Florida
Power
CORPORATION
Crystal River Unit 3
Docket No. 50-302

December 9, 1996
3F1296-09

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Subject: 10 CFR 50.59 Report

Dear Sir:

Florida Power Corporation (FPC) is submitting the attached report as required by 10 CFR 50.59(b)(2).

These 10 CFR 50.59 evaluations have resulted in no unreviewed safety questions for the modifications or procedure changes. The answer is NO to each of the following questions:

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased?

2. Are the consequences of an accident previously evaluated in the FSAR increased?

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created?

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased?

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased?

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6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created?

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced?

This report (page 37 of 119 in the attachment) includes the 10 CFR 50.59 evaluation performed for MAR No. 96-04-12-01. This modification removed the automatic opening capability of the Emergency Feedwater System valve ASV-204 on an Emergency Feedwater Initiation and Control (EFIC) System actuation. This modification was installed in Refuel 10. Although this attached 10 CFR 50.59 evaluation concluded at the time that an Unreviewed Safety Question (USQ) did not exist, subsequent evaluation of the impact of this modification on the electrical loading of the Emergency Diesel Generator A resulted in a Unreviewed Safety Question. That evaluation was reported to the NRC in LER 96-20-00 which was submitted as a "voluntary" LER. FPC will take the appropriate steps to resolve the USQ and document the resolution in appropriate licensing correspondence.

Sincerely,

P. M. Beard, Jr.
Senior Vice President
Nuclear Operations

PMB/JWT

Attachment

xc: Regional Administrator, Region II
Senior Resident Inspector
NRR Project Manager

MAR No. 80-06-02-01

Description Modification

MAR 80-06-02-01 replaced the pneumatically operated valve CAV-2 in the Chemical Addition System with a solenoid operated valve.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   MAR 80-06-02-01 installed the new CAV-2 in accordance with applicable design, material, and construction standards. The valve will close upon receipt of a containment isolation signal and will fail closed upon loss of control power. Operation of the Liquid Sampling System remains unchanged as a result of this change to CAV-2. No new system interfaces have been created that could increase of the likelihood of any analyzed accident.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   CAV-2, as installed per MAR 80-06-02-01, performs the same functions as the original valve. The valve will continue to close upon receipt of a containment isolation signal and will fail closed upon loss of control power. The function of containment isolation was unchanged by this modification. No assumptions previously made in evaluating the radiological consequences of any analyzed accident were altered by this modification. This change did not degrade or prevent actions described or assumed in any accident discussed in the FSAR.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   No equipment function important to safety was affected by changing CAV-2 to a solenoid operated valve. The valve continues to close upon receipt of a containment isolation signal and will fail closed upon loss of control power. The function of containment isolation remained unchanged by this modification. MAR 80-06-02-01 selected a replacement valve which met design specifications for material and construction practices. There is no degradation to SSC reliability, no additional DG loading, and no changes in equipment protection features.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   Changing CAV-2 from a pneumatically operated valve to a solenoid operated valve did not change the mode of operation for any other equipment. Power is supplied from DPDP-5B, 125V DC ES Panel, which has been analyzed for the this electrical loading. No new failure modes for equipment had been introduced by this modification. Therefore, there is no increase in probability of occurrence of malfunction of equipment previously evaluated.

MAR No. 80-06-02-01
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   No radiological consequences resulting from equipment malfunction are changed as a result of changing CAV-2 from pneumatic to solenoid operation. The valve continues to fail in the closed position upon loss of power and provides the same containment isolation function. The valve is packless and hermetically sealed, which reduces the potential for contaminated leakage.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The solenoid valve fails closed upon loss of power. This is the same failure mode as the originally installed pneumatically operated valve. The physical location of the valve is unchanged. The source of electrical power for the valve is the DPDP-5B, 125 V DC ES Panel, which has been analyzed for this load. No new equipment failure modes have been introduced, thus there is no possibility for malfunction of equipment of a different type than that previously evaluated.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The basis for the Technical Specifications pertaining to the containment isolation valves concerns the ability of the valve to close within 60 seconds, and the leak tightness of the containment provided by the isolation valves. The solenoid valve installed by MAR 80-06-02-01 meets the same leak rate criteria as the original valve and satisfies the same (< 60 second) closure criteria. There is, therefore, no change in the margin of safety as defined in the basis for any technical specification.

MAR No. 87-01-19-11

Description of Modification

This modification installs a new Reactor Building Chiller, Cooling Tower, and auxiliary equipment.

10 CFR 50.59

NOTE: This 10 CFR 50.59 uses the 3 question format for determining whether or not an Unreviewed Safety Question (USQ) is involved with the modifications because the 10 CFR 50.59 evaluation was prepared before the use of the 7 question USQ format suggested by NSAC-125 and used by FPC.

1. Is the probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety, as previously evaluated in the Final Safety Analysis Report, increased? No..

   Chapter 14 of the FSAR was reviewed to find any design base accidents/malfunctions involving the Industrial Cooler (CI) system. There was no mention of CI interface in Chapter 14.

   Failure/malfunction of any equipment associated with this modification would not contribute as an initiator to any accident identified by FSAR Chapter 14.

   All work accomplished with this MAR is to the non-safety related CI system. Per Section 9.7.2.1 of the FSAR, the CI system supplies cooling water to the Reactor Building (RB) Fan Assemblies and the RB cavity cooling units under normal conditions. Upon activation of the ES signal, the cavity cooling units are automatically isolated from the CI system and cooling water to the RB fan assemblies is supplied by the SW system.

   Since the CI system is isolated upon an ES signal, the CI system is not affiliated with any of the accidents/malfunctions identified in Chapter 14.

   This modification will add non-safety/non-seismic equipment to the Intermediate Building roof. Equipment and piping will be designed for worst case wind conditions. This issue was presented to Nuclear Licensing (FPC memo NEA92-1245) and was found acceptable based on Nuclear Licensing (FPC memo NL92-0097).

MAR No. 87-01-19-11
(continued)

The only safety related equipment which interfaces with the CI system is the RB Fan Assemblies (AHHE-31A, -31C) and Ventilation Fan Motors (AHHE- 32A, -32C).

This modification does not change the function of the CI system, but does reduce the system flow from 1870 gpm to 1200 gpm. This modification does not increase the probability of occurrence of a malfunction of equipment important to safety.

Since the operation of the CI system (to provide cooling the RB) will not change, this modification does not increase the consequences of a malfunction of equipment important to safety.

2. Is the possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report created? No.

The following FSAR chapters/sections were reviewed which discuss design base accidents/malfunctions involving the system:

6.3 Reactor Building Emergency Cooling (See Section 6.3.3, Actuation)

9.5.2.1 Nuclear Services Cooling Water Function

9.7 Plant Ventilation-Systems (See Section 9.7.2.1)

Per sections 6.3.3, 9.5.2.1 and 9.7.2.1 of the FSAR and the SLD's/SFD's (600 series drawings), operation of the CI system is not required to achieve or maintain plant shutdown for any design basis event.

This modification does not create any new accident scenarios. The relationship of this modification with a safe shutdown function is covered by Part I of this evaluation.

There are no new malfunctions of equipment important to safety created by this modification. As discussed in Part I of this evaluation, the only interface the CI system has with safety related equipment is the RB Fan Assemblies and the RB cavity cooling units and the CI system is isolated upon an ES signal.

MAR No. 87-01-19-11
(continued)

3. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The following Tech. Spec. Bases involving the CI system were reviewed for potential impact by this change:

   3/4.3.2 Engineered Safety Feature Actuation System Instrumentation

   3/4.6.1 Primary Containment

   The operability of the CI system or any of the valves and instrumentation associated with this modification is not covered by the Tech. Spec. Bases. Section 3/4.6.1.5 [now ITS 3.6.5] (discusses primary containment air temperature limitations (not to exceed 130°F) during normal operation. Since this modification will provide more cooling capacity for the CI system, the potential for reaching 130°F during normal operation is reduced.

   Since this modification does not affect any of the parameters or programs, there is no effect on the Tech. Spec. Bases.

MAR No. 87-10-27-01

Description of Modification

This modification revised the operation of portions of the meteorological towers.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   No reference is made in chapter 14 of the FSAR to the meteorological monitoring system concerning design basis accidents. The MM system is non-safety related intended to assist plant personnel in evaluation of monitoring a plant release.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   No reference is made in chapter 14 of the FSAR to the meteorological monitoring system. The meteorological monitoring system will be used only to monitor atmosphere conditions during a plant release and provides no control of plant equipment and therefore, has no influence on an increase in off-site and control room doses above the licensing limit.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   This is an upgrade to the existing back-up meteorological monitoring system and will basically function the same. The only minor difference will be that the signals from the tower site will be transmitted via modem then converted back to analog for display on the digital indicators and to the plant computer. The system provides no automatic or manual actuation of equipment and is strictly for monitoring purposes only.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The meteorological monitoring system is a non-safety related system with no interface to any safety related equipment.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The meteorological monitoring system is a non-safety related system with no interface to any safety related equipment.

MAR No. 87-10-27-01
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   This is an upgrade to the existing back-up metecrological monitoring system and will basically function the same. The only minor difference will be that the signals from the tower site will be transmitted via modem then converted back to analog for display on the digital indicators and to the plant computer. The system provides no automatic or manual actuation of equipment and is strictly for monitoring purposes only. Therefore it creates no new malfunction of equipment.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   This upgrade updates obsolete equipment, it also removes some equipment that has been determined no longer necessary as alternate methods of obtaining this data are available. Additionally, the Meteorological Monitoring requirements have been relocated to the Offsite Dose Calculation Manual (ODCM).

MAR No. 90-06-19-01

Description of Modification

This modification installed additional equipment in the Post Accident Sampling System (PASS).

10 CFR 50.59

NOTE: This 10 CFR 50.59 uses the 3 question format for determining whether or not an Unreviewed Safety Question (USQ) is involved with the modifications because the 10 CFR 50.59 evaluation was prepared before the use of the 7 question USQ format suggested by NSAC-125 and used by FPC.

1. Is the probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety, as previously evaluated in the Final Safety Analysis Report, increased No.

   The Post Accident Sampling System (PASS) is not a safety system and does not provide any plant protection or control function. The PASS is used to analyze reactor coolant and/or reactor building sump process fluids for hydrogen, boron, pH, and chloride during a post accident plant status. The range of measurement for these process variables remains unchanged by this modification. The sample flow rate to PASS is approximately 0.5 gpm and is obtained through a 3/8 inch tubing sample line from the reactor coolant system or reactor building sump. The existing reactor building isolation valves CAV-431 and CAV-435 remain unchanged and will continue to provide isolation for the PASS upgrade implemented by this modification. since the PASS is non-safety related, does not provide any plant protective or control functions and is designed to perform analysis of reactor coolant fluid during a post accident plant status, this modification will not increase the probability of an occurrence or the consequence of an accident as evaluated in the FSAR.

2. Is the possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report created? No.

   The PASS does not provide any plant protection or control function. The basic function of PASS in that of analysis of reactor coolant or reactor building sump process fluid for hydrogen, boron, pH, and chloride during a post accident plant status. Since the PASS is non-safety related, does not provide any plant protective or control functions and in designed to perform analysis of reactor coolant fluid during a post accident plant status, this modification does not create the possibility of an accident or malfunction of a different type than those evaluated in the FSAR.

MAR No. 90-06-19-01
(continued)

3. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The PASS is not the basis for a technical specification limit or value. Since PASS in designed to perform analysis of reactor coolant fluid during a post accident plant status, the margin of safety an defined by the technical specifications is not reduced.

MAR No. 92-01-02-01 & 92-01-02-02

Description of Modification

These modifications install a replacement Reactor Coolant Pump motor on RCP-1A.

10 CFR 50.59

NOTE: This 10 CFR 50.59 uses the 3 question format for determining whether or not an Unreviewed Safety Question (USQ) is involved with the modifications because the 10 CFR 50.59 evaluation was prepared before the use of the 7 question USQ format suggested by NSAC-125 and used by FPC.

1. Is the probability of an occurrence or the consequence of an accident or malfunction of equipment important to safety, as previously evaluated in the Final Safety Analysis Report, increased? No.

   An existing RCP Motor is planned to be replaced with a new replacement motor. The replacement RCP Motor will be designed, fabricated and tested by the original equipment manufacturer. The replacement RCP Motor is similar in design to the existing RCP Motor and will be installed with only a few modifications to the existing interface systems required. The design changes made to the new replacement RCP Motor were accomplished to improve the reliability of the replacement RCP Motor Lube Oil/Lube Oil Collection Systems. These design changes or similar design changes are planned for the future refurbishment of the existing RCP Motors. The new replacement RCP Motor and planned future refurbishment of the existing RCP Motors will be supplied with a seismic RCP Lube Oil System, a seismic re-designed upper RCP Lube Oil Collection System and a modified seismic Lower Lube Oil Collection System. The seismic RCP Lube Oil System and the deletion of the AC powered RCP Lube Oil Lift pump and associated piping, valves and other components will enhance the reliability of the RCP Lube Oil System by decreasing the number of potential oil leakage sites (i.e., threaded connections on the existing non-seismic system) which currently exist on the existing RCP Motor Lube Oil System. Welded connections will be utilized for the replacement RCP Motor Lube Oil System and the planned future refurbishment of the existing RCP Motors Lube Oil System as much as possible, decreasing the potential for oil leakage. The modifications to the RCP Lube Oil System will eliminate the need for complete enclosure of the RCP Lube Oil System as the RCP Lube Oil System will be designed to withstand the postulated events contained within the Final Safety Analysis Report and 10 CFR 50 Appendix R, Section III, without failure and will simplify maintenance activities for the RCP Motor decreasing the potential for incorrect installation of the RCP Lube Oil Collection System. Potential oil leakage collection of the threaded connections for the re-designed seismic RCP Motor Lube Oil System will be accomplished using drip pans, a drain pan for the lower end of the RCP Motor, an upper lip and heat exchanger drip pan for the upper end of the RCP Motor and a spray shield or guard for the high pressure components of the RCP Motor Lube Oil System. Potential oil spray and oil leakage will be postulated and collected from the mechanical connections for the high pressure components of the RCP Motor Lube Oil System.

MAR No. 92-01-02-01 & 92-01-02-02
(continued)

The high pressure lube oil system operates at a pressure of approximately 900 psig. Potential oil spray will not be postulated from the mechanical connections within the low pressure components of the RCP Motor Lube Oil System. Potential oil leakage from the low pressure RCP Motor Lube Oil System mechanical connections will be postulated and collected. During initial startup and shutdown of the RCP Motor and during low speed operation of the RCP Motor below 500 RPM, the low pressure outlet of the high pressure Lube Oil System Lift Pump provides lubrication to the Ant-Reverse Device. The pressure within the oil lines for the Anti-Reverse Device during initial startup, during shutdown or during low speed operation of the RCP Motor has not been measured by the equipment manufacturer. The expected discharge pressure for the low pressure outlet of the high pressure Lube Oil Lift Pump is expected to be 4-20 psig. During normal operation of the RCP Motor at normal operating speed, oil is drawn through the openings near the top and bottom of the cylinder surrounding the upper thrust bearings, pumped through the upper bearings and expelled through ports within the upper bearings which are located at the interface of the stationary cylinder and the thrust runner. A close running scraper directs the oil into the proper discharge port, where ft then goes to the upper oil heat exchanger, is cooled, and then returned to the upper bearing reservoir. The pumping action developed within the thrust bearing is sufficient to overcome the hydraulic losses within the heat exchanger and associated piping and is equipped with an atmospheric vent. The upper guide bearings are self lubricating, each having its own inlet and discharge ports. A small flow of oil is directed to the bearing for the Anti-Reverse Device to provide lubrication for this bearing. During normal operation the pressure developed within the oil lines to the Anti-Reverse Device is expected not to exceed 18-50 psig according to the equipment manufacturer. The lower lube oil system is contained within the reservoir. The lower guide bearings are self lubricating. Low pressure developed within the lower lube oil system is that created by the static head of the oil level and is negligible for oil spray considerations. The seismic design of these system components provides assurance that the system will withstand the safe shutdown earthquake and will not lead to a fire during normal or design basis accident conditions.

The Upper Lube Oil Collection System will be designed to provide a one piece fiber glass fiber and Dion 6994 resin enclosure (spray shield or guard) which will enclose the high pressure lube oil system components. This enclosure will provide spray and oil leakage protection for the high pressure lube oil system in accordance with the requirements of Appendix R, Section III. The high pressure lube oil system is used during the initial startup and shutdown of the RCP Motor only and is not required for normal RCP Motor operation. The low pressure lube oil supply lines for ft RCP Motor Anti-Reverse Device will not be included within the spray guard. Potential oil leakage from these lines will be captured by the collection lip for the RCP Motor installed at the radial assembly line of the RCP Motor.

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(continued)

The upper RCP Motor will be designed with a lip around the upper part of the motor (at the radial assembly line) to collect potential oil leakage from mechanical joints within this area from the upper RCP Motor Lube Oil System. Potential oil leakage from this area will drain to the new drip pan just below the oil cooler (upper RCP Motor Lube Oil Heat Exchanger) for the upper lube oil system and will then drain to the existing plant RCP Motor Lube Oil Collection System using an existing flex hose which will be connected to the new drip pan. Potential oil leakage from the upper oil reservoir and heat exchanger drain lines will be collected by the heat exchanger drip pan. The upper RCP Motor Lube Oil System will be seismically designed preventing failure during the postulated safe shutdown earthquake described within the requirements of Appendix R, Section III. The upper RCP Motor Lube Oil Collection will be designed to allow drainage from the four quadrants located between the seismic lugs at the upper end of the RCP Motor to the drip pan located below the upper lube oil system heat exchanger. The components covered by the upper redesigned RCP Motor Lube Oil Collection System include the High Pressure/Low Pressure Upper Lube Oil System, Bearing/Oil Thermocouple, Level Instrument (Level Alarm), Isolation Valve for the Level Instrument, Drain Valve/Line for the Level Instrument, Oil Fill, Remote Oil Connection, Drexelbrook Probe, Lube Oil Heat Exchanger and Lube Oil Piping/Tubing/Hoses.

The lower RCP Motor Lube Oil System will be seismically designed to prevent failure during the postulated safe shutdown earthquake described within Appendix R, Section III. The lower RCP Motor Lube Oil Collection System will be designed to retain the existing drain pan for the RCP Motor. A new drip pan near the lower Level Instrument (Level Alarm), Level Instrument Isolation Valve, Level Instrument Drain Valve, Oil Level Gage, Oil Fill, Remote Oil Connection and Drexelbrook Probe will be added to collect potential oil leakage from the mechanical connections within these components. This drip pan will be connected to the existing plant RCP Motor Lube Oil Collection System using an existing flex hose. The external piping for the new replacement RCP Motor and the planned future refurbishment of the existing RCP Motors will be seismically designed and will include drains, vents, etc. identified within the requirements of Appendix R, Section III, preventing failure of the external piping during the safe shutdown earthquake as described within Appendix R, Section III, O. A seismically designed oil collection system will be installed for each of the RCP Motor Bearing Bracket Vents to collect potential oil leakage from these vents. Potential oil leakage from these vents will be drained to the plant RCP Motor Oil Collection System.

Identification of potential oil leakage sites from the mechanical components of the RCP Motor Lube Oil System, external piping, vents drains, etc.; and the method of collection or protection is shown and described in the attachments. Item numbers are identified on the attached GE Drawing 4005E1072FT and GE Drawing 4004D1266CM.

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(continued)

These modifications will not increase the possibility of an occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Final Safety Analysis Report.

2. Is the possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report created? No.

These modifications are being accomplished to improve the reliability of and enhance the maintenance activities associated with the existing RCP Lube Oil and RCP Lube Oil Collection Systems for the new replacement RCP Motor and the future planned refurbishment of the existing RCP Motors. The RCP Lube Oil System for the new replacement RCP Motor and the future planned refurbishment of the existing RCP Motors will be seismically designed to prevent failure of the system during the safe shutdown earthquake as described within the requirements of Appendix R, Section III. Welded joints will be used as much as possible for the redesigned RCP Motor Lube Oil System to minimize potential oil leakage sites. The AC Powered Lube Oil Lift Pump will be eliminated in order to decrease the number of potential oil leakage sites which currently exist on the existing RCP Motors Lube Oil System. The RCP Motor Lube Oil System, oil drain lines, vents, fill lines and other external piping will be seismically designed to withstand the events described within the Final Safety Analysis Report and Appendix R, Section III.

The modifications to the RCP Lube Oil Collection System will maintain the existing seismic design requirement to assure the system will withstand the safe shutdown earthquake as described within Appendix R, Section III. The re-design of the upper RCP Motor Lube Oil Collection System will include a fiberglass spray guard which will enclose the upper high pressure lube oil piping and allow potential oil leakage and oil spray to drain to the drip pan below the RCP Motor Upper Lube Oil Heat Exchanger. Potential oil leakage from this drip pan will drain to the existing oil collection system using an existing flex hose connected to the bottom of the drip pan. The existing lower RCP Motor Lube Oil Collection System will be modified to remove the existing enclosures for the existing non-seismic lube oil piping. The existing lower RCP Motor drain pan will be retained to collect potential oil leakage from the lower RCP Motor oil reservoir drain line, lower bearing vents and shaft seal. A new seismically designed drip pan will be installed to collect potential oil leakage from the lower Oil Level Instrument (Level Alarm), Level Instrument Isolation Valve, Level Instrument Drain Valve, Oil Level Gage, Oil Fill, Remote Fill Connection and Drexelbrook Probe. The new drip pan will be connected to the existing plant RCP Lube Oil Collection System using the existing flex hose at the connection provided at the bottom of the new drip pan. The seismic design of these system components provides assurance that the system will withstand the safe shutdown earthquake and will not lead to a fire during normal or design basis accident conditions.

MAR No. 92-01-02-01 & 92-01-02-02
(continued)

A new seismically designed oil collection system for the Upper Bearing Bracket Vents will be installed on the new replacement RCP Motor and each of the existing RCP Motors as each of the existing RCP Motors are refurbished. The collection system will utilize drip pans which will collect potential oil leakage from these vents and allow drainage to the plant RCP Lube Oil Collection System.

Identification of potential oil spray and oil leakage sites and the method of collection or protection is described within the attachments. Item numbers are identified on the attached GE Drawing 4005E1072FT and GE Drawing 4004D1266CM.

These modifications will not create the possibility for an accident or malfunction of a different type than any previously evaluated in the Final Safety Analysis Report.

3. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

The new replacement RCP Motor and the planned refurbishment of the existing RCP Motors will be designed with seismic Lube Oil/Lube Oil Collection Systems. The seismic design of these systems will improve the reliability of the RCP Lube Oil/Lube Oil Collection Systems and will maximize the use of welded joints in order to minimize potential leakage sites. The existing AC powered Lube Oil Lift Pump will be eliminated in order to decrease the number of potential lube oil leakage sites within the RCP Motor Lube Oil System. The existing upper RCP Lube Oil Collection System will be replaced with a more reliable seismic system which will decrease the potential for incorrect installation, damage to the system during removal and re-installation during maintenance activities and lost parts/fasteners currently used for the system. The replacement system will be designed to withstand the design basis accidents described within the Final Safety Analysis Report and will assure the system will withstand the safe shutdown earthquake as required by Appendix R, Section III. The basic function of the RCP Lube Oil/RCP Lube Oil Collection Systems will remain unchanged. Potential spray and oil leakage protection will be provided for the high pressure mechanical connections of the RCP Motor Lube Oil System. Potential oil leakage collection will be provided for the low pressure mechanical connections, drains, vents and other external piping/components. The seismic design of these system components provides assurance that the system will withstand the safe shutdown earthquake and will not lead to a fire during normal or design basis accident conditions.

MAR No. 92-01-02-01 & 92-01-02-02
(continued)

Identification of potential oil spray and oil leakage sites and the method of collection or protection is described in the attachments. Item numbers are identified on the attached GE Drawing 4005E1072FT and GE Drawing 4004D1266CM.

These modifications will not reduce the margin of safety, as defined for any Technical Specification.

MAR No. 93-01-08-01

Description of Modification

This modification allows the use of a Portable Nitrogen Compressor Unit (PNCU) for pressurizing the Core Flood Tanks in lieu of the existing nitrogen bottles located on the 95' elevation of the Turbine Building.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The PNCU provides an alternate source for pressurizing the core flood tanks during normal plant operation. The nitrogen blanket within the core flood tanks is maintained within Technical Specification limits. When the PNCU is not in use the nitrogen gas supply to the pump and the discharge line from the pump is disconnected from the nitrogen system and the pressurization line to the core flood tanks. As a result, the probability of an accident as previously evaluated within the FSAR is not affected by the use of the PNCU.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The pressure within the core flood tanks is maintained within established limits. The use of the PNCU only provides an alternate means for pressurizing the core flood tank within established limits. When the pump is not in use, the supply and discharge lines are disconnected from the nitrogen and core flood pressurization line, respectively. As a result, the consequences of an accident previously evaluated within the FSAR is not affected by the use of the PNCU for pressurizing the core flood tanks to established pressure limits during plant operation.

3. Is the possibility Of an accident of a different type than any previously evaluated in the FSAR created? No.

   When the PNCU is not in use, it is disconnected from the nitrogen supply line and the line used for pressurizing the core flood tanks. When the pump is in use, it is used to pressurize the tank to within established limits. The use and connection of the PNCU is administratively controlled via established procedure (Ref: OP-401, "Core Flood System") to assure the connections to the nitrogen and core flood system are only used (connected) during pressurization of the core flood tanks, eliminating the possibility of an accident.

MAR No. 93-01-08-01
(continued)

4. Is the probability of occurrence of malfunction of equipment previously evaluated in the FSAR increased? No.

   In the event the PNCU malfunctions during pressurization of the core flood tanks, redundant isolation valves are installed to isolate the PNCU, if required. Overpressure protection for the Core Flood System is provided by the pressure relief valves for the core flood tanks assuring that a malfunction or overpressure of the core flood tanks does not occur. The use of the PNCU only provides an alternative method for pressurizing the core flood tanks.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The pressurization limits or the core flood tank level is not affected by the use of the PNCU. The PNCU only provides an alternative method for pressurizing the core flood tanks in lieu of using the installed high pressure nitrogen bottle station, eliminating the need to periodically replace these nitrogen bottles. When the PNCU is not being used it is completely disconnected from the nitrogen and core flood systems, eliminating any potential for equipment malfunction. Redundant isolation valves are installed to isolate the core flood pressurization line in the event the PNCU malfunctions during use. As a result, the consequences of a malfunction are not affected.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The discharge line from the PNCU is comprised of stainless steel tubing, isolation valves, fittings and piping in accordance with established design requirements assuring the elimination of a potential malfunction of the pump discharge line. In the event the pump malfunctions during use, redundant isolation valves are installed to isolate the core flood pressurization line from the pump. High pressure nitrogen bottles are installed as a means of pressurizing the core flood tanks in lieu of using the PNCU, assuring the function of the core flood tanks. When the PNCU is not being used, it is disconnected from the CF/nitrogen systems, eliminating potential malfunctions.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The use of the PNCU provides an alternative means or method of pressurizing the core flood tanks within established limits. Neither the nitrogen blanket limits or the core flood tank level are affected by the use of the PNCU to assure the cover gas pressure within the core flood tanks is maintained within established limits. As a result, the margin of safety for any technical specification is not reduced.

MAR No. 94-06-01-01

Description of Modification

The modification abandons Seismic Monitors SI-4-MEI and SI-5-MEI. Other seismic monitors are still installed in CR-3.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The seismic monitors to be abandoned were recording monitors only. Other than mounting, they did not interface with any plant equipment. The recording function was for information only, to be used after a seismic event. They will remain in place, thus maintaining the structural configuration of the current installation. As abandoning SI-4-MEI and SI-5-MEI will not change plant physical configuration or the function of any active components, this MAR will not affect the probability of the occurrence of a-7 accident previously evaluated.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The seismic monitors affected by this MAR did not perform a function related to the mitigation of an accident. As a result the consequences of accidents previously evaluated will not be affected by the abandonment of these monitors.

3. Is the possibility of an accident of a different type than any previously evaluate in the FSAR created? No.

   The abandoned monitors will remain in place. They did not perform any function other than recording accelerations and did not interface with any active plant equipment. As the physical configuration of the plant will remain unchanged and the function of active components will not be affected, this MAR does not have the potential to create a new/different accident.

4. Is the probability of occurrence of malfunction of equipment previously evaluated in the FSAR increased? No.

   Other than the mounting, these monitors do not interface with plant equipment. As a result, the possibility of a malfunction of equipment will be unchanged by the implementation of this MAR.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Other than the mounting, these monitors do not interface with plant equipment. As a result. the consequences of an evaluated malfunction will not be affected by this MAR.

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(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Other than the mounting, these monitors do not interface with plant equipment. As a result. the potential for a new or different malfunction will not be created.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The SI-4-MEI and SI-5-MEI seismic monitors do not have a function identified in the Technical Specification, additionally they do not have any active function. As a result, the margin of safety will not be changed as a result of this MAR.

MAR No. 94-11-11-01

Description of Modification

This modification replaces the load cell and geared limit switch on the fuel handling cable drive system.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The existing load cell and geared limit switch are being replaced with newer equipment. Shutdown timers are being added to the hydraulic pumps' circuitry to shutdown after a specific time of non use. This modification can not increase the frequency of the analyzed accident for the FSAR assumes that a fuel assembly is dropped. The equipment modified by this MAR does not pick up a fuel assembly therefore it is not part of the evaluation used by the FSAR.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The two fuel handling accidents (Spent Fuel Pool area & Reactor Building area) use an ultra conservative analysis involving the breakage of all rods in a fuel assembly. Replacing the load cell and geared limit switched with a newer type, the FSAR's evaluated accident does not change. The timers installed are in the upender hydraulic pump circuitry so as to shut them down if not being used.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The FSAR assumes that a fuel assembly is dropped, resulting in all fuel rods releasing their fission gases. This modification does not interface with equipment that can drop a fuel assembly.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The FSAR evaluation addresses a failure of a fuel assembly. How the fuel assembly is damaged is by dropping. Equipment failures are not addressed, but conservatively, for a dropped assembly to occur would have to be from one of the fuel handling cranes. This modification does not work on the cranes.

5. Are the consequences of a malfunction of equipment previously evaluated in the FSAR increased? No.

   The ultimate failure in the fuel handling accident is the rupture of all rods in a fuel assembly. There is no other malfunction that can have a higher consequence.

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(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The FSAR assumes a complete failure of a fuel assembly. There can be no failure worse than this that has a equivalent probability.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The fuel handling equipment is not used to mitigate or prevent a fuel handling accident or maintain CR-3 in a safe shutdown condition.

MAR No. 95-01-07-02

Description of Modification

This modification changes the Makeup Tank high level alarm setpoint.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   1.A This section of the modification changes the make-up tank high pressure variable alarm setpoint. The change to the make-up tank high pressure variable alarm setpoint is based on the maximum allowable make-up tank design pressure curve. The maximum allowable make-up tank design pressure curve, as described in calculation M94-0053, is defined as the maximum make-up tank cover gas pressure allowed at a particular make-up tank level. Maintaining the make-up tank cover gas pressure below the maximum allowed pressure will ensure that MUP gas entrainment during all accident conditions will not occur.

   1.B This section of the modification changes the make-up tank high level alarm setpoint from 86" water to 100" water. The maximum make-up tank high alarm setpoint is considered an operational setpoint. The high level setpoint is not used to prevent or mitigate an accident. The alarm setpoint provides an operator with sufficient response time to prevent inventory level from exceeding the available level indication (120'water). FSAR Chapter 9 mentions a make-up tank high level alarm of 86" water. This setpoint reflects the existing high level setpoint which, as noted previously, is inconsistent with other B&W type 177FA plants. An FSAR change notice has been initiated to change the make-up tank high level alarm to 100" water (reference letter IOC NED 95-0032).

   Based on the information in sections 1.A and 1.B, the probability of occurrence of an accident previously evaluated in the FSAR is not increased.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   2.A This section of the modification is limited to changing the algorithm which generates the NM high pressure annunciator. The make-up tank high pressure alarm curve is offset from the design pressure curve and allows sufficient operator response time to prevent a make-up tank overpressure condition. Providing an operator with sufficient warning before the make-up tank enters into an over pressure condition ensures that design basis accident mitigation systems perform their intended function.

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(continued)

2.B This section of the modification is limited to changing the make-up tank high level alarm setpoint from 86" water to 100" water. This change to the high level MUT setpoint provides operator notification in the event of an overfill condition ensuring the MUT level remains in a level band which has been analyzed to ensure that design basis accident mitigation systems perform their intended function.

Based on information from items 2.A through 2.B, the modification is limited to changing alarm setpoints which provide operator notification before plant parameters exceed their analyzed condition. Since the equipment and operating parameters have been previously analyzed, the consequences of an accident previously evaluated in the FSAR has not increased.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

3.A The make-up tank high pressure alarm setpoint warns an operator that the MUT is approaching an overpressure condition and that gas entrainment to the make-up pump suction lines could occur if mitigating action is not taken. The setpoint provides sufficient time to take mitigating action to prevent the make-up tank from exceeding the tank's maximum allowable design pressure region.

3.B Increasing the make-up tank high level alarm does not impact safety equipment used to mitigate or prevent accidents as defined in the FSAR. No safety related equipment will be changed under this modification

Based on information from items 3.A through 3.B, the modification is limited to changing alarm setpoints associated with MUT parameters. The changes to equipment and systems have been previously analyzed and do not provide the possibility of an accident of a different type than any previously evaluated in the FSAR.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

4.A The change to the make-up tank high pressure alarm setpoint lowers the alarm setpoint. Equipment that may have been impacted by this modification have been evaluated. The evaluation included the following equipment, the equipment's method of operation, and the equipment's use during accidents:

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(continued)

Emergency Boration: Adding boron to the RCS may be required to achieve shutdown margin (SDM) from any hot standby or hot operating condition. Under certain circumstances, a soluble boron solution addition may be required to increase the RCS boron concentration and thereby achieve SDM conditions. STS 3.1.1.A requires boron addition initiation within 15 minutes of an insufficient SDM condition. There are two sources of inventory for soluble boron addition, the BWST tank and the BAST tanks.

The make-up tank pressure can impact boron addition. If the inventory source of boron addition were the BWST tank, and the transport method aligned the BWST to the running make-up pump by opening MUV-73 (only), then boron addition would not occur until make-up tank pressure equalizes with BWST pressure. During boron addition from the BWST, EOP-2 directs an operator to divert letdown flow to the RCBT's to allow continued boration. EOP-2 allows boron addition from the BAST's (via CAP'S) if the BWST flow path is unavailable. Either method of boration can be performed within the 15 minute time frame established by STS 3.1.1.A.

Minimum make-up tank pressure: During development of Calculation M94-0053, FPC determined the make-up tank pressure could decrease below atmospheric pressure during a LOCA event. Whether the make-up tank actually experienced a vacuum depends on the make-up tank's level/pressure parameters at the start of the LOCA event. The possibility of the tank experiencing a vacuum is a concern because tie tan has no vacuum relief capabilities.

Engineering Calculation M95-0001, Rev. 0 determined the maximum allowable make-up tank vacuum of 11.72 psiv. Calculation M94-0053 determined the make-up tank could only approach the maximum allowable vacuum limit if the tank had an initial vacuum of 5.6 psiv at a level of 100" water. Since it is not possible to increase WT-1 tank vacuum to 5.6 psiv under any conceivable operating condition, the tank can never approach the maximum vacuum condition described in calculation M95-0001. Therefore there is no minimum required make-up tank pressure associated with maintaining tank integrity. The existing make-up tank low pressure alarm setpoint is 3 psig. The intent of the alarm is to notify an operator that cover gas may be escaping (stuck relief valve). This modification will not change the low pressure setpoint.

4.B The make-up tank high level setpoint is an operational setpoint and is not based on technical specification limits or design basis limits. This setpoint change allows an incremental inventory increase to the make-up tank and will not increase the occurrence or malfunction of equipment previously evaluated in the FSAR

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(continued)

Low Temperature Over Pressure (LTOP): At a reduced RCS temperature (such as during start up or shutdown), over pressure protection of the RCS is provided by plant design, operator actions, and administrative controls.

Make up tank level may be used as an LTOP feature during certain unusual plant cooldown events. For example, while RCS temperature is < 293°F and the PORV Block Valve closed or inoperable, then an operator is procedurally required to reduce make up tank level to less than 70" water (OP-209 step 3.2.16.2, OP-301 step 3.2.13.2).

Raising the make up tank high level annunciator alarm setpoint from 86" water to 100" water dos not impact this LTOP administrative control. Theoretically, an operator may be required to reduce make up tank level from 100" water to less than 70" water as opposed to 86" water to less than 70" water. Procedurally, the time required to reduce make up tank level to less than 70" water is less than 12 hours. Therefore the increased make up tank operating level range does not impose an unreasonable operator burden.

Based on information from items 4.A and 4.B, the probability of occurrence or malfunction of equipment previously evaluated in the FSAR will not be increased.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The setpoints established by this modification allow the system to operate within design parameters. Based on operation within design parameters (system) the consequences of malfunctions are not increased or changed.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The setpoint changes provide alarms which are meant as operator aids to protect vital plant equipment. The make-up tank high pressure alarm setpoint is based on the make-up tank high pressure design basis curve. Operating the make-up tank with a cover gas pressure below the design basis curve ensures existing equipment can function during accident conditions. Additionally, using the results of question #4, the design basis pressure curve does not impact or cause malfunction of equipment that can be used during operating or accident conditions. The changes described in this modification do not change the primary methods of equipment protection and therefore do not provide the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR.

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(continued)

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced?

   The margin of safety as defined in the technical specifications basis is not being reduced because of this modification.

   During an STS review, an error was discovered in the basis to technical specification B.3.5.2. Calculations M95-0005 and M95-0007 determined the minimum amount of BWST inventory that must be injected into the reactor building (RB) and the minimum allowable BWST level to prevent pump vortexing. Using the results from the calculations, the LPI swapover point from BWST to RB sump is to begin at a BWST level of < 15 feet. The EOP's have been revised to include the BWST swapover level information. However neither the EOP revision or the analysis/calculation included a revision to technical specification B.3.5.2 which states that the LPI swapover to the RB sump does not occur until the BWST is less than 5 feet.

   The changes to setpoints described in this modification assume a BWST swapover greater than 5 feet. A change to the technical specification basis has been initiated to include the revised swapover point (IOC NED 95-0213).

MAR No. 95-02-19-01 & 95-02-19-04

Description of Modification

These modifications installed additional equipment to support the Reactor Building chiller.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   Chapter 14 was reviewed to identify design basis accidents involving or requiring the operation of the CI System. None were identified. The CI System does remove heat from the Non-safety-related (NSR) LRHE-1 during purge/repressurization (FSAR Section 14B.1), but this function can be accomplished with NSR systems. There is no change to the post-LOCA RB cooling alignment (RB Fans automatically supplied by the Safety Related SW System). The addition of additional NSR heat sink to the NSR CI System doesn't increase the probability of any DB.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Prior to being modified (1st by MAR No. 87-01-19-11, and later by the subject design change documents), the CI had a single heat sink to cool LRHE-1. The modified CI System will have four (4) cooling tower cells, any one of which can cool LRHE-1 during post-LOCA hydrogen purge. MAR No. 95-02-19-01 installed CI piping through the AB wall. Piping was fully grouted, and the exterior of the AB wall coated to eliminate a potential leak path into the AB (therefore no flooding concern). No increases in the consequences of known DBEs.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   Only non-safety related piping is being modified and/or installed. A new design basis accident will not be created. Now CI piping analyzed to ensure no adverse seismic interaction with SW system piping. New piping meets anti-fall down criteria (SI*). All SR components in the affected area evaluated for wetting and spray as required by CR-3 HELB criteria (new moderate energy line).

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   Only non-safety related piping is being affected. Piping is designed to SI* (anti-falldown), and all SR equipment in the vicinity has previously be evaluated for wetting and spray, thus no new malfunction is created. AB wall structural integrity not adversely affected. No credible flooding path has been created.

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(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   As described in question 4, there are no new malfunctions created by these MARs/CGWRs, and no increased consequences for previously recognized malfunctions. AB wall structural integrity not adversely affected. No new flooding path has been created.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Only non-safety related piping and manually operated valves are being reconfigured or installed. No new active failures are possible. No additional Operation action required to mitigate any design basis event. No change in existing ES circuitry or control logic.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   Tech Specs limit containment air temperature to 130°F (not corrected for inst. accuracy). The design intent of the subject MARs/CGWRs is to maintain the average RB air temperature well below the instrument error corrected Technical Specification limit.

MAR No. 95-05-02-01

Description of Modification

The purpose of this modification is to decrease the potential for RCS leakage by replacing a potentially leaking mechanical joint with a welded joint. Therefore, this modification should increase the level of safety of CR-3. Implementation of this modification replaces a 304 SS Thermowell and RTD Mounting Nut plus a Flexitallic gasket with an Inconel 690 Thermowell and a welded joint between the Inconel 690 Thermowell and the Inconel 600 RTD Mounting Boss on the RCS piping.

To ensure this, the design and implementation of this modification has been performed in strict compliance with, or to more stringent requirements than, the applicable codes and standards as specified in FASR Table 4-2.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The FSAR does not specifically address the thermowell attachment. Section 4.1.3.2, 4.2.2.4, 7.1.2.2.3, 7.3.2.2.1, 7.3.2.2.2, 14.2.5.6 & 14.2.2.5.7 were reviewed. The purpose of this modification is to decrease the potential for RCS leakage by replacing a potentially leaking mechanical joint with a welded joint. Therefore, this modification should increase the level of safety of CR-3. Implementation of this modification replaces a 304 SS Thermowell and RTD Mounting Nut plus a Flexitallic gasket with an Inconel 690 Thermowell and a welded joint between the Inconel 690 Thermowell and the Inconel 600 RTD Mounting Boss on the RCS piping.

   Replacing the mechanical joint and gasket with a welded joint will not introduce a failure mode that would increase the probability of occurrence of any of the FSAR Chapter 14 accidents previously evaluated or place the plant outside the design envelope evaluated in Chapter 14 during any mode of plant operation.

   This is demonstrated by the following:

   - The replacement Thermowell is designed and manufactured to the requirements of ASME Code, Section III, Class 1.

   - The RTD Thermowell-to-Boss weld was sized and designed utilizing the material allowable stresses, methodology, and criteria of the ASME Code, Section III, for Class 1 components.

   The existing thermowell mounting boss is Inconel 600. The replacement thermowell is Inconel 690, SB-166, Code Case N474-1 material as allowed in FSAR Table 4-2. The mounting boss to thermowell welded joint shall be made with ERNiCrFe-7 (Alloy 52) high nickel alloy steel weld material per ASME Section IX, Code Case 2142.

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(continued)

Note: Code Cases 2142 and 2143 were approved by the NRC in 1996 for use at CR-3.

This modification does not change (relax) any of the functional or operational criteria controlling the system and equipment design criteria for the RPS, NNI, RCS systems or the RTE Assembly and, therefore, will not have a negative impact on the safe operation of CR-3. Implementation of this modification replaces the 304 SS Thermowell with an Inconel 690 Thermowell at the point of interface with the RPS and NNI instrumentation systems. The only operational impact would be caused by a significant effect on the total thermal delay time for temperature response of the RTE that could be attributed to the difference in the materials of construction. This interface has been analyzed and the analysis shows that the material difference does not have a significant impact on the total thermal delay time and, therefore, has no effect on the instrumentation response.

Additionally, the weldable thermowell and the existing RTD fitup the same as the existing thermowell, mounting nut and gasket. The dimensions of the weldable thermowell are the same as the existing thermowell and the temperature sensor fitup will be the same.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

The FSAR does not specifically address the thermowell attachment. Sections 4.1.3.2, 4.2.2.4, 7.3.2.2.1, 7.3.2.2.2, 14.2.2.5.6 & 14.2.2.5.7 were reviewed. Changing the mechanical joint connection to a welded thermowell connection does not effect the performance of the NNI and RPS systems or the RCS piping. Loss of a thermowell at the weld would be a SBLOCA. The SBLOCA evaluation criteria has not been changed, nor have the assumptions been invalidated, by this modification. Since this SBLOCA is of lesser size (5/8" instrument hole) than the 0.5 ft^2 SBLOCA, the consequences of this lesser SBLOCA are bounded by the FSAR evaluation. The FSAR accident consequences (off-site dose, face/cladding, failure of the RCS pressure boundary, and containment pressure) are, therefore, not increased.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

The FSAR does not address an accident associated with thermowell attachment. Section 4.1.3.2, 4.2.2.4, 7.1.2.2.3, 7.3.2.2.1, 7.3.2.2.2, 14.2.2.5.6 & 14.2.2.5.7 were reviewed. There are no failure modes introduced by this change that lead to the possibility of an accident of a different type than those previously evaluated on the FSAR. The loss of the thermowell at the weld would be a SBLOCA. This accident is bounded by the SBLOCA evaluated in CR-3 FSAR Section 14.2.2.5.7.

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(continued)

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The FSAR does not specifically address the thermowell attachment Sections 4.1.3.2, 4.2.2.4, 7.3.2.2.1, 7.3.2.2.2, 14.2.2.5.6 & 14.2.2.5.7 were reviewed. However, this modification does not alter the design criteria for either the NNI and RPS instrumentation or the RCS piping and will, therefore, not increase the probability of occurrence or malfunction or equipment previously evaluated in the FSAR.

   Implementation of this modification replaces the 304 SS thermowell with an Inconel 690 thermowell at the point of interface with the RPS and NNI instrumentation systems. The only operational impact would be caused by a significant effect on the total delay time for temperature response of the RTE that could be attributed to the difference in the materials of construction or the RTD to thermowell fitup. This interface has been analyzed and the results of the analysis shows that the material difference does not have a significant impact on the total thermal delay time and, therefore, will not increase probability of an equipment malfunction. Additionally, the weldable thermowell and the existing RTD fitup the same as the existing thermowell, mounting nut, and gasket. The dimensions of the weldable thermowell are the same as the existing thermowell and the temperature sensor fitup will be the same.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The FSAR does not specifically address a malfunction of a thermowell or thermowell attachment. Sections 4.1.3.2, 4.2.2.4, 7.1.2.2.3, 7.3.2.2.1, 7.3.2.2.2, 14.2.2.5.6 & 14.2.2.5.7 were reviewed. Welding the thermowell to the boss in lieu of a gasketed mechanical joint does not introduce a now credible failure mode nor will it effect the performance of the RPS and Non-Nuclear Instrumentation Systems or the RCS piping. The difference (304SS to Inconel 690) in the material of construction does not introduce a new credible failure mode. The design and performance criteria for all the RPS and NNI instrumentation that interface at the thermowell remain unchanged.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The FSAR does not specifically address any failure modes of a thermowell attachment of any equipment malfunction attributed to a thermowell attachment. Sections 4.1.3.2, 4.2.2.4, 7.1.2.2.3, 7.3.2.2.1, 7.3.2.2.2, 14.2.2.5.6 & 14.2.2.5.6 were reviewed. Welding the thermowell to the boss decreases the possibility of a gasket leak and does not introduce any new failure mode to the Non-Nuclear Instrumentation or the RCS. The thermal response time for the Inconel 690 versus SS304 thermowells were analyzed as part of the modification design and the results of that analysis shows that the Inconel 690 does not cause an equipment malfunction.

MAR No. 95-05-02-01
(continued)

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   Improved Tech Spec Section 3.4.12 addresses RC system leakage. RCS leakage from the pressure boundary is limited to 0 GPM. However, leakage past seals and gaskets is not considered as RCS pressure boundary leakage. Replacing gasketed joints with welds will reduce the possibility of leakage and will, therefore, not reduce the margin of safety.

MAR No. 96-02-01-01

Description of Modification

The MAR adds a ½" test connection to MSV-27 and MSV-28 upstream of the Atmospheric Dump Valves.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The scope of the MAR is to add a ½" test connection to MSV-27 and MSV-28 upstream of the ADVs. The auxiliary connections were attached using full penetration butt-welds in accordance with ANSI B16.34-1988. Since the test connections are closed at all times except mode 5, they will not affect the probability of a MSLB or other accident previously evaluated in the FSAR. All materials were selected based on the design pressure and temperature. Analysis showed the stresses remained acceptable.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The test connections are not active components. Since they maintain their structural integrity through-out all accident scenarios, they have no bearing on any accidents. The ends of the test connections are capped for additional safety.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The materials selected are adequate for the intended pressure and temperature to which they will be exposed. The only failure associated with this passive component is a loss of pressure integrity. This is already bounded by a MSLB analysis.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The test connections were properly sized and designed so that a loss of pressure boundary integrity should not occur. The installation of the test connection in the side of a normally open manual isolation valve will not affect it either.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The installation of passive test connections in the MS piping does not affect any other equipment. Thus, if an RB isolation is required (i.e. during an OTSG tube failure), the test connection will preform as required without inhibiting any other equipment from doing the same.

MAR No. 96-02-01-01
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The test connections are passive and closed during power operation. Also, they are capped so that they will not leak during service.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The Tech Specs do not address the test connections. They are equivalent to any other test connection for local indication, such as a pressure gage or temperature gage.

MAR No. 96-02-09-01

Description of Modification

This modification revised the HPI instrumentation to assist the operators in mitigating various LOCAs.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   HPI Injection Flow is involved in any SBLOCA. The flow instrumentation is used by the operators to monitor HPI flow to assure (1) that the HPI system is working properly in that ft is providing flow of borated water to the core and (2) that R is not operating at above pump runout (540 gpm per pump indicated). Adding an additional low range instrument per HPI Injection Line and changing the existing indicators from analog to digital to increase their accuracy, does not increase the probability of the occurrence of the spectrum of SBLOCA,S.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Adding an additional low range instrument per HPI Injection Line and changing the existing indicators from analog to digital to increase their accuracy does not change the consequences of the HPI Line Break accident as evaluated in the FSAR. It in fact enables the operator to better monitor the performance of the HPI system in cooling the core as ft provides an additional string of low range instrumentation for each HPI Injection Line so that no electrical failure can take out the low range instrument on an injection line. Improved ability to monitor the performance of the HPI System in other accidents evaluated in the FSAR where ft is required also means the consequences of those accidents are also not increased by this modification.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   Adding an additional low range instrument per HPI Injection Line and changing the existing indicators from analog to digital to increase their accuracy does not create a new accident. No new unanalyzed accident like a new type of line break or loss of major equipment is created or introduced by adding additional instrumentation or converting the existing analog instruments to digital.

MAR No. 96-02-09-01
(continued)

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The installation of the new indicators and new instrument strings as safety related electrical equipment similar to the installation of the previous indicators and following all the design requirements for such strings (Environmental Qualification, Seismic, Electrical Separation requirements, etc.) assures that the probability of occurrence of a malfunction of equipment previously evaluated in the FSAR will not be increased.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The malfunctions of equipment previously evaluated in the FSAR for SBLOCAs and HPI Line Breaks are found in FSAR Tables 6-14 and 6-19. The consequences of those malfunctions with the new digital indicators and the new low range HPI flow instrumentation are not increased, as they are bounded by the previous analysis and the digital indicators and new low range instrument strings will not change that analysis.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Adding an additional low range instrument string per HPI Injection Line and changing the existing indicators from analog to digital to increase their accuracy does not create a new malfunction. Two potential common mode failures were considered for the use of digital indicators for this modification. (1) Software introduced common mode failure which is addressed in the supplemental guidance for 10 CFR 50.59 Evaluation of Digital Upgrades. (2) Common mode failures induced by EMI/RFI Interference. Similar digital indicators were tested and are documented in Dixson Test Report 60643-96N. A similarity analysis will be performed prior to turnover. (MAR Open Item #12) which will include a confirmatory onsite RFI test using CR-3 portable transceivers. Additionally, a specific certified EMI/RFI test report will be performed prior to MAR closure. (MAR Open Item #27).

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   This change does not reduce the margin of safety for a SBLOCA. In fact, by adding 4 narrow range instruments it increases the margin of safety as defined in the basis for the Technical Specifications.

MAR No. 96-04-12-01

Description of Modification

This modification removes the automatic opening capability of ASV-204 on an EFIC actuation.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   Eliminating the automatic opening upon an EFIC actuation of ASV-204 will not impact the probability of occurrence of any of the accidents analyzed in Chapter 14 of the FSAR. Those accidents involve the failure of large plant components and none of them are started by failure of the control circuitry for ASV-204.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The accidents that the opening of ASV-204 is involved in are any that involve an EFIC initiation. Since they all take a concurrent LOOP, this involves every one of them. The only single failure that may require ASV-204 to automatically open is a failure of ASV-5 to automatically open. Any single failure that causes ASV-5 to not open precludes a single failure that would effect the "A" Emergency Feedwater Train. Since the "A" EFW train would be available to mitigate the consequences of any postulated accident, the consequences of that accident would not be increased.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   Since this MAR takes out the capability of ASV-204 to open automatically, it actually decreases the possibility of an accident of a different type than any previously evaluated in the FSAR, as ASV-204 cannot spuriously open as a result of a failure in that circuit.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   ASV-204 becomes a redundant manually operated steam admission valve to EFP-2. This does not impact the redundancy of the Emergency Feedwater System.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   ASV-204 becomes a redundant manually operated steam admission valve to EFP-2. The Emergency Feedwater System remains fully redundant.

MAR No. 96-04-12-01
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Removal of the automatic opening on EFIC actuation on ASV-204 actually decreases the possibilities of malfunctions of this equipment of a different type than previously evaluated in the FSAR since it removes two circuits that could fail from the plant.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The margin of safety, as defined in the basis for Technical Specification 3.7.5, Emergency Feedwater System, is satisfied by one of the two trains remaining operational in the event of the defined accidents even with a single failure. Removal of the automatic opening of ASV-204 does not change the capability of the EFW System to meet that requirement.

Temporary MAR No. 96-07-16-01

Description of Modification

This temporary modification installed thermal relief valves on the Industrial Cooling (CI) System piping inside the Reactor Building.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   The installation of relief valves in the CI piping within the Reactor Building will not increase the probability of occurrence of an accident previously evaluated in the FSAR. The CI system serves no safety-related function, other than providing a means of containment isolation after an accident. The valves will allow the CI system to relieve internal pressure which may build up following an event which causes isolation of the containment isolation valves (CIV-34, 35, 40, and 41). This will ensure the ability of the closed CI pipe to function as one of the two containment isolation boundaries.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The consequences of an accident previously evaluated in the FSAR are not increased. The CI piping within the RB is one of two containment isolation boundaries. The omission of the capability to relieve internal pressure from the piping could possibly result in the failure of one level of containment isolation. However, the installation of relief valves will protect the integrity of the pipe during scenarios where the internal pressure would have challenged the allowable pressure of the system. The slight amount of water (less than 30 gallons) released into containment during pressure relief is insignificant for RB flood level considerations.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The possibility of an accident of a different type than any previously evaluated in the FSAR is not created. The CI system serves no safety-related purpose, other than providing a means of containment isolation. The installation of relief valves ensure that the pipe boundary remains functional, even after an accident.

Temporary MAR No. 96-07-16-01
(continued)

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The probability of occurrence of malfunction of equipment previously evaluated in the FSAR is not increased. The installation of relief valves protects the CI piping boundary from over-pressurization during a LOCA or any other scenarios where the cavity cooling pipe is isolated and subjected to elevated temperatures. If the system were to rupture during normal operation, CR-3 would be required to enter LCO 3.6.3 and isolate the affected train of the cavity cooling portion of the CI system within 4 hours. Normal operating conditions do not cause sufficient internal pressure rise in the isolated train of cavity cooling, as is evidenced by past operating experience. The only credible rupture scenarios could occur during operating periods above allowable RB temperature limits, which would require power reduction, or during a LOCA, which would not require entry into the LCO.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The consequences of malfunction of equipment previously evaluated in the FSAR are not increased. The CI system serves no safety related function other than to provide a containment boundary in the event of an accident. The system contains two containment barriers, the containment isolation valves and the closed piping system itself (type III penetration). Prior to the installation of the relief valves, closure of the isolation valves coupled with an energy input to the system could result in an increase in the internal pressure of the CI system beyond allowable limits, resulting in only one remaining boundary. The installation of the relief valves protects the CI piping boundary, ensuring it will continue to function as a containment boundary, even after proper closure of the containment isolation valves.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR has not been created. The FSAR requires two containment barriers for containment isolation, which allows the failure of one barrier without compromising containment integrity. The installation of relief valves actually reduces the possibility of malfunction, as the piping boundary is more likely to remain intact following an accident. Failure of a relief valve to reseat after opening is outside the CR-3 design basis. However, if such a failure occurred, the containment isolation valves would still ensure containment integrity.

Temporary MAR No. 96-07-16-01
(continued)

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The margin of safety, as defined in the basis for any Technical Specification, it not reduced. The installation of the relief valves protects the piping boundary, which is one of two containment barriers relied on for containment isolation, ensuring it remains intact following an accident. The margin of safety, as expressed in the exposure of unacceptable levels of off-site and control room doses, is not reduced, since boundary performance is enhanced.

Procedure Review Record for Abnormal Procedure AP-880, Fire Protection

Changes to this procedure are required to enhance response of the Fire Brigade to minimize potential hazards to personnel

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   a. Procedure changes will allow limited Fire Brigade response for small fires which are already extinguished or small fires not affecting plant equipment, which do not require Fire Brigade response, as determined by the Fire Team Leader. Current guidance is to sound the Fire Alarm and make a PA announcement for the Fire Brigade to muster at a location chosen by the Fire Team Leader. This is inappropriate for the above mentioned fires.

      There are hazards to personnel and equipment associated with people moving rapidly through the plant while wearing heavy and bulky protective gear. These include the possibility of personnel injury due to heat stress, tripping or falling; and equipment damage due to inadvertent operation by personnel moving around while wearing Self-Contained Breathing Apparatus (SCBA).

      The majority of fires at CR-3 have been, and likely will continue to be, small fires in non-safety related areas that are extinguished during the incipient phase by the person discovering the fire.

      Proceduralizing a limited response will allow the Fire Team Leader to use his or her specialize experience and training to determine the proper response for a given fire. It will minimize the chances of personnel injury or equipment damage due to rapid response in protective equipment. The Fire Team Leader retains the option of immediately calling the Fire Brigade for any fire he feels is, or might become, significant to safety.

   b. Closes the Auxiliary Building (AB) hydrogen supply isolation valve, (HYV-34) for any fire in the AB. This valve was recently installed as a modification to limit MUT overpressure during Appendix R Fires. The commitment to use a "dedicated operator" whenever the local MUT hydrogen addition isolation valve is open has made the closure of HYV-34 unnecessary from a MUT overpressure standpoint. However, it remains a good practice to isolate hydrogen from any fire area.

   c. Relocates Enclosure 1: Appendix R Fire Information, to OP-880 Fire Service System Enclosure 1 Appendix R Post-Fire Safe Shutdown Information. This enclosure previously contained 78 pages of seldom used information and is more appropriately contained in OP-880. The information contained in the Enclosure is appropriately contained is in the nature of recommendations and information concerning Post-Fire operation of equipment. AP-880 refers the procedure user to OP-880 for his information. OP-880 is readily available to AP-880 users. The change to OP-880 will be issued simultaneously with that of AP-880. Moving this information to OP-880 will allow easier maintenance of that information following completion of the most recent Appendix R Fire Study.

Procedure Review Record for Abnormal Procedure AP-880, Fire Protection
(continued)

The latest Appendix R Fire Study has removed the required actions from the Table. Since the table no longer contains required operator actions it is appropriate to remove it from AP-880.

Accidents involving fire are not analyzed in FSAR Chapter 14. 10 CFR 50, Appendix R and the CR-3 Fire Protection Plan delineate requirements or the Fire Protection Program. The changes made to this procedure remain in compliance with Appendix R and with the Appendix R Fire Study and the Fire Protection Plan. The changes to this procedure will maintain current response levels for safety significant fires while minimizing the possible adverse effects of an excessive response to non-safety significant fires. For the preceding reasons this procedure change does not increase the probability of a previously evaluated accident.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The changes to this procedure will enhance Fire Brigade response while minimizing hazards to personnel and equipment. The changes to the procedure do not increase the likelihood or severity of a fire. The procedure remains in compliance with 10 CFR 50 Appendix R and the Appendix R Fire Study and the Fire Protection Plan. Therefore the consequences of a previously evaluated accident are not increased.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The changes to the procedure do not create any additional accident scenarios. No new failure modes are created. No unanalyzed accidents are created. The changes will not impede access to vital areas or impede actions to mitigate the consequences of reactor accidents.

4. Is the probability of occurrence of malfunction of equipment previously evaluated in the FSAR increased? No.

   The changes to this procedure do not change the response to significant fires involving safety related equipment. It only changes response to a ready extinguished fires or small Tires which the Fire Team Leader Determines do not require Fire Brigade Response. In these cases a limited Fire Brigade response is appropriate and increases personnel and plant safety.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The consequences of a malfunction of equipment are not increased. Response to significant fires will remain as before and therefore will not affect any evaluations previously made for safety system operation during large fires and will have no impact on safety system operation during small fires.

Procedure Review Record for Abnormal Procedure AP-880, Fire Protection
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The changes to this procedure do not create any new failure modes. The procedure is used to mitigate the consequences of fires affecting plant equipment. This mitigation is enhanced by the removal of requirements for inappropriately responding to a fire that is insignificant to safety. Mitigation efforts for those fires which affect safety equipment will remain as before.

7. Is the margin of safety, as defined in the basis for any Improved Technical Specification, reduced? No.

   The changes to this procedure do not affect any parameters addressed in the basis for any Technical Specification. Therefore, the margin of safety is not reduced.

Changes to FSAR Section 7.4.6.6 & Table 7-8
Due to FPC Calculation I-90-0019, Revision 1

Description of Change

Instrumentation range for Reactor Building pressure in the FSAR is being revised to agree with calculational assumptions and other CR-3 design documentation which is correct.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   FSAR Table 7-8 and Section 7.4.6.6 identifies an incorrect range (0 - 70 psia) for the Reactor Building pressure indication instrumentation loops. The actual (installed) RB Pressure indication range is -10 to 70 psig. Correcting the discrepancy between the actual installed instrumentation as documented in the Design Basis Document and the requirements of Reg. Guide 1.97 for Category 1 containment pressure in the FSAR text does not increase the probability of the occurrence of accidents evaluated in the FSAR.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The installed RB pressure indication instrument loops range does not agree with FSAR Table 7-8 and Section 7.4.6.6. The installed pressure indication range (-10 to 70 psig) envelopes the RB "Accident" pressure (55 psig) as identified in the FSAR, section 5.2.1. The correction of the discrepancy in the FSAR to match the Design Basis Document and the requirements of Reg. Guide 1.97 for Category 1 containment pressure requirements (indication) does not increase the consequences of FSAR evaluated accidents.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The RB Pressure indication instrument loops do not provide automatic or manual control function capabilities. The FSAR discrepancy correction and issuance of the string error calculation do not create the possibility for accidents different than what was previously evaluated in the FSAR.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   FSAR Table 7-8 and Section 7.4.6.6 do not agree with plant installed equipment. No physical changes are made to the existing installed equipment. The correction of the discrepancy in the FSAR ensures that all personnel using the FSAR for a reference have the correct information for assessing the plant requirements including those required to meet Reg. Guide 1.97.

Changes to FSAR Section 7.4.6.6 & Table 7-8
Due to FPC Calculation I-90-0019, Revision 1
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Correction of the FSAR to agree with plant installed equipment does not relate to the malfunctioning of equipment. No increase in the consequences of malfunctions are created by correcting the discrepancy in the FSAR to meet the installed/committed design requirements.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The revision to the FSAR Table 7-8 and Section 7.4.6.6 does not involve changes to installed plant equipment. Correction of discrepancies in the FSAR does not increase the chances for malfunctions different than those identified in the FSAR.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   This change revises the Bases Section 3.3.17, Items 8,9 to agree with installed equipment and the requirements of Regulatory Guide 1.97 as committed to the NRC. The correction of the discrepancy in the ITS bases with respect to the design requirements and commitments for Regulatory Guide 1.97 does not reduce the margin of safety as defined in the ITS.

Procedure Review Record for OP-404, Decay Heat Removal System

Description of Change

These procedure changes are intended to preserve Low Pressure Injection (LPI) pump operation for small break loss-of-coolant accidents (SBLOCA) where LPI flow may be limited, and preserve the capability to establish blowdown to the RB sump, which ultimately prevents boron precipitation absent taking credit for internal reactor vessel (RV) gap flow.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   Section 4.12: These procedure changes are intended to preserve Low Pressure Injection (LPI) pump operation for small break loss-of-coolant accidents (SBLOCA) where LPI flow may be limited. LPI pumps may be configured to supply the High Pressure Injection (HPI) pumps for "piggyback" operation, thus limiting flow to the constraints associated with HPI pump operation.

   Section 4.13: These procedure changes preserve the capability to establish blowdown to the RB sump, which ultimately prevents boron precipitation absent taking credit for internal reactor vessel (RV) gap flow.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Section 4.12: Operation under low flow conditions are effectively managed with the guidance provided in this change. This preserves LPI pump operability over the expected demand (mission time) period. Therefore, long term post accident core cooling is assured.

   Section 4.13: Reactor Coolant System (RCS) blowdown to the Reactor Building (RB) sump is an additional measure that prevents buildup and subsequent unacceptable boron precipitation. In effect, flow channels will not be blocked which maintains a coolable geometry.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   Section 4.12: LPI pump operation is maintained within vendor recommendation by implementation of this procedure change. Therefore, as LPI relates to accident types, no new type of accident is created.

   Section 4.13: Preventing boron precipitation using the dropline to RB sump configuration is an analyzed operation. This change does not introduce any new mechanism (however, it does eliminate auxiliary spray which was found to be inadequate for high core power levels without taking credit for internal RV gap flow), but does effectively address prerequisite conditions enabling the dropline to be used.

Procedure Review Record for OP-404, Decay Heat Removal System
(continued)

4. Is the probability of occurrence of malfunction of equipment previously evaluated in the FSAR increased? No.

   Section 4.12: Vendor recommendations identify the potential for "degraded" modes of operation. However, catastrophic failures are not expected to occur. Since this procedure change provides guidance to minimize operation in low flow areas of concern it is not anticipated that any degraded mode of operation will lead to an inability for the LPI pumps to perform their safety function.

   Prior to the current vendor recommendations, FPC performed a 10 hour low flow test (at approximately 400 gpm) on DHP-1B with results that indicated no unusual wear or damage.

   Section 4.13: Ensuring RCS pressure is approximately equal to RB pressure prior to establishing the blowdown to RB sump configuration prevents challenging the RB sump screens.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No

   Section 4.12: The potential for degraded operation exists as identified in vendor recommendations for protracted LPI pump low flow conditions. LPI pump low flow conditions are typically associated with SBLOCAs; LOCAs that do not completely depressurize the RCS. The degraded condition of concern relates to the potential for increased seal leakage, which in turn could elevate the local radiological environment and increase atmospheric radiological dose. However, the SBLOCA source term does not typically approach that which is assumed for large break (LB) LOCAS. Absent significant core damage, which is assumed for the Maximum Hypothetical Accident (MHA) associated with LBLOCAs, the actual source term is significantly lower. In view of the above, if seal leakage were to increase then the radiological consequences are considered to be well within the bounds of the design basis analysis. Actions taken, in accordance with the proposed procedure change are intended to minimize operation under low flow conditions, thus improving overall pump performance and reliability.

   Section 4.13: Configuring the dropline to the RB sump is already addressed in FSAR 4.3.10.1. This procedure change focuses on establishing prerequisite conditions that prevent challenging equipment (RB sump screens) needed to mitigate the consequences of an accident that leaves the RCS in a saturated state.

Procedure Review Record for OP-404, Decay Heat Removal System
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Section 4.12: Failure mechanisms associated with LPI pump operation remain essentially the same. System configuration and pump operation are not changed as a result of this procedure revision. LPI pump low flow conditions are managed using the proposed new guidance.

   Section 4.13: Aligning the dropline to the RB sump is addressed in the FSAR. Limitations imposed by this procedure change improves the capability of establishing the lineup.

7. Is the margin of safety, as defined in the basis for any Improved Technical Specification, reduced? No.

   Because: Section 4.12: LPI pump operation to mitigate LOCAs is not changed. The safety function is preserved by improving low flow conditions using the proposed procedural changes.

   Section 4.13: The dropline to RB sump configuration is addressed in the ITS Bases. This procedure change does not affect the flow path.

PRECURSOR CARD 96-1630

Description of Change

This Precursor Card identified incorrect ranges in FSAR Section 7.4.6.6 and FSAR Table 7-8.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   MAR No. 82-05-03-01 changed the range of RC-158-PI1, RC-158-PI2, RC-159-PI1 and RC-159-PI2 from 0 to 2,500 psig to 0 to 3,000 psig. FPC IOC NEA85-1078, dated 11/27/85 was sent to Nuclear Licensing to update the FSAR to show the new range of RC pressure. RC-131-PI has had a range of 0 to 600 psig, not 0 to 500 psig from initial stan-up. This 50.59 has been initiated only to correct typos and changes which were not correctly incorporated into the FSAR. Therefore, the probability of an occurrence of an accident previously evaluated in the FSAR is not increased.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Presently, there are four (4) ranges of RC pressure indication (0 to 600 psig, 0 to 2,500 psig, 1,700 to 2,500 psig and 0 to 3,000 psig) at CR-3. No change is being made to the plant due to this 50.59, but instead will result in the correct reflection of the actual plant configuration in the FSAR. The nine (9) sensors that feed indication for the Control Room are RC-3A-PT1, RC-3A-PT3, RC-3B-PT1, RC-3B-PT3, RC-131-PT, RC-131-PT1, RC-132-PT, RC-158-PT and RC-159-PT. RC-147-PT, RC-148-PT, RC-158-PT and RC-159-PT feed indication to Remote Shutdown Panel.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   An accident of a different type than any previously evaluated in the FSAR is not being created. This 10 CFR 50.59 evaluation is documenting existing plant configuration due to MAR No. 82-05-03-01 and initial plant configuration.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   No equipment is being added, changed or deleted. The installed RC pressure ranges available in the Main Control Room are being corrected to reflect actual plant configuration. Therefore, the probability of occurrence or malfunction of equipment previously evaluated in the FSAR is not being increased.

PRECURSOR CARD 96-1630
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The consequences of a malfunction of equipment previously evaluated in the FSAR is not being increased. The changes to the FSAR are being initiated to correct the FSAR, so that it correctly reflects existing plant configuration.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   No equipment is being changed. Correct ranges of instrumentation is being corrected to reflect actual plant configuration. Therefore, the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR is not being created.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   Correcting the FSAR to reflect actual plant instrumentation ranges does not affect Technical Specification Bases; therefore, the margin of safety defined in the basis of any Technical Specification is not being reduced.

FSAR Section 9.3, Spent Fuel Cooling System

Description of Change

A complete revision was made to this FSAR section to assure that it accurately reflects CR-3.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   This change to the FSAR text provides a more accurate description of the SF System. It does not introduce any increase in the probability of any accident. The text changes reflect analytical data for the performance of the system. The analytical data reflects the plant configuration as licensed by the NRC in License Amendment #134.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   No changes are being made in how the SF System was designed and licensed. There are no requirements for the SF System to provide design basis accident mitigation for any events involving the RCS. There are no changes in the Fuel Handling Accident (FHA) assumptions so these descriptive changes will not increase the dose consequence above the CR-3 license limit of 25 rem whole body specified in 10 CFR 100.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The SF System is not used to mitigate a design basis accident in the RCS. The FHA is the only accident that impacts the SF System and these descriptive changes do not create a possibility of an accident of a different type. The SF System function is not being changed from that which is previously described in the FSAR.

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The expected operating modes of the SF System reflect the use of the Industrial Cooling (CI) System during Modes 5 and 6. Specific criteria for CI System usage under these circumstances have been evaluated by Engineering and are described. As such, the SF System function to remove spent fuel decay heat is not being changed so an increase in the probability of occurrence of malfunction of equipment will not occur. The systems, structures, and components that compose the SF System are not being changed. Engineering analyses have established the performance capability of the SF System which are described in this FSAR material.

FSAR Section 9.3, Spent Fuel Cooling System
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Since the systems, structures and components that compose the SF System are not being changed and the previously evaluated Fuel Handling Accident (FHA) remains bounding, there is no changes in the consequences of an accident due to equipment malfunctioning. The FHA dose is less than the licensed limit of 25 rem whole body specified in 10 CFR 100.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The functionality of the systems, structures and components that compose the SF System are not being changed by the changes in SF System description. The use of the CI System in place of the SW System has been evaluated by Engineering and specific criteria, which is described in the FSAR text, has been developed and implemented by plant procedures. Therefore, the possibility for malfunction of equipment of a different type is not being created. The SF System will continue to remove the spent fuel decay heat under all specified design conditions.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The ITS applicable to the SF System are 3.7.13, 3.7.14, 3.7.15, 3.9.1, and 3.9.6. The changes being made by this FSAR description do not reduce the margin of safety discussed in the ITS Bases for any of these ITS. The text changes agree with the discussions in the ITS Bases about the functioning of the systems, structures and components that compose the SF System.

Loss of Coolant Accidents, EOP-08, REV-02

Description of Changes

Procedure changes were made as part of the Makeup Tank and BWST Swapover issues resolution. Revisions to several FSAR sections were identified as being affected.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   Defining the number of RB cooling units to operate for emergency cooling consistent with the FSAR assumptions, has no impact on the probability of occurrence for the analyzed accidents.

   Adding steps to direct the operator isolate selected isolable (RCS makeup and ECCS paths are not isolated) leak paths from the RCS has no impact on the probability of occurrence for the analyzed accidents since the bounding accident (Loss of Coolant Accident) has already occurred.

   Adding compensatory actions to steps, such as the RC leak isolation mentioned above, that direct operation of MOVs in a situation (other than for the FSAR stated safety function) that challenges their design capability only adds to the "defense in depth" philosophy of mitigating the consequences of an accident that has already occurred. This mitigative effort will not impact the probability of an accident occurring.

   Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft has no impact on the probability of occurrence for the analyzed accidents since the bounding accident (Loss of Coolant Accident) has already occurred.

   Performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft has no impact on the probability of occurrence for the analyzed accidents since the bounding accident (Loss of Coolant Accident) has already occurred.

   Deleting the requirement to check RB flood level $\geq$ 2.2 ft prior to transferring LPI suction to RB sump has no impact on the probability of occurrence for the analyzed accidents since the bounding accident (Loss of Coolant Accident) has already occurred.

Loss of Coolant Accidents, EOP-08, REV-02
(continued)

Bypassing the MUT low level interlock after swapover of the LPI suction to the RB sump has no impact on the probability of occurrence for the analyzed accidents since the interlock was installed to protect the MUPs from loss of suction source on low MUT level. When the source that the interlock would select on low MT level is no longer available, bypassing this interlock would serve to protect the MUPs which are now supplied via piggyback from LPI. Additionally this action addresses a concern outlined in Generic Letter 89-10 dealing with check valve leakage scenarios that could cause backflow of water into the BWST via the MU suction header.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The number of RB cooling units in operation for the Reactor Building Design Basis Accident, FSAR 14.2.2.5.9, is described as "one RB Cooler and one RB spray." The directed use of 2 RB cooling units is consistent with "Emergency Operation" and "ACTUATION" as described in FSAR chapters 5.5.3.2.c and 6.3.3.a.

   Adding the RC leak isolation and compensatory actions for NOV failures are part of a "defense in depth" strategy to lessen the severity of an accident using any available means and that the consequences of failure of these steps under these conditions will not increase the severity of the accident.

   Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft results from review of calculation M94-0053, Revision 0 which assumes realignment to separate MUP suction supplies at 25.5 ft. This change implements the requirement of the calculation to preclude Hydrogen gas binding of the MUPs during mitigation of the design basis accident as described in the FSAR.

   Performing the transfer of LPI suction source from BWST to RB sump at 15 ft versus 5 ft will provide assurance that BWST level will not be allowed to decrease to the point of vortexing in the suction piping during mitigation of the design basis accident as described in the FSAR.

   Deleting the requirement to check RB flood level prior to transferring LPI suction to RB sump is not required when the analyzed volume of the BWST has been transferred to the RB. This verification was a hold over from the restrictions placed on allowable RB flood level when post-accident instrumentation was located in the flood plane. This restriction has since been removed by elevating this instrumentation. Checking this level serves no useful purpose. Adequate NPSH for RB sump suction is ensured for ES pumps delivering required flow rates by ensuring swapover no sooner than 15 ft in the BWST. This is backed up by the validation which has been performed on the simulator and by the evaluations summarized in FPC IOC NED95-0066.

Loss of Coolant Accidents, EOP-08, REV-02
(continued)

Bypassing the MUT low level interlock when the BWST is no longer in use as the suction source to LPI has been included for two purposes: 1) To conserve and protect the MUPs from damage due to insufficient suction supply, and 2) This action addresses a concern outlined in Generic letter 8910 dealing with check valve leakage scenarios that could cause backflow of water into the BWST via the NU suction header.

For these reasons, the consequences of previously evaluated accidents have not been increased.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

Operation of the RB cooling units is directed within design parameters for the units and the SW system, and are used for the intended purpose. This usage will not create the possibility of an accident of a different type than any previously evaluated to occur.

Adding steps to direct the operator isolate selected isolable (RCS makeup and ECCS paths are not isolated) leak paths from the RCS has not increased the possibility of an accident of a different type than any previously evaluated because these steps are not initiated until an RC leak (i.e., the accident) has already occurred.

Adding compensatory actions to steps, such as the RC leak isolation mentioned above, that direct operation of MOVs in a situation (other than for the FSAR stated safety function) that challenges their design capability only adds to the "defense in depth" philosophy of mitigating the consequences of an accident that has already occurred. This mitigative effort will not impact the possibility of an accident of a different type than any previously evaluated occurring.

Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft supports the train separation assumed in the FSAR for successful accident mitigation. Only the BWST level requirement has changed. Increasing the action level to 28 ft maintains the assumed reliability of the HPI pumps.

Performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft is done to prevent the possibility of vortexes forming in the suction headers during design basis accident mitigation which could affect ES pump reliability. The actual mechanism for accomplishing this step has not changed. Therefore, this setpoint revision does not create the possibility of an accident of a different type than any previously evaluated to occur.

Loss of Coolant Accidents, EOP-08, REV-02
(continued)

Deleting the requirement to check RB flood level $\geq$ 2.2 ft prior to transferring LPI suction to RB sump does not create the possibility of an accident of a different type than any previously evaluated to occur because the required RB flood level is assured by the volume of water from the BWST and CFTs as described in the evaluation performed by Engineering and outlined in IOC NED95-0066. This evaluation provides assurance that sufficient NPSH is available when transferring to RB sump recirculation for assumed accident flow rates for HPI, LPI and BS. As mentioned in the previous question, the 2.2 ft requirement was based on RB flood plane considerations which have since been resolved by modification to instrument location.

Bypassing the NUT low level interlock when the BWST is no longer in use as a suction source serves to allow the closure of MUV-58 and MUV-73 and does not create the possibility of an accident of a different type than any previously evaluated to occur.

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The RB cooling units continue to be operated within the design parameters for the systems, no increase in the probability of occurrence of malfunction has been created.

   This change adds steps to attempt isolation of potential RC leak sources at an RC pressure above 1500 psig (ES HPI setpoint). By attempting operation at this higher pressure, it becomes possible that on the motor-operated valve (MOV) isolating the leak, the torque switch will reach its thrust set point, stopping valve movement before reaching the closed seat. This is due to the higher differential pressure present as the valve throttles leak flow. It should be noted that during normal operation, the MOV torque switch is the device that stops movement when the valve is fully closed. As RC pressure decreases, the differential pressure across the MOV will decrease, allowing the torque switch to reset. The MOV will then close on command from the operator or by ES actuation. A note has been placed in this procedure to inform the operator of valve response to a high ΔP and a compensatory step has been added to direct the operator to fully close the valve when RC pressure (thus differential pressure) has lowered to the value specified for accomplishing the safety function in the Maximum Differential Pressure Calculation. Attempting to isolate RC leakage at pressures above ES actuation setpoint does not cause damage to the MOV, nor will it impede or encumber the accomplishment of the design basis safety function, therefore the probability of malfunction remains unchanged.

Loss of Coolant Accidents, EOP-08, REV-02
(continued)

Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft, performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft, deleting the requirement to check RB flood level ≥ 2.2 ft prior to transferring LPI suction to RB sump, and bypassing the NUT low level interlock to allow closure of MUV-58 and MUV-73, are actions taken to maintain equipment within operating limits while responding to a design basis accident and have no impact on the probability of the occurrence of malfunction of equipment.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The Reactor Building Design Basis Accident, FSAR 14.2.2.5.9, RB cooling equipment response is described as "one RB cooler and one RB spray." This assumes an entire ES train has failed to actuate and is unavailable. The directed use of 2 RB cooling units is consistent with "Emergency Operation" and "ACTUATION" as described in FSAR chapters 5.5.3.2.c and 6.3.3.a, respectively.

   The addition of steps which attempt to isolate RC leakage that is too small to cause an ES actuation on low RC pressure, uses the components for their intended purpose to isolate leakage, but at a higher pressure. The valves operated for this purpose will continue to be available, and will perform their safety function as described in the FSAR.

   Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft, performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft, deleting the requirement to check RB flood level ≥ 2.2 ft prior to transferring LPI suction to RB sump, and bypassing the NUT low level interlock to allow closure of MUV-58 and MUV-73, are actions taken to maintain equipment within operating limits while responding to a design basis accident and have no impact on the FSAR assumptions regarding the consequences of equipment malfunction.

   Review of these changes reveals that the consequences of assumed malfunctions have not increased from the previous revision.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The changes made to this procedure have been reviewed by the author, for use of components for purposes other that as described in the FSAR and EDBD. The results indicate that the level of exposure to new or unresolved malfunction possibility remains unchanged.

Loss of Coolant Accidents, EOP-08, REV-02
(continued)

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   CR-3 Improved Technical Specifications Bases were reviewed for impact from this revision. This change is consistent with the emergency operation described in ITS B 3.5.2, B 3.5.4, B 3.6.3 and B 3.6.6, and thus does not impact the safety analysis for the related ITS.

Interim Change to EOP-08, Rev. 04

Description of Change

This interim procedure change is to modify instructions concerning Low Pressure Injection (LPI) flow indications. Current flow values used for ECCS equipment do not contain instrument errors assumed in calculations for operation of the equipment.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   The purpose of this interim procedure change is to modify instructions concerning Low Pressure Injection (LPI) flow indications. Current flow values used for ECCS equipment do not contain instrument errors assumed in calculations for operation of the equipment. Including instrument error in the EOPs forces operator action to be more conservative when flow conditions may be low. The nature of the error is maximum at low flow conditions which may be detrimental to ECCS pump life. By emphasizing the error corrected values, the mitigation strategy is not modified while enhancing protection of (LPI) pumps during accident conditions. This guidance does not increase the probability of occurrence of any accident listed in chapter 14 of the FSAR.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Previously analyzed accidents utilize criteria to assess fission product barrier performance during the accident. This interim procedure change does not impact any of the criteria listed in NOD-11. To have an increase in the consequences of an accident, the guidance must increase the off-site and control room doses above the licensing limit. This guidance does not invalidate the analysis or impact the consequences of accidents that were previously analyzed.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   This interim procedure change emphasizes the error corrected flow guidance to apply during an accident condition. This minimizes the risk of damage to the LPI pumps during accident scenarios. In addition, termination criteria for High Pressure Injection (HPI) is maintained by ensuring the minimum LPI flow is satisfied. No change to system operating characteristics are created by taking action at higher indicated flow rates. This action creates no new credible failure modes or increases the possibility that a previously thought incredible failure is now credible.

Interim Change to EOP-08, Rev. 04
(continued)

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   Utilizing more conservative guidance during an accident scenario does not increase the probability of occurrence of malfunction. No now system alignments are created which could impact the analysis. The operating characteristics of plant equipment used to mitigate the events for which Emergency Operating Procedures are written remain the same.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The guidance issued in this interim procedure change ensures the minimum flow requirements are error corrected during an accident scenario. The EOP strategy to mitigate the event is not modified. Equipment assumed in the safety analysis is operated consistent with the analysis and no increase in consequences for equipment assumed to malfunction is seen.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   No change to the operating characteristics of plant equipment is produced utilizing guidance issued in this interim procedure change. Using error corrected flow values during an accident scenario ensures a minimum flow is maintained through the LPI pumps. In addition to the FSAR, chapter 6/3 of the Enhanced Design Basis Document was reviewed and no impact to ECCS parameters listed was noted.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   CR-3 Improved Technical Specifications (ITS) were reviewed for impact due to the issue of this interim procedure change. Acceptance criteria "e" for the ECCS system listed in ITS Bases B 3.5.2 is ensured by guidance issued in this interim procedure change. The error corrected guidance ensures equipment protection when minima flow conditions are evidenced during operation of ECCS in the Emergency Operating Procedures.

Enhanced Design Basis Document Temporary Change No. 476

Description of Change

Changes were made to FSAR Chapters 6, 9, and 14 to reflect instrumentation errors for LPI and BS pump flow rates.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   The Building Spray System serves no normal operational function and has no impact on the probability of the occurrence of an accident. The BS System is an Engineered Safeguard and only functions as a result of an accident.

   The changes made to the FSAR are a result of recalculating LPI and BS pump flow rates to include instrument error with worst case (min/max) flow. The equipment is used to mitigate an accident that has already occurred. The equipment is not used in normal operation during modes 1 through 4. Therefore, it does not affect the probability of occurrence of an accident.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The reduction in BS flow results in off-site and control room doses that are below licensing limits.

   The consequences of an accident were specifically evaluated in several calculations to assure FPC the new flow criteria was acceptable. Refer to FPC Calculations M90-0021, M95-0005, M95-0006, I86-0002, I86-0003, I90-0022, I91-0001.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The Building Spray System serves no normal operational function and has no impact on the likelihood or possibility of an accident.

   The changes focus on slightly different flow rates used in the mitigation of a LOCA. Since the equipment is not used in normal operation during modes 1 through 4, no new accidents will be created.

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The reduced BS flow is above the vendor's minimum recommended pump flow (600 gpm for 100 hrs/yr). Additionally, equipment qualification has been determined to be unaffected at 1000 gpm BS flow.

Enhanced Design Basis Document Temporary Change No. 476
(continued)

No changes were made to the material design specifications or construction practices for any hardware. Equipment reliability is not reduced by the changes. Setpoint changes with instrument error were evaluated. No adverse equipment impact resulted.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   This change only reduces the required BS flow during recirculation to account for instrument error associated with the flow controller. Changes in this flow has no effect on the consequences of the malfunction of equipment.

   FPC Calculation M90-0021 evaluated the NPSH required at the BS and LPI pumps. Using upper flow limits and including instrument error, adequate NPSH is available to preclude cavitation & ensure proper operation.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   This change only reduces the required BS flow during recirculation to account for instrument error associated with the flow controller. Changes in this flow has no effect on the possibility of malfunction of equipment.

   The water in the RBES for recirculation was evaluated in FPC Calculation M90-0021 and found acceptable for the NPSH requirements of the LPI and BS pumps. With separate redundant trains for the emergency equipment, no now credible single failure could prevent both trains from actuating as designed to mitigate a LOCA.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The reduced Building Spray flow results in off-site and control room doses that are below acceptable limits established for CR-3.

   The margin of safety is not reduced by evaluating the BS pumps at slightly higher or lower flow rates. Nominal flows are not affected. With LPI, its availability and reliability is not reduced by evaluating its NPSH requirements at a higher flow rate. The BWST to RBES swapover level still provides adequate NPSH available for system operation.

FSAR Section 9.6 Fuel Handling Equipment

Description Changes

A complete revision was made to this FSAR section to assure that it accurately reflects CR-3.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   This revision to the FSAR does not affect the Fuel Handling Accident (FHA) assumptions discussed in Section 14.2.2.3. The Fuel Handling Equipment described in this Section 9.6 is the equipment assumed to be involved in the FHA. The revision involves an expansion of the discussion previously provided in the FSAR. No increase in probability is involved with the use of the Fuel Handling Equipment as described in this text revision.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The FHA assumptions described in FSAR Section 14.2.2.3 are not changed by the revisions to the Fuel Handling Equipment. No additional failures are created by this text revision. Therefore, the dose consequences previously calculated to be well within the guidelines of 10 CFR 100 remain valid for this text revision.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The worst case accident scenario for the Fuel Handling Equipment is the FHA which assumes a dropped fuel element. The Fuel Handling Equipment is designed to preclude this event by assuring that lifting limits are imposed, heavy load paths are controlled, hooks are inspected, and personnel are familiar with equipment procedures and operation. This revision does not change any of the assumptions that could lead to the possibility of a different type accident.

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The FHA continues to remain as the design bases accident involving the Fuel Handling Equipment for CR-3. Plant procedures for the operation and maintenance of the equipment provide guidance to assure to personnel that malfunctions do not occur. No additional uses of the Fuel Handling Equipment is being introduced by this text revision so the probability of a malfunction is not increased.

FSAR Section 9.6 Fuel Handling Equipment
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The FHA (both inside and outside the Reactor Building) remains the bounding accident for the Fuel Handling Equipment. The FHA is caused by a fuel assembly falling from the Fuel Handling Equipment. There are no other Fuel Handling Equipment failures which could create a more worst case accident scenario than that already considered. Both accidents (inside RB or outside RB) produce dose consequences which are well within 10 CFR 100 limits.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The Fuel Handling Equipment is designed and operated for the specific purpose of transferring fuel assemblies to and from the reactor vessel. The failure that could occur have been evaluated and have been precluded by design provisions and operating limitations either through mechanical and electrical interlocks or by procedural steps.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The Fuel Handling Equipment is not covered directly in any Improved Technical Specification Bases, however, ITS B 3.9.6 does discuss an administrative limit of 72 hours as the minimum decay time prior to fuel movement in the reactor vessel. This text revision does not reduce the 72 hour requirement, but a new administrative limit of 150 hours after shutdown before fuel movement is permitted is being imposed. This 150 hour limit may be reduced, but only after an engineering evaluation of the Spent Fuel Cooling System is completed as described in FSAR Section 9.3.2.7. The FHA assumes 72 hours which is a more conservative assumption and therefore, the FHA results remain bounding for CR-3.

FSAR REVISION DUE TO SBLOCA HPI REEVALUATION

Description of Changes

Several FSAR Sections were revised to reflect the HPI re-revaluation which occurred as a result of the unit shutdown in February 1996, so that CR-3 response to a SBLOCA would be accurately described.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   The HPI reevaluation refined our understanding of plant response to currently recognized accidents, specifically, SBLOCA and Letdown Line Rupture (FSAR Section 14.2.2.5.7). Nothing was physically done to the plant which would change the performance of safety related or non safety related systems. Therefore, the probability of occurrence of a recognized accident previously evaluated in the FSAR has not increased.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The HPI reevaluation effort determined that core uncovery and concurrent Peak Cladding Temperature (PCT) escalations occur for CLPD SBLOCAS, within a small spectrum of break areas. No core uncovery was predicted for HPI line breaks or pinches or a core flood line break. The consequences of the SBLOCAs which resulted in the increased PCTs are not increased for these breaks since the SBLOCAs of interest still meet the ECCS Acceptance Criteria contained in 10 CFR 50.46, and FSAR Section 14.2.2.5.4.

   The acceptability of the increased PCT from the HPI reanalysis is acceptable per NSAC-125, which states:

   "Changes in barrier performance which do not result in increased radiological dose to the public are addressed under margin of safety" (See Question 7).

   Therefore, since the newly identified SBLOCA consequences are within the acceptance criteria defined in 50.46, no changes in barrier performance, (i.e., cladding, RCS or containment) exist, and the consequences of the HPI reanalysis are unchanged.

   The acceptability of the EOP-3 action to initiate full HPI in LSCM will result in offsite dose in excess of the amount currently identified in the FSAR. The dose was reevaluated and was found to be less than 10% of the 10 CFR 100 Acceptance Criteria. Therefore, although the dose associated with the letdown line break may increase, the results of the accident are within legal limits. According to NSAC-125, these consequences do not constitute an unreviewed safety question.

FSAR REVISION DUE TO SBLOCA HPI REEVALUATION
(continued)

As result, the HPI reevaluation effort has not increased the consequences of an accident previously evaluated in the FSAR.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The HPI reevaluation refined our understanding of plant response to currently recognized accidents, specifically, SBLOCA and Letdown Line Rupture (FSAR Section 14.2.2.5.7). Nothing was physically done to the plant which would result in any new failure modes or operating characteristics. Therefore, the possibility of an accident of a different type than any previously evaluated in the FSAR is not created.

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The HPI reevaluation effort only considered the current operation of existing plant equipment in mitigating SBLOCAs and the Letdown Line Rupture. No change was made to the function of any safety of non-safety related plant equipment. No new credible failure modes or operating characteristics due to this HPI reevaluation have been identified. Therefore, the probability of occurrence or malfunction of equipment previously evaluated in the FSAR has not increased.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The HPI Reevaluation Effort determined, and evaluated the effect of, the worst case credible single failure which could occur during mitigation of a SBLOCA. Several single failures were considered, and are discussed at length in the calculations. Any additional failures do not need to be considered since they would be outside of the current design basis. Therefore, the consequences of malfunction of equipment previously evaluated in the FSAR has not increased.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The HPI reevaluation effort only considered the current operation of existing plant equipment in mitigating SBLOCAs and the Letdown Line Rupture. No change was made to the function of any safety or non-safety related plant equipment. No new malfunction of existing equipment has been created. Therefore, the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR has not created.

FSAR REVISION DUE TO SBLOCA HPI REEVALUATION
(continued)

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   NSAC-125 states:

   "Changes in transient or accident core thermal hydraulic conditions or peak reactor coolant pressures which do not violate the fuel design limits or reactor coolant system design pressures in the Bases for the safety limits specified in the plant Technical Specifications do not constitute a reduction in the margin of safety as used in 10 CFR 50.59."

   Using this logic, the increase in PCT during some SBLOCAs which still complies with 10 CFR 50.46, as well as the additional offsite dose from the Letdown Line Event reevaluation, which still complies with 10 CFR 100, does not result in a reduction in the margin of safety, as defined in the basis for any Technical Specification.

Evaluation of Shutting Down All Spent Fuel Cooling Pumps

Description of Evaluation

On past occasions, the running spent fuel pump was shutdown to gather information on spent fuel pool heatup. This information was used to establish maintenance schedules and determine contingency for certain maintenance activities.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   The only accident evaluated in the FSAR which affects the spent fuel system Is a Fuel Handling Accident (14.2.2.3). The mitigative function of the spent fuel system for this accident Is to maintain 23 ft of water in the spent fuel pool above the fuel for Iodine decontamination. Shutting down all spent fuel cooling does not affect level in the spent fuel pool nor Is this accident even possible since fuel assemblies are not being moved during the evolution.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The dose consequences for a fuel handling accident remain unchanged since 23 ft of water will be maintained above the fuel at all times.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   This evolution does not create a possibility of a different type of accident since the ability to cool the spent fuel pools was never lost or anticipated to be lost. Even If both trains of spent fuel cooling was lost, no new accident would be created since the fuel would be adequately cooled even If boiling were to occur in the spent fuel pools.

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The spent fuel cooling pumps will be shut down for this evolution, but the probability of a pump to malfunction upon restart is no greater than during normal operations. Both pumps were/will be operable during these evolutions.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Cooling to the spent fuel pools can be reestablished at any time during the evolution. The system Is designed to withstand continuous operation at 160°F and an alarm Is present to notify Operations when 140°F is reached in the pools. Cooling to the pools will be reestablished before reaching the alarm setpoint.

Evaluation of Shutting Down All Spent Fuel Cooling Pumps
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The spent fuel system will be operated within its design parameters therefore the possibility for a malfunction of a different type Is not created. The spent fuel cooling pumps can be relied upon to restart at any time. Redundancy is available in the system via two pumps and heat exchangers.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   There is no Improved Technical Specification which requires the spent fuel cooling pumps to be running. The specifications applicable to the spent fuel system deal with level in the spent fuel pool, boron concentration in the pools, and fuel assembly location. These specifications are not impacted by this evolution. Therefore the margin of safety as defined in the improved Technical Specification is not reduced.

FSAR CHANGE FOR INCREASE IN ALLOWABLE OPEN AREA IN THE CONTROL COMPLEX HABITABILITY ENVELOPE DURING CORE ALTERATIONS

Description of Changes

Revised calculations have established an increase in the allowable open area in the Control Complex Habitability Envelope during Modes 5 and 6. Changes are required in FSAR Chapter 7.

10 CFR 50.59

1. Is the possibility of occurrence of an accident previously evaluated in the FSAR increased? No.

   The Control Complex Habitability Envelope (CCHE) provides two primary functions. Protection of personnel from 1) toxic gasses and 2) radiological effects following a LOCA or Fuel Handling Accident. The purpose of this revision is to make changes to the FSAR which will allow for a larger control complex "open area" during core alterations. FPC determined the effect of the increased inleakage (1400 CFM, total) on the toxic gas concentration in the CCHE. This memo determined the concentration with additional inleakage is less than the 36 ppm concentration allowable per Standard Review Plan (SRP) 6.4. The CCHE also provides protection from radiological hazards. The primary radiological hazard during core alterations i-s the Fuel Handling Accident (FHA). FPC determined a total outside air infiltration rate of 2300 CFM during an FHA resulted in 15.7 Rem. Since toxic gas considerations are limiting for CCHE inleakage, 1400 cfm will be the new limit during core alterations. Changing the allowable inleakage from 355 CFM to 1400 CFM has a nominal effect on the operation of any plant system and therefore will have no effect on the probability of occurrence of an accident previously evaluated in the FSAR.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Increasing the CCHE inleakage rate will result in slightly higher concentrations to sulfur dioxide in the CCHE following a sulfur dioxide tank rupture, but the actual concentration is still within regulatory limits. Increasing the inleakage to the CCHE following an FHA will result in less dose than the current licensing basis assumes for CR-3 for a LOCA. Therefore, the consequences of an accident previously evaluated in the FSAR are not increased.

FSAR CHANGE FOR INCREASE IN ALLOWABLE OPEN AREA IN THE CONTROL COMPLEX HABITABILITY ENVELOPE DURING CORE ALTERATIONS
(continued)

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The CCHE provides protection of the personnel in the Control Complex from toxic gas and radiological hazards. No new accidents will be created by increasing the allowable inleakage that can occur during core alterations because the increased inleakage will allow a less stringent requirement for allowable leakage and will allow-slightly degraded performance of control complex isolation devices (doors, dampers, etc..) during core alterations.

4. Is the probability of the occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   Increased allowable inleakage will allow a less stringent requirement for allowable inleakage and will allow slightly degraded equipment performance for control complex isolation devices (doors, dampers, etc..) during core alterations. Therefore, increasing the allowable inleakage to the CCHE during core alterations will have no effect on the probability of occurrence or malfunction of equipment previously evaluated in the FSAR.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Increasing the allowable inleakage to the CCHE during core alterations will not impact any consequences of equipment failure previously evaluated in the FSAR since less stringent isolation criteria are being applied to control complex isolation devices (doors, dampers, etc.) resulting in less significant consequences if equipment were to malfunction.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Allowing additional inleakage to the CCHE during a toxic gas event or FHA will not impact way CCHE isolation devices act, only the leaktightness necessary for completion of their safety function. Therefore, the possibility for malfunction of a different type than previously evaluated is not created.

FSAR CHANGE FOR INCREASE IN ALLOWABLE OPEN AREA IN THE CONTROL COMPLEX HABITABILITY ENVELOPE DURING CORE ALTERATIONS
(continued)

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   Prior to the Parson's Power memo, there was no guidance for allowable inleakage for Fuel Handling Accidents. The allowable leakage during the FHA is approximately half the LOCA control room thyroid dose. Resulting in no reduction of the safety margin. The toxic gas inleakage limit is greater than previously evaluated. However, since the control complex is initially isolate the SRP Guidance for the allowable toxic as concentration is not exceeded and the margin of safety as defined in the basis for any technical specification is not reduced.

Compliance Procedure CP-142, Primary Water Chemistry Guideline and Chemistry Procedure CH-400, Nuclear Chemistry Master Scheduling Program

Description of Change

Procedural changes were made which required changes in FSAR text.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The limits on dissolved hydrogen in the RCS are based on the ability to control the production of free oxygen as a result of the radiolytical decomposition of water and providing a reducing environment in the RCS in order to minimize the production of corrosion products. The original B&W guidelines for CR-3 (mid 1970's) provided a range of 15 to 40 cc/Kg hydrogen. More recent guidance for the industry states that a minimum of 25 cc/Kg should be maintained. This level is based primarily on conservative calculations and the desire to assure a surplus of hydrogen is present in the core region of RCS to scavenge free oxygen. The existing BAW and EPRI hydrogen limits support raising the lower limit from 15 to 25 cc/Kg and the higher limit from 40 to 50 cc/Kg to assure free oxygen is not available in the core.

   Lithium is primarily used to adjust the RCS pH. Generally, the higher the concentration of lithium in the coolant, the higher the pH. An increase in the lithium concentration in the RCS will increase the pH in the coolant to a level that will aid in the reduction of system corrosion. This increase in lithium is within allowable recommendations of BAW.

   The change in the Reactor Coolant lithium chemistry limit is not outside of the allowable limits established by the NSSS vendor for CR-3, and represents a positive change to enhance system performance and longevity. No FSAR design basis accident criteria are affected by this change.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The change in the lithium and hydrogen chemistry of the RCS remains within the guidelines of the NSSS vendor and help reduce long term corrosion of the primary system. The change in the lithium and hydrogen concentrations do not create conditions that increase accident consequences, as evaluated in the FSAR.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The maximum allowed chemistry values, established by BAW and used in the evaluation and determination of design basis accidents, bound this change in lithium and hydrogen concentrations. Therefore, no new accidents are created by this revision.

Compliance Procedure CP-142, Primary Water Chemistry Guideline and Chemistry Procedure CH-400, Nuclear Chemistry Master Scheduling Program
(continued)

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   This change raises the lithium concentration limit in the RCS to maintain the pH within the industry prescribed bounds resulting from increased baron concentrations, due to core fuel loading for extended fuel cycles. The change in hydrogen concentration minimizes corrosion potential for the RCS and fuel. Therefore, the probability of equipment malfunctions is not increased.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   This change is an improvement effort to better control primary chemistry, and therefore reduces the potential, both in frequency and consequence, for equipment failures. The change to the lithium limits are within the bounds of previous FSAR evaluations, and therefore will produce no adverse consequences within the scope of those evaluations.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Primary water chemistry is included in the FSAR, which includes lithium and hydrogen control for the minimization of corrosion, to reduce radiological impact and improve system integrity. This change is an administrative adjustment to existing limits, and remains within the original scope of FSAR evaluations. As such, no possibility for different types of equipment malfunctions are created by this change.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The Improved Technical Specifications do not include references to hydrogen and lithium concentrations in the RCS. As there are no bases concerned with this issue, this change will not affect the margin of safety for Technical Specifications.

Operating Procedure OP-403B, Chemical Addition-Boric Acid System

Description of Change

Changes were made in OP-403B that affected the facility as described in the FSAR.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   This safety evaluation is in regards to details added to OP-403B which will defeat/restore the open limit switch for WDV-27, the outlet isolation for the A RCBT. WDP-5A is not a safety related pump and is not used to mitigate any accidents at CR-3. The limit switch functions as protection and control for WDP-5A. WDP-5A can only operate when the open limit switch for WDV-27 is made up. However, the Reactor Coolant Bleed Tank (RCBT) crossties are connected between WDP-5A and the RCBT isolation valve (WDV-27). A flow path does exist when the correct valve lineup is established from the B or C RCBT to WDP-5A. When this is done the limit switch on WDP-27 must be defeated to operate WDP-5A. The RCBTs and WDP-5A are not designed to perform any safety functions. This change will not increase the probability of any previously evaluated accidents in the FSAR.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   As stated above, WDP-5A and the RCBTs do not perform any safety related functions. This evolution has been performed several times with out any complications. This change will ensure that the limit switch is defeated by procedure and restored to service by procedure.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   This change will not create any new unevaluated accidents. The guidance will proceduralize all actions that must be performed to carry out adding boric acid to the B or C RCBTS. This will provide a way of tracking that the limit switch is restored to service before the procedure is completed.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   There is not an increase for equipment malfunction associated with this change. If WDP-5A failed, it would not affect the safety of the plant.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   As stated above, this change does not affect safety related equipment.

Operating Procedure OP-403B, Chemical Addition-Boric Acid System
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The performance of this procedure would not directly cause the malfunction of any equipment. The task performed by this change and the section that the change was initiated for, have been performed several times without conflict or malfunction.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The changes to OP-403B do not affect the margin of safety, as defined in the basis of Technical Specifications.

Operating Procedure OP-403C, Chemical Addition System Caustic System

Description of Change

Changes were made in OP-403B that affected the facility as described in the FSAR.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The probability of an accident evaluated by the FSAR has not been increased by the changes to OP-403C. The revision has not changed the intent of the procedure or the task being performed. Additional instruction was added to install a temporary pressure indicator to determine tank level while filling. BST-1 was removed from service, as the sodium hydroxide tank, by MAR No. 88-05-01-01 in 1993. The tank was recently drained to remove the sodium hydroxide. The tank will now need to be maintained full of Demineralized Water to provide a heat sink/heat source for the BST-1 and BST-2 enclosure area. The tank will be maintained in a secure valve lineup by de-energizing and sealing BSV-11 and BSV-12 closed. These valves will be maintained in this position by the performance of SP-381.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The consequences for an accident evaluated by the FSAR have not increased due to the revision of OP-403C. Section 14.1.2.4.2 of the FSAR states, that "BST-1 was removed from service in 1993 when a modification installed three trisodium phosphate dodecahydrate (TSP-C) baskets in the RB 95 ft elevation for post-LOCA pH control." The addition of Demineralized Water to BST-1 will allow BST-1 to function as one of the two heat source/heat sinks in the BST-1 and BST-2 enclosure to support Engineering Calculation E-90-0090.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The possibility of a different type of accident than previously evaluated in the FSAR has not increased. It would take two valve failures or mispositions for Demineralized Water to enter the Building Spray System. This would be considered a double, passive failure which we do not analyze for. BSV-21 (isolation for BST-1) is maintained closed by OP-405 and BSV-11 and 12 are maintained sealed closed by SP-381.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   There is no increase in the probability of equipment malfunction associated with the revision to OP-403C. The only requirement for BST-1 is that it holds water. (There is no other permanent plant equipment required for BST-1 to fulfill it's function.)

Operating Procedure OP-403C, Chemical Addition System Caustic System
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The change from sodium hydroxide to Demineralized Water will provide a cleaner medium that is not caustic. This change will not negatively impact BST1.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   There are no new equipment malfunctions created by the change to OP403C. As mentioned above, BST-1 only needs to be able to hold water to serve the function as a heat sink/heat source for Calculation E-90-0090. The Demineralized Water that will be maintained in BST-1 will not be as caustic as the sodium hydroxide formerly maintained in the tank.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The change to OP-403C for BST-1 to be filled to 36 feet, will not have an adverse impact on the Building Spray System or any other Technical Specification component.

Setpoint/Instrument String Re-validation Program

Description of Changes

The Setpoint/Instrument String Re-validation Program is requiring changes to numerical values used in operating CR-3. These changes are affecting the facility as described in the FSAR.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   Each calculation performed under the Calculation Re-validation Program for instrument loops at CR-3 is determining the indication accuracies for their specific loops. Various organizations (Operations, Nuclear Plant Maintenance, Nuclear Plant Technical Support, etc.) and disciplines are involved in the review process prior to each analysis/calculation issuance. The accuracies determined are evaluated against operational and accident mitigation impacts on an individual basis. Each instrument, though serving the same function, may not have the same overall accuracy.

   The generic accuracy given in the FSAR could be misleading and the individual analysis/calculation should be reviewed for the appropriate error values. Thus, the removal of the generic accuracy values will not impact any assumptions made in the FSAR.

   As stated above, this 50.59 is being done to minimize the number of changes to the FSAR, by removing the presently identified accuracies and referencing the user to the specific instrument calculation for the latest accuracies.

   Thus, the probability of occurrence of an accident previously evaluated in the FSAR will not be increased.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Although some plant indication is used in the mitigation of accidents, the indication accuracies being determined under the re-validation program are being reviewed by Nuclear Plant Technical Support and Operations, prior to the issuance of each specific loop calculation, to ensure that appropriate action is taken (i.e.: revision of plant procedures, operability evaluations where necessary, plant modifications if required, etc.).

   Thus, the consequences of an accident previously evaluated in the FSAR will not be increased.

Setpoint/Instrument String Re-validation Program
(continued)

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   Removal of the "Indication Accuracy % of Full Scale" column in FSAR Table 7-8 will minimize the number of changes to the FSAR, due to the calculation re-validation program. The indication accuracy information will still be available in the specific loop calculation.

   Thus, the possibility of an accident of a different type than any previously evaluated in the FSAR will not be created.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The removal of the indication accuracies in FSAR will not affect the operation of any equipment. The indication accuracies will be listed in the specific loop calculation, which is reviewed by Nuclear Plant Technical Support and Operations, prior to the issuance of the calculation. The removal of the information in FSAR Table 7-8 will minimize the changes to the FSAR.

   Thus, the probability of occurrence of a malfunction of equipment previously evaluated in the FSAR will not be increased.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The removal of the indication accuracies in the FSAR will not increase or decrease the probability of equipment malfunctions. As the specific calculations are developed they are reviewed by different plant departments, including Operations, to determine if changes to the operation of CR-3 are required.

   Thus, the consequences of malfunction of equipment previously evaluation in the FSAR will not be increased.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The calculation re-validation program is not installing new equipment. If new equipment needs to be installed due to loop errors which are to great for the operation of the plant, modifications will be issued. The affect of the new equipment would be analyzed under the specific modification.

   Thus, the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR will not be created.

Setpoint/Instrument String Re-validation Program
(continued)

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced?

   Each calculation is required to be reviewed against current Technical Specification requirements to determine the impact. The removal of the indication accuracies from FSAR Table 7-8 will not affect Technical Specifications.

   Thus, the margin of safety, as defined in the basis for any Technical Specification will not be reduced.

Emergency Procedure EOP-07, Inadequate Core Cooling

Description of Changes

This change revised the BWST indicated level where switchover to the ECCS sump is to take place.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft has no impact on the probability of occurrence for the analyzed accidents since the bounding accident (Loss of Coolant Accident) has already occurred.

   Performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft has no impact on the probability of occurrence for the analyzed accidents since the bounding accident (Loss of Coolant Accident) has already occurred.

   Deleting the requirement to check RB flood level $\geq$ 2.2 ft prior to transferring LPI suction to RB sump has no impact on the probability of occurrence for the analyzed accidents since the bounding accident (Loss of Coolant Accident) has already occurred.

   Bypassing the MUT low level interlock after swapover of the LPI suction to the RB sump has no impact on the probability of occurrence for the analyzed accidents since the interlock was installed to protect the MUPs from loss of suction source on low MUT level. When the source that the interlock would select on low MUT level is no longer available, bypassing this interlock would serve to protect the MUPs which are now supplied via piggyback from LPI. Additionally this action addresses a concern outlined in B&W letter 89-10 dealing with check valve leakage scenarios that could cause backflow of water into the BWST via the MU suction header.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft results from review of calculation M94-0053, revision 0 which assumes realignment to separate MUP suction supplies at 25.5 ft. This change implements the requirement of the calculation to preclude Hydrogen gas binding of the MUPs during mitigation of the design basis accident as described in the FSAR.

   Performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft will provide assurance that BWST level will not be allowed to decrease to the point of vortexing in the suction piping during mitigation of the design basis accident as described in the FSAR.

Emergency Procedure EOP-07, Inadequate Core Cooling
(continued)

Deleting the requirement to check RB flood level prior to transferring LPI suction to RB sump is not required when the analyzed volume of the BWST has been transferred to the RB. This verification was a hold over from the restrictions placed on allowable RB flood level when post-accident instrumentation was located in the flood plane. This restriction has since been removed by elevating this instrumentation. Checking this level serves no useful purpose. Adequate NPSH for RB sump suction is ensured for ES pumps delivering required flow rates by ensuring swapover no sooner than 15 ft in the BWST. This is backed up by the validation which has been performed on the simulator and by evaluations summarized on Engineering IOC NED95-0066.

Bypassing the MUT low level interlock when the BWST is no longer in use as the suction source to LPI has been included for two purposes: 1) To conserve and protect the MUPs from damage due to insufficient suction supply, and 2) This action addresses a concern outlined in B&W letter 8910 dealing with check valve leakage scenarios that could cause backflow of water into the BWST via the MU suction header.

For these reasons, the consequences of previously evaluated accidents have not been increased.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft supports the train separation assumed in the FSAR for successful accident mitigation. Only the BWST level requirement has changed. Increasing the action level to 28 ft maintains the assumed reliability of the HPI pumps.

Performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft is done to prevent the possibility of vortexes forming in the suction headers during design basis accident mitigation which could affect ES pump reliability. The actual mechanism for accomplishing this step has not changed. Therefore, this setpoint revision does not create the possibility of an accident of a different type than any previously evaluated to occur.

Emergency Procedure EOP-07, Inadequate Core Cooling
(continued)

Deleting the requirement to check RB flood level ≥ 2.2 ft prior to transferring LPI suction to RB sump does not create the possibility of an accident of a different type than any previously evaluated to occur because the required RB flood level is assured by the volume of water from the BWST and CFTs as described in the evaluation performed by Engineering and outlined in IOC NED95-0066. This evaluation provides assurance that sufficient NPSH is available when transferring to RB sump recirculation for assumed accident flow rates for HPI, LPI and BS. As mentioned in the previous question, the 2.2 ft requirement was based on RB flood plane considerations which have since been resolved by modification to instrument location.

Bypassing the MUT low level interlock when the BWST is no longer in use as a suction source serves to allow the closure of MUV-58 and MUV-73 and does not create the possibility of an accident of a different type than. any previously evaluated to occur.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft, performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft, deleting the requirement to check RB flood level ≥ 2.2 ft prior to transferring LPI suction to RB sump, and bypassing the MUT low level interlock to allow closure of MUV58 and MUV-73, are actions taken to maintain equipment within operating limits while responding to a design basis accident and have no impact on the probability of the occurrence of malfunction of equipment.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Raising the action level for 2 MUPs operating from a single BWST suction from 25 ft to 28 ft, performing the transfer of LPI suction source from BWST to RB sump at 15 ft vice 5 ft, deleting the requirement to check RB flood level ≥ 2.2 ft prior to transferring LPI suction to RB sump, and bypassing the MUT low level interlock to allow closure of MUV58 and MUV-73, are actions taken to maintain equipment within operating limits while responding to a design basis accident and have no impact on the FSAR assumptions regarding the consequences of equipment malfunction.

   Review of these changes reveals that the consequences of assumed malfunctions have not increased from the previous revision.

Emergency Procedure EOP-07, Inadequate Core Cooling
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The changes made to this procedure have been reviewed by the author, for use of components for purposes other that as described in the FSAR and EDBD. The results indicate that the level of exposure to new or unresolved malfunction possibility remains unchanged.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   CR-3 Improved Technical Specifications Bases were reviewed for impact from this revision. This change is consistent with the emergency operation described in ITS B 3.5.2, and B 3.5.4 thus does not impact the safety analysis for the related ITS.

FSAR Revisions to Assure FSAR Agrees With CR-3 Water Chemistry Program

Description of Change

Portions of FSAR Chapter 4 require revision to assure that the FSAR agrees with the CR-3 Water Chemistry Program.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The only plausible accident evaluated in Chapter 14 of the FSAR relevant to water chemistry specifications is the steam generator tube rupture accident. While the main feedwater line break and steam line failure accidents evaluated in Chapter 14 do involve the secondary cooling loop for which Table 4-11 provides the water chemistry specifications, the current Table 4-11 specifications are still low enough from a practical viewpoint to prevent rapid wall loss of the secondary piping due to aggressive corrosion or erosion such as would be necessary for either of these accidents to take place. Therefore, only the steam generator tube rupture accident will be evaluated for the remaining questions.

   In the steam generator, even very low levels of impurities can become very concentrated in crevices and deposits and other occluded regions, thus creating the potential for corrosion of the tubing which constitutes a large portion of the reactor coolant system primary-to-secondary pressure boundary. Revising Table 4-11 to have more restrictive water chemistry requirements, decreases, rather, than increases the probability of occurrence the steam generator tube rupture accident from occurring relative to the current Table 4-11 minimum requirements.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Section 14.2.2.2 of the FSAR evaluates the consequences of a double-end rupture of one steam generator tube at full power. This is a worst case scenario for the rupture of one tube as opposed to a small pin hole leak or a crack; therefore, the consequences of this previously evaluated accident cannot be increased.

FSAR Revisions to Assure FSAR Agrees With CR-3 Water Chemistry Program
(continued)

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   Chapter 14 of the FSAR already evaluates accidents resulting in the breach of the pressure boundary in a steam line, main feedwater line, and a steam generator tube. Water chemistry specifications are to control corrosion of the secondary cooling system piping and components. Inadequate water chemistry controls resulting in the corrosion of secondary plant components or piping would result in a breach of the pressure boundary at some location in the secondary plant. The three accidents evaluated in the FSAR bound any pressure boundary breaches that could occur at other locations in the secondary plant. The steam generator generally is the limiting factor for water chemistry controls, that is, water quality adequate for the steam generators is adequate for other components in the secondary plant such as the turbine. Silica is of particular concern for the turbine. the silica limit in the proposed revision to Table 4-11 will ensure the precipitation of silica in the turbine does not occur, and will therefore not contribute to turbine blade failure and a possible pressure boundary breach.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   A steam generator tube rupture is the only plausible relevant equipment malfunction evaluated in the FSAR that could result a breach of the secondary plant pressure boundary due to the current revision of Table 4-11 being inadequate to minimize corrosion. The same rationale for Question 1 applies to this question also.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   A steam generator tube rupture is the only plausible relevant equipment malfunction evaluated in the FSAR that could result a breach of the secondary plant pressure boundary due to the current revision of Table 4-11 being inadequate to minimize corrosion. The same rationale for Question 2 applies to this question also.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The same rationale for Question 3 applies to this question also.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced?

   Plant Technical Specifications section 5.6.2.11 do not specify any secondary chemistry limits; therefore, the basis for any Technical Specification is unaffected by this FSAR revision.

Removal of FSAR Section 4.2.3.10.1, RCS Vents Operational Requirements

Description of Changes

This section was a relocated technical specification created when the CR-3 Improved Technical Specifications were implemented in 1994. It determined that the vents did not need to be maintained with the type of administrative controls as described in the FSAR.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased?

   The RCS Vents were installed to mitigate accidents that create voids in RCS piping and pressurizer that could lead the operators to take improper actions. This deletion of FSAR Section 4.2.3.10.1 in no way changes the use of these vents or the accidents for which there were installed to mitigate. The valves are still available for accident mitigation and the probability of occurrence has not changed.

2. Are the consequences of an accident previously evaluated in the FSAR increased?

   The post-accident doses are bounded by the use of these valves. Elimination of this FSAR section does not change the implementation of any accident mitigation strategies which would affect the consequences of an accident. The vents are still available for use.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created?

   The RCS Vents were installed because of problems at TMI-2 in mitigating that accident. Misoperation of the valves was considered in their design implementation and they are single failure proof for opening and closing. The valves are surveilled during CR-3 startup to assure that they will function as designed. The elimination of this FSAR section does not create any new credible failure modes or operating characteristics.

4. Is the probability of occurrence of malfunction of equipment previously evaluated in the FSAR increased?

   The use of the RCS Vents is not being changed by the elimination of the FSAR reporting criteria. The valves will function as designed and they are surveilled to assure that they will.

Removal of FSAR Section 4.2.3.10.1, RCS Vents Operational Requirements
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased?

   The dose rates for the Chapter 14 accidents are still bounded by the use of the RCS Vents. There is no additional malfunctions that can occur. The elimination of the action statements and reporting requirements defined in the FSAR will not increase doses because of any malfunction.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created?

   The design and operation of the RCS Vents is not being changed by the elimination of this FSAR section. No additional malfunctions are being created.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced?

   There is no margin of safety defined in the ITS for the RCS Vents. They were not deemed to satisfy NRC criteria for inclusion in ITS.

Revision to Surveillance Procedure SP-610
CFV-1, 2, 3, 4 Full Stroke Test

Description of Change

SP-610 was created to satisfy the corrective actions of Problem Report 95-0177 as well as Section XI.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   This procedure is designed to verify the proper operation of Core Flood system valves and thereby ensure their capability to fulfill their safety function. All operation of equipment is within the normal range of operation so no degradation of equipment is expected beyond that for normal service. The evaluation of the thermal affects of this test is being performed by BWNT and the number of cycles (each test performance representing a cycle) will be tracked for the Core Flood Tanks to ensure this limit is not exceeded. This new procedure will not affect the frequency of probability category of any FSAR Chapter 14 Accident.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   This test will verify the capability of valves CFV-1, 2, 3, and 4 to permit design basis flow rates from the Core Flood Tanks to the Reactor Coolant System. This validation will ensure the plant design bases for compliance with 10 CFR 50 Appendix K and 10 CFR 50.46 requirements for fuel cladding temperature, clad oxidation, hydrogen generation resulting from cladding oxidation, core geometry changes, and a path to long term core cooling is maintained. Since no changes are incorporated by this procedure to effect failure modes, equipment operating characteristics or plant response parameters, the consequences of accidents previously evaluated in the FSAR are not increased.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   This new test is performed during refueling outages with the reactor vessel head removed and the vessel defueled. Radiological concerns are addressed by designing the initial test conditions to preclude inaction of nitrogen from the Core Flood Tank into the Fuel Transfer Canal. No new system upsets, transients, or radiation releases are considered probable with the plant configuration required for this test and therefore no new unanalyzed accident possibility created.

Revision to Surveillance Procedure SP-610
CFV-1, 2, 3, 4 Full Stroke Test
(continued)

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The testing performed by this procedure will implement the requirements of ASME Section Xi for Care Flood Check Valves CFV-1, 2, 3, and 4. Remote position indication is also performed for Core Flood Tank Block Valves CFV-5 and CFV-6. FSAR Table 6-5 will require revision due to the implementation of this procedure. The current description of Core Flood Check Valve testing in the FSAR discusses the methods used in SP-405, CFV-1,2,3,4 Partial Stroke exercise. SP-405 will continue to be performed during cold shutdown outages other than refueling outages. During refueling outages, SP-610 will be performed to full stroke CFV 1, 2, 3, and 4 for meeting ASME Section Xi requirements. This new procedure will eliminate the requirement for sample disassembly and inspection of CFV-1, 2, 3, and 4 and thereby reduce the chance for errors and damage in valve disassembly and re-assembly. This new procedure is superior to the methods currently described in the FSAR for verifying Care Flood check valve operability. Successful completion of this test will verify the design criteria for flow capability of Core Flood Check Valves CFV-1, 2, 3, and 4 and will not create new failure modes or operating characteristics for the components involved. Decay Heat Cooling is secured during this test with the Decay Heat System Isolated and the test flow path is confined to the Core Flood Tanks to the Fuel Transfer Canal thereby preventing possibility of damage to Decay Heat components. Probability of occurrence of a malfunction of equipment previously evaluated in the FSAR is therefore not increased.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   This test will verify the capability of valves CFV-1, 2, 3,and 4 to permit design basis flow rates from the Core Flood Tanks to the Reactor Coolant System. This validation will ensure the plant design bases for compliance with 10 CFR 50 Appendix K and 10 CFR 50.46 requirements. The testing performed by this procedure will implement the requirements of ASME Section XI for Core Flood Check Valves CFV-1, 2, 3, and 4. Remote position indication is also performed for Core Flood Tank Block Valves CFV-5 and CFV-6. Since no changes are incorporated by this procedure to affect failure modes, equipment operating characteristics or plant response parameters, the consequences of equipment malfunctions as previously evaluated in the FSAR are not increased.

Revision to Surveillance Procedure SP-610
CFV-1, 2, 3, 4 Full Stroke Test
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   During the development of this procedure, consideration for unexpected system or component performance as well as radiological concerns were accounted for in the establishment of initial Core Flood Tank level I pressure and Fuel Transfer Canal levels to insure that in the event of Core Flood Tank Isolation Valve failure, no inaction of nitrogen into the Fuel Transfer Canal will occur. The evaluation of the thermal affects of this test is being performed by BWNT and the number of cycles (each test performance representing a cycle) will be tracked for the Core Flood Tanks to ensure this limit is not exceeded. The affect on OTSG Nozzle Dams was considered to be minimal, primarily limited to minor increases in static head resulting from this test. Other new credible failure modes were not determined so malfunction of equipment, other than evaluated in the FSAR, is not created.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   Because: This test will verify the capability of valves CFV-1,2,3,and 4 to permit design basis flow rates from the Core Flood Tanks to the Reactor Coolant System. This validation will ensure the plant design bases for compliance with 10 CFR 50 Appendix K and 10 CFR 50.46 requirements. No specific safety margins are discussed in the referenced ITS bases or FSAR Sections that are affected by this test. No margins of safety are reduced.

Core Operating Limits Report - Cycle 11

Description of Changes

The Core Operating Limits Report has been revised to reflect the Cycle 11 design. Appropriate changes are required in the FSAR.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The COLR has been revised for Cycle 11 to reflect the influence of the Cycle 11 core design on power peaking, reactivity, control rod worths, and limiting conditions for operation have been set to preserve maximum allowable LOCA linear heat rate limits, initial condition DNB maximum allowable peaking limits, ejected rod worth reactivity limits, and shutdown margin reactivity limit. The Cycle 11 core thermal and kinetics properties are bounded by previously accepted analyses and the key safety analysis parameters are bounded by the assumptions in the FSAR. The probability of occurrence of an accident previously evaluated in the FSAR is therefore not increased.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The Cycle 11 analysis confirms the initial condition assumptions for the transient analysis are bounded those in the FSAR or previously accepted analyses. A comparison of the doses in the FSAR with those for Cycle 11 shows that while some accident doses exceed FSAR values, all doses are within the 10 CFR 100 limits and meet acceptance criteria in the NRC Standard Review Plan, NUREG-0800.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The design for the Batch 13 reload fuel for Cycle 11 is identical to the Batch 12 fuel with the exception of uranium/gadolinium and axial blankets. The BPRA assemblies consist of 8 pin clusters as a result of the use of gadolinium as a burnable absorber in selected fuel rods. These changes in design were developed using NRC approved methodology and conform to all approved acceptance criteria. These changes are within the design basis used in the FSAR and subsequent cycles. The possibility of an accident of a different type than previously evaluated is therefore not created.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The fuel assembly and control component design conform to the same NRC approved acceptance criteria as used in the design basis in the FSAR and subsequent cycles. The probability of occurrence or malfunction of equipment previously evaluated in the FSAR is therefore not increased.

Core Operating Limits Report - Cycle 11
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Since the Cycle 11 reload design parameters are within all NRC approved acceptance criteria and the design basis in the FSAR and subsequent cycles, the radiological consequences of a malfunction are not increased.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The changes in the Cycle 11 reload core design conform to the design basis in the FSAR, and the fuel design parameters are similar to those in the FSAR and subsequent cycles. The possibility of a malfunction of a different type than evaluated in the FSAR is therefore not created.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The key safety analysis parameters for the Cycle 11 reload core are bounded by the values in the FSAR and/or subsequent approved cycle analyses. The margin of safety as defined in the basis for Technical Specifications is therefore not reduced.

FSAR Change to Delete the Fuel Handling Equipment on Auxiliary Fuel Handling Bridge, FHCR-2

Description of Change

The Auxiliary Fuel Handling Bridge, FHCR-2, has been transformed into a work platform.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The Fuel handling equipment of the Auxiliary Fuel Handling bridge (tag # FHCR-2) has been removed. This bridge is a work platform only and does not move fuel. Since the fuel movement capabilities are no longer used, the occurrence of a fuel handling accident as identified in chapter 14 of the FSAR can not be caused by the Auxiliary bridge.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The results of the fuel handling accident in chapter 14 of the FSAR has not been changed by the removal of the fuel handling equipment from FHCR-2.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The worst case in an accident scenario is assumed in Chapter 14 of the FSAR i.e. the failure of an entire fuel assembly is chosen to evaluate 10CFR100 limits. Since only one fuel assembly can be moved by the main bridge at a time, a different type of accident is not created by eliminating the Auxiliary Bridge to move fuel.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The removal of the fuel handling capabilities from the Auxiliary Bridge can no longer cause a malfunction that will contribute to the Fuel Handling accident, as defined in the FSAR.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Since failure of an entire fuel assembly is the catalyst of the Fuel Handling accident. Failure of the Auxiliary bridge is irrelevant. It can not move fuel. It can not cause the Main bridge to malfunction for only one fuel assembly can be manipulated at one time.

FSAR Change to Delete the Fuel Handling Equipment on Auxiliary Fuel Handling Bridge, FHCR-2
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   By using a failure of an entire fuel assembly in the Fuel Handling Accident of Chapter 14, it encompasses all possibilities of equipment malfunction.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The Main Fuel Handling bridge or the Auxiliary Fuel Handling bridge do not perform any functions to help mitigate an accident or maintain it in a safe shutdown condition. Fuel handling bridges are not discussed in the Improved Technical Specifications.

FSAR Revision for Industrial Cooling as a Backup to Spent Fuel Cooling System

Description of Change

FSAR Section 9.3, Spent Fuel Cooling System, did not discuss the use of the Industrial Cooling (CI) System as backup to the Spent Fuel Cooling System when the plant in is Modes 5 and 6.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   Loss of Spent Fuel Cooling is not a Chapter 14 Design Basis Accident.

   The FSAR already considers the loss of the Spent Fuel Cooling System (SF), and the systems which support spent fuel cooling, DH and SW (Ref. FSAR Section 9.3.2.1.2). FSAR Section 9.3.2.2 states "The Spent Fuel Cooling System provides adequate capacity and component redundancy to assure the cooling of stored spent fuel, even when unusually large amounts of fuel are in storage. Ample time is available to assure that protective actions can be taken even in the unlikely event of multiple component failures or complete cooling loss."

   It is not absolutely clear that FSAR Section 9.3.2.2 intends that two (2) safety related spent fuel cooling paths must be operational during refueling outages, nor is it clear to what extent emergency on-site power sources are credited. Neither the FSAR nor the License Amendment #134 Safety Evaluation Report discuss the availability of power supplies. The prevailing interpretation has been that only one (1) safety related spent fuel cooling path need be operational, with at least one emergency diesel generator or alternate emergency power source, and one additional cooling path shall be available (REF: AI-502).

   The CI System has adequate hydraulic capacity to cool the spent fuel pool. A PIPF hydraulic analysis of the CI/SW cross tied condition indicates that a flow rate of 1450 gpm is achievable through a single SFHE (corresponding pump dP of 92.2 ft). Valving in the second SFHE, if desired, will result in a flow split between the SFHEs. Adding an RB Fan and/or a control complex chiller will reduce flow available to the SFHXs. A SFHE flow of 900 gpm has .been determined to be sufficient (M96-0014 Rev. 0).

   The CI System rated heat removal capacity (1458 Tons or 17.5E6 BTU/hr) easily handles worst case heat loads. As of 4/15/96, Spent Fuel Pool heat load will be no more than 3.9x 10^6 BTU/hr (325 Tons). A single RB Fan Assembly rejects approximately 1.2 x 10^6 BTU/hr (100 Tons) during mode 5 and 6, and a single control complex chiller will reject a maximum of 140 Tons. Total load on the CI system will be no more than 565 Tons. Worst case heat load is well within the capacity of the CI system.

FSAR Revision for Industrial Cooling as a Backup to Spent Fuel Cooling System
(continued)

The CI components (recirculation pumps, cooling tower fans, etc) are normally powered from non-safety related busses. The cooling towers and recirculation pumps associated with the CI system receive power from diverse, non-safety related sources. Thus a total loss of cooling capacity is very unlikely due to a single electrical power supply failure. In the event of a loss of off site power, Intermediate Building roof heat sink components can be back fed from the 480V Plant Aux. Bus 3B (MTSW-3J) while powered from the B-EDG (satisfying the requirements of AI-502 Section 4.1.1.3). In the event of a total loss of cooling capability from the CI System, the safety related system mandated by AI-502 would be used to cool the pool.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

The consequences of a loss of spent fuel cooling has not increased. The spent fuel cooling heat load in well defined (Ref. Calc M96-0014 Rev. 0), and will not be increased by the proposed alignment. The maximum acceptable spent fuel pool temperature (140°F) prior to the loss of cooling will not be increased as a result of the proposed alignment. In this instance, beginning spent fuel pool temperature is approximately 88°F. The spent fuel pool heat up rate, in the absence of cooling, will not be increased (actual rate no greater than 1.5°F).

Current spent fuel pool heat load (as of 4/15/96) is estimated to be no more than 3.9×10^6 BTU/hr, or 325 Tons. Safety related analyses estimates that the spent fuel pool heat up rate will be no more than 1.5°F/hour (Ref. Calc F91-0001, based on 5.32×10^6 BTU/hr, or 443 Tons). At the existing spent fuel pool temperature (88°F), the pool would not reach the 190°F for approximately 68 hours.

The consequences of a loss of spent fuel cooling can only be increased if spent fuel pool volume is lost through boiling (possible only after eight hours without cooling, following a full core off-load at an initial temperature of 140°F), and is not replaced. The proposed alignment does not change the required spent fuel pool make up rate of 70 gpm based on a full core off-load (per FSAR Section 9.3.2.1.2). Without a full core off load, required make up will be substantially less than 70 gpm. The proposed alignment does not change the sources of available make up water (REF: FSAR Section 9.3.2.8).

FSAR Revision for Industrial Cooling as a Backup to Spent Fuel Cooling System
(continued)

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The existing design basis FSAR chapter 14 events envelope the proposed operational configuration.

   As discussed in FSAR Section 9.5.2.1.5, the SW System serves as a radiological boundary between contaminated systems and the environment. Since the CI System will be serving components normally supplied by the SW System, the design of the CI System must also prevent the release of radioactivity to the environment.

   A spent fuel heat exchanger leak would contaminate the main CI system loop (refer to figure 1), however, heat exchangers incorporated into the design of the main CI loop (CIHE-3, 4A and 10) prevent potentially contaminated water from leaving the Auxiliary Building or Intermediate Building (REF: MAR 87-01-19-11 and CGWR 95-02-19-06). Cooling tower loop flow does not mix or come into contact with the main CI loop flow.

   The possibility of contaminating the CI System exists. Available CI System pressure is expected to be less than SF system operating pressure. To minimize the potential concern, FPC will sample the CI System for indications of a Spent Fuel to CI system leak every 24 hours (required since RM-L3 is bypassed by the proposed configuration). FPC will not permit fuel movement while the CI System serves as the Spent Fuel Pool heat sink to eliminate the possibility of a FSAR Chapter 14 Fuel Handling accident which would quickly increase the isotopic concentrations in the fuel pool. By sampling the CI system to ensure it is free of significant isotopic concentrations, even a gross failure of this non-safety related system would not result in an significant release to the environment.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   There has been no physical change in the fit, form or function of the spent fuel cooling system, or the DH/RW system which serves as the safety related back up to the SF System (per AI-502). There has been no physical change in the fit, form or function of diesel backed power to the SF, DH and RW Pumps.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   As discussed in question 2, there is no increase in spent fuel pool heat load, no increase in spent fuel pool heat up rate, and no reduction in the time required to restore a spent fuel cooling path.

FSAR Revision for Industrial Cooling as a Backup to Spent Fuel Cooling System
(continued)

A Spent Fuel Cooler to CI System leak will contaminate the evaporative tower CI System heat sink loops. Heat exchangers isolate these heat sink loops from the main CI System loop. The potentially contaminated CI System loop is installed in the Auxiliary Building and Intermediate Building (i.e., potentially contaminated piping is not routed outside recognized RCAs.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

Section 9.3 of the FSAR considers reductions in spent fuel pool cooling capability up to and including a total loss of cooling. Utilizing the CI System as an ultimate heat sink path does not introduce any different types of malfunctions that could result in a loss of decay heat removal or in a lose of spent fuel pool inventory. Additionally, none of the possible failures or malfunctions in the CI system adversely impact the availability or quantity of make up water available to replenish the spent fuel pool (Ref. FSAR 9.3.2.2).

The possibility of a Spent Fuel Pool heat exchanger tube failure continues to exist. When cooled by the SW System, the SW System acts as a barrier to prevent radioactive fluid from being released to the environment. The CI system will also serve this function. The SW System is continuously monitored for radioactivity. In the proposed mode of operation, the CI system will be sampled at least daily to provide an equivalent level of assurance.

Active CI System components (recirculation pumps, fans, control circuitry) are all non-safety related. The physical separation of safety and non-safety related circuits at CR-3 ensures that adverse interaction can not exist. Active CI system components are powered from diverse, non-safety related sources. Thus a malfunction in one source will not disable the entire CI system. The 500 Ton heat sink components (CIHE-1A, 1B, CIP-1A, 1B) are powered from NSR plant busses, but can be powered from the B- EDG while being back fed through the plant aux. bus. The 958 ton heat sink components (CIHE-9A, 9B, CIP-9A,9B) are powered from an off-site transformer (Ref MAR No. 95-02-19-04) which while non-safety related, is completely independent from plant busses.

Active CI system components are redundant. The main CI system loop has two (2) 100% redundant pumps (CIP-2A, 2B). The 500 Ton tower has two (2) 100% redundant pumps (CIP-1A, 1B). The 958 Ton tower has two (2) 100% redundant pumps (CIP-9A, 9B).

FSAR Revision for Industrial Cooling as a Backup to Spent Fuel Cooling System
(continued)

Each cooling tower actually consists of two (2) identical cells with a separate fan. Should a single fan fail, the overall unit looses 90% of the single call capacity. For example, should one (1) of two (2) fans on the 500 ton tower fail, tower capacity would fall to no less than 250 Tons + 25 Tons or 275 Tons. Should one (1) of two (2) 958 Ton tower fans fail, tower capacity would fall to no less than 479 Tons + 48 Tons or 527 Tons. Overall CI System capacity remains significant. The loss of one (1) 500 Ton tower fan reduces total CI system cooling capacity to 1233 Tons (14.8×10^6 BTU/hr). The loss of one (1) 958 Ton fan reduces total CI system cooling capacity to 1027 Tons (12.3×10^6 BTU/hr). Maximum expected CI system heat load should be no more than 565 Tons (325 Tons Spent Fuel + 100 Tons RB Fan + 140 Tons CC Chiller).

Recall that the Control Complex chillers can be transferred, if required or desired, to the SC system, thereby shedding 140 Tons, reducing total CI load to 425 Tons (less than the 500 Ton nominal rating of the IB roof heat sinks).

Note: these capacities represent tower performance on the worst case summer day (95°F dry bulb, 80°F wet bulb). Tower performance during cold or mild weather will be markedly better.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   There is no recognized reduction in any margin of safety, as documented in the applicable Technical specifications. Technical Specifications reviewed: 3.4, 3.7, 3.7.13, 4.3. There are no operability requirements for either the SW System or the RW system in mode 5 or 6.

   FPC recognizes the hydraulic and heat removal limitations of the CI system (main CI loop limited to approx. 1600 gpm, maximum heat removal capacity = 17.5×10^6 BTU/hr). FPC will utilize the CI system to cool a minimum set of SW System components (1 RB Fan, 1 CC Chiller and 2 SFHXs) during modes 5 and 6, ensuring CI system capacity comfortably exceeds system demand.

   The most significant heat load on the CI system (during mode 5 or 6 will come from spent fuel cooling. The spent fuel cooling load is well defined as a function of time after shutdown (FPC Calculation M96-0014 Rev. 0). Engineering has estimated that the spent fuel pool heat load will be no more than 3.9×10^6 BTU/hr (as of 4/15/96) per FPC Calculation M96-0014, Rev. 0.

Revisions to FSAR, Section 9.8.7, Fire Protection

Description of Change

Revisions to FSAR Section 9.8.7, Fire Protection, are required because of changes in the Fire Protection Plan and items identified in Problem Report 96-0119.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The changes being made to the FSAR are clarification type changes to the text and add an existing fire protection system located in out buildings not addressed by the FSAR. This should not effect the probability of any accident that has been evaluated prior to these changes. Since the referenced systems and buildings are not in the success path for mitigation of analyzed accidents, these changes do not reduce the capability to safely shut down the plant following a fire.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   These changes do not effect the operation of any existing safety-related equipment nor will they effect any consequences of any evaluated accident. They only add clarification to existing fire protection features and list a new system in an out building not addressed by the FSAR.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   These changes have no effects on accident evaluations or possibilities as they deal only with clarifications of types of existing fire protection equipment/systems and add a new system in an out structure not addressed by the FSAR, and are not performing any safety function.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   These changes are clarification/editorial and add a fire protection system in an out building not considered in the FSAR. No impact on probabilities or malfunctions of equipment would be brought about due to these changes.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   These changes should not impact or increase any consequences of evaluated malfunctioning equipment due to the nature of the changes being requested. These changes are either clarification/editorial and add a new fire protection system to the types of systems in use at CR-3. The new system is in an out building and is not listed in the FSAR.

Revisions to FSAR, Section 9.8.7, Fire Protection
(continued)

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   These changes have no effect on any safety-related equipment at CR-3. These changes are clarification type changes and add a system to the list of fire protection systems in use at CR-3.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   These changes are to areas of the FSAR (fire protection) that have no impact to the CR-3 Tech Specs.

FSAR Revisions Due to Water Chemistry Program Changes

Description of Changes

Water Chemistry standards and guidelines for nuclear power plants have changed. Revisions to the appropriate FSAR sections are required.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   Previously evaluated accidents applicable to the FSAR changes described for pages 4-16, 4-41, 4-42, and 4-89 are t e steam generator tube rupture and steam line failure accidents evaluated in Sections 14.2.2.2 and 14.2.2.1, respectively. The probability of either of these two accidents occurring is not increased by this FSAR revision because chemistry controls are still required by technical specifications to prevent water quality from severely degrading to the point that either of these two catastrophic fa lures could occur due to uncontrolled corrosion of the steamline piping or the steam generator tubing. Water chemistry specifications are still contained in plant procedures as required by plant technical specifications; however, due to the dynamic nature of water chemistry specifications, constantly being revised and improved as more is learned from industry experience and test programs, they will no longer be included in the FSAR.

   Previously evaluated accidents applicable to the FSAR changes described for pages 4-88, and 4-89 are the loss of coolant accidents and the steam generator tube rupture accident evaluated in Sections 14.2.2.5 and 14.2.2.2, respectively. The probability of either of these two accidents occurring is not increased by this FSAR revision because chemistry controls are still required to prevent water quality from severely degrading to the point that either of these two catastrophic failures could occur due to uncontrolled corrosion of the coolant piping or the steam generator tubing. Water chemistry specifications are still contained in plant procedures as required by plant technical specifications; however, due to the dynamic nature of water chemistry specifications, constantly being revised and improved as more is learned from industry experience and test programs, they will no longer be included in the FSAR.

   There are no accidents evaluated in the FSAR which are applicable to the FSAR change described for pages 4-26, 4743, 9-36, 9-87, and 9-98. Condensate piping ruptures or failures, resin requirements, sampling, and hydrazine chemical additions are not evaluated.

FSAR Revisions Due to Water Chemistry Program Changes
(continued)

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Previously evaluated accidents applicable to the FSAR changes described for pages 4-16, 4-41, 4-42, and 4-89 are the steam generator tube rupture and steam line failure accidents evaluated in Sections 14.2.2.2 and 14.2.2.1, respectively. The consequences of either of these two accidents occurring is not increased by this FSAR revision because both scenarios involve the double-ended rupture of the piping or tubing of concern. This type of catastrophic failure cannot be worst unless more than one such failure is involved. Two double-ended ruptures is considered implausible and, are therefore, not evaluated in the FSAR.

   Previously evaluated accidents applicable to the FSAR changes described for pages 4-88, and 4-99 are the loss of coolant accidents and the steam generator tube rupture accident evaluated in Sections 14.2.2.5 and 14.2.2.2, respectively. These types of catastrophic failures cannot be worst unless more than one such failure is involved. Multiple failures are not postulated or analyzed.

   There are no accidents evaluated in the FSAR which are applicable to the FSAR change described for pages 4-26, 4-43, 9-36, 9-87, and 9-98. Condensate piping ruptures or failures, resin requirements, sampling, and hydrazine chemical additions are not evaluated.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The FSAR changes described for pages 4-16, 4-41, 4-42, and 4-89 are regarding feedwater quality. Feedwater quality affects corrosion rates of the feedwater and steam piping, and the steam generator tubes. Extremely poor feedwater quality would result in the degradation and eventual failure of steam generator tubing and feedwater and steam lines. These failures are already evaluated in Sections 14.2.2.2 and 14.2.2.1, respectively. The FSAR changes described for pages 4-88, and 9-89 discuss reactor coolant quality, which affects corrosion rates of the reactor coolant system and the steam generator tubes. The loss of coolant accidents and the steam generator tube rupture accident are evaluated in Sections 14.2.2.5 and 14.2.2.2. Accidents of a different type than that previously evaluated in the FSAR, are not created.

   There are no accidents evaluated in the FSAR which are applicable to the FSAR change described for pages 4-26, 4-43, 9-36, 9-87, and 9-98. Condensate piping ruptures or failures, resin requirements, sampling, and hydrazine chemical additions are not evaluated, so any accident that could theoretically result due to the failure of the condensate system or the other topics listed, cannot be an accident of a different type previously evaluated because there are no condensate system failures evaluated in the FSAR.

FSAR Revisions Due to Water Chemistry Program Changes
(continued)

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   Previously evaluated malfunctions applicable to the FSAR changes described for pages 4-16, 4-41, 4-42, and 4-89 are the steam generator tube rupture and steam line failure evaluated in Sections 14.2.2.2 and 14.2.2.1, respectively. The FSAR changes described for pages 4-88, and 9-89 discuss reactor coolant quality, which affects corrosion rates of the reactor coolant system and the steam generator tubes. The probability of any of these malfunctions occurring is not increased by this FSAR revision because chemistry controls are still required by technical specifications to prevent water quality from severely degrading to the point that any of these catastrophic failures could occur due to uncontrolled corrosion of the steamline piping of the steam generator tubing, or reactor coolant piping. Water chemistry specifications are still contained in plant procedures as required by plant technical specifications; however, due to the dynamic nature of water chemistry specifications, constantly being revised and improved as more is learned from industry experience and test programs, they will no longer be included in the FSAR.

   There are no malfunctions evaluated in the FSAR which are applicable to the FSAR change described for pages 4-26, 4-43, 9-36, 9-87, and 9-98. Condensate piping ruptures or failures, resin requirements, sampling. and hydrazine chemical additions are not evaluated, so the probability of occurrence of a previously evaluated malfunction cannot be increased for this FSAR change.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Previously evaluated malfunctions applicable to the FSAR changes described for pages 4-16, 4-41, 4-42, and 4-89 are the steam generator tube rupture and steam line failures evaluated in Sections 14.2.2.2 and 14.2..2.1, respectively. The consequences of either of these two malfunctions occurring is not increased by this FSAR revision because both scenarios involve the double-ended rupture of the piping or tubing of concern. This type of catastrophic failure cannot be worst unless more than one such failure is involved. Two double-ended ruptures is considered implausible and are, therefore, not evaluated in the FSAR.

   Previously evaluated accidents applicable to the FSAR changes described for pages 4-88, and 9-89 are the loss of coolant accidents and the steam generator tube rupture accident evaluated in Sections 14.2.2.5 and 14.2.2.2, respectively. These types of catastrophic failures cannot be worst unless more than one such failure is involved. Multiple failures are not postulated.

FSAR Revisions Due to Water Chemistry Program Changes
(continued)

There are no accidents evaluated in the FSAR which are applicable to the FSAR change described for pages 4-26, 4-43, 9-36, 9-87, and 9-98. Condensate piping ruptures or failures, resin requirements, sampling, and hydrazine chemical additions are not evaluated, so the consequences of an accident previously evaluated cannot be increased for this FSAR change.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

The FSAR changes described for pages 4-16, 4-41, 4-42, and 4-89 are regarding feedwater quality. Feedwater quality affects corrosion rates of the feedwater and steam piping, and the steam generator tubes. Extremely poor feedwater quality would result in the degradation and eventual failure of steam generator tubing and feedwater and steam lines. These failures are already evaluated in Sections 14.2.2.2 and 14.2.2.1, respectively. Malfunctions of a different type than that previously evaluated in the FSAR are not created.

The FSAR changes described for pages 4-88, and 9-89 discuss reactor coolant quality, which affects corrosion rates of the reactor coolant system and the steam generator tubes. The loss of coolant accidents and the steam generator tube rupture accident are evaluated in Sections 14.2.2.5 and 14.2.2.2. Malfunctions of a different type than that previously evaluated in the FSAR, are not created.

There are no accidents evaluated in the FSAR which are applicable to the FSAR change described for pages 4-26, 4-43, 9-36, 9-87, and 9-98. Condensate piping ruptures or failures, resin requirements, sampling, and hydrazine chemical additions are not evaluated so any accident that could theoretically result due to the failure of the condensate system or the other topics listed, cannot be a malfunction of a different type previously evaluated because there are no condensate system failures evaluated in the FSAR.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

The FSAR changes described for pages 4-16, 4-41, 4-42, 4-89, and 9-36 do not reduce the margin of safety of ITS 5.6.2-11, Secondary Water Chemistry Program because chemistry controls are still required by this technical specification to prevent water quality from severely degrading to the point that either of these two catastrophic failures could occur due to uncontrolled corrosion of the steamline piping or the steam generator tubing or turbine disc stress corrosion cracking. Water chemistry specifications are still contained in plant procedures as required by this plant technical specification.

FSAR Revisions Due to Water Chemistry Program Changes
(continued)

The FSAR changes described for pages 4-88, and 9-89 discuss reactor coolant quality, which affects corrosion rates of the reactor coolant system and the steam generator tubes. The topics discussed in these changes are not included in the ITS.

Fsar Revision Due To HPI Reevaluation

Description of Change

Postulated failures in the ECCS required a re-assessment of CR-3's response to a small break LOCA. Changes were required in the FSAR descriptions for this event.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The HPI reevaluation refined FPC's understanding of plant response to currently recognized accidents, specifically, SBLOCA and Letdown Line Rupture (FSAR Section 14.2.2.5.7). Nothing was physically done to the plant which would change the performance of safety related or non safety related systems. Therefore, the probability of occurrence of a recognized accident previously evaluated in the FSAR has not increased.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The HPI reevaluation effort determined that core uncovery and concurrent Peak Cladding Temperature (PCT) escalations occur for CLPD SBLOCAs, within a small spectrum of break areas. No core uncovery was predicted for HPI line breaks or pinches or a core flood line break. The consequences of the SBLOCAs which resulted in the increased PCTs are not increased for these breaks since the SBLOCAs of interest still meet the ECCS Acceptance Criteria contained in 10 CFR 50.46, and FSAR Section 14.2.2.5.4. The conditions evaluated are:

   (1) Peak cladding temperature. The calculated maximum fuel element cladding temperature shall not exceed 2200 Degrees F.

   (2) Maximum cladding oxidation. The calculated total oxidation of the cladding shall nowhere exceed 0.17 times the total cladding thickness before oxidation.

   (3) Maximum hydrogen generation. The calculated total amount of hydrogen generated from the chemical reaction of the cladding with water or steam shall not exceed 0.01 times the hypothetical amount that would be generated if all of the metal in the cladding cylinders surrounding the fuel, excluding the cladding surrounding the plenum volume, were to react.

   (4) Coolable geometry. Calculated changes in core geometry shall be such that the core remains amenable to cooling.

   (5)Long-term cooling. After any calculated successful initial operation of the ECCS, the calculated core temperature shall be maintained at an acceptably low value and decay heat shall be removed for the extended period of time required by the long-lived radioactivity remaining in the core.

Fsar Revision Due To HPI Reevaluation
(continued)

The acceptability of the increased PCT from the HPI reanalysis is acceptable per NSAC-125, which states:

"Changes in barrier performance which do not result in increased radiological dose to the public are addressed under margin of safety" (See Question 7).

Therefore, since the newly identified SBLOCA consequences are within the acceptance criteria defined in 50.46, (Ref. 3) no changes in barrier performance, (i.e., cladding, RCS or containment) exist, and the consequences of the HPI reanalysis are unchanged.

The acceptability of the EOP-3 action to initiate full HPI in LSCM will result in offsite dose in excess of the amount currently identified in the FSAR. The dose was reevaluated and was found to be less than 10% of the 10 CFR 100 Acceptance Criteria. Therefore, although the dose associated with the letdown line break may increase, the results of the accident are within legal limits. According to NSAC-125, these consequences do not constitute an unreviewed safety question.

As result, the HPI reevaluation effort has not increased the consequences of an accident previously evaluated in the FSAR.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   The HPI reevaluation refined our understanding of plant response to currently recognized accidents, specifically, SBLOCA and Letdown Line Rupture (FSAR Section 14.2.2.5.7). Nothing was physically done to the plant which would result in any new failure modes or operating characteristics. Therefore, the possibility of an accident of a different type than any previously evaluated in the FSAR is not created.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   The HPI reevaluation effort only considered the current operation of existing plant equipment in mitigating SBLOCAs and the Letdown Line Rupture. No change was made to the function of any safety of non-safety related plant equipment. No new credible failure modes or operating characteristics due to this HPI reevaluation have been identified. Therefore, the probability of occurrence or malfunction of equipment previously evaluated in the FSAR has not increased.

Fsar Revision Due To HPI Reevaluation
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The HPI reevaluation effort determined, and evaluated the effect of, the worst case credible single failure which could occur during mitigation of a SBLOCA. Several single failures were considered, and are discussed at length in FTI 51-1245866-00. Any additional failures do not need to be considered since they would be outside of the current design basis. Therefore, the consequences of malfunction of equipment previously evaluated in the FSAR has not increased.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   The HPI reevaluation effort only considered the current operation of existing plant equipment in mitigating SBLOCAs and the Letdown Line Rupture. No change was made to the function of any safety or non-safety related plant equipment. No new malfunction of existing equipment has been created. Therefore, the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR has not created.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   NSAC-125 states:

   "Changes in transient or accident core thermal hydraulic conditions or peak reactor coolant pressures which do not violate the fuel design limits or reactor coolant system design pressures in the Bases for the safety limits specified in the plant Technical Specifications do not constitute a reduction in the margin of safety as used in 10 CFR 50.59."

   Using this logic, the increase in PCT during some SBLOCAs which still complies with 10 CFR 50.46, as well as the additional offsite dose from the Letdown Line Event reevaluation which still complies with 10 CFR 100, does not result in a reduction in the margin of safety, as defined in the basis for any Technical Specification.

Increase in Allowable Open Area in the Control Complex Habitability Envelope During Core Alterations

Description of Change

The Control Complex Habitability Envelope (CCHE) breeches are limited in size during Modes 1 through 4 operation because of design basis dose consequences and toxic gas effects. During Modes 5 and 6, the design basis accident is the Fuel Handling Accident. Therefore, an increase in the CCHE breech size is allowable.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased ? No.

   The Control Complex Habitability Envelope (CCHE) provides two primary functions. Protection of personnel from 1) toxic gasses and 2) radiological effects following a LOCA or Fuel Handling Accident. The purpose of this revision is to make changes to the FSAR which will allow for a larger control complex "open area" during core alterations. FPC determined the effect of the increased inleakage (1400 CFM, total) on the toxic gas concentration in the CCHE. FPC determined the concentration with additional inleakage is less than the 36 ppm concentration allowable per Standard Review Plan (SRP) 6.4. The CCHE also provides protection from radiological hazards. The primary radiological hazard during core alterations is the Fuel Handling Accident (FHA). FPC determined a total outside air infiltration rate of 2300 CFM during an FHA resulted in 15.7 Rem. Since toxic gas considerations are limiting for CCHE inleakage, 1400 cfm will be the new limit during core alterations. Changing the allowable inleakage from 355 CFM to 1400 CFM has a nominal effect on the operation of any plant system and therefore will have no effect on the probability of occurrence of an accident previously evaluated in the FSAR.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   Increasing the CCHE inleakage rate will result in slightly higher concentrations of SO_2 in the CCHE following a SO_2 tank rupture, but the actual concentration is still within regulatory limits. Increasing the inleakage to the CCHE following an FHA will result in less radiological dose than the current licensing basis assumes for CR-3 for a LOCA. Therefore, the consequences of an accident previously evaluated in the FSAR are not increased.

Increase in Allowable Open Area in the Control Complex Habitability Envelope During Core Alterations
(continued)

3. Is the possibility of an accident of a different type than previously evaluated in the FSAR created? No.

   The CCHE provides protection of the personnel in the Control Complex from toxic gas and radiological hazards. No new accidents will be created by increasing the allowable inleakage that can occur during core alterations because the increased inleakage will allow a less stringent requirement for allowable leakage and will allow slightly degraded performance of control complex isolation devices (doors, dampers, etc..) during core alterations.

4. Is the probability of occurrence or malfunction of equipment previously evaluated in the FSAR increased? No.

   Increased allowable inleakage will allow a less stringent requirement for allowable inleakage and will allow slightly degraded equipment performance for control complex isolation devices (doors, dampers, etc.) during core alterations. Therefore, increasing the allowable inleakage to the CCHE during core alterations will have no effect on the probability of occurrence or malfunction of equipment previously evaluated in the FSAR.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   Increasing the allowable inleakage to the CCHE during core alterations will not impact any consequences of equipment failure previously evaluated in the FSAR since less stringent isolation criteria are being applied to control complex isolation devices (doors, dampers, etc.) resulting in less significant consequences if equipment were to malfunction.

6. Is the possibility for malfunction of a different type than previously evaluated created? No.

   Allowing additional inleakage to the CCHE during a toxic gas event or FHA will not impact the way CCHE isolation devices act, only the leaktightness necessary for completion of their safety function. Therefore, the possibility for malfunction of a different type than previously evaluated is not created.

Increase in Allowable Open Area in the Control Complex Habitability Envelope During Core Alterations
(continued)

7. Is the margin of safety as defined in the basis for any technical specification reduced? No.

   The allowable leakage during the FHA is approximately half the LOCA control room thyroid dose. This results in no reduction the safety margin. The toxic gas inleakage limit is greater than previously evaluated. However, since the control complex is initially isolated, the SRP guidance for the allowable toxic gas concentration is not exceeded and the margin of safety as defined in the basis for any technical specification is not reduced.

Changes to FSAR Description of Appendix R Chiller

Description of Change

FSAR Section 9.7 is being revised to update the description of the Appendix R chiller. Clarification is being provided to distinguish between the normal (desired) Turbine Building Switchgear Room cooling and the NRC's regulatory criteria for the cooling functions of the Appendix R chilled water System. This clarification is to assure adequate information is provided in the FSAR to prevent misinterpretation of the design basis of the system.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased?

   The Appendix R chiller's primary function is to provide cooling to essential safe shutdown equipment within the plant during a 10 CFR Appendix R Fire, when the normal duty HVAC system is not available. During normal plant operation, the chiller is used to provide ventilation to the Turbine Building Switchgear Rooms. Accidents described within the FSAR (i.e., LOCA, etc.) are not postulated simultaneously with an Appendix R fire. The Appendix R chiller performs no safety function and is not used for accident mitigation.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The chilled water lines for the Appendix R chiller are isolated from the safety-related/seismic chilled water piping located within the Control Complex to prevent the loss of the chilled water during a seismic event. This assures the integrity of the safety-related chilled water piping for the Normal HVAC System for the Control Complex. The use of the Appendix R chiller to cool the Turbine Building Switchgear Room has no affect on the function of the chiller. Use of the chiller requires manual valve realignments. The chiller is not used for accident (i.e., LOCA, etc.) mitigation.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   Prior to the realignment of the chiller to cool the Turbine Building Switchgear Room, the chiller was manually isolated from the safety-related chilled water piping located in the Control Complex. Manual valve realignment is required during an Appendix R fire to allow the chiller to cool essential safe shutdown equipment in the event of an Appendix R fire, when the Normal Duty HVAC system for the Control Complex is not available. When the chiller is required for an Appendix R fire, cooling to the TB switchgear is terminated. The chiller is not used for accident mitigation.

Changes to FSAR Description of Appendix R Chiller
(continued)

4. Is the probability of occurrence of malfunction of equipment previously evaluated in the FSAR increased? No.

   The use of the Appendix R chiller to provide cooling to the Turbine Building Switchgear Room has no affect on the malfunction of the Appendix R chiller. This chiller performs no safety function and is not required for accident mitigation. Redundancy and single failure are not within the scope of the design of the Appendix R chiller system per the requirements of the system. As a result, the probability of a malfunction as previously evaluated is not affected.

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   In the event the Appendix R chiller is out of service for routine scheduled maintenance or due to a equipment or component failure, the chiller will be repaired to assure the chiller is available for use during an Appendix R fire. As a result, the consequences of a malfunction of equipment via the equipment or a component is not affected. This revision to the FSAR is being made to clarify the requirements associated with a malfunction or out of service condition in order to assure the design basis for this chiller is clearly stated within the FSAR. The chiller performs no safety function and is an NRC required function only.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   Using the Appendix R chiller for either the Appendix R fire function or the cooling function for the Turbine Building Switchgear Room, as already stated within the FSAR, does not affect the possibility for a malfunction of a different type than previously evaluated within the FSAR. The Appendix R chiller is normally isolated from the safety-related chilled water system located within the Control Complex and has no affect on safety related components during normal plant operation (i.e,, cooling of the Turbine Building Switchgear Room). Allowing the chiller to be used in lieu of being idle until needed for the Appendix R function, enhances the reliability of the unit by preventing the unit from corroding.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   The function of the Appendix R chiller is not addressed within the Improved Technical Specifications nor the Improved Tecnnical Specification Bases. As a result, the safety margin for any technical specification is not affected by the availability of the appendix R chiller or the use of the Appendix R chiller to cool the Turbine Building Switchgear Room, as stated within the FSAR.

Change to FSAR Table 6-9

Description of Change

FSAR Table 6-9 is being changed because of the determination that the Emergency Diesel Generator (EDG) loading would not support more than a single Reactor Building Cooling Unit (RBCU) loaded on any one EDG.

10 CFR 50.59

1. Is the probability of occurrence of an accident previously evaluated in the FSAR increased? No.

   The availability of two or three Reactor Building cooling units is not an initiating event or precursor event for any accident evaluated in the FSAR. No performance of any system contained within the RB is affected by having one RBCU isolated and unavailable for service nor are any system interfaces changed as a result of this action. The RB normally has only two RBCUs in service, so the environment of any equipment important to safety is not affected by this change. Therefore, there is no increase in the probability of occurrence of any evaluated accident.

2. Are the consequences of an accident previously evaluated in the FSAR increased? No.

   The Design Basis LOCA described in Section 14.2.2.5 assumes the worst case single failure of a loss of one train of emergency power due to failure of an EDG to start. Consequently, only one RB spray train and one RB cooling unit are assumed to be available for post-accident reduction of containment pressure and airborne iodine. This assumption remains unchanged as a result of isolating the third RBCU.

3. Is the possibility of an accident of a different type than any previously evaluated in the FSAR created? No.

   No new equipment is introduced by this change, nor is the operation of any existing equipment affected by isolating cooling water to the third RB cooling unit. One unit is available per the Design Basis LOCA assumption of FSAR section 14.2.2.5. Therefore, there is no new accident not previously evaluated that can be postulated as a result of this change.

4. Is the probability of occurrence of malfunction of equipment previously evaluated in the FSAR increased? No.

   The isolation of the third RBCU and maximum availability of two RBCUs does not affect any other equipment important to safety, either directly or indirectly. Since there is no affect upon any other plant equipment, there is no increase in the probability of occurrence of malfunction of equipment previously evaluated in the FSAR.

Change to FSAR Table 6-9
(continued)

5. Are the consequences of malfunction of equipment previously evaluated in the FSAR increased? No.

   The isolation of the third RBCU and maximum availability of two RBCUs does not affect any other equipment important to safety, either directly or indirectly. Existing Design Basis LOCA analysis (FSAR Section 14.2.2.5) in the FSAR assumes that only one RBCU and Building Spray train is available and that the plant is able to mitigate this design basis accident. Since no equipment important to safety is affected by this change and because existing analysis is bounding, there is no increase in the consequences of malfunction of equipment previously evaluated in the FSAR.

6. Is the possibility for malfunction of equipment of a different type than any previously evaluated in the FSAR created? No.

   No new failure modes for any equipment important to safety are created by the isolation of the third RBCU. Since no new failure modes are created, no equipment is relocated, and no electrical or thermal loadings are changed, there is no possibility for malfunction of equipment of a different type than previously evaluated in the FSAR.

7. Is the margin of safety, as defined in the basis for any Technical Specification, reduced? No.

   Technical Specification 3.6.6 defines the requirement for two cooling trains to be remain operable. The Bases for Technical Specification 3.6.3 states that no single, credible failure or malfunction of an active component can result in the loss of isolation or intolerable leakage. These are unchanged as a result of the single failure analysis changes for the RBCUs and their electrical loading on the EDGS. No other Technical Specifications or associated bases are affected by this change.