact closures. The change is to incorporate instrument uncertainties and does not impact the EDG or 4160 volt systems or functions.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the increase in time for the time delay relay for the breaker does not affect the 10 second closure time of the breaker.

Safety Evaluation Number: SE-97-115

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCPs 9600390, 9600391 and 9600392

Title: EDG Shutdown Solenoid Replacement with Energize to Shutdown

DESCRIPTION:

The shutdown solenoid shuts down the EDG by causing the governor to shut off the fuel supply. The design of the shutdown solenoid required that the solenoid be energized for fuel to be supplied to the EDG. These Design Changes replaced the solenoid with one that was required to be energized to shutdown the EDG.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the new design increases the reliability of the diesel. With the previous design a failure of the solenoid to energize would result in a failure of the diesel to start. With the new design a failure of the solenoid to energize would result in a failure of the EDG to shut down. The later failure is much more desirable than the previous because it does not impact the Safety-Related function of the EDG as does the previous failure.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change enhances the reliability of the EDG. The new design energizes the shutdown solenoid in the shutdown mode and will interrupt the fuel path for a period of 7 minutes or until a restart is initiated, whichever occurs first. The worst case scenario is that the diesel would not shut down when no longer needed without manual intervention.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this does not affect any parameters that the Technical Specifications are based on.

Safety Evaluation Number: SE-97-134

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Revision to the Fire Hazards Analysis Report Revision 97-08 (Fire Protection Report, Volume 2)

DESCRIPTION:

Change the Fire Protection Reports Safe Shutdown Analysis Section 5.5, Table 5.5-1, Table 5.5-2 to remove the requirements of tripping and pulling control power for breakers feeding cables not affected by the postulated fire. The existing Safe Shutdown Analysis portion of the Fire Protection Reports requires the tripping of breakers and pulling of control power fuses feeding non-safe shutdown loads at switchgear. This is required when that specific switchgear is relied upon to achieve safe shutdown (SSD) in the event of a severe fire. In many cases based upon NDIR QDC-97-090, these requirements are unnecessary because the majority of the non-safe shutdown cables are not affected by the postulated fire. Non-fire induced failure of cables are not required to be postulated.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this change reduces the degree to which non-SSD equipment is isolated from SSD equipment during a severe fire. The evaluation that was performed, verified that for given SSD paths, this change is unaffected by the fire. Since non-SSD equipment shown to be vulnerable to the fire will still require breaker tripping and fuse pulling, the probability of malfunction of the SSD equipment is not increased.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the reduced fuse pulling and tripping requirements of the Safe Shutdown Analysis will be in effect in the event of a severe, uncontrolled fire. Therefore, the only impact to systems

or functions would be in a fire or post-fire scenario. The Safe Shutdown Analysis defines the reliable method to be used to achieve and maintain the reactor in the safe shutdown condition. Additionally, the Loss of Off-Site Power (LOOP) has been analyzed in the SSD Analysis. The SAR does not postulate other accidents or failures occurring in conjunction with the severe fire. Therefore, leaving the non-fire-affected breakers energized during the accident does not create the possibility of an additional accident or malfunction.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-139

Type of Safety Evaluation: Modification

Evaluation Reference Number: DCP 9700330, DCN 001576M

Title: Unit 2 LP Heater Bay Wet Pipe

DESCRIPTION:

This modification is to the Unit 2 LP Heater Bay Wet Pipe System (the small bore pipes off of the main line 2-4109-8"-O). There will be eight sprinklers changed from standard sprinklers to large orifice (17/32") sprinklers. In addition to the sprinkler head changes, an Isolated Obstructed Area Justification (Q-ECDS-97-592) was written for node 442 located on the South piping run. The hydraulic calculation for the Fire Suppression System of the Unit 2 Low Pressure Bay was revised to include the information recorded from the pump capacity test performed in 1996 for the "A" and "B" Fire Pumps. The required changes to the system addressed in this 10CFR50.59 are as a result of the revised pump capability information and hydraulic re-analysis of the system to obtain adequate flow and coverage.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the enhancement of the Fire Suppression system and the isolated obstructed area justification assures conformance to the Fire Protection Report and NFPA requirements. Zone 8.2.6.D has one piece of Safe Shutdown Equipment (Diesel Generator Unit 2 Cooling Water Flow Indicator F12-3941-26) within its' boundary. Zone 8.2.7.D does not have any safe shutdown equipment located in its boundaries. However, both have various cables for safe shutdown equipment routed through these fire zones. The design basis fire has been analyzed for these zones and proven that in the event of a fire, both hot and cold shutdown can be achieved. The malfunction or failure mechanism of the sprinkler system has not been changed; thus not affecting the probability. The consequences will not change based upon the results analyzed in the Design Basis

Fire for the Zones and because there are alternate Safe Shutdown Paths to be utilized outside of these zones.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the enhancement of the Fire Suppression System will not create any additional accidents nor malfunctions not previously evaluated. The purpose of this system is to mitigate damage by extinguishing the fire. Thus, bringing the system performance up to the NFPA code requirements with the revised hydraulic information will enhance the system and have no adverse interactions or affects on other systems. The existing Fire Pumps will not be adversely affected by the system flow requirements. The density requirements of the system have not been altered from the previous system calculation.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-141

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCP 9600447; UFSAR-97-R5-004

Title: Install an Additional Nitrogen Atmosphere Vaporizer

DESCRIPTION:

Install an additional nitrogen atmosphere vaporizer to support the NCAD system. Revise UFSAR to incorporate the change.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this installation does not affect operation of the existing NCAD or nitrogen inerting system. The system provides additional redundancy to nitrogen supply atmosphere vaporizer and is normally isolated from nitrogen and NCAD unless the electric vaporizers fail to operate.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because during normal operation nitrogen atmosphere vaporizers are isolated from NCAD/Nitrogen inerting. Failure of the installed equipment will not affect the existing equipment.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because change does not effect parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-97-143

Type of Safety Evaluation: Modification

Evaluation Reference Number: DCP 9700340

Title: Changing the Seal Ring in Valve MO 2-2301-4

DESCRIPTION:

For the High Pressure Coolant Injection (HPCI) system valve MO 2-2301-4 , the seal ring area of the valve body will be increased. Also, the seal ring will be changed to a larger one to accommodate the larger internal diameter. The valve is to be machined to provide an improved mating surface in order to reduce leakage past the seal ring. This valve is the inboard containment isolation valve on the steam supply line to the HPCI turbine.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the minimum wall thickness of the valve body was maintained after machining and the gap tolerance of the new seal ring is within the vendor-specified tolerance. Therefore, the sealing capability of the valve has not been reduced.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the code minimum wall thickness is maintained and the valve function has not changed. The valve will continue to function as it did before the design change.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-144

Type of Safety Evaluation: Modification

Evaluation Reference Number: DCP 9700341

Title: Replacement Of The Valve Body And Internals For The Inboard Reactor Water Sample Primary Containment Isolation Valve

DESCRIPTION:

AO 2-0220-44 valve has failed its LLRT and requires replacement. The valve body material changes to A351 stainless steel, which has been evaluated to meet or exceed the material requirement of the piping design table. In addition, the internal trim is a quick change trim for easier future maintenance.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the new valve material meets or exceeds code and piping design table requirements for this system. The design change was installed to safety-related and seismic requirements and does not change the function of the valve or the system.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the new valve material meets or exceeds code and piping design table requirements for this system. Since there are no new system interaction or functions introduced no new failure modes are created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because Technical Specifications 3/4.6.N for Primary System Boundary Structural Integrity and 3/4.7.A for Primary Containment Integrity were reviewed and are not affected. The new valve material meets or exceeds code and piping design table requirements for this system.

Safety Evaluation Number: SE-97-145

Type of Safety Evaluation: Procedure Revision

Evaluation Reference Number: QCOP 3200-02, QCOP 3200-03, QCOP 3200-04, and QCOP 3200-05

Title: Revise Operating Procedures To Return Valve 2-3213-C To The Open Position

DESCRIPTION:

Allow Operation of the 2-C RFP with its associated manual isolation valve (at the main condenser) for the pump minimum flowpath, 2-3213-C, in the OPEN position. This is the normal operating valve line-up for the 2-C Reactor Feedwater Pump (RFP) and restores the minimum flow capability of the 2-C RFP. FSAR Section 10.4.7 states that a minimum flow of 900 gpm for each RFP is required. The previous revision to Operations Procedures QOP 3200-02, QOP 3200-03, QOP 3200-04, and QCOP 3200-05 for the extended OOS 970021966 allowed operation of the 2-C RFP with NO minimum flow path available by revising the QCOP/QOPs as follows:

- 1) Allow the operation of the 2-C RFP until the plant power level is within the capacity of the available RFPs, and then the 2-C RFP should be removed from service.
- 2) Require process flowrate of 450,000 lb/hr through the 2-C RFP be verified when the 2-C RFP is operating to ensure adequate cooling for the 2-C RFP.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the probability of a malfunction of either the 2-A, 2-B, and 2-C RFPs due to returning the system valve lineup to the normal system valve lineup has not been increased. The consequence of a malfunction of an operating RFP has not increased by removal of an extended equipment OOS to returning the system lineup to the normal system lineup. The accident analysis for the malfunction of the Feedwater system has been previously evaluated under FSAR Section 15.2.7 "Loss of Normal Feedwater Flow" and under FSAR Section 15.1 "Increase in Heat Removal By The Reactor Coolant System. These accidents bound the consequences of a malfunction of a equipment under the normal system valve lineup. The Technical Specification requirement for a trip of an operating Feedwater pump upon high reactor water level bounds the malfunction of RFP to limit offsite dose. The mis-operation of the Feedwater system under the normal system valve lineup does not have any adverse effect upon the consequences of mis-operation of the high level trip.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the removal of an extended equipment OOS and the return of the Feedwater system to its normal system valve lineup does not have any potential to create an accident or malfunction of a type different from those evaluated in the UFSAR. This revision to Operations Procedures QOP 3200-02, QOP 3200-03, QOP 3200-04, and QCOP 3200-05 will provide Operations Department personnel with direction for the operation of the 2-C RFP with the normal system valve lineup.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification requirement for a trip of an operating Feedwater pump upon high reactor water level bounds the malfunction of RFP to limit offsite dose. The mis-operation of the Feedwater system under the normal system valve lineup does not have any adverse effect upon the consequences of mis-operation of the high level trip. There are no Technical Specifications that are related to the Standby RFP having a minimum flow path. Therefore, the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-147

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-003

Title: Shift Supervisor Requirements

DESCRIPTION:

Delete the requirement that the Shift Supervisor must hold a Senior Reactor Operator license.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because changing management duties has no effect on the probability of an accident or malfunction to occur. The Unit Supervisor is required to hold an active SRO license and he is responsible for all actions taken on the Unit.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because changing management duties has no effect on the possibility of an accident/malfunction of a different type as stated in the SAR. The Unit Supervisor is required to hold an active SRO license and he is responsible for all actions taken on the Unit.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because changing management duties has no effect on the Tech Spec Margin to Safety. The Unit Supervisor is required to hold an active SRO license and he is responsible for all actions taken on the Unit.

Safety Evaluation Number: SE-97-149

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: NSWP-A-04, Rev. 1

Title: Administrative Procedures Used To Perform Safety Evaluations

DESCRIPTION:

This change to the ComEd NSWP procedures adopts minor revisions intended to better screen out work that does not require a Safety Evaluation. The changes are being adopted at other ComEd stations as well.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the changes include adequate instructions to preclude a change to SSC's that could increase the probability of an accident/transient or prevent the mitigation of an accident/transient. The revision precludes changes in design, failure modes, or system interactions that could cause an accident/transient or prevent its adequate mitigation.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this change does not authorize any specific changes to the plant. It changes the way the changes are evaluated. The change may affect what paperwork is completed for a plant change (Screening vs full 50.59). Any change that requires a full 50.59 under the regulation will still get one.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because both the Screening and the full 50.59 evaluation require a review of the change against the Technical Specifications and their bases. This change in procedures make no specific changes to the plant.

Safety Evaluation Number: SE-97-151

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-016
(DBD Change Request No. 97008003)

Title: Update RHRSW Pump Descriptions in Table 9.2-1 of UFSAR

DESCRIPTION:

This change revises the description of the RHRSW pumps in Table 9.2-1 of the UFSAR. This table lists the capacity of the pumps at 3500 gpm/each. The 3500 gpm is the required flow rate per pump to the RHR heat exchangers, but these pumps also supply the RHRSW room cubicle coolers and the RHR pump/motor bearing coolers and seal coolers. The RHRSW system also provides the safety-related cooling water to the B Train of Control Room HVAC. This change will clarify that the 3500 gpm is the required flow rate to the RHR heat exchanger. It will also clarify that the developed head corresponds to a flow rate of 3500 gpm through the RHRSW pump. It has been previously identified that the requirements for these pumps contained in the UFSAR, the RHR Design Basis Document (DBD) and the pump/system specifications did not agree.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the probability and consequences of any malfunction of equipment important to safety is unaffected by this change. This change does not physically affect the equipment or operation of the RHRSW system. This change does not physically alter any equipment or the operation of any system in the plant, it simply clarifies the design parameters. This change will not adversely affect any release barriers or any equipment required to mitigate the consequences of a design base LOCA. Therefore, the probability of the failure of any equipment is unchanged, and the malfunction or failure of any equipment will have the same effects as before this change was made.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this change does not physically alter any equipment in the plant. It simply clarifies the design parameters. The operation of the RHRSW system is also unchanged. Since the design function of the equipment and the operation of any system remains unchanged, this UFSAR change will have no effect on existing equipment failure modes and will not create any new failure modes. Thus, this change will not create the possibility of an accident or malfunction different from those previously evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety. However, for Technical Specification 3(4).8A Plant Systems-RHRSW, all changes to the parameters or conditions used to establish the Technical Specification requirements are in a conservative direction. The margin of safety is not reduced because the 3500 gpm and 760' co-incident head requirements shown in Table 9.2-1 were original design specification values which remain unchanged. The table is being revised to clarify specific (long-term containment cooling) pressure/flow requirement that have been quantitatively defined in calculation QDC-M-0485, revision 0.

Safety Evaluation Number: SE-97-152

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700397

Title: Temporary SBO Cable Re-Route

DESCRIPTION:

To alleviate Appendix R concerns, power and control cables from SBO bus 71 will be temporarily re-routed on seismic scaffolding around a common fire area. A permanent modification will be implemented at a later date.

Note that this temporary modification was later altered to incorporate a radiant heat barrier to protect the cables from damage from a postulated fire in the common fire area. A separate 50.59 evaluation was used for that alteration.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the integrity of both the cabling and adjacent equipment is to be maintained by the use of seismic rated support structures (scaffolding), grounding, fire barriers, etc. The cable splicing, supporting, and routing is designed to maintain all of the design features of the original cable routing.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the functions of the cables and their supports are to remain unchanged. All routing is being done in accordance with the design features of the original configuration to prevent new or different interactions or accidents.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change is not applicable: No Technical Specifications or bases for Technical Specifications are to be affected by the proposed change.

Safety Evaluation Number: SE-97-153

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-008

Title: UFSAR Change to Sections 6.3, 9.2 and 9.5, endnotes, Table 9.2-2, Figure 9.2-2 and Figure 9.5-2

DESCRIPTION:

Adds further description on the HPCI, Core Spray and RHR Room Coolers purpose to maintain qualification temperature assuming 95 degrees F river water temperature. Revises section on the Diesel Generator Cooling Water Pump in Section 9.5 to change the required flowrates to the Diesel Generator Heat Exchanger and the ECCS Room Coolers. Deletes reference to the Service Water System feeding the HPCI Room Cooler during normal operation. The only reliable water source for the HPCI Room Cooler will be referenced as

the DG Cooling Water. The Service Water is still available to the HPCI Room Cooler but its isolation valves will be normally closed to prevent use as it would INOP the Diesel Generator.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this change impacts the comfort cooling of the HPCI Room during normal operation only. Therefore, the changes to the design flow rates to the room coolers does not impact the probability or consequences of any postulated accident or malfunction as described in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because none of the changes will affect the operation of the room coolers for their design function. Therefore, the change in the design flow rates have no consequence of creating any new failure modes from those previously evaluated in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based. Therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-154

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700387

Title: Installation Of Two Emergency Lighting Units In Unit 1 HPCI Room

DESCRIPTION:

Install two 8 hour battery powered emergency lighting units in the Unit 1 HPCI room to support manual actions required during a postulated fire.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed lighting units will not pose a threat to any equipment important to safety. They are powered from normal lighting circuits, and have been designed and evaluated to not jeopardize equipment in their vicinity (i.e. will not initiate fires, cause unacceptable seismic interactions, etc.). They are non-invasive with respect to safety-related equipment and piping. Therefore, the installation and presence of the proposed lighting units does not increase the probability of a malfunction of equipment important to safety.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed lighting units are self contained, and are limited in their potential failure modes. The effects of these failure modes are benign with respect to equipment important to safety. No new or unanalyzed failure modes or effects will be introduced by the use of the proposed lighting units.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the proposed change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-155

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700391

Title: Installation Of Two Emergency Lighting Units In Unit 2 HPCI Room

DESCRIPTION:

Install two 8 hour battery powered emergency lighting units in the Unit 2 HPCI room to support manual actions required during a postulated fire.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed lighting units will not pose a threat to any equipment important to safety. They are powered from normal lighting circuits, and have been designed and evaluated to not jeopardize equipment in their vicinity (i.e. will not initiate fires, cause unacceptable seismic interactions, etc.). They are non-invasive with respect to safety-related equipment and piping. Therefore, the installation and presence of the proposed lighting units does not increase the probability of a malfunction of equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed lighting units are self contained, and are limited in their potential failure modes. The effects of these failure modes are benign with respect to equipment important to safety. No new or unanalyzed failure modes or effects will be introduced by the use of the proposed lighting units.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the proposed change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-157

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700415/DCN 001603M

Title: Install Relief Valve on RCIC Barometric Condenser

DESCRIPTION:

This design change installs a relief valve (RV 1-1399-151) on the shell of the existing RCIC Barometric Condenser. The relief valve is mounted on a tap originally provided for this purpose. The relief valve discharge is piped to the existing RCIC pump bedplate drain header. A new manual ball valve is installed in the piping between the existing RCIC bedplate drain and the relief valve tie-in. The bedplate drain piping drains into a reactor building floor drain trench, which in turn drains to the reactor building floor drain sumps.

The vendor manual shows a tap for a relief valve and indicates that it will be supplied by others. Discussions with General Electric and the Condenser manufacturer indicated that the Condenser should have been equipped with a relief valve during original installation. The relief valve will be set at 5 psig which is above the high pressure alarm setpoint of 1.47 psig and below the vendor recommended maximum pressure of the Condenser which is 15 psig. The relief valve setpoint, blowdown capacity and backpressure were evaluated and determined acceptable for this application. The new ball valve will be normally closed and will allow for removal of a long standing Temporary Alteration which installed a plug in this piping. Note that the RCIC pump bedplate drain piping is equipped with a check valve in the reactor building basement which prevents flooding of the Core Spray pump room in the event of flooding in the reactor building basement.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the addition of the relief valve, ball valve and associated piping does not alter the normal operation of the RCIC system. The subject relief valve would only actuate as a result of a system malfunction. This change will have no impact on the capability of the RCIC system to deliver the required flows at the required pressures to meet the design basis requirements of the system.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the relief valve, ball valve and associated piping are procured, fabricated, installed and tested in accordance with the requirements of the USAS B31.1.0 piping code and applicable station procedures and standards. This ensures that the quality and reliability will be commensurate with the barometric condenser and all other associated RCIC system equipment. The new relief valve will be tested in accordance with applicable station procedures prior to installation to provide assurance that the valve will relieve at the required setpoint. The routing of the relief valve discharge piping to a drainage point outside of the Core Spray Room eliminates any possibility of flooding in the Core Spray pump room which may result from the relief valve becoming stuck in the open position. Therefore, there will be no adverse impact on any other equipment important to safety which is located inside of the Core Spray Room.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the addition of the relief valve, ball valve and associated piping do not alter the normal operation or functions of the RCIC system. The change will not prevent the system from delivering the required flows, at the required pressure, for the system to be considered operable as required under the station Technical Specifications.

Safety Evaluation Number: SE-97-158

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700416

Title: Installation of Interposing Relay in High Containment Pressure Start Logic for HPCI

DESCRIPTION:

Install an interposing relay in the HPCI primary containment high pressure start logic circuit. This change will remove the possibility of a hot short initiating a HPCI start signal during a postulated fire.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the modification is to the HPCI start logic. The SAR analyzes two accidents in which HPCI is required or postulated. The first is a LOCA inside containment. HPCI initiation is not an initiator of a LOCA. The second is inadvertent initiation of HPCI (cold water reactivity addition). The installation of the interposing relay decreases the probability of this accident by removing a potential inadvertent initiation mechanism while maintaining the original design initiation requirements.

The limiting failures that could conceivably be associated with the proposed modification are a complete failure of HPCI, or, conversely, an inadvertent initiation of HPCI. The consequences of a failure of HPCI have been explicitly considered in the SAR, and it is stated in the SAR that in the event of a complete failure of HPCI the core will be adequately cooled. There are no radiological consequences associated with an inadvertent initiation of HPCI.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed change will not affect plant operation of the HPCI system as designed, nor will it result in an inability of any other components within the HPCI system to perform their design functions. No new modes of failure are introduced because the circuitry already is designed with the possibility of relay failure, and the overall failure of HPCI to operate is a previously analyzed accident described in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the proposed change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-159

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCP 9700398; UFSAR-97-R5-023

Title: Modify Logic for RCIC Minimum Flow Valve

DESCRIPTION:

Modify the control circuitry of the RCIC Minimum Flow Valve (MO-1-1301-60) so that the valve will automatically open and/or close whenever the RCIC Steam Inlet Valve (MO 1-1301-61) valve opens and/or closes. This logic change will apply a short duration OPEN or CLOSE demand to the minimum flow valve control logic. The reason for the change is to ensure a minimum flow path exists to prevent damage to the pump should the pump have a spurious start from the steam inlet valve opening. Such a spurious start is postulated to occur due to a fire that damages the control circuitry for the steam inlet MOV. In the event of such a fire, the RCIC pump may be needed to maintain reactor coolant inventory and therefore must be protected from damage.

Table 8.3-4 of the UFSAR has been updated to reflect the removal of 250 Vdc MCC's space heater circuits. This change was necessary to utilize the cubicles for this modification.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed modification will not affect any of the conditions which can initiate an increase or decrease in a heat removal transient or a loss of AC power event (the two previously identified transients for which RCIC is required). There are no changes to system mechanical interactions, pressures, stresses, or the quality of components which could affect the integrity of any system boundaries or system performance.

Similarly, there are no electrical or instrumentation effects that could initiate a transient or event, or cause control system malfunctions to induce plant events that would challenge the capability of plant systems to function within their intended design limits. The circuitry changes to the minimum flow valve cannot cause an inadvertent RCIC injection (reactivity event) because only the valve actuating circuitry that is being affected is the minimum flow valve logic.

No protective systems, barriers, or mitigation systems would be adversely affected by the proposed modification. Therefore, the consequences of an accident or malfunction would not be increased.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no systems are being operated in abnormal lineups or under conditions outside their design allowances. The logic change to "slave" the minimum flow valve to the steam inlet valve will not introduce any accidents or malfunctions not previously considered.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the proposed change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-160

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700394

Title: Install Closing Device on Unit 1 MSIV Vent Door

DESCRIPTION:

Install a closing device on the Unit 1 MSIV Room Reactor Building Vent Door. The closing device will isolate the Reactor Building in the event that smoke is detected in the Reactor Building.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because installation of MSIV vent door closing device will not cause an MSIV line break. During a break, primary/secondary containment is maintained by the main steam isolation valves. Pressure is relieved by the blow out panels. Blow out panels will perform their function regardless of the MISV vent door position.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because when the MSIV room is part of the turbine building the door will function as previously designed. When the MSIV Room is part of the reactor building, the closing device provides additional protection for operators who must access the area.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-97-161

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700393

Title: 3-Hour Fire Barriers for Unit 1 Drywell Electrical Penetrations X-100B and X-104F

DESCRIPTION:

The design change installs a 3-hour fire barrier on the reactor building side of Unit 1 drywell electrical penetrations X-100B and X-104F. The penetrations will be encased in a Darmatt KM-1 fireproof enclosure. The new barriers will prevent fire damage to designated cables within the penetrations to allow power/control to be restored to safe shutdown equipment inside the drywell following an Appendix R design basis fire in fire zone 1.1.1.2.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the fire barriers are attached directly to the subject drywell penetrations. The stress levels within the penetrations and drywell liner are within acceptance limits. The barriers are passive components that have no operational interface with other plant systems or components and the barriers do not interact with the drywell pressure boundary.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the passive fire barriers and drywell penetrations are structurally qualified including postulated seismic effects. The barriers do not interact with any other active plant system or component nor are the barriers considered a seismic interaction hazard. The barriers are designed to accommodate any postulated seismic or thermal movements under any plant condition. The electrical conductors internal to the fire barriers will not experience any adverse impact from the enclosure. The subject conductors are qualified for more severe environmental conditions.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the revised stress levels due to the added weight for the subject penetrations and drywell liner are within the acceptance limits. Thus, margin of safety is not reduced.

Safety Evaluation Number: SE-97-162

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700401

Title: Modify the Control Circuitry of the RCIC Minimum Flow Valve

DESCRIPTION:

This logic change will apply a short duration OPEN or CLOSE demand to the minimum flow valve control logic. When the steam inlet valve is commanded to open, an open signal is sent to the minimum flow valve to start opening it. This change will cause the minimum flow valve to function more normally like a minimum flow valve (the current logic will not open the minimum flow valve on a manual turbine start). The existing signal which opens the minimum flow valve automatically on Reactor Lo Lo Level, coincident with low RCIC pump flow, is not affected. The existing valve closure signals, which close the minimum flow valve on RCIC pump flow of 80 gpm and turbine trip, are also not affected.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the slaving of the RCIC Minimum Flow Valve, MO 2-1301-60, to the movement of the RCIC Steam Inlet Valve, MO 2-1301-61, increases the reliability of the RCIC System by assuring a minimum flow path for the RCIC Pump any time the turbine is started; manually or automatically. This closure increases the reliability of the system and assures that a drain path from the Contaminated Condensate Storage Tanks to the Torus is not accidentally created when the RCIC Pump is shut down. The operational effects of the circuit modification were reviewed, including failure effects. This review verified that there are no required system operational sequences that would cause unacceptable

system conditions or interactions. Therefore, an increase in the probability of a malfunction of equipment has not increased.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no systems are being operated in abnormal lineups or under conditions outside of their design allowances. The logic change to "slave" the minimum flow valve to the steam inlet valve will not introduce any accidents or malfunctions not previously considered. Therefore, this change does not adversely impact systems or functions so as to create the possibility of an accident or malfunction of a type different than those evaluated.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-97-164

Type of Safety Evaluation: Procedure Changes

Evaluation Reference Number: N/A

Title: Implementation Of A Series Of Procedures (QCARP's And QOP's) That Provide Instructions For Dealing With A Severe, Uncontrolled (Appendix R) Fire

DESCRIPTION:

These procedure changes will provide instructions and discussions ranging from compensatory measures to specific equipment manipulations which address expected plant responses to the referenced fire. These procedure changes describe a different methodology for achieving the required shutdown functions. For example, use of the SBO diesels as opposed to the EDG's for 4kV power is a change in strategy for powering required SSD equipment.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the probability of a malfunction of equipment important to safety is not affected by the specified procedural changes. The procedures provide administrative and operating guidance for plant control and operation during the postulated fire. While there are changes to the overall strategy for achieving hot shutdown, these changes are occurring at the system and programmatic level. They do not affect existing or create any new radioactive release paths, therefore they do not impact the consequences of malfunction of equipment important to safety.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no possibility for new equipment or system failures are created because the individual components and systems are being operated within their specific SSD design requirements. While there are changes to the overall strategy for achieving hot shutdown, these changes are occurring at the system and programmatic level. Therefore, systems and functions are not being impacted in any way that could create the possibility of an accident or transient not previously postulated.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-165

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9700399

Title: 3-Hour Fire Barriers for Unit 2 Drywell Electrical Penetrations X-100F and X-104A

DESCRIPTION:

The design change installs a 3-hour fire barrier on the reactor building side of Unit 2 drywell electrical penetrations X-100F and X-104A. The penetrations will be encased in a Darmatt KM-1 fireproof enclosure. The new barriers will prevent fire damage to designated cables within the penetrations to allow power/control to be restored to safe shutdown equipment inside the drywell following an Appendix R design basis fire in fire zone 1.1.2.2.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the fire barriers are attached directly to the subject drywell penetrations. The stress levels within the penetrations and drywell liner are within acceptance limits. The barriers are passive components that have no operational interface with other plant systems or components and the barriers do not interact with the drywell pressure boundary.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the passive fire barriers and drywell penetrations are structurally qualified including postulated seismic effects. The barriers do not interact with any other active plant system or component nor are the barriers considered a seismic interaction hazard. The barriers are designed to accommodate any postulated seismic or thermal movements under

any plant condition. The electrical conductors internal to the fire barriers will not experience any adverse impact from the enclosure. The subject conductors are qualified for more severe environmental conditions.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the revised stress levels due to the added weight for the subject penetrations and drywell liner are within the acceptance limits. Thus, margin of safety is not reduced.

Safety Evaluation Number: SE-97-167

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: PIF Q1997-03608; UFSAR-97-R5-017

Title: UFSAR Change to Section 9.4.5 on the Diesel Generator Room Ventilation System

DESCRIPTION:

Revise section 9.4.5 of the UFSAR to show the correct actuation of the solenoid valves which control the normal ventilation duct damper and the vent fan duct dampers. This UFSAR section previously stated that both of these solenoid valves would actuate on the fan energizing to respectively close the normal ventilation duct damper and open the vent fan duct damper. Although the damper positions were correct, the solenoids actuation to cause the damper operation were different. One solenoid denergized and the other solenoid energized on fan start.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this change shows the actual position of the solenoid valves in question and does not change the end result of the operation of the EDG Room Ventilation Dampers. This change does not impact the probability or the consequences of any accident as described in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the actual function of the solenoids of positioning the dampers for the EDG Room ventilation system in any condition does not prevent the Diesel Generator from performing its' intended function. Therefore, the change does not impact any accident or malfunction as previously evaluated or create any new ones.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based, therefore there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-168

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-018

Title: Reactor Vessel Head Seal Leakoff Level and Pressure Switches

DESCRIPTION:

UFSAR Section 5.2.5 (Detection of Leakage Through Reactor Coolant Pressure Boundary) and 5.2.5.4.2 (Pressure Switches) lead the reader to believe that the Reactor Vessel Head Seal Leakoff Level Switch, Pressure Switch, and Vessel Head O-rings are vented to the Drywell atmosphere. This is not the case, because the valve arrangement on the level switch prevents the area between the Vessel O-rings from venting directly to the Drywell.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the description of the piping, as currently written, implies that the piping is vented to the Drywell. The system is actually isolated from the Drywell atmosphere by valves and pipe which are properly designed for full reactor pressure and temperature, decreasing the probability of an accident resulting from vessel head o-ring leakage. The line size of the affected piping is bounded by current accident analysis. The valving allows for the isolation of any vessel head o-ring leakage and thus will decrease the consequences of an accident.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this change is limited to properly designed small bore piping connected to the Reactor vessel inside the Drywell. This will not create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based, therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-169

Type of Safety Evaluation: Design Change; UFSR Revision

Evaluation Reference Number: DCPs 9700314 and 9700315; UFSAR-97-R5-032

Title: Reactor Building Corner Room Floor Drain Sump Valve Replacement

DESCRIPTION:

Install manual ball valves on the floor drain lines inside the Reactor Building basement sumps associated with the RHR and Core Spray corner rooms. The ball valves will be normally closed and administratively controlled during plant operation. The UFSAR was revised to discuss the installation of the ball valves. The UFSAR was revised to discuss the installation of the ball valves.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because flooding is caused by a failure of an internal piping system or the torus. The installed valves do not interface directly with these components, but they do interface indirectly by means of being the floor drain isolation valves. However, a failure of these valves cannot initiate flooding. The ball valves provide passive protection and replace the automatic protection provided by the existing check valves. The valves are designed to remain closed under a Class I seismic event. In the event of a torus break, the valves will prevent water from affecting the proper operation of the ECCS systems. The ball valves will not inhibit design leakage of the Core Spray and RHR pumps. As a part of the surveillance requirements for the corner rooms, operations personnel perform inspections of the rooms at least once per shift. This verifies that any leakage due to degraded equipment is quickly identified and resolved. Therefore, the consequences of an accident are bounded by the previously analyzed accidents. The new ball valves are normally closed and perform the same flood protection barrier function as the existing check valves. However, the ball valves are designed to function in the environment (dirt and debris, etc.), and the ball valves are passive protection against flooding. The effect of isolating the ECCS rooms from the floor drain is that water could collect in the corner rooms. However, significant levels of water in all rooms can be detected by other methods (such as torus water level, fire protection initiation, etc.), and the rooms are inspected at least once every shift.

This ensures that a flood in one room will not affect operation in the other ECCS rooms, and only one ECCS loop is required for safe operation of the plant. The 4" drain lines for each of the corner rooms are provided for convenience only – they are not designed to handle a large-bore line break inside the corner rooms. The ECCS can still perform its functions assuming the most limiting single failure of ECCS components. Therefore the probability of a malfunction of equipment important to safety will not increase. In the event of a failure of a ball valve, the corner room would become flooded and the other ECCS corner rooms would provide safe shutdown of the plant. Single failure on one ball valve will not prevent safe shutdown of the plant. The ball valves failing has no more effect on consequences than the existing check valves failing. Therefore, the consequences of ball valve failure remain unchanged.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the new ball valves are designed to isolate the floor drains and maintain passive protection of the ECCS Corner Rooms. This is a change to the methodology used to protect the ECCS corner rooms (automatic drainage vs. operator action). However, the installation does not add any additional failure modes that were not previously evaluated. The ball valves failing has no more effect on consequences than the existing check valves failing. The ball valves ensure that the other corner rooms are protected from flooding if the torus or one of the ECCS loops breaks. The plant can still be safely shut down if one of the ECCS loops is lost. As a part of the surveillance requirements for the corner rooms, operations personnel perform inspections of the rooms at least once per shift, which ensures that any leakage due to degraded equipment is quickly identified and resolved. Therefore, installation of manual ball valves does not impact systems or functions so as to create the possibility of an accident or malfunction of a type different than those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which the Tech Specs are based (specifically Section 3 / 4.8.E: Flood Protection); therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-97-171

Type of Safety Evaluation: Comp Measure Procedure Change

Evaluation Reference Number: QCARP

Title: Evaluation Of The SBO Diesel As An Alternate Power Source During a DBA Fire

DESCRIPTION:

This evaluation discusses the use of the station blackout diesel generator in place of the Unit 1(2)(0) Diesel Generator to safely shutdown the plant in the event of a DBA fire. This safety evaluation is a compensatory measure and does not document final compliance with 10CFR50.48(B). The compensatory measure provides reasonable assurance that Unit 1 can be safely shutdown.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the SBO Diesel is contained in its own building. Procedures are invoked after the DBA fire has started. Existing validation has determined that the unit 1(2)(0) diesel generator cannot be completely relied upon to cope with an Appendix R fire. Use of SBO will reduce the consequences of a DBA fire. The SBO provides equivalent protection by providing power to the

emergency buses. The fuel transfer pump may receive a start signal but the DCS system is deenergized to prevent this, and the over flow would return to the bulk storage tank.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because operation of SBO during a blackout is not unlike operation during a DBA fire. However, during a fire all instrumentation is available except for Day Tank level which can be read locally. The SBO Diesel could auto start due to a hot short but this does not affect the SBO Diesel because operators must report to the area within 10 minutes.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect parameters upon which Technical Specifications are based. This is a compensatory action only.

Safety Evaluation Number: SE-97-172

Type of Safety Evaluation: Temporary Alteration

Evaluation Reference Number: DCP 9700448, 9700449, 9700450, 9700452

Title: Temporary Alterations to Support Hydrolazing the U1 Main Condenser

DESCRIPTION:

This safety evaluation supports four temporary alterations in support of hydrolazing the Unit One main condenser in the Q1P01 maintenance outage. Well water and service water tie-ins will require two temporary alterations. The other two will involve removal of the Turbine Building and LP heater bay block walls to allow passage of the vendor's hoses. The block wall removal may be performed during any operating mode, but will not be done until Unit One is in either Mode 4 or 5 because of radiation concerns in the LP heater bay. All four of these temporary alterations were done under one safety evaluation. However, DCP 00449 is not yet op authorized and will be included in the summary report when it becomes op authorized.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the block walls are not load-bearing components of the Turbine Building and LP Heater Bay walls. Also, the size of the holes will be kept much smaller than the size of the blowout panels in the Turbine Building. The well water and service water systems are not required to function after an accident.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no equipment

important to safety is adversely impacted by these Temporary Alterations. All work will be done outside of secondary containment and the two water systems will not be adversely affected.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-97-173

Type of Safety Evaluation: Temporary Alteration

Evaluation Reference Number: DCP 9700460

Title: Allow Operation Of The Radwaste System When The Waste Collector Tank Is Not Available

DESCRIPTION:

Safety evaluation to analyze operating the Radwaste system in a way contrary to that described in the UFSAR while tank repairs were being made.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the use of the Floor Drain Collector Tank (FDCT) as the sole receiving tank for unprocessed radwaste water will have no effect altering the probability of a malfunction of equipment important to safety. The radwaste system does not directly support any equipment considered important to safety.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the only credible accident that the radwaste system could cause would be the failure of the River Discharge Tank (RDT) which is already analyzed in the UFSAR. The probability of the failure of the RDT would not be altered by the use of the FDCT as the sole receiving tank for unprocessed radwaste water.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the only margin of safety basis for radwaste in Technical Specifications is Section 5.1 which refers to the Offsite Dose Calculation Manual maximum permissible concentration limits. Administrative procedures are in place to limit the total curies that can be discharged off the site through the liquid radwaste system.

Safety Evaluation Number: SE-97-174

Type of Safety Evaluation: Modification

Evaluation Reference Number: DCP 9700447

Title: Replace Existing 3-Way Manifold Valve (Yarway Model 8112) For LIS 1-0263-72B With An Anderson -Greenwood Model M1HS-4-N

DESCRIPTION:

The 3-way manifold valve is used to calibrate LIS 1-0263-72B and is part of the reactor pressure boundary. LIS 1-0263-72B is one of the Low Low (-59") signals and the +48" trip for HPCI and RCIC. This is part of a one-out-of-two twice logic such that a single failure will not initiate any system functions.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because no functions are created or removed by this design change and the replacement valve has been evaluated to be a like for like replacement. The valve meets or exceeds the pressure rating for the system and will maintain the reactor pressure boundary.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no functions are created or removed by this design change and the replacement valve has been evaluated to be a like-for-like replacement. The valve meets or exceeds the pressure rating for the system and will maintain the reactor pressure boundary.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because no Technical Specifications are affected by this design change.

Safety Evaluation Number: SE-98-002

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: QCOS 1000-04, Revision 14/QCOS 1000-28

Title: Quarterly RHR Service Water Pump Operability Test

DESCRIPTION:

Scope of Changes:

1. Add correction to the required outlet pressure on the RHR Heat Exchanger to account for the effect that actual river level is above the Tech Spec minimum level (561 ft. elev.) for the ultimate heat sink.
2. This change valves out loads on the RHRSW system when measuring and trending pump performance so that all pump flow passes through the flow element so that total pump flow can be measured. (Both procedures)
3. Change to the test method such that RHRSW flow will be set to the pump design flow and pump DP will be measured, compared to acceptance criteria, and trended. Previously the RHRSW pump DP was set to a reference value and the flow was measured, compared to acceptance criteria, and trended.
4. The valve position of the RHRSW FCV, MO 1(2)-1001-5A/B, will be recorded when flow is set to its reference value for trending purposes and the "as left" direction of flow through the heat exchanger will be reversed so that each quarter, the flow direction is the opposite of the previous quarter.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because UFSAR section 6.3.2.2.2 states, in reference to the RHR Pump Motor oil and Seal Coolers, "Both the RHR pump and motor are designed for operation during the accident condition without the use of external cooling water passing through the secondary side of the heat exchangers." An operator will be present during the testing to monitor RHRSW Room temperatures. It is not expected that the room temperature will exceed the Equipment Qualification (EQ) allowable temperature of 120 degrees F because of the relatively short duration of the test. In addition, the RHRSW pump Tech Spec LCO will be entered during the time that an abnormal line-up is in use.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because an operator will be present during the testing to monitor RHRSW Room temperatures. It is not expected that the room temperature will exceed the Equipment Qualification (EQ) allowable temperature of 120 degrees F because of the relatively short duration of the test.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because while the testing is being performed on an RHRSW pump, the pump will be administratively declared inoperable. Therefore, the pump being tested will not be relied upon as equipment that will be expected to perform any function during an accident while the test is in progress. The RHRSW pump Tech Spec LCO will be entered during the time that an abnormal line-up is in use.

Safety Evaluation Number: SE-98-006
Type of Safety Evaluation: Procedure Change
Evaluation Reference Number: QCOP 6620-02; IP 98-0017
Title: Simulation of Event

DESCRIPTION:

This interim procedure allowed simulation of an event which resulted in a start failure of the Unit 1 EDG for the purpose of troubleshooting the failure.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the equipment affected by this testing is not an initiator for the accidents discussed, and all required equipment for mitigation of the consequences of the accident are verified to be available prior to performing the testing.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the actuations of the equipment being tested are not outside their normal operation and all equipment is verified to be returned to its normal configuration following completion of the testing.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because at least the minimum equipment specified in the Technical Specifications will be verified to be available prior to performance of the testing.

Safety Evaluation Number: SE-98-007
Type of Safety Evaluation: Procedure Change
Evaluation Reference Number: QCOP 6600-98; IP 98-0016
Title: Special Nitrogen Test Rig

DESCRIPTION:

This interim procedure allowed connection of a special nitrogen test rig and recording equipment to the Unit 1 EDG to facilitate investigation of a start failure.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the Unit 1 EDG will be isolated from interaction with the remainder of the plant class 1E electrical distribution system for the duration of the test and will be fully tested prior to being returned to an operable status. All applicable Tech Spec LCOs are to be satisfied prior to performing the testing.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because all testing of the EDG is being performed isolated from the plant. Functional testing of the EDG is to be performed at the conclusion of the testing. Inspections of equipment that will be repeatedly cycled will be performed at completion of the testing. Operation of the EDG is not different than that of normal operation with the exception of monitoring equipment.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the specific plant configuration during the testing of the EDG is allowed by the Tech Specs.

Safety Evaluation Number: SE-98-008

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCF 9800031; UFSAR-97-R5-024

Title: Install a DCS Bypass Switch for U-2 SBO Fuel Oil Transfer Pump

DESCRIPTION:

This change will install a Distributed Control System (DCS) bypass (in the form of an SBM switch) on the front of U-2 Station Blackout (SBO) diesel local control panel 2202-104. This is necessary to provide a method for operating the U-2 SBO fuel oil transfer pump to move fuel from the underground storage tank to the day tank should the DCS system experience a loss of power during an Appendix R control room fire. During this postulated fire scenario, DCS would be rendered inoperable. The UFSAR is being revised to include a description of the DSC control switch.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the modification of the U-2 SBO diesel's fuel oil transfer pump circuitry to provide an alternate method of manual operation in the event DCS is inoperable will increase the reliability of the transfer pump to perform its' design function (filling day tank from underground storage) and

thereby enhance its' support of the SBO diesels. Potential failures associated with the new circuitry are off-set by the physical features of the system. These include the cross-tie capability of the day tanks, the overflow return path from the day tank to the storage tank and the fuel oil transfer pump motors being rated at continuous duty. In addition, this design change is confined to the SBO building and does not affect any other systems or components.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because failure of this bypass circuit cannot result in the total loss of ability to transfer fuel. The Unit 1 transfer pump (which will have the same DCS bypass switch) can be connected via a piping cross-tie to fill the Unit 2 day tank. The bypass circuitry is passive in the respect that it is de-energized (OPEN) when DCS is operable. The bypass is not automatically engaged. It requires specific operator action that will be controlled by station procedures. Should the bypass circuit fail energized (CLOSED), due to the design of the day tank and its associated piping, the tank could not be over-filled. This would be an identical failure to the DCS system High Day Tank Level permissive failing to shut down the pump when the tank level reaches the high setpoint.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-98-009

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800032

Title: Addition Of Fuses To The Control Circuits Of 250 VDC MCCS

DESCRIPTION:

10 amp fuses will be added to the control circuits of various loads at 250 VDC MCCs 2A, 2B, and 2C. These fuses are necessary due to Appendix R concerns. Currently, the existing feed breaker may not open during fire induced faults which could cause fires in other fire areas to ignite.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the fuses will open the circuit in the event of a fire induced fault. Should the fuse fail for some other reason, that particular piece of equipment would become inoperable. However, this would be the same as a failure

of any other component associated with the equipment. The loss of HPCI or RCIC has been previously evaluated.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the new fuse protection will open in the event of short circuits in order to prevent adjacent cables from being damaged from the heating effects of the fault currents. Per fuse selection analysis PI-83 No. S040-QH-0397-01, the fuses will open under a short circuit condition. They will pass the normal load current and not cause nuisance trips. They are also mounted such that they will not cause undesirable plant actuations (Ref. QDC-8300-S-0561, Rev 1). When a fuse opens due to a short circuit on the control circuit or randomly fails, the motor's contactors will open and stay open, rendering that equipment inoperable; however, this is not a new failure mode. The modified control circuits will still allow the HPCI and RCIC systems to perform their design function. No new accidents types different from those evaluated in the SAR will be created by this modification.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because all relevant sections of the Technical Specifications were reviewed. These modifications will not affect any of their basis. The margin of safety is therefore not reduced.

Safety Evaluation Number: SE-98-011

Type of Safety Evaluation: Facility Change; UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-022

Title: Revise RPV Stud CUF=1.0 Prediction

DESCRIPTION:

Revise UFSAR predicted time frame for the Reactor Pressure Vessel (RPV) closure studs achieving a fatigue cumulative usage factor (CUF) of 1.0. The prediction currently indicates the studs would reach a CUF of 1.0 in 1998. The revised prediction indicates reaching a CUF of 1.0 in 2002. Additionally, the minimum boltup temperature was revised (from 100°F to 83°F) when the RPV studs are under tension.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the CUF stud limit has not changed and the revised prediction concludes the limit will be reached in 2002. The minimum boltup temperature was decreased, and evaluated per 10CFR50 Appendix G and ASME Code requirements. Requirements have been maintained and there is no physical change to the Reactor Pressure Vessel (RPV) or the studs affecting their

ability to maintain the Reactor Coolant Pressure Boundary (RCPB). The consequences of the accidents/transients or a malfunction of equipment important to safety are not increased because the RPV and closure studs will continue to maintain the RCPB.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changes of when the RPV studs will reach a CUF of 1.0 and the minimum boltup temperature change has no effect on plant operation. There is no change to the physical hardware. The revised CUF prediction and boltup temperature change has been evaluated consistent with applicable requirements. Therefore, the possibility of an accident or malfunction different from those evaluated in the SAR is not created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-98-012

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCP 9800021; UFSAR-97-R5-024

Title: Install a DCS Bypass Switch for U-1 SBO Fuel Oil Transfer Pump

DESCRIPTION:

This change will install a Distributed Control System (DCS) bypass (in the form of an SBM switch) on the front of U-1 Station Blackout (SBO) diesel local control panel 2201-104. This is necessary to provide a method for operating the U-1 SBO fuel oil transfer pump to move fuel from the underground storage tank to the day tank should the DCS system experience a loss of power during an Appendix R control room fire. During this postulated fire scenario, DCS would be rendered inoperable. The UFSAR is being revised to include a description of the DCS control switch.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the modification of the U-1 SBO diesel's fuel oil transfer pump circuitry to provide an alternate method of manual operation in the event DCS is inoperable will increase the reliability of the transfer pump to perform its' design function (filling day tank from underground storage) and thereby enhance its' support of the SBO diesels. Potential failures associated with the new circuitry are off-set by the physical features of the system. These include the cross-tie capability of the day tanks, the overflow return path from the

day tank to the storage tank and the fuel oil transfer pump motors being rated at continuous duty. In addition, this design change is confined to the SBO building and does not affect any other systems or components.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because failure of this bypass circuit cannot result in the total loss of ability to transfer fuel because the Unit 2 transfer pump (which will have the same DCS bypass switch) can be connected via a piping cross-tie to fill the Unit 1 day tank. The bypass circuitry is passive in the respect that it is de-energized (OPEN) when DCS is operable. The bypass is not automatically engaged. It requires specific operator action that will be controlled by station procedures. Should the bypass circuit fail energized (CLOSED), due to the design of the day tank and its associated piping, the tank could not be over-filled. This would be an identical failure to the DCS system High Day Tank Level permissive failing to shut down the pump when the tank level reaches the high setpoint.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-98-014

Type of Safety Evaluation: Interim Procedure

Evaluation Reference Number: IP-98-0020

Title: Allow Operation Of The Radwaste System When The Floor Drain Collector Tank (FDCT) Is Not Available

DESCRIPTION:

While the FDCT was being repaired, the Waste Collector Tank (WCT) was used to process both the WCT and FDCT process streams. Since this is contrary to the UFSAR, a 50.59 evaluation had to be performed to show that this would not impact normal plant operations. The FDCT was repaired and returned to service.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because procedure QCCP 0300-02 limits the controlled release of radioactive water to the river to maintain the effluent discharge below the Technical Specification limit for Radwaste effluent and below the NPES discharge limit regulated by the EPA. Using the Radwaste System without the FDCT will not increase off-site dose since the remainder of the Radwaste System

still must follow this procedure no matter what tank is used to process floor drain water.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the probability of the failure of the River Discharge Tank (the Chapter 15 analyzed accident for Radwaste) would not be altered by the use of the WCT as the sole receiving tank for unprocessed radwaste water. Both the FDCT and the WCT are located in the Radwaste Building basement and failure of either tank would cause the contents of that tank to be completely contained in the basement as analyzed in the UFSAR. Therefore, using the WCT in place of the FDCT would not create an accident or malfunction not previously evaluated in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because as discussed in part 1 of this document administrative procedures are in place to limit the total number of curies that can be discharged off-site through the liquid Radwaste System. These procedures limit the off-site dose when averaged over 31 days to 0.13 mrem to the total body or 0.42 mrem to any organ to satisfy Technical Specification Section 5.1 and SAR section 15.7.1. The changes allowed by this system modification do not change the above off-site dose limits. Therefore, the margin of safety is not reduced.

Safety Evaluation Number: SE-98-015

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800035

Title: Install a new cable raceway from the Unit 2 RAT (Transformer 22) and UAT (Transformer 21) to the Service Building Computer Room. The additional work associated with this design change (cable route and terminations) will be completed per DCN 001654E and evaluated separately.

DESCRIPTION:

This change will install a Distributed Control System (DCS) bypass (in the form of an SBM switch) on the front of U-1 Station Blackout (SBO) diesel local control panel 2201-104. This is necessary to provide a method for operating the U-1 SBO fuel oil transfer pump to move fuel from the underground storage tank to the day tank should the DCS system experience a loss of power during an Appendix R control room fire. During this postulated fire scenario, DCS would be rendered inoperable.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the conduit installed by this portion of the design change (ECN 001644E) is passive in nature and does not interact with any other

plant systems or components that could affect the probability of the malfunction of any equipment important to safety. The attachment of the conduit and associated supports for this design change will in no way affect the ability of the NCAD system, HRSS, Unit 1/2 EDG or Secondary Containment to perform their previously stated design functions. The size and depth of the holes being drilled to install the conduit supports will not penetrate the wall and will not damage any of the concrete reinforcing framework (re-bar).

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the new raceway will consist of rigid conduit, field routed along the outside east wall of the Turbine and Reactor building. It is not credible that this new raceway will cause the failure of any existing systems, specifically the Nitrogen Containment Atmosphere Dilution System, HRSS, the Unit 1/2 EDG or Secondary Containment. This is because an evaluation has qualified the raceway for structural integrity (S&L Calculation 9200-EO-S).
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition. See Table 3.8-11.

Safety Evaluation Number: SE-98-016

Type of Safety Evaluation: UFSAR Change

Evaluation Reference Number: UFSAR-97-R5-028

Title: HRSS Liquid Sample Line Isolation Valve Tubing Connections

DESCRIPTION:

UFSAR Section 9.3.2.1.3.3 is being revised to provide clarification regarding the use of compression-fitting connections for HRSS liquid sample line isolation valves. The last paragraph of UFSAR Section 9.3.2.1.3.3 is being revised to add clarification of the statement regarding the sample tubing being of all welded construction. For ease of replacement, compression fittings may be used for sample line isolation valve connections. By facilitating much more time-efficient work activities such as disconnecting/re-connecting of the valves for backflushing or replacement, As Low As Reasonably Achievable (ALARA) radiation work practices are better served.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the compression fittings have the required pressure rating, and have proven reliable performance based upon maintenance history and observation of online performance. This change does not affect Secondary Containment, and its associated support systems. Consequently, there will be no effects on the consequences of a leak from the sample tubing connections

associated with this change.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this change provides an approved {Reference Spec R-4411} equivalent alternative for sample valve tubing connections in accordance with applicable codes/standards. The compression fitting connections meets or exceeds the required pressure rating for each sample line application.

A "Break in Reactor Coolant Pressure Boundary Instrument Line Outside Containment" is evaluated in UFSAR Section 15.6.2. The probability of this accident is not increased by this change, and there is no affect on the consequences of a failure associated with these sample valve connections.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because none are applicable.

Safety Evaluation Number: SE-98-017

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800034

Title: Install Two New Auxiliary Relays In Panel 902-29

DESCRIPTION:

The reason for this design change is the concern of losing the 125 Vdc control power for the Unit 2 UAT/RAT protective relays due to an Appendix R Fire in Area TB-1 of the Turbine Building. The existing control power for the protective circuits is supplied from Turbine Building 125 Vdc buses 2A-2 (Main Supply) or 2B-2 (Reserve Supply). The existing design requires manual action to transfer control power from the main to the reserve supply. This modification will provide an automatic transfer to the reserve supply when the normal supply is not available. These relays will perform an auto-transfer between the main and alternate 125 VDC control power sources for the main generator, Main Power Transformer (MPT), Unit Auxiliary Transformer (UAT), and Reserve Auxiliary Transformer (RAT) primary and backup system tripping relay circuits.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed change will not adversely affect the 125 Vdc system during normal system operation. The new HFA relays have higher current demands than the existing relays. The effect of these higher currents on 125 Vdc Battery #2 was evaluated using ELMS-DC and were found to have no adverse impact on battery performance as documented by S&L

evaluation S040-QH-0388. This design change replaces the manual transfer between the main and alternate control power to the Generator and Transformer Tripping Relay circuits with an automatic transfer feature. This DCP does not affect the configuration or method of operation of the protective transformer tripping relays. For these reasons, the probability of a malfunction of equipment important to safety is not increased by this design change.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this design change does not adversely affect generator or transformer protective relay operation. By automatically switching over to the reserve 125 Vdc control power supply in the event of a loss of main control power, the amount of time that this control circuit is without power is decreased. Also, the failure modes of the new HFA relays have been evaluated and do not create an adverse or unanalyzed system interaction as discussed in Question 6. Therefore, this design change does not create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition.

Safety Evaluation Number: SE-98-018

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCP 9700176; UFSAR-97-R5-051

Title: Install New AMHG Breakers at Bus 13-1

DESCRIPTION:

This Design Change will install new Merlin Gerin (MG) model AMHG 4 kV 350 MVA (Mega Volt-Amps) Sulfur Hexafluoride (SF₆) gas circuit breakers at Bus 13-1. The existing General Electric (GE) model AMH 4 kV 250 MVA air circuit breakers will be removed. Additionally, Bus 13-1 will be upgraded to a momentary and short circuit rating of 350 MVA, minor wiring changes will be made to the 125 VDC breaker control circuitry. New spring discharge cams, and 350 MVA interference plates will be installed at each breaker cubicle. The UFSAR has been revised to reflect the installation of the new breakers.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the probability of a Loss of Offsite AC Power or Normal AC Power will not be increased by this design change because the installation of the new breakers, control circuit changes, replacement of the spring

discharge cams and the upgrading of the buses to 350 MVA will not increase the probability of large grid disturbances. This design change enhances the stability of Bus 13-1 during three phase short circuit conditions by improving the ability of the buses to isolate such a fault and decrease the probability of propagating the fault and causing a Loss of AC power.

This design change does not change the system configuration or the breaker control logic of the auxiliary power system. The auxiliary power system will function the same to mitigate the consequences of any accident after the design change is installed.

At no time will the loss of auxiliary power prevent a reactor scram since stored pneumatic energy and reactor pressure are the driving forces of the control rods. In addition, the DGs, SBO DGs and station batteries are available for emergency operation of reactor instrumentation, isolation valves, ECCS pumps, and other critical systems.

The failure modes of the new breaker include the failure of the breaker to open or close during all operating conditions. These failure modes are the same as the failure modes for the existing GE AMH Breakers. As discussed in question 6, the change in interrupting medium will not adversely affect equipment malfunctions. Therefore, the consequences of a breaker malfunction does not change.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the UFSAR provides the bounding condition of a loss of auxiliary power. The services and functions at 4 kV Bus 13-1 are unchanged by the installation of this design change. The replacement of the breakers, spring discharge cams, light circuit alterations and the upgrade of the buses to 350 MVA will maintain the 4 kV auxiliary power system within its design basis and provide a higher degree of reliability. No new functions or system interactions are involved with this design change and the design will not adversely affect the operation of the 13-1 switchgear, therefore no accidents or malfunctions of a different type are created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because these new breakers and the associated changes are being completed to increase the reliability of the performance of their safety-related functions. This breaker replacement will improve reliability because the new SF₆ model AMHG breakers have overall a simpler design than the GE AMH breakers with fewer internal mechanical interfaces that could be affected by hardening of grease. The new interference plates prevent incorrect breaker models from being installed during maintenance. The change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-98-019

Type of Safety Evaluation: Equipment Out of Service

Evaluation Reference Number: OOS 980000319

Title: ½ Emergency Diesel Generator (EDG) Normal Supply Fan (1200 cfm)

DESCRIPTION:

This Safety Evaluation was written to address the long-term OOS associated with the ½ EDG normal supply fan. The fan has been OOS since 8/30/94, and no Safety Evaluation was performed to address interim compensatory actions regarding this long-term OOS.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because LOCA where EDG operation is required: The probability of an accident is not increased since the ½ EDG system and room equipment are designed for operation following an accident or transient (needed after the accident occurs). Thus, maintaining the ½ EDG ventilation supply fan in an OOS condition does not increase the probability of an accident. The consequences of the accident are not increased because the ½ EDG normal supply fan is automatically secured after the ½ EDG starts and therefore has no effect on the operation of the ½ EDG during or after the LOCA. The consequences of the accident are therefore not affected.
 - a. Loss of AC Power: The ½ EDG normal ventilation fan is not required for ½ EDG operation, therefore, the probability of a Loss of AC Power is not increased. The Loss of AC Power casualty does not affect the on-site or off-site dose; therefore, the consequences of an accident are not affected.
 - b. Design Basis Fire in Fire Zone 9.3: Compensatory actions which have been put in place while the ½ EDG normal supply fan is OOS do not increase the likelihood of a fire. The Design Basis Fire in Fire Zone 9.3 does not affect the on-site or off-site dose; therefore, the consequences of an accident are not affected.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because with the ½ EDG normal supply fan OOS, only the air exchange in the ½ EDG enclosure during periods when the ½ EDG is not running is affected. This condition only affects the fire protection basis for the ½ EDG enclosure and the design basis temperature of the ½ EDG enclosure. The fire protection basis is addressed in the SAR. Exceeding the design basis temperature of the ½ EDG enclosure would require an outside air temperature of at least 108 degrees F. A review of climatology records since 1994 revealed that this outside air temperature has

never been exceeded. It is therefore reasonable to conclude that the $\frac{1}{2}$ EDG temperature has never exceeded the design basis temperature, nor is it likely that the design basis temperature will ever be exceeded with the $\frac{1}{2}$ EDG normal supply fan in an OOS condition.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this activity does not affect any parameters upon which the Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-98-020

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Update of the Appendix R Safe Shutdown Report, Amendment 9 (Fire Protection Report, Vol 2)
To incorporate information relating to use of SBO in lieu of the EDG's as a 4kV power source.

DESCRIPTION:

The Emergency Diesel Generators (EDG's) are no longer credited to provide emergency power during safe shutdown of the reactors as a result of a fire. Instead, power is provided by the Station Black Out Diesel Generators (SBO DG's).

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed change credits operation of the SBO DG's to provide power to essential post-fire safe shutdown equipment. The SBO DG's were specifically designed and selected to provide power of the correct voltage and cycle frequency to assure that the ac power distribution system will function normally when powered by the SBO DG's. Revising the SSR to utilize the SBO DG's avoids the inherent vulnerability of the EDG's to fire damage, which also reduces the number of manual operator actions needed to prevent malfunction of the EDG's. Under the specific conditions for which the analysis may be used, the SBO DG's are significantly more reliable than the EDG's previously used. The SBO DG's are in a separate building, and a fire which caused damage to them would not affect any normal shutdown equipment. Therefore, the change does not increase the consequences of a malfunction of equipment important to safety, and does not adversely affect the ability to achieve and maintain safe shutdown following a fire.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because neither

the single additional refueling, nor the manual start requirement adversely affect the ability to achieve and maintain safe shutdown. However, they do constitute new requirements from the previous SSR. Therefore, in accordance with the guidance provided by Information Notice 97-78, this change creates the possibility of an accident or malfunction of a type different from those evaluated in the SAR.

Because Step 12 was answered affirmatively, Step 14 was not answered. Performance of this SE resulted in the discovery of a USQ. Change request was submitted to the NRC under ComEd SVP cover letter #SVP-98-114.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-022

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCN 001675M, DCP 9800058

Title: Core Hole in the N (14-15) Lines Secondary CTMT Wall

DESCRIPTION:

This Design Change includes removal of 9" diameter concrete core sample from Reactor Building (RB) east wall to perform thermal conductivity test of concrete for evaluating RB general area temperature.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because RB wall does not initiate any accident scenario. Hence 9" diameter hole will not increase any accident probability. The core hole will be covered to maintain Secondary Containment.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because there are no new failure modes introduced by this design change. The purpose of this design change is to obtain a sample of concrete only.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-023

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800022 and 9800057

Title: Addition Of Fuses To The Control Circuits Of 250 VDC MCCs

DESCRIPTION:

10 amp fuses will be added to the control circuits of various loads at 250 VDC MCCs 1A, 1B, 1C, and 2B. These fuses are necessary due to Appendix R concerns. Currently, the existing feed breaker may not open during fire induced faults which could cause fires in other fire areas to ignite.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the fuses will open the circuit in the event of a fire induced fault. Should the fuse fail for some other reason, that particular piece of equipment would become inoperable. However, this would be the same as a failure of any other component associated with the equipment. The loss of HPCI or RCIC has been previously evaluated.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the new fuse protection will open in the event of short circuits in order to prevent adjacent cables from being damaged from the heating effects of the fault currents. Per fuse selection analysis PI-83 No. S040-QH-0397-02, the fuses will open under a short circuit condition. They will pass the normal load current and not cause nuisance trips. They are also mounted such that they will not cause undesirable plant actuations (ref. QDC-8300-S-0561, Rev 1). When a fuse opens due to a short circuit on the control circuit or randomly fails, the motor's contactors will open and stay open, rendering that equipment inoperable; however, this is not a new failure mode. The modified control circuits will still allow the HPCI and RCIC systems to perform their design function. No new accidents types different from those evaluated in the SAR will be created by this modification.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because all relevant sections of the Technical Specifications were reviewed. These modifications will not affect any of their basis. The margin of safety is therefore not reduced.

Safety Evaluation Number: SE-98-024

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-030

Title: Revise UFSAR to Describe the Use of RWCU for Decay Heat Removal During the Hydrostatic Test and at Higher Coolant Temperatures

DESCRIPTION:

A Technical Specification change was made to LCO 3/4.12.C, "Inservice Leak and Hydrostatic Testing Operation," and Table 1-2 of the Technical Specifications to allow an exemption from the Mode 3 requirements for Special Test Exceptions (including the hydrostatic test and Inservice Leak Test of the reactor vessel). The NRC has reviewed and approved performing the test at higher temperatures. To provide core cooling when the reactor is at high pressure (but at temperatures not causing steam formation) the RWCU system is used for decay heat removal. The use of RWCU decay heat removal mode during the hydrostatic test as the primary mode of decay heat removal is discussed in the UFSAR (with this change).

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the change to performing the hydrostatic or inservice leak test at higher temperatures and entering Mode 3 without the required number of ECCS systems was reviewed by the NRC and a SER was issued with the License Amendment. Using RWCU to provide decay heat removal during the test is consistent with that change. RWCU has normally been used for this purpose in the past. The change merely allows the RWCU system to perform this function at slightly higher temperatures. This higher temperature does not cause any equipment to exceed its ratings, as RWCU normally operates at even higher temperatures when the Unit is online. RWCU is not required to mitigate the consequences of any accidents. The test includes adequate instructions to place the plant in a safe condition if decay heat removal capacity is lost.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this change does not create any new system interactions or failure modes. The change merely allows operation of the RWCU system at slightly higher temperatures than what had been previously allowed (225°F vs 212°F). The capability of the system to handle the higher operating temperature has been fully evaluated.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the higher operating temperature is required to comply with Technical Specifications on brittle fracture of the vessel metal. The Mode 3 exception was reviewed in an NRC SER. This UFSAR change merely changes the system descriptions to be consistent with the changed Technical Specification and procedure changes needed.

Safety Evaluation Number: SE-98-026

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800029

Title: Install Alternate Feeder for RCIC Valve 2-1301-16 for Appendix R Concerns

DESCRIPTION:

Provide an alternate 208 VAC three phase power feed to the Unit 2 Motor Operated Valve (MOV) RCIC 2-1301-16 Steam Supply Isolation valve from Unit 2 SBO Distribution Panel 75-1-1. Installation of this alternate feed will require routing new cable through a combination of new and existing raceway from SBO through the RB wall to MCC 28-1A-1. For certain Appendix R safe shutdown methods, MOV 2-1301-16 is required to be operable/open to allow the RCIC system to function. Providing this alternate feed from the SBO distribution panel reduces operator actions to accommodate the acceptable timeframe for restoring power to the MO 2-1301-16 valve.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the installation of the alternate feed for the RCIC 2-1301-16 Inboard Steam Supply Isolation valve is designed to meet safety-related (including circuit separation) requirements where interfaces exist with normal ESS electrical distribution equipment at MCC 28-1A-1. The alternate feeder (NSR circuit) will be utilized only in an Appendix R fire scenario. This design change makes no changes to any portion of RCIC system initiation or isolation logic that would increase the probability of the failure of the RCIC system. Addition of the alternate feed provides flexibility for the utilization of the RCIC system when required to operate during an Appendix R fire.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because as stated previously, the alternate feed circuit will be maintained normally open and controlled by a combination of normal (QOM) and abnormal (QCARP) operations equipment alignment procedures, equipment labels and caution placards. Additionally, the SR/NSR isolation breaker will be fitted with an Appendix R Fire Lock to prevent inadvertent closure due to personnel error. Although the RCIC 2-1301-16 valve performs a PCI function, it is not required to postulate additional accidents, including any that would cause a Group 5 PCI

signal during the postulated fire. The combination of procedural control and a mechanical interlock between the feeder circuits ensures that no single equipment malfunction or personnel error can connect SBO power (NSR) inadvertently to a live Reactor Building MCC 208 VAC bus (SR).

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition per UFSAR Table 3.8-11.

Safety Evaluation Number: SE-98-028

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800025

Title: Reroute 345KV OCB Control Cables for UAT/RAT Trip Functions

DESCRIPTION:

The proposed change will reroute control cables 1254 and 1267 to minimize that portion of the cable route which is in the Turbine Building cable tunnel area. This requires the addition of approximately 50 feet of new conduit and associated supports, a junction box, and one new core bore through the Auxiliary Electric Equipment Room (AEER) floor. There are no functional/circuit logic changes associated with the proposed change. The proposed change is required to ensure that cables 1254 and 1267 remain undamaged during a postulated Appendix R fire in the Turbine Building cable tunnel. These control cables provide tripping of 345kV switchyard Oil Circuit Breakers (OCBs) for faults on the electrical distribution system downstream of the UAT and RAT.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the subject cables are rerouted in new and existing raceway which is installed in an approved manner with no new hazards introduced. The termination in panel 902-29 of the rerouted cables shall be in accordance with the design requirements, and applicable testing will ensure the functionality of the original circuits. Therefore, the reliability of the UAT / RAT is not decreased and the probability of an equipment malfunction is not increased. The proposed design change does not change the ability of any system or component which is used to mitigate the consequences of a malfunction of equipment important to safety from performing its function.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed modification to reroute cables 1254 and 1267 to avoid the Turbine Building cable tunnel does not represent a functional change to operation of the 345kV switchyard OCBs for any mode of operation since the applicable circuits remain electrically the same. The reroute improves reliability of OCB tripping functions during a specific analyzed event (i.e. common enclosure Appendix R fire event). Reliability of the UAT / RAT during normal and accident conditions remains the same. The new core bore in the AEER floor shall be resealed per approved plant procedures. Therefore, the original floor boundary function is maintained for fire and HVAC.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specifications provide an acceptance limit for the Control Room HVAC envelope pressure of greater than or equal to 1/8" positive pressure with respect to adjacent areas. This TS requirement will be controlled during the installation of the referenced design change.

Safety Evaluation Number: SE-98-029

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Revision to the Fire Hazards Analysis Report Revision 97-02 (Fire Protection Report, Volume 2) to Address Changes in the 125VDC system for Appendix R

DESCRIPTION:

The activity is an update of the FHA, as contained in Volume 2 of the Quad Cities Fire Protection Report. The Fire Protection Report is incorporated into the SAR by reference in Section 9.5.1 of the UFSAR.

Changes to the 125VDC system will include: 1.) Use of SBO 125 VDC as a control power source, 2.) Backup fault protection of the 4kV buses, 3.) Use of a mobile 125VDC power source for ADS valves, and 4.) No manual actions taken to protect or restore the station 125VDC system.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because there is no adverse impact on SSD system with relationship to the source of 125VDC power to perform control functions. The 125VDC produced by SBO is equivalent in voltage and current capacity to the station power supplies. Therefore, as far as equipment manipulations is concerned, the change is transparent.

The elimination of some manual actions to isolate large amounts of station 125VDC loads will reduce response timelines. The actions necessary to isolate

specific loads subject to spurious actuation due to fire-induced cable damage is not affected. In summary, the probability or consequences of a malfunction of equipment important to safety are not increased.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the isolation of the 125VDC from those specifically being identified as spurious operating high-risk are being procedurally incorporated to eliminate additional operator actions that increase the response timeline. Because they have been specifically identified and isolated, an accident or malfunction of a different type than previously analyzed is not created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-98-030

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800063

Title: The 250VDC Condensate Pump Power Cable (20003) Will Be Rerouted To Avoid Any Portion Of The Cable From Entering The Turbine Building

DESCRIPTION:

To implement this cable reroute, a new splice box will be installed in the RCIC room adjacent to the end of the existing conduit which contains the subject cable from the pump. The cable will be rerouted into the splice box and cut. A new section of cable of the same size and type (3/C-#10 AWG, 600V) as the original cable will be spliced onto the existing cable in the splice box. The new route will use existing raceway in its entirety; therefore, no new raceway is required. The portion of the original cable which is not re-used will be abandoned in place and labeled accordingly.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the power cable for the condensate pump is rerouted only, therefore there is no functional change to the power circuit. The new cable is of an approved type and construction and is the same conductor size as the original. A small increase in circuit length is associated with the new route. This change has been evaluated and found acceptable with respect to voltage drop as documented in Calculation QDC-8350-E-0521. The reliability of the power circuit is not decreased. No change in condensate pump operation or RCIC system operation is created due to the power cable reroute. The proposed cable reroute does not create any different mode of operation for any SSC, or

create any new adverse interface with any SSC, which is relied upon to mitigate the consequences of a malfunction of equipment important to safety.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed power cable reroute does not represent a change in circuit function and does not adversely impact the 250VDC power supply, the Reactor Building or Reactor Building raceway system, or Reactor Building secondary containment. No change in condensate pump operation or RCIC system operation is created due to the power cable reroute. The proposed reroute does not create any different mode of operation for any SSC, or create any new adverse interface with any SSC, in anyway which may create an accident or a malfunction of a different type from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-031

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Update of the Appendix R Safe Shutdown Report, Amendment 9 (Fire Protection Report, Vol 2)
To incorporate information relating to changes in the power supplies for the 125VDC for ADS

DESCRIPTION:

The activity updates the existing SSR. 125 Vdc power to the ADS valves is vulnerable to fire damage. The SSR identifies a repair to provide alternate power from an opposite unit source. The proposed activity revises the SSR to credit mobile safe shutdown batteries as the alternate power source.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the mobile batteries are less vulnerable to the effects of fire, which improves their reliability under post-fire safe shutdown conditions. However, since the sealed cells of the mobile batteries do not allow the degree of surveillance and testing provided for the safety-related station batteries, their use in lieu of the station batteries could potentially increase the probability of an equipment malfunction adversely affecting the ability to achieve and maintain safe shutdown. The mobile safe shutdown batteries are vulnerable to damage from fire only in the Reactor Building fire areas, and the redundant mobile battery

systems assure that the ADS valves can be operated, regardless of where the fire occurred. Therefore, this change does not increase the consequences of a malfunction of equipment important to safety, and does not adversely affect the ability to achieve and maintain safe shutdown following a fire.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because Step 11 was answered affirmatively, Steps 12 to 14 are not answered. Performance of this SE resulted in the discovery of a USQ. Change request was submitted to the NRC under ComEd SVP cover letter #SVP-98-114.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-032

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Update of the Appendix R Safe Shutdown Report, Amendment 9 (Fire Protection Report, Vol 2)
To incorporate information relating to changes in the required operator manual actions associated with SSD

DESCRIPTION:

The activity updates the existing SSR. Additional analyses have identified the need for more operator actions to resolve potential spurious operation of safe shutdown systems, and to shorten the timeline for establishing a high-pressure reactor water level makeup source.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed change requires one new operator action per unit to be performed immediately following entry into the Appendix R safe shutdown procedures. The proposed revision will enhance safety of the plant by completing the actions within 31 minutes, rather than the 35 minutes currently needed. The introduction of a longer list of actions to perform in the first 10 minutes of the event introduces an increased probability of human error, and therefore has the potential to increase the probability of a malfunction of equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because Step 11 was

answered affirmatively, Steps 12 to 14 are not answered. Performance of this SE resulted in the discovery of a USQ. Change request was submitted to the NRC under ComEd SVP cover letter #SVP-98-139.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-033

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800028 and 9800033

Title: Swap Power Feeds To The Unit 1(2) Main Generator, Main Transformer, RAT, And UAT

DESCRIPTION:

The protective relaying for the Unit 1(2) Main Generator, Main Transformer, UAT, and RAT utilizes both primary and backup logic schemes. In addition, each logic scheme has both a main and reserve 125 VDC control power source. These control power sources extend to auxiliary electric room panels 901(2)-29 which is where a majority of the control components are located. These DCPs will rework the reserve power feeds such that the Unit 1 protective relaying will use Turbine Building 125 VDC Main Bus 2A-2 (Unit 2) as its reserve source (rather than 1B-2), and the Unit 2 protective relaying will use Turbine Building 125 VDC Main Bus 1A-2 (Unit 1) as its reserve source (rather than 2B-2). The main sources for both units are fed from their respective unit battery buses and will not be altered by these DCPs.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the changes will not affect the relaying logic, only the source from which it is fed from. The relaying logic is normally de-energized; therefore, a loss of control power cannot cause a generator or RAT trip. A spurious actuation of this relaying circuit could cause the main generator to trip or RAT to isolate; however, this possibility existed prior to this modification.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changes made by these DCPs will reduce the consequences of certain Appendix R fires. By supplying the reserve feeds from other sources, 125 VDC control power availability will be assured for these control schemes. Although the new reserve feeds will be supplied from opposite units (i.e. Unit 1 logic fed from Unit 2), they will still be supplied from the same battery (ref. Drawing 4E-1318B, Rev E). The change in 125 VDC circuit breaker sizes will not adversely affect the way the

protective relaying behaves during normal and abnormal conditions. The circuit breakers will still open the 125 VDC control circuits in the event of short circuits, yet still supply enough margin to produce a reliable 345 kV tripping scheme.

The new conduits and supports will be seismically installed to prevent them from damaging nearby equipment during and after a seismic event. The core holes have been evaluated and found not to affect the structural integrity of the block walls. These core holes will be sealed to prevent the propagation fire across this divisional barrier. The existing cable rework including cable pulls, terminations, and splices will be made in accordance with applicable approved procedures. Post modification testing will be performed to ensure adequacy of the design and installation. Since the function of the modified circuits remains unchanged, and no new interactions with equipment important to safety were added, no new failure modes or unanalyzed accidents will be created.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because all relevant sections of the Technical Specifications were reviewed. These modifications will not affect any of their basis. The margin of safety is therefore not reduced.

Safety Evaluation Number: SE-98-035

Type of Safety Evaluation: Work Request

Evaluation Reference Number: WR 980021522

Title: Reactor Bottom Head Drain Line Freeze Seal

DESCRIPTION:

The subject safety evaluation was written to evaluate use of a single freeze seal to provide isolation to a portion of the reactor bottom head drain line which required repair. During vessel hydrotest a small leak was discovered at a socket weld on the bottom head drain line. The leak was inboard of the system isolation valve. The proposed repair evolution was to isolate the affected portion of the bottom head drain piping using a single freeze seal, then cut out the affected portion of pipe and weld in a new spool to replace the damaged spool.

The description portion of the safety evaluation contains an extensive discussion of the procedural requirements met for this evolution to ensure that a reliable freeze seal is developed and maintained. Among these are:

Performance of freeze sealing activities in accordance with approved station and ComEd procedures.

Preparation of an Engineering Evaluation (ER9801003) for the freeze seal evolution.

Use of an upstream thermocouple to ensure that temperatures at the vessel nozzle do not approach vessel NDT limits.

Appropriate clearances between the freeze seal and all welding/cutting work to be performed.

Use of three thermocouples in and near the freeze to constantly monitor freeze integrity, contingency plans in the event of a freeze failure and required surface examination of piping following removal of the freeze seal to ensure piping was not damaged.

The description portion also includes discussion of additional requirements performed to ensure this activity could be performed in a safe manner, including:

Utilization of a qualified freeze seal contractor to overview the evolution.

Discussions were held with ComEd corporate experts, General Electric, INPO and other utilities who have performed similar evolutions to ensure all appropriate considerations were made.

Prefabrication of the repair spool to minimize installation time and use of mock-ups to ensure installers are adequately prepared and trained to perform all required repair activities in a proficient manner and are prepared to implement any required contingencies.

The subject safety evaluation had the following conditions applied:

All Technical Specification requirements for operations with a potential for draining the vessel are applicable and shall be met.

All control rods are fully inserted.

Reactor is depressurized and vessel temperature is less than or equal to 150 degrees F.

Minimum reactor water level is at normal operating level (30 inches above vessel 0).

The RWCU system is out of service or the bottom head drain line is isolated from RWCU.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because a risk assessment of the proposed freeze seal evolution was made in the subject safety evaluation, which determined that, based on the stringent administrative and technical controls associated with the installation of the freeze seals and the availability of proven contingency measures to prevent leakage, the probability of an accident or malfunction of equipment important to safety is not increased. Per the safety evaluation the consequences of a LOCA are not increased due to the following:

This evolution is performed with the reactor subcritical, depressurized and subcooled and all control rods are fully inserted. These initial conditions are much less severe than those evaluated under the UFSAR analysis. Due to the lower

temperatures and pressures, the resultant accident effects on the drywell/torus temperature and pressure would be much less severe than those evaluated in the UFSAR analysis. The UFSAR analysis is based on inventory loss through a 28" diameter recirculation pipe, with the vessel at full power and fully pressurized. However, this evolution involves the bottom head drain line, which is a 2" NPS line and the vessel pressure will be equivalent to the static head of the water in the vessel. All systems required to mitigate the accident during modes 4 and 5 will be available and have the capacity to supply water to the vessel at a rate that greatly exceeds the drainage rate through an open bottom head drain line. With the affected reactor having been shutdown in excess of 80 days, the initial decay heat removal requirements for the accident are much less than those utilized in the UFSAR analysis. Therefore it is concluded that the activities in this repair evolution are bounded by the existing UFSAR analysis.

With regard to flooding issues, the consequences of the accident are not increased based on the following:

In the unlikely event that the freeze seal and all prepared contingencies were to fail the potential exists to flood the drywell basement. Minor leakage could be accommodated by the drywell floor drain sumps. However, a full open drain path to the drywell basement could overwhelm the ability of the sumps to remove the water. In this event, the water level in the drywell basement would eventually reach a level where the water would drain into the downcomers and then into the torus. Per the UFSAR, the drywell and torus have been seismically analyzed for water levels up to the normal pool level. Given the large volume available in the torus and the downcomers, and the availability of systems to maintain torus level, it is not considered credible that any flood resulting from this activity would flood the drywell to a level as high as the X-1 equipment hatch before compensatory actions could be taken. Based upon this evaluation it is determined that the activities in this repair evolution are bounded by the existing UFSAR analysis.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the bottom head drain line will not be in service during this evolution and does not provide support to any system that is required to be operable during this evolution except for the requirement to maintain primary coolant pressure boundary. A malfunction of the freeze seal at a time that the pressure boundary of the bottom head drain line is breached, could result in a small break LOCA inside of the primary containment and/or internal flooding of the drywell/torus. These accidents have been evaluated in the UFSAR and are discussed above.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the piping code, USAS B31.1.0, provides minimum requirements applicable to piping maintaining the reactor coolant pressure boundary. The freeze seal will represent the pressure boundary during this repair evolution. The procedural and technical requirements applied to the installation of the freeze seal provide a high degree of confidence that the seal will be reliable. In addition, mockup testing was performed which validated the installation procedures, the

proposed contingencies and the reliability of the freeze seal under conditions that meet or exceed those expected to be encountered in the plant. These considerations ensure that the reliability of the reactor coolant pressure boundary will be maintained at a level comparable to that of the code for the duration of this repair evolution and the margin of safety is not reduced.

Safety Evaluation Number: SE-98-038

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800035

Title: Route New Cables For The Unit 2 RAT (Transformer 22) and UAT (Transformer 21) Current Transformer (CT) Neutral Ground Detection Circuits

DESCRIPTION:

Each cable will feed a single CT for each winding (X&Y) of the affected transformers. Cables routed between the UAT and RAT control panels and a local junction box will be in separate conduits. Cables running between the local junction box and the auxiliary electric room UAT/RAT Protective Relay Panel 902-29 will be routed in a combination of cable tray and conduit on the exterior walls of the reactor and turbine buildings. The existing cables associated with these CT circuits will be abandoned in place. The cables will enter the Auxiliary Equipment Room from the Computer Room through an existing penetration in the Service Building wall. The additional work associated with this design change (balance of the conduit/raceway installation) will be evaluated separately under SE-98-015.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the configuration and function of the UAT/RAT neutral ground detection circuitry remains unchanged by this modification, providing the same level of fault protection as before. A failure of any or all current transformer cables will not cause the UAT/RAT neutral ground detection relay to trip Auxiliary AC Power. Changing the routing of the affected cables to remove them from undesirable Fire Zones increases the probability of clearing a fault on the 4kV buses during postulated fires. This modification does not affect the function of any accident mitigation equipment important to safety and therefore cannot increase the consequences of a malfunction of that equipment.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the function of these ground detection circuits is not changed by this modification. The amount of protection provided to the transformers remain the same. This change routes the new cables in such a way as to avoid fire areas TB-I and TB-III. Although the new cable route has all the Unit 2 UAT/RAT current transformer cables in the

same raceway this is acceptable based on the BOP classification of the cables. Therefore, this modification will not adversely impact systems or functions in such a way as to create the possibility for an accident or malfunction of a type different from those evaluated in the SAR.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition. See section Tech. Spec. 3/4.8.D.

Safety Evaluation Number: SE-98-039

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-049

Title: Removes Reference to Microwave Party Line Phones (Section 9.5.2.2.2)

DESCRIPTION:

This UFSAR Change removes references to the microwave party line phones (Blue Phones) that were mentioned as a communication link to other ComEd facilities. The microwave phone system is outdated and parts are no longer obtainable to repair the system.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the phones that are being removed are not used for normal plant operation nor do they have any interaction with any safety systems. The emergency staff will use other existing ComEd communication systems or commercial phones to perform the same voice communications that were possible via the party line circuits.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the UFSAR does not address emergency response facility communication failures. They are not important to the safe operation of the plant or to any accident that has been analyzed. Removal of the party line circuits does not create the possibility of an accident or different malfunction already evaluated in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-98-041

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: QCTS 0300-01

Title: Automatic Blowdown Logic Test

DESCRIPTION:

1. Changing the order of steps so that a section of the logic is tested as a whole.
2. Adding steps to install finger blocks on relays 1430-105A(B) and 1430-106A(B) to prevent valve movement.
3. Adding a Limitation and Action requirement stating what to do if an accidental ESF or relay actuation occurs and what accidental ESF actuations could result from this test.
4. Adding notes before each section to let personnel know what panels will be worked in and what systems could be affected.
5. Adding notes to clarify timing steps, what is being timed and when timer starts and ends.
6. Adding mode restriction to Prerequisites.
7. Adding a Prerequisite to verify that Tech Spec 3.5.B is met.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because adding the finger blocks to the relays will not increase the probability of a piping break inside of containment. The finger blocks will not affect any piping. The 2 loops of LPCI will still be available to keep the core covered. Also only one channel will be affected at a time, so the Core spray valves would still be able to receive a signal from the opposite channel. Also the operators will still have remote control from the Control Room to open and/or close the valves.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the finger blocks will affect the automatic opening and closing of the core spray valves only. The Technical Specifications allows for both loops of Core Spray to be inoperable with both loops of LPCI operable during operational modes 4 and 5.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because LCO for Tech Spec 3.5.B allows both core spray subsystems to be inoperable with both LPCI subsystem loops operable for OPERATIONAL MODE(s) 4 and 5.

Procedure directs Operations to verify requirements of Tech Spec 3.5.B for ECCS operability will be met when the finger blocks are installed.

Safety Evaluation Number: SE-98-042

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800117

Title: EDG TD2 Setpoint Change

DESCRIPTION:

This setpoint change changes the allowable range of the EDG TD2 time delay relay to 10 – 16.5 seconds in order to allow the relay to operate within its designed band and to prevent the unnecessary declaration of inoperable for the EDG.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the EDG is not an initiator for any accident. The change in the setting of the TD2 relay will not affect the ability of the EDG to mitigate the consequences of an accident.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change of the EDG TD2 setting does not introduce a new accident or failure mode for the equipment because the operation and function of the equipment are unchanged.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the setpoint change does not change any parameters upon which the Tech Specs are based.

Safety Evaluation Number: SE-98-043

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCN 001708M, DCP 9800115

Title: HPCI Gland Seal Condenser Piping Supports for Unit 1

DESCRIPTION:

This Design Change includes upgrade of existing Pipe Supports and addition of new support to upgrade the existing piping system to meet the requirements for Safety Related/Class I design.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this upgrade of piping system will eliminate the design basis seismic event as a potential failure mode of the system which reduces the probability.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because there are no new failure modes introduced by this design change. The purpose of this design change is to increase the reliability of HPCI Gland Seal Condenser.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-044

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCN 001709M, DCP 9800116

Title: HPCI Gland Seal Condenser Piping Supports for Unit 2

DESCRIPTION:

This Design Change includes upgrade of existing Pipe Supports and addition of new support to upgrade the existing piping system to meet the requirements for Safety Related/Class I design.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this upgrade of piping system will eliminate the design basis seismic event as a potential failure mode of the system which reduces the probability.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because there are no new failure modes introduced by this design change. The purpose of this design change is to increase the reliability of HPCI Gland Seal Condenser.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-045

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Revision to Appendix R Safe Shutdown Report, CRN 98-02 (FPR Volume 2)

DESCRIPTION:

A safe shutdown analysis is required (10 CFR 50.48) to assure that the plant can achieve and maintain cold shutdown regardless of any single fire. The systems and process credited for safe shutdown in the revised analysis differ from those previously credited. These changes have been made to: 1) take advantage of design features which have been incorporated since the previous analysis, 2) reduce the number of manual actions required, 3) limit inter-unit dependencies, 4) simplify the safe shutdown process, 5) reformat and reorganize the analysis report to improve the presentation of the analysis results, and 6) maximize operator efficiencies in actions performed. This revision replaces the previous safe shutdown report and provides a new Appendix R safe shutdown design basis. The revision includes editorial, organizational, and format changes. The revision also reflects a new safe shutdown analysis and includes a number of technical changes.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the term "equipment important to safety", in the context of this evaluation, is the equipment which is credited for safe shutdown purposes. Such equipment includes equipment which provides a direct safe shutdown function and support equipment which assures that the safe shutdown function can be accomplished. The revision does not remove or modify any regulatory requirements for the specified. Selection of alternate methods/equipment that meet the design requirements does not increase the consequences of malfunction of required safety equipment.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changes addressed in this evaluation are those associated with the revised safe shutdown analysis. The changes include both editorial changes and technical changes. The technical changes are: 1) Changes in the assumptions, 2) changes in fire areas, 3) changes in design, 4) utilization of systems and equipment not previously used, 4) changes in the use of systems or equipment previously used, 5) changes in how systems or equipment are operated, 6) changes in repair activities required, and changes addressed in other safety evaluations. All of the changes described have failure modes which are bounded by previous analyses; no new types of failures or accidents are introduced.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-98-048

Type of Safety Evaluation: Temporary Alteration

Evaluation Reference Number: DCP 9800013 and 9800014

Title: Battery Room Temporary Heater Addition

DESCRIPTION:

Temporary installation of a heater/fan unit into the Unit 1 and 2 battery rooms to pull air from near the floor and heat it. The heater will not exceed 20 kw and will be thermostatically controlled. The heater is a 480 V heat wave salamander type unit. The power for this heater will come from available 480 V receptacles. This activity is in accordance with QCOS 6900-1 requirements for corrective measures on out of band battery room temperatures.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the temporary heater is separated and isolated from affecting the off-site power source by breakers, fuses, and transformers and is totally independent from on-site auxiliary power sources. The heater placement was reviewed and was determined there was no adverse seismic interaction, securing of this heater was not required. Operations periodic confirms this temporary heater is in proper operation and location.

The affects this heater might have with hydrogen build up in the room was evaluated as not being a concern due to its location and the low concentrations of hydrogen. Operations is directed to turn off this heater if normal battery room ventilation is off or failed. The potential buildup of hydrogen would not ignite in this heater when it is shutdown.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the addition of this portable heater does not create a failure of a different kind as other electric components in the room could spark and fail. This heater is on the floor and away from where any hydrogen would collect. The probability is really low.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because Electrolyte Temperature is greater than 60 degrees F per TS 3 /4.9.2.C. This margin is supported not reduced by this modification. The heater assists in maintaining the Battery Room temperature per site procedure QCOS 6900-01.

Safety Evaluation Number: SE-98-049

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCR 980047 and DCR 980048; UFSAR-97-R5-037

Title: Change MOV 1(2)-1001-18A(B) From Normally Closed To Normally Open

DESCRIPTION:

DCRs 980047 (Unit 1) and 980048 (Unit 2) are being issued to change the configuration of motor operated valves MO 1(2)-1001-18A and B from "normally closed" to "normally open" on P&IDs M-39-1 and M-81-1. The valves' present control circuit configuration will not be altered. This proposed change does not require any physical work for implementation; i.e., the valves only need repositioning which can be accomplished from the control room or locally at the valves. The applicable procedure changes will be evaluated separately. The proposed change is being implemented due to 10CFR50 Appendix R fire concerns. Changing the MO 1(2)-1001-18A and B valves' position to normally open will reduce the probability of damaging the residual heat removal (RHR) pumps due to a failure of the minimum flow valves to open as a result of an Appendix R event. The UFSAR has been revised to reflect the valves' position on Table 6.3-13 Sheet 2.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased based on changing the normal valve position of MOV 1(2)-1001-18A(B). There is no physical change to the valves or their circuitry so the probability of the valves malfunctioning is not changed. Changing the normal valve position to open reduces the probability of RHR pump malfunction due to the minimum flow valve failure to open from a normally closed position.

An analysis (UFSAR section 6.3.3.2.4) has evaluated the impact of having one of the minimum flow valves failing to close when desired, thus bypassing water to the torus/suppression pool. The analysis concludes that the minimum flow valve failure to close is bounded by the LOCA analysis. If the valve fails closed, the pumps could overheat due to a lack of minimum flow path. This has the same consequences as the existing normally closed valve's failure to open. Thus, the consequences have not changed.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change to MOVs 1(2)-1001-18A and B normal position has no adverse impact on the ECCS/RHR system, containment system or reactor systems to the extent of creating an accident or malfunction different from those evaluated in the SAR. There are no new interactions or functions created so there is no possibility of creating an accident or malfunction of a different type than already evaluated.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety. However, all changes to the parameters or conditions used to establish the Technical Specification requirements for 6.8.A.7 Fire Protection Program are in a conservative direction. Therefore, the actual acceptance limit need not be identified to determine that no reduction in margin of safety exists. This change provides additional assurance of pump protection during an Appendix R event. A safety evaluation of the revised Safe Shutdown Analysis has evaluated the need for Technical Specification changes as a result of Fire Protection Program revisions including the normal position of the RHR minimum flow valves.

Safety Evaluation Number SE-98-050

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800025

Title: Install One Hour Rated Fire Wrap For 125Vdc UAT/Rat Tripping Circuits

DESCRIPTION:

The proposed change will install a 1 hour-rated fire barrier system to protect existing cables 1230, 1243, 1254 and 1267 in the Turbine Building cable tunnel area. The fire barrier system consists of an approved fire wrap material applied over the conduits which contain these cables. All conduits to be fire wrapped contain only the subject cables. There are no functional/circuit logic changes associated with the proposed change. The proposed change is required to ensure that cables 1230, 1243, 1254 and 1267 remain undamaged during a postulated Appendix R fire in the Turbine Building cable tunnel area. These control cables provide the 125VDC tripping circuit and are necessary to ensure the electrically-actuated opening of 345kV switchyard Oil Circuit Breakers (OCBs) for faults on the electrical distribution system downstream of the UAT and RAT for each unit.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the addition of the proposed fire wrap has been analyzed and will not create any adverse effects either structurally or electrically during normal operation or during any postulated event. The proposed fire wrap

represents a passive feature which does not create any operational interface with any SSC. The electrical function of the existing cables is not changed. The reliability of the UAT, RAT, OCBs or the standby power supply is not decreased. Since the application of the fire wrap on the subject cables does not alter this function and there are no other interactions created, the consequences of a malfunction of any equipment important to safety are not increased.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the fire wrap improves reliability of OCB tripping functions during a specific analyzed event (i.e. common enclosure Appendix R fire event). Reliability of the UAT, RAT, and OCBs during normal and accident conditions remains the same. Additionally, the standby power supply is not impacted in any way by this change. The standby supply is designed to fully compensate for the loss of the normal supply for all modes of operation as previously evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-98-051

Type of Safety Evaluation: Plant Change

Evaluation Reference Number: DCN 001714M

Title: Coat RHR Intake Bay Separation Screens with Anti-Foulant Coating

DESCRIPTION:

Coat the stainless steel structure and screen mesh of the RHR Intake Separation screens with anti-foulant-coating to minimize/prevent biological growth (zebra mussels, algae, etc.). The RHR Service Water Intake Bay is located in the center of the crib house. The triangular shaped bay is located such that a 5-foot wide inlet is available from either the 1A Circ Pump Inlet Bay or the 2C Circ Pump Inlet Bay. Six individual screens are stacked in each opening from the bottom at an elevation of 552' 6" to the crib house floor elevation of 595'. The flow path from the plant intake to the systems served is as follows: Mississippi River, log boom (to block floating debris), bar racks (metal bars on 2.5" centers, cleaned by manually operated trash rake), traveling screens with a 3/8" steel screen (cleaned by water spray initiated by screen D/P), and finally the RHR Service Water Intake Bay Separation Screens.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the coating to be used is specifically designed for use in protecting metal in a marine environment. The coating has been demonstrated to be

effective in reducing bio-fouling. Calculation QDC-1000-M-0337 Rev 1 has been performed to demonstrate that the loss of flow area to the coating will not degrade the performance of the components served. By reducing the incidence of biofouling the coating will increase the available open area of the screen over the service cycle of the screens between cleanings and inspections.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the coating will not degrade the screens since the coating is specifically designed for the protection of metal in marine environments. Screen blockage is an existing failure mechanism and is being made less likely by the application. Separation of the coating would release paint fragments no different from debris already present in the river and smaller than the 3/8" screen openings.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the application of the coating will increase the open screen area available to support the systems served over the service cycle of the screens. Calculation QDC-1000-M-0337, Rev 1 demonstrates that the decrease in clean screen flow area will not affect the performance of the systems served.

Safety Evaluation Number: SE-98-052

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-043

Title: Revise UFSAR Table 3.11-1 To Incorporate Calculated Post-LOCA Reactor Building Temperatures

DESCRIPTION:

Revise UFSAR Table 3.11-1 to incorporate calculated Post-LOCA Reactor Building Temperatures.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because there are no physical or functional changes being made as a result of this change. The instrument evaluations and EQ calculation have verified that there was sufficient margin to incorporate the increased temperature. The required electrical components function as required in the new environmental conditions after the thermal overloads were replaced.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the purpose of this change is to revise the Post-LOCA Maximum Reactor Building temperatures that

have increased based upon the recently performed evaluation. These temperatures are the direct result of the DBA-LOCA and do not affect any other accident. This change does not affect normal plant operation or operation during any other design basis transient or accident.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-055

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: QCARP 0000-01, 0100-01, 0200-01, 0300-01, 0400-01, 0500-01, 0600-01, 0700-01, 0800-01

Title: Quad Cities Appendix R Procedures

DESCRIPTION:

Address the affect on the facility of the above referenced proposed procedures as compensatory measures to be implemented only during plant conditions of an Appendix R fire.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because each of the compensatory actions required to safely shut down the plant in the event of an Appendix R fire were determined to provide the necessary capabilities to shutdown and maintain shutdown the plant in the event of a DBA fire.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because each of the compensatory actions required to safely shut down the plant in the event of an Appendix R fire were determined not to create an accident or malfunction of a different type than evaluated previously in the SAR.
3. The margin of safety, as described in the basis for any Technical Specification, is not reduced because the proposed changes do not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-056

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: QCTS 0310-01, Revision 3

Title: Unit One Emergency Core Cooling System Simulated Automatic Actuation and Diesel Generators Auto-Start Surveillance

DESCRIPTION:

This revision to QCTS 0310-01 incorporates the current TS surveillance requirement 4.9.A.8.b, includes testing of all EDG auto-starts, incorporates lessons learned from previous testing, and makes various editorial and clarifying changes.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this procedure tests the response of the various systems required to mitigate the consequences of a LOOP and/or LOCA. Any abnormal configurations required by the test are verified to be returned to normal configuration at the completion of testing.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because various configuration changes are made in order to simulate operation conditions at the time of the LOOP/LOCA. These changes are verified to be returned to normal at the completion of testing. Additionally, only one division of the affected systems are tested at a time.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this procedure change does not change any parameters upon which the Tech Specs are based.

Safety Evaluation Number: SE-98-057

Type of Safety Evaluation: Design Change; UFSAR Revision

Evaluation Reference Number: DCPs 9800149, 9800150, DCNs 01718M, 01715M; UFSAR-97-R5-045

Title: Restore CCST A(B) to Meet UFSAR Requirements

DESCRIPTION:

This design change will alter the standpipes inside of the existing Contaminated Condensate Storage Tanks (CCSTs) and will also alter the position of the tank low level switches 0-3341-72A(B). The existing 16-inch NPS (nominal pipe size) Condensate Makeup, and 8-inch NPS Condensate Transfer standpipes, will be raised (from a level of approximately 6' 2") to a level (approximately 9' 5" from tank bottom) that ensures that 90,000 gallons of useable tank volume is reserved for the High Pressure Coolant Injection (HPCI), Reactor Core Isolation Cooling (RCIC) and Safe Shutdown Makeup Pump (SSMP) systems. The existing configuration provides a 90,000 gallon volume from the bottom of the tank to the top of the standpipes; however, it fails to account for the unusable volume at and below the RCIC/HPCI nozzles and vortex effects.

The existing 24-inch NPS Residual Heat Removal (RHR)/Core Spray (CS) system standpipe will be cutoff at the existing nozzle elevation. The tank low level switches are located on 10" NPS standpipes that are external to the CCSTs and are located inside the Unit 1 trackway. The location of the low level switches will be raised such that the level switches will provide an alarm in the control room when water level in the tank drops below 12'. The level switch provides one of the inputs, specifically a low level input, to the control room alarm for CCST hi/lo level on the 912-1. The design function of the alarm is to alert Operators to a high or low level condition in the tank. The existing level switches are Magnetrol switches that must be physically located at the required setpoint, therefore the existing piping and valves for the switches will also be raised, and the electrical cables will be modified as required to support raising the switches.

Currently, the UFSAR references a tank level of 9.5 ft. required in the CCSTs to ensure that the HPCI/RCIC discharge pipes are kept filled. Currently, QOS 0005-01 has been updated to require Operators to verify that CCST level is at or above 12 ft. to support this function. This level requirement has been verified as documented in calculation no. QDC-1400-M-0585, Rev. 1. As part of this design change, the UFSAR will be updated to reflect this value.

PIF Q1998-01339 identified that due to piping configuration and vortex considerations the existing standpipes in the CCSTs do not provide the required reserve volume to support operation of the HPCI, RCIC and SSMP systems. Per the UFSAR, in operational modes 1, 2 and 3, 90,000 gallons of water must be 'available' to support operation of these systems. With the standpipes raised, the subject level switches must be raised accordingly.

The new level switch elevation will continue to fulfill the primary function of the level switch, which is to alert Operators to a low level condition in the tank. The level switch provides an alarm in the control room to accomplish this function. The new setpoint will provide an alarm when water level inside of the tank is at or below 12 ft. This setpoint provides an additional advantage in that it also reflects the tank level required to maintain the HPCI/RCIC keep fill. Currently the HPCI/RCIC keep fill is maintained through verification of CCST level during Operator rounds. Calculation No. QDC-1400-M-0585, Rev. 1 has verified that a minimum CCST tank water level of 12 ft. is required to support HPCI/RCIC keep fill requirements.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because neither the CCSTs, associated piping, or the CCST low level switches function as initiators for any of the applicable design basis accidents/transients. All material and installations performed were consistent with the original design requirements for the non-safety-related tank and the pressure switches/piping. Each RHR/Core Spray flow path from the CCSTs to the respective pumps is protected by two locked closed valves, one of which is within the safety-related boundary of the RHR/Core Spray system and the other which is outside of the safety-related boundary but inside of the bounds of the seismic analysis for the respective RHR/Core Spray suction piping. This was considered to be adequate protection to allow this standpipe to be cut. Therefore, it was concluded that the design change does not increase the probability of an accident or malfunction of equipment important to safety in the Safety Analysis Report. Consequences of an accident or malfunction of equipment important to safety in the Safety Analysis Report are not increased because the modified configuration ensures that the reserve volume required in the UFSAR (90,000 gallons) for HPCI, RCIC and SSMP system operation is met and the systems are capable of meeting all operating parameters required to mitigate accidents/transients as specified in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change to the Condensate Makeup/Condensate Transfer standpipes merely raises the existing standpipes. It does not alter the operation of the Condensate Makeup or Condensate Transfer systems or any of the systems they support. The change to the RHR/Core Spray suction pipe, i.e. the removal of the standpipe, does not functionally alter operation of the RHR/Core Spray suction piping. It does provide an increased volume of water available to RHR/Core Spray under emergency conditions or under conditions of low suppression pool water level. The relocation of the low level switch will continue to provide adequate warning to the control room that CCST levels are approaching the top of the standpipes. None of these changes will adversely impact any systems or functions so as to create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because Technical Specification 3/4.5.C states that if during Modes 4 and 5 suppression chamber level is less than 7 ft., among other items, the CCST shall contain $\geq 140,000$ available gallons of water. This is consistent with Technical Specification 3/4.5.B which requires CCST to contain 140,000 available gallons of water for RHR (LPCI) and Core Spray operability under these conditions. This is also in accordance with the SER for the TSUP upgrade (letter to D. L. Farrar of NRC dated December 27, 1995) which takes credit for 140,000 available gallons under these conditions and provides the basis for NRC acceptance of the TSUP upgrade. This Design Change does not alter the Technical Specification above

conditions. However, the cutting of the RHR/Core Spray standpipe does alter the basis for Technical Specification 3/4.5.C in that the RHR/Core Spray suction is no longer uncovered at the 90,000 gallon level. Lowering the RHR/Core Spray suction to a lower level in the tank makes available a much greater tank volume to the RHR/Core Spray systems under these conditions. This will remain in compliance with the TSUP SER 140,000 gallon minimum requirement. This design change also allows for greater margin over the 140,000 gallon value at the discretion of Operations under such conditions due to the availability of a larger tank volume. The basis should be altered to reference only the 140,000 gallon requirement. As previously discussed, the two normally locked closed isolation valves in each RHR/Core Spray suction flow path from the CCSTs provide a level of assurance that the 90,000 gallon reserve for HPCI, RCIC and SSMP is maintained that is equivalent to the original standpipe. Based upon the above, it is concluded that this design change does not alter the actual Technical Specification requirements and that the change to the Technical Specification basis does not reduce the margin of safety.

Safety Evaluation Number: SE-98-058

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCN 001684M, DCP 9700316

Title: Replace 3-Way Manifold Valve For LITS 1-0263-59B

DESCRIPTION:

This Design Change replaces the 1-0263-59B valve. The existing valve is a Yarway Model 8112; the replacement valve is an Anderson-Greenwood Model M1HS-4-N.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because no new components are being added and no components are deleted. This is only a replacement.

There are no new failure modes introduced by this Design Change. The valve and the associated Level Indicator Transmission Switch do not initiate any accident.

The replacement valve has the same properties and has been evaluated to be like-for-like. Therefore, the system will respond the same as before.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no new functions are created nor removed by the Design Change. The replacement valve has been evaluated and found to be like-for-like replacement. Implementation of

the design change will not affect the operations of the associated Level Indicator Transmission Switch.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Design Change does not create a new function or remove an existing function. The replacement valve has been evaluated and found to be like-for-like replacement. Implementation of the design change will not affect the operations of the associated Level Indicator Transmission Switch.

Safety Evaluation Number: SE-98-059

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-048

Title: Removes Incorrect Emergency Action Level (EAL) References

DESCRIPTION:

UFSAR Section 3.7.4 was revised to remove incorrect Emergency Action Level (EAL) references. The current wording in the last sentence of 3.7-47 was "The Generating Stations Emergency Plan (GSEP) for Quad Cities defines three emergency action levels, depending upon the earthquake magnitude recorded by the seismograph: A. Unusual Event (earthquake below OBE magnitude), B. Alert (OBE magnitude earthquake), C. Site Emergency (SSE magnitude earthquake)."

The UFSAR as changed now reads "The Generating Stations Emergency Plan (GSEP) for Quad Cities defines emergency action levels, depending upon the earthquake magnitude recorded by the seismograph."

The Generating Station Emergency Plan was revised with NRC approval in 1993 to incorporate NUMARC NESP 007 based EALs. The previous EALs which were based on NUREG 0654, which had three emergency classification levels for an earthquake based on the magnitude of the earthquake (Unusual Event, Alert, Site Emergency). The NUMARC EALs on which the GSEP is now based contain only two emergency classification levels for an earthquake based on magnitude, Unusual Event and Alert. It appears the GSEP was changed without changing the UFSAR since the 50.59 screening for implementation of these EALs said the UFSAR was not affected. The intent of this change was to put the emergency action levels in one document, the GSEP Quad Cities Annex.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because plant system operation is not dependent on emergency action level classification. Therefore, changing emergency action level classification for an earthquake will have no impact on how the plant is operated or how systems will react. Operation of plant equipment is not dependent on or

directed by emergency classification; therefore, consequences of the accident (offsite dose) are not increased.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this UFSAR change does not direct the operation or maintenance of any plant equipment; therefore, new failure modes are not introduced.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-98-061

Type of Safety Evaluation: Design Change

Evaluation Reference Number: M04-1-91-013B (DCP 9100028), M04-2-91-013B (DCP 9100059)

Title: HPCI Turbine Exhaust Sparger and External Vacuum Breaker Line

DESCRIPTION:

This is a supplemental 50.59 Safety Evaluation to the original 50.59 Safety Evaluation for modifications that have been installed at Quad Cities Units 1 and 2 on the HPCI systems. This evaluation is for the logic changes associated with the HPCI steam supply / containment isolation valves (MO-1(2)-2301-4 and MO-1(2)-2301-5). The logic changes included separation of the isolation logic for the inboard and outboard containment isolation valves. The additional closure time for the alternating current (AC) inboard containment isolation valve MO-1(2)-2301-4 with a loss of offsite power event concurrent with HPCI steamline break and a failure of the direct current (DC) outboard containment isolation valve MO-1(2)-2301-5 will be addressed. There are no physical plant changes being made as a result of this supplemental 50.59 Safety Evaluation.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the installed modification provided an upgrade to the Group IV logic to incorporate improved design criteria (than what was utilized with original plant construction) by providing additional circuit separation, improved seal-in features, and more secure reset controls. The installed changes make malfunction of the Group IV circuitry less likely.

The HPCI system has Automatic Depressurization System (ADS) and low pressure Emergency Core Cooling Systems as a backup. The Primary Containment Isolation (PCI) System requires remote or local manual

manipulation of valves, if the PCI system should fail. The availability of the backup equipment to mitigate the consequences of an equipment failure has not changed as a result of the installed modification. In addition, the consequences of a malfunction of HPCI steam supply / containment isolation valves do not change.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this is a supplemental 50.59 Safety Evaluation for the HPCI Sparger modifications installed at Quad Cities Units 1 and 2.

The HPCI steam supply isolation valve closure time affects the steam mass release through the break area. The environmental zone maps, Specification N202 Rev. 7, for the HPCI room (Zone 7) indicates the Main Steam Line Break conditions (Temperature and Pressure) were applied to the HPCI Room and a unique pressure / temperature calculation for the HPCI Room does not exist. The zone maps for the Torus Area (Zone 2) and other areas communicating with the Torus Area calculation QC-030-M-001 Rev. 2 is referenced for pressure and temperature affects. This calculation uses a 9 second delay time, 13 seconds for Emergency Diesel Generator power to buses and a 50 second valve stroke time for a total isolation time of 72 seconds. The calculation is based on a HPCI steamline break concurrent with a Loss of Offsite Power and failure of the direct current (DC) outboard isolation valve (MO-1(2)-2301-5) to close. Therefore, the design basis calculation uses a conservative HPCI steam supply isolation valve closure time to calculate pressure and temperature affects.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-063

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: QCAP 1500-02

Title: Administrative Requirements for Inoperable Safe Shutdown Equipment

DESCRIPTION:

Implementation of a revised safe shutdown method which uses a different set of equipment. This equipment is listed in Tables 3.3-1, 3.3-2 of the SSR. The current ATR of 67 days for all safe shutdown equipment is being reduced and affiliated with safe shutdown systems or combination of systems. Revision to procedure QCAP 1500-02 to:

- 1.) Assure that the administrative & technical requirements (QTR) for inoperable safe shutdown equipment is consistent with the revised Safe Shutdown Report (SSR).
- 2.) Delete the additional compensatory measures that were implemented to resolve deficiencies in the SSR.

- 3.) Delete the tables of safe shutdown equipment and refer to the safe shutdown report for the equipment listing.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this procedure is used to administratively control the duration that a safe shutdown system or combination of systems can remain inoperable. The reduction in the maximum duration of time that a piece of safe shutdown equipment is inoperable has no affect on equipment malfunction or the consequences thereof.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this procedure change reduces the maximum duration of time that a piece of safe shutdown equipment can remain inoperable. The reduction from 67 days to a maximum of 30 days for certain components will be a more restrictive requirement. This procedure is implemented after the piece of equipment malfunctions and does not create an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-98-064

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: QTS 0170-06, Revision 10

Title: Unit 1 Functional Test of the Second Level Undervoltage

DESCRIPTION:

Revision 10 to QTS 0170-06 includes the following changes: 1) adding steps to inhibit the EDG from closing into the 4kV bus and applicable LCO requirements; 2) adding steps to ensure contacts are tested in accordance with Generic Letter 96-01 requirements; 3) incorporating PORC comments and editorial changes.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the surveillance changes do not impact the integrity of the reactor coolant boundary and appropriate test switches, jumpers, and finger

blocks are used to prevent tripping of breakers to equipment required for operation. This surveillance is performed in modes 4, 5 or no fuel in vessel. All required equipment for the mitigation of an accident is verified to be available prior to performance.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because all manipulation of equipment is verified to be returned to normal following completion of the surveillance. The output breaker of the EDG is placed in pull-to-lock which will ensure that the EDG is protected from an overload in the event of a LOOP. Additionally, only one division of electrical power is tested at a time ensuring that one division is always available for powering plant equipment.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the surveillance changes do not impact any of the parameters upon which the Tech Specs are based.

Safety Evaluation Number: SE-98-065

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-050

Title: Control Rod Drive Insert and Withdraw Speed

DESCRIPTION:

Change the Control Rod Drive (CRD) insert and withdraw speed described in the UFSAR from 3 in/sec to 3 in/sec \pm 20%. This change is consistent with the original system design specification.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this change aligned the UFSAR description of CRD insert and withdraw speed with the original system design specification. Since there was no physical change to plant equipment and the equipment will be operated in a manner consistent with its design specification, the probability of an accident or malfunction does not increase. CRD speed is not used as a parameter for any accident or transient; therefore, the consequences are unchanged.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because there was no physical change to the system. The addition of a tolerance does not affect any failure mode and is less severe than the UFSAR-stated consequences of misadjusted speed control valve.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because CRD insert withdraw speed is not addressed in the Technical Specifications.

Safety Evaluation Number: SE-98-066

Type of Safety Evaluation: Procedure Change

Evaluation Reference Number: QCAP 1500-02

Title: Administrative Requirements for Inoperable Safe Shutdown Equipment

DESCRIPTION:

Implementation of a revised safe shutdown method which uses a different set of equipment. This equipment is listed in Tables 3.3-1, 3.3-2 of the SSR. The current ATR of 67 days for all safe shutdown equipment is being reduced and affiliated with safe shutdown systems or combination of systems. The revision to procedure QCAP 1500-02 updates the Administrative Technical Requirements (ATR) for inoperability of the safe shutdown make-up pump from 30 to 14 days and adds the 125 VDC battery carts to the list of equipment with a 14-day ATR. In addition Appendix A of the safe shutdown report will be added as a reference. This will give the user additional guidance in determining the required equipment for safe shutdown.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this procedure is used to administratively control the duration that a safe shutdown system or combination of systems can remain inoperable. The reduction in the maximum duration of time that a piece of safe shutdown equipment is inoperable has no affect on equipment malfunction or the consequences thereof.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this procedure change reduces the maximum duration of time that a piece of safe shutdown equipment can remain inoperable. The reduction from 30 days to 14 days for the SSMP and adding the 125 Vdc battery carts at 14 days is a more restrictive requirement. This procedure is implemented after the piece of equipment malfunctions and does not create an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SE-98-067

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Update of the Appendix R Safe Shutdown Report, (Fire Protection Report, Vol 2) to incorporate information supplied in NDIT #QDC-98-135 & 135 relating to the accessibility of the HPCI 1(2) 2301-8 & 9 valves for post-fire manual actions.

DESCRIPTION:

PIF #98-2156 identified discrepancies between the Appendix R SSR and the analysis provided by the referenced NDITs. The purpose of this change is to incorporate the findings of the NDITs into the SSR and delete the incorrect information.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed SSR change will more clearly identify the accessibility of the referenced valves for the required post-fire manual actions associated with SSD. There is no change to the function or SSD design requirements of these valves. Therefore, there is no increase in the probability or consequences of a malfunction of any equipment important to safety.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this change to the SSR will incorporate information about the accessibility of SSD equipment post-fire that is necessary to be operated to provide a required SSD function. There is no change in the location, SSD or overall function of the specified equipment. The change provides clarifying information only. No changes to the required action associated with SSD is made. There is no possibility of a new accident being created by this SSR change.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters on which the Technical Specifications are based.

Safety Evaluation Number: SE-98-068

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-052

Title: Revise UFSAR Sections 2.4.4 and 9.2.5 to Clarify UHS Issues

DESCRIPTION:

Revise UFSAR Section 2.4.4 and 9.2.5 to:

- 1) Clarify the description of Lock and Dam 14 failures
- 2) Description of analysis
- 3) Devise evacuation routes
- 4) Clarify volume of heat sink
- 5) State that the event does not happen in combination with other DBA events

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because these actions do not affect the probability of a Dam failure. There are no offsite dose consequences associated with a Dam failure. The UHS provides sufficient cooling for both units. The UFSAR change enhances the station's response to a Dam failure. RHR/DGCW systems would remain within design basis allowables. RHRSW/DGCWP vaults would experience slightly higher temperatures but equipment in the room has been evaluated and accepted.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because Lock and Dam failure is already described in the SAR. These changes enhance station's response to this event. No additional failures are created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-069

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-042

Title: Changes to HPCI Logic Diagrams

DESCRIPTION:

This safety evaluation is evaluating 14 changes to Figures 6.3-15, 6.3-16, 6.3-17 and Table 6.3-6 of the UFSAR. These changes are to correct the HPCI subsystem logic as shown on these figures or to improve the readability of the figures. These changes include addition/deletion of alarms, correction of notes on the functional block diagrams, change to the logic for the HPCI Gland Condenser Blower and change to the description of how the 2301-4 valve throttles. The change to Table 6.3-6 is to correct the turbine speed range listed in the table for the HPCI subsystem.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because these changes do not affect the initiators of any event and do not actually make changes to equipment that could cause a malfunction of any equipment important to safety. Some of these changes describe methods of operation (i.e. throttling of the 2301-4 valve) or alarms that actually make an event or a failure of equipment important to safety less likely.

The addition/deletion of alarms, correction of notes on the functional block diagrams, change to the logic for the initiation of the HPCI Gland Seal Condenser Blower, change to the description of how the 2301-4 valve throttles and change to the HPCI turbine speed range cannot increase the consequences of a malfunction or an event. This is because these changes do not add new equipment or change the way that the HPCI operates. The HPCI subsystem will still respond to its design basis events and mitigate the consequences of these events.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because seven of the fourteen changes to the UFSAR evaluated under this safety evaluation are descriptive in nature. These changes relabel components or remove unnecessary notes from the HPCI functional block diagrams contained in the UFSAR. They do not affect the way that any SSC is operated and since they are only descriptive in nature they do not present the possibility of any new malfunctions or accidents.

Summaries of the rationale used to answer these questions for the other seven UFSAR changes are below.

1. The change in the description of the 2301-4 valve to a throttle open and seal in close valve does not change plant operation. This valve needs to be throttle opened in order to slowly pressurize the HPCI steam line when unisolating it as described in section 6.3.2.3.2 of the UFSAR. This does not introduce any new failure modes or affect any equipment failures since the 2301-4 valve is normally open when the subsystem is in the stand-by mode.
2. The change to describe additional alarms on Figure 6.3-16 is not likely to lead to inappropriate actions by operators due to redundant indications if the alarms fail. Since these are just alarm functions, a failure of any one of these would not add a new failure mode for HPCI equipment that is required to operate to mitigate an accident.
3. The change to the Gland Seal Condenser Blower logic on Figure 6.3-16 does not introduce any new failure modes. If the Gland Seal Condenser Blower continues to operate when the HPCI subsystem is isolated, this is not a new failure. The HPCI subsystem would already be unavailable due to the isolation.

4. The change to remove the alarm for low flow to the Gland Seal Condenser in Table 1 on Figure 6.3-16 will not affect plant operation. If there were low cooling water flow, the operators would be alerted to this by redundant indications. Since the equipment to provide the alarm is not installed, this change cannot affect failure modes or introduce new ones.
 5. The removal of the local turning gear reset pushbutton from Figure 6.3-17 will not affect plant operation. Since this pushbutton is not used, this change cannot affect any failure mode or introduce new ones.
 6. The change to Figure 6.3-17 to remove the local control switch for the Gland Seal Cooling Water Pump does not affect plant operation, failure modes or introduce a new type of accident. This equipment is not installed and the Cooling Water Pump is not used when HPCI performs its design function, therefore this change does not affect any failure mode and does not introduce any new ones.
 7. The change to Table 6.3-6 to revise the HPCI turbine speed range also does not affect plant operation. This turbine speed range is still adequate for the turbine to perform its design function of providing core cooling from 150 psig to 1120 psig reactor pressure. No new failure modes are introduced.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because these changes do not affect any Technical Specifications basis parameters.

Safety Evaluation Number: SE-98-071

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: UFSAR-97-R5-053

Title: Update The UFSAR To Clarify Sections 6.3.2.3.3, Table 6.3-2 And Table 6.3-6

DESCRIPTION:

UFSAR change 97-R5-053 accomplishes the following:

1. Clarifies the discussion on the operational interlock between the CCST suction valve and the torus suction valves for the HPCI subsystem described in UFSAR Section 6.3.2.3.3;
2. Clarifies the required power sources for HPCI operation presented in UFSAR Table 6.3-2; and
3. Corrects the HPCI pump "discharge head" parameter to "developed head" in UFSAR Table 6.3-6.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the three changes to the UFSAR contained in this package do not affect the initiators of any event.

The HPCI subsystem will still operate as described in the sequence of events for any event.

The change to UFSAR Section 6.3.2.3.3 does not increase the consequences of the analyzed accidents. This interlock cannot affect the consequences of these accidents because it provides for a continuous HPCI pump suction path while HPCI is being used to mitigate these events.

The change to UFSAR Table 6.3-2 does not increase the consequences of the analyzed accidents. This change clarifies required power sources for HPCI operation and does not affect how HPCI responds to these events.

The change to Table 6.3-6 does not increase the consequences of the analyzed events. This change corrects the table to describe a performance parameter of the HPCI pump correctly.

Additionally, none of these changes to the UFSAR would increase HPCI flow to the reactor in the event of an inadvertent initiation. With no increase in HPCI flow, the radiological consequences as a result of an inadvertent HPCI initiation will not increase.

These changes to the UFSAR, which clarify and improve the description of the HPCI subsystem, do not affect the operation of the subsystem or any other equipment important to safety. No new operational alignments or testing requirements, on the HPCI subsystem, are imposed and no new interactions are introduced. As a result, the probability of a malfunction of equipment important to safety is not increased.

Since the three UFSAR changes included in this evaluation have no operational impact on HPCI subsystem equipment or any other equipment important to safety, the malfunction, or response of the equipment to a malfunction, would not be changed. As a result, the consequences of a malfunction of equipment important to safety will not increase.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because these changes only clarify and improve the UFSAR description of the HPCI subsystem, and there is no impact on subsystem/equipment operation or interactions that could affect failure modes or introduce new failure modes.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the margin of safety of the Technical Specifications is not affected. These changes do not affect any Technical Specifications.

Safety Evaluation Number: SE-98-073

Type of Safety Evaluation: UFSAR (SSA) Update

Evaluation Reference Number: N/A

Title: Update of the Appendix R Safe Shutdown Report, (Fire Protection Report, Vol 2)

DESCRIPTION:

This information is being added to clarify the SSR position on the maximum number of spurious failures being used as a basis to perform circuit analysis in compliance with 10CFR50 Appendix R. This change also identifies other specific guidance for the operation and/or isolation of SSD equipment that is potentially affected by a postulated fire. This update incorporates information regarding the number of circuit failures required to be assumed in accordance with 10CFR50 Appendix R, and provides other equipment operating guidelines associated with spurious circuit failures and their impact on SSD activities.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this change to the SSR clarifies the method used to conduct circuit failure analysis and adds other information providing specific guidance for coping with SSD equipment that may be adversely affected by the postulated fire. The proposed revision does not change the functional SSD design requirements of any equipment utilized for SSD. Therefore, no increase in the probability or consequences of any previously postulated accident is created by the change.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed change to the SSR will expand the availability of components and system required to be operable to support post-fire SSD requirements. There is no change to the function of any equipment associated with SSD. Therefore, the possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters on which the Technical Specifications are based.

Safety Evaluation Number: SE-98-076

Type of Safety Evaluation: Interim Procedure

Evaluation Reference Number: IP to QCOP 6900-26

Title: IP for QCOP 6900-26 to Allow De-energizing Reactor Building 250 VDC MCC 1A and Keep RWCU Running

DESCRIPTION:

Interim Procedure for QCOP 6900-26 directs the installation of a block to relay 1-595-126 in order to prevent the trip of the RWCU pumps when the power is removed from the RWCU suction valve, 1-1201-5, and the relay. This will leave the RWCU valve in the open position while 250 VDC MCC 1A is de-energized for maintenance to a breaker for the MO 1-1201-47 valve (which requires that the whole MCC be de-energized). The position of the MO 1-1201-5 valve will be left open to allow RWCU operation while the MCC is OOS de-energized. The Safety Evaluation considers the following: MO 1-1201-5 valve is OOS open (the 5-valve is a PCI valve not required in Mode 4) AND blocking of the relay 595-126 which is designed to protect the RWCU pumps if the MO 1-1201-5 valve should close (which is extremely unlikely since it will be OOS open).

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the relay block preventing a RWCU pump trip (if the MO 1-1201-5 valve is not full open) will not prevent a RWCU pump trip on loss of flow path. There is also a trip of the pump on low system flow. Therefore, the pumps are still protected from a loss of flow path event. The relay is also not needed as the MO 1-1201-5 valve is OOS OPEN, and there will not be any power to the valve to allow a mis-positioning event.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created. This change to the plant operates the RWCU system in a new configuration that has not been previously evaluated. The interlock defeated is for the purpose of protecting the RWCU pumps from cavitation. The need for this protection is mitigated by the continued protection on low system flow, which would also occur during a cavitation event, and the changed configuration of the MO 1-1201-5 valve (OPEN and OOS). This change eliminates the redundancy of the primary containment isolation (PCI) function. The change, however, is performed when PCI function is not required to be operable per Technical Specifications. The pumps will still

trip on a system isolation, because the pump trips on MO 1-1201-2 not full open or the MO 1-1201-80 being full closed are still operable.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the automatic isolation of RWCU is still present while performing this procedure, since the MO 1-1201-2 valve and its isolation logic is fully operational. Taking the MO 1-1201-5 valve OOS open does eliminate the redundancy of the system isolation (depending now on the MO 1-1201-2 valve/channel, only). This is an acceptable reduction in redundancy of the system based on Technical Specification bases that allow the automatic isolation of shutdown cooling (SDC) to be non-redundant during Mode 4 (Ref TS Table 3.2.A-1, note G). This change does not reduce the ability to maintain reactor water chemistry while shutdown.

Safety Evaluation Number: SE-98-079

Type of Safety Evaluation: Design Change

Evaluation Reference Number: DCP 9800045, DCN 001673I

Title: Unit 1 Recorder Replacement for FR 1-3340-52

DESCRIPTION:

The proposed design change replaces main control room recorder FR 1-3340-52 with a replacement recorder manufactured by Yokogawa. Recorder FR 1-3340-52 is used to monitor condensate (normal and emergency) reject to the condensate storage tanks. The original recorder was a Bailey model 732, two-pen recorder located in panel 901-6. The replacement recorder is a Yokogawa μ R100T, two-pen recorder installed in the same location. In addition to the replacement of this recorder, square root converter FY 1-3341-48, located in panel 941-28, is removed since the new recorder is capable of performing the square root function internally. This plant change was generated because the original recorder is obsolete, experiencing frequent failures. Completion of this design change removes Operator Work Around 1-97-005. The replacement recorder has been selected in an effort to standardize the recorders used for Main Control Room applications.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the recorder which this design change replaces has reached the end of its useful life. This is testified to by the numerous failures it has experienced. The express purpose of this design change is to replace this older technology recorder, which is manufactured by Bailey, with a newer design of recorder manufactured by Yokogawa. The type of Yokogawa recorder being installed by this design change is currently in use for other applications in the Quad Cities Main Control Room and has proven to be more reliable than the original Bailey recorder.

The removal of square root converter FY 1-3341-48 and the performance of this function as an integral part of recorder FR 1-3340-52 eliminates one component, and thus one potential failure mechanism, from the instrument loop. While the square root converter has not experienced failures, as has its associated recorder, it is 1960's vintage equipment whose function will now be accomplished by a newer device.

No significant additional seismic structural load is created by the replacement of recorder FR 1-3340-52 in panel 901-6. Therefore, other equipment located in this panel are unaffected by this design change.

In light of the above, it is concluded that the probability of a malfunction of equipment important to safety will not increase.

This design replaces one Main Control Room recorder and its associated square root converter with a single recorder produced by a different manufacturer. The consequences of a malfunction of equipment important to safety are not increased. The potential malfunctions (failure modes) of the Yokogawa recorder and the Bailey recorder are the same. This has been verified through a similarity analysis. Since the failure modes are the same the potential malfunctions would result in the same consequence, regardless of whether they occur in a Yokogawa recorder or a Bailey recorder with a separate square root converter. There are no additional off-site dose releases as a result of this design change.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the replacement recorder for FR 1-3340-52 installed under this design change has been analyzed to ensure that it will perform its intended function within design limits. The ability of the overall system to achieve its design function is therefore not altered by this design change.

The original recorder was not installed in such a way as to create an accident or malfunction of a type different from those evaluated in the SAR. The replacement of this recorder with a new recorder supplied by a different manufacturer does not create such a possibility.

Based on the above considerations it is concluded that this design change does not adversely impact systems or functions so as to create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this design change does not affect any accident described in the SAR. The affected recorder is used for indication of the condensate reject flow. This recorder is not part of the Reg. Guide 1.97 response.

A review of the Technical Specifications for Quad Cities and the basis for the Technical Specifications has been performed. This review has concluded that there are no Technical Specification sections affected by this design change.

Since this design change does not affect any accident described in the SAR, the consequences of an accident are not affected. There are no additional off-site dose releases as a result of this design change.

Safety Evaluation Number: SE-98-080

Type of Safety Evaluation: Procedure Change; UFSAR Revision

Evaluation Reference Number: UFSAR 97-R5-078; QCAN 2212-45 E-1, QCAN 2212-45 E-2, QCAN 2251(2)-10 E-1, QCOA 6600-01, QCOA 6600-02, QCOP 6600-02, QCOP 6600-05, QOA 6500-08, QOA 6500-09

Title: Revise Plant Operating Procedures And UFSAR To Reflect The 2nd Level Degraded Voltage Setpoint Changes

DESCRIPTION:

Revise the subject procedures and UFSAR to reflect the 2nd Level Degraded Voltage Relay critical voltage based on the value specified in Technical Specification Table 3.2.B-1. The UFSAR will also be revised to clarify that electrical loads which are calculated to have < 90% of their rated voltage have a separate calculation justifying the lower voltage.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the subject change involves a new setting of the 2nd Level Degraded Voltage Relays which has been determined to provide adequate protection of Essential Service Equipment from the affects of a degraded grid condition. This determination is justified via calculation. Changing the relay setting in no way affects the logic or mechanics of transferring AC power between sources. Operation of the EDGs and 4kV Buses is also unaffected by the setting change. For these reasons, the probability of a malfunction of equipment important to safety is not increased.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because by increasing the relay setting, Essential Service Equipment is protected from the effects of a degraded grid condition. The higher setting (increased from a nominal setting of 3886 V to 3898 V) remains well below normal operating voltages and thus the EDGs are not unnecessarily challenged. All automatic actuations associated with a LOOP and LOCA remain unchanged. Therefore, this change does not create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition.

Safety Evaluation Number: SE-98-082

Type of Safety Evaluation: Design Change - Temporary Alteration

Evaluation Reference Number: DCP 9800219

Title: Temporary Alteration To Install A Portable Digital Fault Recorder (DFR) To Monitor And Record Unit 2 Main Generator Parameters

DESCRIPTION:

A portable DFR will be installed to measure and record current and voltage levels associated with the Unit 2 Main Generator trip system. This temporary alteration is being installed to provide quantitative data to support the root cause investigation into the June 28, 1998 Unit 2 turbine generator trip on differential current should another generator trip on differential current occur.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because installing this temporary alteration in accordance with the present Electrical Installation Standards (EIS) and verifying it is operating properly before the turbine generator trip system is operational will minimize the probability of a malfunction to the point of being negligible. Other aspects, which minimize the probability of an equipment malfunction, include in-line fusing of the connections between the DFR voltage inputs and the turbine generator trip system components, not increasing the CT burden, and not affecting ELMS. A malfunction of equipment associated with this temporary alteration would be a turbine generator trip with the same consequences, with no differences in off-site dose, presently described in the SAR.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the possible failure modes associated with this temporary alteration are opens, grounds and/or shorts. These failure modes are no different than the failure modes that exist on the presently installed equipment and the results of any of these failures are no different.
3. The margin of safety, as described in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SE-98-083
Type of Safety Evaluation: Facility Change; UFSAR Revision
Evaluation Reference Number: UFSAR-97-R5-042; M04-1(2)-86-011A,
M04-1(2)-77-046, M04-1(2)-76-057

Title: Updates HPCI Subsystem per Referenced Modifications

DESCRIPTION:

Update UFSAR Figures 6.3-15, 6.3-16 to reflect modification M04-1(2)-86-011A which added a Pull-To-Lock feature to the control logic for the 2301-14 valve, modification M04-1(2)-77-046 which installed a manual initiation pushbutton in the HPCI subsystem logic and modification M04-1(2)-76-057 which changed the open logic for the 2301-8 valve. Additionally UFSAR Table 6.2-7 is revised to reflect the correct power source for the 2301-14 valve.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because these changes do not affect the initiators of the events analyzed in the SAR.

The function of the HPCI subsystem during these events is to provide water to cool the core and to assist in depressurization of the reactor. These changes do not affect the ability of HPCI to perform this function. Additionally, these changes do not affect the HPCI flow control equipment and therefore cannot increase HPCI flow to the vessel in the event of an inadvertent initiation.

Since the 2301-14 valve provides a support function for the HPCI subsystem, in that it does not directly impact the ability of the subsystem to perform its design basis safety function (injection), the probability of a malfunction of equipment important to safety is not increased by M04-1(2)-86-011A.

The installation of a manual initiation pushbutton for HPCI does not increase the probability of a malfunction of equipment important to safety because the switch contacts are wired in parallel with the HPCI initiation logic and are normally open. Therefore M04-1(2)-77-046 does not interfere with the previously existing logic and does not increase the chance of this logic failing.

The change to the logic for the 2301-8 valve prevents unnecessary/excessive cycling of the valve. Therefore M04-1(2)-76-057 actually reduces the probability of a malfunction of equipment.

None of these changes could cause an increase in the amount of radioactivity released if the affected equipment would malfunction.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because:
 1. Adding the pull-to-lock logic to the control switch for the 2301-14 valve does not change the failure modes for this valve. The valve can still either fail open or closed, therefore a different type of accident or malfunction can not occur.
 2. The manual initiation pushbutton could be accidentally actuated or the contacts associated with the pushbutton could fail closed causing an inadvertent HPCI injection. Inadvertent HPCI initiation has already been evaluated in UFSAR Section 15.5.1, and therefore this change cannot create the possibility of a different type of malfunction or accident.
 3. The open logic for the 2301-8 valve does not affect the failure modes of this valve. If the additional contact installed in the 2301-8 valve circuitry failed, the valve could be prevented from opening when needed. This is not a new failure mode and does not cause a new type of accident.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because these changes do not affect any Technical Specifications basis parameters.

Safety Evaluation Number: SE-98-084

Type of Safety Evaluation: Facility Change; UFSAR Revision

Evaluation Reference Number: P04-1(2)-91-114; UFSAR-97-R5-042

Title: HPCI Motor Gear Unit Control Switch

DESCRIPTION:

Revise UFSAR Figure 6.3-17 to show that the High Pressure Coolant Injection (HPCI) Motor Gear Unit (MGU) control switch is a break-before-make type of switch. Additionally, the description of the interlock that runs the HPCI Motor Speed Changer to its Low Speed Stop (LSS) in the event of a turbine trip is being revised to more accurately describe the interlock.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the HPCI MGU switch is not a part of any piping systems and is not located near any reactor piping systems such that it could

affect the probability of a LOCA. This change likewise does not affect the initiators for any other events.

This replacement of the HPCI MGU switch does not affect any effluent or release paths. It also does not affect the way that the HPCI subsystem responds to any event. Therefore the consequences of the events have not been affected by this change. Additionally, since this change does not affect the automatic flow controller setpoint or the High Speed Stop on the MGU, it does not increase the amount of HPCI flow to the reactor vessel in the event of an inadvertent initiation. Therefore the consequences of an inadvertent initiation have not been affected by this change.

P04-1(2)-91-114 installs a new HPCI MGU control switch that will maintain the isolation between manual control and automatic control of the MGU. Cross feeding of this equipment could lead to a failure of the MGU. By installing a break before make switch, circuit isolation is assured. The probability of a malfunction of equipment important to safety is decreased by this change.

The consequences of a failure of the HPCI MGU will not be affected by P04-1(2)-91-114 since the function and operation of the MGU is not being changed.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because P04-1(2)-91-114 eliminates a malfunction of cross-connecting the manual and automatic controls for the HPCI MGU. Since this change only impacts the automatic and manual transfer within the MGU control logic, and since the function and operation of the MGU and HPCI remains the same, the possibility of an accident or malfunction of a different type has not been created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because these changes do not affect any Technical Specifications basis parameters.

Safety Evaluation Number: SE-98-086

Type of Safety Evaluation: Temporary Alteration; Interim Procedure

Evaluation Reference Number: DCP 9800213; QCOS 1300-10

Title: Valve Lineup for Unit 2 RCIC; RCIC Monthly Vent Verification Procedure

DESCRIPTION:

The normal standby valve line-up for the Unit 2 RCIC System is changed. This change will temporarily realign the System Isolation Valve and the Pump Discharge Valve so that in stand-by the System Isolation Valve is open and the Pump Discharge Valve is shut. DCP #9800213 is implementing this change. Interim procedures are being implemented to reflect this change and to specify additional operating surveillance requirements to assure that RCIC is operable.

The RCIC Monthly Vent Verification procedure (QCOS 1300-10) is revised to change the method of verifying fill to the system discharge piping.

The valve line-up change is a temporary alteration and the procedure changes are interim. These actions were taken as compensatory measures for the operability determination performed as a part of PIF #Q1998-02890.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this change does not affect any of the initiators of the events RCIC is credited to mitigate or the initiators of any other event. The change revises the standby valve line-up for the RCIC system that is used to mitigate these events and implements the appropriate operating procedures to support the new line-up.

The function of the RCIC system is as a mitigator to the subject events by providing cooling water to the reactor and to assist with pressure control during some of the events. Since this change will not affect the ability of RCIC to provide these functions within the design time requirements, this change does not increase the consequences of any event.

This change to system operation will not increase the probability of a malfunction of equipment important to safety because:

1. The pump discharge valve now being used for injection isolation has been evaluated to be able to perform the required functions,
2. The affected piping and equipment is rated for the expected conditions and will be monitored so that it is maintained within those conditions and
3. The RCIC discharge piping will be maintained full and verified full as required by the Technical Specifications.

This change will not affect the consequences of a malfunction of equipment important to safety and does not make a release of radioactive material more likely or affect any of the equipment designed to prevent and mitigate the release of radioactive material.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change to the RCIC System standby line-up has no impact on the system design functions. The pump discharge valve has been verified to be an acceptable injection isolation valve for the system, and system integrity will be maintained.

The pressure gauge installed under the interim procedures will be isolated if an RCIC initiation occurs during use. Therefore, this change does not create the possibility of a different type of accident or malfunction.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the intent of the Technical Specification surveillance requirement is to ensure that the RCIC discharge piping is full so that the system will inject water in the least amount of time and prevent water hammer events. This is normally accomplished by the routine surveillance through verification of water flow from the high point vent. The water flow verification will still be accomplished; however, due to the new standby system line-up, an additional static pressure measurement will be performed to verify that the pump discharge piping remains full between surveillances.

Safety Evaluation Number: SE-98-087

Type of Safety Evaluation: Procedure Changes

Evaluation Reference Number: QCIS 0200-01, QCIS 0200-03, QCIS 0300-01, QCIS 0300-02, QCIS 0500-01, QCIS 0500-02, QCIS 0700-07, QCIS 1000-01, QCIS 1000-02, QCIS 1700-01, QCIS 1700-04, QCIS 1700-21, QCIS 5600-01, QOS 5600-01

Title: RPS Channel Surveillance Testing Bypass With Test Box

DESCRIPTION:

During performance of the individual surveillance, the activity will install an RPS Test Box across designated RPS relay contacts (bypassing the contacts that will open for the test) in the RPS scram subchannel by connecting it to banana jacks installed on the RPS relay terminal posts. The test box has a light that will illuminate to indicate the trip contacts have opened as required but will also maintain the RPS trip channel logic energized. The Limiting Condition and Action Statement per the applicable Technical Specification will be entered while the test is in progress.

This Evaluation is being performed to document the reasoning behind the acceptability of using the Test Box as identified in the above procedures. Current testing practices actuates the ½ scram logic as part of the test.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the test boxes are constructed of passive devices as described in question 6 of this document. There are no power supplies or other energy sources in the test box to create an overcurrent or overvoltage condition in the RPS trip logic. The test boxes are installed during testing activities where the equipment under test is considered inoperable and will be removed within the allowed out of service time (AOT) required by the Technical Specifications. Because there will be no change in the AOT, the probability of an equipment malfunction remains unchanged from that already analyzed. All other inputs to the RPS subchannel trip logic remain available during the time the test box is installed.

These procedure changes will increase the total time that the associated Scram Logic Subchannel is bypassed during performance of the referenced procedures by the time required to install and remove the jumpers. The added time for installation and removal of jumpers is minutes and will be done during the allowed outage time for this trip function. This is not considered an increase in the probability of a malfunction in the Reactor Protection System, because the total time that the associated Scram Logic Subchannel may be bypassed is still bounded by Technical Specification Table 3.1.A-1, Note (a).

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the test boxes are constructed of passive devices as described in question 6 of this document. There are no power supplies or other energy sources in the test box to create an overcurrent or overvoltage condition in the RPS trip logic. The failure modes of the test boxes have been documented in question 6 of this document. The test boxes are installed during testing activities where the equipment under test is considered inoperable and will be removed within the allowed out-of-service time (AOT) required by the Technical Specifications. Because there will be no change in the AOT, the probability of an equipment malfunction remains unchanged from that already analyzed. All other inputs to the RPS subchannel trip logic remain available during the time the test box is installed.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because:

Affected Technical Specification(s):

Reactor Protection Instrumentation:	3/4.1.A
RPS Instrumentation Table:	3.1.A

Reactor protection system instrumentation surveillance
Table 4.1.a-1
Requirements Definition Section 1

The change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SE-98-089

Type of Safety Evaluation: UFSAR Revision

Evaluation Reference Number: PIF Q1998-03175; UFSAR-97-R5-068

Title: Additional Methodology for Determining DWEDS/DWFDS Pump Out Flow Rate

DESCRIPTION:

Reword UFSAR section 9.3.3.1, paragraph 3, and section 9.3.3.2, paragraph 1, to allow means other than the total flow integrator in the Control Room to determine rate of flow from the DWEDS or DWFDS. Measuring the time to manually pump the sumps can be used to determine flow rate.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because DWEDS and DWFDS discharge flow is measured for comparison to Technical Specification leakage limits. The change to the UFSAR provides an additional method for determining sump discharge flow should the control room integrator(s) not be available. The drywell sumps provide one of the methods for determining possible reactor coolant boundary leakage. The function of collecting, transporting and measuring liquid waste does not initiate or directly interface with initiators of this accident. Therefore, the probability of this accident is not increased. The ability of the sump discharge valves to close on a Group II Isolation Signal is not affected by the change to the UFSAR. Therefore, the probability of contaminated water escaping the drywell following a loss of coolant inventory is not increased.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because there is no change to the DWEDS and DWFDS, their function, or their mode of operation. Flow monitoring instrumentation neither automatically initiates nor alerts the operator to initiate operation of a safety-related system. The logic associated with sump isolation during a Group II Isolation Signal is not changed. The alternate method of determining sump flow rate will not increase the probability of a malfunction of equipment important to safety. Other than drywell isolation of the sump discharge piping, which is unaffected by this change, the DWEDS and DWFDS do not directly interface with equipment important to safety. The sumps collect, store and transfer drywell leakage. They provide a means of identifying and quantifying coolant boundary leakage. Therefore, the consequences of a malfunction of equipment important to safety is not increased.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because Technical Specification 3.6.G.2 states that the drywell floor drain sump system shall be operable during operational modes 1, 2 and 3. Technical Specification surveillance requirements 4.6.G.1 and 4.6.G.2 state that operability is demonstrated by performing leakage determinations per 4.6.H and flow totalizer calibration at least every 18 months. The changes to the UFSAR to describe additional methodology for determining discharge flow do not affect the requirements of the Technical Specifications.

Technical Specification 3.6.H states that during operational modes 1, 2 and 3, reactor coolant leakage shall be limited to: no pressure boundary leakage, ≤ 25 gpm total leakage over any 24 hour surveillance period, ≤ 5 gpm unidentified leakage and ≤ 2 gpm increase in unidentified leakage in any period of 24 hours or less

(applicable to mode 1 only). Surveillance requirements 4.6.H.2 states that primary containment sump flow rate shall be determined at least once per 8 hours, not to exceed 12 hours. The changes to the UFSAR to describe additional methodology for determining discharge flow do not affect the requirements of the Technical Specifications.

Safety Evaluation Number: None

Type of Safety Evaluation: Validation, Design Change; Temporary Alterations

Evaluation Reference Number: SE-97-131; DCP 9700443, 9700453, 9800061;
T/As 97-1-36, 98-1-007, 98-1-014

Title: 1/2A and 1/2B Diesel Fire Pumps

DESCRIPTION:

These temporary alterations disabled low oil pressure, overcranking, overspeed, and high cooling water temperature alarm circuits on the 1/2A and 1/2B Diesel Fire Pumps. The alarms are disabled by unplugging the pressure switch, lifting a lead and unplugging R9 relay. There were equipment problems due to trip of the fire diesel due to an overspeed signal following removal of an alarm condition. In order to provide assurance that the problem would not cause an inadvertent trip and inoperability of the fire diesels, these temporary alterations were installed.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the diesel fire pump auto-start capability is not affected by this change. Therefore, there is no change to the fire diesel's function during a design basis fire.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because during a design basis fire, the alarm functions bypassed by these temporary alterations are not relied upon. The elimination of these alarms therefore does not create the possibility for a different accident or malfunction.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SS-H-97-0001

Type of Safety Evaluation: Validation, Design Change; UFSAR Revision

Evaluation Reference Number: DCP 9600447; UFSAR-97-R5-004

Title: Install an Additional Nitrogen Atmosphere Vaporizer

DESCRIPTION:

Install additional nitrogen atmosphere vaporizer to support the NCAD system. Revise UFSAR to incorporate the change. This addendum letter installs an additional relief valve on the nitrogen skid. Validates SE-97-141.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this installation does not affect operation of NCAD or nitrogen inerting system. The system provides additional redundancy to nitrogen supply. The atmospheric vaporizer is normally isolated from nitrogen and NCAD unless the electric vaporizers fail to operate.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because during normal operation nitrogen atmosphere vaporizers are isolated from NCAD/nitrogen inerting. Failure of the installed equipment will not affect the existing equipment.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because change does not affect parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-97-0002

Type of Safety Evaluation: Validation, Design Change

Evaluation Reference Number: DCP 9700400

Title: Install Closing Device on Unit 2 MSIV Vent Door

DESCRIPTION:

Install a closing device on the Unit 2 MSIV Room Reactor Building Vent Door. The closing device will isolate the Reactor Building in the event that smoke is detected in the Reactor Building. This will provide smoke detection to operators to enter the MSIV Room to misstate an Appendix R Fire.

Approved installation of the MSIV Vent door on Unit 2.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because installation of MSIV vent door closing device will not cause an MSIV line break. During a break, a primary/secondary containment is maintained by the main steam isolation valves. Pressure is relieved by the blow out panels. Blow out panels will perform their function regardless of the MSIV vent door position.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because when the MSIV room is part of the Turbine Building the door will function as previously designed. When MSIV Room is part of the reactor building the closing device provides additional protection for operators who must access the area. Therefore, spurious operation of MO1-2301-8 will not affect the ability of SSMP system to perform its design function during an Appendix R fire.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0001

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QCOP 6600-02; IP 98-0019

Title: Diesel Generator Start Verification

DESCRIPTION:

This interim procedure allowed attaching data acquisition equipment and performing repeated starting of the Unit1 EDG for the purpose of troubleshooting the failure.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the Unit 1 EDG will be isolated from interaction with the remainder of the plant class 1E electrical distribution system for the duration of the test and will be fully tested prior to being returned to an operable status. All applicable Tech Spec LCOs are to be satisfied prior to performing the testing.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because all testing of the

EDG is being performed isolated from the plant. Inspections of equipment that will be repeatedly cycled will be performed at completion of the testing. Operation of the EDG is not different than that of normal operation with the exception of monitoring equipment.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the specific plant configuration during the testing of the EDG is allowed by the Tech Specs.

Safety Evaluation Number: SS-H-98-003

Type of Safety Evaluation: Validation; Procedure Change

Evaluation Reference Number: QCOS 1000-28; SE-98-002

Title: RHR Service Water Pump Performance Testing

DESCRIPTION:

When measuring and trending pump performance all pump flow must be measured. This procedure valves out loads on the RHRSW system that do not pass through the flow element so that total pump flow can be measured.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because UFSAR section 6.3.2.2.2 states, in reference to the RHR Pump Motor oil and Seal Coolers, "Both the RHR pump and motor are designed for operation during the accident condition without the use of external cooling water passing through the secondary side of the heat exchangers." An operator will be present during the testing to monitor RHRSW Room temperatures. It is not expected that the room temperature will exceed the Equipment Qualification (EQ) allowable temperature of 120 degrees F because of the relatively short duration of the test. In addition, the RHRSW pump Tech Spec LCO will be entered during the time that an abnormal line-up is in use.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because an operator will be present during the testing to monitor RHRSW Room temperatures. It is not expected that the room temperature will exceed the Equipment Qualification (EQ) allowable temperature of 120 degrees F because of the relatively short duration of the test. The procedure contains provisions to allow the operator to abort the test to valve in cooling equipment if temperatures become too hot.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because while the testing is being performed on an RHRSW pump, the pump will be administratively declared inoperable. Therefore, the pump being tested will not be relied upon as equipment that will be expected to perform any function during an accident while the test is in progress. The RHRSW pump Tech Spec LCO will be entered during the time that an abnormal line-up is in use.

Safety Evaluation Number: SS-H-98-0005

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QOS 0020-S02, SE-97-018

Title: Inspection Of The RHR, Core Spray And Torus Areas For Flood Protection And Flooding

DESCRIPTION:

Revise frequency of flooding check of ECCS corner rooms from twice per day to three times per day. The controlling procedure requires a once per shift visual inspection to be performed. Operating shifts were previously on a 12 hour rotation resulting in a table that reflected two checks per day. Operating then changed shifts to an 8 hour rotation, resulting in three checks per day.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the procedure stipulated the minimum number of checks per day to be performed for a 12 hour rotation. This revision increased the number of checks performed and therefore is more conservative than previous.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because performance of visual inspections can not result in accidents or malfunctions.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the frequency of inspections does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0006
Type of Safety Evaluation: Validation, Out-Of-Service
Evaluation Reference Number: OOS 21885, SE-97-108
Title: ACAD Bleed FCVs

DESCRIPTION:

Maintain isolation of Drywell atmosphere flowpath to SBTG via ACAD bleed lines.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the ACAD valves have no effect on any equipment assumed to cause an accident. The valves are located outside of the Drywell and their failure will not affect the plant's ability to remove combustible gases from the Drywell. The ACAD system is no longer used to remove combustible gases from the Drywell, before and after a LOCA. The system performs no function to reduce the consequences of a LOCA or any other accident.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the ACAD system is not required to function after an accident. Closing of the manual valves will not affect the mounting of the associated piping. Therefore, no new accidents or malfunctions are created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the OOS does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0007
Type of Safety Evaluation: Validation, Design Change
Evaluation Reference Number: SE-98-017, DCP 9800023
Title: Install Two New Auxiliary Relays In Panel 902-29

DESCRIPTION:

The only difference between this design change (DCP 9800023) and the previous design change (DCP 9800034) is that DCP 9800023 is for Unit 1 and DCP 9800034 is for Unit 2. S&L Evaluation S040-QH-0399 demonstrates that there is no adverse affect on the Unit 1 125 VDC battery due to the installation of this design change. Also, S&L

calculation QDC-8300-E-0566 was performed to seismically qualify the mounting of the new HFA relays in panel 901-29. These relays will perform an auto-transfer between the main and alternate 125 Vdc control power sources for the main generator, Main Power Transformer (MPT), Unit Auxiliary Transformer (UAT), and Reserve Auxiliary Transformer (RAT) primary and backup system tripping relay circuits.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed change will not adversely affect the 125 Vdc system during normal system operation. The new HFA relays have higher current demands than the existing relays. The effect of these higher currents on 125 Vdc Battery #2 was evaluated using ELMS-DC and were found to have no adverse impact on battery performance as documented by S&L evaluation S040-QH-0388. This design change replaces the manual transfer between the main and alternate control power to the Generator and Transformer Tripping Relay circuits with an automatic transfer feature. This DCP does not affect the configuration or method of operation of the protective transformer tripping relays. For these reasons, the probability of a malfunction of equipment important to safety is not increased by this design change.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this design change does not adversely affect generator or transformer protective relay operation. By automatically switching over to the reserve 125 Vdc control power supply in the event of a loss of main control power, the amount of time that this control circuit is without power is decreased. Also, the failure modes of the new HFA relay have been evaluated and do not create an adverse or unanalyzed system interaction as discussed in Question 6. Therefore, this design change does not create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition.

Safety Evaluation Number: SS-H-98-0008

Type of Safety Evaluation: Validation, Design Change

Evaluation Reference Number: SE-98-038; DCP 9800027

Title: Route New Cables For The Unit 1 RAT (Transformer 12) And UAT (Transformer 11) Current Transformer (CT) Neutral Ground Detection Circuits

DESCRIPTION:

The only difference between this design change (DCP 9800027) and the previous design change (DCP 9800035) is that DCP 9800027 is for Unit 1 and DCP 9800035 is for Unit 2. Each cable will feed a single CT for each winding (X&Y) of the affected transformers. Cables routed between the UAT and RAT control panels and a local junction box will be in separate conduits. Cables running between the local junction box and the auxiliary electric room UAT/RAT protective relay panel 901-29 will be routed in conduit on the exterior wall of the turbine building. The existing cables associated with these CT circuits will be abandoned in place. This DCN and safety evaluation is concerned with installation and termination of the new cables and the portion of conduit routed in the auxiliary electric equipment room. The additional work associated with this design change (balance of the conduit/raceway installation) will be completed per DCN 001643E and evaluated separately under SS-F-98-0049.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the configuration and function of the UAT/RAT neutral ground detection circuitry remains unchanged by this modification, providing the same level of fault protection as before. A failure of any or all current transformer cables will not cause the UAT/RAT neutral ground detection relay to trip Auxiliary AC Power. Changing the routing of the affected cables to remove them from undesirable Fire Zones increases the probability of clearing a fault on the 4kV buses during postulated fires. This modification does not affect the function of any accident mitigation equipment important to safety and therefore can not increase the consequences of a malfunction of that equipment.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the function of these ground detection circuits are not changed by this modification. The amount of protection provided to the transformers remain the same. This change routes the new cables in such a way as to avoid fire areas TB-I and TB-III. Although the new cable route has all the Unit 2 UAT/RAT current transformer cables in the same raceway this is acceptable based on the BOP classification of the cables. Therefore, this modification will not adversely impact systems or functions in such a way as to create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition. See section Tech. Spec. 3/4.8.D

Safety Evaluation Number: SS-H-98-0012

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-97-135; QCOP 5400-01

Title: Revise Procedure QCOP 5400-01 "Off-Gas System Startup" per DCP 9700323

DESCRIPTION:

Revise the referenced procedure to reflect changes required by the replacement of the existing Masonilan pressure controller with a new Fisher pressure controller for EPN PC 2-3041-22B. The application of this pressure controller is to maintain the steam flow pressure at 125 psig from the main steam system to the Unit 2 "B" train off gas booster air ejector via pressure control valve (PCV) 2-5425B1. The original safety evaluation is being validated for this change.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the purpose of the subject controller is to ensure that proper off gas system booster SJAЕ/dilution steam pressure is maintained. There are no new failure modes created by the installation of the new controller such that the probability of malfunction of equipment is increased. Additionally, the function of the controller is not related to any equipment important to safety. The new pressure controller is functionally equivalent to the original controller except that it provides for manual control in addition to the automatic functions. Therefore, the operation of the off gas system will not be impacted by replacement of the pressure controller and no new modes of system operation will be introduced. The procedure change will reflect the new capabilities of the PCV.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changed component does not create any new failure modes or create failures of a different type since all credible failures for the component remain unchanged between the new and old unit. Therefore the change will not create the possibility of an accident or malfunction of a type different from those evaluated in the SAR. The procedure change is necessary to direct operations in the use of the new controller.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0013

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-97-135; QCOP 5400-02

Title: Revise QCOP 5400-02 "Loss of Steam Pressure or Off-Gas Flow" Per DCP 9700323

DESCRIPTION:

Revise the referenced procedure to reflect changes required by the replacement of the existing Masoneilan pressure controller with a new Fisher pressure controller for EPN PC 2-3041-22B. The application of this pressure controller is to maintain the steam flow pressure at 125 psig from the main steam system to the Unit 2 "B" train off gas booster air ejector via pressure control valve (PCV) 2-5425B1. The original safety evaluation is being validated for this change.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the purpose of the subject controller is to ensure that proper off gas system booster SJAE/dilution steam pressure is maintained. There are no new failure modes created by the installation of the new controller such that the probability of malfunction of equipment is increased. Additionally, the function of the controller is not related to any equipment important to safety. The new pressure controller is functionally equivalent to the original controller except that it provides for manual control in addition to the automatic functions. Therefore, the operation of the off gas system will not be impacted by replacement of the pressure controller and no new modes of system operation will be introduced. The procedure change will reflect the new capabilities of the PCV.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changed component does not create any new failure modes or create failures of a different type since all credible failures for the component remain unchanged between the new and old unit. Therefore the change will not create the possibility of an accident or malfunction of a type different from those evaluated in the SAR. The procedure change is necessary to direct operations This change does not affect any parameters upon which the Technical Specifications are based in the use of the new controller in the referenced plant scenario.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0015
Type of Safety Evaluation: Validation, Design Change
Evaluation Reference Number: TALT DCP 9800080

Title: Install Tygon Tubing

DESCRIPTION:

Install 1/2" O.D. clear tygon tubing x approx 30' long to the A & B CCST level indicator LT 0-3341-76A(B) instrument test connections. Mount vertically along the 10" Ø reference columns. The tubing shall have their own isolation valves such that they can be isolated when no one is in attendance. The tubing will be used to verify HPCI/RCIC available water volume during drain down for ISP tie-ins.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the gage glass will be used only when operations is in attendance. If the tubing were to fail, it would be valved out and isolated. There is no effect on the CCST's ability to provide a reservoir of water.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no new failure modes or system interfaces are created. The change does not affect any interactions with safety related SSC. The design function is not changed nor are any accidents or malfunctions not previously evaluated introduced.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which TS are based, therefore there is no reduction in the margin of safety.

Safety Evaluation Number: SS-H-98-0016
Type of Safety Evaluation: Validation, Design Change, Procedure Change
Evaluation Reference Number: DCP 9700400, QCIS 4100-60

Title: Install Closing Device On Unit 2 MSIV Vent Door

DESCRIPTION:

Install a closing device on the Unit 2 MSIV Room Reactor Building Vent Door. The closing device will isolate the Reactor Building in the event that smoke is detected in the

Reactor Building. This will provide smoke protection to operators to enter the MSIV Room to misstate an Appendix R Fire.

Allowed the creation of a new procedure to test the Unit 2 MSIV vent door.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because installation of MSIV vent door closing device will not cause MSIV line break. During a break primary/secondary containment is maintained by the main steam isolation valves. Pressure is relieved by the blow out panels. Blow out panels will perform their function regardless of the MSIV vent door position.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because when the MSIV room is part of the turbine building the door will function as previously designed. When MSIV Room is part of the Reactor Building the closing device provides additional protection for operators who must access the area. Therefore spurious operation of MO1-2301-8 will not affect the ability of SSMP system to perform its design function during an Appendix R fire.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the new procedure does not affect parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0017

Type of Safety Evaluation: Validation, Design Change

Evaluation Reference Number: SE-98-028; DCP 9800026

Title: Fire Wrap of Cables 1230 & 1243 for U-1 UAT/Rat OCB Tripping Circuits

DESCRIPTION:

The proposed change will reroute control cables 1230 and 1243 to minimize that portion of the cable route which is in the Turbine Building cable tunnel area. This requires the addition of approximately 50 feet of new conduit and associated supports, a junction box, and one new core bore through the Auxiliary Electric Equipment Room (AEER) floor. There are no functional/circuit logic changes associated with the proposed change. The proposed change is required to ensure that cables 1230 and 1243 remain undamaged during a postulated Appendix R fire in the Turbine Building cable tunnel. These control cables provide tripping of 345kV switchyard Oil Circuit Breakers (OCBs) for faults on the electrical distribution system downstream of the UAT and RAT.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the subject cables are rerouted in new and existing raceway which is installed in an approved manner with no new hazards introduced. The termination in panel 901-29 of the rerouted cables shall be in accordance with the design requirements, and applicable testing will ensure the functionality of the original circuits. Therefore, the reliability of the UAT / RAT is not decreased and the probability of an equipment malfunction is not increased. The proposed design change does not change the ability of any system or component which is used to mitigate the consequences of a malfunction of equipment important to safety from performing its function.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed modification to reroute cables 1230 and 1243 to avoid the Turbine Building cable tunnel does not represent a functional change to operation of the 345kV switchyard OCBs for any mode of operation since the applicable circuits remain electrically the same. The reroute improves reliability of OCB tripping functions during a specific analyzed event (i.e. common enclosure Appendix R fire event). Reliability of the UAT / RAT during normal and accident conditions remains the same. The new core bore in the AEER floor shall be resealed per approved plant procedures. Therefore, the original floor boundary function is maintained for fire and HVAC.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specifications provide an acceptance limit for the Control Room HVAC envelope pressure of greater than or equal to 1/8" positive pressure with respect to adjacent areas. This TS requirement will be controlled during the installation of the referenced design change.

Safety Evaluation Number: SS-H-98-0018

Type of Safety Evaluation: Validation, Design Change

Evaluation Reference Number: SE-98-026; DCP 9800024

Title: Install Alternate Feeder for RCIC Valve 1-1301-16 for Appendix R Concerns

DESCRIPTION:

Provide an alternate 208 VAC three phase power feed to the Unit 1 Motor Operated Valve (MOV) RCIC 1-1301-16 Steam Supply Isolation valve from Unit 1SBO Distribution Panel 65-1-1. Installation of this alternate feed will require routing new cable through a combination of new and existing raceway from SBO through the RB wall to MCC 18-1A-1. For certain Appendix R safe shutdown methods, MOV 1-1301-16 is required to be operable/open to allow the RCIC system to function. Providing this

alternate feed from the SBO distribution panel reduces operator actions to accommodate the acceptable timeframe for restoring power to the MO 1-1301-16 valve. The original SE for the U-2 portion of this design change is being validated for U-1.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the installation of the alternate feed for the RCIC 1-1301-16 Inboard Steam Supply Isolation valve is designed to meet safety related (including circuit separation) requirements where interfaces exist with normal ESS electrical distribution equipment at MCC 18-1A-1. The alternate feeder (NSR circuit) will be utilized only in an Appendix R fire scenario. This design change makes no changes to any portion of RCIC system initiation or isolation logic that would increase the probability of the failure of the RCIC system. Addition of the alternate feed provides flexibility for the utilization of the RCIC system when required to operate during an Appendix R fire.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because as stated previously, the alternate feed circuit will be maintained normally open and controlled by a combination of normal (QOM) and abnormal (QCARP) operations equipment alignment procedures, equipment labels and caution placards. Additionally, the SR/NSR isolation breaker will be fitted with an Appendix R Fire Lock to prevent inadvertent closure due to personnel error. Although the RCIC 1-1301-16 valve performs a PCI function, it is not required to postulate additional accidents, including any that would cause a Group 5 PCI signal during the postulated fire. The combination of procedural control and a mechanical interlock between the feeder circuits ensures that no single equipment malfunction or personnel error can connect SBO power (NSR) inadvertently to a live Reactor Building MCC 208 VAC bus (SR).
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition per UFSAR Table 3.8-11.

Safety Evaluation Number: SS-H-98-0020

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-008 and SE-98-012

Title: Procedure Change for QCAN 2201(2)-105 I-6, QCOP 6620-03, QCOS 6620-05

DESCRIPTION:

Design change 9800021 and 9800031 have been completed to add a control switch to bypass the normal control function of the SBO DCS for Unit 1 and Unit 2 SBO DG fuel oil transfer switch. These procedure changes incorporate use of the bypass switch into plant operation.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this design change has no affect on the probability or frequency of occurrence because the SBO fuel oil system is not electrically connected to any safety related power buses or the EDG in any manner that could cause any postulated accidents. The fuel oil system is a support system for the SBO DGs. Implementation of this design change will ensure that the SBO DGs will be able to perform their intended function. Therefore, this modification to provide an alternate method of ensuring SBO day tank fuel oil levels are maintained will not increase the consequences of an accident.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the modification of the SBO DG fuel oil transfer pump circuitry provides an alternate method for manual operation of the pumps when the DCS is unavailable. Failure of this circuit will not result in the total loss of ability to transfer fuel because the opposite unit SBO can be manually cross-connected via existing piping. This design change contains no other system interfaces and is physically located only in its unit SBO room.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this design change does not affect any parameter that is addressed in any Tech Spvc limit or basis. Therefore, the margin of safety is not reduced.

Safety Evaluation Number: SS-H-98-0028

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QCOS 6600-01, SE-98-042

Title: Diesel Generator Monthly Load Test

DESCRIPTION:

Implement an acceptance band for TD2 relay of greater than 10 seconds and less than or equal to 16.5 seconds. A lower administrative limit is being set at 13.5 seconds.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the TD2 relay does not have any new failure modes associated with it. The existing failure modes with the relay are still possible with the revised set points; therefore, there are no new impacts on the function of the Emergency Diesel Generator and the probability of a malfunction of either the Diesel or the relay are not increased. There are 2 EDGs per unit. In the event that one relay timed out early, the other EDG is available to perform the design function which is consistent with the LOCA analysis which assumes that only one division of AC power is available.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change in the setting does not adversely affect the operation of the EDG. The setting is such that the 10 second start time of the EDG is protected. Additionally, the capacity of the air start system is preserved should a second start attempt be desired in response to an accident or transient condition.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change in the time delay setting does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-029

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QOS 0020-03, SE-97-169

Title: Interim Flood Protection Surveillance

DESCRIPTION:

Replace reference to check valves in the floor drain lines inside the Reactor Building basement sumps associated with the RHR and Core Spray Corner Rooms, with ball valves.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because flooding is caused by a failure of an internal piping system or the Torus. The installed valves do not interface directly with these components, but they do interface indirectly by means of being the floor drain isolation valves. However, a failure of these valves cannot initiate flooding. The valves are designed to remain closed. In the event of a Torus break, the valves will prevent water from affecting the proper operation of the ECCS systems.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the ball valves are designed to isolate the floor drains and maintain passive protection of the ECCS corner rooms. The ball valves failing has no more effect on consequences than the previous check valves failing. The ball valves ensure that the other corner rooms are protected from flooding if the Torus or one of the ECCS loops breaks. The plant can still be safely shut down if one of the ECCS loops is lost.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change in the type of valve used does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0032

Type of Safety Evaluation: Validation

Evaluation Reference Number: SE-98-030

Title: 250VDC RCIC Condensate Pump Control/Power Circuit

DESCRIPTION:

The 250VDC control circuit for the condensate pump will be modified so that the condensate pump will automatically cycle on and off when the pump is operated in the local mode. The existing vacuum tank level switch will be used to perform this function. Previous to the proposed modification, the pump cycled on vacuum tank level only when operated in the REMOTE, AUTO mode. The pump was previously provided with a continuous run signal when operated in the LOCAL mode which could result in pump damage.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed changes in the control circuit for the LOCAL mode of condensate pump operation does not represent an overall higher probability of a malfunction of equipment. Normal operation of the condensate pump is in the REMOTE, AUTO mode. This mode of operation currently provides for the cycling of the condensate pump off the vacuum tank level switch. The proposed change will make the pump less likely to fail in the LOCAL mode during an Appendix R fire since the pump will be prevented from operating dry.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed control logic change does not create a change to any portion of RCIC system initiation or isolation logic that is relied upon to mitigate the consequences of a

malfunction of equipment important to safety. Addition of the vacuum tank level control feature to the LOCAL mode of pump operation provides greater reliability for the utilization of the RCIC system when required to operate for an Appendix R fire.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0034

Type of Safety Evaluation: Validation

Evaluation Reference Number: WR 980021522 task 04, SE-98-035

Title: Install Freeze Seal on Reactor Bottom Head Drain Line

DESCRIPTION:

This validation is based on original Safety Evaluation SE-98-035, the summary for which is included in this report. Note that this validation is later superseded by validation SS-H-98-0039. The following mode and plant conditions are applicable to this validation:

Reactor is in Modes 4 or 5.

All Technical Specification requirements for operations with a potential for draining the vessel are applicable and shall be met.

All control rods shall be fully inserted.

Reactor is depressurized and vessel water temperature is less than or equal to 150 degrees F.

Minimum reactor water level is at normal operating (30 inches above vessel 0).

The Reactor Water Cleanup (RWCU) system is out of service or the bottom head drain line is isolated from RWCU.

Task 04 of the subject work request installs a freeze seal as a means to isolate the existing leaking socket weld coupling on the reactor bottom head drain line from the reactor vessel to ensure that there is no means of draining the vessel while performing activities prior to the repair of the bottom head drain pipe. Anticipated activities to be performed include; The performance of surveillances which have prerequisites that preclude performance of the surveillance when there is a potential to drain the vessel and performance of activities to disassemble the reactor vessel to allow for the installation of a mechanical plug in the bottom of the vessel to support repair of the bottom head drain pipe. As part of the mechanical plug installation process, Operations intends to remove fuel from at least one, and possibly more cells and to withdraw the associated control rod(s) to allow access to the bottom head drain nozzle. Performance of surveillances and

other Operations activities will be performed in accordance with existing procedures and are not addressed as part of this validation, this validation addresses only the installation of the freeze seal.

The original safety evaluation (SE-98-035) was written to utilize the freeze seal as a singular means of isolating the pipe for purposes of performing repair activities which include cutting the existing pipe. None of the anticipated activities affect the bottom head drain piping downstream of the freeze seal and none of them have an adverse impact on the ability to maintain the freeze seal. Therefore, it is concluded that with the freeze seal in place and maintained in accordance with the QCMM 1500-32 freeze seal procedure, the potential to drain the vessel via the existing bottom head drain line leak is eliminated and control rods for cells that have been emptied of fuel may be withdrawn without invalidating the previous safety evaluation. It is also concluded that any of the other Technical Specification requirements for operations with a potential for draining the vessel may be waived without invalidating the original safety evaluation as long as the freeze seal is in place and maintained.

There are no additional accident or transient analyses affected as a result of the proposed work task beyond those evaluated SE-98-035. There are no changed impacts on Technical Specifications. A failure of the freeze seal in this task would return the piping to the same condition it was in prior to the freeze seal. A contingency plan, as required by the QCMM has been prepared and is part of the subject work package. As discussed in the original safety evaluation, mock ups have demonstrated that a significant amount of time (greater than one hour) would be available to notify Operations and allow Operations to secure from any activities that may be affected due to the pipe reverting to the original condition. The conditions experienced in the mockup and anticipated in the original safety evaluation are more severe than those present in this freeze seal application. Because breaching the pipe is not a part of this activity the scope of the contingency plan is reduced as opposed to the plan contained in the safety evaluation but all essential elements for this installation are included. Therefore it has been determined that the results and conclusions of the previous safety evaluation are met or enveloped by the original safety evaluation is valid for the installation proposed under task 04 of the subject work request.

Note that the original safety evaluation referred to the line no. (EPN) as 1-0207-2"-A. Review of the P&ID has indicated that the correct designation for this line is 1-1265-2"-A.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the original safety evaluation (SE-98-035) concluded that the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated in the Safety Analysis report was not increased. The original safety evaluation was issued for performing a single freeze seal to support repair of the bottom head drain line. The subject repair would have required breaching the bottom head drain line downstream of the installed freeze seal. As described above, under task 04 of the subject work

request, the freeze seal would be utilized only to isolate the existing leak while performing activities required prior to performing the subject repair. This condition is less severe than that evaluated in SE-98-035.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed activity under task 04 of the subject work request does not present the possibility of any accident or malfunction of a different type than those already evaluated in the reference Safety Evaluation (SE-98-035). As previously stated, this activity will utilize the freeze seal merely to isolate the existing leak, not to perform repair activities.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because there is no activity introduced in the performance of task 04 of the work request (described above) which alters the evaluation or conclusions of the original SE-98-035 safety evaluation, which concluded that the margin of safety as defined in the Technical Specifications is not.

Safety Evaluation Number: SS-H-98-0039

Type of Safety Evaluation: Validation

Evaluation Reference Number: Work Request 980021522 task 04

Title: Reactor Bottom Head Drain Line Freeze Seal

DESCRIPTION:

This validation is based on original Safety Evaluation SE-98-035, the summary for which is included in this report. The following mode and plant conditions are applicable to this validation:

Reactor is in Modes 4 or 5.

All Technical Specification requirements for operations with a potential for draining the vessel are applicable and shall be met.

All control rods shall be fully inserted.

Reactor is depressurized and vessel water temperature is less than or equal to 150 degrees F.

Minimum reactor water level is at normal operating (30 inches above vessel 0).

The Reactor Water Cleanup (RWCU) system is out of service or the bottom head drain line is isolated from RWCU.

This validation of previously performed safety evaluations supersedes SS-H-98-0034. This evaluation is identical to SS-H-98-0034 except that it also addresses issues associated with installation of the freeze seal for an extended period of time. Specifically, seismic and material issues are specifically addressed.

Task 04 of the subject work request installs a freeze seal as a means to isolate the existing leaking socket weld coupling on the reactor bottom head drain line from the reactor vessel to ensure that there is no means of draining the vessel while performing activities prior to the repair of the bottom head drain pipe. Anticipated activities to be performed include; the performance of surveillances which have prerequisites that preclude performance of the surveillance when there is a potential to drain the vessel and performance of activities to disassemble the reactor vessel to allow for the installation of a mechanical plug in the bottom of the vessel to support repair of the bottom head drain pipe. As part of the mechanical plug installation process, Operations intends to remove fuel from at least one, and possibly more cells and to withdraw the associated control rod(s) to allow access to the bottom head drain nozzle. Performance of surveillances and other Operations activities will be performed in accordance with existing procedures and are not addressed as part of this validation, this validation addresses only the installation of the freeze seal.

The original safety evaluation (SE-98-035) was written to utilize the freeze seal as a singular means of isolating the pipe for purposes of performing repair activities which include cutting the existing pipe. None of the anticipated activities affect the bottom head drain piping downstream of the freeze seal and none of them have an adverse impact on the ability to maintain the freeze seal. Therefore it is concluded that with the freeze seal in place and maintained in accordance with the QCMM 1500-32 freeze seal procedure, the potential to drain the vessel via the existing bottom head drain line leak is eliminated and control rods for cells that have been emptied of fuel may be withdrawn without invalidating the previous safety evaluation. It is also concluded that any of the other Technical Specification requirements for operations with a potential for draining the vessel may be waived without invalidating the original safety evaluation as long as the freeze seal is in place and maintained.

This validation also addresses the duration of the freeze seal. In accordance with the 6th Edition of the Piping Handbook, the ASTM A312 type 304 material of the bottom head drain pipe is a commonly used material for cryogenic applications. The handbook also states that a major consideration in the use of these materials is the improvement in toughness properties and elimination of the sharp ductile to brittle transition found in ferritic (carbon) steels. The handbook notes that these materials have been used to contain and distribute liquid hydrogen and liquid helium. Therefore it is concluded that there are no material concerns associated with utilization of the freeze seal for an extended period of time. The anticipated period of time is a few weeks while preparing for and executing the replacement of the leaking bottom head drain pipe. The freeze seal must be removed prior to exiting the mode restrictions placed in this evaluation and the original safety evaluation (modes 4 and 5).

It should also be noted that the guidance provided in ER9801003 with regard to the treatment of pipe supports in and around the freeze seal was performed based upon a

review of the existing piping calculations, including the seismic analysis. The stresses in the vicinity of the freeze are all well below the allowable stress levels. The freeze jacket and associated equipment imparts a load on the pipe that is less than 15 lbs. Per the ER, an existing u-bolt will be loosened or removed. A temporary support with a capacity of 100 lbs. will be installed at the location of a removed u-bolt, otherwise the loosened u-bolt will provide sufficient support and still allow sufficient flexibility to accommodate contraction of the piping due to the freeze seal installation. Based upon the evaluation performed the piping with the freeze jacket in place is capable of meeting the seismic requirement.

There are no additional accident or transient analyses affected as a result of the proposed work task beyond those evaluated in SE-98-035. There are no changed impacts on Technical Specifications. A failure of the freeze seal in this task would return the piping to the same condition it was in prior to the freeze seal. A contingency plan, as required by the QCMM has been prepared and is part of the subject work package. As discussed in the original safety evaluation, mock ups have demonstrated that a significant amount of time (greater than one hour) would be available to notify Operations and allow Operations to secure from any activities that may be affected due to the pipe reverting to the original condition. The conditions experienced in the mockup and anticipated in the original safety evaluation are more severe than those present in this freeze seal application. Because breaching the pipe is not a part of this activity the scope of the contingency plan is reduced as opposed to the plan contained in the safety evaluation but all essential elements for this installation are included. Therefore it has been determined that the results and conclusions of the previous safety evaluation are met or enveloped by the original safety evaluation and is valid for the installation proposed under task 04 of the subject work request.

Note that the original safety evaluation referred to the line no. (EPN) as 1-0207-2"-A. Review of the P&ID has indicated that the correct designation for this line is 1-1265-2"-A.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the original safety evaluation (SE-98-035) concluded that the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated in the Safety Analysis report was not increased. The original safety evaluation was issued for performing a single freeze seal to support repair of the bottom head drain line. The subject repair would have required breaching the bottom head drain line downstream of the installed freeze seal. As described above, under task 04 of the subject work request, the freeze seal would be utilized only to isolate the existing leak while performing activities required prior to performing the subject repair. This condition is less severe than that evaluated in SE-98-035.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed activity under task 04 of the subject work request does not present the possibility of any accident or malfunction of a different type than those already evaluated in the referenced Safety Evaluation (SE-98-035). As previously stated, this activity will utilize the freeze seal merely to isolate the existing leak, not to perform repair activities.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because there is no activity introduced in the performance of task 04 of the work request (described above) which alters the evaluation or conclusions of the original SE-98-035 safety evaluation, which concluded that the margin of safety as defined in the Technical Specifications is not reduced.

Safety Evaluation Number: SS-H-98-0042

Type of Safety Evaluation: Validation; Procedure Change

Evaluation Reference Number: SE-98-026; QOM 2-6700-T19, QOM 2-6800-T20

Title: Install Alternate Feeder For RCIC Valve 2-1301-16 for Appendix R Concerns

DESCRIPTION:

Procedure change to QOM's 2-6700-T19 & QOM 2-6800-T20 to reflect addition of an alternate power feed for RCIC valve 2-1301-16 for Appendix R. Validation of the referenced SE is being performed.

Provide an alternate 208 VAC three phase power feed to the Unit 2 Motor Operated Valve (MOV) RCIC 2-1301-16 Steam Supply Isolation valve from Unit 2 SBO Distribution Panel 75-1-1. Installation of this alternate feed will require routing new cable through a combination of new and existing raceway from SBO through the RB wall to MCC 28-1A-1. For certain Appendix R safe shutdown methods, MOV 2-1301-16 is required to be operable/open to allow the RCIC system to function. Providing this alternate feed from the SBO distribution panel reduces operator actions to accommodate the acceptable timeframe for restoring power to the MO 2-1301-16 valve.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the installation of the alternate feed for the RCIC 2-1301-16 Inboard Steam Supply Isolation valve is designed to meet safety related (including circuit separation) requirements where interfaces exist with normal ESS electrical distribution equipment at MCC 28-1A-1. The alternate feeder (NSR circuit) will be utilized only in an Appendix R fire scenario. Addition of the alternate feed provides flexibility for the utilization of the RCIC system when required to operate during an Appendix R fire.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because as stated previously, the alternate feed circuit will be maintained normally open and controlled by a combination of normal (QOM) and abnormal (QCARP) operations equipment alignment procedures, equipment labels and caution placards. Additionally, the SR/NSR isolation breaker will be fitted with an Appendix R Fire Lock to prevent inadvertent closure due to personnel error. The combination of procedural control and a mechanical interlock between the feeder circuits ensures that no single equipment malfunction or personnel error can connect SBO power (NSR) inadvertently to a live Reactor Building MCC 208 VAC bus (SR).
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition per UFSAR Table 3.8-11.

Safety Evaluation Number: SS-H-98-0043

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-026, QOM 1-6700-T-19, QOM 1-6800-T20

Title: Install Alternate Feeder for RCIC Valve 2-1301-16 for Appendix R Concerns

DESCRIPTION:

Procedure change to QOM's 1-6700-T19 & QOM 1-6800-T20 to reflect addition of an alternate power feed for RCIC valve 1-1301-16 for Appendix R. Validation of the referenced SE is being performed.

Provide an alternate 208 VAC three phase power feed to the Unit 2 Motor Operated Valve (MOV) RCIC 1-1301-16 Steam Supply Isolation valve from Unit 1 SBO Distribution Panel 65-1-1. Installation of this alternate feed will require routing new cable through a combination of new and existing raceway from SBO through the RB wall to MCC 18-1A-1. For certain Appendix R safe shutdown methods, MOV 1-1301-16 is required to be operable/open to allow the RCIC system to function. Providing this alternate feed from the SBO distribution panel reduces operator actions to accommodate the acceptable timeframe for restoring power to the MO 1-1301-16 valve.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the installation of the alternate feed for the RCIC 1-1301-16 Inboard Steam Supply Isolation valve is designed to meet safety related (including circuit separation) requirements where interfaces exist with normal ESS electrical distribution equipment at MCC 18-1A-1. The alternate feeder (NSR circuit) will be utilized only in an Appendix R fire scenario.

Addition of the alternate feed provides flexibility for the utilization of the RCIC system when required to operate during an Appendix R fire.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because as stated previously, the alternate feed circuit will be maintained normally open and controlled by a combination of normal (QOM) and abnormal (QCARP) operations equipment alignment procedures, equipment labels and caution placards. Additionally, the SR/NSR isolation breaker will be fitted with an Appendix R Fire Lock to prevent inadvertent closure due to personnel error. The combination of procedural control and a mechanical interlock between the feeder circuits ensures that no single equipment malfunction or personnel error can connect SBO power (NSR) inadvertently to a live Reactor Building MCC 208 VAC bus (SR).
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition per UFSAR Table 3.8-11.

Safety Evaluation Number: SS-H-98-0049

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QCIS 4100-60, Rev. 0

Title: Test Closing Device on Unit 1 MSIV Vent Door

DESCRIPTION:

Test the closing device on the Unit 1 MSIV Room Reactor Building Vent Door. The closing device is designed to isolate the Reactor Building in the event that smoke is detected in the Reactor Building.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because testing of MSIV vent door closing device will not cause an MSIV line break. During a break, primary/secondary containment is maintained by the main steam isolation valves. Pressure is relieved by the blow out panels. Blow out panels will perform their function regardless of the MSIV vent door position.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because when the MSIV room is part of the turbine building the door will function as previously designed.

When the MSIV Room is part of the reactor building, the closing device provides additional protection for operators who must access the area. Testing of the door closure mechanism will ensure functionality is maintained.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0050

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-033, QOM 1-6300-T03, QOM 1-6300-T05

Title: Rework The Reserve Power Feeds For The Protective Relaying For The Unit 1(2) Main Generator, Main Transformer, UAT, And RAT Primary And Backup Tripping Logic Schemes

DESCRIPTION:

Procedure changes to QOM's 1-6300-T03 & 1-6300-T05 as per changes associated with DCP 9800033. Validation of the referenced SE is being performed.

The protective relaying for the Unit 1(2) Main Generator, Main Transformer, UAT, and RAT utilizes both primary and backup logic schemes. In addition, each logic scheme has both a main and reserve 125 VDC control power source. These DCPs will rework the reserve power feeds such that the Unit 1 protective relaying will use Turbine Building 125 VDC Main Bus 2A-2 (Unit 2) as its reserve source (rather than 1B-2), and the Unit 2 protective relaying will use Turbine Building 125 VDC Main Bus 1A-2 (Unit 1) as its reserve source (rather than 2B-2). The main sources for both units are fed from their respective unit battery buses and will not be altered by these DCPs.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the changes are being made to the 125 VDC control power circuits only and will not affect the relaying logic. The changes made by these DCPs have no direct interface with any equipment important to safety. The panels to which the 125 VDC control power is supplied from are classified as Non-Essential Service Systems (ESS). Non-ESS panels do not feed any equipment important to safety. By implementing these changes, an Appendix R fire cannot disable the protective relaying for the UAT or RAT.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changes made by these DCPs will reduce the consequences of certain Appendix R fires. By supplying the reserve feeds from other sources, 125 VDC control power availability will be assured for these control schemes. Although the new reserve

feeds will be supplied from opposite units (i.e. Unit 1 logic fed from Unit 2), they will still be supplied from the same battery (ref. Drawing 4E-1318B, Rev E).

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0052

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-033, QOM 2-6300-T07, QOM 2-6300-T09

Title: Rework The Reserve Power Feeds For The Protective Relaying For The Unit 1(2) Main Generator, Main Transformer, UAT, And RAT Primary And Backup Tripping Logic Schemes

DESCRIPTION:

Procedure changes to QOM's 2-6300-T07 & 2-6300-T09 as per changes associated with DCP 9800028. Validation of the referenced SE is being performed.

The protective relaying for the Unit 1(2) Main Generator, Main Transformer, UAT, and RAT utilizes both primary and backup logic schemes. In addition, each logic scheme has both a main and reserve 125 VDC control power source. This DCP will rework the reserve power feeds such that the Unit 1 protective relaying will use Turbine Building 125 VDC Main Bus 2A-2 (Unit 2) as its reserve source (rather than 1B-2), and the Unit 2 protective relaying will use Turbine Building 125 VDC Main Bus 1A-2 (Unit 1) as its reserve source (rather than 2B-2). The main sources for both units are fed from their respective unit battery buses and will not be altered by this DCP.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the changes are being made to the 125 VDC control power circuits only and will not affect the relaying logic. The changes made by this DCP have no direct interface with any equipment important to safety. The panels to which the 125 VDC control power is supplied from are classified as Non-Essential Service Systems (ESS). Non-ESS panels do not feed any equipment important to safety. By implementing these changes, an Appendix R fire cannot disable the protective relaying for the UAT or RAT.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changes made by this DCP will reduce the consequences of certain Appendix R fires. By supplying the reserve feeds from other sources, 125 VDC control power availability will be assured for these control schemes. Although the new reserve

feeds will be supplied from opposite units (i.e. Unit 1 logic fed from Unit 2), they will still be supplied from the same battery (ref. Drawing 4E-1318B, Rev E).

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0056

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-046; QCOP 1000-03, Rev. 6

Title: Shutdown Cooling Suction Header Fill And Vent

DESCRIPTION:

Revise the procedure to require the Residual Heat Removal (RHR) Shutdown Cooling (SDC) System Outboard Isolation Valve MO 1(2)-1001-47 be electrically disconnected. This is required to prevent spurious opening the valve due to hot shorts, which would expose low pressure piping downstream of MOV 1(2)-1001-47 to reactor vessel pressure. This could cause piping to fail and loss of vessel inventory.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the procedure revisions require the armatures for valves MO 1(2)-1001-47 to be electrically isolated prior to going above 100 psig reactor pressure. The valves will remain capable of manual alignment, thus the RHR SDC subsystem can function should it be required. Isolation of the valve armatures will be performed using approved station work practices. The changes are limited to valves MO 1(2)-1001-47 and have no adverse impact on any other equipment. Therefore, the probability of a malfunction of equipment important to safety has not increased.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the valves will remain capable of manual operation to support the SDC mode of RHR. In addition the valves will remain closed when the armatures are electrically isolated due to the automatic isolation function being disabled. The operation of valves MO 1(2)-1001-47, the SDC mode of RHR, and the primary containment isolation function have not been adversely impacted by the changes. Therefore, there are no accidents or malfunctions of a different type created.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0059

Type of Safety Evaluation: Validation, Design Change

Evaluation Reference Number: DCP9600270; SE-96-178

Title: Setpoint Change For The Torus To Reactor Building Differential Vacuum Switch

DESCRIPTION:

The setpoint change is associated with instruments DPIS 1-1632-A and DPIS 1-1632-B. SE 96-178 was completed for DCP's 9600270 and 9600271 in the last quarter of 1996 based on the completion of calculation NED-I-EIC-0044, Rev.3. Thus, due to the fact that the DCP 9600270 was not implemented until April of 1998, this Exhibit H Validation was completed prior to implementation.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed change in the nominal setpoint will equalize the pressure between the Torus and the Reactor Building closer to the ambient pressure conditions than currently specified. The setpoint change is in the conservative direction and provides a higher assurance that the vacuum breakers will open within the limits established in the Technical Specifications.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the purpose of moving the Torus to Reactor Building differential switch setpoint in a more conservative direction to account for instrument uncertainties, is to ensure that the Technical Specification setting value of ≤ 0.5 psid vacuum is not exceeded. This design change provides a greater degree of certainty that the pressure switch will open prior to reaching the Technical Specification setting limit.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this design changes provides a greater degree of certainty that the pressure switch will open prior to reaching the Technical Specification setting limit. Therefore, the margin of safety is not impacted at all.

Safety Evaluation Number: SS-H-98-0061

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QCIS 1600-06, Rev. 5; SE-96-178

Title: Calibration of Master Trip Units for AO-1(2)-1601-20A & 20B

DESCRIPTION:

This procedure provides calibration detail for the master trip unit that opens AO-1(2)-1601-20A & 20B. This procedure change will move the setpoint to a new value in accordance with setpoint changes DCPs 9600270 & 271. The new setpoint will open the valves at -0.335 psig. The Technical Specification limit is less than or equal to -0.5 psig.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the change to the setpoint maintains the system within the requirements of the Technical Specifications and provides a more conservative opening of the valves to protect the containment.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the setpoint is moved in the conservative direction and no new equipment is added to the system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the revised setpoint is calculated to account for instrument uncertainties to ensure that the Margin of safety is maintained.

Safety Evaluation Number: SS-H-98-0062

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QCIS 1000-05 Rev. 5; IP-98-0063; SE-97-158

Title: Installation of Interposing Relay in High Containment Pressure Start Logic for HPCI

DESCRIPTION:

An interim procedure to perform post-modification of a new relay installed in HPCI system. Validation of the referenced SE is being performed. The proposed procedure tests the installation of an interposing relay installed in the HPCI logic under the referenced SE. The installation of the interposing relay removed a potential maloperation mode while leaving the logical functioning of the circuit unchanged.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the modification is to the HPCI start logic. The SAR analyzes two accidents in which HPCI is required or postulated. The first is a LOCA inside containment. HPCI initiation is not an initiator of a LOCA. The second is inadvertent initiation of HPCI (cold water reactivity addition). The installation of the interposing relay decreases the probability of this accident by removing a potential inadvertent initiation mechanism while maintaining the original design initiation requirements.

The limiting failures that could conceivably be associated with the proposed modification are a complete failure of HPCI, or, conversely, an inadvertent initiation of HPCI. The consequences of a failure of HPCI have been explicitly considered in the SAR, and it is stated in the SAR that in the event of a complete failure of HPCI the core will be adequately cooled. There are no radiological consequences associated with an inadvertent initiation of HPCI.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed change will not affect plant operation of the HPCI system as designed, nor will it result in an inability of any other components within the HPCI system to perform their design functions. No new modes of failure are introduced because the circuitry already is designed with the possibility of relay failure, and the overall failure of HPCI to operate is a previously analyzed accident described in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the proposed change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SS-H-98-0063

Type of Safety Evaluation: Validation, Interim Procedure

Evaluation Reference Number: SE-97-158

Title: Interim Procedure (IP) 98-0063

DESCRIPTION:

An interim procedure to perform post-modification of a new relay installed in the High Pressure Coolant Injection (HPCI) system. Validation of the referenced SE is being performed. The proposed procedure tests the installation of an interposing relay installed in the HPCI logic under the referenced SE. The installation of the interposing relay

removed a potential maloperation mode while leaving the logical functioning of the circuit unchanged.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the modification was to the HPCI start logic. The SAR analyzes two accidents in which HPCI is required or postulated. The first is a LOCA inside containment. HPCI initiation is not an initiator of a LOCA. The second is inadvertent initiation of HPCI (cold water reactivity addition).

The failures that could conceivably be associated with the proposed testing are bounded by those identified by the installation: a complete failure of HPCI, or, conversely, an inadvertent initiation of HPCI. The consequences of a failure of HPCI have been explicitly considered in the SAR, and it is stated in the SAR that in the event of a complete failure of HPCI the core will be adequately cooled. There are no radiological consequences associated with an inadvertent initiation of HPCI.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed testing will not affect plant operation of the HPCI system as designed. The proposed testing will be performed by a revision of an existing approved procedure that renders the HPCI system inoperable during the logic testing to prevent inadvertent initiation. The completion steps of the procedure directs realignment of the system to restore operability. The proposed testing will not result in an inability of any other components outside the limits of the test procedure to perform their design functions. The overall failure of HPCI to operate is a previously analyzed accident described in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the proposed change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SS-H-98-0064

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QOS 0005-S15, SE-98-027

Title: Operators Surveillance/Turnover Sheets, Outside Equipment Operator

DESCRIPTION:

Routinely check heat trace lines for Unit 1 minimum flow/test return line and Unit 2 suction piping tie-in for the Independent Shutdown Pump.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this surveillance only results in documentation of the condition of the heat trace or the affected lines. The CCST provides a water source for systems which are required to respond to accidents. The addition of two piping tie-ins to the CCST and RHR branch line will not increase the probability of any accidents. The integrity of the CCST system has not been affected. The systems required to operate to mitigate the consequences of accidents are not being affected. This does not affect the capabilities or flow characteristics of any other systems.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the surveillance only dictates that a visual check of heat trace indication be performed. The heat trace installation was performed in accordance with applicable codes, standards and procedures and therefore do not adversely impact the associated structures, systems or components..
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because documentation of heat trace status of these lines does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0065

Type of Safety Evaluation: Validation, Interim Procedure

Evaluation Reference Number: SE-98-056; QCTS 0310-01; IP 98-0054

Title: Unit One Emergency Core Cooling System Simulated Automatic Actuation and Diesel Generators Auto-Start Surveillance

DESCRIPTION:

This interim procedure change to QCTS 0310-01 demonstrates that the EDG can successfully perform the Tech Spec synchronizing test. Additionally, division II testing and other steps not required to perform the division I synchronizing test are removed in this interim procedure.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this procedure does not change the methodology previously evaluated under SE-98-056. Any abnormal configurations required by the test are verified to be returned to normal configuration at the completion of testing.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this procedure does not change the methodology previously evaluated under SE-98-056. Any abnormal configurations required by the test are verified to be returned to normal configuration at the completion of testing. Additionally, only one division of the affected systems are tested.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this procedure change does not change any parameters upon which the Tech Specs are based.

Safety Evaluation Number: SS-H-98-0066

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-017, QCAN 901(2)-8, F-12

Title: Installation of Relays

DESCRIPTION:

Procedure change to QCAN 901(2)-8, F-12 to reflect installation of relays as per DCP 9800034.

Validation of the referenced SE is being performed.

This modification installs two new auxiliary relays in panel 902-29. These relays will perform an auto-transfer between the main and alternate 125 Vdc control power sources for the Main Generator, Main Power Transformer (MPT), Unit Auxiliary Transformer (UAT), and Reserve Auxiliary Transformer (RAT) Primary and Backup System Tripping Relay Circuits. Prior to this design change, manual operator action was required to transfer to the alternate source of DC power.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the proposed change will not adversely affect the 125 Vdc system during normal system operation.

This change decreases the amount of time the relay protection circuit is unavailable should the main power supply be lost. This design change replaces the manual transfer between the main and alternate control power to the Generator and Transformer Tripping Relay circuits with an automatic transfer feature. It does not affect the configuration or method of operation of the protective transformer tripping relays. For these reasons, the probability of a malfunction of equipment important to safety is not increased by this design change.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this design change does not adversely affect generator or transformer protective relay operation. By automatically switching over to the reserve 125 Vdc control power supply in the event of a loss of main control power, the amount of time that this control circuit is without power is decreased. Also, the failure modes of the new HFA relays have been evaluated and do not create an adverse or unanalyzed system interaction. Therefore, this design change does not create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition. See Battery Sizing Considerations in section 3/4.9.C & Bases.

Safety Evaluation Number: SS-H-98-0067

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-057, QOA 912-1-C-4 and D-4

Title: Setpoint Change for Low Level Switches

DESCRIPTION:

Changed setpoint for low level switches which cause these alarms in the control room.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because raising the level switches ensures the alarm comes in sooner with more water available to the operator. This does not adversely affect or change the probability or consequences of any accident that has been previously evaluated.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because raising the level at which the alarms come in ensures an increased volume of water available to be used during accident conditions. These changes will not adversely impact any system or component so as to create a different type of accident.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this setpoint change does not alter any Tech Spec requirement and does not reduce the margin of safety. The Tech Spec requirement of having available a volume of water to the RHR and Core Spray system during Modes 4 or 5 when the Suppression Chamber is < 7 feet is still in effect and is not changed.

Safety Evaluation Number: SS-H-98-0068

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QOM 1-1300-04, Rev. 3 and QOM 1-2300-02, Rev. 3

Title: Include Newly Installed Fuses On The Appropriate Fuse Checklists

DESCRIPTION:

Two 10 amp fuses have been added to the control circuits for certain RCIC and HPCI equipment. These fuses were installed to protect the circuits during an Appendix R fire (reference safety evaluations SE-98-009 and SE-98-023). This change only includes the newly installed fuses on the appropriate fuse checklist.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because placing these newly installed fuses on the appropriate fuse check list does not affect the probability of occurrence or the consequences of any accident or malfunction.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because placing these newly installed fuses on the appropriate fuse check list does not create the possibility for an accident or malfunction of a different type than any evaluated previously in the SAR.
3. The margin of safety, as described in the basis for any Technical Specification, is not reduced because the margin of safety, as described in the basis for any Technical Specification is not affected by placing the newly installed fuses on the appropriate fuse list.

Safety Evaluation Number: SS-H-98-0069

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QOM 2-1300-04, Rev. 4 and QOM 2-2300-02, Rev. 3

Title: Include Newly Installed Fuses On The Appropriate Fuse Checklists

DESCRIPTION:

Two 10 amp fuses have been added to the control circuits for certain RCIC and HPCI equipment. These fuses were installed to protect the circuits during an Appendix R fire (reference safety evaluations SE-98-009 and SE-98-023). This change only includes the newly installed fuses on the appropriate fuse checklist.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because placing these newly installed fuses on the appropriate fuse check list does not affect the probability of occurrence or the consequences of any accident or malfunction.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because placing these newly installed fuses on the appropriate fuse check list does not create the possibility for an accident or malfunction of a different type than any evaluated previously in the SAR.
3. The margin of safety, as described in the basis for any Technical Specification, is not reduced because the margin of safety, as described in the basis for any Technical Specification is not affected by placing the newly installed fuses on the appropriate fuse list.

Safety Evaluation Number: SS-H-98-0071

Type of Safety Evaluation: Validation, Drawing Change

Evaluation Reference Number: DCR 980068

Title: DCR to Change Instrument Setpoint Information In EWCS

DESCRIPTION:

The current Technical Specification for HPCI Room Temperature is contained in Tech Spec Table 3.2.A-1. The Tech Spec limit is 170°F. A trip instrument setpoint of 155°F was implemented by modification M04-1-84-021A (and the Tech Spec changed to 170°F). The instruments affected by this DCR are not the Tech Spec instruments, but

provide an alarm prior to reaching the Tech Spec initiation point. The 140°F setpoint for this alarm provides the operator with a warning that conditions in the room could be approaching those where a HPCI isolation may occur at 155°F prior to reaching the Tech Spec limit of 170°F. This logic was used in Safety Evaluation SE-93-51 to change the setpoint to 140°F and is still valid.

NOTE: This screening does not actually change any instrument setpoint. The 140°F setpoint was changed under Safety Evaluation SE-93-51. The EWCS database did not capture this setpoint change during the download of information. This DCR corrects the information in EWCS to agree with the design basis.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this setpoint affects temperature monitoring equipment and does not affect any equipment that could cause a HELB. The instruments provide an early warning for room temperature, but these instruments do not provide the protective isolation function.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this safety screening merely verifies that the previous safety evaluation used to change the instrument setpoint is applicable to the change in the EWCS database. Since the database is supposed to reflect the plant design, this change is covered by the safety evaluation that justified the configuration change.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the isolation instrument setpoint insures that the margin of safety given in the Technical Specification is maintained. This margin is the isolation at 155°F vs the Tech Spec required isolation at 170°F. This instrument setpoint does not affect the instruments that isolate HPCI automatically.

Safety Evaluation Number: SS-H-98-0072

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-049, QCOP 1000-29, Rev. 4

Title: Shutdown Cooling Startup And Operation From Outside The Control Room

DESCRIPTION:

The procedure is being revised in accordance with DCRs 980047 (Unit 1) and 980048 (Unit 2) which change the configuration of motor operated valves, MO 1(2)-1001-18A and B, from "normally closed" to "normally open". The valves' present control circuit configuration will not be altered. This proposed change does not require any physical work for implementation; ie., the valves only need to be repositioned. which can be

accomplished from the control room or locally at the valves. The applicable procedure changes will be evaluated separately. The proposed change is being implemented due to 10CFR50 Appendix R fire concerns. Changing the MO 1(2)-1001-18A and B valves' position to normally open will reduce the probability of damaging the residual heat removal (RHR) pumps due to a failure of the minimum flow valves to open as a result of an Appendix R event.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because there is no increase in the probability of a malfunction of equipment important to safety based on changing the normal valve position of MOV 1(2)-1001-18A(B). There is no physical change to the valves or their circuitry so the probability of the valves malfunctioning is not changed. Changing the normal valve position to open reduces the probability of RHR pump malfunction due to the minimum flow valve failure to open from a normally closed position.

An analysis (UFSAR section 6.3.3.2.4) has evaluated the impact of having one of the minimum flow valves failing to close when desired, thus bypassing water to the torus/suppression pool. The analysis concludes that the minimum flow valve failure to close is bounded by the LOCA analysis. If the valve fails closed, the pumps could overheat due to a lack of minimum flow path. This has the same consequences as the existing normally closed valve's failure to open. Thus, the consequences have not changed.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change to MOVs 1(2)-1001-18A and B normal position has no adverse impact on the ECCS/RHR system, containment system or reactor systems to the extent of creating an accident or malfunction different from those evaluated in the SAR. There are no new interactions or functions created so there is no possibility of creating an accident or malfunction of a different type than already evaluated.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety. However, all changes to the parameters or conditions used to establish the Technical Specification requirements for 6.8.A.7 Fire Protection Program are in a conservative direction. Therefore, the actual acceptance limit need not be identified to determine that no reduction in margin of safety exists. This change provides additional assurance of pump protection during an Appendix R event. A safety evaluation of the revised Safe Shutdown Analysis has evaluated the need for Technical Specification changes as a result of Fire Protection Program revisions including the normal position of the RHR minimum flow valves.

Safety Evaluation Number: SS-H-98-0073

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-057, QCOP 1000-02, Rev. 9

Title: RHR System Preparation For Standby Operation

DESCRIPTION:

The procedure is being revised in accordance DCPs 9800149, 9800150, and DCNs 01718M, 01715M as a result of restoring A(B) CCSTs to UFSAR Requirements by altering the tanks' standpipes.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because neither the CCSTs, associated piping, or the CCST low level switches, function as initiators for any of the applicable design basis accidents/transients. All material and installations performed were consistent with the original design requirements for the non-safety-related tank and the pressure switches/piping. Each RHR/Core Spray flow path from the CCSTs to the respective pumps is protected by two locked closed valves, one of which is within the safety-related boundary of the RHR/Core Spray system and the other which is outside of the safety-related boundary but inside of the bounds of the seismic analysis for the respective RHR/Core Spray suction piping. This was considered to be adequate protection to allow this standpipe to be cut. Therefore it was concluded that the design change does not increase the probability of an accident or malfunction of equipment important to safety in the Safety Analysis Report. The consequences of an accident or malfunction of equipment important to safety in the Safety Analysis Report are not increased because the modified configuration ensures that the reserve volume required in the UFSAR (90,000 gallons) for HPCI, RCIC and SSMP system operation is met and the systems are capable of meeting all operating parameters required to mitigate accidents/transients as specified in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change to the Condensate Makeup/Condensate Transfer standpipes merely raises the existing standpipes. It does not alter the operation of the Condensate Makeup or Condensate Transfer systems or any of the systems they support. The change to the RHR/Core Spray suction pipe, i.e. the removal of the standpipe, does not functionally alter operation of the RHR/Core Spray suction piping. It does provide an increased volume of water available to RHR/Core Spray under emergency conditions or under conditions of low suppression pool water level. The relocation of the low level switch will continue to provide adequate warning

to the control room that CCST levels are approaching the top of the standpipes. None of these changes will adversely impact any systems or functions so as to create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because Technical Specification 3/4.5.C states that if during Modes 4 and 5 suppression chamber level is less than 7 ft., among other items, the CCST shall contain $\geq 140,000$ available gallons of water. This is consistent with Technical Specification 3/4.5.B which requires CCST to contain 140,000 available gallons of water for RHR (LPCI) and Core Spray operability under these conditions. This is also in accordance with the SER for the TSUP upgrade (letter to D. L. Farrar of NRC dated December 27, 1995) which takes credit for 140,000 available gallons under these conditions and provides the basis for NRC acceptance of the TSUP upgrade. This Design Change does not alter the Technical Specification above conditions. However, the cutting of the RHR/Core Spray standpipe does alter the basis for Technical Specification 3/4.5.C in that the RHR/Core Spray suction is no longer uncovered at the 90,000 gallon level. Lowering the RHR/Core Spray suction to a lower level in the tank makes available a much greater tank volume to the RHR/Core Spray systems under these conditions. This will remain in compliance with the TSUP SER 140,000 gallon minimum requirement. This design change also allows for greater margin over the 140,000 gallon value at the discretion of Operations under such conditions due to the availability of a larger tank volume. The basis should be altered to reference only the 140,000 gallon requirement. As previously discussed, the two normally locked closed isolation valves in each RHR/Core Spray suction flow path from the CCSTs provide a level of assurance that the 90,000 gallon reserve for HPCI, RCIC and SSMP is maintained that is equivalent to the original standpipe. Based upon the above it is concluded that this design change does not alter the actual Technical Specification requirements and that the change to the Technical Specification basis does not reduce the margin of safety.

Safety Evaluation Number: SS-H-98-0077

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-96-016, QCOP 0203-01, Rev. 6

Title: Reactor Pressure Control Using Manual Relief Valve Actuation

DESCRIPTION:

Setpoint change – the setting for the time delay relays have been changed from 9-10 seconds to 14.5 ± 0.5 seconds.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because changing the TDR setting has no impact on the probability or consequences of any accidents. This relay is normally deenergized and is actuated following relief valve actuation. Failure of this relay will not cause the relief valve to open or fail to close.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the new setting of the TDR will provide additional time for the relief valve discharge line vacuum breakers to operate which ensure hydraulic loads introduced during subsequent relief valve actuation are within analyzed limits. No new failures are created.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because no Tech Specs are affected by this setpoint change. The valves will still operate within Tech Spec requirements. Therefore, the margin of safety is not reduced.

Safety Evaluation Number: SS-H-98-0078

Type of Safety Evaluation: Validation, Interim Procedure

Evaluation Reference Number: IP 98-0064; QCTS 0300-01; SE-98-041

Title: Test Equipment to Measure ADS Inhibit Time Delays

DESCRIPTION:

This interim procedure change to QCTS 0300-01 changes the test equipment used to measure the ADS inhibit time delays and eliminates the division I steps.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this procedure does not change the methodology previously evaluated under SE-98-041. Only the test equipment has been changed.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this procedure does not change the methodology previously evaluated under SE-98-041. Only the test equipment has been changed.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the required verifications to be in compliance with the Tech Specs are included in the procedure.

Safety Evaluation Number: SS-H-98-0079

Type of Safety Evaluation: Validation

Evaluation Reference Number: SE-98-050

Title: Install One Hour Rated Fire Wrap For 125Vdc UAT/RAT Tripping Circuits

DESCRIPTION:

The proposed change will install a 1 hour- rated fire barrier system to protect existing cables 1110, 1687, 1119, 1122, 1111, 1126, 1128 & 1112 in the Turbine Building cable tunnel area. The fire barrier system consists of an approved fire wrap material applied over the conduits which contain these cables. All conduits to be fire wrapped contain only the subject cables. There are no functional/circuit logic changes associated with the proposed change. The proposed change is required to ensure these cables remain undamaged during a postulated Appendix R fire in the Turbine Building cable tunnel area. These control cables provide the 125VDC tripping circuit and are necessary to ensure the electrically- actuated opening of 345kV switchyard Oil Circuit Breakers (OCBs) for faults on the electrical distribution system downstream of the UAT and RAT for each unit.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the addition of the proposed fire wrap has been analyzed and will not create any adverse effects either structurally or electrically during normal operation or during any postulated event. The proposed fire wrap represents a passive feature which does not create any operational interface with any SSC. The electrical function of the existing cables is not changed. The reliability of the UAT, RAT, OCBs or the standby power supply is not decreased. Since the application of the fire wrap on the subject cables does not alter this function and there are no other interactions created, the consequences of a malfunction of any equipment important to safety are not increased.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the fire wrap improves reliability of OCB tripping functions during a specific analyzed event (i.e. common enclosure Appendix R fire event). Reliability of the UAT, RAT, and OCBs during normal and accident conditions remains the same. Additionally, the standby power supply is not impacted in any way by this change. The standby supply is designed to fully compensate for the loss of the normal supply for all modes of operation as previously evaluated in the SAR.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0080

Type of Safety Evaluation: Validation

Evaluation Reference Number: NFS:BSS:98-045

Title: Changes To Q2C15 Revision 1 Core And Associated Analysis Due To Failed Fuel Replacement

DESCRIPTION:

A 50.59 was prepared by Nuclear Fuels Management to evaluate the changed reactor core after replacement of a failed fuel bundle. Also evaluated were changes to the Operating Limit MCPR, a new COLR report, a reduced pressure MCPR penalty, and revised Feed Water Controller Failure (FWCF) transient analysis.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the replacement fuel is a GE9B type. This fuel type is already in use in the Unit Two reactor. Thus the probability and consequences of an accident is not increased by the fuel type. The replacement bundle was verified to be below the exposure limits for the end of Q2C15 Rev 1.

The new analysis were performed to incorporate recent information regarding updated additive constants for the Siemens Atrium-9B fuel. The analysis changes are not a physical change and thus have no impact on the probability or consequences of an accident.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because no new failure modes will be generated by replacing the leaking fuel assembly with a discharged assembly. The replacement assembly is of a type already in use in the core and will meet the mechanical and thermal-hydraulic criteria established.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the margin of safety associated with the new analysis is the MCPR safety limit. The new analysis concerning the Operating limit MCPR, the reduced pressure MCPR penalty, and the FWCF were all valid with a MCPR safety limit of 1.10. Therefore, since there was no change to the safety limit the margin of safety was not reduced.

Safety Evaluation Number: SS-H-98-0081

Type of Safety Evaluation: Validation, Drawing Change

Evaluation Reference Number: DCR 980065, DCP 9600192

Title: Revise P&ID To Reflect Removal Of The Auto-Fill Capability For The Fire Diesel Day Tank

DESCRIPTION:

The previous design change removed the auto isolation function for the diesel fuel oil transfer pump to prevent the loss of fuel oil in the event of a line break. This DCR incorporates that change into the plant P&IDs.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased. The original concern was that in the event of a DBA Seismic Event, piping downstream of the 2-5299-02 could fail causing fuel oil to be diverted from the unit diesel day tanks. Implementation of this change prevents this accident from occurring. However, this change will remove the auto-fill capability of the fuel oil transfer pump but will not affect the consequences of a DBA fire because the day tanks have the necessary fuel for 8 hours of operation as required by NFPA 20. Additional fuel can be added manually in the event of a DBA fire. A seismic event is not postulated concurrent with a DBA fire. The design change separates the non-Safety Fire Diesel Fuel Oil System from the safety-related Emergency Diesel Generator Fuel Oil System.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the UFSAR does not state that the auto fill capability is available for the fire diesels. The required amount of fuel is maintained in the Bulk Storage Tank.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change removes the auto fill capability of the fire diesel day tanks. No credit for this function is taken in the design basis of the plant. This capability is only a convenience to plant operators.

Safety Evaluation Number: SS-H-98-0084

Type of Safety Evaluation: Validation, UFSAR Revision

Evaluation Reference Number: SE-97-159, E04-1-94-013, DCP 9700398, DCP 9700401, DCR 970240, UFSAR-97-R5-023

Title: Space Heaters For 250 VDC MCC's 1A, 1B, 2A And 2B

DESCRIPTION:

The space heaters for 250 VDC MCCs 1A, 1B, 2A and 2B have been disconnected. DCR 970240 is to revise drawings for the space heater for 1A to show the heater, breaker and associated wiring removed. For the heater for 2A MCC, the DCR updates the plant drawings to show the cable determined at the breaker. The breaker for the space heaters for MCCs 1B and 2B were disconnected and removed under DCPs 9700398 and 9700401. Table 8.3-4 of the UFSAR lists the space heaters as a typical load on the 250 VDC system. Since the space heaters have been disconnected and/or removed, they are no longer a load on the 250 VDC system. Thus Table 8.3-4 is being revised to remove the load.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the removal of the space heaters does not directly interface with any systems required for safe shutdown of the plant. The only direct operating impact on any safety-related systems is with the 250 Volt battery system. The operating impact is in the conservative direction by decreasing the direct connected load to the 250 Volt battery system.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the implementation of this exempt change will have no adverse effect in the operation or system description as contained in the UFSAR or Technical Specifications. The removal of these heaters will actually increase the reliability by removing unnecessary loads from the 250 Volt battery system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the 250 Volt battery system of each unit is designed to carry its direct connected load for eight hours without recharging. The direct connected loads for each unit (as listed in UFSAR Table 8.3-4) includes the above mentioned space heaters. The removal of these heaters will decrease the load that the 250 Volt battery system is required to carry.

Safety Evaluation Number: SS-H-98-0088

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: QCIS 1000-05; SE-97-158

Title: Installation of Interposing Relay in High Containment Pressure Start Logic for HPCI

DESCRIPTION:

The change to procedure QCIS 1000-05, Rev. 5 and IP-98-0063 provides for verification of the proper operation of the 1-2330-162 relay during the functional testing of PS-1-1001-89D and clarifies the test setup for the pressure switch.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the modification is to the HPCI start logic. The SAR analyzes two accidents in which HPCI is required or postulated. The first is a LOCA inside containment. HPCI initiation is not an initiator of a LOCA. The second is inadvertent initiation of HPCI (cold water reactivity addition). The installation of the interposing relay decreases the probability of this accident by removing a potential inadvertent initiation mechanism while maintaining the original design initiation requirements.

The limiting failures that could conceivably be associated with the proposed modification are a complete failure of HPCI, or, conversely, an inadvertent initiation of HPCI. The consequences of a failure of HPCI have been explicitly considered in the SAR, and it is stated in the SAR that in the event of a complete failure of HPCI the core will be adequately cooled. There are no radiological consequences associated with an inadvertent initiation of HPCI.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the proposed change will not affect plant operation of the HPCI system as designed, nor will it result in an inability of any other components within the HPCI system to perform their design functions. No new modes of failure are introduced because the circuitry already is designed with the possibility of relay failure, and the overall failure of HPCI to operate is a previously analyzed accident described in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the proposed change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.

Safety Evaluation Number: SS-H-98-0089

Type of Safety Evaluation: Validation, Unique Test

Evaluation Reference Number: SE-98-008

Title: Post DCP Testing For Installation Of U-2 SBO Fuel Oil DCS Bypass Switch

DESCRIPTION:

Provide detailed testing steps to prove that the installation of the Distributed Control System (DCS) bypass switch for the U-2 SBO fuel oil transfer pump allows local, manual control of pump independent of DCS system availability while not affecting the normal manual or automatic control.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the referenced safety evaluation describes the installation and functional attributes, including potential modes of failure, for the U-2 SBO fuel oil transfer pump DCS bypass handswitch to be tested. This test can be performed in any mode with no additional system or component out-of-services required.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because test will not function pump control circuit, including the DSC bypass switch, in any manner not previously analyzed under the referenced safety evaluation.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0090

Type of Safety Evaluation: Validation, Unique Test

Evaluation Reference Number: SE-98-012

Title: Post DCP Testing For Installation Of U-1 SBO Fuel Oil DCS Bypass Switch

DESCRIPTION:

Provide detailed testing steps to prove that the installation of the distributed control system (DCS) bypass switch for the U-1 SBO fuel oil transfer pump allows local, manual control of pump independent of DCS system availability while not affecting the normal manual or automatic control.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the referenced safety evaluation describes the installation and functional attributes, including potential modes of failure, for the U-1 SBO fuel oil transfer pump DCS bypass handswitch to be tested. This test

can be performed in any mode with no additional system or component out-of-services required.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because test will not function pump control circuit, including the DSC bypass switch, in any manner not previously analyzed under the referenced safety evaluation.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which the Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0091

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-033, QCAN 901(2)-8 C-2 Rev. 2

Title: TURB/GEN Trip Relay Main Dc Power Failure

DESCRIPTION:

The procedure is being revised in accordance for DCPs 9800028 and 9800033 which swap power feeds to the Unit 1(2) Main Generator, Main Transformer, RAT, and UAT.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the changes will not affect the relaying logic, only the source from which it is fed from. The relaying logic is normally de-energized; therefore, a loss of control power cannot cause a generator or RAT trip. A spurious actuation of this relaying circuit could cause the main generator to trip or RAT to isolate; however, this possibility existed prior to this modification.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changes made by these DCPs will reduce the consequences of certain Appendix R fires. By supplying the reserve feeds from other sources, 125 VDC control power availability will be assured for these control schemes. Although the new reserve feeds will be supplied from opposite units (i.e. Unit 1 logic fed from Unit 2), they will still be supplied from the same battery. The change in 125 VDC circuit breaker sizes will not adversely affect the way the protective relaying behaves during normal and abnormal conditions. The circuit breakers will still open the 125 VDC control circuits in the event of short circuits, yet still supply enough margin to produce a reliable 345 Kv tripping scheme.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because all relevant sections of the Technical Specifications were reviewed. These modifications will not affect any of their basis. The margin of safety is therefore not reduced.

Safety Evaluation Number: SS-H-98-0092

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-033, QOA 900-08 C-2, Rev. 3

Title: Reserve AUX Trans 12(22) Trouble

DESCRIPTION:

The procedure is being revised in accordance for DCPs 9800028 and 9800033 which swap power feeds to the unit 1(2) Main Generator, Main Transformer, RAT, and UAT.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the changes will not affect the relaying logic, only the source from which it is fed from. The relaying logic is normally de-energized, therefore, a loss of control power cannot cause a generator or RAT trip. A spurious actuation of this relaying circuit could cause the main generator to trip or RAT to isolate; however, this possibility existed prior to this modification.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the changes made by these DCPs will reduce the consequences of certain Appendix R fires. By supplying the reserve feeds from other sources, 125 VDC control power availability will be assured for these control schemes. Although the new reserve feeds will be supplied from opposite units (i.e. Unit 1 logic fed from Unit 2), they will still be supplied from the same battery. The change in 125 VDC circuit breaker sizes will not adversely affect the way the protective relaying behaves during normal and abnormal conditions. The circuit breakers will still open the 125 VDC control circuits in the event of short circuits, yet still supply enough margin to produce a reliable 345 Kv tripping scheme.
4. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because all relevant sections of the Technical Specifications were reviewed. These modifications will not affect any of their basis. The margin of safety is therefore not reduced.

Safety Evaluation Number: SS-H-98-0095
Type of Safety Evaluation: UFSAR Revision
Evaluation Reference Number: UFSAR-97-R5-058

Title: UFSAR Change To Reflect Setpoint Change

DESCRIPTION:

UFSAR Section 9.5.6 to specify the cranking time band.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the EDG is not an initiator for any accident. The change in the setting of the TD2 relay will not affect the ability of the EDG to mitigate the consequences of an accident.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the change of the EDG TD2 setting does not introduce a new accident or failure mode for the equipment because the operation and function of the equipment are unchanged.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the setpoint change does not change any parameters upon which the Tech Specs are based.

Safety Evaluation Number: SS-H-98-0097
Type of Safety Evaluation: Validation, Procedure Change
Evaluation Reference Number: QCAP 1500-01, DCP9700400, DCP 9700394 and DCP 9700289

Title: Administrative Requirements for Fire Protection

DESCRIPTION:

This procedure change revised Attachment 1 "EFP Fire Doors" to include the Unit 1 and Unit 2 MSIV Room Hatch Doors into the Smoke and Heat Barrier for Appendix R. This was done per DCP 9700400 and DCP 9700394. DCP 9700289 removed the existing Main Turbine Oil Bearing 8&9 Fire control panel for Unit 1. The revision to QCAP 1500-1 for the modification listed Unit 2 in error and is now being corrected.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because this procedure by definition is administration controls only and does not affect plant operation as reflected in the UFSAR.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because this procedure by definition is administration controls only and does not affect plant operation as reflected in the UFSAR.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because there are not any Technical Specifications affected by this change.

Safety Evaluation Number: SS-H-98-0098

Type of Safety Evaluation: Validation, Modification Test

Evaluation Reference Number: DCP 9300292, SE-97-098

Title: Unit 2 Feedwater Oxygen Injection System Modification Test

DESCRIPTION:

This Modification Test put the new Feedwater Oxygen Injection system into operation similar to the normal operating procedure QCCP 0500-05. Additional data was taken.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the Feedwater Oxygen Injection System is to maintain the oxygen concentration to limit the long term erosion/corrosion rates of the carbon steel pipe. It does not interact with any other systems and improves the long term pipe integrity of the Feedwater and Condensate system.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because it does not interact with any other systems and improves the long term pipe integrity of the Feedwater and Condensate system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because there are not any Technical Specifications affected by this change.

Safety Evaluation Number: SS-H-98-0099

Type of Safety Evaluation: Validation, Design Change

Evaluation Reference Number: SE-98-038; DCP 9800027

Title: Route New Cables For The Unit 2 RAT (Transformer 22) And UAT (Transformer 21) Current Transformer (CT) Neutral Ground Detection Circuits

DESCRIPTION:

Each cable will feed a single CT for each winding (X&Y) of the affected transformers. Cables routed between the UAT and RAT control panels and a local junction box will be in separate conduits. Cables running between the local junction box and the auxiliary electric room UAT/RAT Protective Relay Panel 901-29 will be routed in a combination of cable tray and conduit on the exterior walls of the reactor and turbine buildings. The existing cables associated with these CT circuits will be abandoned in place. The cables will enter the Auxiliary Equipment Room from the Computer Room through an existing penetration in the Service Building wall. The additional work associated with this design change (balance of the conduit/raceway installation) will be evaluated separately under SE-98-015.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the configuration and function of the UAT/RAT neutral ground detection circuitry remains unchanged by this modification, providing the same level of fault protection as before. A failure of any or all current transformer cables will not cause the UAT/RAT neutral ground detection relay to trip Auxiliary AC Power. Changing the routing of the affected cables to remove them from undesirable Fire Zones increases the probability of clearing a fault on the 4kV buses during postulated fires. This modification does not affect the function of any accident mitigation equipment important to safety and therefore can not increase the consequences of a malfunction of that equipment.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the function of these ground detection circuits are not changed by this modification. The amount of protection provided to the transformers remain the same. This change routes the new cables in such a way as to avoid fire areas TB-I and TB-III. Although the new cable route has all the Unit 1 UAT/RAT current transformer cables in the same raceway this is acceptable based on the BOP classification of the cables. Therefore, this modification will not adversely impact systems or functions in such a way as to create the possibility of an accident or malfunction of a type different from those evaluated in the SAR.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Technical Specification or SAR provides a margin of safety or acceptance limit for the applicable parameter or condition. See section Tech. Spec. 3/4.8.D.

Safety Evaluation Number: SS-H-98-0101

Type of Safety Evaluation: Validation, Modification Test

Evaluation Reference Number: DCP 9300138, SE-97-098

Title: Unit 1 Feedwater Oxygen Injection System Modification Test

DESCRIPTION:

This Modification Test put the new Feedwater Oxygen Injection system into operation similar to the normal operating procedure QCCP 0500-05. Additional data was taken.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the Feedwater Oxygen Injection System is to maintain the oxygen concentration to limit the long term erosion/corrosion rates of the carbon steel pipe. It does not interact with any other systems and improves the long term pipe integrity of the Feedwater and Condensate system.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because it does not interact with any other systems and improves the long term pipe integrity of the Feedwater and Condensate system.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because there are not any Technical Specifications affected by this change.

Safety Evaluation Number: SS-H-98-0102

Type of Safety Evaluation: Validation, UFSAR Revision

Evaluation Reference Number: SE-96-029, UFSAR-97-R5-059

Title: UFSAR Update To Table 7.3-1 To Reflect The Correct "RCIC Steamline Low Pressure" Nominal Setpoint Value Of 60 PSIG

DESCRIPTION:

UFSAR Update to table 7.3-1 to reflect the correct "RCIC Steamline Low Pressure" nominal setpoint value of 60 psig and to insert a % sign into the nominal setpoint for "RCIC Steamline High Flow".

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the nominal setpoint has been adjusted to cause the safety actuation at an earlier level. If the setpoint were to drift, the total uncertainties have been quantified to not exceed the allowable value of the Technical Specifications during the entire surveillance interval.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the equipment's function will remain the same; revising the instrument's setpoint does not affect the instrument's function.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change increases the margin to the applicable Technical Specification. This change ensures that the RCIC isolation function will occur prior to the requirement stated by the Technical Specification.

Safety Evaluation Number: SS-H-98-110

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: SE-98-078

Title: Procedure Change for Interim Procedure IP #98-0103

DESCRIPTION:

The positions of the standby lineup for the pump discharge valves are being changed because of leakage through the outboard discharge valve; the inboard will be closed while the outboard will be open.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the pump discharge valves have been evaluated for increased operating temperatures and pressures, valve backleakage, and stroke timing and no new failures or malfunctions were identified.

2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the RCIC discharge piping is still being monitored for fill and vent and other Technical Specification requirements are being met. No new accidents have been identified.
3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because the Tech Spec requirement of ensuring the system stays full of water is still being maintained. Due to the new standby lineup, an additional static pressure measurement will be performed to verify the system piping remains full. Because of this, the margin of safety is not reduced.

Safety Evaluation Number: SS-H-98-0111

Type of Safety Evaluation: Validation, Procedure Change

Evaluation Reference Number: DCP 9700394; QCIS 4100-59; SE-97-160

Title: Install Closing Device on Unit 1 MSIV Ver* Door

DESCRIPTION:

Install a closing device on the Unit 1 MSIV Room Reactor Building Vent Door. The closing device will isolate the Reactor Building in the event that smoke is detected in the Reactor Building.

Approved the Instrument Maintenance functional test for fire detectors associated with the MSIV door modification.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence or the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because installation of MSIV vent door closing device will not cause MSIV line break. During break primary/secondary containment is maintained by the main steam isolation valves. Pressure is relieved by the blow out panels. Blow out panels will perform their function regardless of the MSIV vent door position.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because when the MSIV room is part of the Turbine Building the door will function as previously designed. When MSIV is part of the Reactor Building the closing device provides additional protection for operators who must access the area. Therefore spurious operation of MO 1-2301-8 will not affect the ability of SSMP system to perform its design function during an Appendix R fire.

3. The margin of safety, as defined in the basis for any Technical Specification, is not reduced because this change does not affect any parameters upon which Technical Specifications are based.

Safety Evaluation Number: SS-H-98-0118

Type of Safety Evaluation: Validation, Interim Procedure

Evaluation Reference Number: SE-98-081; IP-98-0108, QCIPM 0600-01, Rev. 2

Title: Reactor Feedwater Loop Calibration

DESCRIPTION:

IP 98-0108 implements a change in the span of the Feed Water (FW) flow transmitter to provide the proper flow signal as determined by test results of QCTP 1100-05 and scaling calculation QDC-0600-I-0447, Revision 0. The associated transmitter will be re-spanned to implement the change in nozzle coefficients to provide the proper flow signal.

SAFETY EVALUATION SUMMARY:

1. The probability of occurrence of the consequences of an accident or a malfunction of equipment important to safety previously evaluated in the Safety Analysis Report is not increased because the new Feedwater (FW) flow span calculation and uncertainty analyses were performed to ensure the FW flow input to the core thermal power meets accuracy requirements. Since the flow input will be accurately measured, the assumed starting point of the accident/transient analyses will be within the limits of this analysis. Therefore this change will not increase the likelihood, predicted frequency or consequences of an accident or malfunction previously evaluated in the SAR.
2. The possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report is not created because the function and the configuration of the transmitters will remain the same during all operating modes and accident conditions. Re-spanning of the transmitters only changes the output of the transmitters for a given input and does not change the method of operation of function of the transmitters. The failure mode of the transmitter is not affected by this change and no new failure mode is introduced.
3. The margin of safety, as described in the basis for any Technical Specification, is not reduced because the change does not affect any parameters upon which Technical Specifications are based; therefore, there is no reduction in the margin of safety.