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Carolina Power & Light Company

ROBINSON NUCLEAR PROJECT DEPARTMENT
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JUL 21 1989

Robinson File No: 13510C

Serial: RNP/89-2422
(10 CFR 50.59)

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
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1988 CHANGES TO THE FACILITY REPORT

Gentlemen:

Carolina Power and Light Company (CP&L) provides this report of changes to the facility as described in Amendment 7 to the updated Final Safety Analysis Report. The enclosure is submitted as specified in 10 CFR 50.59(b)(2) and contains a brief description of any changes, tests, and experiments, including a summary of the safety evaluation of each.

Very truly yours,

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

DAS:lko

Enclosure

cc: Mr. S. D. Ebnetter
Mr. L. W. Garner

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AMENDMENT 7 CHANGES TO THE FACILITY AS DESCRIBED IN THE SAR

A synopsis of the change requests approved for Amendment 7 is provided below. The changes have been reviewed in accordance with Plant procedures and none have been determined to constitute an unreviewed safety question as defined by 10 CFR 50.59.

1. Engineering Evaluation No. 88-042, Jumpering of Pressure Switches PS-1721 and PS-1743 in the Post Accident Containment Venting System Valve Control Circuitry

DESCRIPTION: During testing of certain Post Accident Containment Venting (PACV) valves it was found that to vent the innerspace, air must pass through one solenoid valve on its way through the vent of the next solenoid valve in series. This delay of air may consume up to six hours before the innerspace pressure is reduced. In addition, the component identities for certain components were revised to be consistent with Plant nomenclature.

SAFETY EVALUATION: The installation of electrical jumpers across pressure switches PS-1721 and PS-1743 does not alter the design function of the PACV valves. Plant procedures ensure that the PACV System ductwork will not be overpressurized. Additional controls ensure that the jumpers are removed to return the System to normal configuration.

FSAR REFERENCE: Figure 6.2.5-1.

2. Engineering Evaluation No. 87-115, Reroute of Caustic Injection Piping for Neutralization Water Tank

DESCRIPTION: The Plant determined there was a need to allow for better mixing of sodium hydroxide in the neutralization water tank. To attain better mixing, certain piping in the Demineralized Water System was rerouted and valves added.

SAFETY EVALUATION: The rerouting of the nonsafety-related piping and the installation of additional nonsafety-related valves affects no safety-related equipment, piping, or components. The new configuration creates no path for caustic solution to contact safety-related equipment.

FSAR REFERENCE: Figure 9.2.3-1.

3. Engineering Evaluation No. 88-031, Start Failure Trip of Fuel Racks on Emergency Diesel Generators - Interpretation of Tech. Spec. 3.7.1.d.5 and Determination of whether or not Design Meets Tech. Spec. Requirements

DESCRIPTION: Plant Technical Specification 3.7.1.d.5 requires bypassing the start failure trip of the fuel racks for either of the two emergency diesel generators when in a standby condition.

SAFETY EVALUATION: The start failure trip of the fuel racks discussed in the Technical Specifications is by design a repositioning of the racks to the shutdown position by the engine governor. If the start failure remains undefeated, the diesel will shutdown immediately and local operator action is required for restart. Although the start failure protective trip is defeated by the trips defeat switch, the wording may be misleading. The addition of mechanical overspeed to the list of conditions which can shut down a running diesel adds clarity and consistency.

FSAR REFERENCE: Section 8.3.1.5.1.

4. Operations Surveillance Test Procedure OST-701, Inservice Inspection Valve Test (Quarterly), Procedure Change Notice No. 15307

DESCRIPTION: The procedure change revised the identification of the Penetration Pressurization System (PPS) solenoid valve associated with operation of PACV valves V12-10 and V12-11.

SAFETY EVALUATION: The procedure change is editorial in nature and scope.

FSAR REFERENCE: Figure 6.2.5-1.

5. Operating Procedure OP-202, Safety Injection and Containment Vessel Spray System, Procedure Change Notice No. 15101

DESCRIPTION: The procedure change revised the position of Safety Injection valve SI-883R from normally closed to normally open and that of Safety Injection valve SI-869 from normally open to normally closed.

SAFETY EVALUATION: The Containment isolation function formerly provided by valve SI-883R in association with valves SI-866A and SI-866B is now accomplished by an equivalent, fully qualified valve, SI-869.

FSAR REFERENCE: Figures 6.2.4-15, 6.3.2-1, and 6.3.2-2, and, Table 6.2.4-1.

6. Plant Modification No. 936, Spent Fuel Pit Skimmer Pump Suction Upgrade

DESCRIPTION: The Modification replaced the two Spent Fuel Pit skimmer pumps originally installed with two of double capacity and modified the supporting piping to accommodate single skimmer operation.

SAFETY EVALUATION: The Modification supports single skimmer operation and provides sufficient redundancy to ensure the capability to remove floating debris and surface films and contaminants from the spent fuel storage pool.

FSAR REFERENCE: Sections 9.1.3.1.4, 9.1.3.2.1, and 9.1.3.3.3; Table 9.1.3-1; and, Figure 9.1.3-1.

7. Engineering Evaluation No. 87-111, Removal of Unit 2 Restroom Door to Turbine Area

DESCRIPTION: The Engineering Evaluation justified Plant Modification No. 884 which removed the restroom access door from a section of wall on the ground floor of the Turbine Building.

SAFETY EVALUATION: The removal of the access door has no adverse affect on the safety of the Plant or personnel and improves egress from the restroom.

FSAR REFERENCE: Figure 1.2.2-9.

8. Plant Modification No. 932, Relocate the Alternate Shutdown Transceiver

DESCRIPTION: The Modification relocated the alternate shutdown radio transceiver from the Reactor Auxiliary Building to the 4160 volt Switchgear Room of the Turbine Building to protect the transceiver from a safe-shutdown related fire. The Modification also replaced the Dedicated Shutdown System uninterruptible power supply with a larger system to assure improved reliability of the power supply and to provide the capability to supply an increase in electrical load.

SAFETY EVALUATION: The Modification increases the protection of the transceiver and further assures adequate voltage is available for components dedicated to safe shutdown.

FSAR REFERENCE: Figures 1.2.2-10, 7.4.1-6, and 8.3.1-4.

9. CP&L Corporate Nuclear Safety (CNS) Safety System Function Inspection of the Auxiliary Feedwater System

DESCRIPTION: An inspection of the Auxiliary Feedwater System by the CP&L group resulted in a recommendation to clarify the description of the seismic classification of the steam supply lines to the steam-driven Auxiliary Feedwater Pump.

SAFETY EVALUATION: The changes are editorial in nature and scope.

FSAR REFERENCE: Sections 3.2.1.2, 3.7.3.2.7.1, 3.7.3.3.2, and 3.10, and, Table 3.2.1-2.

10. Plant Environmental Monitoring Procedure EMP-026, Calibration of NMC PIOPS Continuous Air Monitor R-22 and EOF/TSC Monitor R-38, Procedure Change Notice No. 15376

DESCRIPTION: The procedure change allowed a single channel to be calibrated without requiring all channels to be calibrated at the same time.

SAFETY EVALUATION: The change merely adds information to the description of radiation monitors R-22 and R-38 and increases the number of channels which monitor radiation levels in Plant operating systems from 11 to 14. The ambient temperature range for the two monitors is also changed to reflect latest manufacturer specifications.

FSAR REFERENCE: Sections 11.5.1 and 11.5.2.1, and, Table 11.5.2-3.

11. Plant Construction Work Package No. 744, New Radwaste Facility/
Mechanical and Electrical

DESCRIPTION: The Work Package modified the Plant by installing equipment and piping for the Radwaste Facility structure. The modification also provides a tie-in of the Plant Instrument and Station Air Systems to the Radwaste Facility/

SAFETY EVALUATION: The Radwaste Facility mechanical and electrical systems are designed in accordance with USNRC Regulatory Guide 1.143. The tie-in of the Plant Instrument Air System is nonsafety-related and the tie-in of the Station Air System is for maintenance purposes only so there is no constant demand on the system.

FSAR REFERENCE: Section 9.3.1.

12. Drawing Change Request No. 88-643 for the Steam Generator Blowdown System Flow Diagram G-190234

DESCRIPTION: Review of Sheet 2 of the flow diagram found the need for revision to delete a redundant label for a single valve.

SAFETY EVALUATION: The change is editorial in nature and scope.

FSAR REFERENCE: Figure 10.1.0-8.

13. Plant Modification No. 921, Diesel Generator Rooms Louver Modification

DESCRIPTION: The Modification resolved a concern with regard to whether the diesel generator rooms' ventilation damper and louver controls would line up the system for 100% recirculation to prevent overheating.

SAFETY EVALUATION: The Modification ensures the availability of ventilation air to both diesel generators by reversing the fail positions of the air actuated louvers and control dampers.

FSAR REFERENCE: Sections 9.4.1, 9.5.1.4.2.6.2, and 9.5.1.4.2.7.

14. Plant System Description SD-027, Feedwater System, Procedure Change Notice No. 15661

DESCRIPTION: The procedure change added references and equipment details, refined valve and instrument nomenclature, and incorporated appropriate recommendations from the CP&L Safety System Functional Inspection (See Item 9 above).

SAFETY EVALUATION: The changes are editorial in nature and scope.

FSAR REFERENCE: Table 10.4.8-1.

15. Plant Modification No. 938, Eliminate Turbine Trip from Loss of Main Feed Pumps

DESCRIPTION: The Modification removed one cause of unnecessary Unit trips, the turbine trip signal associated with opening both main feedwater pumps' breakers.

SAFETY EVALUATION: The Plant determined it advisable to eliminate the turbine trip on loss of the main feedwater pumps since no credit is taken in the Plant safety analysis for this trip. Acceptable results are demonstrated for the resulting logic configuration.

FSAR REFERENCE: Figure 7.2.1-28.

16. Plant Modification No. 953, Move the Post Accident Sampling System Primary Water Flushing Line

DESCRIPTION: The Modification rerouted the primary water flush connection to the Reactor Coolant System sample line from the Post Accident Sampling System (PASS) sampling location in the Reactor Auxiliary Building hallway to a location in the Reactor Auxiliary Building pipe alley. In addition, the line which contained the original flush connection was replaced with a single piece of tubing, to minimize mechanical joints and crud traps.

SAFETY EVALUATION: The piping replaced and rerouted is nonsafety-related. The function of the rerouted flush line is preserved and its relocation provides a more complete flush. The replaced line's function and routing are maintained although piping joints are eliminated.

FSAR REFERENCE: Figure 9.3.2-2.

17. Special Procedure SP-788, Power Operation with Local Handwheel Control of Steam Generator Feedwater Regulating Valve, Procedure Change Notice No. 14768, and, Operating Procedure OP-403, Feedwater System, Procedure Change Notice No. 15701

DESCRIPTION: The procedure changes incorporated a specific set of instructions for taking local handwheel control of a Steam Generator Feedwater Regulating Valve to ensure certain precautions and directions were identified for Plant operations personnel.

SAFETY EVALUATION: The changes, supported by analysis, are editorial in nature and clarify component capacities and setpoints for a main steamline break and the corresponding detail on actuation signals and delays for Main Steam Isolation Valve, Safety Injection, and Feedwater safety actions.

FSAR REFERENCE: References 15.1.5-5 and 15.1.5-6, and, Tables 15.0.8-1 and 15.1.5-2.

18. Plant Modification No. 868, Core Exit Thermocouple Core Cooling Monitor System Upgrade

DESCRIPTION: The Modification installed equipment in the Plant to which combine the core exit thermocouple core cooling monitor and Reactor Vessel Instrumentation System (RVLIS) equipment into a single system, with displays in the Unit 2 Control Room. Bottom-mounted thermocouples were placed in new in-core thimbles and the top-mounted thermocouple columns were removed from the reactor head. The Plant Technical Specifications were revised accordingly.

The RVLIS and core exit thermocouple core cooling monitor system improves the capability of measurement and indication of inadequate cooling of the reactor core. The instrumentation installed inside Containment is designed to operate under the accident environment of steam-air mixture and radiation. The system creates no path that would allow reactor coolant to exit the Containment boundary.

FSAR REFERENCE: Sections 3.11.1, 4.4.3.1, 4.4.3.4, 7.7.1.5.2, 7.7.1.5.2.1, 7.7.1.8, and 15.4.7.1; Table 3.11.2-1; and, Figures 4.4.3-1 and 5.1.2-1.

19. Accredited Plant Operator Training Program

DESCRIPTION: The Robinson Training Unit developed the accredited Plant operator training program to meet regulatory commitments.

SAFETY EVALUATION: The program changes are in response to 10 CFR 55.31(a) and 10 CFR 55.59(c).

FSAR REFERENCE: Sections 13.2.1 through 13.2.3; Figure 13.2.1-1; and, References 13.2.2-1 through 13.2.2-3.

20. System Description SD-027, Feedwater System, Procedure Change Notice No. 14540

DESCRIPTION: The procedure change added information obtained from the performance of a separate annunciator procedure and 1987 calibration data.

SAFETY EVALUATION: The changes are editorial in nature and provide a more appropriate level of detail information with regard to Feedwater annunciation.

FSAR REFERENCE: Figure 10.1.0-6.

21. Engineering Evaluation No. 88-088, Reduce the Frequency of Testing the Intercept and Reheat Valves of the Turbine Redundant Overspeed Trip System

DESCRIPTION: The Engineering Evaluation provided a basis for omitting the reheat stop valves and intercept valves from the monthly Turbine Redundant Overspeed Trip System (TROTS) function test required by Plant Technical Specifications.

SAFETY EVALUATION: The testing of the TROTS reheat stop and intercept valves on an 18-month interval provides sufficient reliability based on a probability of 1.11×10^{-7} for a failure to limit the turbine to 118% of rated speed.

FSAR REFERENCE: Section 10.2.2.

22. Plant Modification No. 943, Upgrade of Valve Operators on SI-856A and SI-856B

DESCRIPTION: The Modification changed the Safety Injection minimum flow valves from fail closed to fail open to protect the Safety Injection pumps in the event of an Instrument Air failure.

SAFETY EVALUATION: The changes in the valve operators will prevent damage to the Safety Injection Pumps should either valve fail while the pumps are using the Refueling Water Storage Tank (RWST) inventory with flow to Containment isolation valves. Handwheels installed on the operators allow manual closure of the valves when switching the water source from the RWST to the Containment sump to prevent contaminating the RWST. The design is consistent with Engineered Safety Features component criteria, whereby valves de-energize to operate.

FSAR REFERENCE: Sections 6.3.2.2.5. and 7.3.1.1.2.3; Table 6.2.3-8; and, Figures 6.2.2-1 and 6.3.2-1.

23. Plant Modification No. 935, Unit 2 Upgrade of Low Voltage Fire Detection System

DESCRIPTION: The Modification upgrades the Low Voltage Fire Detection System in the Reactor Auxiliary, Turbine, and Reactor Containment Buildings.

SAFETY EVALUATION: The system upgrade improves the operability, functionability, reliability, and maintainability of the nonsafety-related system. Seismic supports and mounting are utilized in safety-related locations.

FSAR REFERENCE: Sections 9.5.1.4.3.2, 9.5.1.4.3.3, 9.5.1.4.3.4.1, 9.5.4.3.4.3, and, Figure 10.1.0-5.

24. Engineering Evaluation No. 87-045, Unit No. 2 Turbine-Generator Fully Integral Rotor Installation

DESCRIPTION: The Engineering Evaluation was developed in support of the installation of the two low-pressure fully integral Turbine rotors, LP1 and LP2.

SAFETY EVALUATION: The two new rotor assemblies are nonsafety-related and represent an upgrade in performance warranty, safety, and reliability. Their installation eliminates the shrunk-on discs and hence eliminates the possibility of a disc failure and subsequent missile.

FSAR REFERENCE: Sections 1.2.2.6, 3.5.1.1, 3.5.1.3.1.2, 3.5.1.3.2, 3.5.1.3.2.1 through 3.5.1.3.2.4, 3.5.1.3.3, 3.5.1.3.3.1, 3.5.1.3.3.2, 3.5.1.3.4, 3.5.1.3.5, 10.2.1, 10.2.2, and 10.2.3.1.2; Tables 1.1.0-1, 3.5.1-1, 3.5.1-2, 10.2.1-1, 10.2.3-4, and 10.2.3-5; References 3.5.1-1 through 3.5.1-5 and 10.2.3-2; and, Figure 10.2.3-3.

25. Plant Operations Management Procedure OMM-009, Locked Valve List, Procedure Change Notice No. 15861

DESCRIPTION: The procedure change added Feedwater full flow recirculation isolation valve FW-232 to the list of normally locked valves. The valve had been installed by Plant Modification No. 902.

SAFETY EVALUATION: The addition of the valve as a normally locked valve is an improved assurance that the valve's normally closed position will not be altered without permission by Plant operations.

FSAR REFERENCE: Figure 10.1.0-5.

26. Engineering Evaluation No. 87-117, Documenting Corrective Actions Taken to Restore Main Feed Pump Low Suction Instrumentation in the Feedwater System

DESCRIPTION: The Engineering Evaluation had revised the UFSAR flow diagram in Amendment No. 6; however, two valve numbers had been inadvertently overlooked in the update.

SAFETY EVALUATION: The change is editorial in nature and provides component identification.

FSAR REFERENCE: Figure 10.1.0-6.

27. Plant Modification No. 969, Low Alarm Setpoint Change for DPS-1698

DESCRIPTION: The Modification changed the low flow alarm setpoint for four Differential Pressure Switches, DPS-1698A through DPS-1698D, to accommodate a revised minimum Service Water flow requirement for operation of the four Containment fan coolers under post accident conditions.

SAFETY EVALUATION: The Containment air recirculation system supplier, Westinghouse, determined by calculation that 750 gallons per minute of Service Water flow to the Containment for coolers is sufficient to provide the required design heat removal capability.

FSAR REFERENCE: Table 9.4.3-1.

28. Plant Modification No. 968, HVH-4 Pressure Gauges

DESCRIPTION: The Modification added a pressure differential indicator and a pressure gauge to provide cooling coil performance data for monitoring of one of the four Containment fan coolers, HVH-4.

SAFETY EVALUATION: The added components provide for monitoring the pressure drop across the cooler unit coils and the static pressure in the coil discharge header so that the heat transfer capability of the coils can be evaluated based on measured hydraulic data. This will allow initiation of preventive maintenance activities prior to reaching an unacceptable operating condition due to failing of the coolers.

FSAR REFERENCE: Section 6.2.2.2.1.

29. Plant Operating Procedure OP-903, Service Water System, Procedure Change Notice No. 15937; Annunciator Panel Procedure APP-002, Engineering Safeguards System, Procedure Change Notice No. 15939; Operations Surveillance Test Procedure OST-302, Service Water System Component Test (Quarterly), Procedure Change Notice No. 15940; and, Operations Surveillance Test Procedure OST-902, Containment Fan Coolers Component Test (Monthly), Procedure Change Notice No. 15941

DESCRIPTION: Investigations of the Service Water System and operability requirements for the Containment air recirculation system determined a need to change the minimum flow requirement for post accident operation of the four Containment fan coolers (see Item 27 above).

SAFETY EVALUATION: The Containment air recirculation system supplier, Westinghouse, determined by calculation that 750 gallons per minute of Service Water flow to the four Containment fan coolers is sufficient to provide the required design heat removal capability.

FSAR REFERENCE: Sections 6.2.2.2 and 9.4.3.2.1, and, Table 9.2.1-2.

30. Engineering Evaluation No. 87-195, Sink Addition in the Unit 2 First Aid Room

DESCRIPTION: The Engineering Evaluation added a sink to the new Unit 2 First Aid Room with tie-ins to the existing nonsafety-related structure and plumbing.

SAFETY EVALUATION: The addition of nonsafety-related plumbing fixtures to a nonsafety-related portion of the Plant is inconsequential to the safety-related functions of equipment or the facility structures.

FSAR REFERENCE: Figure 1.2.2-9.

31. Plant Modification No. 927, Relocate the 230 kV Switchyard Protection and Controls to the New Switchyard Building

DESCRIPTION: The Modification relocated the 230 kV Switchyard protection and control equipment from the Unit 2 Control, Communications, and Cable Spread Rooms to a new 230 kV Control Building in the 115 kV switchyard.

SAFETY EVALUATION: The relocation of the nonsafety-related electrical equipment from the Unit 2 structures reduces the amount of combustibles in safety-related areas. The installations in the 115 kV Switchyard allow the CP&L load dispatch office to control the outgoing power for commercial reasons and, should the need arise, to backfeed from offsite to Unit 2.

FSAR REFERENCE: Figures 7.2.1-28, 8.2.1-2, and 8.3.1-5.

32. Administrative change to the number of valve leakoffs inside Containment

DESCRIPTION: Review of the UFSAR discovered an incorrect number of valves provided with leakoffs inside Containment.

SAFETY EVALUATION: The change is editorial in nature and reduces the number of valves listed with leakoffs located inside Containment.

FSAR REFERENCE: Section 5.2.5.3.1.1.

33. Plant Modification No. 942, Anticipated Transient Without Scram (ATWS) Mitigation System Actuation Circuitry

DESCRIPTION: The Modification installed nonsafety-related equipment with Class 1E isolation to reduce risks associated with ATWS events. Additional editorial changes were made to the UFSAR to define and describe the ATWS Mitigation System Actuation Circuitry (AMSAC).

SAFETY EVALUATION: The addition of the AMSAC equipment is in response to 10 CFR 50.62. The equipment is designed to function in a reliable manner independent of the Reactor Protection System. AMSAC will provide a trip signal into existing Plant circuitry causing an analyzed Plant trip. The complete malfunction of the AMSAC would cause a spurious Plant trip.

FSAR REFERENCE: Sections 7.3.1.1.1, 10.2.2, and 10.4.8.5; Table 1.1.0-1; and, Figures 7.2.1-27 and 7.2.1-28.

34. Plant Modification No. 940, Battery Charger Addition

DESCRIPTION: The Modification provided redundant battery chargers to both of the safety-related 125 volts DC electrical trains with associated feeder and annunciator circuits, cables, and raceway.

SAFETY EVALUATION: The addition of two safety-related Class 1E battery chargers into the existing Battery Room provides 100% backup capability to the two existing battery chargers in service. The new battery chargers are seismically qualified and mounted as analyzed for additional loads on the facility structure. The electrical additions are in accordance with analyses for increased combustible loading as well as electrical loading.

FSAR REFERENCE: Sections 8.1.2.5, 8.3.2, and 9.5.1.5.1; Table 8.3.1-1; and, Figure 8.3.1-5.

35. Plant Modification No. 959, Reactor Coolant System Bypass Resistance Temperature Detection (RTD)

DESCRIPTION: The Modification removed the original Reactor Coolant System (RCS) Resistance Temperature Detection bypass piping from the three loops, installed new resistance temperature detectors with associated electrical equipment, and modified the Reactor Vessel Level Indication System (RVLIS) connections to the hot legs of two of the three loops. Plant Technical Specifications were revised accordingly.

SAFETY EVALUATION: Since the new RTD response time was longer than that previously used in the FSAR Chapter 15 analyses, additional restrictions to Plant operation were required to ensure safe operation of the Plant. Those restrictions are as follows: the Overtemperature Delta Temperature K1 bias constant was reduced; the range over which the allowable moderator temperature coefficient may be positive was reduced; and the automatic control rod withdrawal capability was eliminated.

FSAR REFERENCE: Pages 15-v through 15-vi, 15-xi, 15-xv, 15-xix, and 15-xviii; Sections 7.2.1.1.2, 7.2.2.2.2, 15.2.2.1, 15.2.2.2, 15.2.2.4, 15.2.2.11, 15.4.2.3, 15.4.2.4, 15.4.3.1.3, 15.4.3.1.4, 15.4.3.2, 15.4.3.2.3, 15.4.3.2.4, 15.4.3.3, 15.4.3.3.3, 15.4.3.3.4, 15.4.3.4, 15.4.3.4.3, 15.4.3.4.4, 15.4.3.5.3, 15.4.3.5.5, 15.4.3.6, 15.4.3.7, 15.4.3.8; Tables 15.0.2-1, 15.0.5-1, 15.0.7-1, 15.0.7-2, 15.2.2-1, 15.2.2-2, 15.4.2-2, and 15.4.3-5 through 15.4.3-8; Reference 15.2.2-1; and, Figures 5.1.1-1, 5.1.2-1, 7.2.1-13, 7.7.1-2, 15.2.2-6 through 15.2.2-11, 15.4.2-12 through 15.4.2-19, and 15.4.3-1 through 15.4.3-8.

36. Engineering Evaluation No. 88-100, Approve Use of a One Micron Filter in the Reactor Coolant Filter

DESCRIPTION: The Engineering Evaluation justified the use of a finer filter in the Reactor Coolant System.

SAFETY EVALUATION: The use of a finer particulate filter for reactor coolant improves filtration capability but without reducing flowrate.

FSAR REFERENCE: Section 9.3.4.2.4.g).

37. Plant Modification No. 964, Diesel Generator Overspeed Warning Function

DESCRIPTION: The Modification removed the overspeed warning function from the two emergency diesel generators in accordance with diesel generator manufacturer redesign.

SAFETY EVALUATION: The overspeed warning function as initiated by a contact of the speed switch at 1000 revolutions per minute serves no useful purpose since its setpoint is very close to that of the mechanical overspeed trip.

FSAR REFERENCE: Table 8.3.1-4.

38. Plant Modification No. 948, Upgrade of the Pressurizer Power Operated Relief Valves (PORVs)

DESCRIPTION: The Modification upgraded Pressurizer PORVs PCV-455C and PCV-456 by replacing the cage spacers and gaskets with improved designs to eliminate seat leakage. The Modification also changed the PORV pneumatic system to accommodate the improved components.

SAFETY EVALUATION: The upgrades increase the pressure available at the PORV pneumatic operators to reduce the PORV opening time, minimize susceptibility to failures, and eliminate potential leak points as well as the need for nitrogen bottle replacement. The Modification provides redundant pneumatic supplies to the PORVs during both high and low temperature operation.

FSAR REFERENCE: Section 6.2.2.5; Table 6.2.4-1; and, Figures 6.2.4-17, 6.3.2-2, and 7.6.1-2.

39. Plant Modification No. 966, Residual Heat Removal Cold Leg Recirculation Pressure Interlock

DESCRIPTION: The Modification consisted of installation of safety-related, environmentally qualified pressure switches in the cross-tie piping shared by the Residual Heat Removal and Safety Injection Systems. The switches replaced the function of two original switches in providing a pressure interlock permissive in the injection-to-recirculation phase of Safety Injection.

SAFETY EVALUATION: The upgrade of components to Class 1E improves reliability and performance of equipment as well as the assurance of safety.

FSAR REFERENCE: Figures 5.4.4-1 and 6.3.2-2.

40. Plant Modification No. 858, HVH Service Water Pipe Replacement

DESCRIPTION: The Modification replaced the portion of Service Water supply and return piping to the Containment fan coolers, HVH-1 through HVH-4, and their motor coolers with upgraded, more corrosion-resistant material.

SAFETY EVALUATION: The upgrade of Service Water supply and return piping for the Containment air recirculation system increases the margin of safety and provides a lower probability of piping failure due to corrosion.

FSAR REFERENCE: Sections 6.2.4.2 and 9.2.1.2; Tables 3.7.3-6 and 6.2.4-1; and, Figures 6.2.4-16 and 9.2.1-1.

41. Plant Modification No. 972, Service Water Chemical Treatment System

DESCRIPTION: The Modification interconnected the Plant sodium hypochlorite system with the Service Water System and installed the capability to add supplemental biofouling control agents other than chlorine to allow for chemical treatment to minimize fouling and corrosion.

SAFETY EVALUATION: The interconnects are safety-related to the second check valve from the service water lines and provide improved chemical treatment of the service water supply to various safety-related components.

FSAR REFERENCE: Section 9.2.1.2 and Figure 9.2.1-1.

42. Plant Environmental Monitoring Procedure EMP-025, Gaseous Effluent Sampling and Analysis Requirements, Procedure Change Notice No. 16574

DESCRIPTION: The procedure change updated activity calculations for the calibration of radiation monitor R-20 and included reference to the Plant curves book, to allow for monitor efficiency factors.

SAFETY EVALUATION: The change to the sampling location and sampling procedure improves the efficiency of gaseous effluent sampling.

FSAR REFERENCE: Section 11.3.2.1.

43. Engineering Evaluation No. 88-154, Use of a Westinghouse Mechanical Steam Generator Tube Plug

DESCRIPTION: The Engineering Evaluation was developed to evaluate use of a mechanical steam generator tube plug as designed and manufactured by Westinghouse.

SAFETY EVALUATION: The Westinghouse mechanical tube plug design is a permanent device which provides a leaktight barrier fabricated from the same thermally treated material as the steam generator tubes. Proprietary thermal transient test data from Westinghouse simulating both temperature excursions and pressure swings on the primary system typical during steam generator operation demonstrate the mechanical plug conservatively maintains adequate contact pressure with the tube during all conditions, including normal operation, feedline break, or LOCA. Proprietary design verification test data support the integrity of the plug.

FSAR REFERENCE: Section 3.9.3.3.

44. Plant Modification No. 979, Resupply Turbine Auxiliary Equipment from Balance of Plant Motor Control Centers

DESCRIPTION: The Modification relocated the turbine auxiliary equipment electrical loads to nonsafety-related motor control centers.

SAFETY EVALUATION: The removal of nonsafety-related electrical loads from safety-related motor control centers precludes overload conditions and enhances the ability of the motor control centers to perform their intended function during under operational and accident conditions.

FSAR REFERENCE: Table 8.3.1-1.

45. Review of the UFSAR Against Plant Corrective Maintenance Procedure CM-621, Structural, Mechanical and Electrical Penetration Fire Barriers

DESCRIPTION: Review of the UFSAR and CM-621 determined a need to revise the UFSAR information on cable tray configurations with regard to penetration fire barriers seals.

SAFETY EVALUATION: The procedure change is administrative in nature with no impact on existing Plant program requirements for sealing rated fire barrier penetrations.

FSAR REFERENCE: Figures 8.3.3-1 and 8.3.3-2.

46. Engineering Evaluation No. 88-202, Change FSAR Section 9.1.4 to Agree with HBR's Response to NUREG-0612

DESCRIPTION: The Engineering Evaluation was developed to justify a change to the UFSAR to reflect the CP&L response to NUREG-0612 concerning the review provisions for the control of heavy loads.

SAFETY EVALUATION: The CP&L position is that the possibility of dropping the reactor vessel head and damaging the vessel is an incredible event based on a very low probability. The CP&L position is acceptable to the NRC as documented under TER-C5506-389 dated April 29, 1983.

FSAR REFERENCE: Section 9.1.4.3.

47. Engineering Evaluation No. 88-194, Removal of Extraction and Main Steam Thermowells - TX-1335-11, TX-1335-12, TX-1344, TE-1344, TX-1345, TE-1345

DESCRIPTION: The Engineering Evaluation justified the deletion of certain Main Steam and Extraction Steam thermowells due to their potential for failure.

SAFETY EVALUATION: The removal of the specific secondary system thermowells is of no safety or reliability concern since these six thermowells are no longer utilized to obtain operating data. There is no existing Plant instrumentation installed in the six thermowells.

FSAR REFERENCE: Figure 10.1.0-2.

48. Plant Chemistry Procedure CP-001, Chemistry Monitoring Program, Procedure Change Notice No. 16662

DESCRIPTION: The procedure change added new lithium-boron information and corrected a single typographical error.

SAFETY EVALUATION: The incorporation of an elevated lithium program similar to those in use at a number of other nuclear power plants, both domestic and foreign, increases the reactor coolant pH and reduces crud generation and previous RCS crud inventory with subsequent reductions in general Plant radiation dose rates.

FSAR REFERENCE: Table 5.2.3-2.

49. Engineering Evaluation No. 89-016, Replacement in Kind of a 12" Carbon Steel Spool Piece

DESCRIPTION: The Engineering Evaluation justified the replacement of a 12" carbon steel spool piece with one of Schedule 10, 304 stainless steel and the replacement of a 4" carbon steel pipe, reducing flange, and 2" pipe with components made of Schedule 10, 316L stainless steel.

SAFETY EVALUATION: The piping is nonsafety-related with no safety-related function.

FSAR REFERENCE: Section 9.2.1-2.

50. Plant Modification No. 986, HVH-1 through -4 Butterfly Valve Position After Safety Injection Reset

DESCRIPTION: The Modification installed a "seal in" circuit on each of the four Containment fan coolers' butterfly valves to maintain the valves open when Instrument Air to Containment is restored following the reset of a Safety Injection.

SAFETY EVALUATION: The installation of the circuit ensures the fiberglass batts used as pre-filters for the cooling coils are bypassed during accident conditions, thus precluding the batts becoming degraded by the steam atmosphere and the potential for becoming dislodged and pulled into the cooling coils of the fans.

FSAR REFERENCE: Figure 7.2.1-24.

51. Engineering Evaluation No. 89-017, As-Found Condition of Isolation Valve Seal Water to the Safety Injection Cold Legs Isolation Valve Seal Water Test Line

DESCRIPTION: The Engineering Evaluation addresses the as-found condition of the Isolation Valve Seal Water (IVSW) System, specifically the omission of tubing lines of the Safety Injection cold leg isolation valves for Containment penetrations No. 62, 63, and 64. The intent of the Evaluation was to determine why the desired response during surveillance testing was not obtained.

SAFETY EVALUATION: The Evaluation results in the installation of a tubing check valve, IVSW-98, to prevent exposure of IVSW components to Safety Injection System pressure and temperature. The evaluation justifies the tubing line omissions.

FSAR REFERENCE: Tables 6.2.4-1 and 6.3.2-1, and, Figures 6.2.4-15 and 6.3.2-1.

52. Engineering Evaluation No. 88-158, Gaskets of Chlorite/Graphite Filler as a Replacement in Kind for Asbestos Gaskets

DESCRIPTION: The Engineering Evaluation justified the replacement of installed asbestos filler gaskets with those of chlorite/graphite mixture.

SAFETY EVALUATION: The option of installing gaskets made of a composition other than asbestos is necessary to accommodate a change in product availability. The chlorite/graphite filler material is similar and equivalent to the asbestos filler and accomplishes the same function.

FSAR REFERENCE: Section 6.1.1.1.1.3.1.

53. Editorial Changes

DESCRIPTION: Review of the UFSAR determined there were certain inconsistencies with regard to the wording of the Plant Technical Specifications as well as a few typographical errors.

SAFETY EVALUATION: The changes are editorial in nature and scope.

FSAR REFERENCE: Pages 1.8.0-2, 1.8.0-4, 1.8.0-5, 1.8.0-7, and 1.8.0-16, and, Sections 9.5.1.3.3, 17.2.6, and 17.2.8.

54. Plant Modification No. 987, Piping Modification for Service Water System Sidestream Monitor

DESCRIPTION: The Modification provided sample supply and drain piping and an electrical power supply for equipment to monitor for corrosion and biological fouling of the Service Water System.

SAFETY EVALUATION: The tie-in for the sample supply line is nonsafety-related and located separate from safety-related components. The sample drain line discharges to an existing equipment drain and is also nonsafety-related. The monitoring equipment electrical power supply is nonsafety-related and uses spare balance of plant circuits and power panels.

FSAR REFERENCE: Figure 9.2.1-1.

55. Plant Temporary Modification No. 88-706, Temporary Pipe Cap on the Refueling Water Storage Tank Drain at Valve SI-837

DESCRIPTION: The Modification installed a pipe cap on the Refueling Water Storage Tank drain temporarily to prevent inadvertent leakage into the site storm drain.

SAFETY EVALUATION: The installation of the pipe cap is of no impact on safety-related equipment and provides additional assurance that reactor coolant makeup water will not find a path to the site storm drain system.

FSAR REFERENCE: Figure 6.3.2-1.

56. Plant Modification No. 971, Electro-Hydraulic Oil Cooler Temperature Control Valve

DESCRIPTION: The Modification installed a temperature control configuration for the Service Water System to monitor temperature of the coolant to the turbine Electro-Hydraulic Oil System reservoir.

SAFETY EVALUATION: The changes affect only nonsafety-related equipment and are located in the Turbine Building.

FSAR REFERENCE: Section 9.2.1.2 and Figure 9.2.1-1.

57. Review of UFSAR information regarding Containment fan cooler temperature indication

DESCRIPTION: Review of the UFSAR found a need to revise the description of the coolers' water discharge exit high temperature indication in the Unit 2 Control Room.

SAFETY EVALUATION: The water discharge temperature from the Containment fan coolers is not a critical parameter in post-accident response and no specific operator action would be required.

FSAR REFERENCE: Section 6.2.27.

58. Plant System Description SD-044, Halon Fire Suppression System, Procedure Change Notice No. 16848

DESCRIPTION: Plant Modification No. 935 relocated certain fire alarms to the central fire alarm console and revised the suppression time delay. The System Description was changed to reflect the new location and logic.

SAFETY EVALUATION: The relocation of the fire alarms is of no consequence to the operability of the instrumentation and controls for the Halon 1301 fire suppression system provided by the Low Voltage Fire Detection System. The change of the suppression time delay to 17 seconds +/- 4 seconds allows for operator evaluation of an alarm in time to respond accordingly.

FSAR REFERENCE: Section 9.5.1.

59. Plant Temporary Modification No. 88-704, Fuel Handling System Electrical Jumper

DESCRIPTION: The Modification isolated the PPS to the three Containment penetration sleeves to reduce the number of operator entries into the Pipe Alley and the associated radiation risks.

SAFETY EVALUATION: The temporary isolation of the PPS to the sleeves is of no impact to the operability of either the Containment penetrations or the PPS since the inner barrier design of the sleeves is such that leakage from Containment is highly unlikely and since the inner barrier will not degrade in the absence of continuous PPS pressurization.

FSAR REFERENCE: Sections 3.1.2.26, 3.8.1.1.6.2, and 6.9.2.1.

60. CP&L corporate reorganization

DESCRIPTION: Review of the UFSAR description of the CP&L organization responsible for the H. B. Robinson Steam Electric Plant, Unit No. 2 determined a need to update the information to reflect the current organization structure.

SAFETY EVALUATION: The changes are administrative and involve title changes and the shifting of certain, specific responsibilities.

FSAR REFERENCE: Section 13.1.1.1 and Figure 13.1.1-1.

61. Plant Modification No. 774, Secondary Sampling System

DESCRIPTION: The Modification relocated the Feedwater System sample point to provide for a better sample of the feedwater.

SAFETY EVALUATION: The relocation of the sample point is of no impact to the operability of the system and provides for improved sampling of the feedwater.

FSAR REFERENCE: Figure 10.1.0-5.

62. Incorporation of the Fire Hazards Analysis, FPP-RNP-900; Plant Modification No. 921, Diesel Generator Room Louver Modification; Plant Modification No. 844, Battery "C" Modification; Plant Modification No. 935, Unit 2 Fire Detection System Upgrade; Plant Modification No. 937, Upgrade Auxiliary Feedwater Flow Indication; Plant Modification No. 927, Relocate 230 kV Switchyard Protection and Controls to New Switchyard Building; Plant Modification No. 972, Service Water Chemical Treatment System; and, Plant Modification No. 909, Battery Room Ventilation

DESCRIPTION: The Fire Hazards Analysis, a reference document of the UFSAR, was incorporated into UFSAR Chapter 9, Section 9.5.1. Plant Modification 921 (Item 13) resolved a concern with regard to whether loss of Instrument Air to the diesel generator rooms' ventilation damper and louver controls could result in a common mode failure of both diesel generators due to overheating. Plant Modification 844 relocated a nonsafety-related motor control center to a nonsafety-related battery room. Plant Modification 935 (Item 23) upgraded the Low Voltage Fire Detection System for increased operability, reliability, and maintainability. Plant Modification 937 improved the accuracy and reliability of the Auxiliary Feedwater System flow indication instrumentation. Plant Modification 927 (Item 31) relocated the nonsafety-related 230 kV protection and controls to a location outside of the Unit 2 structures. Plant Modification 972 (Item 41) provided an interconnection between the existing sodium hypochlorite system and the Service Water System and added the capability for supplemental biological fouling control to minimize fouling and corrosion. Plant Modification 909 added electrical heaters in the safety-related Battery Room to assure ambient temperature would be maintained. Plant Modification 979 (Item 44) resolved a potential design deficiency with regard to whether two safety-related motor control centers could experience an over-current condition and relocated certain turbine auxiliary equipment power supplies to balance of plant motor control centers. Plant Modification 980 removed the reactor support and concrete shield wall cooling fans from two safety-related motor control centers to balance of plant buses to preclude the potential for overload during a postulated accident. These Plant Modifications resulted in a need to reassess the combustible loadings of the Plant and subsequent revision to the Fire Hazards Analysis to reflect new configurations and combustible loadings. The incorporation of the Fire Hazards Analysis into the UFSAR provides the document more visibility as a design reference during the review of facility modifications.

SAFETY EVALUATION: The changes involve three types: Editorial, minor increases in the combustible loading values, and the addition or revision of descriptions of plant features because of the modifications. No new credible fire hazard is created by the increases in combustible loadings. The relocation of Motor Control Center "C" by Plant Modification No. 844 decreases the probability of the occurrence of an accident by further separating the distance of the equipment from safety-related batteries "A" and "B". The indication instrumentation changed by Plant Modification No. 937 are not required for any safety-related function. The heaters installed by Plant Modification No. 909 are not required during either normal operations or emergency conditions to support the batteries or battery changes in the performance of their safety functions and will provide additional assurance that the Battery Room is maintained at optimum temperature for battery life and capacity. Plant Modification No. 980 added cable lengths in Fire Zone 25, an essentially outdoor fire zone, requiring recalculation of the combustible loadings in Btu only. The safety evaluations for the following Plant Modifications are presented earlier in this report as

indicated:

<u>Modification</u>	<u>Item</u>
921	13
935	23
927	31
972	41
979	44

FSAR REFERENCE: Pages 9.5.1A-i through 9.5.1A-vii; Sections 9.4.1, 9.5.1.1, 9.5.1.4.2.6, 9.5.1.4.2.6.2, 9.5.1.4.2.7, 9.5.1.4.2.8, 9.5.1.4.3.2, 9.5.1.4.3.3, 9.5.1.4.3.4.1, 9.5.1.4.3.4.3, 9.5.1.4.4.1, and 9.5.1.5.1; Table 9.5.1A-1; Figures 7.2.1-28, 8.2.1-2, 8.3.1-5, and 10.1.0-5; and, Appendices 9.5.1A through 9.5.1C.

63. "B" Safety Injection Pump Control Logic Modifications: Plant Modification No. 951, Safety Injection Pump "B" Deletion of Automatic Start; Engineering Evaluation No. 88-013, Technical Justification for the Change in Breaker Line-up for Breaker Group 52/29B, 52/22B and 52/29C; Plant Modification No. 947, Safety Injection Pump Availability Upgrade; and, Plant Modification No. 958, Add Automatic Start to "B" SI Pump

Specifications Amendment No. 109

DESCRIPTION: The Plant was modified early in 1988 following discovery of a potential single failure which may limit the Safety Injection System to one pump available for automatic start on a Safety Injection Signal. Modification 951 removed the automatic start controls for the "B" Safety Injection pump, thus placing the Plant in a limiting condition for operation with only two Safety Injection pumps operable. Plant Technical Specifications were amended to limit reactor operation to 60% of rated power with only two Safety Injection pumps operable. The Modification was completed following Engineering Evaluation 88-013, developed to correct a design operating breaker lineup deficiency in response to an NRC request for additional information on the "B" Safety Injection pump automatic transfer scheme. Analysis of the circuitry concluded that a loss of either safety-related battery bus coincident with a Safety Injection signal would limit the number of Safety Injection pumps available to mitigate the consequences of design basis accidents to a single pump. By reconfiguring the breaker lineup for the three Safety Injection pumps on automatic start, the "B" pump became available for operation only after local operator action. Plant Modification 947 followed and altered the "B" Safety Injection pump control logic in support of Modification 951. The 60% reactor power limitation was later eliminated by amendment to the Technical Specifications as supported by LOCA analyses which determined that the consequences of design basis accidents was not increased with only two Safety Injection pumps available, each powered from a separate emergency bus. Plant Modification 958 reinstalled the automatic start capability for the "B" Safety Injection pump but without the automatic transfer feature so that the "B" pump became available as a replacement for either the "A" or "C" pump if out of service for maintenance.

SAFETY EVALUATION: The analyses and revised Technical Specifications support changes to the facility as described in the SAR as well as changes to design basis accident response considerations. The changes are significant in scope although inconsequential with regard to the safety of the Plant or the health and safety of the public.

FSAR REFERENCE: Pages 15-xix and 15-xx; Sections 5.1, 6.3, 6.3.1.1, 6.3.2.2.1, 6.3.2.5, 7.3.1.3, 8.3, 8.3.1.1.5.1, 8.3.1.1.5.3, 8.3.1.2, 8.3.1.2.2, 15.1.5.2, 15.6.2, 15.6.2.1, 15.6.2.2, 15.6.5, 15.6.5.1 through 15.6.5.4, 15.6.5.5.1, and 15.6.5.5.2; Tables 6.3.2-8, 8.3.1-4, 8.3.1-5, 15.0.11-1, 15.1.5-1, 15.1.5-2, 15.6.2-1 through 15.6.2-4, 15.6.3-1, and 15.6.5-1 through 15.6.5-3; References 15.0-6, 15.1.5-5, 15.1.5-6, and 15.6.2-1 through 15.6.2-4; and, Figures 6.3.2-1, 8.3.1-3, 15.6.2-1 through 15.6.2-20, and 15.6.5-1 through 15.6.5-39.