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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
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1987 CHANGES TO THE FACILITY REPORT

Gentlemen:

In accordance with 10CFR50.59(b)(2), Carolina Power and Light Company (CP&L) furnishes the enclosed report of changes to the H. B. Robinson facility as described in the Final Safety Analysis Report. This report contains brief descriptions of modifications to the Plant and a summary of the safety evaluation of each. There were no procedures, tests, or experiments conducted during 1987 which require reporting in this document.

Very truly yours,

R. E. Morgan
H. B. Robinson S. E. Plant

RDC:jch

Enclosure

cc: Dr. J. N. Grace
Mr. L. W. Garner

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CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modifications 807C and 807D: Emergency Response Facility Information System (ERFIS)

DESCRIPTION: The ERFIS is a passive information gathering and display system. The installation of this system meets the requirements of 10CFR50.47(b), NUREG-0737, Supplement 1, and the Standard Review Plan 18.2. This system is necessary to aid operators in evaluation of emergency operation of the nuclear plant.

SAFETY SUMMARY: ERFIS is a passive information gathering, retrieval, calculating, and display system with no control functions. The digital and analog signals interface with the CPU through fiber-optic cables, thus providing isolation of safety-related circuits. ERFIS provides control room operators with real-time information of plant conditions, and thus, the capability for timely and appropriate action under accident conditions.

FSAR REFERENCE: Sections 7.7 and 8.3.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-86-076: Design Change to Replace Condensate Recirculation Valve and Add a Strainer

DESCRIPTION: An upgrade to the condensate pumps resulted in an increased system pressure during low flow conditions. This caused water hammer and excessive vibration to occur in the system piping. In order to eliminate this condition, the Condensate Recirculation Valve (FCV-1446) was replaced with a valve that would pass sufficient flow at a large pressure drop. A strainer was added upstream of the valve to remove any debris from the system created by the additional flow.

SAFETY SUMMARY: This piping change affected a non-Q system. There are no Q-systems in the immediate vicinity of the Condensate Recirculation Valve that would be damaged by pipe destruction during a seismic event. The FSAR was affected only in that the strainer added upstream of the valve was reflected on the Condensate System flow diagram.

FSAR REFERENCE: Figure 10.1.0-4.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-87-060: Replacement of Primary and Demineralized Water Makeup System Valve.

DESCRIPTION: Replace-in-Kind of a Demineralized Water System Valve to improve isolation capability.

SAFETY SUMMARY: A globe valve in service application DW-301 was replaced with a gate valve. The replacement valve meets or exceeds the design parameters of the service application, while providing better isolation capability at that location. This valve application is in a non-Q system. The FSAR flow diagram was revised to reflect the new valve type.

FSAR REFERENCE: Figure 9.2.3-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 900: Relocate Steam Generator Blowdown Dump Line

DESCRIPTION: This modification installed a Steam Generator Blowdown (SGB) System bypass line around the SGB drain tank. This bypass allowed low-flow blowdown to be dumped directly to the Condenser via the Steam Dump System, preventing oxygenated water from being reused in the Condensate System. High-flow blowdown continues to be dumped to the SGB Drain Tank and dumped via the circulating water system. The energy input from low-flow blowdown does not adversely affect condenser capacity since the energy input is insignificant compared to exhausted main steam

SAFETY SUMMARY: The new piping, fittings, and hangers are non-safety-related, and their failure cannot adversely affect another system important to safety. Although a rupture in the SGBDT bypass would result in some loss of Steam Generator level, the maximum blowdown flow rate is limited by Steam Generator nozzle size and a flow restriction orifice. Therefore, the possibility of creating a Steam Generator low-low level has not increased. Thus, this modification did not represent an unreviewed safety question.

FSAR REFERENCE: Page 16.4.7-1, Figure 10.1.0-2 and 10.1.0-8.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 898: Radiation Monitor System Upgrade

DESCRIPTION: This modification replaced and upgraded the Steam Generator Blowdown Monitor (R-19) to three separate detectors (one for each Steam Generator) and provided control room recording for the Main Stack Monitor (R-34). In addition, the Radiation Monitor Control Room annunciator was modified to reflash to allow for positive indication of all radiation monitoring channels at any time. This modification was installed to comply with the requirements of Regulatory Guide 1.97.

SAFETY SUMMARY: This modification installed a radiation monitor for each Steam Generator, eliminating the need for a common header to detect total activity present in the blowdown. The individual monitors provide the same functions as the orignal monitor and, therefore, does not affect the safety evaluation for the system. Addition of the monitors and indication does not increase the probability of airborne activity within the areas associated with the ventilation system.

FSAR REFERENCE: Section 10.4.7, 11.5.1, 11.5.2, Figures 10.1.0-8, 1.2.2-5, 1.2.2-9.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 912: Pressurizer PORV Block Valve Replacement

DESCRIPTION: This modification replaced PORV Block Valves RC-535 and RC-536. The old valves had become worn to the point that further repair to the valve seats was not possible. The new valves' location and electrical connections are identical to the original valves, and are qualified for use by NUREG-0737.

SAFETY SUMMARY: The electrical controls, piping material and structural requirements, and valve operator designs were reviewed to ensure continued design parameter compatibility. The modification did not adversely affect the function of the PORV Block Valves to isolate flow should a PORV stick open or leak excessively. Therefore, this modification did not present a hazard to any Plant system. The FSAR was revised since the new block valves pressure boundaries are not designed to the old codes which were referenced in FSAR Section 5.2.3.

FSAR REFERENCE: Page 5.2.3-5, 3.5.1-4.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 891: Letdown Line Relief Valve Replacement

DESCRIPTION: This modification replaced the Chemical and Volume Control System Letdown stop valves with new valves, and relocated the letdown stop valves outside the "A" Reactor Coolant Pump bay. A manual isolation valve was installed in the letdown line outside the pump bay. The purpose of this modification was to relieve maintenance problems experienced with the letdown stop valves and to reduce radiation exposure associated with that maintenance.

SAFETY SUMMARY: The limit switches and solenoid valve on each replacement letdown stop valve were mounted identically to the original valve. The letdown line was evaluated to ensure compliance with seismic requirements. Relocation of the valves outside the missile barrier reduced the possibility of valve damage due to missiles. The FSAR was revised to reflect the relocation of the letdown stop valves and the addition of the manual isolation valve.

FSAR REFERENCE: Section 5.2.5, 9.3.4, Figure 6.2.4-8, 9.3.4-1, 5.1.2-1

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 901: Main Feedwater Pump Recirculation Line Improvement

DESCRIPTION: This modification replaced the line piping and the control valves (FCV-1444 and FCV-1445) that open in the event of a Main Feedwater Pump Trip. This modification was necessary to reduce thrust loads that occur with valve opening. In addition, it is intended to eliminate seat corrosion and subsequent leakage during line use.

SAFETY SUMMARY: The areas of the Feedwater System directly pertaining to this modification are not safety-related and failure would not affect safe shutdown of the Plant. The piping and components are located in close proximity to the replaced piping and components. The new equipment is similar in operational logic and function to the replaced equipment, and there is no increase in probability of equipment failure. No safety margin was reduced by this modification. The FSAR was revised to reflect the location of the new line and valves.

FSAR REFERENCE: Figure 10.1.0-6.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 902: Feedwater Recirculation to Condensate Pump - Valve and Piping Upgrade

DESCRIPTION: The purpose of this modification was to upgrade the valves and piping of the Feedwater Recirculation system. In addition, this modification provided a means of dumping excess gland steam into the Main Condenser.

SAFETY SUMMARY: This modification upgraded the Feedwater Recirculation system to allow for the removal of corrosion product buildup in various secondary systems, thereby enhancing Steam Generator reliability. This system replaced the existing recirculation system and is not safety-related.

FSAR REFERENCE: Page 10.4.6-1, 10.4.7-1, Figure 10.1.0-2, 10.1.0-4, 10.1.0-5, 10.1.0-8.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-86-135: Replacement Cooling Coils for HVH-6A&B

DESCRIPTION: HVH-6A&B (Safety Injection and Containment Vessel Spray Pump Area Cooling Units) cooling coils were replaced with coils that had a different fin surface design. The replacement coils provided greater heat transfer efficiency while maintaining the same fit and form of the original coils. This design reduced the per unit air flow from 16,600 cfm to 16,000 cfm due to the increased fin surface area.

SAFETY SUMMARY: Replacement of the HVH-6A&B cooling coils did not reduce the margin of safety since the new coils served the same fit, form, and function of the original coils. The new coils provide greater heat transfer efficiency, although the new design reduced the air flow by 600 cubic feet. However, even though the air flow was reduced, the new design increased the total heat transfer rating.

FSAR REFERENCE: Figure 9.4.1-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 920: AFW Control Wiring Reroute

DESCRIPTION: This modification provided isolation between the safety-related control circuitry for the Auxiliary Feedwater Pumps (AFW) and the non-Q Main Feedwater Pumps' control circuitry. This control wiring provides automatic initiation of the AFW pumps when both Main Feed Pump breakers are in the open position.

SAFETY SUMMARY: Automatic start of the AFW pumps when both Main Feed pump breakers are in the open position was designed to provide early initiation of the AFW pumps before the feedwater level in the steam generators dropped to the low-low level. Startup of the AFW pumps is also automatically initiated at this point.

Accidents previously evaluated in FSAR Chapter 15 assume, on loss of feedwater flow, that initiating actions occur on low-low level in any Steam Generator. No credit is taken for automatic initiation of the AFW pumps when both Main Feed pump breakers are in the open position.

There is no practical way to upgrade this portion of the Auxiliary Feedwater pump control circuitry to meet single failure criteria; therefore, this portion of the circuitry was isolated from the remaining AFW pump controls. The function of the control circuits was not modified.

FSAR REFERENCE: Page 7.3.1-2, 10.4.8-3.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 875: Instrument Air Compressor Addition

DESCRIPTION: The modification installed an additional Instrument Air supply system. This modification was necessary because Plant demands for instrument air had increased since Plant startup, resulting in an increase in the duty cycle for the existing air compressors, and a decrease in compressor reliability.

SAFETY SUMMARY: This modification provides an additional Instrument Air Compressor, improving the system reliability while not reducing any Plant safety margin. The FSAR was revised to reflect the addition of this equipment.

FSAR REFERENCE: Page 9.3.1.-1, 9.3.1-5.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Minimum Fuel Oil Capability for Diesel Generator Operation

DESCRIPTION: As stated in Licensee Event Report, LER-88-006-00, 25,000 gallons of fuel oil is insufficient to operate one Emergency Diesel Generator at full load for seven days. This amount is revised to 32,000 gallons to conservatively assure seven days operation at maximum nameplate rating of the diesel.

SAFETY SUMMARY: This change increased the required quantity of fuel oil to be stored onsite. The new inventory of 32,000 gallons of fuel oil assures that one Emergency Diesel Generator can carry safety feature equipment up to its design rating (two of each 24 hours at 2750 KW, 22 of 24 hours at 2500 KW) for seven days following a design basis accident. This change improves previous margins of safety.

FSAR REFERENCE: Page 8.3.1.-5.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-87-122: Removal of Feedwater Pump Test Point Isolation Valves

DESCRIPTION: Feedwater Isolation Valves FW-60 and FW-61 were originally intended to be used as test points, but their service had never been required. These valves had excessive steam leaks and needed to be removed.

SAFETY SUMMARY: FW-60 and FW-61 were not used as test points and did not service any instrumentation or equipment. Removal of these valves did not affect operation of the Plant. The system piping weight was reduced and the stress at the valve location was lowered. These valves were non-Q, and their removal did not constitute a safety concern. The FSAR was revised to reflect the elimination of these valves.

FSAR REFERENCE: Figure 10.1.0-5.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Design Verification Responsibilities

DESCRIPTION: This change designates authority for design verification of changes to the facility.

SAFETY SUMMARY: FSAR 1.8.0-12 commits H. B. Robinson to Regulatory Guide 1.64, which commits to ANSI N45.2.11-1974. Section 17.2.3-1 of the FSAR was revised to be consistent with this commitment. This FSAR addition does not represent a physical change to the facility or impact any safety concern.

FSAR REFERENCE: Page 17.2.3-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-86-147: Removal of Level Indicator From the Spray Additive Tank

DESCRIPTION: The Spray Additive Tank (SAT) local only level indicator was removed due to maintenance concerns. This instrument was Q-list only in that provided a Q-list pressure boundary for the SAT solution. Although the instrument was removed, the pressure boundary was replaced.

SAFETY SUMMARY: The Spray Additive Tank (SAT) level indicator was not required by Technical Specifications. It was safety-related only in that it provided a Q-list pressure boundary for the SAT solution. The pressure boundary capacity was replaced by the insertion of pipe elbows in place of the tees where the instrument was connected to the SAT, thereby changing one pressure boundary for another with equal or better qualities. The local only level indication did not fulfill a safety-related function.

FSAR REFERENCE: Figure 6.2.2-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Construction Modification 744: New Radwaste Facility/Mechanical and Electrical

DESCRIPTION: This modification installed equipment and piping in the Radwaste facility under construction. The safety concerns involved with this facility applied to the interaction between this new facility and the existing Plant systems. The FSAR was revised to reflect the interface between this facility and the Plant.

SAFETY SUMMARY: The margin of safety for radwaste system operation was not reduced because appropriate design criteria was applied to radwaste handling piping, equipment, and building foundation design.

FSAR REFERENCE: Page 9.2.3-2, 9.5.1-6, Figure 12.5.2-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 908: Installation of Shunt Trip Bypass Indication

DESCRIPTION: This modification added breaker position indication for the Reactor Trip Bypass breakers and relocated the breaker position indication on the main control board (RTGB). The new position indication is interlocked with the breaker cell switch so that position indication is provided only while the breaker is fully racked in.

SAFETY SUMMARY: The new breaker position indication uses the same components and material as the replaced indicator and provided no more load on the Reactor Trip Bypass breaker control power. The new indication module is safety-related, seismically qualified, and is located in a mild environment as defined in 10CFR50.49. The new module envelopes the environmental parameters for the applicable location in the control room. This modification did not increase the probability of an equipment failure and did not introduce an unreviewed safety question.

FSAR REFERENCE: Page 7.2.1-9.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-87-131: Addition of Pipe Cap to Vent Line on Waste Disposal System

DESCRIPTION: The installation of the pipe cap provides a second containment boundary on the affected waste disposal line, thus, eliminating the requirement for local leak rate testing on the affected vent line valve. The basis for not local leak rate testing this valve has been submitted to the NRC.

SAFETY SUMMARY: The installation of the pipe cap serves to enhance Plant safety by providing a second containment boundary, thus providing additional basis for local leak rate test exemption. The pipe cap is fabricated of 316 stainless steel and is rated at 3000 lbs. The cap is of removable design which will allow line venting if required. The installation of the pipe cap serves to enhance plant safety by adding a containment boundary capable of withstanding pressures well in excess of post accident containment pressure. This FSAR was revised to reflect the addition of the pipe cap.

FSAR REFERENCE: Figure 6.2.4.2, Table 6.2.4-15.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-87-127: Containment Vessel Isolation Reclassification of the Component Cooling Water System

DESCRIPTION: During 1984, in response to a Westinghouse 10CFR21 report, CP&L modified the Component Cooling Water (CCW) system overpressure protection device, RCV-609, to prevent a potential overpressurization of the CCW system (ref. M-835). This resulted in the CCW system being reclassified as an "open" system outside Containment Vessel (CV). In 1987, Westinghouse issued a follow-up 10CFR21 report stating that, in carrying out the instructions of the previous 10CFR21 report, utilities may have violated their containment integrity criteria since their FSARs take credit for the closed CCW system outside CV as being the required second isolation device. A review of the FSAR indicated that, since the CCW system inside the CV was considered "open" (non-missile protected), the closed CCW system outside the CV was taken credit for as the required second isolation boundary, the primary being an automatic isolation valve. As a result, an Engineering Evaluation was prepared which, using the leak-before-break criteria in WCAP 9558 (R-2), reclassified the CCW system inside the CV as a "closed" system. This means that the CCW system inside the CV acts as the first isolation device to the release of materials from the CV to the Auxiliary Building. The automatic isolation valve acts as the required second isolation device, and the CCW system outside the CV can be an "open" system. This resolved the 1987 Westinghouse 10CFR21 concern.

SAFETY SUMMARY: In reanalyzing the classification of the CCW system inside the CV from "open" to "closed," based upon the WCAP 9558 "leak-before-break" analysis, it was shown that adequate CV isolation capabilities still existed for post-LOCA conditions, even with the CCW system outside CV being classified as "open." The use of the WCAP has been agreed upon by the NRC for HBR Unit 2 under NRC Generic Letter 84-04.

FSAR REFERENCE: Page 6.8.2-3, 6.2.4-6, Figure 6.2.4-6

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-87-035: Addition of Valve in the Potable Water System Piping to the Circulating Water Pumps

DESCRIPTION: The Unit 1 (Fossil) Potable Water System supplies the backup supply for the bearing and gland seal cooling of the Unit 2 Circulating Water Pumps (CWP). During the removal of the CWP motors, the Potable Water Supply piping had to be cut upstream of the pumps to facilitate motor removal. The Unit 1 Potable Water System was therefore shutdown due to the open pipe to the Unit 2 CWPs. A globe valve was installed to allow Unit 1 to operate without affecting the outage work on the Unit 2 CWPs.

SAFETY SUMMARY: The valve addition does not overstress the Potable Water System piping in its existing configuration. The valve and piping are not safety-related components. Therefore, this facility change did not represent a safety concern.

FSAR REFERENCE: Figure 9.2.1-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-87-168: Operability of Two Resistance Temperature Detection (RTD) Bypass Isolation Valves With Stem/Plug Separation

DESCRIPTION: The FSAR stated that all NSSS valves have stems with backseats which would prevent the ejection of the valve stem in the unlikely event that the stem threads or valve yoke were to fail. The RTD Bypass Valves in question experienced stem/plug separation. The FSAR was revised to describe the condition of these valves.

SAFETY SUMMARY: The missile generation analysis found in the FSAR is not adversely affected by the condition of the RTD Bypass Valves which experienced stem/plug separation. Because stem thread or yoke failures are not considered to be credible events, operation of the plant with these valves in their present condition is justified.

FSAR REFERENCE: Page 3.5.1-3.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Feedwater Control/Regulation Valve Operability and Feedwater Isolation Delay Time

DESCRIPTION: An analysis was performed which included a calculation of the maximum containment pressure and temperature which would be seen with the Feedwater Control/Regulation Valve locked open. As a result, the peak containment pressure which would be realized was 57.2 psig, which remains below the acceptable maximum of 60 psig shown in the FSAR. The FSAR was revised to reference the design activities under which this evaluation was performed.

SAFETY SUMMARY: Although the pressure is greater than the 42 psig containment building design limit given on FSAR page 6.2.1-2, containment integrity is not considered important for the main steamline break event evaluated. This is because fission product barrier integrity is assured by maintaining a DNBR well above the limit, precluding a significant radiological release. Even without the Feedwater Regulation Valve, the block valve can be relied upon to isolate the main feedwater flow path.

FSAR REFERENCE: Page 15.0.8-2, 15.1.5-10, 15.1R-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 909: Battery Room Ventilation System Upgrade

DESCRIPTION: This modification installed two heaters in the Station Battery Room in order to maintain optimum room temperature. Prior to this modification, the battery electrolyte temperature was directly affected by outside air being drawn into the room as makeup for the building exhaust fans. The potential existed for the electrolyte temperature to fall below the specified value, which would require a Limiting Condition for Operation to be entered.

SAFETY SUMMARY: Although installed in a space containing safety-related equipment, the unit heaters and all associated power sources, thermostat, contactors, switches, and safety and control devices are not safety-related. The battery room atmosphere was analyzed to determine if hydrogen generation was a concern. It was concluded that the atmosphere would be non-hazardous. The heaters are not required during either normal or emergency operations to support the batteries or battery chargers in the performance of their safety function.

FSAR REFERENCE: Page 9.4.4-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Construction Work Package 20: Addition of Membrane Roof System to the Containment Dome

DESCRIPTION: An addition of a membrane roof system to the Containment Building dome was completed to preclude damage to the dome's cosmetic dome surface caused by weather conditions. This change was included in the FSAR to ensure document completeness.

SAFETY SUMMARY: The addition of the membrane roof applied to the containment dome has no impact on plant operations. This addition serves to enhance plant safety by precluding damage to the domes structural concrete due to weather conditions.

FSAR REFERENCE: Figure 3.8.1-9.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 885: Independent Spent Fuel Storage Installation (ISFSI)

DESCRIPTION: The NUTECH Horizontal Modular Storage (NUHOMS) System is a totally passive installation that is designed by analysis to provide shielding and safe confinement of irradiated fuel. The Dry Storage Cannister (DSC) and the Horizontal Storage Module, which make up the ISFSI, provides for an alternative for the HBR fuel storage capacity. The Unit 2 FSAR was revised to include a description of this facility.

SAFETY SUMMARY: The ISFSI is licensed with the NRC under 10CFR72 to provide long term (20-year) storage for irradiated fuel assemblies. The safety analysis developed for this modification is consistent with the accident analysis of the SAR for the facility.

FSAR REFERENCE: Page 1.2.2-4

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 910: Replacement of Seismic Monitors

DESCRIPTION: This modification replaced two seismic monitors utilized to detect and record earthquake vibrations. The new monitors provide the same function and have the same setpoint as those replaced. The FSAR was updated to reflect the new recorder locations and their setpoints.

SAFETY SUMMARY: The seismic monitors themselves are not safety-related, do not interface with safety-related equipment, and are not located in the vicinity of any safety-related equipment. The new monitors are set at the same setpoint as those replaced, thereby allowing the operator to safely shutdown the reactor after ground motion in excess of an OBE is experienced.

FSAR REFERENCE: Page 1.3.2-2, 3.7.4-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 819: Plant PA System Upgrade

DESCRIPTION: This modification provided a dedicated power panel and a redial feed power distribution system for the plant's Public Address system. In addition, an annunciator was installed in the Control Room to monitor for tripped circuit breakers and to provide additional PA system controls. This modification included a speaker volume level control as discussed in IE Bulletin 79-18.

SAFETY SUMMARY: MCC-6 and the feeder breakers installed by this modification are safety-related. All other PA system equipment is non-Q. The FSAR was revised to change the source of power from the inverter to MCC-6.

FSAR REFERENCE: Page 9.5.2-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Engineering Evaluation EE-87-117: Low Suction Pressure Instrumentation to the Main Feedwater Pumps

DESCRIPTION: During the 1987 Refueling Outage, it was determined that the "A" and "B" Main Feedwater Pump suction pressure instrumentation was incorrectly hooked up. The instrumentation involved indicate low suction pressures and provide valve actuations to prevent Main Feed Pump trip on low suction pressure. The corrective actions for this condition were to reconnect the existing instrumentation tubing to a proper location along the suction line of the feedwater pumps.

SAFETY SUMMARY: The pressure switches and the control logic back to the main control board was not affected. The existing instrumentation tubing was cut and plugged so that the Main Feed Pump suction-side tubing could be reconnected to the pressure switches. The as-left condition of the pressure switches and associated tubing restores the Main Feed pump trip protection consistent with the plant's original startup criteria. This portion of the Feedwater system is non-Q. The FSAR was revised to reflect field changes made as corrective actions for this condition.

FSAR REFERENCE: Page 10.1.0-5.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: ASME Requirements for NSSS Valve Bolt Stress

DESCRIPTION: A review of the FSAR noted that Section 3.5.1.2 stated that all NSSS valves two inches and larger have been designed using the design practice of ASME Section VIII, which limits the allowable stress of bolting material to less than 20 percent of its yield strength. Because the plant practice of torquing bolts in NSSS valves beyond this limit is a code approved technique, the applicable FSAR sections were revised to clarify the differences between the design criteria and the in-service tolerances.

SAFETY SUMMARY: ASME Section VIII provides criteria for design of bolted connections for valves. This criteria limits allowable stress in these bolts to twenty percent of yield for design purposes. This method ensures that adequate safety margin is built into the design. However, Section VIII specifically allows in-service bolt stresses to exceed twenty percent of yield. This FSAR was revised to clarify the differences between the Section VIII design criteria and the in-service allowables.

FSAR REFERENCE: Page 3.5.1-4.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 585: Replacement of Emergency Diesel Generator (EDG) Starting Air System Piping

DESCRIPTION: This modification replaced the carbon steel supply and return piping for the EDG Starting Air system air dryer aftercoolers. This replacement piping followed the routing of the original piping and used the existing pipe hangers. The size of the piping did not change. This modification also installed a check valve in the starting air lines. The new check valve functions in series with the existing check valve, thus providing redundant isolation for the EDG receivers. As a result of this modification, the FSAR was revised to state that the piping is not seismically qualified, and that the consequences of failure of lines has been evaluated as acceptable.

SAFETY SUMMARY: The addition of a redundant check valve by this modification ensures that failure of piping upstream of the valve, combined with a single failure, will not degrade the airstart system. This meets the isolation boundary criteria. Thus, piping upstream of the first check valve does not impact the safety-related airstart components and is classified as non-Q.

FSAR REFERENCE: Page 9.2.1-2.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 518: Installation of Keyed Switches in the Auxiliary Feedwater Controls

DESCRIPTION: During 1982, keyed switches were installed into the Auxiliary Feedwater (AFW) controls for the purposes of preventing the starting of the Auxiliary Feedwater Pumps and the closing of the Steam Generator Blowdown valves during shutdown conditions. This modification did not conflict with the FSAR, and no FSAR change was made at that time. An independent review of the AFW system during 1987 recommended that the FSAR be updated to reflect this configuration.

SAFETY SUMMARY: Prior to installation of the keyed switches in the AFW pump controls, the defeat of the pump start function was accomplished by jumper and/or wire removal. There were no safety implications to this modification, as it did not conflict with the FSAR or Technical Specifications. During implementation of this modification in February 1982, the requirements of 10CFR50.71(e) were not in effect. Therefore, the FSAR was not changed at that time. The basis of the safety analysis for the modification remains valid.

FSAR REFERENCE: Page 10.4.8-2.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Reduction of Station Safety-Related Batteries Duty Cycle from Eight Hours to One Hour

DESCRIPTION: HBR Technical Specifications require that batteries be subjected to a load test every five years. Battery service and performance testing was performed by special procedure during 1987. As a result of the safety analysis for the acceptance of the test results, the battery duty cycle was reduced from eight hours to one hour.

SAFETY SUMMARY: Evaluation of the special test data did not require a change to the Technical Specification or introduce an unreviewed safety question. Therefore, in accordance with 10CFR50.59, the change in duty cycle was made without prior approval from the NRC. Furthermore, results of these tests prove that the safety-related 125V DC power system will continue to meet the requirements of 10CFR50.59 Appendix A, General Design Criterion 18, and NUREG-0800, Section 8.3.2 applicable to the capacity and capabilities of the batteries. (Reference special submittal from Beatty to Grace, May 22, 1987, Serial No. RNPD/87-2267.

FSAR REFERENCE: Page 8.3.2-1, Table 8.3.2-1.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Cycle 12 Core Loading

DESCRIPTION: The FSAR was revised to accommodate the Cycle 12 core loading. This change identified the typical core loading pattern for Cycle 12 operation. This information was transmitted to the NRC by CP&L Letter NLS-87-107, dated June 2, 1987. In addition, this letter also transmitted Exxon Report XN-NF-86-149, "H. B. Robinson Unit 2, Cycle 12, Safety Analysis Report, dated January 1987.

SAFETY SUMMARY: Refueling for Cycle 12 was performed in accordance with 10CFR50.59 and did not involve an unreviewed safety question.

FSAR REFERENCE: Page 4.1.1-1, 15.4.8-3, 15.4.8-4, Figure 4.1.1-3.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Extended Burnup Topical Report

DESCRIPTION: This change incorporated into the FSAR the plant specific extended burnup report regarding the mechanical aspects of the fuel design. In addition, the FSAR was updated to reflect fuel design details which were not incorporated in Amendment 5.

SAFETY SUMMARY: The NRC has reviewed and approved the Extended Burnup Topical Report. The information which updates the fuel design details have also been reviewed as part of the Cycle 10 SER and the 10CFR50.59 evaluations for Cycle 11 and 12 reloads. (Reference CP&L Letters NLS-87-107 and NLS-87-060.)

FSAR REFERENCE: Page 4.1.2-, 4.2.1-1, 4.2.1-3, 4.2.2-2, 4.2.3-1, 4.2.3-3, 4.2R-2.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Correction to Values of Parameters Related to Offsite Dose

DESCRIPTION: One of the changes implemented in 1984 for Cycle 10 operation was raising the allowable fuel burnup to a maximum assembly average exposure of 44,000 MWd/MTU. Two aspects of this higher burnup were slight increases in both the estimated core fission product inventory presented in FSAR Table 15.6.5-4 and offsite doses presented in FSAR Table 15.6.5-5. These changes were appropriately incorporated in the FSAR as part of Amendment 3.

Per Letter HGS:250:86, dated 7-28-86, Advanced Nuclear Fuel notified CP&L of the discovery of errors in both the RODEX2 computer code and the methodology of its application. Although the corrected offsite doses provided in this letter were incorporated in the LOCA (Section 15.6.5) and Fuel Handling Accident FSAR analyses by Amendment 5, the associated fission product source term was not available until Revision 1 of the Radiological Assessment topical was issued.

FSAR Figure 15.6.5-18 is associated with the offsite dose resulting from a Large Break LOCA. It shows the sensitivity of the radioactive iodine dose to the thyroid as a function of the Containment Spray removal coefficient. Its purpose is to illustrate both the importance of the iodine removal phenomena and also the degree of conservatism resulting from the use of ten inverse hours instead of the best estimate value of 18.7 inverse hours presented in FSAR Section 6.5. Since the offsite dose is a function of the source term as well as the spray removal coefficient, this figure should have been updated in Amendment 3, but its content was inadvertently left unchanged.

SAFETY SUMMARY: The radioactive source term for offsite dose relates only to possible consequences of an accident. The offsite doses themselves are not being changed. The spray removal coefficient relates only to mitigating the consequences of a LOCA, and no safety margin is being changed. This change represents a revision to the FSAR to increase the accuracy of that document.

FSAR REFERENCE: Page 6.5.3-2, 15.6.5-3, 15.6.5-4, 15.6.5-10, 15.6R-2, Table 15.6.5-18.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Revision to Radiation Monitor Sensitivities

DESCRIPTION: Because background radiation and calibration coefficients change frequently, the actual Radiation Monitor sensitivities vary. The FSAR was revised to include typical sensitivities for the monitors rather than the specific sensitivity ranges.

SAFETY SUMMARY: The required lower limit of detection (LLD) for effluent monitors is identified in the Technical Specifications and the Offsite Dose Calculation Manual. The typical sensitivity ranges for monitors RMS-14 and RMS-15 are equal to the required LLD. The FSAR changes made remain consistent with the Technical Specifications basis.

FSAR REFERENCE: Page 11.5.2-2, 11.5.2-4, 11.5.2-6a, 11.5.2-6b, 11.5.2-6c, 11.5.2-8, 11.5.2-10, Table 11.5.2-2, 11.5.2-4.

CHANGE TO FACILITY AS DESCRIBED IN THE FSAR

TITLE: Modification 897: Demineralizer Skid Connections

DESCRIPTION: This modification added a Chemical and Volume Control System (CVCS) to Waste Disposal System (WDS) cross-connect from the "B" Waste Evaporator to the "C" Waste Evaporator Room. The purpose of this modification was to provide an alternate method of treating CVCS wastewater.

SAFETY SUMMARY: The new piping and valves added to the CVCS and WDS meet or exceed the design criteria and functional requirements of the original system piping. The changes installed were evaluated against Regulatory Guides 1.143 and 1.121, and were found to be acceptable. The FSAR was revised to reflect the addition of the cross-connect piping.