



Commonwealth Edison

Dresden Nuclear Power Station
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Morris, Illinois 60450
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March 21, 1986

DJS LTR: 86-213

Director, Office of Inspection
and Enforcement
United States Nuclear Regulatory
Commission
Washington, DC 20555

Attention: Document Control Desk

Dear Sir:

Enclosed, please find Dresden Station's operating data for the years 1984 and 1985. This information is supplied to your office per the instructions set forth in Regulatory Guide 1.16.

Sincerely,

D. J. Scott
Station Manager
Dresden Nuclear Power Station

DJS:DCM:hjb
Enclosure

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ANNUAL OPERATING REPORT
OF
DRESDEN NUCLEAR POWER STATION, COMMONWEALTH EDISON COMPANY
FOR 1984 AND 1985

<u>UNIT NO.</u>	<u>DOCKET NO.</u>	<u>LICENSE NO.</u>
1	050-010	DPR-2
2	050-237	DPR-19
3	050- ² 1 49	DPR-25

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AMENDMENTS TO FACILITY LICENSE

DPR-2 (UNIT 1) OR ASSOCIATED

TECHNICAL SPECIFICATIONS

No amendments issued in 1984 and 1985.

UNIT 1

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION M12-1-80-11

Provide a High Range Noble Gas Monitor on the Unit 1 Chimney.

The change involved installing a high range noble gas effluent monitoring system on the Unit 1 chimney per NUREG-0578, Item 2.1.8.b and per Regulatory Guide 1.97, Rev. 2.

The safety evaluation concluded that the margin of safety is increased by the more efficient monitoring of the chimney effluents.

MODIFICATION M12-1-82-2

Provide a Means of Adding Chemicals to the Unit 1 Heating Boilers.

The change involved routing piping and fittings to the Springfield heating boilers to provide a means to chemically control the water, as was done on the D-2/3 heating boilers.

The safety evaluation concluded that the health and safety of the plant and public are not compromised by this modification.

AMENDMENTS TO FACILITY LICENSE

DPR-19 (UNIT 2) OR ASSOCIATED

TECHNICAL SPECIFICATIONS

AMENDMENTS #76 and #77

On November 11, 1983, the Nuclear Regulatory Commission issued Amendments #76 and #77 to the Dresden Facility License No. DPR-19. The following is a resume of the changes in the license for incorporation of the Amendments:

Amendments #76 and #77 states response verification above 20% power of control rod drives that have experienced uncoupling and no response is discernable on nuclear instrumentation; also, the ECCS limitations imposed on the torus ring header snubbers during installation of the Mark I Torus attached piping modifications.

AMENDMENTS #78 and #79

On December 12, 1983, the Nuclear Regulatory Commission issued Amendments #78 and #79 to the Dresden Facility License No. DPR-19. The following is a resume of the changes in the license for incorporation of the amendments:

Amendments #78 and #79 state expected response time verification of the HPCI steam line high flow surveillance during a refueling outage; also, clarification of the control rod drives' scram insertion time surveillances.

AMENDMENTS #80 and #81

On February 14, 1984, the Nuclear Regulatory Commission issued Amendments #80 and #81 to the Dresden Facility License No. DPR-19. The following is a resume of the changes in the license for incorporation of the amendments:

Amendments #80 and #81 provide specification and surveillance requirements to ensure operability of the RPS bus electrical power assemblies. Each channel from either overvoltage, undervoltage or underfrequency will trip the associated MG set or alternate power source per reference letter T. Rausch to H. Denton, dated 02-04-83; also, the inclusion of T.S. page #45 that was inadvertently omitted from Amendment #78.

AMENDMENT #82

On September 4, 1984, the Nuclear Regulatory Commission issued Amendment #82 to the Dresden Facility License No. DPR-19. The following is a resume of the changes in the license for incorporation of the amendment:

Amendment #82 is the complete Technical Specification re-issue in the new format.

AMENDMENTS #83, #84 and #85

On February 27, 1985, the Nuclear Regulatory Commission issued Amendments #83, #84 and #85 to the Dresden Facility License No. DPR-19. The following is a resume of the changes in the license for incorporation of the amendments:

Amendments #83, #84 and #85 state surveillance requirements of reactor water level instrumentation and CRD scram discharge volume instrumentation; also, RETS requirements and surveillance activities; and also, snubber surveillance requirements.

AMENDMENT #86

On March 15, 1985, the Nuclear Regulatory Commission issued Amendment #86 to the Dresden Facility License No. DPR-19. The following is a resume of the changes in the license for incorporation of the amendment:

Amendment #86 states changes to the administration control requirements and to reportability requirements in Section 6.0 of the Technical Specifications.

AMENDMENTS #87, #88 and #89

On May 30, 1985, the Nuclear Regulatory Commission issued Amendments #87, #88 and #89 to the Dresden Facility License No. DPR-19. The following is a resume of the changes in the license for incorporation of the amendments:

Amendments #87, #88 and #89 state the reactor coolant chemistry dose requirements and their associated surveillance requirements; also, limiting conditions for use and surveillance requirements of all the station battery systems; and also, the EGC surveillance requirements.

AMENDMENT #90

On June 24, 1985, the Nuclear Regulatory Commission issued Amendment #90 to the Dresden Facility License No. DPR-19. The following is a resume of changes in the license for incorporation of the amendment.

Amendment #90 states post-accident monitoring instrumentation requirements and associated surveillance requirements.

AMENDMENT #91

On December 12, 1985, the Nuclear Regulatory Commission issued Amendment #91 to the Dresden Facility License No. DPR-19. The following is a resume of changes in the license for incorporation of the amendment:

Amendment #91 states fuel pool storage reactivity limits of the new 9x9 fuel elements, storage of the new fuel requirements and associated surveillance requirements.

UNIT 2

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION M12-2-79-20

Install Torus Support Saddles for Mark I Containment Program

The change involved the addition of sixteen (16) saddle type supports welded to the torus shell at the torus ring headers. Also, to enlarge the torus basement access hatches to facilitate installation of the saddles.

The safety evaluation concluded that the margin of safety is increased with respect to hydrodynamic loads.

MODIFICATION M12-2-79-23

Install Trip Logic Circuits to "A" and "B" Recirculation Pumps ATWS and ARI systems

The change involved cutting and welding the existing 1" air lines to provide a faster means for the initiation of the ATWS and ARI systems. Also, the addition of new solenoid valves and relocation of the seal-in contacts.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-2-79-30

Install Torus Internal Modifications as Required by the Mark I Containment Program

The change involved installing, by welding, additional supports on the SRVD lines and re-coating affected areas of the torus.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-2-79-49

Install Seismic Restraints as Required by I.E. Bulletins 79-02 and 79-14

The change involved the addition of hangers on all safety related systems and were designed to mitigate failure due to seismic loadings. Normal operation of the systems were not affected in any way.

The safety evaluation concluded that the systems' design and function remains unchanged.

MODIFICATION M12-2-79-55

Install Containment Pressure and Water Level Monitors as Required by TMI Commitments

The change involved the addition of water level monitors in the drywell basement and associated alarms, also the addition of sudden overpressure sensors throughout the drywell and associated alarms to comply with TMI letter dated 9-13-79.

The safety evaluation concluded that this addition does not affect the margin of safety as defined in the Technical Specifications.

MODIFICATION M12-2-80-19

Provide a Reactor Coolant and Containment Atmosphere Sampling System

The change involved designing and installing a sampling system for the reactor coolant and primary containment atmosphere per NUREG-0578. This included a new building to house the system re-routng sample lines, proper disposal of effluent and connection of the new building to airlocks.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-2-81-25

Replace the Existing Vickers Solenoids with Parker-Hannifin Solenoids on the Main Turbine Control Valves

The change involved replacing the existing solenoids on the main turbine control valves with new Parker-Hannifin (wet armature type) solenoids. These new solenoids incorporate a pressure switch for the RPS circuitry.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-2-81-28

Provide Undervoltage Sensors at the D.C. Load Bus on the 125 Volt D.C. System

The change involved replacing the existing sensors with new voltage indicators and undervoltage alarms on the 125 VDC battery system.

The safety evaluation concluded that the margin of safety is increased because the new system will assure an adequate state of charge exists on the station batteries at all times.

MODIFICATION M12-2-81-44

Install Torus Attached Piping Modifications and Associated Supports for Mark I Containment Program

The change involved adding welded supports to the piping entering the torus and hangers to this existing piping.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-2-82-3

Provide Undervoltage Sensors at the D.C. Load Bus on the 24/48 Volt D.C. System

The change involved replacing the existing sensors with new voltage indicators and undervoltage alarms on the 24/48 VDC battery system.

The safety evaluation concluded that the margin of safety is increased because the new system will assure an adequate state of charge exists on the station batteries at all times.

MODIFICATION M12-2-82-11

Install Temperature and Flow Indicators Across the Unit 2 Diesel Generator Heat Exchangers for Local Indication

The change involved the addition of sensors for temperature and directional flow on the diesel generator heat exchanger piping including cutting and welding and re-routing the cooling water flow from the bottom to the top of the heat exchangers and replacement of the diesel generator cooling water pump check valves.

The safety evaluation concluded that the margin of safety is increased by providing a positive indication of cooling water flow.

MODIFICATION M12-2-82-12

Install a Normally Open, Spring Return, Pushbutton Switch on Each Rod Block Monitor (RBM) Page Board

The change involved the addition of a G.E. electronics switch pushbutton (part #35-018) on each RBM page board to facilitate calibration of the RBM backup trip circuit, according to G.E. Service Information Letter (SIL) #365.

The safety evaluation concluded that the margin of safety is not reduced because calibration of the trip cards is more easily facilitated and reduces the potential for equipment damage.

MODIFICATION M12-2-82-38

Install Relays to Protect Diesel Generator During Surveillance Tests and Provide Underfrequency Trip Bypass During Auto-Start Operation

The change involved specific wiring changes and the addition of relays in the trip and alarm circuits of the diesel generator to provide protection during surveillance testing and during auto-start conditions.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-82-47

Rewire Drywell Equipment Drain Pumps to Start with the 2001-5 and 2001-6 Valves Closed

The change involved rewiring the logic circuit of the drywell equipment drain pumps to allow cooling the pump with valves 2001-5 and 2001-6 closed and with valve 2001-3 open.

The safety evaluation concluded that the margin of safety is not affected by this modification.

MODIFICATION M12-2-82-49

Install a Second Isolation Valve Downstream of Single Isolation Valve on Core Spray and LPCI LLRT Taps

The change involved the installation by cutting and welding of a second isolation valve downstream of CS valves 2-1402-10A and 2-1402-10B, and LPCI valves 2-1570-70A and 2-1570-70B. This was accomplished because of an NRC request for double isolation valves per SEP Topic VI-4.

The safety evaluation concluded that the margin of safety is increased through the addition of the second valve.

MODIFICATION M12-2-83-4

Install Suction Isolation Valves for the Gland Seal Leak-Off Pump (GSLO) to Enable Pump Maintenance With HPCI In-Service and Install Isolation Valves for HPCI Drain Pot Level Switch

The change involved adding test taps and isolation valves for the GSLO pump and the HPCI drain pot level switch, by cutting and welding, to allow for maintenance without taking HPCI out-of-service.

The safety evaluation concluded that the margin of safety is not affected by this modification.

MODIFICATION M12-2-83-7

Install New HPCI Pipe Supports for Line 2-2304-14

The change involved the addition of hangers on HPCI pump discharge line 2-2304-14 to prevent vibration on nearby instrument rack #2202-10C (main steam line instrumentation) to prevent spurious scrams of the unit.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-11

Reinstallation and Upgrade of the Temporary Hydrogen Addition System

The change involved adding permanent control room panel #902-65 which incorporated all the hydrogen addition control. Also, permanent tubing for the addition of the hydrogen was installed. This was accomplished because testing has shown that stress corrosion cracking induced by oxygen was lessened with the temporary hydrogen addition system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-12

Mount Accelerometers on 'B' Recirculation Line for Acoustic Monitoring of Possible Pipe Crack

The change involved the addition of accelerometers to the 'B' recirculation line for early detection of possible pipe cracks in conjunction with the hydrogen addition modification.

The safety evaluation concluded that the margin of safety is increased by early detection of possible cracking.

MODIFICATION M12-2-83-14

Replace the Existing 24/48 VDC Batteries

The change involved replacing the existing 96 Gould type DPR-19 batteries with 96 Gould #2-MCX-190 lead-calcium batteries and replacing the battery racks with seismic racks for the physically larger batteries.

The safety evaluation concluded that the margin of safety is increased because we upgraded from an 80 ampere-hour to a 190 ampere-hour capacity.

MODIFICATION M12-2-83-15

Modify '2C' Reactor Feed Pump (RFP) Vent Damper to Provide Vent Fans With a Flow Path When All Three Feed Pumps are Off

The change involved rewiring the 2C RFP vent damper and adding air lines to allow for an air flow path when all three RFP's are off.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-18

Install Instrumentation and Wiring for Remote Monitoring of Main Steam Line Snubbers

The change involved the installation of strain gauges and linear movement gauges and the necessary wiring in the drywell, along with instrumentation and wiring outside of the drywell to monitor snubber operation and pipe movement of the main steam lines.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-19

Add Hangers on CCSW Keepfill Line for Additional Support

The change involved the addition of two hangers on CCSW keepfill line 2-39243 for support per engineering design.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-21

Revise Annunciation for the HPCI 125 VDC Control Power

The change involved revising the HPCI 125 VDC loss of power annunciator to provide alarms from both the main and reserve feeds. The rewiring and addition of relay provide a means to monitor the status of both the main and reserve feeds.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-39

Replace LPCI Instruments with Environmentally Qualified Instruments

The change involved replacing LPCI instruments DPS-2-1501-55A, DPS-2-1501-55B, FS-2-1501-58A and FS-2-1501-58B with environmentally qualified instruments per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-43

Termination of Spare Instrument and Thermocouple Wires Pulled Through Reactor Building Penetration AQ

The change involved the installation of terminal blocks and junction boxes where the wires were terminated. This was accomplished per IEEE Standard 323 for safety related equipment and is environmentally qualified.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-44

Provide Local Monitoring of Main Steam Line (MSL) Snubber Instrumentation

The change involved instrumentation to monitor MSL snubbers' strain gauges and linear velocity gauges to provide indications of unexpected dynamic loads which may have led to previous snubber failures.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-24

Install New Service Water Cooling Line to CRD Pumps

The change involved the addition of a 2" service water cooling line for the 2A and 2B CRD pumps to allow cooling for proper operation of the pumps.

The safety evaluation concluded that the safety margin is not reduced.

MODIFICATION M12-2-83-33

Modify Turbine Building Crane Per NUREG-0612, "Control of Heavy Loads"

The change involved the addition of speed limiters and necessary instrumentation to reduce the hoist vertical movement from 92 feet per minute to 30 feet per minute. This allows the operators to have better control of loads they are moving.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-34

Install a Check Valve in the Torus Water Transfer Line

The change involved adding, by cutting and welding, a check valve in the torus water transfer line downstream of valve 2-1599-73 to prevent back flow on the line.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-36

Replace Pressure Suppression (Torus) Instruments with Environmentally Qualified Instruments

The change involved replacing the torus instruments DPIS 2-1622A, DPIS 2-1622B, and LT-2-1641-1 with environmentally qualified instruments per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-37

Replace Core Spray (CS) Instruments with Environmentally Qualified Instruments

The change involved replacing the CS instruments FS-2-1464A and FS-2-1464B with environmentally qualified instruments per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-45

Install a Bypass Line Around the Stator Cooler Service Water Discharge Valve

The change involved, by cutting and welding, a 1" bypass line around the stator cooler service water discharge valve and flange. This was accomplished to keep a 75 gpm flow of water through the cooler to preclude tube pitting, which occurs from the stagnant service water in the tubes.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-52

Rewire 2-250 VDC Battery Charger Feed from MCC 28-2 to MCC 28-3

The change involved electrical rewiring to the 2-250 VDC battery charger to MCC 28-3 to preclude tripping possibilities that exist on MCC 28-2 which also feeds the 2-24/48 VDC battery charger.

The safety evaluation concluded that the margin of safety is increased due to the improved reliability.

MODIFICATION M12-2-83-53

Provide Separate Power Supplies to the Annunciators on Control Room Panels 902-4 and 902-5

The change involved removing the tie between alarm panels AP2 and AP5 and provide a separate feed to AP5.

The safety evaluation concluded that the margin of safety is increased because alarm functions are more reliable.

MODIFICATION M12-2-83-57

Install Shear Lugs on Main Steam Lines (MSL) for Snubber Pipe Clamps

The change involved adding, by welding, shear lugs on specific snubber locations on vertical runs of the MSL to prevent slippage of the snubber pipe clamp.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-83-58

Modify ADS Logic to Bypass the High Drywell Pressure Trip with a Low-Low Reactor Water Level Condition

The change involved adding time delayed relays, bypassing the high drywell pressure signals in the ADS circuitry that are initiated by Rx 10-10 H₂O level. The relays also start the LPCI and CS pumps through auxiliary relays. The original function of the ADS circuitry remains the same.

The safety evaluation concluded that the margin of safety is maintained.

MODIFICATION M12-2-83-59

Provide a Reliable "Auto-Reset" Reset Logic for the Relay Race Between Relays K113A(B) and K103A(B) on the ATWS System

The change involved rewiring the logic circuit from a parallel circuit to a series circuit and thus allow proper operation during and after an ATWS signal.

The safety evaluation concluded that the margin of safety is not reduced because reliability is increased.

MODIFICATION M12-2-84-6

Replace the Existing Rod Position Indicating System (RPIS) Relay Driven Computer Output with Solid State Outputs

The change involved replacing the RPIS relay output cards with new solid state output cards which enable rod scans in less than two seconds, supplementing the quick-response design criteria established for the RWM.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-7

Replace the Existing Packing on the Torus/Drywell Vacuum Breakers

The change involved replacing the existing teflon packing on the torus/drywell vacuum breakers with bronze bushings and o-rings to mitigate the excessive leakage and provide a more reliable seal.

The safety evaluation concluded that the margin of safety is maintained because the new design packing does not limit any conditions as specified in the Technical Specifications.

MODIFICATION M12-2-84-8

Replace Various HGA Relays in the Core Spray System and LPCI System Logic Circuits

The change involved in-place exchange of designated G.E. HGA-11 relays with seismically qualified HFA relays, per G.E. Service Advice #721-PSM-174.1.

The safety evaluation concluded that the margin of safety is not reduced because the new relays exceed the original equipment ratings.

MODIFICATION M12-2-84-9

Modify the Closing Circuit for Core Spray Valves 2-1402-25A and 2-1402-25B

The change involved rewiring the closing logic circuit of the 2-1402-25A and -25B CS valves so that the valves still have throttling capabilities, but once closed will not be "hammering" through the torque switch contacts.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-13

Replace the Acoustic Accelerometers on the Main Steam Safety and Relief Valves

The change involved replacing the existing acoustic monitoring system on the main steam line safety and relief valves with an environmentally qualified monitoring system per NUREG-0737, Item 11.D.3.

The safety evaluation concluded that the margin of safety is not reduced because the new equipment provides the operator with more reliable information.

MODIFICATION M12-2-84-23

Replace the Overload Heaters of RBCCW Valve MO-2-3706 Actuator in MCC 28-1

The change involved replacing the existing overload heaters associated with MO-2-3706 to allow operator trip at 0.97 amps, rather than 0.6 amps. The increased current allows for appropriate valve operating times.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-24

Replace the Overload Heaters of RWCU Valve MO-2-1201-1 Actuator in MCC28-1

The change involved replacing the existing overload heaters associated with MO-2-1201-1 to allow operator trip at 6.42 amps, rather than 5.82 amps. The increased current allows for appropriate valve operating times.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-27

Replace the Torus Pilot Versa Solenoid Valve SO-2-1601-50A

The change involved replacing the existing solenoid valve SO-2-1601-50A with an environmentally qualified solenoid valve per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced because the replacement solenoid will perform its function throughout the specified design range.

MODIFICATION M12-2-84-28

Replace the Torus Pilot Versa Solenoid Valve SO-2-1601-50B

The change involved replacing the existing solenoid valve SO-2-1601-50B with an environmentally qualified solenoid valve per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced because the replacement solenoid will perform its function throughout the specified design range.

MODIFICATION M12-2-84-42

Modify HPCI Line 2-2305-10" Whip Pipe Restraints

The change involved shimming and adjusting pipe sleeves for two supports on Unit 2. Restraint #PWHP3, add shim plates, #PWHP4, replace pipe sleeve to obtain the originally designed gap spacing conditions.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-49

Replace Motor #2-57A6A on West LPCI Room Cooler

The change involved replacing motor #2-57A6A on the west LPCI room cooler with an environmentally qualified motor per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced because the motor is now qualified for normal and post-accident environmental conditions.

MODIFICATION M12-2-84-50

Replace Motor #2-57A6B on East LPCI Room Cooler

The change involved replacing motor #2-257A6B on the East LPCI room cooler with an environmentally qualified motor per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced because the motor is now qualified for normal and post-accident environmental conditions.

MODIFICATION M12-2-84-67

Seal the Solenoids Connecting Conduit for the Safety/Relief Valves

The change involved the application of "Bisco Locaseal" to the electrical conduits connected to the safety/relief valves to seal the conduits against moisture intrusion.

The safety evaluation concluded that the margin of safety remains as originally designed.

MODIFICATION M12-2-84-73

Provide New Power Source for CCSW System II Instrumentation

The change involved wiring in a new circuit to provide redundant electrical supplies to CCSW I and II systems for independency and redundancy of the LPCI system.

The safety evaluation concluded that the margin of safety is increased due to improved reliability of the LPCI system.

MODIFICATION M12-2-84-79

Replace the AS11 Control Card with Control Card BCl and Replace Resistor R5 with a 2400 ohm (1 watt) Resistor on the 24/48 Volt DC Battery Charger

The change involved replacement of the two named items and enables the system to operate in a more compatible manner with the battery charger.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-90

Replace Microswitches and Install Quick Disconnects on the HPCI Temperature Switches

The change involved replacing microswitch B-R814-P5 with an environmentally qualified microswitch and installing E.Q. quick disconnects on temperature switches TS 2-2370 A thru D, TS 2-2371 A thru D, TS 2-2372 A thru D and TS 2-2373 A thru D per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is maintained.

MODIFICATION M12-2-84-91

Replace Microswitches and Install Quick Disconnects on the MSL Tunnel Temperature Switches

The change involved replacing microswitch BZ-R184-P5 with an environmentally qualified microswitch and installing E.Q. quick disconnects on temperature switches TS 2-261-15 A thru D, TS 2-261-16 A thru D, TS 2-261-17 A thru D and TS 2-261-18 A thru D per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is maintained.

MODIFICATION M12-2-84-93

Install an Off-Gas Loop Seal Spray Modification on the "A" SJAE After Condenser Loop Seal

The change involved installing a water spray system into the loop seal of the "A" SJAE after condenser to prevent ignition of the "A" SJAE off-gas components before the off-gas recombiner.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-94

Install an Off-Gas Loop Seal Spray Modification on the "B" SJAE After Condenser Loop Seal

The change involved installing a water spray system into the loop seal of the "B" SJAE after condenser to prevent ignition of combustible off-gas components before the off-gas recombiner.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-98

Remove Two Core Samples on Reactor Cleanup Line 2-1201-B-8"

The change involved cutting and welding of Rx cleanup line 2-1201-B-8" - A, removing two samples (one of the old piping, and one of the new piping installed during the prior refueling outage) and sending them to EPRI for research to fulfill a CECO. commitment.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-100

Install Taps on the Reactor Building Heating Steam System for the Decontamination Facility

The change involved the permanent addition, by cutting and welding, of taps on the Rx Building heating steam system to provide temporary hose connections for the decontamination facility during chemical cleanup of the Rx recirculation piping.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-103

Replace the Existing Recirculation Valve Motor on Valve 2-202-5B with an Environmentally Qualified Motor per I.E. Bulletin 79-01B

The change involved replacing the existing motor with a "Limitorque" motor that is environmentally qualified and designed for greater reliability.

The safety evaluation concluded that the margin of safety is not reduced because the new motor will perform its function throughout the design range of the originally installed motor.

MODIFICATION M12-2-84-104

Replace the Existing Recirculation Valve Motor on Valve 2-202-5A with an Environmentally Qualified Motor per I.E. Bulletin 79-01B

The change involved replacing the existing motor with a "Limitorque" motor that is environmentally qualified and designed for greater reliability.

The safety evaluation concluded that the margin of safety is not reduced because the new motor will perform its function throughout the design range of the originally installed motor.

MODIFICATION M12-2-84-114

Replace the Turbine Supervisory Vibration Recorder

The change involved replacing the existing turbine vibration and eccentricity recorder with a new TRACOR state-of-the-art multi-point recorder which requires less maintenance and is more reliable.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-115

Replace the Turbine Supervisory Expansion Recorder

The change involved replacing the existing turbine expansion and metal temperature recorder with a new TRACOR state-of-the-art multi-point recorder which requires less maintenance and is more reliable.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-116

Replace the Existing HPCI Valve Motor on Valve 2-2301-4 with an Environmentally Qualified Motor per I.E. Bulletin 79-01B

The change involved replacing the existing motor with a "Limitorque" motor that is environmentally qualified and designed for greater reliability.

The safety evaluation concluded that the margin of safety is not reduced because the new motor will perform its function throughout the design range of the originally installed motor.

MODIFICATION M12-2-84-164

Replace Specified Sections of the Reactor Cleanup Piping

The change involved replacing, by cutting and welding, certain specified sections of the Rx cleanup piping from penetration X-113 to valves 2-1201-2 and 2-1201-3 and on the flued head up to valve 2-1201-1. This was accomplished because of indications of cracking found in these sections of pipe.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-84-165

Replace Eight Control Rod Blades in Unit 2 Reactor

The change involved replacing eight control rod blades in the Rx cavity. The existing blades have reached their end-of-life, and have been replaced with new G.E. hybrid blades which are designed to improve stress corrosion cracking resistance and attain the nuclear lifetime limit.

The safety evaluation concluded that the margin of safety is not reduced because the new blade does not effect scram times as documented in the Technical Specifications.

MODIFICATION M12-2-85-3

Replace Main Steam Line Snubbers

The change involved replacing the nine (three each on lines B, C and D) PSA-10 snubbers on the main steam lines with the larger PSA-35 snubbers. Experience has shown that the smaller snubbers are not capable of handling some of the operating transient loads, therefore replacement is an adequate action.

The safety evaluation concluded that the margin of safety is increased by installation of the higher rated snubbers.

MODIFICATION M12-2-85-46

Install Inlet and Outlet Pressure Gauges on Service Water to the 2B LPCI Heat Exchanger

The change involved adding permanent pressure gauges to existing taps on the inlet and outlet service water lines of the 2B LPCI heat exchanger to provide monitoring capabilities during routine surveillances of the LPCI system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-85-47

Install Inlet and Outlet Pressure Gauges on Service Water to the 2A LPCI Heat Exchanger

The change involved adding permanent pressure gauges to existing taps on the inlet and outlet service water lines of the 2A LPCI heat exchanger to provide monitoring capabilities during routine surveillances of the LPCI system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-85-50

Install Pressure Gauge in the Suction Line of the Unit 2 Diesel Generator Cooling Water Pump

The change involved the addition, by cutting and welding, of a 1/2" tap to the existing 3" suction line of the D/G CW pump and adding an isolation valve and pressure gauge to facilitate inspection of the system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2-85-51

Install Pressure Gauges on the Suction Line of the Closed Cooling Water (CCSW) Pumps

The change involved the addition of a pressure gauge on an existing tap on each of the four CCSW pumps to monitor pump performance.

The safety evaluation concluded that the margin of safety is maintained.

MODIFICATION M12-2-85-54

Seal the Solenoid Connecting Conduit for the Safety/Relief Valves

The change involved the application of "Ray Chem" nuclear grade, environmentally qualified sealing compound to the Unit 2 safety/relief valves.

The safety evaluation concluded that the margin of safety remains as originally designed.

MODIFICATION M12-2-85-71

Replace the Wiring for the Electromatic Relief Valve Temperature Element

The change involved replacing the thermocouple wiring on ERV 2-203-3D temperature element 2-261-14D. This was accomplished because the wiring was found to be defective.

The safety evaluation concluded that the margin of safety is not reduced.

UNIT 2/3

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION M12-2/3-78-4

Upgrade the Fire Suppression and Fire Detection Systems

The change involved adding sprinkler systems, smoke detectors and local fire alarm panels in the Reactor and Turbine Buildings of both units. This was accomplished to upgrade the fire suppression and fire detection systems as specified to meet NML and NRC standards.

The safety evaluation concluded that the margin of safety is increased by upgrading the systems.

MODIFICATION M12-2/3-79-02

Provide Temporary Electrical Supply for the Mark I Containment Project

The change involved boring a hole in the south wall of the Reactor Building and installing a temporary 277/480 VDC electrical feed for the Mark I Containment project.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-80-13

Provide a High Range Noble Gas Monitoring on the 2/3 Chimney

The change involved installing a high range noble gas effluent monitoring system on the 2/3 chimney per NUREG-0578, Section 2.1.8.b.2 and TMI commitments.

The safety evaluation concluded that the margin of safety is increased because the system is now redundant.

MODIFICATION M12-2/3-81-2

Install Synchronization Protection in the Manual Close Circuit of the 2/3 Diesel Generator

The change involved adding a HACR-1 solid state synchronizing check relay in the manual close diesel generator circuit to preclude closing the diesel generator out-of-phase into the grid system.

The safety evaluation concluded that the margin of safety is increased because availability of the diesel generator is increased.

MODIFICATION M12-2/3-81-18

Revise the Circuitry of the 2/3 Reactor Building Overhead Crane to Prevent Further Hoisting when the Radiation Monitor is in the Alarm State

The change involved revising the slow-speed motor circuitry of the 2/3 Reactor Building overhead crane to prevent further hoisting when the radiation monitor alarms. The main speed motor already has this facility. In addition, the radiation monitor bypass switch was replaced with a G.E.-CR2940 selector switch and a light which is visible from the refueling floor when the radiation monitor is in the bypass position.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-81-23

Install a Separate and Permanent Electrical Feed to the 2/3-C Heating Boiler Feed Pump

The change involved the permanent installation of an electrical feed to the 2/3-C heating boiler feed pump. In the past, leads were swapped between feed pumps, which is an unsafe practice. For this reason and the frequent need of the 2/3-C feed pump, this modification was accomplished.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-82-5

Remove the "NMC" Reactor Vent Stack Noble Gas Monitors and Associated Alarms

The change involved removing the "NMC" Rx vent stack noble gas monitors and associated alarms (installed under Modification M12-2/3-78-14) and reconnecting the Rx Building vent stack flow transmitter to the vent stack SPING. This was accomplished to ensure proper operation of the SPING system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-82-6

Relocate and Replace the Maximum Recycle Concentrator Recirculation Pump Bearing Temperature Recorder and Add Equipment so that Both Pumps can be Monitored

The change involved replacing the named recorder and relocating it in the Radwaste Control Room to facilitate surveillance of the bearing temperature. Also, add thermocouples and equipment to monitor the temperature on both pumps, rather than just one pump.

The safety evaluation concluded that the margin of safety will not be reduced.

MODIFICATION M12-2/3-82-12

Construct a Two Story Building Between Old Administration Building and the South Auxiliary Bay

The change involved the construction of a two story building with facilities for the Shift Engineers' Office, locker rooms, Radiation Protection

Department Offices and a personnel decontamination area.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-82-23

Install Immersion Heaters in the Spirahoff, Secondary Final Settling Tank

The change involved the installation of 2, 9 immersion heaters in the Spirahoff, secondary final settling tank, electrical feed to the heaters, and a control circuit in the Radwaste Control Room. This was accomplished to maintain a temperature above 60°F so that the bacteria can break down the sewage.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-83-7

Install Assembly Warning Lights in Unit 2 and Unit 3 High Radiation Sampling System (HRSS) Buildings

The change involved the addition of red, flashing warning lights in both HRSS Buildings to alert personnel of an assembly in progress, per Appendix R commitments. This was accomplished because when the door is closed, personnel in the HRSS Buildings may not hear the warning siren.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-83-16

Provide Local Control and Isolation to the 2A, 2B, 3A, 3B, and the 2/3 Service Water Pumps

The change involved the addition of wiring and circuitry to the five service water pumps in the 2/3 cribhouse to provide local control and isolation, per Appendix R commitments. This was accomplished to reduce the possible consequence of a fire in various areas of the plant and to enable the use of the isolation condenser for safe shutdown.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-83-22

Install Piping and Valves to Allow Operating the Maximum Recycle Demineralizers in Series

The change involved the addition of 4" stainless steel piping by cutting and welding from the A and B maximum demineralizers to the A and B distillate tank floor drain filter to allow series operation of the system. By running the trains in series one would "scrub" and the others "polish" the waste.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-83-25

Install Manual Isolation Valves on the A and B Concentrated Waste (CW) Transfer Pipe to Main Concentrated Waste Tank

The change involved the addition, by cutting and welding, of manually operated isolation valves on the A and B CW transfer tank piping to the main CW tank. This was accomplished to alleviate plugging in the long leg of piping to the isolation valves in the Radwaste megganine.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-83-28

Remove the Standby Gas Treatment Heater High Temperature Reset Switches

The change involved removing the named switches and revise the wiring as necessary. This was accomplished to eliminate a potential for damage to the heaters.

the safety evaluation concluded that the safety margin is not reduced.

MODIFICATION M12-2/3-84-9

Install New Conduit and Re-route Cables for Separations of Division I and Division II Control Room Breathing Air Pressure Switches

The change involved the installation of new conduit and re-routing of existing cables of the Division I and Division II Control Room breathing air pressure switches. This was accomplished to provide proper separation of the Division I and II cables.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-84-56

Install Fire Stops in 2/3 Cribhouse Basement

The change involved the installation of two firestops in the 2/3 cribhouse basement cable trays per ECN #D84E-05. This was accomplished to prevent fires from spreading in the cable trays from one area to another in the event of fire so that the plant can be shutdown safely.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-84-63

Replace the Standby Gas Treatment Fan Motors

The change involved replacing the SBTG fan motors 2/3-A-7506 and 2/3-B-7506 with environmentally qualified motors per I.E. Bulletin 79-01B.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-2/3-84-70

Provide Local Indication of Fire Pump Isolation Valve MO-2/3-4101

The change involved the attachment of an indicating rod on the end of the 2/3-4101 valve stem to provide local indication of valve position.

The safety evaluation concluded that the margin of safety is not reduced.

AMENDMENTS TO FACILITY LICENSE

DPR-25 (UNIT 3) OR ASSOCIATED

TECHNICAL SPECIFICATIONS

AMENDMENTS # 67 and #68

On November 11, 1983, the Nuclear Regulatory Commission issued Amendments #67 and #68 to the Dresden Facility License No. DPR-25. The following is a resume of the changes in the license for incorporation of the amendments:

Amendments #67 and #68 states response verification above 20% power of control rod drives that have experienced uncoupling and no response is disseamable on nuclear instrumentation; also, the ECCS limitations imposed on the torus ring header snubbers during installation of the Mark I torus attached piping modification.

AMENDMENTS #69, #70 and #71

On December 12, 1983, the Nuclear Regulatory Commission issued Amendments #69, #70 and #71 to the Dresden Facility License No. DPR-26. The following is a resume of the changes in the license for incorporation of the amendment:

Amendments #69, #70 and #71 state expected response time verification of the HPCI steam line high flow surveillance during a refueling outage; also, clarification of the control rod drives' scram time surveillances.

AMENDMENTS #72, #73 and #74

On February 14, 1984, the Nuclear Regulatory Commission issued Amendments #72, #73 and #74 to the Dresden Facility License No. DPR-25. The following is a resume of the changes in the license for incorporation of the amendment:

Amendments #72, #73 and #74 provide specification and surveillance requirements to ensure operability of the RPS bus electrical power assemblies. Each channel from either overvoltage, undervoltage or underfrequency will trip the associated MG set or alternate power source per reference letter T. Rausch to H. Denton, dated 02-04-83; also, the inclusion of Technical Specification page #43 that was inadvertently omitted from Amendment #71.

AMENDMENT #75

On September 4, 1984, the Nuclear Regulatory Commission issued Amendment #75 to the Dresden Facility License No. DPR-25. The following is a resume of the changes in the license for incorporation of the amendment:

Amendment #75 is the complete Technical Specification re-issue in the new format.

AMENDMENTS #76, #77 and #78

On February 27, 1985, the Nuclear Regulatory Commission issued Amendments #76, #77 and #78 to the Dresden Facility License No. DPR-25. The following is a resume of the changes in the license for incorporation of the amendments:

Amendments #76, #77 and #78 state surveillance requirements of reactor water level instrumentation and control rod drive scram discharge volume instrumentation; also, RETS requirements and surveillance activities; and also, snubber surveillance requirements.

AMENDMENT #79

On March 15, 1985, the Nuclear Regulatory Commission issued Amendment #79 to the Dresden Facility License No. DPR-25. The following is a resume of the changes in the license for incorporation of the amendment:

Amendment #79 states changes to the administration control requirements and to reportability requirements in Section 6.0 of the Technical Specifications.

AMENDMENTS #80, #81 and #82

On May 30, 1985, the Nuclear Regulatory Commission issued Amendments #80, #81 and #82 to the Dresden Facility License No. DPR-25. The following is a resume of the changes in the license for incorporation of the amendments:

Amendments #80, #81 and #82 state the reactor coolant chemistry dose equivalents and their associated surveillance requirements; also, limiting conditions for use and surveillance requirements of all the station battery systems; and also, the ECC surveillance requirements.

AMENDMENT #83

On June 24, 1985, the Nuclear Regulatory Commission issued Amendment #83 to the Dresden Facility License No. DPR-25. The following is a resume of changes in the license for incorporation of the amendment:

Amendment #83 states post-accident monitoring instrumentation requirements and associated surveillance requirements.

AMENDMENT #84

On September 17, 1985, the Nuclear Regulatory Commission issued Amendment #84 to the Dresden Facility License No. DPR-25. The following is a resume of changes in the license for incorporation of the amendment:

Amendment #84 deleted the equalizer valve restriction between the recirculation loop piping.

AMENDMENT #85

On December 12, 1985, the Nuclear Regulatory Commission issued amendment #85 to the Dresden Facility License No. DPR-25. The following is a resume of the changes in the license for incorporation of the amendment:

Amendment #85 states fuel pool storage reactivity limits of the new 9x9 fuel element, storage of new fuel requirements and associated surveillance requirements.

UNIT 3

OTHER CHANGES, TESTS AND EXPERIMENTS

MODIFICATION M12-3-79-20

Install Torus Support Saddles for Mark I Containment Program

The change involved the addition of sixteen saddle type supports welded to the torus shell at the torus ring headers. Also, to enlarge the torus basement access hatches to facilitate installation of the saddles.

The safety evaluation concluded that the margin of safety is increased with respect to hydrodynamic loads.

MODIFICATION M12-3-79-23

Install Trip Logic Circuits to "A" and "B" Recirculation Pumps ATWS and ARI Systems

The change involved cutting and welding the existing 1" air lines to provide a faster means for the initiation of the ATWS and ARI systems. Also, the addition of new solenoid valves and relocation of the seal-in contacts.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-3-79-49

Install Seismic Restraints as Required by I.E. Bulletins 79-02 and 79-14

The change involved the addition of hangers on all safety related systems and were designed to mitigate failure due to seismic loadings. Normal operation of the systems were not affected in any way.

The safety evaluation concluded that the systems' design and function remains unchanged.

MODIFICATION M12-3-80-11

Replace Existing Watt and Var Transducers for the Main Generator Metering with an Improved/Combined Watt/Var Transducer

The change involved replacing the existing separate Watt and Var Main Generator transducers with an improved and combined Watt/Var transducer to improve metering accuracy and replacing the scaling resistors in the Control Room and Data Acquisition Cabinet in the Auxiliary Electric Room.

the safety evaluation concluded that this modification will not affect any safety related equipment.

MODIFICATION M12-3-80-19

Provide a Reactor Coolant and Containment Atmosphere Sampling System

The change involved designing and installing a sampling system for the reactor coolant and primary containment atmosphere per NUREG-0578. This included a new building to house the system, re-routing sample lines, proper disposal of effluent and connection of the new building to airlock.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-3-80-34

Install a Second Undervoltage Relay Package on the 4 KV ESS Buses

The change involved installing undervoltage relays, time delay relays, auxiliary relays and test switches on the 33-1 and 34-1 ESS switchgear to provide a second undervoltage system on the diesel generator to protect against a degraded voltage condition.

The safety evaluation concluded that this addition will not affect the diesel generator starting in an emergency and will time out in 10 seconds if not required.

MODIFICATION M12-3-81-18

Install a Seismically Qualified, Redundant Voltage Protection Relay on the RPS MG Set

The change involved the addition of seismically qualified Class IE relays at the RPS MG set and power supply interface to preclude any single component failures and postulated component malfunctions. This redundant addition will provide necessary protection to the RPS should the event occur.

The safety evaluation concluded that the margin of safety, as defined in the Technical Specifications, is actually increased.

MODIFICATION M12-3-81-22

Install a Sudden Pressure Inhibit Relay Package on the Main Power Transformer

The change involved adding an ASEA relay package which prevents erroneous tripping of the Unit 3 generator for faults close to, but external to the main power transformer. Additionally, a second set of differential relays are a backup relaying system when the operation of the sudden pressure relay is inhibited.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-3-81-25

Replace the Existing Vickers Solenoids with Parker-Hannifin Solenoids on the Main Turbine Control Valves

The change involved replacing the existing solenoids on the main turbine control valves with new Parker-Hannifin (wet armature type) solenoids. These new solenoids incorporate a pressure switch for the RPS circuitry.

The safety evaluation concluded that the margin of safety is increased.

MODIFICATION M12-3-81-28

Provide Undervoltage Sensors at the D.C. Load Bus on the 125 VDC System

The change involved replacing the existing sensors with new voltage indicators and undervoltage alarms on the 125 VDC battery system.

The safety evaluation concluded that the margin of safety is increased because the new system will assure an adequate state of charge exists on the station batteries at all times.

MODIFICATION M12-3-81-29

Provide Undervoltage Sensors at the D.C. Load Bus on the 250 VDC System

The change involved replacing the existing sensors with new voltage indicators and undervoltage alarms on the 250 VDC battery system.

The safety evaluation concluded that the margin of safety is increased because the new system will assure an adequate state of charge exists on the station batteries at all times.

MODIFICATION M12-3-81-38

Install Low Flow Sensor Switches on the Generator Stator Cooling System

The change involved adding low flow sensor switches on the stator cooling system and wiring them to the existing runback circuitry utilized by the system. These differential pressure devices, connected across the orifice in the generator water feed line would sense low flow and improve the generator cooling system safety.

The safety evaluation concluded that the margin of safety is not affected.

MODIFICATION M12-3-82-2

Install a Low Level Alarm on the HPCI Gland Seal Condenser/Hotwell Pump

The change involved installing a low level alarm on the hotwell so that when the HPCI pump is running and the low hotwell level alarm annunciates, the operator can manually shut off the HPCI pump. Also, a jumper was removed from the local stop switch so the pump can be shut off locally.

The safety evaluation concluded that the margin of safety is not reduced and reliability of the system will be maintained.

MODIFICATION M12-3-82-3

Provide Undervoltage Sensors at the D.C. Load Bus on the 24/48 VDC System

The change involved replacing the existing sensors with new voltage indicators and undervoltage alarms on the 24/48 VDC battery system.

The safety evaluation concluded that the margin of safety is increased because the new system will assure an adequate state of charge exists on the station batteries at all times.

MODIFICATION M12-3-82-11

Install Temperature and Flow Indicators Across the Unit 3 Diesel Generator Heat Exchangers for Local Indication

The change involved the addition of sensors for temperature and directional flow on the diesel generator heat exchanger piping, including cutting and welding, re-routing the cooling water flow from the bottom to the top of the heat exchangers and replacement of the diesel generator cooling water pump check valve.

The safety evaluation concluded that the margin of safety is increased by providing a positive indication of cooling water flow.

MODIFICATION M12-3-82-14

Install Pressure Relief Protection on the MG Set Oil Coolers

The change involved installing 150 psi relief valves on the recirculation MG set oil coolers in place of one of the four cathodic protection devices on each cooler.

the safety evaluation concluded that the margin of safety is improved.

MODIFICATION M12-3-82-15

Replace the +0 to -60 Yarway Indication and Feed the New Indicators from the ATWS System

The change involved replacing the old +60" to -60" yarway indicators with ELL1151BV indicators to improve accuracy of the Control Room indication. These new indicators will be fed from the ATWS system. This allows maintenance and calibration of the equipment during operation, rather than during an outage.

The safety evaluation concluded that the increased accuracy enhances safety.

MODIFICATION M12-3-82-24

Replace the Rx Vessel Feedwater Flow Recorder

The change involved replacing the GEMAC feedwater flow recorder with a new and more reliable WESTRONICS dual pen feedwater flow recorder.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-82-25

Replace the Rx Building Vent Monitor Recorder

The change involved replacing the GEMAC Rx Building vent monitor recorder with a new and more reliable WESTRONICS dual pen Rx Building vent monitor.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-82-36

Install a Containment High Radiation Monitor Failure Alarm

The change involved adding an alarm in the 902-55 and -56 Control Room consoles for an annunciation in the event of failure or loss of signal from the containment hi-rad monitors. This was accomplished by connecting the failure contacts of the hi-rad monitors to a spare alarm.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-82-38

Install Relays to Protect Diesel Generator During Surveillance Tests and Provide Underfrequency Trip Bypass During Auto-Start Operation

The change involved specific wiring changes and the addition of relays in the trip and alarm circuits of the diesel generator to provide protection during surveillance testing and during auto-start conditions.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-82-41

Install Isolation Valves for Maintenance of HPCI Valve 3-2301-31

The change involved adding manual isolation valves on both sides of the HPCI 3-2301-31 drain pot bypass valve for maintenance.

The safety evaluation concluded that the margin of safety is not affected.

MODIFICATION M12-3-82-42

Replace the Negative Sequence Relay on the Main Generator Protective Relaying System

The change involved replacing the existing type INC negative sequence relays with the more advanced type SGC relays. This was accomplished because the new relays expand negative sequence protection to include practically all single phasing conditions as well as all fault conditions on the system.

The safety evaluation concluded that the margin of safety is not affected.

MODIFICATION M12-3-82-46

Install an Alarm in the Control Room when a X-Area Cooler Trips

The change involved adding auxiliary contacts in the x-area cooler motor and an annunciator in the Control Room that will alarm when a motor or electrical feed to a motor (or all cooler motors) would fail. This was done to alert the operators to a potential x-area cooler problem.

The safety evaluation concluded that safety is not reduced.

MODIFICATION M12-3-82-47

Rewire Drywell Equipment Drain Pumps to Start with the 2001-5 and 2001-6 Valves Closed

The change involved rewiring the logic circuit of the drywell equipment drain pumps to allow cooling the pump with valves 2001-5 and 2001-6 closed and with valve 2001-3 open.

The safety evaluation concluded that the margin of safety is not affected by this modification.

MODIFICATION M12-3-82-49

Install a Second Isolation Valve Downstream of Single Isolation Valve on Core Spray and LPCI LLRT Taps

The change involved the installation, by cutting and welding, of a second isolation valve downstream of CS valves 3-1401-A and 3-1401-B, and LPCI valves 3-1570-A and 3-1570-B. This was accomplished because of an NRC request for double isolation valves per SEP Topic VI-4.

The safety evaluation concluded that the margin of safety is increased through the addition of the second valve.

MODIFICATION M12-3-82-50

Install Vent and Drain Lines with LLRT Isolation Valves on the RBCCW Drywell Cooler Supply Line

The change involved installing, by cutting and welding, a vent and a drain line with two isolation valves each for the RBCCW drywell cooler supply line. This was accomplished to provide LLRT taps for the RBCCW supply line.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-82-51

Install a Safety Relief Valve (SRV) Logic System

The change involved adding time delay and auxiliary relays on the electro-matic relief valve to inhibit opening the valve after actuation until a

10 second interval has elapsed. Also, the setpoints of the SRV's were rearranged to accommodate the time delay of the SRV logic.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-82-55

Replace the AO 3-0302-6A CRD Pump Discharge Flow Control Valve

The change involved replacing, by cutting and welding, the above named valve. This was accomplished to provide a valve that has better flow control capabilities and improves overall performance of the CRD hydraulic system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-83-2

Provide Double Isolation Capabilities on RWCU LLRT Test Tap

The change involved cutting and welding on the LLRT test tap of line 3-1201-10" A which included replacing the existing 3-1299-13 valve and adding a second isolation downstream. This was accomplished because of an NRC request for double isolation valves per SEP Topic VI-4.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-83-4

Install Suction Isolation Valves for the Gland Seal Leak-Off (GSLO) Pump to Enable Pump Maintenance with HPCI In-Service and Install Isolation Valves for HPCI Drain Pot Level Switch

The change involved adding test taps and isolation valves for the GSLO pump and the HPCI drain pot level switch, by cutting and welding, to allow for maintenance without taking HPCI out-of-service.

The safety evaluation concluded that the margin of safety is not effected by this modification.

MODIFICATION M12-3-83-14

Replace the Existing 24/48 VDC Batteries

The change involved replacing the existing 96 Gould DPR-19 batteries with 96 Gould #2-MCX-190 lead-calcium batteries and replacing the battery racks with seismic racks for the physically larger batteries.

The safety evaluation concluded that the margin of safety is increased because we upgraded from an 80 ampere-hour to a 190 ampere-hour capacity.

MODIFICATION M12-3-83-15

Modify 3C Reactor Feed Pump (RFP) Vent Damper to Provide Vent Fans with a Flow Path When All Three Feed Pumps are Off

The change involved rewiring the 3C RFP vent damper and adding air lines to allow for an air flow path when all three RFP's are off.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-83-21

Revise Annunciation for the HPCI 125 VDC Control Power

The change involved revising the HPCI 125 VDC loss of power annunciation to provide alarms from both the main and reserve feeds. The rewiring and addition of relays provide a means to monitor the status of both the main and reserve feeds.

The safety evaluation concluded that safety is not reduced.

MODIFICATION M12-3-83-31

Replace Eight Control Rod Blades in Unit 3 Reactor

The change involved replacing four G.E. control rod blades with four ASEA-ATOM control rod blades that contain boron carbide power throughout the length of the blade. Also, replacing four G.E. control rod blades with ASEA-ATOM control rod blades containing boron carbide powder and the tip section containing hafnium. The eight blades were placed in specified sections of the core and were provided by EPRI for research.

The safety evaluation concluded that the margin of safety is not reduced because the ASEA-ATOM blades are not prone to the same failure mechanism as the presently installed blades.

MODIFICATION M12-3-83-34

Install a Check Valve in the Torus Water Transfer Line

The change involved adding, by cutting and welding, a check valve in the torus water transfer line downstream of valve 3-1599-73 to prevent back flow on the line.

The safety evaluation concluded that safety is not reduced.

MODIFICATION M12-3-83-45

Install a Bypass Line Around the Stator Cooler Service Water Discharge Valve

The change involved by cutting and welding a 1" bypass line around the stator cooler service water discharge valve and flange. This was accomplished to keep a 75 gpm flow of water thru the cooler to preclude tube pitting, which occurs from the stagnant service water in the tubes.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-83-51

Installation of Manual Isolation Valves on Both Sides of Auxiliary Drain Pot Valve 3-2301-32

The change involved installing, by cutting and welding, two manual isolation valves on both sides of auxiliary drain pot valve 3-2301-32. This was accomplished to provide maintenance facilities for the solenoid operated drain pot valve on the 1" drain lines.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-83-59

Provide a Reliable "Auto-Reset" Reset Logic for the Relay Race Between Relays K113A(B) and K103A(B) on the ATWS System

The change involved rewiring the logic circuit from a parallel circuit to a series circuit and thus allow proper operation during and after an ATWS signal.

The safety evaluation concluded that the margin of safety is not reduced because reliability is increased.

MODIFICATION M12-3-84-73

Provide New Power Source for CCSW II Instrumentation

The change involved wiring in a new circuit to provide redundant electrical supplies to CCSW I and II systems for independent redundancy of the LPCI system.

The safety evaluation concluded that the margin of safety is increased due to improved reliability of the LPCI system.

MODIFICATION M12-3-84-79

Replace the AS11 Control Card with Control Card BC1 and Replace Resistor R5 with a 2400 ohm (1 watt) Resistor on the 24/48 VDC Battery Charger

The change involved replacement of the two named items and enables the system to operate in a more compatible manner with the battery charger.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-85-37

Re-route Unit 3 Sprinkler System in the Turbine Trackway

The change involved raising, by approximately two feet, the fire sprinkling system in the Unit 3 turbine trackway. This was accomplished to accommodate the upcoming main turbine low pressure rotor replacement during the refueling outage.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-85-46

Install Inlet and Outlet Pressure Gauges on Service Water to the 3B LPCI Heat Exchanger

The change involved adding permanent pressure gauges to existing taps on the inlet and outlet service water lines of the 3B LPCI heat exchanger to provide monitoring capabilities during routine surveillances of the LPCI system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-85-47

Install Inlet and Outlet Pressure Gauges on Service Water to the 3A LPCI Heat Exchanger

The change involved adding permanent pressure gauges to existing taps on the inlet and outlet service water lines of the 3A LPCI heat exchanger to provide monitoring capabilities during routine surveillances of the LPCI system.

The safety evaluation concluded that the margin of safety is not reduced.

MODIFICATION M12-3-85-51

Install Pressure Gauges on the Suction Line of the Closed Cooling Service Water (CCSW) Pumps

The change involved the addition of a pressure gauge on an existing tap on each of the four CCSW pumps to monitor pump performance.

The safety evaluation concluded that the margin of safety is maintained.

GLOSSARY

The following is a list of abbreviations which may appear in this report:

<u>ADS</u>	- Automatic Depressurization System
<u>AO</u>	- Pneumatic Operated Valve (Air Operated)
<u>APLHGR</u>	- Average Planar Linear Heat Generation Rate
<u>APRM</u>	- Average Power Range Monitor
<u>ARI</u>	- Alternate Rod Injection
<u>ARMS</u>	- Area Radiation Monitoring System
<u>ATWS</u>	- Anticipated Transient Without Scram
<u>BKR</u>	- Motor Control Center or Bus Breaker
<u>CAD/CAM</u>	- Continuous Air Dilution/Continuous Air Monitoring
<u>CCSW</u>	- Containment Cooling Service Water Pump
<u>CS</u>	- Core Spray
<u>CRD</u>	- Control Rod Drive
<u>CTP</u>	- Core Thermal Power
<u>CW</u>	- Concentrated Waste
<u>D/G</u>	- Diesel Generator
<u>DPLS</u>	- Differential Pressure Indicating Switch
<u>ECCS</u>	- Emergency Core Cooling System
<u>EGC</u>	- Economic Generation Control
<u>EHC</u>	- Electro-Hydraulic Control
<u>EQ</u>	- Environmentally Qualified
<u>ESS</u>	- Essential Service System
<u>FIC</u>	- Flow Indicating Controller
<u>FPC</u>	- Fuel Pool Cooling
<u>FSAR</u>	- Final Safety Analysis Report
<u>FW</u>	- Feedwater

GSLO - Gland Seal Leak Off
HO - Hydraulic Operated Valve
HPCI - High Pressure Coolant Injection System
HRSS - High Radiation Sampling System
HVAC - Heating, Ventilation, and Air Conditioning
HVPS - High Voltage Power Supply
ILTR - Integrated Leak Rate Test
IRM - Intermediate Range Monitor
LHGR - Linear Heat Generation Rate
LLRT - Local Leak Rate Test
LPCI - Low Pressure Coolant Injection System
LPRM - Local Power Range Monitor
LTPF - Limiting Total Peak Factor
MAPLHGR - Maximum Average Planar Linear Heat Generation Rate
MCPR - Minimum Critical Power Ratio
MG - Motor Generator
MO or MOV - Electric Motor Operated Valve
MSIV - Main Steam Isolation Valve
MSL - Main Steam Line
MSLHR - Main Steam Line High Radiation
MSV - Main Stop Valve
OBE - Operation Base Earthquake
RBCCW - Reactor Building Closed Cooling Water System
RBM - Rod Block Monitor
RETS - Radiological Effluent Technical Specifications
RM - Remotely Operated Manual Valve
RPIS - Control Rod Position Indication System
RPS - Reactor Protection System

RWCU - Reactor Water Cleanup
RWM - Rod Worth Minimizer
SBLC - Standby Liquid Control System
SCRE - Shift Control Room Engineer
SDV - Scram Discharge Volume
SER - Safety Evaluation Report
SGTS - Standby Gas Treatment System
SJAE - Steam Jet Air Ejector
SO - Solenoid Operated Valve
SPING - System Particulate Iodine and Noble Gas
SRM - Source Range Monitor
SRDV - Safety Relief Valve Discharge
SSG - Secondary Steam Generator
TBCCW - Turbine Building Closed Cooling Water System
TIP - Traversing In-Core Probe
TPF - Total Peaking Factor
 a Meter - Micro Micro Ammeter Nuclear Instrument