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August 29, 1989
 Docket No. 50-352
 License No. NPF-39

U. S. Nuclear Regulatory Commission
 Attention: Document Control Desk
 Washington, DC 20555

Subject: Limerick Generating Station, Unit 1
 Annual Plant Modifications Report
 July 1, 1988 through June 30, 1989.

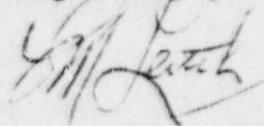
Enclosed is a copy of the Limerick Generating Station,
 Unit 1 Annual Plant Modifications Report for the period July 1, 1988
 through June 30, 1989 as required by 10CFR Section 50.59.

The attached report consists of a listing of modifications
 completed during this period. The following information is
 included on each modification:

- o The Philadelphia Electric Company Plant Modifications
 (or document) "Tracking Number".
- o The "Title or Name" of the system, subsystem or
 document which was changed.
- o A "Description" of the change.
- o The "Reason" for making the change.
- o A "Summary" of the written safety evaluation.

Should you have any questions, or require further information,
 please contact us.

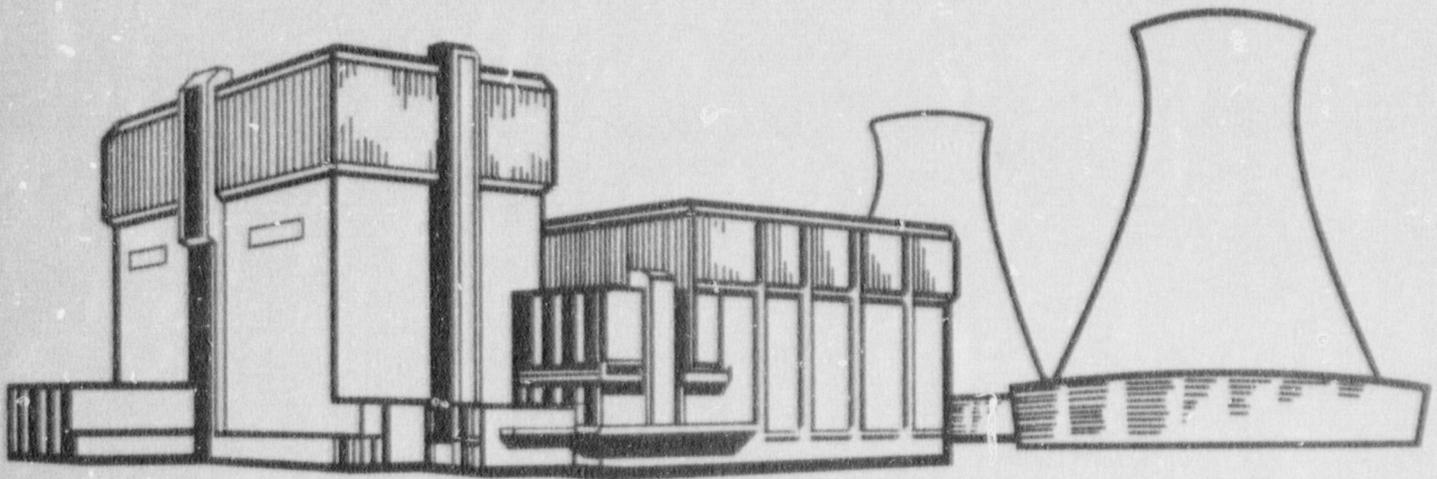
Very truly yours,



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**LIMERICK
GENERATING
STATION**

3892349830

LIMERICK GENERATING STATION
UNIT NO. 1

ANNUAL PLANT MODIFICATION REPORT
JULY 1, 1988 THROUGH JUNE 30, 1989

SUBMITTED TO
THE UNITED STATES NUCLEAR REGULATORY COMMISSION

PURSUANT TO

FACILITY OPERATING LICENSE NPF-39
DOCKET NO. 50-352

LIMERICK GENERATING STATION
ANNUAL PLANT MODIFICATION REPORT
JUNE 30, 1989

This report for Limerick Generating Station Unit No. 1, License No. NPF-39 (and previous License NPF-27), is issued in fulfillment of the reporting requirements of 10 CFR 50.59 (b). The report covers modifications that were physically completed during the one year period ending June 30, 1989, including changes made to the facility as described in the FSAR.

For each of the modifications included in this report, the safety evaluation has determined that there are no unreviewed safety questions as defined in 10 CFR 50.59 (a) (2) in that (i) the probability of occurrence of the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR was not increased, or (ii) a possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR was not created, or (iii) the margin of safety as defined in the basis for any Technical Specification was not reduced.

Note: The actual work involved in some of these modifications was started prior to July 1, 1988 but not completed until after July 1, 1988 and before June 30, 1989.

LIMERICK GENERATING STATION
UNIT NO. 1
ANNUAL MODIFICATION REPORT

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NOTE: There were no procedural changes during the period July 1, 1988 through June 30, 1989 which affect 10CFR 50.59, therefore warranting exclusion from this report.

Modification No.: 0522-1

A. System: Residual Heat Removal (RHR)

B. Description:

This modification increased the range of the LPCI injection valve differential pressure instrument loops composed of transmitters PDI-51-1N058A, B, C, and D and trip units PDISL-51-1N658A, B, C, and D.

C. Reason for Change:

To eliminate false RHR loop out-of-service annunciations when the reactor is shutdown.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the subject instrument loops continue to maintain the original level of overpressure protection provided for the low pressure RHR piping, yet the operation of the RHR system remains within the safety requirements of the RHR system.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the subject instrument loops continue to maintain the original level of overpressure protection provided for the low pressure RHR piping, yet the operation of the RHR system remains within the safety requirements of the RHR system.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, this modification does not reduce the margin of safety as defined in the bases for any Technical Specifications sections. The basis for the Technical Specifications section 3/4.3.3 was reviewed in making this determination.

Modification No.: 0526-1

A. System: Reactor Water Cleanup

B. Description:

This modification revised the logic for pump C to be the same as the pumps A and B logic and made pump C independent of pumps A and B. This provides an independent RWCU pump suction low flow signal for the pump C logic.

C. Reason for Change:

The suction flow low signal for RWCU pump C is dependent on the power supply for pumps A and B. If the power supply for either pump A or B is disconnected for maintenance, there is a false alarm in the main control room for pump C although the actual suction flow is normal. Therefore, this modification was required to transfer 120VAC control power for the RWCU pumps suction low flow signal relay from the control circuits of pumps A and B to a separate 120 VAC source available in panel 10C602.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the FSAR?

Answer: No, because the original functional design of the system as described in the FSAR was unchanged and all components added were non-safety related. FSAR sections 5.4.8, 7.7.1.8 and 7.7.2.8 were reviewed in making this determination.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because the original functional design of the system as described in the FSAR was unchanged and all components added were non-safety related. It has been determined that the fire protection analysis was not affected by this modification.

FSAR sections 5.4.8, 7.7.1.8 and 7.7.2.8 were reviewed in making this determination.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the original functional design of the system was unchanged. All components that were added were not safety-related. In addition, this modification did not change the limiting conditions as defined in the bases of any Technical Specifications.

Technical Specification section 3/4.3.2 was reviewed in making this determination.

Modification No.: 0689-1

A. System: Plant Process Rad Monitoring

B. Description:

The Philadelphia Electric Company committed to the Nuclear Regulatory Commission (NRC) to provide "qualified" RHR service water process radiation monitors at Limerick Generating Station Unit #1.

C. Reason for Change:

Modification #0689-1 satisfied this commitment by replacing the existing RHR service water radiation monitors LCRM's with "qualified" replacement units, Nuclear Measurement Analysis & Control Units (NUMAC).

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the FSAR?

Answer: No, because the replacement log count rate meters, installed through full or partial implementation of this modification, met all the applicable requirements of the system to which they were installed.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because the replacement log count rate meters, installed through full or partial implementation of this modification, were functionally identical to the existing units.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specifications?

Answer: No, because the replacement log count rate meters, installed through full or partial implementation of this modification, were functionally identical to the existing units, and will preserve the margin of safety as defined in all applicable sections of the Technical Specification; including:

3/4/3.7.11 - Radioactive Liquid Effluent
Monitoring
Monitoring Instrumentation.

3/4.11.1 - Radioactive Effluent
- Liquid Effluents

Modification No.: 0732-1

A. System: Drywell Chilled Water System

B. Description:

This modification consisted of the addition of system balancing valves, gate valves, temperature measuring devices, vent connections for the Drywell Chilled Water System (DCWS) and Reactor Enclosure Cooling Water System (RECWS). In addition to hanger modifications to ensure that DCWS and RECWS remain seismic Category IIA, additional hanger modifications were made to support the "O" listed and seismic category I upgrade which were implemented per MDCP-0106.

C. Reason for Change:

Initially, the system's globe valves on the outlets of the unit coolers were utilized as balancing valves. After servicing the cooling coils, restoring the globe valves to their "final balanced" position was difficult to achieve. This modification added balancing valves and temperature measuring devices to provide a more positive means for assuring that the design flow conditions are restored and maintained, and to allow accurate measurement of the total drywell cooling load.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the addition of passive system components does not affect system functional requirements, and the operability of the DCWS/RECWS is not required to mitigate the consequences of any postulated accident. All design requirements applicable to the original DCWS and RECWS, including, but not limited to, environmental and seismic qualification, separation, testability and quality assurance were met. There is no effect on bus loading. (FSAR Section 6.2.6 and 9.2.10 were reviewed in making this determination.)

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, for the same reason as discussed in item i) above. (FSAR Section 6.2.6 and 9.2.10 were reviewed in making this determination.)

- iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specifications?

Answer: No, because the DCWS/RECWS are not covered by any Technical Specifications. The modifications are outside the containment isolation boundary for the DWCS/RECWS penetrations. (Technical Specification Section 3/4.6.3 was reviewed in making this determination.)

Modification No.: 0746-1

A. System: Reactor Water Cleanup

B. Description:

This modification relocated steam leak detectors TE-44-1N016A/D inside the Reactor Water Cleanup (RWCU) regenerative heat exchanger compartment.

C. Reason for Change:

The existing location of these temperature elements was too close to the heat exchanger compartment ceiling such that the elements could have sensed an abnormally high ambient temperature sufficient to exceed the setpoint of temperature switches TTS-44-1N600A/D and trigger an isolation of the RWCU system.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, the temperature switch set points, and the ability of the RWCU isolation system to perform its design safety function were not affected by this change. No functional change was made to the RWCU isolation system. This modification enhanced the reliability of the plant as it prevents spurious isolation of the RWCU system during normal and blowdown operating conditions.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than previously evaluated in the FSAR?

Answer: No, this modification did not affect the performance or operation of any other safety or nonsafety related equipment.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specification Section 3/4/3.2?

Answer: No, because this modification involved the relocation of temperature elements only and was in accordance with the design requirements applicable to the original design. Technical Specification Section 3/4.3.2 governing the RWCU isolation system was not affected by this modification.

Modification No.: 0759-1

A. System: 076 Reactor Encl. HVAC
077 Drywell HVAC
078 Control Encl. HVAC
081 Misc. Structures HVAC

B. Description:

This modification covered the resolution of the discrepancies identified in Quality Control Inspection Reports M66-QCG-1-24 and M66-QCG-1-25, between the as built wiring and the vendor wiring diagrams.

C. Reason for Change:

It resolved discrepancies that resulted from the inspections of all the Unit 1 and common safety related HVAC panels supplied by MCC powers.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification did not increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR. This modification did not alter the design or performance of any HVAC System. This modification was initiated to update the vendor wiring diagrams and the wire and cable numbers in the field to agree with each other.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, this modification did not create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR. This modification was initiated to update the vendor wiring diagrams and the wire and cable numbers in the field to agree with each other.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, this modification did not reduce the margin of safety as defined in the bases for any Technical Specifications since this modification did not modify the operation of the HVAC systems associated with the subject control panels. The Technical Specifications Sections 3/4.6.5 and 3.4.7.2 were reviewed to make this determination.

Modification No.: 0761-0

A. System: Emergency Service Water

B. Description:

This modification installed a modified Seismic Class I hanger HBC-252-H4 which replaced hanger H4 on ESW 6" HBC-252 water line. The existing grouted rods on HBC-283-H901 were trimmed closer to their respective nuts.

C. Reason for Change:

It justified plant operation with a modified Seismic Class I hanger on ESW 6" HBC-252 water line and trimmed excessive length of threaded rod on hanger HBC-283 H901 to clear Unit 2 HVAC duct interferences.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the modified hangers remained Seismic Class I designs. They were installed/modified at the existing hanger locations.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than previously evaluated in the FSAR?

Answer: No, because these modifications did not expose the pipes to any additional hazards, and did not affect any other components of the system. FSAR Sections 9.2.2 and 9.2.3 were reviewed in making this determination.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, the Technical Specification Bases 3/4.7.1 was reviewed in making the determination.

Modification No.: 0814-1

A. System: Various

B. Description:

This modification rearranged various controls and indicators in the control room and remote shutdown panels at LGS-1.

C. Reason for Change:

The rearrangement of control switches and indicators was required to improve the man/machine interface of the control panels to the Reactor Operator. The standardization of control switch shapes and indication light lens-colors provide a consistent meaning to the Reactor Operators. The installation of a guard rail on the Control Room Consoles and Remote Shutdown Panel help prevent inadvertent switch actuation.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because by improving the operator/machine interface, the probability of occurrence and the consequences of an accident was reduced. Revising the panel by rearranging controls and indicators, standardizing switch shapes and light lens colors, and the addition of guard rails did not increase the probability of occurrence or the consequences of an accident. This rearrangement did not affect the electrical function of the controls and indicators.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because revising the panel by rearranging controls and indicators, standardizing switch shapes and light lens colors, and the addition of guard rails will not create any different type of accident or malfunction. The rearrangement does not affect the electrical function of the controls and indicators. No electrical circuit changes were required.

- iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specifications?

Answer: No, a change to the Limerick Technical Specifications was not required. The Technical Specifications sections 3.3.7.8, 3.6.5 and 3.7.2 were reviewed in making this determination.

Modification No.: 0883-0

A. System: RX Enclosure HVAC & SBGTS

B. Description:

This modification deleted the charcoal adsorber cooldown mode for both the Unit 1 Reactor Enclosure Recirculation System (RERS) and the Standby Gas Treatment System (SGTS).

C. Reason for Change:

This mode, which provided cooldown air to limit excessive charcoal temperature increases due to potential radioactive decay heat buildup in the adsorbers during and following an accident, has been determined to be not necessary for the existing design conditions.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because conservative calculations have shown that the worst case temperature rise in the RERS and SGTS charcoal adsorbers due to radioactive decay without cooldown mode operation is well below both the iodine desorption and charcoal auto-ignition temperatures. Hence, the ability of the RERS and SGTS to perform their safety function was not reduced by elimination of the cooldown mode.

- ii) Does this modification create the possibility of an accident or malfunction of a type different than any evaluated previously in the FSAR?

Answer: No, because after elimination of the cooldown mode, the RERS and SGTS designs still comply with the ANSI N509-1980 and Regulatory Guide 1.52 requirements as indicated in FSAR Tables 6.5-2 and 9.4-4.

iii) Does this modification reduce the margin of safety as defined in the bases for any technical specification?

Answer: No, because the deletion of the Unit 1 RERS and the SGTS cooldown modes did not affect the function of the two systems. Based on calculation results, the maximum charcoal adsorber temperatures are well below the iodine desorption and charcoal ignition temperatures, proving the cooldown modes unnecessary. In the unlikely event of a fire, the charcoal adsorbers are equipped with high temperature alarms and water systems which are identified by Reg. Guide 1.52 as an acceptable means to detect and extinguish a fire in the charcoal. The deletion of the cooldown mode did not change the systems ability to perform their safety related functions. Technical Specifications 3/4.6.5.3 and 3/4.6.5.4 were reviewed in making this determination.

Modification No.: 0965-1

A. System: Containment Atmosphere Control

B. Description:

This modification removed a temporary pressure transmitter and installed a replacement pressure transmitter that provides a permanent means of monitoring the suppression chamber narrow range pressure.

C. Reason for Change:

This modification removed an existing temporary pressure transmitter located in Area 12, Elevation 201', installed per temporary circuit alteration No. 636. Also, a replacement pressure transmitter was installed in the same area adjacent to the wide range suppression chamber monitor PT-57-101, to provide a permanent means of monitoring the suppression chamber narrow range pressure.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the installation of this new narrow range pressure transmitter enhances the existing design. It decreases the probability of occurrence or consequence of an accident because the suppression chamber atmosphere pressure will be closely monitored during containment inerting to assure that it is properly pressurized and thus minimize the possibility of a combustible atmosphere. Plant fire protection features were not affected.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the pressure transmitter and its associated tubing were installed to the requirements of Seismic Category I criteria, and does not affect the performance or operation of any safety-related equipment or functions. The integrity of the containment pressure boundary was maintained. Plant fire protection features were not affected. The pressure transmitter was qualified in accordance with the existing design criteria for this application.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, this modification does not reduce the margin of safety as defined in Technical Specification Sections 3/4.6.1.6 and 3/4.6.6.3. This modification provided more precise suppression chamber pressure monitoring in order to meet the 0-2 psig Technical Specification.

Modification No.: 5021-1

A. System: Fuel Pool Cooling

B. Description:

This modification added a vent to the 16" GBB-110 open FPCC/RHR intertie spool and a vent and drain to the 16" HBB-110 open FPCC/RHR intertie spool.

C. Reason for Change:

To prevent potential worker contamination by allowing the removable spool pieces to be drained in a controlled manner.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the addition of vents and drain to the intertie spools does not affect normal system operation of the FPCC or RHR systems since the affected spools are only installed when the RHR system is to be used for spent fuel pool cooling. Administrative procedures require that the reactor be shut down and in refueling mode before the intertie may be used. Therefore, this modification cannot affect the safe shutdown condition of the plant. The added vents and drain were installed in accordance with the applicable Seismic Category I design criteria up to and including the second isolation valve. This change is consistent with the existing design criteria for the subject spool and does not have an adverse effect on this safety-related equipment.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the PSAR?

Answer: No, because adding vents and drain to the FPCC/RHR intertie spools does not affect normal system operation of the FPCC or RHR systems since the affected spools are only installed when the RHR system is used for spent fuel pool cooling. Administrative procedures require that the reactor be shut down and in refueling mode before the intertie may be used. Therefore, this modification cannot affect the safe shutdown condition of the plant. This change is consistent with the existing design criteria for the subject spool and does not have an adverse effect on this safety-related equipment.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the added vents and drain were installed in accordance with the applicable Seismic Category I design criteria up to and including the second isolation valve.

Technical Specification Section 3/4.9.1 through 3/4.9.11 were reviewed and were not affected by the modification.

Modification No.: 3042-1

A. System: Reactor Core Isolation Cooling (RCIC)

B. Description:

This modification replaced the existing RCIC turbine exhaust drain pot D/P level switch with an external cage float-type level switch.

C. Reason for Change:

To eliminate control room nuisance alarms caused by the switch setpoint set at ten percent of the instrument's range, evaporation of the reference leg and vibration affecting the setpoint.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the worst case consequence of a failure of both the existing and proposed replacement RCIC turbine exhaust drain pot level switch is that the drain pot is not drained and water backs up into the turbine exhaust, damaging the turbine and rendering the RCIC system inoperable. Since back-up is provided by HPCI, the consequence of an accident or malfunction will not be increased.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because the monitoring and protective functions of the level switch does not change as a result of this replacement. The design of this modification meets the applicable requirements of the original RCIC system, including testability, seismic and environmental qualification and Quality Assurance.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because this modification reduces the frequency of nuisance alarms by substituting a more reliable float type switch for the existing differential pressure switch. The new hardware was designed, procured, installed and tested in accordance with applicable piping system requirements. This modification did not change any limiting conditions for operation or trip setpoints.

Modification No.: 5121-1

A. System: Containment Atmospheric Control

B. Description:

This modification provided means to close the nitrogen line bypass leakage barrier block valves, (mov) HV57-160A and 160B, on the same isolation signals that close drywell and suppression chamber exhaust valves HV57-105, 111, 117, and 118.

C. Reason for Change:

To prevent undesirable pressure in the containment.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the modified functional logic of valves HV57-160A and 160B continues to meet all applicable design criteria of the CAC and NSSS systems. This modification replaced existing relay contacts with other isolation relay contacts. This change does not create any new failure modes of these valves. The transient and accident analysis as described in FSAR Chapter 15 have been reviewed and is not affected as a result of this modification.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than that previously evaluated in the FSAR?

Answer: No, because the modified functional logic of valves HV57-160A and 160B continues to meet all applicable design criteria of the CAC and NSSS systems. The only function affected by this modification was the isolation of the containment from the containment purge nitrogen supply. This modification assures that the supply valves close on all of the signals that can cause exhaust valve closure preventing an accidental over pressurization of the primary containment. A spurious closure of these valves would only result in the isolation of the nitrogen supply which would not jeopardize plant safety or prevent safe shutdown.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, this modification enhances the margin of safety described as the basis of Technical Specification 3.6.1.6 as it prevents inadvertent pressurization of the containment.

Modification No.: 5132-1

A. System: Emergency Service Water

B. Description:

This modification increased the HPCI pump compartment unit cooler inlet header from 3 inches to 4 inches, replaced the 3-inch isolation globe valve 11-1022 with a 4-inch gate valve and replaced the 3-inch check valve 11-0069 with a 4-inch check valve.

C. Reason for Change:

This modification was done to lower the flow resistance in the line to the coolers so that as the piping ages sufficient Emergency Service Water flow through the coolers can still be maintained. A 3" gate valve was also added to provide isolation for personnel protection.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification made no functional change to the system; it will operate exactly as before. The increased MELB flow from the modified ESW lines is still bounded by MELB flows from existing adjacent lines so that the conclusions of the MELB analysis are still valid.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because this modification did not introduce any new hazards. Since there is no functional change to the system, no accidents or malfunctions could occur in the modified system that could not have occurred and been considered in the present system design.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specification?

Answer: No, because section 3/4.7.1.2 of the Technical Specifications only requires that the ESW system be operable. Since the new valves are no more likely to be out of position than the old ones, the margin of safety will not be reduced.

Modification No.: 5134-1

A. System: Emergency Service Water

B. Description:

This modification increased the core spray pump compartment unit cooler inlet/outlet headers from 2 inches to 3 inches and replaced the eight 2-inch isolation globe valves with 3-inch gate valves.

C. Reason for Change:

The modification was done to lower the flow resistance in the lines to the coolers so that as the piping ages, sufficient Emergency Service Water flow through the coolers can still be maintained.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification made no functional change to the system; it operated exactly as before. The increased MELB flow from the modified ESW lines is still bounded by MELB flows from existing adjacent lines so that the conclusions of the MELB analysis are still valid.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because this modification did not introduce any new hazards. Since there is no functional change to the system, no accidents or malfunctions could occur in the modified system that could not have occurred and been considered in the present system design.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specification?

Answer: No, because the Technical Specifications only required that the ESW system be operable, which for the case of valves 1025A, B, C, and D and 1027A, B, C, and D means that they are no more likely to be out of the open position than the old ones, the margin of safety will not be reduced.

Modification No.: 5135-1

A. System: Emergency Service Water

B. Description:

This modification increased the diameter of the portion of each control room chiller condenser inlet header upstream and downstream of the fuel pool makeup line takeoff from 6 inches to 8 inches. It also limits the maximum travel of each control room chiller condenser temperature control valve, based on the results of the Emergency Service Water (ESW) loop flow balances.

C. Reason for Change:

The pipe diameter modification was done to lower the flow resistance so that as the piping ages, sufficient ESW flow through the condensers can still be maintained. The valve modification was being done to limit the condenser water flow to no more than the ESW design flow, so that less than design flow conditions do not develop in other ESW system components.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the increased MELB flow from the modified ESW lines is still bounded by MELB flows from existing adjacent lines so that the conclusions of the MELB analysis are still valid.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because changing the pipe size made no functional change to the ESW system. Limiting the valve travel will still permit the full design flowrate of cooling water to the chiller condensers.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specifications?

Answer: No, because section 3/4.7.1.2 of the Technical Specifications only requires that the ESW system be operable, and system operability will not be reduced by this modification. Since the ESW system margin of safety is not decreased, the margin of safety of the Control Structure Chilled Water System is not affected.

Modification No.: 5136-1

A. System: Emergency Service Water

B. Description:

Removed flow orifices FO-11-007A, B.

C. Reason for Change:

Imposed restriction on plant operation during some ESW operating modes when Unit 2 goes into operation and as the Unit 1 and unit 2 ESW piping ages.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the modification eliminated the possibility of some future restrictions on plant operation.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than previously evaluated in the FSAR?

Answer: No, because the modification eliminated the possibility of some future restrictions on plant operations.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specification?

Answer: No, because the removal of FO-11-007A and B and the replacement of the orifices with HBC piping class spacers do not require a change to any technical specification based upon a review of Technical Specification 3/4.1.2.

Modification No.: 5175-1

A. System: Reactor Water Cleanup System

B. Description:

This modification added a protective cover over TIS-44-1N008, which is located on local rack 10C002.

C. Reason for Change:

To prevent inadvertent movement of setpoint adjustment knob.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to the safety as previously evaluated in the FSAR?

Answer: No, this modification did not affect the design requirements applicable to the original design.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, this modification had no affect on the functioning of any safety-related or non safety-related system.

- iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specification?

Answer: No, there are no applicable Technical Specifications.

Modification No.: 5201-1

A. System: Feedwater

B. Description:

The Reactor Feed Pump (RFP) start-up bypass valve supplies feedwater to the reactor only during start-up operations. This valve is regulated through a manual loading station to adjust the water level in the reactor vessel. The operator needs to monitor the level and make adjustments as required. This can result in cycling the reactor water level between high and low levels resulting in thermal cycling of the reactor vessel.

C. Reason for Change:

This modification eliminated thermal cycling by modifying the existing control circuit for the bypass valve for automatic level control. Automatic level control was achieved by use of an existing feedwater control reactor water level transmitter LT-42-1N004D with a SRU which provides input to a new level controller LIC-06-120, which will control the position of the startup bypass valve.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the PSAR?

Answer: No, this modification reduced the thermal cycling of the reactor vessel by automatically maintaining the proper water level within the reactor during start-up operations. Automatic level control is achieved by automatically controlling the start-up bypass valve. This modification did not affect the performance or operation of any other safety or nonsafety-related equipment. FSAR sections 10.4.7.2.2 and 15.2.7 were reviewed in making this determination.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the automatic control is from an existing non-safety-related level transmitter. Failure of the new control loop will not affect the safety-related function of any other circuit. This modification did not affect the performance or operation of any other safety or non safety-related equipment. FSAR sections 10.4.7.2.2 and 15.2.7 were reviewed in making this determination.

- iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specification?

Answer: No, because the Technical Specifications did not address any requirements for RFP start-up bypass valve operation.

Modification No.: 5278-1

A. System: Post LOCA Recombiner

B. Description:

This modification replaced the existing process controllers, monitors, annunciators and power supplies of the post-LOCA Station Unit 1. This modification package implemented all of the modifications made on the Unit 2 hydrogen recombiners under PCN 20136.

C. Reason for Change:

This modification eliminated the unavailability of spare parts problem associated with the existing hydrogen recombiner equipment at LGS Unit 1.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the function of the containment hydrogen recombiners is to ensure that the oxygen concentration in the primary containment is maintained below the lower flammability limit for H₂-O₂ mixtures after a loss of coolant accident (LOCA). The recombiner function is not affected since the changes to the recombiner control cabinets do not alter or modify the basic control system design. Thus, the probability of occurrence of accidents previously evaluated in the FSAR is not increased. This modification provides a higher degree of operability and reliability of the recombiner since the spare parts problem associated with the existing hardware was eliminated. Thus, the ability of the plant to respond to a LOCA is improved, and consequently, overall plant safety is enhanced.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because this modification replaced existing safety-related components with new fully qualified safety-related components. Thus, the function of the recombiners, or the safety-related status and redundancy of the recombiner subsystems are not changed. The previously evaluated accidents and malfunctions of FSAR Table 6.2-20 and FSAR Section 15.6.5 are not affected, and no different type of accident or malfunction is created.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because this modification did not require a change to any Limerick Unit 1 Technical Specifications. By replacing hardware for which replacement spares are not available with hardware for which spares are available, this modification reduced the probability that a recombiner system could become inoperable for a period long enough (30 days) to require plant shutdown. Thus, the LCO for Technical Specification 3/4.6.6 is not changed. Furthermore, none of the surveillance requirements of Technical Specification 3/4.6.6 are affected by this modification.

Modification No.: 5283-1

A. System: Containment Atmospheric Control

B. Description:

This modification provided a suppression pool atmosphere temperature signal at terminal box 1ATB095 outside the containment using the spare temperature element of TE57-125.

C. Reason for Change:

This modification provided a redundant signal for measuring the suppression pool atmosphere temperature, when necessary, from a location where the level of radiation is low.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification only provided a redundant means of measuring the suppression pool atmosphere temperature and did not in any way affect the performance of the suppression pool temperature monitoring system.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the cables and wiring installed by this modification are in accordance with Dwg. 8031-E-1412 and the addition of a terminal box satisfies all Class 1E installation requirements. Since this modification provided a temperature signal from the spare element of TE57-157, it ensures that the suppression pool atmosphere temperature can be constantly monitored from the main control room or at the terminal box 1ATB095.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: This modification does affect safety related equipment/system but it does not affect the ability to safely shutdown the plant. A change to the technical specification is not required. No technical specification is directly affected by this modification.

Modification No.: 5352-1

A. System: Plant Process Rad Monitoring

B. Description:

Replacement of RHR Service Water Radiation Monitor Piping.

C. Reason for Change:

The flow rate to radiation monitors 0AS578, 0BS578, 1CS578, 1DS579 in the RHR Service Water System was decreased due to buildup of corrosion products from the existing carbon steel sample piping. This modification replaced the existing HBC class carbon steel piping with HCC class stainless steel piping, added flushing and drain connections to facilitate flushing, and extended the sample taps 2" inside the wall of the service water header to prevent potential blockage of the sample piping by corrosion deposits.

D. Safety Evaluation Summary:

i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification makes no functional change to the system; it operates exactly as before.

ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because this modification does not introduce any new hazards. Since there is no functional change to the system, no accidents or malfunctions could occur in the modified system that could not have occurred and have been considered in the present system design.

iii) Does this modification reduce the margin of safety as defined in the bases for any technical specification?

Answer: No, because the function of the applicable systems are unaffected by the modification.

Sections 3/4.7.1.1 and 3/4.3.7.11 of the Technical Specifications, which cover limiting conditions for operation and surveillance requirements, are not affected by this modification.

Modification No.: 5379-1

A. System: 4 KV System

B. Description:

This modification connected the diesel generator field ground relay contact which was not previously wired and it modified the generator field ground relay circuitry.

C. Reason for Change:

It eliminated the A loop Between the diesel generator field ground detection circuitry and the Division 1 Battery ground detection relay.

D. Safety Evaluation Summary:

i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because it did not result in any increase in fire hazard and maintains all the design and installation requirements for safety-related Class 1E systems.

ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because it provides annunciation for ground faults on either the positive or negative wire of the diesel generator field. Also, it eliminated the ground loop between the generator field ground detection circuitry and Division 1 Battery ground detection relay.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because no Technical Specification surveillance requirement or limiting condition for operation is directly or indirectly affected by this modification.

Modification No.: 5417-1

A. System: Post Accident Sampling System

B. Description:

This modification installed thermal insulation to the portion of the post accident sampling system jet pump sample line that runs from penetration A-31B to sample cooler 10E901.

C. Reason for Change:

To prevent personnel from being severely burned if they make contact with the sample line while a sample is being taken.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the addition of insulation to the pass lines will not change the function of the system. A small section of piping and some of the tubing which was insulated is classified as safety related since it is part of the primary containment boundary. However, the weight of the insulation installed is not enough to adversely affect the integrity of the piping or tubing.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the addition of insulation does not change the nonsafety related status of the system or affect any other safety related system, component or structure.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the post accident sampling system is not covered by any technical specifications except for the administrative requirements of paragraph 6.8.4 C. This modification does not impact any other system or structure governed by technical specifications.

Modification No.: 5470-1

A. System: Reactor Enclosure Cooling Water

B. Description:

This modification provided independent 120 VAC control power to the isolation circuits of the Reactor enclosure cooling water (RECW) and the drywell chilled water (DCW) supply/return containment isolation valves (HV87-120A/B, -121A/B -124A/B and 125A/B). It also added containment isolation signal bypass switches to the isolation circuits of the Reactor Recirculation Pump Cooling Water Inlet/outlet (RRPCW) containment isolation valves (HV13-106, 107, 108 & 111).

C. Reason for Change:

It provided automatic and diverse isolation signals to RECW INBOARD and OUTBOARD isolation valves in the supply and return lines to the recirculation pumps and the DCW OUTBOARD isolation valves in the supply and return lines.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because it did not increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the FSAR.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: It did not create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR.

FSAR Sections 6.5.1.1, 7.3.1.1, and 7.3.2.7 were reviewed in determining that a revision to the FSAR is not required.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, this modification did not reduce the margin of safety as defined in the bases for any Technical Specifications. The bases for Technical Specification 3/4.3.2, 3/4.6.1 and 3/4.6.3 were reviewed in making this determination.

Modification No.: 5539-1

A. System: 4 KV System

B. Description:

This modification connected the diesel generator field ground relay contact, which was not previously wired, and modified the generator field ground relay circuitry.

C. Reason for Change:

To eliminate A loop between the diesel generator field ground detection circuitry and the division 1 battery ground detection relay.

D. Safety Evaluation Summary:

i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because it does not result in any increased fire hazard and maintained all the design and installation requirements for safety-related Class 1E system.

ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because it provides annunciation for ground faults on either the positive or negative wire of the diesel generator field. Also, it eliminates the ground loop between the generator field ground detection circuitry and Division 1 Battery ground detection relay.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because no technical specification surveillance requirement or limiting condition for operation are directly or indirectly affected by this modification.

Modification No.: 5546-1

A. System: Nuclear Boiler

B. Description:

Bore out of the main steam flanges connecting to the safety relief valves.

C. Reason for Change:

Collection of condensate on the main seat and disk of the safety relief valves contributes to valve leaking. The presence of a pool of condensate over the main seat creates thermal gradients that distort the valve body causing a loss of seal between the seat and disk. The main steam flanges that mate with the safety relief valve inlet flanges have a smaller inner diameter than the valve inlet. The smaller diameter inner bore forms a dam that traps condensate in the valve. The bore-out of the flange will remove the dam and facilitate condensate drainage. The reduction of condensate will tend to mitigate valve distortion and reduce main seat leakage.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the safety related function of the main steam line branch flange connected to the safety relief valve is that it forms a part of the RPV pressure boundary. The integrity of the pressure boundary will not be compromised by removal of excess material on the inside diameter of the flange.

- ii) Does this modification create the possibility for an accident or modification of a different type than previously evaluated in the FSAR?

Answer: No, because the consequences of a postulated failure of the flange connected to the safety relief valve are completely enveloped by postulation of pipe breaks at the main steam branch connection for the safety relief valves.

- iii) Does this modification reduce the margin of safety as defined in the bases of the Technical Specification?

Answer: No, because the ability to safely shutdown the plant, as described in the Technical Specifications is unaffected by the change.

Modification No.: 5579-1

A. System: Various

B. Description:

This modification installed accessible test points at the terminal boards in panels 10C609, 10C611, 10C617, 10C618, 1-C620, 10C621, 10C640, 10C641 for surveillance testing of the signals from: 1) RCIC/HPCI steam leak detection; 2) containment head spray drywell pressure; 3) HPCI high water level reset; 4) RCIC/HPCI condensate storage tank level; 5) RHR injection valve differential pressure logic, and 6) nuclear boiler instrumentation.

C. Reason for Change:

To allow plant personnel to perform surveillance testing without connecting test probes directly to relay contacts which could result in handling malfunctions or unintentional isolations of other circuits.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the jumpers are installed in accordance with Drawing 8031-E-1412 and satisfy all Class 1E installation requirements. This modification provides easy accessibility to the test points of relay contacts and does not in any way affect the performance or operation of any safety-related equipment. This modification will not change the function and logic of the original circuit.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the jumpers are installed in accordance with Drawing 9031-E-1412 and satisfy all Class 1E installation requirements. Since test points will be more accessible to plant personnel this modification will reduce the possibility of an accident or malfunction.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because this modification will reduce the probability of occurrence of unintentional isolations of other circuits. No Technical Specifications are applicable to the subject of this modification.

Modification No.: 5599-1

A. System: 4 KV System

B. Description:

This modification added secondary fuses to Division I diesel generator control circuits.

C. Reason for Change:

To protect the Division I diesel generator primary fuses from an electrical fault that may be caused by a fire in the control complex.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because this modification leaves the system functionally unchanged from the original design, does not result in any increase in fire hazard, and maintains all the design and installation requirements for safety-related Class 1E systems. This modification does not affect any other safety or non-safety-related systems.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR.

Answer: No, this modification affects safety-related equipment and wiring but does not prevent the diesel-generator from performing its functions. The design of the modification meets all the design requirements applicable to the original design, including seismic and environmental qualification, separation criteria, quality assurance, and testability. This modification does not affect any other safety or non-safety-related systems.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because this modification increases the safety margin since it prevents the diesel generators from becoming disabled as the result of an electrical fault in the diesel-generator control circuitry due to a fire in the control complex concurrent with a loss of off-site power.

Modification No.: 5621-1

A. System: Drywell HVAC

B. Description:

This modification provided additional time delay relays for the motor auto starting circuits to delay the starting of all the sixteen drywell unit cooler fans 1A1/ 1A2/ 1B1/ 1B2/ 1C1/ 1C2/ 1D1/ 1D2/ 1E1/ 1E2/ 1F1/ 1F2/ 1G1/ 1G2/ 1H1/ 1H2V212 and the four control room supply and return fans 0AV116, 0BV116, 0AV121 and 0BV121.

C. Reason for Change:

This modification improves the voltage regulation at the 480V buses during a LOCA on Unit 2 and a forced shutdown of Unit 1 accompanied by a loss of the active 500/230-13.8 kv offsite source.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, this modification reduces the probability of equipment malfunction because the added time delays to the drywell lead and standby cooler fans and control room fans serve to improve the C and D channel voltage regulation in the event of a LOCA on one unit in conjunction with a loss of either of the offsite power sources. Improving the post-accident voltage regulation ensures operability of the safety related equipment. FSAR sections 6.2.5.1, 6.2.5.3, 7.3.1.1.16, 7.3.1.1.10, 8.3.1.1.5, 9.4.1.1, 9.4.5.2 and tables 8.3-4 thru 17 were reviewed in making this determination.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because this modification meets all the design requirements applicable to drywell and control room HVAC systems. These requirements include, but are not limited to seismic and environmental qualifications, separation criteria, quality assurance and testability. The plant fire protection analysis is unchanged by this modification since no new combustible loading was added. FSAR sections 7.3.1.1.16, 7.3.1.1.10, 8.3.1.1.5, 9.4.5.2, 9.4.1.1 and tables 8.3-4 thru 17 were reviewed in making this determination.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the short delay in restarting the containment cooler fans has no effect on the resulting containment peak temperature following a partial loss of offsite power since this was determined by the existing, longer restart time of the drywell chilled water system chillers. Similarly, the short delay in restarting the control room fans has no effect on the resulting control room peak temperature since this is determined by the existing, longer restart time of the control room chillers. Technical Specification Sections 3/4.6.1, 3/4.6.6 and 3/4.7.2 were reviewed in making this determination.

Modification No.: 5658-1

A. System: Residual Heat Removal (RHR)

B. Description:

This modification deleted the head spray mode of the RHR System.

C. Reason for Change:

This system would have been used only during reactor cooldown and required partial disassembly and reassembly at every refueling outage in order to remove the RPV head.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the RPV pressure boundary is maintained by a blind flange which replaced the head spray line at nozzle N6A. Primary containment integrity is maintained by a plate which was installed in the head spray line outside containment. The portion of head spray piping that constituted a high energy pipe break hazard was removed. The penetration through the containment seal plate has been closed. The primary containment HVAC design has been reviewed to establish that there are no adverse effects by this closure. This mod does not increase the combustible loading of the plant. Relocating the seismic sensor from the RHR head spray line to the RPV nozzle blind flange does not affect the sensors operability. The FSAR chapter 15 accident/transient analysis does not take credit for RHR head spray or the seismic sensor.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR.

Answer: No, because this modification removed the RHR head spray system which serves no safety-related function other than being part of the reactor coolant pressure boundary. The reactor coolant pressure boundary will now be maintained by a blind flange installed on RPV nozzle 6A. The consequences of a postulated failure of this blind flange are completely enveloped by the Main Steam Line breaks evaluated in Chapter 15 of the FSAR. Furthermore, the effects associated with a high energy line break at this location have already been evaluated in FSAR Chapter 3.6.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the RHR head spray system itself is not addressed in the Technical Specifications. The ability to safely shut down the plant, as described in the Technical Specifications, is not impacted by this change.

Modification No.: 5666-1

A. System: Aux. Boiler & Steam Supply

B. Description:

This modification installed drip pans for the Diesel Generator Steam Heaters.

C. Reason for Change:

Steam unit heaters 1EE593, 1FE593, 1GE593 and 1HE593 were installed above each of the four diesel generator control panels 1AC514, 1BC514, 1CC514 and 1DC514. Each of these heaters had blowdowns, PSV's and unions that potentially could leak or rupture and introduce water into the control panels. There was also the possibility of a steam coil crack that could cause major leaks.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the FSAR?

Answer: No, because this modification did not affect the operability of the diesel generators. The drip pans were Seismic Category I passive pieces of equipment which did not affect the control panel operation nor that of the diesel generators. The associated drain pipe was Seismic Category IIA and did not impact any safety related equipment.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR.

Answer: No, because the drip pans were classified as Seismic Category I, it retained its integrity and did not damage or impact the diesel generator control panels or any nearby safety related equipment. The associated drain pipe was Seismic Category IIA and did not impact any safety related equipment. Therefore a different type of accident than that previously evaluated in the FSAR was not created.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specification?

Answer: No, because this change did not affect the capability to safely shutdown the plant if required. Implementation of this modification did not affect the operability of the diesel generators. The drip pans and associated drain pipe were passive pieces of equipment which did not affect the control panel operation nor that of the diesel generators.

Modification No.: 5667-0

A. System: Rx Encl. HVAC & SBGTS

B. Description:

Added access doors and pressure ports for HVAC isolation valves.

C. Reason for Change:

Provisions were added for leak testing and adjustment of butterfly valve seals used for reactor enclosure and refueling area secondary containment and for control room HVAC isolation.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the reactor enclosure, refueling area, and control room HVAC isolation systems are assumed to be functional following any LOCA and many transient events as identified in the FSAR (Chapters 6 & 15).

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the addition of access doors and pressure ports is a simple, passive change to the ductwork. The new components were installed to the same design criteria as the original systems. No failure modes were identified and therefore, no different types of accidents are postulated from the installation of these ductwork components.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specification?

Answer: No, because installation of these ductwork accessories did not affect the flowrate, inleakage, drawdown time or isolation capability of the existing HVAC systems. The following Technical Specification sections and their associated Bases were reviewed in making this determination: 1.33, 1.35, 3.0.3, 3/4.6.5.1.1, 3/4.6.5.1.2, 3/4.6.5.2.1, 3/4.6.5.2.2, and 3/4.7.2.

Modification No.: 5696-1

A. System: Lighting & Misc. Distribution

B. Description:

This modification replaced a 50 amp. Feeder Breaker with a 90 amp breaker in Motor Control Center (MCC) 00B520.

C. Reason for Change:

The main feeder breaker in cubicle #5C of MCC 00B520 for the spray pond pump house lighting panel 1L-85 tripped inadvertently. The size of the former feeder breaker was 50 amp. Bechtel lighting panel load tabulation drawing E-1425 Sht. 8.2 Rev. 7 called for a 90 amp breaker to eliminate inadvertent tripping problem.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the FSAR?

Answer: No, because the system was functionally unchanged from the original design, it did not result in any increase in fire hazard and maintains all the design and installation requirements for safety related Class 1E systems. FSAR Section 8.3.1 was reviewed in making this determination.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, the replacement maintained all the Class 1E design and installation criteria, it did not change the original functional design and did not result in any increase in fire hazard. FSAR Section 8.3.1 was reviewed in making this determination.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specification?

Answer: No, the original functional design was unchanged and cables are properly and adequately protected. The amperage rating of this breaker is not addressed in the Tech. Specs. Technical Specification 3/4.8.3 was reviewed in making this determination.

Modification No.: 5702-0

A. System: Control Structure Chilled Water

B. Description:

This modification added a Low Load Oil Recovery System to each of the control structure water chillers OAK 112 and OBK 112.

C. Reason for Change:

To enable continuous operation and proper functioning of the water chillers despite chiller low load conditions.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because all materials used for this modification were purchased, installed and tested to the same requirements as the present CSCWS in accordance with the codes and specifications governing this safety-related system.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, this modification did not introduce any new hazards. Addition of the automatic oil recovery system eliminated the need to manually add and extract oil from the system, which was not considered in the FSAR Section 9.2.10.2.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specification?

Answer: No, because the control structure chillers were not addressed in the plant Technical Specification. The margin of safety was increased with respect to the reliability of the CSCWS since this modification enabled continuous operation of the chiller units.

Modification No.: 5730-1

A. System: Various

B. Description:

This modifications added several block valves and test connections or reversing some valves to assure that packing on inboard containment isolation valves and small manual block valves exposed to containment atmosphere can be tested during local leak rate testing (Type C).

C. Reason for Change:

This modification facilitates local leak rate testing (Type C) of the packing of inboard containment isolation valves and small manual block valves located outside of the primary containment.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the only safety related function of the valves involved in this modification is to isolate the primary containment and maintain containment integrity Post-LOCA. The isolation function of the valves involved in this modification was not impaired by this change.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the PSAR?

Answer: No, because this modification did not alter the design function, design criteria or testing acceptance criteria for the affected piping systems. No new equipment of a different type than previously installed was added and the prior system configurations were not significantly altered by this modification. Finally the fire protection features of the plant are not affected by this modification.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the Technical Specifications applicable to containment isolation valves affected by this modification are 3.6.1 Primary Containment Integrity which defines acceptable Primary Containment Leakage and 3.6.3 Primary Containment Isolation valves which defines required valve response and response times. This modification did not adversely affect valve performance nor did it affect the acceptance criteria for Primary Containment Leakage. The butterfly valves potential closing time delay as a result of this modification have been reviewed and closing times have been found to be within the maximum time allowed in the Technical Specifications Section 3.6.3. Therefore the margin of safety was not affected by this modification.

Modification No.: 5735-1

A. System: Nuclear Boiler Instruments

B. Description:

This modifications installed wide range level transmitters to monitor the reactor cavity water level during refueling operations.

C. Reason for Change:

Provides redundant water level indication in the Main Control Room when the reactor vessel head is removed for refueling.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because of the installation of the two new wide-range level transmitters, this modification enhanced the existing design, even decreased the probability of occurrence or consequence of an accident because the reactor cavity water level will be more closely monitored during refueling operations and, thus minimize the possibility of an accident.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because the monitoring and operability functions of the existing level transmitters did not change as a result of this modification and the design and installation of the new level transmitters met the applicable requirements of the original system.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specifications?

Answer: No, because this modification is in accordance with the design requirements applicable to the original design and did not change any limiting condition for operation or trip setpoint. Technical Specifications Sections 2.1.4, 3/4.3 and 3/4.9 were reviewed in making this determination.

Modification No.: 5751-1

A. System: Feedwater

B. Description:

This modification installed three air circulating fans in Class 1E feedwater control panel 10C668 to reduce heat generated from the resistors used in 24V lamps control circuitry.

C. Reason for Change:

Excessive heat developed inside Class 1E feedwater control panel 10C668 when the panel was energized. The heat was generated from the resistors used in the 24V lamps control circuitry. Continuous heat generation was undesirable as it might deteriorate the insulation of the feedwater control circuitry, which may subsequently cause a malfunctioning of the FWCS. In order to reduce the heat, three Non-Class 1E air cooling fans were installed in the above Class 1E panel (two at the top and one at the bottom) to blow air across the banks of resistors.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the FSAR?

Answer: No, because the original functional design of the system was unchanged and the fans were installed with angle iron brackets on the unistruts in such a manner that they would not fall down during a design basis event. FSAR Section 6.7, 7.7.1.4, 15.5 and 15.6 were reviewed in making this determination.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because the original functional design of the system was unchanged and the fans were installed with angle iron brackets on the unistruts in such a manner that they would not fall down during a design basis event. FSAR Sections 6.7, 7.7.1.4, 15.5 and 15.6 were reviewed in making this determination.

- iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specification?

Answer: No, because the feedwater control system was not required for safe shutdown of the plant, and this modification did not affect the MSIV system. Tech. Spec. 3/4.3.9 and 3/4.4.7 were reviewed in making this determination.

Modification No.: 5774-1

A. System: Reactor Water Cleanup

B. Description:

This modification provided the main control room, ANNUNCIATION, at panel 1BC802 when reactor water cleanup pump 1AP221 trips.

C. Reason for Change:

An alarm would have annunciated on panel 1BC802 in the main control room, if the pump was overloaded, but it had no annunciation if the pump tripped due to other reasons. This modification installed an extra normally closed contact in the starter in parallel with the existing overloaded contact in MCC 10B223 which provided an alarm capability on pump trip.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, the original functional design of the system is unchanged. It did not add any cable; therefore plant combustible loading was not affected. It maintains all the design and installation of Class 1E requirements applicable to the original design. FSAR Section 7.1.2.1.20 was reviewed in making this determination.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than that evaluated previously in the FSAR?

Answer: No, because failure of the starter's normally closed auxiliary contact will not jeopardize the associated Class 1E circuit. The RWCU system is non Class 1E and is not required to be operable following a design bases accident. FSAR Section 7.1.2.1.20 was reviewed in making this determination.

- iii) Does this modification change the Technical Specification?

Answer: No, a change to the Technical Specification was not required. This modification is in accordance with the design requirements applicable to the original design and did not change any limiting condition for operation or trip setpoint. Section 3/4.3.2 of the Technical Specification was reviewed in making this determination.

Modification No.: 5810-1

A. System: Post LOCA Recombiner

B. Description:

This modification removed temperature cards TY-DO-101A and TY-DO-101B used in the Train "A" and "B" process inlet gas temperature indication loops of the Containment Hydrogen Recombiner System.

C. Reason for Change:

The temperature cards TY-DO-101A(B) removed were used to convert the T/C millivolt output signal of inlet gas temperature element TE-DO-101A(B) to millivolt DC signal which is then fed to the digital temperature indicator XI-DO-101A(B). The temperature card was one of many components comprising the recombinder instrumentation and control system which has been qualified as an assembly by Rockwell International. Its removal will not change the qualification of the remaining components in the instrument housing.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because monitoring of the process inlet gas temperature is not required to assure proper system operation. If inlet gas temperature is desired, the drywell atmosphere temperature recorded on TR-57-122 may be used. Removal of the temperature card has no effect on the operation of the remaining equipment on the instrument housing.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the temperature card being removed is used for temperature indication only and its removal does not affect system operation or reliability. Therefore, the removal of the temperature card will not result in a different type of accident or malfunction than has already been evaluated.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because Technical Specification 3/4.3.7 and 3/4.6.6 were reviewed in making this determination and are not affected.

Technical Specifications 3.6.6.1 and 4.6.6.1 were reviewed and require no changes as a result of this temperature card removal:

Modification No.: 5814-1

A. System: 1-2 Heater Vents and Drains

B. Description:

This modification replaced the obsolete RADI-15 temperature indicating system with a Tracor Westronics DDS7800 data acquisition and indication system including TI-03-101.

C. Reason for Change:

Selected temperatures in the Feedwater Vents & Drains, Condensate and Feedwater systems were monitored in the main control room with a General Electric supplied Tracor Westronics RADI-15 temperature indicating system. That system was obsolete and was replaced by a Tracor Westronics DDS 7800 system due to the unavailability of spare parts.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification maintains reliability of the temperature indication system to monitor the performance of feedwater and condensate systems.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because the monitoring and operability functions of the temperature indicating system related to the feedwater and condensate systems were improved as a result of this modification. The additional monitoring functions of the replacement data processor will mitigate the possibility of any abnormal system condition occurring unobserved.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specifications?

Answer: No, because this modification was in accordance with the design requirements applicable to the original design and did not change any limiting condition for operation or trip setpoint. Technical Specifications Section 3/4.2 was reviewed for references to feedwater temperature relative to power distribution limits, and Section 3/4.3 was reviewed in detail for instrumentation.

Modification No.: 5824-1

A. System: Structures

B. Description:

This modification consisted of modifying the existing lifting beam assembly for use on the "A" Control Room Chiller (Equipment No. OAK-112).

C. Reason for Change:

Provided a means for removal of the chiller compressor motor stator to facilitate maintenance and several conduits and supports was necessary to avoid interference with the assembly.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the PSAR?

Answer: No, because this modification only facilitated maintenance and will not affect the safety related function of the Control Room Chiller OAK-112.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any evaluated previously in the PSAR?

Answer: No, because this modification did not introduce any new hazards in the plant or potential for interferences with safety related functions, including fire protection and safety impact considerations. The lifting of the chiller does not affect any safety related systems in the area.

iii) Does this modification reduce the margin of safety as defined in the bases for Technical Specification?

Answer: No, because this modification was implemented for maintenance purposes only, which maintained the functional reliability of the safety related equipment.

Modification No.: 5934-1

A. System: Control Encl. HVAC

B. Description:

This modification consisted of relocation of the Atmospheric Chlorine Detection System detector probes, AE780016C and AE78-0160.

C. Reason for Change:

It reduced the number of spurious control room isolations and the initiation of CREFAS due to false isolation signals identified as water from rain and snow.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because it did not increase the probability of occurrence or the consequences of an accident or malfunction of equipment as previously evaluated in the FSAR. It did not decrease the capability of the system to perform its safety-related function nor increase the probability of failure, however it did increase the reliability of normal operation.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because it did not create a possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because it did not reduce the margin of safety as defined in the bases for the Technical Specifications, Section 3/4.3.7.8 was reviewed in making this determination.

Modification No.: 5943-1

A. System: Neutron Monitoring

B. Description:

This modification installed model MBK-61 local power range monitors supplied by Kraftwerk Union in place of the existing general electric assemblies.

C. Reason for Change:

To provide a means for competitive bidding on the new supply contract for LPRMS.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety, as previously evaluated in the FSAR?

Answer: No, because the KWU LPRMs are designed to operate under the same conditions and withstand the same mechanical forces as the existing LPRMs. Since they are sensitive to the same range of neutron flux and produce an equivalent output current, no deficiency in the level of core power monitoring will result from substituting KWU LPRMs for the existing GE assemblies. The signals from the KWU units are processed by the APRM and RBM systems along with the GE signals and does not require special conditioning. T1P operability and calibration requirements is not impacted by this modification.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the LPRMs monitor core power and feed this data into the APRM and RBM systems. The KWU assemblies will not fail or cause associated equipment to fail in ways other than those analyzed for the GE assemblies. Reliability of the KEU LPRMs is equal to or greater than the reliability of the GE units.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the KWU LPRMs supply to the reactor protection system a signal equivalent to that produced by the GE LPRMs. Conditioning and processing of these signals proceed as usual. System and channel operability requirements apply equally to the GE and KWU LPRMs. TIP operability and calibration requirements are not impacted by this modification.

Modification No.: 5946-1

A. System: Structures

B. Description:

This modification consisted of boring two 4" diameter openings through the south exterior wall of the Unit 1 Reactor Enclosure. These openings were located in D line wall above Elevation 253'-0" west of 21.5 line.

C. Reason for Change:

These openings were used for the routing of cables from computerized ultrasonic equipment located outside secondary containment to inspection devices located inside primary containment. This equipment and consequently these opening were only used during refueling outages to perform ASME Section XI examinations of Class 1 piping, the Reactor Pressure Vessel (RPV) and RPV nozzles. The availability of these penetrations eliminated the need to assemble and subsequently disassemble Kelly enclosures inside the Reactor Enclosure to house the ultrasonic equipment.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety, as previously evaluated in the PSAR?

Answer: No, because this modification involved a Q-listed reinforced concrete wall, the wall's structural capacity has not been reduced below design requirements. The threaded pipe caps covering the openings serve as an adequate boundary to maintain secondary containment integrity which will be breached only during refueling operations. This is in accordance with the Technical Specifications requirements.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the installation met all the original design requirements. The plant fire protection features were not affected by this modification. This modification maintained the level of safeguard effectiveness required by the current Security Plan.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because there was no violation of the secondary containment integrity during normal plant operation. It is acceptable to have the secondary containment breached during outage, since this is in accordance with Technical Specifications Section 3/4.6.5 requirements. Technical Specifications Sections 3/4.6.5 and 3/4.9 were reviewed in making this determination.

Modification No.: 5950-1

A. System: Nuclear Boiler Instruments

B. Description:

Changed the power supply for level and pressure instruments LI-42-1R010 and FI-42-1R011, located in the remote shutdown panel, from ac to dc.

C. Reason for Change:

It ensured that in the event of a concurrent loss of both onsite and offsite ac power for Unit 1, due to a fire that requires evacuation of the control room, these instruments will remain operable for at least 3 hours.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety, as previously evaluated in the Unit 1 FSAR?

Answer: No, because changing the power supply for reactor level indicator LI-42-1R010 and reactor pressure indicator PI-42-1R011 in remote shutdown panel 10C201 from ac to dc ensured that they will remain operable when shutdown method R must be used because of a fire in the control complex.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because the Reactor level indicator LI-42-1R010 and pressure indicator PI-42-1R011 are required to be operable for use with shutdown method R.

iii) Does this modification reduce the margin of safety as defined in the basis for the Unit 1 Technical Specifications?

Answer: No, because the basis for Technical Specification 3/4.3.7.4, "Remote Shutdown System Instrumentation and Controls", requires that sufficient capability must be available to achieve and maintain hot shutdown of the reactor from outside the control room.

Modification No.: 5962-1

A. System: Reactor Core Isolation Cooling (RCIC)

B. Description:

This modification added Isolation devices and other circuit changes to the RCIC turbine speed control and indicating circuits in the remote shutdown panel.

C. Reason for Change:

To provide isolation devices and other circuit changes to protect RCIC operation from the results of a control complex fire.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety, as previously evaluated in the PSAK?

Answer: No, because this modification to the RSS (Remote Shutdown System) and RCIC systems will not increase the consequences of an accident. The components associated with the control circuits of this modification are Class 1E and seismically qualified and are installed accordance with Class 1E and seismic requirements. This modification maintains the original separation criteria, divisional power requirements, seismic requirements and environmental qualification requirements for both the RCIC and RSS. Therefore, there is no increase in the probability of malfunction of the RCIC or RSS which may affect the overall plant safety.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the modification maintains the design functions, the separation criteria, divisional power requirements, seismic requirements and environmental qualification requirements of the RCIC and RSS. Thus, the plant will operate within the envelope of analyzed conditions. Malfunction of the non-Class 1E components associated with the modification will not affect the operability of the RCIC system or the RSS. Malfunction of the Class 1E components associated with the modification will result in the failure of RCIC, a condition which is already considered in the FSAR.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the modification does not affect any setpoints or instrument accuracy and drift requirements defined in the Technical Specifications. In addition, this modification does not affect the separation criteria, divisional power requirements, seismic requirements, and environmental qualification requirements for RCIC and RSS. Therefore, this modification will not cause the plant to be operated outside normal operating mode.

Modification No.: 5963-0

A. System: 480 V System

B. Description:

This modification replaced the existing 600 Amp Frame/225 Amp Trip circuit breakers with new 600 Amp Frame/600 Amp Trip circuit breakers installed in the 480 volt safeguard load centers 10B201, 10B202, 10B203 and 10B204.

C. Reason for Change:

This modification ensures proper breaker coordination between 480 volt load center and motor control center circuit breakers.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because this modification only replaced the existing 600 Amp Frame/225 Amp Trip circuit breakers with new 600 Amp Frame/600 Amp Trip circuit breakers to achieve proper coordination between the 480 volt load center circuit breakers and 480 volt motor control center circuit breakers. This enhances the system reliability. The existing cables emanating from the load center circuit are sized to carry the full 600 amp current allowed by the new breakers, and are not degraded by the higher allowable currents.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the PSAR?

Answer: No, because the existing cables emanating from the load center circuit breakers are sized to carry the full 600 amp current allowed by the new breakers, and are not degraded by the higher allowable currents. This modification does not affect the function or operation of any other Safety or Non-Safety related system. This modification does not affect the Safe Shutdown of the plant.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because this modification only replaced the existing 600 Amp Frame/225 Amp Trip breakers with new 600 Amp Frame/600 Amp Trip circuit breakers in the 480 volt safeguard load centers to enhance the reliability of the 480V ac on-site power distribution system. The coordination of circuit breakers is not addressed in the Technical Specifications.

Modification No.: 5972-1

A. System: 4 KV System

B. Description:

This mod replaced the existing model ITE-27D relay installed 4.16kV switchgear sections 10A11502, 10A116, 10A11609, 10A11702, 10A11802, and 10A11809, with model ITE-27N relays. The new relays have significantly improved setpoint tolerances and pick-up-dropout ratio.

C. Reason for Change:

To provide protection to class 1E loads against adverse effects caused by sustained undervoltage conditions when the Class 1E buses are connected to offsite power and to minimize the likelihood of spurious separation of class 1E systems from offsite power.

D. Safety Evaluation Summary:

- 1) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the PSAR?

Answer: No, because this modification only replaced the existing safety-related time delay undervoltage relay model ITE-27D by model ITE-27N. This replacement enhances the system reliability as it significantly reduces the likelihood for spurious tripping and separating the Class 1E distribution system from offsite power. The safety function of these relays are to protect Class 1E equipment from operating under degraded voltage conditions. The new relay setpoints will ensure that adequate voltages are available to all Class 1E equipment for all modes of plant operation.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the replacement of existing model ITE-27D time delay undervoltage relays by ITE-27N relays does not affect any other safety-related system. This modification does not affect the safe shutdown of the plant. This modification does not alter the design function, design criteria or testing acceptance criteria for the affected systems.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because this modification does not adversely affect the relay performance, but rather improves it by reducing the likelihood of tripping and separating the Class 1E distribution system from offsite power. The revised setpoints will help ensure compliance with BTP PSB-1 for equipment protection against degraded voltages. The new relay setpoints will ensure that adequate voltages are available to all Class 1E equipment for all modes of plant operation. Therefore the margin of safety is not reduced by this modification.

Modification No.: 5973-1

A. System: Nuclear Boiler

B. Description:

This modification replaced Suppression Pool Temperature Monitoring System (SPTMS) Resistance Temperature Detectors (RTDs) TE-41-101A thru H and TE-41-103A thru H with RTDs that are 28 inches longer.

C. Reason for Change:

The longer RTDs were required to assure RTD temperature sensing element submergence for the worst-case post-LOCA suppression pool water level.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because by lowering the SPTMS RTD's, the original design intent to provide information for the operator actions while the RPV is pressurized and long term indications for the duration is satisfied.

- ii) Does this modification create the possibility of an accident or malfunction of a different type than any previously evaluated in the FSAR?

Answer: No, because lowering the SPTMS RTDs, the original design intent is to provide information for operator actions while the RPV is pressurized and long term indication for the duration of the accident is satisfied.

iii) Does this modification reduce the margin of safety as defined in the bases for Technical Specifications?

Answer: No, because approved project calculations verified that the SPTMS measurement and indication of the average/bulk temperature of the suppression pool remains conservative with respect to the calculated bulk pool temperature. Replacing all 16 SPTMS RTDs with ones that are 28 inches longer maintains the original design concept of the SPTMS and satisfied the current Technical Specifications for the required number of operable channels. Technical Specifications 3.4.3.7 (3.3.7.5), 3/4.5.3 and 3/4.6.2 and their bases were reviewed in making this determination.

Modification No.: 5976-1

A. System: Structures

B. Description:

This modification implemented the original design intent of installation of panels within the Control Enclosure by connecting panels together with externally mounted plates using existing connection points on top of the panels.

C. Reason for Change:

To eliminate the possibility of inter-panel interference during a seismic event.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification was issued to implement the original design intent of panel installation within the Control Enclosure to eliminate the the possibility of inter-panel interference during a seismic event. This modification assured the dynamic qualification of the affected safety related panels.

- ii) Does this modification create the possibility for an accident or malfunction or a different type than any previously evaluated in the FSAR?

Answer: No, this modification eliminated the possibility of inter-panel interference during a seismic event and assured the dynamic qualification of the affected safety related panels.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the Technical Specifications did not address installation requirements of panels. The operability of all systems with components in the panels being interconnected was not affected by this change.

Modification No.: 5977-1

A. System: Miscellaneous

B. Description:

This modification added environmental seals and modified the conduits and junction boxes of certain safety-related electrical devices.

C. Reason for Change:

To provide additional assurance that these devices will continue to operate under HELB conditions. The devices are those specifically designated to detect and mitigate the effects of a HELB.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because this modification made no functional changes to the affected systems. The systems operate exactly as before and function as designed. The installation of conduit seals and the sloping of conduit runs has been analyzed to assure conformance to the existing seismic and environmental qualification criteria for Limerick. The addition of conduit and junction box drain holes maintains the environmental qualification of the instruments.

- ii) Does this modification create a possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, this modification enhanced and increased the assurance of plant operation under postulated accidents. The environmental and seismic qualification of the instruments were maintained by this modification. This modification did not impact the plant fire protection features.

- iii) Does this modification reduce the margin of safety as defined in the basis for the Technical Specification?

Answer: No, this modification enhances the margin of safety for affected devices and increases assurance of plant operation under postulated accident conditions. Technical Specification Section 3/4.3.7.5, Tables 3.3.7.5-1 and 4.3.7.5-1 and their bases have been reviewed in making this determination. Therefore this modification did not involve an environmental safety question.

Modification No.: 5989-1

A. System: HPCI/Core Spray

B. Description:

This modification consisted of rewiring the control circuitry for valve HV-52-1F037 so that fire caused damage to cable 1BB21407D cannot cause the valve to open inadvertently. The rewiring was performed inside panel 10C601 in the control room and panel 10C618 in the auxiliary room.

C. Reason for Change:

Re-wiring E21-F037 Logic to E21-F004B to prevent faulty opening of E-21-F037.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety previously evaluated in the FSAR?

Answer: No, because this modification made no functional changes to the affected systems; the systems operate in the same manner. The sequencing change of control devices in the control circuitry does not increase the probability of an accident or malfunction involving any portion of the core spray system. The modification work was performed in accordance with the existing seismic and environmental qualification criteria for Limerick. The modification maintains the systems capability to function as presently designed.

- ii) Does this modification create a possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the rewiring of the switch contacts did not affect the intended core spray system function. This modification did not introduce any new failure mode in the core spray system. Therefore, none of the accident analysis described in the SAR will be impacted. This modification ensured compliance with existing licensing requirements. The environmental and seismic qualifications of the valve and control switch were maintained by this modification. This modification did not impact the plant fire protection features.

- iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, Technical Specification Sections 6.7, 3/4.3.3, 3/4.5.1, 3/4.5.2 and Tables 3.3.3-1 and 3.3.3-2 and their bases were reviewed. There is no change required to the Technical Specifications, impacting this system or any other safety-related systems.

Modification No.: 6007-0

A. System: Control Enclosure HVAC

B. Description:

This modification provided for the installation of seals for the remote shutdown panel (RSP) room to minimize the infiltration of smoke due to a postulated fire in the Auxiliary Equipment Room.

C. Reason for Change:

It minimized the infiltration of smoke in the remote shutdown panel room from postulated fire in the Auxiliary Equipment Room.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR?

Answer: No, because the installation of the seals did not increase the probability of occurrence or the consequences of an accident or malfunction of equipment related to safety as previously evaluated in the FSAR.

FSAR Sections 6.4, 7.4, 9.4, 9.5 and 15.9 were reviewed in making this determination.

- ii) Does this modification create the possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the installation of the seals did not create the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR.

FSAR Sections 6.4, 7.4, 9.4, 9.5 and 15.9 were reviewed in making this determination.

iii) Does this modification reduce the margin of safety as defined in the bases for the Technical Specifications?

Answer: No, because the installation of the seals did not reduce the margin of safety as defined in the bases for any Technical Specification.

The bases of Technical Specification Sections 3/4.3.7, 3/4.7.2, 3/4.7.6, and 3/4.7.7 were reviewed in making this determination.

Modification No.: 6019-0

A. System: Rx Enclosure HVAC & SBGTS

B. Description:

This mod added a seal-in circuit to the SGTS fan standby start control circuit.

C. Reason for Change:

The SGTS fan is designed to automatically start when it is in a standby mode if low flow of the operating fan is detected. A seal-in electrical circuit was added to the SGTS fan standby control circuitry so that once the standby fan is started it will continue to operate without depending on the low flow signal which initiated the standby fan start signal.

D. Safety Evaluation Summary:

- i) Does this modification increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the FSAR?

Answer: No, because the low flow seal-in circuit did not modify the operation of the SGTS as previously evaluated in the FSAR. Each SGTS fan still automatically starts after a secondary containment isolation. If a low flow signal is received, the lead fan will shut off, and the standby fan will start as designed.

- ii) Does this modification create a possibility for an accident or malfunction of a different type than any evaluated previously in the FSAR?

Answer: No, because the seal-in circuit did not modify the operation or design of the SGTS as previously evaluated. This modification uses spare contacts in existing relays that are wired into the control circuit.

iii) Does this modification reduce the margin of safety as defined in the bases for any Technical Specifications?

Answer: No, because the SGTS will continue to perform its safety-related function as defined in the Technical Specification Bases. The bases for Technical Specification Sections 3/4.6.5.1, 3/4.6.5.2, 3/4.6.5.3 and 3/4.6.5.4 were reviewed in making this determination.s