WISCONSIN ELECTRIC

POWER COMPANY

POINT BEACH NUCLEAR PLANT

UNIT NOS. 1 AND 2

ANNUAL RESULTS AND DATA REPORT 1985

IE24
1/40

U.S. Nuclear Regulatory Commission
Docket Nos. 50-266 and 50-301
Facility Operating License Nos.
DPR-24 and DPR-27

PREFACE

This Annual Results & Data Report for 1985 is submitted in accordance with Point Beach Nuclear Plant, Unit Nos. 1 & 2, Technical Specification 15.6.9.1.B and filed under Docket Nos. 50-266 & 50-301 for Facility Operating License Nos. DPR-24 & DPR-27, respectively.

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1.0 INTRODUCTION

The Point Beach Nuclear Plant, Units 1 and 2, utilize identical pressurized water reactors rated at 1518 MWt each. Each turbine-generator is capable of producing 497 MWe net (524 MWe gross) of electrical power. The plant is located ten miles north of Two Rivers, Wisconsin, on the west shore of Lake Michigan.

2.0 HIGHLIGHTS

2.1 Unit 1

Highlights for the period January 1, 1985, through December 31, 1985, included a 75-day refueling outage, a brief outage caused by an inverter circuit board failure, and an outage to replace a power range detector. Unit 1 operated at an average capacity factor of 78.9% and a net electric/thermal efficiency of 32.8%. The unit and reactor availability were 79.0% and 79.7% respectively. Unit 1 generated its 45 billionth kilowatt hour (gross) on January 29, 1985; its 46 billionth kilowatt hour on July 9, 1985; its 47 billionth kilowatt hour on September 30, 1985; and its 48 billionth kilowatt hour on December 19, 1985.

2.2 Unit 2

Highlights for the period January 1, 1985, through December 31, 1985, included a 51-day refueling outage, a brief outage to weld repair a component cooling water leak on the "A" reactor coolant pump lube oil cooler, and a brief outage caused by a phase-to-ground fault in a switchyard bus section. Unit 2 operated at an average capacity factor of 84.8% and a net electric/thermal efficiency of 32.4%. The unit and reactor availability were 85.9% and 86.5% respectively. Unit 2 generated its 45 billionth kilowatt hour (gross) on January 30, 1985; its 46 billionth kilowatt hour on April 21, 1985; its 47 billionth kilowatt hour on July 12, 1985; and its 48 billionth kilowatt hour on October 1, 1985.

3.0 FACILITY CHANGES, TESTS, AND EXPERIMENTS

3.1 Amendments to Facility Operating Licenses

During the year 1985, there were 12 license amendments issued by the U.S. Nuclear Regulatory Commission to Facility Operating License DPR-24 for Point Beach Nuclear Plant Unit 1, and 10 license amendments issued for Facility Operating License DPR-27 for Point Beach Unit 2. These license amendments are listed by date of issuance and are summarized as follows:

3.1.1 03-07-85, Amendment 88 to DPR-24, Amendment 93 to DPR-27

These amendments provide a specific definition for the "fully withdrawn" condition of a control rod.

3.1.2 03-07-85, Amendment 89 to DPR-24, Amendment 94 to DPR-27

These amendments revise the surveillance requirements for the containment building prestressed tendons.

3.1.3 04-04-85, Amendment 90 to DPR-24

This amendment incorporates additions to the "Overtemperature delta T" and "Overpower delta T" equations of Specification 15.2.3.1.B(4) and (5), respectively, to accomodate the use of Rosemont RTDs.

3.1.4 04-08-85, Amendment 91 to DPR-24, Amendment 95 to DPR-27

These amendments provide additional restrictions on the movement of heavy loads over the spent fuel pool, changes to position titles within the administrative section of the Technical Specifications, and miscellaneous corrections and editorial changes.

3.1.5 07-18-85, Amendment 92 to DPR-24, Amendment 96 to DPR-27

These amendments incorporate Limiting Conditions for Operation and surveillance requirements for accident monitoring instrumentation installed in response to NUREG-0737, "Clarification of TMI Action Plan Requirements."

3.1.6 07-22-85, Amendment 93 to DPR-24, Amendment 97 to DPR-27

These amendments provide Limiting Conditions for Operation for the Reactor Coolant Gas Vents system.

3.1.7 07-22-85, Amendment 94 to DPR-24, Amendment 98 to DPR-27

These amendments changed the setpoint for the reactor coolant pump underfrequency trip.

3.1.8 07-26-85, Amendment 95 to DPR-24, Amendment 99 to DPR-27

These amendments modify steam generator inservice inspection requirements and delete a limiting condition for operation for the auxiliary feedwater system.

3.1.9 09-03-85, Amendment 96 to DPR-24, Amendment 100 to DPR-27

These amendments remove the restrictions on the movement of heavy loads over the spent fuel pool following crane modification to meet the single failure criteria of NUREG-0612.

3.1.10 10-03-85, Amendment 97 to DPR-24, Amendment 101 to DPR-27

These amendments add a new section to the Technical Specifications addressing the control of radiological effluents. These specifications define limiting conditions for operation and surveillance requirements for radioactive liquid and gaseous effluent monitoring, provide additional sampling locations and provide additional managerial review and reporting responsibilities.

3.1.11 10-22-85, Amendment 98 to DPR-24, Amendment 102 to DPR-27

These amendments revise the Point Beach Unit 1 and 2 reactor vessel surveillance capsule removal schedules in Tables 15.3.1-1 and 15.3.1-2, respectively.

3.1.12 11-04-85, Amendment 99 to DPR-24

This amendment deletes the conditions imposed by the Commission's Confirmatory Order for Modification of License dated November 30, 1979 and Order Modifying Confirmatory Order dated January 3, 1980. These operating restrictions were imposed because of the degraded nature of the Unit 1 steam generators; the Unit 1 steam generator replacement in early 1984 made these restrictions unnecessary.

3.2 Facility or Procedure Changes Requiring Nuclear Regulatory Commission Approval

There were no plant modifications or procedure changes during 1985 beyond those authorized with license ammendments as noted previously, which required Nuclear Regulatory Commission approval.

3.3 Tests or Experiments Requiring Nuclear Regulatory Commission Approval

There were no tests or experiments at Point Beach Nuclear Plant in 1985 which required Nuclear Regulatory Commission approval.

3.4 Design Changes

The following design changes were completed during 1985:

3.4.1 M-506 (Unit 1) and M-507 (Unit 2), Manipulator Bearing System. The modifications installed parts to and modified the upper and lower sheaves per the manufacturer's recommendation.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.2 M-675 Unit 1) and M-676 (Unit 2), Post-Accident Coolant Sampling. A stainless steel line with associated isolation valves has been installed in the residual heat removal piping to obtain the ability to sample coolant when a unit is on residual heat removal at low temperature and pressure.

Summary of Safety Evaluation: The design of the piping systems maintain the isolation and integrity of the system in accordance with the acceptable criteria for the systems involved and pose no additional or unanalyzed conditions degrading the safety of the plant.

3.4.3 M-701 (Unit 1) and M-702 (Unit 2), High Flow Condensate Makeup Valves. These modifications removed the controllers for 1(2)CV-2122 and all unnecessary instrument tubing as well as disabling position indication for the valves. These valves are not used during power operation. The valve installation is a carryover from fossil plant designs and serves no safety related purpose. In fact, the feature may not be desirable in a nuclear plant because operation with a gross condensate system leak could result in emptying of the condensate storage tanks. A minimum inventory of 10,000 gallons of water per operating unit must be maintained in the condensate storage tanks per the Technical Specification.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.4 M-744 (Common), Waste Disposal. The modification replaced the existing 3/4" piping from the bottom of the blowdown evaporator reboiler to the common suction header off the bottoms pump with the same size and type of piping. The replacement piping, however, minimized bend fittings in order to improve flow characteristics and prevent plugging in the line.

Summary of Safety Evaluation: The modification does not affect the safe operation of the plant. The system was functionally unchanged, and the modification performed in accordance with B31.1.

3.4.5 M-784 (Common), New Battery Rooms. This modification constructed four separate rooms in the primary auxiliary building El. 26' north wing and provided heating, ventilating and air conditioning systems necessary to accommodate the instrument bus upgrades performed per modifications E-206 and E-207.

Summary of Safety Evaluation: The new battery rooms are designed and constructed to quality assurance and Seismic Category 1 requirements. Piping and conduit relocation has been reviewed and controlled by the use of special maintenance procedures.

3.4.6 M-784-03 (Common), New Battery Room VAC. This addendum changed the logic such that fans W85 and W86 are not stripped on safety injection in either unit but rather are switched to low speed. It also installed pushbuttons on 2C20 which allows for reset to normal operation after a safety injection. The logic is changed in such a manner that the switching to low speed will take place only if the safety injection is coincident with a loss of offsite power.

Summary of Safety Evaluation: The ventilation and air conditioning system is required to remove heat generated by the inverters and battery chargers and maintain proper room temperature in each room. In addition, ventilation must be provided to the battery rooms to prevent accumulation of hydrogen. The system adequately and redundantly performs the intended function.

The heat removal capacity of each train is 321,000 BTU/hr with the fan on high speed and 186,000 BTU/hr on low speed. The heat load of each inverter is approximately 3.5 kW. If all inverters and battery chargers are energized, the total equipment heat load will be approximately 28 kW or 95,000 BTU/hr. The VAC system is, therefore, adequately sized to control battery room temperature at 77°F under design basis conditions. The 77°F design temperature is required to ensure the qualified life of the batteries. Short term temperature swings above 77°F are not a safety concern since the capacity of a battery at 100°F is still essentially 100%. The limiting condition for temperature which is safety related concerns the inverters. Inverter operation at higher room temperatures could cause failure of internal electronic components. Tests were conducted at the factory on sample inverters at 131°F for four hours to demonstrate minimum performance capability at higher temperatures. Therefore, maintaining inverter room temperature at some margin below 131°F is the only limitation which is safety related. Annunciation is provided in the control room if inverter room temperature exceeds 90°F which is adequate.

Power for the fan motors is from 480 V safeguards buses 2B32 and 2B42 which provide adequate availability and redundancy. These buses are not stripped on either a safety injection signal, undervoltage, or both. The motor control logic for the fan motors will automatically transfer the operating fan to lower speed if a safety injection signal is coincident with a loss of AC. The purpose of the transfer is to prevent unnecessary loading of the diesel generator. According to the vendor's technical data, the fan motors draw 14 kW at high speed, and 1.75 kW at low speed. The additional diesel loading at low speed amounts to 0.06 percent of the diesel capacity which is insignificant. Preliminary analysis indicates that inverter failures due to high ambient temperature could occur within approximately 20 minutes if fans are stripped. In the unlikely event a safety injection actuation coincided with a partial or total loss of outside AC, the unnecessary loss of instrument buses or both units would greatly complicate already serious matters. Considering the extreme importance of providing cooling to the inverter rooms, the addition of this relatively insignificant load to the diesel generators was considered appropriate and justified without further analysis.

3.4.7 M-784-04 (Common), Heating Steam. This addendum removed two hangers that supported a 12" building steam line due to interference. A new support was installed to carry the dead weight of the pipe.

Summary of Safety Evaluation: The piping involved performs no safety function. Stress analysis of the new support and loadings on the wall at the new location was performed and found to be satisfactory.

3.4.8 M-792 (Unit 1), Containment Structure. The modification removes approximately 6" of concrete from the bottom of the slab directly above spray valve 1-431B in order to facilitate access. The valve is located in the pressurizer cubicle.

Summary of Safety Evaluation: The structural adequacy of the pressurizer compartment has been verified by Bechtel analysis to be acceptable following this modification.

3.4.9 E-206 (Unit 1) and E-207 (Unit 2), Instrument Bus Upgrade. Addendum 3 to the modification revised the design to supply new battery charger D107 from new distribution 2B39 instead of existing MCC 2B32. New battery charger D108 is supplied from 1B49 instead of 1B42. The change was necessary to prevent potential steady-state loads in excess of 350 amps through the 480 V AC breaker (ACBs) which supply MCCs 2B32 and 1B42.

Summary of Safety Evaluation: This change prevents an increase in the potential of loss of safeguards MCC 1B42 and 2B32 due to an overload condition in excess of the design rating of the overload trip coil. The overload ratings of safeguards panels 1B49 and 2B39 and their respective supply breakers will not be challenged by the additional steady-state loading.

3.4.10 E-206 (Unit 1) and E-207 (Unit 2), Instrument Bus Upgrade. Addendum 4 to the modifications installed wires to connect relay contact 9-13 of the following relays to Terminals 11 and 12 on terminal block 6C in the designated safeguards rack: Relay 1(2)/S[illegible]X in Rack 1(2)C157 and Relay 1(2)/S120X in Rack 1(2)C167. The contacts are utilized in the control circuitry for the contactors in the battery charger supply circuits.

Summary of Safety Evaluation: The addendum installed internal wiring to be used in the relaying of the tripping function of the new battery charger magnetic contactors. Safety aspects of this relaying were previously evaluated in Addendum 2. The new internal wiring has been installed in its own train-oriented cabinets and the use of preexisting SI relay contacts does not present an unresolved safety question.

3.4.11 E-249 (Common), Emergency Power to Technical Support Center. The modification provided an alternative power source to the technical support center by installing a 480 V air circuit breaker connected to the gas turbine building 225 kW diesel generator.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.12 E-250 (Unit 1), Containment Electrical Installation. This modification consisted of the installation of electrical cable and required raceways necessary for completion of modifications required per TMI Lessons Learned. These included reactor vessel head venting; isolation valves; fire protection penetrations; primary system pressure; temperature and level instrument upgrades; as well as high range radiation monitoring.

Summary of Safety Evaluation: This modification consolidated the installation of conduit and cable for numerous other modifications and had no detrimental effect upon existing plant systems. The design and installation of the cabling systems meets or exceeds applicable criteria.

3.4.13 E-253 (Common), Control Building Electrical Installation. This modification consists of the installation of electrical cable and raceways necessary for completion of modifications required per NUREG-0737 and Appendix "R" to 10 CFR 50. These included reactor vessel head venting; isolation valves; fire protection penetrations; primary system pressure; temperature and level instrument upgrades; high range radiation monitoring; service water and auxiliary feedwater pressure instrument upgrades.

Summary of Safety Evaluation: This modification consolidated the installation of conduit and cable for numerous other modifications and had no detrimental effect upon existing plant systems. The design and installation of the cabling systems meets or exceeds applicable criteria.

3.4.14 IC-206 (Unit 1), Pressurizer Safety Valve Acoustic Monitoring. This modification added an acoustic monitor to each of the pressurizer safety valves to detect the passage of fluid through the valves when either a valve is opened or leakage exists. A five-channel critical leakage monitoring system was used which provides separate alarm indication for each channel.

Summary of Safety Evaluation: This modification provided direct valve position indication at all times as required by NUREG-0737.

3.4.15 IC-212-(Unit 1) and IC-213 (Unit 2), Reactor Coolant Temperature. These requests provide hot leg RTD information on 1(2)C04 to fulfill TMI Lessons Learned requirements.

Summary of Safety Evaluation: The modifications were required to provide positive indication of natural circulation in those events where natural circulation is required.

3.4.16 IC-231 (Common), Meteorological Monitoring Upgrade. This modification reinstrumented the existing 45 meter meteorological tower at the 10 meter and 45 meter elevations and addition of a backup 10 meter tower to comply with post-TMI requirements.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.17 IC-236 (Unit 1) and IC-237 (Unit 2), Feedwater Flow. These modifications installed a Westinghouse leading edge flow meter on each unit's main feed line to enhance the reliability and accuracy of feedwater flow measurements.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.18 IC-258 (Common), IC-259 (Unit 1) and IC-260 (Unit 2), Safety System Transmitters. These modifications requests replaced safety related pressure, differential pressure and several level transmitters (boric acid storage tank and condensate storage tank) with transmitters environmentally qualified to IEEE 323-1974 (as implemented by NUREG-0588) and IEEE 344-1975 (as implemented by Regulatory Guide 1.100). Replacement was required as a result of evaluations performed for IE Bulletin 79-01B and the transmitters also meet the requirements of Regulatory Guide 1.97.

Summary of Safety Evaluation: The modifications enhance the safety of all affected systems by upgrading the qualification standards.

3.4.19 IC-261 Addendum 4 added high alarm, change in alarm status and control terminal (CT) fail alarm to ASIP. The design does not allow the 10 minute high alarm interrupt to continuously ring the "change in status" alarm. The modification was installed after the existing RMS was removed. Alarm windows "change in status" and "CT failure" replaced old RMS alarm windows. These alarms have ultimately been added to the ASIP as permanent alarm drops.

Summary of Safety Evaluation: Improves operator awareness of RMS status by alarming system changes.

3.4.20 IC-261-08. This addendum modified the detector wells for 1(2)RE-215 condenser air ejector radiation monitors to allow installation of Eberline Model RDA-3A detector.

Summary of Safety Evaluation: Installation of the detector well meets same requirements as the original design. The replacement scintillation detector is of equal sensitivity as the original GM detector and provides adequate response to normal operating plant conditions. Monthly source response checks are accomplished by manual means.

3.4.21 IC-314/315. As required by Regulatory Guide RG 1.97 Pressurizer Relief Tank Pressure Transmitter 1(2)PT-440 was recalibrated for a range of 100 psig.

However, since normal pressure for the PRT is 2-5 psig, it was determined that this pressure would be difficult to read for the operators on a 0-100 psig scale. Therefore, it was determined to install a dual channel indicator with scale of 0-100 psig and 0-25 psig (for better resolution of lower pressures). To accomplish the scaling from the wide range (0-100 psig), a ratio station controller was installed in the PT-440 loop and it drives the narrow range indicator.

Summary of Safety Evaluation: Not required.

3.4.22 82-015 (Unit 1) and 82-16 (Unit 2), Main Turbine. The modifications installed an intermediate latching relay in the 20-ET solenoid valve circuit providing redundancy in the turbine tripping logic to protect against a failure of the 20-AST solenoid coil or a failure of the OSTR by holding the 20-ET energized until the intermediate relay is reset.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.23 82-18 (Common), Main Control Boards. The modification changed out status light resistors in the main control boards, providing a greater distinction between the dim and bright indication.

Summary of Safety Evaluation: Not nuclear safety related. An SMP was required to perform the job if the affected unit is operating because status light indication will not be available during resistor installation.

3.4.24 82-69 (Unit 1) and 82-70 (Unit 2), Fuel Handling. The modifications scribed the fuel manipulator hoist speeds on the speed control switch to provide administrative control of hoist speed when fuel is raised or lowered within the core.

Summary of Safety Evaluation: Not required.

3.4.25 82-100 (Common), Auxiliary Building Crane. The modification replaced the existing 130/20 ton trolley with an Ederer 125/20 ton X-SAM trolley. Both the main and auxiliary hoists are single-failure proof.

Summary of Safety Evaluation: The new trolley has been generically approved under Ederer Topical Report EDR-1 by the NRC. Structural adequacy has been verified by load testing after installation.

3.4.26 82-103 (Common), Emergency Diesels. The modification replaced the ¼" copper diesel sensing lines with stainless steel tubing.

Summary of Safety Evaluation: Replacing the sensing lines does not affect the function or control of the emergency diesel generator. Reliability has been improved by the higher fatigue resistance of stainless tubing over copper tubing.

3.4.27 82-117 (Unit 1), Waste Disposal Letdown Gas Stripper. The modification replaced relief valve GW-82A with a bellows-sealed relief valve to minimize lifting of the relief valve at low flow or no letdown conditions. The setpoint of the valve is not affected by backpressure, and it can be benchset to 145 psig versus the 108 psig (the setpoint of the existing valve). The new valve will be a direct bolt-in replacement.

Summary of Safety Evaluation: The bellows-type relief valve provides the same relief protection as the existing valve and its design and construction is consistent with system design criteria. The integrity of the gas stripper and associated piping has not been degraded, and the potential for a radioactive release has not increased.

3.4.28 83-40 (Common), Fuel Handling System. The modification permanently locates the fuel sipping device and control panel to the tool storage area in the northwest corner of the south half of the SFP. The sipper container legs have been shortened and a stand fabricated to elevate the container above the SFP rack seismic restraints.

Summary of Safety Evaluation: The new location is verified acceptable with regard to criticality considerations and access to the sipping container is via the use of normal fuel handling equipment and procedures. Stresses in the adjacent fuel pond wall from thermal effects were verified acceptable prior to relocating the sipping container.

3.4.29 83-51 (Unit 1), Fuel Handling. This modification procures new fuel manipulator grippers with design features to positively prevent gripper engagement or disengagement unless the manipulator mast is properly positioned upon the fuel assembly.

Summary of Safety Evaluation: The new gripper assembly prevents engagement unless properly positioned on a fuel assembly, thus reducing the potential for a fuel handling accident. The design material and craftsmanship is equal to, or better than the original equipment.

3.4.30 83-55 (Unit 1), 83-56 (Unit 2) and 83-57 (Common), Auxiliary Feedwater System. These modifications replace the existing auxiliary feed pump discharge check valves (1AF-108, 2AF-108, AF-109, and AF-110 respectively) with valves designed for better maintainability and leak tightness.

Summary of Safety Evaluation: The modifications did not involve a change in system function, and the slight differences in the performance characteristics between the existing and replacement check valves do not reduce the ability of the auxiliary feedwater system to perform its intended safety function. The replacement check valve design and installation requirements meet or exceed original system specifications. Post-installation testing has verified operability of the new valves.

3.4.31 83-70 (Common), Main Steam Crossconnect. The modification installed a crossconnect from the house heating steam system to each unit's gland sealing steam system, and added a bypass line around the primary air ejectors suction supply isolation valves. This allowed supplying gland sealing system with house heating steam and condenser exhausting via the spare circulating water vacuum priming pump.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.32 83-73 (Unit 1) and 83-74 (Unit 2), Secondary Sampling. The modifications installed new secondary sampling lines and control panels meeting EPRI SGOG secondary chemistry guidelines.

Summary of Safety Evaluation: Addition of the new secondary sample control panel and sampling lines will have no adverse effects upon the FSAR safety analyses or Technical Specifications. This is based upon the fact that the secondary sampling system is not essential for safe shutdown and is not required in any of the safety analyses. Additional tubing and piping was designed and installed consistent with existing design and B31.1-1967. Sample lines were not routed in any area where a high energy pipe failure analysis would be required. Installation of the modifications does not prevent Technical Specification-required secondary sampling. Required power was obtained from non-vital sources.

3.4.33 83-73-02 (Unit 1) and 83-74-02 (Unit 2), Secondary Sampling System. Addendum 2 to each of these modifications installed sample lines on the vent connections on the suction of each of four auxiliary feed pump suction lines

Summary of Safety Evaluation: The addendum does not involve an unreviewed safety question and does not adversely affect the functionability or capability of the auxiliary feedwater pumps. Seismic qualification of the auxiliary feedwater pump suction piping will be maintained, and a severed sample tube will not significantly decrease the quantity of water available to the pump. No Technical Specification changes were required.

3.4.34 83-93 (Unit 1) and 83-94 (Unit 2), Turbine Generators. These modifications installed reverse power protective relaying with a time delay feature such that a generator reverse power alarm will be received prior to a reverse power alarm being received, and will give the operator approximately 45 seconds to remove the reverse power condition prior to the automatic generator trip.

Summary of Safety Evaluation: The changes were made to reduce the time delay between the onset of reverse power and initiation of the reverse power alarm, and to cause an automatic generator breaker trip 34 seconds after the reverse power comes up. The proper operation of this circuit removes the requirement for the operator to manually trip the unit within 60 seconds of the onset of reverse power.

3.4.35 83-118 (Common), Emergency Diesel Rooms. The modification request changed the lower sections of the air intake louvers to permit water to escape from the diesel rooms in the event of flooding in the rooms caused by a postulated circulating water pipe rupture in the turbine hall.

Summary of Safety Evaluation: Not required.

3.4.36 83-120 (Common), Spent Fuel Storage. The modification provides for the design and procurement of containers in which spent fuel assemblies (one per container) are stored for shipment from West Valley, New York to PBNP. The assemblies are not removed from the canisters at PBNP but are stored in canister assemblies in the fuel pit racks.

Summary of Safety Evaluation: Adequate measures have been taken to ensure that spent fuel assemblies can be safely stored and handled in the fuel shipping of the canisters. Passages for flow of coolant are provided in the top and bottom, and the lid-to-can latching mechanism is designed with a load safety factor of 8. Additionally, a load test has been performed by the manufacturer and checkouts performed on the prototype assembly to ensure compatibility with PBNP spent fuel racks and gripper.

3.4.37 83-123 (Unit 2), Reactor Trip Breakers. The modification installed a shunt trip relay in each of the reactor trip breakers in parallel with the undervoltage trip relay. Actuation of the STRs is in addition to and as a backup for actuation of the undervoltage trip attachment. The modification was necessary to meet the requirements of Generic Letter 83-28.

Summary of Safety Evaluation: A plant-specific unreviewed safety question was determined to exist concerning this modification. These safety questions are described in the attachment to the 08/10/83 SER submitted to the Westinghouse Owners Group. Satisfactory draft responses to the questions are contained in an 03/30/84 memo (Katers to Zach) as modified on 05/02/84. The responses resolve safety questions raised and contain proposed Technical Specification changes which were reviewed by the NRC. Installation of the modifications was controlled via SMP.

3.4.38 83-122-03 (Unit 1), Shunt Trip Test Jacks. This addendum installed double banana test jacks in the reactor trip breaker terminal board cubicles RTA ("A" train) and BYW ("B" train) designated as TP-7 and TP-8, and wired to the shunt trip test panel, TBA-7,8 and TBB-7,8. These test jacks are used during annual testing of the manual reactor trip pushbuttons. The new testing requirements state that no lifted leads or jumpers are to be used.

Summary of Safety Evaluation: The addition of test jacks in the reactor trip breaker terminal board cubicles, RTA and BYA, allow easy access for testing purposes of the manual reactor trip pushbuttons. The test jacks are installed across the trip coil and "A" contact connection. It allows for positive independent verification of operation of the manual reactor trip pushbutton contacts in the trip coil circuit. The failure mechanism of the installation is such that it could possibly render the trip coil inoperable, but would not affect the breaker UV coil circuit. This has been found acceptable by the NRC in the safety evaluation of the shunt trip modification. The installation was controlled by an SMP. It does not constitute an unreviewed safety question and does not require a change to Technical Specifications.

3.4.39 83-155 (Unit 2), CVCS. The modification changed the control circuitry for excess letdown valve 1 MOV-1299 to prevent spurious operation by installing a double break circuit in the opening coil portion of the circuitry.

Summary of Safety Evaluation: The modification installed a double break circuit in the opening coil portion of the control circuitry to prevent spurious operation of the valve. Under this scheme, spurious operation would require the independent shorting of two new fire retardant cables as described in the April 27, 1985 letter from C. W. Fay to H. R. Denton. This is not considered to be a credible accident. The new circuit design inhibits spurious valve operation even during a fire external to the control room. Installation of a new control switch on the main control board is equivalent to the present configuration. Installation was controlled by SMP.

3.4.40 83-167 (Unit 1) and 83-168 (Unit 2), Waste Liquid. The modifications installed a flow reversing insert in the reactor cavity drain pipe such that the entrained matter is directed toward the existing crud trap. This should reduce or prevent hotspots in the drain line. The modifications also installed a hinged drain closure plate which can be closed by a release cable from EL. 66'.

Summary of Safety Evaluation: The modifications do not affect the safe operation of the plant because the drain will continue to function in the same manner; the filling of the cavity does not lift out the insert, and any uncontrolled flow through the drain can be controlled by lowering the cover plate. No Technical Specification changes are required.

3.4.41 83-169 (Unit 1), Equipment Hatch Bolting. The modification drills holes in the flange and installs studs in these holes for the purpose of bolting the equipment hatch in place. These studs are in addition to the swing bolts originally installed and will replace the temporary boiler clamps.

Summary of Safety Evaluation: The equipment hatch, as originally designed, had 24 swing bolts installed on it to provide the clamping force necessary to seal the flange joint. Due to warpage of the hatch, these swing bolts were not able to provide the needed force. Several "C" clamps were used to deflect the flange in order to obtain a proper seal. Due to the safety hazards and difficulties encountered with the use of "C" clamps, an alternate method was desired.

The equipment hatch problem was discussed with the hatch vendor. He noted that the existing swing bolts can apply a force on the flange that would result in a stress (in the flange) near the design limit, if loaded to their capacity. Therefore, a method of clamping that will not apply any additional stress on the flange (due to a bending moment) must be used.

The new method of clamping does not apply a moment arm on the flange like the swing bolt arrangement.

Under a design load condition, the spherically shaped hatch will be subject to compressive loading (due to pressure acting on the convex face). Therefore, any tensile stress induced as a result of deflecting the flange, for sealing purposes, should not be increased.

The material used for the flange attachments was per original design specifications. The attachments were welded on by a qualified welder using a qualified procedure (P-1 Group 2 to P-1 Group 2). The maximum torque that will be applied to the clamping bolt will be that which will not impose a stress on the attachment (weld) above that allowable.

3.4.42 83-170 (Unit 2), Containment Equipment Hatch. The modification added 38 lugs welded onto the hatch flange to be utilized in conjunction with the 24 swing bolts to seal the hatch. The modification was necessary to control the warpage which occurred to the hatch.

Summary of Safety Evaluation: Design and installation will be in accordance with original design and installation specifications, i.e., resulting stress levels, materials, design practices, and installation details. The proposal does not increase the potential for nor the consequences of a design basis accident, nor does it pose an unreviewed safety question. No Technical Specification changes are required.

3.4.43 83-179 (Unit 2), Reactor Coolant System. This modification installed Midwest flow alarm switches in parallel with the Barton flow transmitter. The modification request was revised to change out the Barton transmitter with a new Midwest transmitter with integral flow alarm switch.

Summary of Safety Evaluation: Replacement of the Barton differential pressure unit with Midwest differential pressure unit improves system performance and reliability. All components used meet or exceed original system design requirements and do not degrade system integrity. The replacement does not affect the seismic analysis of the support structure due to no significant change in instr..nent weight.

3.4.44 83-183 (Unit 1) and 83-184-(Unit 2), Incore Flux Mapping. The modifications changed the incore thimble tube cover gas from carbon dioxide to helium and sealed leakage paths from the 10-path, 5-path and drive assemblies to reduce helium losses.

Summary of Safety Evaluation: The modifications were designed to improve reliability of the primary system boundary by eliminating a potentially corrosive atmosphere within the incore detector thimbles. The modification did not increase the likelihood of any analyzed accident, nor did it increase the probability of an accident. Helium within the core region is considered acceptable and although tritium will be produced, the magnitude is minimal and inconsequential when compared to the projected radioactive release from the core during a DBA. Tritium release to the containment will only occur during flux mapping and will be removed by continuous vent; thus there will not be a continual buildup.

3.4.45 84-001 (Common), Main Control Boards. The modification relocated Units 1&2 auxiliary feedwater disabled alarms, waste disposal and residual heat removal pump room level high alarm annunciation within C01. It also moved water treatment, sewage treatment, potable water, and heating boiler alarms from main control board C01 to ASIP 1C20.

Summary of Safety Evaluation: Not nuclear safety related. These annunciator relocations either maintain or improve the present indication of safety-related system conditions. They do not constitute a change to Technical Specifications. However, their relocation may have caused a momentary loss of alarm indication; therefore, the changes were controlled by a special maintenance procedure.

3.4.46 84-003 (Unit 1), Residual Heat Removal. This modification installed tees and Whitey vent valves on the residual heat removal pump seal flushing line for venting the pump's seals.

Summary of Safety Evaluation: The fitting and valve installation met or exceeded original system requirements. System integrity was not degraded. The small additional mass did not affect the seismic qualification of the system.

3.4.47 84-034 (Common), Fire Protection. The modification added 3/4" gypsum plaster on metal lath in a 1:1/2 gypsum/sand mix to provide fire resistance on the concrete block walls enclosing the entrance to the stairwell from the control room to the cable spreading room.

Summary of Safety Evaluation: The wall is located in a Seismic Class I area. A seismic analysis of the wall with the added weight of the plaster was performed and the wall was reinforced as necessary in a way that will not compromise the fire resistance or seismic classification of the wall. This modification does not require a change to the Technical Specifications.

3.4.48 84-43 (Unit 1) and 84-44 (Unit 2), Main Control Board. The modification changed the control switch for 1(2)LCV-112A from a spring return to auto from the volume control tank to a three-position switch (VCT, auto, divert).

Summary of Safety Evaluation: During normal plant operation with the three-way switch in the auto position, a high level in the volume control tank will automatically divert letdown flow to the holdup tanks. In the VCT position, this automatic function is bypassed to allow planned evolutions where the VCT is filled above the high level setpoint. If the switch is inadvertently left in the VCT position, the VCT pressure high/low and VCT level high/low alarms will indicate the condition before damage to the RCPs or other system components occurs.

3.4.49 84-057 (Unit 1), Main Feed Regulating Valves. The modification installed additional solenoid valves in order to obtain a 15-second closing time required for safety injection.

Summary of Safety Evaluation: The additional air dump solenoid valves ensure rapid closure of the main feedwater regulating valves on a safety injection signal and do not affect other valve control functions. Operability is verified by test and the SOV used is environmentally qualified. The SOV is normally energized and therefore failure of its coil or power supply causes closure of the main feed regulating valve. Since the design flow of the main feed bypasses is a small portion of the main feed regulating valve, a similar dump SOV is not required on the main feed regulating valve bypasses.

3.4.50 84-064 (Common), Emergency Diesels. The modification installed a disc, spacer, and stud in the G01 and G02 lube oil strainer housing to prevent oil from spraying out of the strainer housing when the cover is off and high filter pressure is encountered. This situation could occur when oil is being added with the engine idling.

Summary of Safety Evaluation: The improvement was recommended by EMD per MI 9960, and was intended to reduce the hazard to personnel and equipment from oil spray. The new component was installed per EMD recommendations and its failure, although highly unlikely, would not be expected to affect the availability of the emergency diesels. The margin of safety as defined in the Technical Specifications was not reduced; the possibility of an unanalyzed accident was not created, nor was the probability of a previously evaluated accident increased.

3.4.51 84-065 (Common), Radwaste Steam. The modification tied radwaste steam traps from SA-9/SA-10 and SA-1 to permit steam to be vented to the heating and ventilating condensate return unit-its previous location, the Unit 1 blowoff tank, or Unit 1 condenser.

Summary of Safety Evaluation: Elimination of the current steam vent source improved the plant by preventing degradation of equipment from high moisture. The 3/4" line did not affect the function of the box-type supports used (R374, R375 & R376). The relative difference between the 3/4" pipe and its support in comparison to the non-load bearing function of the box supports resulted in this conclusion.

3.4.52 84-73 (Common), Fire Protection. The modification re-routed HR-34 to provide better hose stream coverage of the heating boiler room and to minimize the probability of freezing problems.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.53 84-080 (Common), Service Air. The modification replaced the K3B service air compressor and provided a redundant service water supply to each service air compressor.

Summary of Safety Evaluation: The plant service air system provides no safeguards function. Design, installation and testing of the new compressor, receiver, piping, etc., met or exceeded original system requirements. The service water crossconnect for compressor cooling is similar to the existing crossconnects for the instrument air compressors. The new air compressor motor is the same horsepower and uses the same power source as the old K3B compressor.

3.4.54 84-082 (Common), Steam Generator Storage Building. The modification installed a concrete block wall with standard door and truck access-type door in the west opening of the south part of the building.

Summary of Safety Evaluation: Replacing the existing plywood doors and wall with a steel roll-up door and concrete walls did not degrade the structure of the steam generator storage building. This modification enhanced security of the building and provided additional radiological shielding. No unreviewed safety questions or Technical Specification changes were involved.

3.4.55 84-083 (Common), Fire Protection. The modification provides automatic sprinkler protection for the 1&2B32 motor control center area, the safety injection pump room, warehouse No. 3, the receiving building, and the flammable liquids dispensing room.

Summary of Safety Evaluation: The only systems of safety concern related to this modification are the sprinklers being added to El. 8' of the primary auxiliary building.

No Technical Specification changes were required to allow installation of the modification. However, Technical Specification Change Request No. 79 would be revised prior to issuance to include the subject sprinkler system.

The effect of sprinkler system water spray on essential equipment and the possible flooding hazard from fire protection system actuation was evaluated to ensure an unsafe condition would not result from sprinkler actuation.

3.4.56 84-083-01 (Common), Fire Protection. This addendum provided additional automatic sprinkler protection in the primary auxiliary building El. 8' central area from the east wall to the eastern edge of the resin cask railway.

Summary of Safety Evaluation: The safety evaluation for modification request 84-083 applies since this addendum only increased the area of sprinkler coverage and did not include any significant change in scope.

3.4.57 84-085 (Unit 1), Reactor Coolant System. The modification removed snubber HS-200 (formerly numbered 1HS-M74) which was replaced in order to satisfy Technical Specification requirements. The snubber had been removed and three additional snubbers installed as part of IE Bulletin No. 79-14 work activities.

Summary of Safety Evaluation: The modification does not affect the safety operation of the plant as documented in the Cartwright to Zach memo dated 10/07/83 and confirming letter from Impell to Frieling dated 10/20/83. The operability and functionability of the system is maintained and could be improved by removing this snubber. This modification required a Technical Specification change.

3.4.58 84-086 (Unit 2), Main Control Boards. The modification rewired the NI blocking relay inputs to the status lights to a series connection between Trains "A" & "B" (the old configuration was a parallel connection).

Summary of Safety Evaluation: The modification gives the operator positive indication that the reactor trips from the source, intermediate and lower power ranges have been blocked. Indication of an individual train being blocked or unblocked is given by plant process computer alarm. The computer alarm ensures that the operator is aware if only one channel has been blocked or if one channel should fail to automatically unblock. A blocked condition on the source range is also indicated by a loss of detector indication. A special maintenance procedure was used for installation of this modification.

3.4.59 84-087 (Common), Heating Steam. The modification installed a sample point in the heating steam condensate return line drain to auxiliary feed pump suction to permit sampling the line for contamination.

Summary of Safety Evaluation: The design of this sample point conforms to existing piping codes and does not alter the function or integrity of other systems. The sample point is isolable from the auxiliary feedwater system by means of an existing manual valve. The sample point is not located in a system with seismic requirements, and the modification will not affect the seismic qualification of other systems.

3.4.60 84-095 (Unit 1&2), Safety Injection. The modification cut and capped the piping downstream of test line sample and drain valves 1(2)SI-882 & 883.

Summary of Safety Evaluation: Addition of caps downstream of the safety injection system test line drain and sample isolation valves did not degrade system integrity. Cap installation met all requirements for piping class 1501R and design criteria of the safety injection system.

3.4.61 84-118 (Unit 1) and 84-119 (Unit 2), Emergency Diesels. The modifications installed a baffle between the emergency diesel generator engine crankcase pressure detector and the engine accessory gear train housing to prevent a false crankcase pressure alarm from occurring during acceleration from zero to full speed following a cold start. The false alarm was caused by engine lube oil from the accessory gear train being forced into the cavity on the engine side of the crankcase pressure detector diaphragm.

Summary of Safety Evaluation: Addition of a baffle to this pressure detector increases the reliability of the engine crankcase pressure alarm. As stated, this baffle did not affect the alarm setpoint but does reduce the likelihood of a false alarm caused by splashing of the engine lube oil on a fast start. No trips or other functions are initiated from this pressure detector.

3.4.62 84-127 (Unit 2), Hangers & Supports. The modification removed snubber HS-1 (former number 2HS-M75) from the pressurizer safety relief valve discharge header.

Summary of Safety Evaluation: The analysis performed by Impell shows that removal of this snubber will not affect the safe operation of the plant. HS-1 is currently acceptable per the Impell February 24, 1984, letter, but it is not required. A Technical Specification change was required.

3.4.63 84-129 (Unit 1), Main Feedwater System. The modification replaced installed solenoid valves 1SV-466C&D and 1SV-476C&D for the main feed regulating valves and the solenoid valves on each of the main feed regulating valve bypass valves with ASCO solenoid valve Model 206-381-6F.

Summary of Safety Evaluation: The modification changed the valve closure time to be consistent with the time which was assumed in the FSAR analyses. This is acceptable per Westinghouse letter WEP 84-534; the function of the valves remains the same; environmentally qualified valves were used.

3.4.64 84-134 (Unit 1) and 84-135 (Unit 2), Fuel. The modifications made a transition during future reload cores from 1/3 optimized fuel assembly (OFA) to an all-OFA core. The gradual transition increases efficiency of the core by reducing the amount of parasitic material and reduces fuel cycle costs due to an optimization of the water to uranium ratio. Major differences are use of 5 intermediate Zircaloy grids for OFA versus Inconel grids for standard fuel and a reduction in fuel rod diameter and guide thimble diameter.

Summary of Safety Evaluation: The modifications (84-134/135), implemented the use of optimized fuel assembly (OFA) regions for PBNP both units. This required a change in the Technical Specifications.

3.4.65 84-140 (Common), Auxiliary Feedwater. The modification installed local level gauges on condensate storage tanks T24A&B.

Summary of Safety Evaluation: The modification improves plant shutdown capability if the control room is inaccessible. The new gauges replaced the transmitter and local level indicator which were removed under modification IC-316. All components used meet or exceed original system ratings and do not degrade system integrity.

3.4.66 84-171 (Unit 2), Condensate/Feedwater. These modifications replaced the Unit 2 Nos. 1&2 (2HX-17A&B) feedwater heaters. The new stainless steel tube bundles will alleviate copper transport to the steam generator caused by the corrosion of the existing tubes. The existing heater shells were reused.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.67 84-172 (Unit 2), Condensate/Feedwater. These modifications replaced the Unit 2 Nos. 3A&3B (2HS-19A&19B) feedwater heaters. The new stainless steel tube bundles will alleviate copper transport to the steam generator caused by the corrosion of the existing tubes. The existing heater shells were modified and reused.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.68 84-176 (Unit 1), Turbine Trip Defeat Circuit. This modification installed a key switch on the back of CO2 near the unit 86 lockout device with contacts which disable turbine trips to the primary and secondary lockout circuits (for use during shutdown periods). One contact was used in the "turbine trip circuits disabled" alarm. This modification allows the lockout circuits to be energized during shutdown periods thereby protecting the generator and generator breaker.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.69 84-179 (Unit 1) and 84-180 (Unit 2), Hangers & Supports. The modifications replaced the existing self-aligning ball bushings in the 500 and 800 K Anker-Holth steam generator snubbers with bushings having a static radial load rating exceeding the load rating of the suppressor. The change was recommended by the manufacturer because of a revision to the static radial load ratings. The modifications also replaced the blind-end flange on the 500 K snubbers with stronger blind-end flanges supplied by Anker-Holth.

Summary of Safety Evaluation: Not required.

3.4.70 84-186 (Unit 2), Circulating Water/Condensate. This modification retubed main condensers 2SC-1A&1B. The new stainless steel tubes will alleviate copper transport to the steam generator caused by the corrosion of the existing tubes.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.71 84-191 (Unit 1) and 84-192 (Unit 2), Main Steam. The modifications changed the main steam nonreturn valve shaft/arm attachments to more securely retain their counter-weight arms.

Summary of Safety Evaluation: Not required.

3.4.72 84-235 (Unit 1) and 84-236 (Unit 2), Fuel. The modifications removed the insert and 4 flexure pins from each of 33 control rod guide tubes and replaced these with a flexureless insert.

Summary of Safety Evaluation: The flexureless inserts act as a guide for drive rod travel and also as a flow restrictor to limit flow to the upper head region. The flexureless insert is an improved design by Westinghouse which performs the same function as the original flexure and insert (donut) arrangement. The need for 4 flexures to hold the insert in place from above the insert is eliminated by use of the flexureless insert. Although the flexure heads were removed, removal was not necessary to permit use of the flexureless inserts. The flexureless insert is held in place by a mechanical spring mechanism which exerts an outward force on 4 latches which engage the upper housing plate of the guide tube. The resulting pull-out force for the flexureless insert is larger than the calculated forces the insert will experience for all operating and accident conditions. The flexureless insert performs the same function as the original design and removal of the flexures eliminates the concern for loose flexure heads. Flexureless inserts do not create the potential for any new unanalyzed accidents nor do they increase the probability of any previously analyzed accidents. No changes to the Technical Specifications are required.

3.4.73 84-240 (Unit 2), MSR Internals Redesign. The modification replaced the steam distribution channels in the moisture separator reheaters. The MSR demister pads were also replaced with chevron-type moisture separators.

Summary of Safety Evaluation: Not required.

3.4.74 84-252 (Unit 1), Reactor Vessel Internals. This modification removed the control rod guide tube (CRGT) support pins (two per CRGT) using a metal discharge machinery device and remnant tooling. The CRGTs were removed from the upper internals so that a new pin of improved design could be inserted and torqued down. All work was completed in the cavity under water for ALARA considerations.

Summary of Safety Evaluation: The implementation of this modification will not affect the safe operation of the plant based upon the acceptance of the Westinghouse safety evaluation (NS-RCSCL-C/L-85-132) and the review of the Technical Specification and FSAR safety analysis considerations. No Technical Specification change was required. In addition, Westinghouse has provided technical justification in a February 22, 1985, letter, WEP-85-521, that further ubstantiates the safety aspects of this modification.

3.4.75 84-278 (Unit 1), Reactor Vessel. The modification replaced the reactor vessel thermocouple column conoseal carbon steel clamps with stainless steel clamps using simplified bolting. The manufacturer recommended such replacement.

Summary of Safety Evaluation: Not required.

3.4.76 84-291 (Unit 1) and 84-292 (Unit 2), Reactor Protection. The modification installed three new manual reactor trip pushbuttons per unit and rerouted control board wiring such that "A" and "B" train control circuits are on separate pushbuttons. Bypass breaker position indications were provided in the control room by replacing the old four main breaker position indication lights with eight new displays.

Summary of Safety Evaluation: The modifications ensure that physical and electrical separation of manual initiation and breaker position indication (both main and bypass) circuits is obtained by the addition of three new qualified trip/reset pushbuttons and rerouting of control board wiring. This meets the requirements of IEEE-384 for separation of safety-related circuits and the requirements of the NRC safety evaluation report for PBNP on Generic Letter 83-28, Item 4.3.

In addition, qualified control board position indicator lights are provided for the reactor trip main and bypass breakers; and once again, train separation is provided. The modification also interlocks the bypass breaker remote position indication lights at both the RPS logic test panels and on the main control board, with a bypass breaker cell switch so bypass breaker position give positive indication that the breaker is fully racked in and operable. Thus, the bypass breaker open or closed indicating lights will be activated only when the bypass breaker is in the operate position. The operator can then readily determine if a main reactor trip breaker is bypassed by observing that the corresponding bypass breaker closed lamp is lit.

Testing procedures were instituted to confirm that the test used to determine bypass breaker operability will also demonstrate proper operation of the control board breaker position indication. Installation of the modification was controlled by special maintenance procedure. The modification does not constitute an unreviewed safety question. A Technical Specification change request was submitted after installation and in conjunction with modification requests 83-122/123.

3.4.77 84-292-01, Reactor Protection System. The addendum to the modification installed test jacks in the reactor trip breaker terminal board cubicles wired to the shunt trip test panels. The test jacks will be used during annual testing of the manual reactor trip pushbuttons.

Summary of Safety Evaluation: The addition of test jacks in the reactor trip breaker terminal board cubicles RTA and BYA allows easy access for testing purposes of the manual reactor trip pushbuttons. The test jacks were installed across the trip coil and "A" connection. It allows for positive independent verification of operation of the manual reactor trip pushbutton contacts in the trip coil circuit. The failure mechanism of the installation is such that it could possibly render the trip coil inoperable, but would not affect the breaker undervoltage coil circuit. This has been found acceptable by the NRC in the safety evaluation of the shunt

trip modification. The installation will be controlled by an SMP. The modification addendum does not constitute an unreviewed safety question and does not require a change to Technical Specifications.

3.4.78 85-003 (Unit 1), Incore Flux Mapping. The modification replaced the existing flux thimble tubes with tubes having a larger inner diameter.

Summary of Safety Injection: Replacement of the incore flux thimbles with thimbles of a larger diameter helps to alleviate thimble blockage. The new thimbles meet or exceed original system ratings and do not degrade system integrity. Replacement of the thimbles does not affect a previously reviewed or create an unreviewed safety question.

3.4.79 85-011 (Unit 1), Reactor Coolant System. The modification ground off the nut welded to the pressurizer manway cover and installed a new bracket as was performed per modification requests 84-13 and 84-28 on the steam generators and per 84-231 on the Unit 2 pressurizer.

Summary of Safety Evaluation: The four ¼" bolt holes added to the manway cover were located in a low stress area of the cover similar to the existing 1" bolt hole provided for an eyebolt attachment. Due to the much smaller size and location of these additional holes, the modification has negligible effects on the strength of the manway cover. Westinghouse concluded for the Unit 1 steam generators that modification of the manway covers results in a configuration which complies with all structural requirements of ASME Section III. Fatigue in the vicinity of the bolt holes is acceptable. Note there is a material difference between the cover analyzed in Westinghouse Report SG-84-03 (SA-533 Grade A, Class 1 versus SA-302, Grade B). However, both of these materials have the same stress allowables; therefore, the results can be translated to this modification. No Technical Specification changes are required.

3.4.80 85-018 (Unit 2), 480 V AC Switchgear. This modification paralleled the load sides of breakers 35C and 38B at 2B03 and breakers 31B and 32C at 2B04. Local open and close push-buttons were installed on breakers 31B and 35C (Unit 2). Breakers 31B and 35C (Unit 2) are administratively controlled to allow operation only during refueling outages for normal safeguards MCC supply breaker maintenance.

Summary of Safety Evaluation: The paralleling of 2B52-35C and 2B42-38B at 2B03 and of 2B52-31B and 2B52-32C at 2B04 will allow the removal of the normal supply breakers for MCC 2B32 and 2B42 for routine maintenance. Since the supply and load sides of both breakers will be connected, and the electrical protection relaying of both breakers will be identical, paralleling the breakers will not present any problems. This modification should increase the reliability of MCC 2B42 and 2B42. A special maintenance procedure was required to control the removal of 2B32 and 2B42 from service during installation of this modification.

3.4.81 85-031 (Unit 1), Reactor Protection. The modification replaced the existing Unit 1 loop RTDs, which were Sostman, with Rosemount Model 186-29, to improve the accuracy of temperature sensors in the RCS bypass loops necessitated by the use of OFAs in the core reload.

Summary of Safety Evaluation: The new RTDs are physically adequate, including meeting present temperature and pressure requirements, for replacement. They are not required to meet environmental qualification and are not contained on the "master list of electric equipment to be environmentally qualified." The similar Rosemount Model 176K is fully qualified seismically; and although the Model 186-29 has not undergone seismic testing, it is also considered seismically qualified since this model design, which came from the Model 176K design, did not involve any structural changes to the RTD.

The time response characteristic of the new RTDs is different from the original Sostman RTDs. The Rosemount RTD typically has a time constant of less than 0.5 seconds while the Sostman had a 2-second time constant under similar conditions. Therefore, changes to Tavg and ΔT have been made in the respective process loops to compensate

for the faster time response of the Rosemount RTDs. To accomplish this, Westinghouse had recommended that a 2-second filter be used with the Rosemount RTD. Per Westinghouse, from an analytical and electrical point of view, there is no difference between use of a Sostman RTD with no filter and a Rosemount Model 176 RTD with a 2-second filter (Rosemount Model 186 is equivalent). (Westinghouse modeling has made an allowance for use of a filter constant of up to 2 seconds). Since equivalent or a more conservative approach is maintained with the use of up to the 2-second filter with the Rosemount RTD, this was incorporated in the two affected safety grade signals, overpower ΔT and overtemperature ΔT. Adjustments were made to the actual measured ΔT signals and the affected Tavg signal used in these two safety grade process loops to ensure proper time response. However, to accurately reflect the filter time constant requirement and thus document acceptable values, a change to Unit 1 Technical Specification 15.2.3.1.B(4) and 15.2.3.1.B(5) for overtemperature ΔT and overpower ΔT has been approved to reflect the mathematical equivalent of the entire circuit, including all time constants. Installation of the modification was procedurally controlled.

3.4.82 85-060 (Unit 2), Feedwater/Extraction Steam. These modifications replace the Unit 2, Nos. 5A & 5B feedwater heaters in their entirety. The new stainless steel tube bundles will alleviate copper in the feed train caused by the corrosion of the existing copper-nickel tubes. It was noted that the new No. 5 heaters will be longer than the existing ones but they will fit in the space available.

Summary of Safety Evaluation: Not nuclear safety related.

3.4.83 85-084 (Common), Safeguards. The modification converted the "B" boric acid tank low-low level annunciator circuit scheme from a parallel wiring arrangement to a series arrangement. This resulted in the annunciator being activated by a low-low level signal from either safeguards train of Unit 1 or Unit 2, versus a low-low level signal from both units.

Summary of Safety Evaluation: The wiring change causes the annunciator circuit to function as specified per the existing drawing. The change does not affect a previously reviewed safety question nor does it create an unreviewed safety question.

3.4.84 85-089 (Unit 1), Containment Polar Crane. The modification installed amphenol plugs on the solid-state control unit which interfaces with the control relays for crane control. This modification allows for removal at the end of a refueling outage; and easy installation and minimal troubleshooting/repair time at the beginning of an outage. A standby module is available to be installed should problems develop with an operating module. In addition, troubleshooting and repair can be performed during noncritical times.

Summary of Safety Evaluation: The addition of amphenol connectors to the receiver unit for the polar crane provides for easy installation and removal of the receiver unit. This will increase the availability of the crane. No change to the Technical Specifications or FSAR is required. This modification does not constitute an unreviewed safety question. The amphenol connectors are equivalent to or better than the existing terminal strip connections.

3.4.85 85-104 (Unit 2), Main Control Boards. The modification provided individual train SI block status lights on the main control boards such that positive indication is provided to the Control Operator that SI actuation is blocked.

Summary of Safety Evaluation: Splitting the SI block light into two lights will give the operator a more accurate indication of safety injection system status. No train separation is required between these connections as the indications are considered to not be safety related. A special maintenance procedure was used to control the installation. The modifications do not require Technical Specification or FSAR changes. The modifications do not constitute an unreviewed safety questions.

3.4.86 85-122 (Unit 1), Burnable Poison Rod Assembly. The modification removed the inner rodlet from the northwest corner of burnable poison assembly 6P100Z. This was based on the PBNP orientation system in which the fuel assembly identification number, Q12, was located on the south face of the top nozzle and the small reference hole in the top of the top nozzle was in the northeast corner.

Summary of Safety Evaluation: This modification of burnable poison assembly 6P100Z was required to meet power distribution requirements for the Unit 1 Cycle 13 core design performed by Westinghouse.

The Unit 1 Cycle 13 reload safety evaluation performed by Westinghouse addresses this modification. Its mechanical design, nuclear characteristics, and thermal hydraulic effects have been found acceptable.

No Technical Specification or FSAR changes were required to permit operation with this modification. This modification does not involve an unreviewed safety question or reduce the margin of safety defined in the Technical Specifications.

3.4.87 85-138 (Unit 1) and 85-139 (Unit 2), Rod Control. These modifications removed the automatic rod withdrawal block defeat function from the turbine runback defeat switch.

Summary of Safety Evaluation: Presently, during any time that the switch is in "defeat" and rod control is in automatic, and an actual rod drop occurs, the turbine runback would be blocked but there could be actual automatic rod withdrawal due to a reduced Tavg. Therefore, a potential positive reactivity addition (due to rod withdrawal) could occur with an abnormal flux distribution (due to the dropped rod).

This modification will correct this potential problem by disconnecting the switch contacts from the "automatic rod withdrawal" circuitry. This will block automatic rod withdrawal (install rod stops) during the time of an actual dropped rod, even if the turbine runback/rod stop defeat switch is selected to "defeat."

This does not constitute an unreviewed safety question and no change to the FSAR or plant Technical Specifications will be required. This modification will also make the Unit 2 circuitry like Unit 1.

3.4.88 85-146 (Unit 1), Reactor Vessel. This modification left the bolt hole at 0° on the F12 upper guide tube assembly vacant. The screw for that hole was found to be galled during installation of the top hat during the U1R12 outage. The bolt goes through the hole containing the alignment bushing. Threads were damaged and would not allow insertion of the screw with ease and assurance of no further damage. The hole could not be retapped to a larger size because of the alignment collar.

Summary of Safety Evaluation: Installing the upper guide tube with only 3 bolts (versus 4) does not increase the likelihood or consequences of an accident. The stresses in the 3 remaining bolts are well below that allowable for both flow and seismic loading. Thus, the guide tube remains functional and does not impair the insertion of an RCCA.

3.4.89 85-157 (Unit 1) and 85-204 (Unit 2), Flux Mapping. These modifications added seismic restraints to the 10-path and 5-path rotary transfer devices, stemming from vendor notification.

Summary of Safety Evaluation: These modifications do not affect the safe operation of the plant because the supports will translate earthquake loading to the wall and thus protect the frame. The supports do not present an unreviewed safety question nor a change to the Technical Specifications.

3.4.90 85-158 (Common), Incore Flux Mapping. This modification reworked the Foster-Wheeler seals to accommodate the new thimble tube size by increasing the inside diameter of the seal retainer.

Summary of Safety Evaluation: This modification was designed to improve the installation of the thimble tube low pressure seals. The potential for displacing the thimble conduit ferrules is the same with either the Westinghouse seals or the Foster-Wheeler seals. However, with the

Foster-Wheeler seals, tightening of the thimble conduit nut is stopped when the seal retainers just make contact with the thimble conduit, thus minimizing the pulling forces on the conduit ferrules. Also, the installation of the Foster-Wheeler seals is administratively controlled by procedure whenever they are installed. This modification does not increase the likelihood nor increase the consequences of the analyzed accidents.

3.4.91 85-171 (Unit 2), Electrical Distribution. The modification provides a keyswitch to disable the turbine trip signals to the generator breaker during shutdown periods. This allows the unit and transformer lockout circuits to remain energized and provide protection to the generator breaker and generator.

Summary of Safety Evaluation: Not required.

3.4.92 85-184 (Unit 2), Reactor Internals. The modification repaired two control rod guide tube assemblies (B6 and B8) found to have cracked or broken split pins.

Summary of Safety Evaluation: Implementation of this modification does not affect the safe operation of the plant based upon acceptance of the Westinghouse safety evaluation (NS-RCS-CL-C/L-85-132) and review of the safety analysis considerations. No Technical Specification changes were required. In addition, Westinghouse has provided technical justification in WEP 85-521 dated February 22, 1985, that further substantiates the safety aspects of this modification.

3.4.93 85-204 (Unit 2), Flux Mapping System. The modification installed restraints to the 10-path flux mapping device similar to those that were added to the Unit 1 device (reference modification request 85-157). The restraints were added in accordance with an evaluation of NRC IE Information Notice 85-45 which concluded that the 10-path rotary transfer device should be reviewed to determine its seismic adequacy. The 10-paths were previously proven to be seismically inadequate.

Summary of Safety Evaluation: The supports will translate earthquake loadings to the wall and thus protect the frame from failure. The addition of the support does not present an unreviewed safety question nor does it require a change to the Technical Specifications.

3.4.94 85-210 (Unit 2), Reactor Protection System. The modification removed the Swagelok plugs for RTD manifold locations for spare RTD channels 406A&B, 408A&B, 409A&B, and 410A&B, and installed Rosemount model 186-29 RTDs.

Summary of Safety Evaluation: Removing the Swagelok plugs and installing RTDs with special Swagelok adapters and ferrules meets or exceeds reactor coolant system design ratings and does not degrade system integrity. This restores the bypass manifolds to their original plant configuration.

The modification does not increase the likelihood of an accident or increase the consequences of any of the accidents analyzed in the FSAR. No Technical Specifications or FSAR changes were required.

3.4.95 85-297 (Unit 2), Nuclear Fuel. The modification repaired fuel assembly N55 by boring a hole in the top nozzle and removing the instrument tube. The tube was found not to extend into the bottom nozzle for support and if left in that condition, could move during operation and damage adjacent fuel rods.

Summary of Safety Evaluation: Removal of the subject thimble tube from fuel assembly N55 does not affect the structural integrity of the fuel assembly as the thimble tube is not a structural member. The removal of the material from the top nozzle to allow the removal of the thimble tube does not significantly affect the structural capability of the top nozzle as the amount of material removed is very small. Fuel assembly N55 will not be used in a location of a thimble. Thus, thimble damage due to a lack of support is not a concern. Future positioning of N55 will be administratively controlled to assure this.

The potential damage to the lower grid(s) from the thimble tube condition does present the potential for future fuel rod damage of adjacent fuel rods during normal operation. However, Technical Specification limits and monitoring of coolant activity will assure plant operation within the bounds of the safety analysis assumptions. The nuclear and thermal characteristics associated with the resulting configuration are acceptable and are addressed in the Unit 2 Cycle 12 reload safety analysis.

Thus, in view of the above, this modification does not present an increase in the potential for or consequences of an analyzed accident, unreviewed safety question nor does it require a change to the Technical Specifications.

3.4.96 Summary of Unit 1 Cycle 13 Revised Reload Safety Evaluation: The safety evaluation reflects the discharge of 3 fuel assemblies which were deleted from the original loading pattern when sipping tests indicated they were leaking. Also addressed was the reinsertion of secondary source SS2 which will remain in fuel assembly M14 for Cycle 13 because of difficulties encountered during the attempted changeout of this source.

Of the 32 fuel assemblies being replaced, 28 will be replaced with optimized fuel assemblies (OFA).

It was also noted that the rod ejection transient was reanalyzed by Westinghouse because the old analysis was not conservative enough.

There are no unreviewed safety questions related to this cycle. The core reload will not adversely affect the safety of the plant.

3.4.97 Safety Evaluation of Fuel Damage Caused by Baffle Jetting: Westinghouse considered: (a) additional fuel damage which could occur during Cycle 12 assuming it will be no worse than that incurred during Cycle 11; and (b) loose fuel material in the reactor coolant system, including up to 300 pellets and some cladding and grid material.

Effects specifically evaluated by Westinghouse were:

a. Flow blockage adversely affecting DNB and LOCA analyses. Westinghouse concluded that small fragments of material creating blockage in the core will have no measurable impact upon peak clad temperature result, which occurs at the 6' axial elevation, or anywhere else in the core during FLECHT heat transfer. They further concluded that if all unaccountable material was trapped by a single fuel assembly bottom nozzle, the blockage could amount to the total flow area of the one bottom nozzle. Calculations,

however, indicated that even if complete nozzle restriction occurs, full recovery of flow occurs about 30" above the bottom nozzle of the blockage. Thus, inlet blockage effects would be limited to the lower portion of the active core, where DNB and LOCA are not limiting concerns. Westinghouse also stated that local flow blockage within a fuel assembly would be likely to promote turbulence and thus would probably not affect DNB.

b. Abnormal loadings on the reactor vessel and lower internals caused by material becoming wedged in the lower core barrel radial restraints or between the bottom head and secondary core support structure. Westinghouse stated that due to the geometry of the objects and the flow and vibration in the bottom of the vessel, it is extremely unlikely that the noted condition would exist.

c. Instrumentation tube damage caused by erosion or wedging between the thimble and its surroundings. Westinghouse acknowledged that thimble assemblies could become damaged which might render the thimble inoperable and could potentially result in reactor coolant leakage. Leakage through a single failed thimble would be within the capacity of the makeup system. While damage to the flux thimbles could effect unit availability, it would not be expected to prevent safe shutdown of the plant.

d. Stuck rods caused by interference between the upper internals and control rods and drive lines. According to Westinghouse, fuel pellets and related debris in the bottom of the reactor vessel would not be expected to reach the upper internals due to the filtering action of the fuel assemblies. Additionally, the close spacing of the fuel rods, configuration of the grids and flow deflectors, and configuration of the nozzles should prevent debris from reaching the upper internals. Westinghouse notes that extremely small objects which could pass through fuel assemblies are likely to pass through the upper internals or be forced clear during operation of the drive line. In

order for a foreign object to cause interference, it would have to be preferentially oriented in a moving clearance area. Rod drop and rod stopping operations prior to and during plant operation should demonstrate continued proper drive line orientation and operation.

e. RCS component damage caused by impact. Westinghouse states that due to the low mass of the fuel and fuel-related debris, the damage due to impacts with RCS components is expected to be insignificant.

f. RCS component corrosion and chemical effects. Due to the high chemical stability of uranium dioxide and zircaloy, corrosion and chemical effects are expected by Westinghouse to be negligible.

g. Increased coolant activity. Westinghouse stated that activity release is chiefly diffusion controlled which is a slow process at the anticipated temperatures. The pellet material goes into solution very slowly and continuous cleanup by the CVCS is employed to control coolant activity. Westinghouse noted that the increase of I-131 concentration would be expected to be small because of this, as well as the limited I-131 production expected in fuel material in low neutron flux areas. Westinghouse concludes that normal monitoring of coolant activity should provide adequate indication of any unexpected increases in activity.

h. Accidental criticality caused by an accumulation of loose fuel. Westinghouse concluded that operation of Cycle 12 would not present a hazard of accident criticality during the subsequent cold shutdown provided that the Technical Specification requirement of 1% reactivity shutdown margin is maintained.

3.4.98 Unit 2 Cycle 12 Reload Safety Evaluation: The modifications to assemblies N02 and N55 were performed in accordance with approved procedures. Continued operation utilizing these assemblies had been previously granted. Note that continued operation as a result of baffle jetting has also been evaluated and found to be acceptable. Therefore, there are no outstanding or unreviewed safety questions which would preclude continued operation of Unit 2.

3.5 Temporary Modifications

The following temporary modifications requiring a review in accordance with 10 CFR 50.59 were installed during 1985:

3.5.1 85-02 (Unit 1), Rod Position Indication. The temporary modification jumpered the rod bottom bistable for Rod I9.

Summary of Safety Evaluation: The NIS rod drop system will be operable. Since the NIS is redundant to the rod position indication system in detecting a dropped RCCA, the NIS is fully capable of providing a turbine runback when a dropped RCCA occurs.

3.5.2 85-05 (Common), Ventilation. The modification installed a relay in the control circuit from the W14A control room emergency filter fan in series with a flow switch relay normally closed contact and included a delay open contact in parallel with the fan flow switch seal-in contact.

Summary of Safety Evaluation: Implementation of the temporary modification corrects the problem with the W14A fan tripping due to excessive turbulent flow transients experienced by its respective flow discharge switch. Use of qualified materials maintains reliability of the system. Added features of the modification ensure continuous fan operation and automatic switchover in both manual and automatic operating modes. Failures in all cases would result in conservative action compared to potential failure with the present configuration. The temporary modification does not constitute an unreviewed safety question and does not require a change in Technical Specifications. Installation is controlled via written and approved instructions.

3.5.3 85-07 (Common), Battery Room HVAC. The temporary modification removed the safety injection trip of the new battery room fans W85 and W86.

Summary of Safety Evaluation: Stripping of ventilation fans will result in rapid increase in room temperature and can cause inverters to trip off the bus in approximately 15 minutes due to high temperature. Completion of permanent Modification M-784 will automatically transfer the

operating fans to low speed under safety injection coincident with loss of AC to ensure continuous cooling. The temporary modification is necessary to ensure the same action occurs during the interim period while the inverters are energized. Low speed operation of one fan will be administratively controlled to prevent unnecessary diesel loading should an SI and loss of AC occur. Diesel loading added at low speed is approximately 1.55 kW or 0.06% diesel capacity which is insignificant. However, an undervoltage condition will strip both fans due to a loss of control power to control relays W85X1 and W86X2. Operating personnel should be informed that manual resetting of fans will be required should an undervoltage condition occur.

3.5.4 85-08 (Unit 1), Rod Position Indication System. The temporary modification jumpers the rod bottom bistable for Rod E3.

Summary of Safety Evaluation: The NIS rod drop system will be operable. Since the NIS is redundant to the rod position indication system in detecting a dropped RCCA, the NIS is fully capable of providing a turbine runback when a dropped RCCA occurs.

3.5.5 85-30 (Unit 1), Main Steam System. The temporary modification installed a modified main steam stop valve shaft in Valve 2CV-2018 ("A" loop main steam stop valve) to replace the existing shaft which was identified as being cracked.

Summary of Safety Evaluation: The vendor, Atwood & Morrill, reviewed the modification. The vendor determined that the modified valve shaft does not impair the operability of the valve or the structural integrity of the shaft. The shaft was dye penetrant inspected satisfactorily prior to installation. Upon installation, the valve was stroke timed and timing was also satisfactory.

3.5.6 85-33 (Common), Structures, Buildings. The temporary modification installed ventilation ducting in the steam generator storage facility, providing a 10" discharge duct originating from the vicinity of the steam generator from which a tube sample was being removed for research and development purposes.

Summary of Safety Evaluation: Installation of the temporary ventilation system for the steam generator storage facility provides a means of maintaining a slight negative pressure on the north side of the facility. This precludes the release of unfiltered air to the south side of the building and to the environment.

The NEPS/charcoal filter units were tested prior to service in a manner similar to that for testing the Technical Specification control room emergency filter units. The minimum removal efficiency was 99%. The filter units were in operation at all times when work is in progress. Additionally, the filter exhausts will be monitored by continuous air monitors and an isokinetic air sampler.

The alarm setpoints for the monitors were set as low as is reasonably achievable given the local background conditions of the storage facility. The air monitors will be in operation with health physics coverage at all times while the filter/blower units are in use.

Any airborne releases are to be maintained within the limits specified for airborne particulate releases by Technical Specification 15.3.9.B.

3.5.7 85-35 (Unit 1), Instrument Buses. The modification connects receptacles for 1DY03 in 120 V instrument bus 1Y203 to permit post-maintenance testing.

Summary of Safety Evaluation: Connection of receptacles to spare breaker #6 in 1Y203 will temporarily place an unqualified load onto a qualified source. This is satisfactory for testing the inverter after post-maintenance as long as there are no other qualified loads placed on the inverter at the same time. After the test is completed, the unqualified receptacles and load were removed. The maintenance and post-maintenance testing procedures were specified 1DY03 not be used as a qualified power supply until testing is satisfactorily completed. The temporary modification does not pose an unreviewed safety question and does not require a change in the Technical Specifications.

3.5.8 85-12 (Unit 1), Reactor Protection System. The temporary modification replaced resistor R1 in dual current sources TT-401A/B, TT-402A/B, and TT-404A/B to accommodate stretch operation.

Summary of Safety Evaluation: Changing of the range resistors in the dual current sources reduces the operating range of the Thot and Tcold RTDs from a range of 540°F-615°F to 525°F-600°F. Since the new range resistors only change the operating range, the protective system temperature setpoints were reduced by 15°F. The range resistors were changed when actual Tavg is 555°F. This brought the output of the dual current sources equal to the milliamp value as if Tavg was 570°F. Thus, the protective system operated with the same current values as if the unit was at normal operating temperature. Additionally, the calibration of the temperature modules were not affected.

Since the unit was at reduced temperature, the actual ΔT_{sp1} setpoints will be conservative. However, the additional range resistors brought the ΔT_{sp1} indicator back to a readable indication on the control boards. The ΔT_{sp2} setpoint was also be changed accordingly and remains on scale. All other control functions will be operated as normal but with reduced temperature setpoints.

3.5.9 85-17 (Unit 1), Upper Internals Storage Stand. The temporary modification installed four spacers on top of the upper internals storage stand in the refueling cavity to provide sufficient clearance under the upper internals when they are placed in the stand.

Summary of Safety Evaluation: The control rod guide tube split pin replacement project required that 7" clearance exist between the bottom of the lower guide tube flange and the cavity floor. Four 1½" stainless steel plates were placed on the internals storage stand ring (one above each leg) to provide this required clearance. The spacers had side tabs to prevent them from moving. The spacers remained on the storage stand during core unload and reload. A 50.59 evaluation was previously performed for 1' spacers (designed by Westinghouse). The 1½" spacers are less likely to fail than the 1' spacers. The safety aspects were

reviewed and it was concluded that there is no impact on refueling Technical specifications; there is no possibility of increasing the likelihood of the fuel handling accidents analyzed in the FSAR; and the possibility of an unanalyzed accident will not be created.

3.5.10 85-19 (Unit 1), Incore Flux Mapping System. The modification installs 36 new special adapter/bonnet low pressure seals at the incore flux mapping seal table.

Summary of Safety Evaluation: The difference in elevations of the reactor vessel flange and the seal table is such that if the seals did not function and the installed push rods were ejected, the water in the cavity would drain to a level of the seal table. The seal table is at El. 41'. The reactor vessel flange is at El. 40'-7.125". Thus, the core would remain covered at all times. The special adapter/bonnet low pressure seals are made up of Swagelok fittings and are compatible with the Swagelok ferrules on the thimble tube conduits. Thus, the possibility of damaging the ferrules is minimized. If a fuel assembly was being moved when a low pressure seal failure occurred, there would be sufficient time to place the fuel assembly back into the vessel and remain covered.

3.5.11 85-37 (Unit 2), CVCS. The temporary modification installed a ½" Whitey valve downstream of the "A" charging pump discharge drain valve.

Summary of Safety Evaluation: Addition of a second valve does not increase the potential or consequences of an accident. The valve is the same pressure and temperature rating as the existing drain valve that will be upstream of it, thus the pressure-retaining capability of the line will be maintained. The additional weight of the valve will not have a significant impact upon the seismic capability of the line.

3.5.12 85-39 (Unit 1), Reactor Protection System. The temporary modification swapped wires for TE-402B (white Tcold channel) to equalize lead resistances.

Summary of Safety Evaluation: Swapping of the common leads makes the lead resistances of the RTDs equal; thus providing a better indication of actual temperature and making the Dana amplifier output consistent with the other cold leg RTD outputs. Swapping of the leads will not degrade the circuit operation in any way. This temporary modification will not result in an unreviewed safety question nor affect a previously reviewed safety question. No changes to Technical Specifications are required.

3.5.13 85-52 (Unit 1), Residual Heat Removal System. The temporary modification installed pressure gauges on Valves 1-856A&B (refueling water storage tank to RHR pump suction) to determine if the valve bonnets were being pressurized during plant cycles.

Summary of Safety Evaluation: The modification alters the upper bonnet assembly pressure boundary for the subject valves. This is accomplished by adding a gauge on the packing leakoff connection and removing the sealing capability from the lower packing set.

The subject valves are located in the line to the RHR pump suction from the RWST. The valves serve two functions. They serve as a maintenance isolation valve for the RHR pumps and also provide a secondary barrier for isolating the RWST from recirculation fluid flow (the primary barrier is the check valve). These valves are not containment isolation valves.

During normal operation, the subject valves are open. They are shut just prior to placing the RHR system into normal decay heat removal service or in the event of a DBA, just prior to establishing recirculation flow.

The modification will not affect the performance of the valve bonnet assembly sealing capabilities. Installation of the gauge will be seismic. The pressure/temperature rating of the components will be equal to or better than the high pressure side of the valve. The overall sealing characteristics of the packing was not degraded as the lower packing set has proven to be not needed. Installation will not impact the operation of the valve.

It should be noted that the only time the valve bonnet assembly could be exposed to recirculation fluid flow is when both the downstream check valve and the subject valve discs leak. Thus, any leakage would be extremely small and would be into the monitored and filtered primary auxiliary building leak path prior to release.

The modification does not present any unreviewed safety questions nor does it require a change to the Technical Specifications.

3.5.14 85-54 (Unit 1), Rod Position Indication System. The temporary modification jumpered the rod bottom bistable for Rod F6.

Summary of Safety Evaluation: The NIS rod drop system will be operable. Since the NIS is redundant to the rod position indication system in detecting a dropped RCCA, the NIS is fully capable of providing a turbine runback when a dropped RCCA occurs.

3.5.15 85-66 (Unit 2), Incore Flux Mapping System. The temporary modification installed a ¼" Whitey ball valve and hose at seal table core location I5 to flush debris from the subject thimble conduit.

Summary of Safety Evaluation: The modification does not involve an unreviewed safety question. The primary system pressure boundary was adequately maintained with the use of the 2500 psi ball valve and following the flush with a Swagelok plug. The flush line was constructed to catch a potentially radioactive piece of material and health physics instruments provided to detect and monitor the same.

3.5.16 85-73 (Common), CVCS. The temporary modification changes the power supply for one train of boric acid tank level from 2MQ-400 to 1Y03 and 2Y03.

Summary of Safety Evaluation: Changing the power source for one train of boric acid tank level and associated circuitry from inverter 2MQ-400 to 1Y03 (Unit 1) and 2Y03 (Unit 2) will more than adequately maintain operability for that train of boric acid tank level. Shifting the power source will place this one train of boric acid tank level onto a qualified power source, specifically the white instrument bus. Also, power source separation will still be maintained since the other boric acid tank level channel(s) are powered from red and yellow instrument bus power.

Therefore, adequate train separation is maintained. Also, the additional loading to the white instrument bus will not degrade it as a qualified power source. The temporary modification does not constitute an unreviewed safety question and does not require a change to the Technical Specifications or the FSAR.

3.5.17 85-79 (Unit 1), 120 V Yellow RMS Power Supply 1Y114. The temporary modification installed a filter capacitor across the 120 V isolation transformer supply to the RMS and neutral to minimize the short duration spikes of approximately 60 V which have been observed in the output of the RMS isolation transformers. These voltage spikes have adversely affected calibration efforts and have induced stresses on the 120 V motor insulation and RMS power supply components. A combination of capacitor types will be installed to determine the best combination.

Summary of Safety Evaluation: Installation of the temporary modification can result in an improved power supply to the RMS. Failure mechanisms are such that there would be no worse perturbations on the system than already exist, and would give no additional perturbations. Therefore, the installation does not present an unreviewed safety question nor does it require a change to the Technical Specifications.

3.5.18 85-82 (Unit 1), Rod Position Indication System. The temporary modification jumpered the rod bottom bistable for Rod I5.

Summary of Safety Evaluation: The NIS rod drop system will be operable. Since the NIS is redundant to the rod position indication system in detecting a dropped RCCA, the NIS is fully capable of providing a turbine runback when a dropped RCCA occurs.

3.6 Procedure Changes

The Emergency Operating Procedures (EOPs) have been completely rewritten in accordance with the Westinghouse Owners Group Emergency Response Guidelines. The new EOPs are written in a step-by-step logic format.

Summary of the Safety Evaluation: These procedures are a result of an entire rewrite of the Emergency Operating Procedures. These procedures are based on the Westinghouse Owners Group Emergency Response Guidelines LP-Revision 1, dated September 1, 1983. These plant procedures have been verified by a Wisconsin Electric Power Company verification team.

These procedures have also received multiple, individual, and group reviews by licensed operators and members of the Manager's Supervisory Staff. The generic procedures have been validated using Westinghouse computer analysis and simulator exercises. This validation has proved these procedures to be the best approach to design basis and beyond design basis event. This process satisfies the 10 CFR 50.59 review of the procedures.

3.6.1 A change to the Technical Specifications is not required. Certain steps in the procedures may cause a violation of the Technical Specifications. This was recognized by the Westinghouse Owners Group and brought to the attention of the NRC. This is within the bounds and intent of 10 CFR 50.54.x and y due to the predicted conditions for use of the procedure.

3.6.2 The probability of an accident previously evaluated in the Final Safety Analysis Report is not increased.

3.6.3 The possibility of an unreviewed accident is not created.

3.6.4 The margin of safety as defined in the Technical Specifications is not reduced.

4.0 NUMBER OF PERSONNEL AND MAN-REM BY WORK GROUP AND JOB FUNCTION

4.1 1985

			JOB FUNCTION					
	GREATER THAN 100 mREM	TOTAL REM FOR WORK GROUP	REACTOR OPERATIONS & SURVEILLANCE	ROUTINE MAINTENANCE	INSPECTIONS	SPECIAL MAINTENANCE	WASTE PROCESSING	REFUELING
1. Company Employees								
Operations	66	68.340	43.720	-------	12.930	------	3.800	7.890
Maintenance & Peak Maintenance	94	111.810	------	16.850	8.960	44.110	------	41.890
Chemistry & Health Physics	27	27.170	21.540	------	------	------	2.310	3.320
Instrumentation & Control	15	8.640	------	0.990	0.710	6.040	------	0.900
Reactor Engineering	4	1.590	------	------	0.170	------	------	1.420
Administration, Engineering Quality & Regulatory Services	15	3.820	0.240	------	3.470	------	------	0.110
2. Contract Workers & Others	285	222.680	0.140	------	14.320	193.760	14.460	------
TOTALS	506	444.050[1]	65.640	17.840	40.560	243.910	20.570	55.530

[1] 75.385 man-Rem of the above total is related to an EPRI steam generator tubesheet research project on steam generators removed from Unit 1.

5.0 STEAM GENERATOR TUBE INSERVICE INSPECTION

The following is a synopsis of findings resulting from steam generator tube inspections conducted during 1985.

5.1 Unit 1

Eddy current testing was performed on the Unit 1 steam generators from April 8 to April 13, 1985 during the Unit 1 Refueling 12 outage.

In the "A" steam generator, 101 tubes were inspected full length while 20 were inspected through the U-bend.

In the "B" steam generator, 101 tubes were inspected full length while 19 were inspected through the U-bend.

Results of Eddy Current Inspection

	"A" SG		"B" SG	
	Inlet	Outlet	Inlet	Outlet
#20%	0	0	0	0
20-29%	0	0	0	0
30-39%	0	0	0	0
40-49%	0	0	0	0
50-59%	0	0	0	0
60-69%	0	0	0	0
70-79%	0	0	0	0
80-89%	0	0	0	0
90-100%	0	0	0	0

5.2 Unit 2

Eddy current testing was performed on the Unit 2 steam generator from October 10 to October 18, 1985, during the Unit 2 Refueling 11 outage.

The extent of inspection in each steam generator was as follows:

Extent of Inspection Hot Leg (Cold Leg)	Number of Tubes Inspected "A" SG	"B" SG
Full length	128(7)	80(81)
U-Bend	32(1)	15
No. 1 Tube Support	1511(69)	1600(3027)
No. 2 Tube Support	18	100(52)
No. 3 Tube Support	2	(1)
No. 4 Tube Support	1	--
No. 5 Tube Support	1	--
No. 6 Tube Support	1(13)	(14)
TOTALS	1694(90'	1795(3175)

The following is a summary of the results of the eddy current inspection showing the number of tubes with indications in the ranges listed:

	Eddy Current Inspection Results Hot Leg (Cold Leg)	
	"A"SG	"B" SG
#20%	8(5)	10(372)
20-29%	1	5(334)
30-39%	3(1)	3(150)
40-49%	1	2(30)
50-59%	0	1(7)
60-69%	1	1
70-79%	1	1
80-89%	5	1
90-100%	1	0
*UDI	1	1
**Distorted	12(1)	12(44)
TOTALS	34(7)	37(937)

* UDI indications are those whose quantitative analysis has not been possible but in past instances have necessitated plugging.

**Distorted are indications whose quantitative analysis has not been possible but in past instances have not necessitated plugging.

Pluggable Indications

The following is a list of tubes which were mechanically plugged as a result of eddy current testing:

"A" Steam Generator

Row - Column	Indication %	Location	Origin
21-12	86%	8.4" ATE(HL)	OD
26-21	99%	8.2" ATE(HL)	OD
36-32	80%	6.9" ATE(HL)	OD
41-34	77%	4.5" ATE(HL)	OD
37-35	82%	7.2" ATE(HL)	OD
35-40	86%	7.8" ATE(HL)	OD
43-45	40%	#1TSP(HL)	OD
39-47	89%	5.2" ATE(HL)	OD
21-79	UDI	5.2" ATE(HL)	OD
1-87	66%	3.2" ATE(HL)	OD

ATE - Above Tube End
HL - Hot Leg
CL - Cold Leg
UDI - Undefinable Indication

"B" Steam Generator

Row - Column	Indication %	Location	Origin
2-2	54%	#1TSP(CL)	OD
11-2	43%	#1TSP(CL)	OD
16-4	40%	#1TSP(HL)	OD
8-26	40%	0.7" ATS(CL)	OD
10-26	42%	0.8" ATS(CL)	OD
7-27	42%	1.1" ATS(CL)	OD
7-30	40%	0.6" ATS(CL)	OD
18-40	45%	0.5" ATS(CL)	OD
12-41	42%	0.9" ATS(CL)	OD
21-41	46%	0.3" ATS(CL)	OD
11-43	44%	1.0" ATS(CL)	OD
7-45	41%	0.4" ATS(CL)	OD
10-45	42%	1.5" ATS(CL)	OD
6-46	45%	1.5" ATS(CL)	OD
7-46	52%	1.8" ATS(CL)	OD
8-46	44%	1.9" ATS(CL)	OD
9-46	47%	2.0" ATS(CL)	OD
10-46	48%	1.3" ATS(CL)	OD
11-46	40%	1.0" ATS(CL)	OD
6-47	49%	0.5" ATS(CL)	OD
7-47	53%	2.0" ATS(CL)	OD
8-47	45%	1.7" ATS(CL)	OD
9-47	52%	1.3" ATS(CL)	OD
11-47	45%	1.1" ATS(CL)	OD
12-47	44%	1.0" ATS(CL)	OD
11-48	44%	1.1" ATS(CL)	OD
18-48	41%	1.0" ATS(CL)	OD
22-52	44%	0.7" ATS(CL)	OD
9-53	56%	1.2" ATS(CL)	OD
13-54	43%	2.2" ATS(CL)	OD
23-54	44%	1.0" ATS(CL)	OD
20-55	43%	0.8" ATS(CL)	OD
4-59	50%	0.4" ATS(CL)	OD
9-59	42%	1.2" ATS(CL)	OD
23-60	53%	1.0" ATS(CL)	OD
9-65	42%	0.8" ATS(CL)	OD
23-65	41%	0.4" ATS(CL)	OD
19-68	43%	0.9" ATS(CL)	OD
5-72	UDI	12.8" ATE(HL)	OD
5-73	42%	0.5" ATS(HL)	OD
6-75	89%	12.8" ATE(HL)	OD
31-78	75%	#1TSP(HL)	OD
26-79	59%	1.7" ATS(HL)	OD
8-92	64%	#1TSP(HL)	OD

ATS - Above Tube Sheet
ATE - Above Tube End
TSP - Tube Support Plate
HL - Hot Leg
CL - Cold Leg
UDI - Undefinable Indication

The following is a list of tubes and the associated indications for both steam generators excluding any pluggable indications:

"A" Steam Generator

Row - Column	Indication %	Location	Origin
8-3	DI	8.1" ATE(HL)	OD
18-5	29%	#1TSP(HL)	OD
18-6	38%	#1TSP(HL)	OD
16-7	#20%	#1TSP(HL)	OD
23-8	32%	#1TSP(HL)	OD
25-8	33%	#1TSP(HL)	OD
4-17	#20%	0" ATS(HL)	OD
14-17	DI	#4TSP(HL)	OD
3-18	DI	0" ATS(HL)	OD
4-18	DI	0" ATS(HL)	OD
3-19	#20%	0" ATS(HL)	OD
4-19	#20%	0" ATS(HL)	OD
41-38	DI	0" ATS(HL)	OD
43-44	#20%	#1TSP(HL)	OD
43-50	#20%	#1TSP(HL)	OD
39-51	DI	#1TSP(HL)	OD
42-64	DI	#1TSP(HL)	OD
4-76	DI	0" ATS(HL)	OD
4-77	DI	0" ATS(HL)	OD
7-77	DI	0" ATS(HL)	OD
8-77	#20%	3" ATS(HL)	OD
10-78	DI	0" ATS(HL)	OD
10-79	#20%	0" ATS(HL)	OD
9-80	DI	0" ATS(HL)	OD
7-1	31%	#1TSP(CL)	OD
10-30	#20%	0.6" ATS(CL)	OD
15-30	#20%	0.7" ATS(CL)	OD
10-35	#20%	0.7" ATS(CL)	OD
17-37	#20%	0.6" ATS(CL)	OD
19-37	DI	0.6" ATS(CL)	OD
10-40	#20%	1.5" ATS(CL)	OD

ATS - Above Tube Sheet
ATE - Above Tube End
CL - Cold Leg
HL - Hot Leg
TSP - Tube Support Plate

"B" Steam Generator

Row - Column	Indication %	Location	Origin
6-1	33%	0" ATS(HL)	OD
6-2	#20%	#1TSP(HL)	OD
12-2	#20%	#6TSP(HL)	OD
13-8	#20%	1.0" ATS(HL)	OD
22-9	23%	23.2" ATS(HL)	OD
6-16	25%	0" ATS(HL)	OD
5-18	30%	0.5" ATS(HL)	OD
38-21	31%	#1TSP(HL)	OD
38-22	DI	0" ATS(HL)	OD
28-24	DI	0" ATS(HL)	OD
33-37	DI	0.2" ATS(HL)	OD
29-41	DI	#1TSP(HL)	OD
33-48	DI	#6TSP(HL)	OD
44-52	#20%	#1TSP(HL)	OD
43-58	#20%	2.3" ATS(HL)	OD
44-58	#20%	0" ATS(HL)	OD
1-62	DI	0.5" ATS(HL)	OD
21-69	#20%	V2(HL)	OD
8-70	#20%	#1TSP(HL)	OD
4-73	DI	0" ATS(HL)	OD
4-74	#20%	0" ATS(HL)	OD
5-74	DI	0" ATS(HL)	OD
9-75	DI	0" ATS(HL)	OD
10-76	20%	0.1" ATS(HL)	OD
6-77	DI	0.2" ATS(HL)	OD
9-77	21%	2.0" ATS(HL)	OD
14-77	21%	0.3 ATS(HL)	OD
3-79	DI	0" ATS(HL)	OD
27-83	#20%	1.5" ATS(HL)	OD
3-90	DI	#2TSP(HL)	OD
3-1	38%	#1TSP(CL)	OD
6-1	29%	#1TSP(CL)	OD
1-2	25%	#1TSP(CL)	OD
5-2	#20%	#1TSP(CL)	OD
10-2	38%	#1TSP(CL)	OD
12-2	32%	#1TSP(CL)	OD
10-3	39%	#1TSP(CL)	OD
13-4	30%	#1TSP(CL)	OD
20-6	25%	#1TSP(CL)	OD
17-8	DI	#1TSP(CL)	OD
22-12	DI	#1TSP(CL)	OD
29-16	39%	#1TSP(CL)	OD
17-18	DI	#1TSP(CL)	OD
31-19	#20%	#1TSP(CL)	OD
36-21	#20%	#1TSP(CL)	OD
37-21	#20%	#1TSP(CL)	OD
7-22	#20%	3.2" ATS(CL)	OD
17-22	#20%	#1TSP(CL)	OD
8-23	#20%	0.7" ATS(CL)	OD
9-23	#20%	0.8" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
9-24	DI	0.1" ATS(CL)	OD
10-24	#20%	0.5" ATS(CL)	OD
11-24	#20%	0.7" ATS(CL)	OD
22-24	#20%	#1TSP(CL)	OD
5-25	#20%	0.6" ATS(CL)	OD
7-25	32%	0.7" ATS(CL)	OD
8-25	37%	0.5" ATS(CL)	OD
9-25	37%	0.6" ATS(CL)	OD
12-25	20%	0.8" ATS(CL)	OD
13-25	28%	0.7" ATS(CL)	OD
10-25	31%	0.4" ATS(CL)	OD
11-25	23%	0.8" ATS(CL)	OD
14-25	#20%	0.8" ATS(CL)	OD
36-25	#20%	0" ATS(CL)	OD
39-25	#20%	#1TSP(CL)	OD
5-26	22%	1.1" ATS(CL)	OD
7-26	33%	1.1" ATS(CL)	OD
9-26	31%	0.6" ATS(CL)	OD
11-26	30%	0.8" ATS(CL)	OD
12-26	35%	0.8" ATS(CL)	OD
13-26	#20%	0.9" ATS(CL)	OD
14-26	24%	0.9" ATS(CL)	OD
5-27	#20%	1.3" ATS(CL)	OD
6-27	#20%	1.2" ATS(CL)	OD
8-27	#20%	1.5" ATS(CL)	OD
9-27	#20%	1.3" ATS(CL)	OD
10-27	37%	1.4" ATS(CL)	OD
11-27	#20%	1.4" ATS(CL)	OD
12-27	33%	1.3" ATS(CL)	OD
13-27	31%	0.5" ATS(CL)	OD
14-27	24%	0.6" ATS(CL)	OD
15-27	#20%	0.6" ATS(CL)	OD
4-28	#20%	0.6" ATS(CL)	OD
5-28	25%	1.0" ATS(CL)	OD
6-28	21%	0.9" ATS(CL)	OD
7-28	29%	0.9" ATS(CL)	OD
8-28	22%	0.7" ATS(CL)	OD
9-28	34%	1.2" ATS(CL)	OD
10-28	28%	1.4" ATS(CL)	OD
11-28	20%	1.0" ATS(CL)	OD
12-28	#20%	1.1" ATS(CL)	OD
13-28	27%	0.6" ATS(CL)	OD
14-28	35%	0.7" ATS(CL)	OD
15-28	22%	0.7" ATS(CL)	OD
16-28	33%	0.6" ATS(CL)	OD
17-28	DI	0.5" ATS(CL)	OD
4-29	#20%	0.9" ATS(CL)	OD
5-29	24%	0.8" ATS(CL)	OD
6-29	35%	0.8" ATS(CL)	OD
7-29	29%	1.1" ATS(CL)	OD
8-29	30%	0.6" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
9-29	24%	1.3" ATS(CL)	OD
10-29	21%	1.2" ATS(CL)	OD
11-20	24%	1.0" ATS(CL)	OD
12-29	38%	1.6" ATS(CL)	OD
13-29	21%	1.1" ATS(CL)	OD
14-29	#20%	0.7" ATS(CL)	OD
15-29	23%	0.6" ATS(CL)	OD
16-29	32%	0.7" ATS(CL)	OD
17-29	#20%	0.7" ATS(CL)	OD
18-29	33%	0.7" ATS(CL)	OD
23-29	26%	#1TSP(CL)	OD
4-30	22%	0.9" ATS(CL)	OD
5-30	35%	0.9" ATS(CL)	OD
6-30	26%	1.2" ATS(CL)	OD
8-30	29%	0.5" ATS(CL)	OD
9-30	33%	0.9" ATS(CL)	OD
10-30	#20%	0.9" ATS(CL)	OD
11-30	#20%	1.6" ATS(CL)	OD
12-30	#20%	1.6" ATS(CL)	OD
13-30	#20%	1.4" ATS(CL)	OD
14-30	#20%	1.4" ATS(CL)	OD
15-30	22%	1.2" ATS(CL)	OD
16-30	#20%	1.5" ATS(CL)	OD
17-30	21%	0.9" ATS(CL)	OD
18-30	33%	0.8" ATS(CL)	OD
19-30	#20%	0.6" ATS(CL)	OD
4-31	#20%	0.5" ATS(CL)	OD
5-31	#20%	1.1" ATS(CL)	OD
6-31	#20%	0.8" ATS(CL)	OD
7-31	#20%	0.8" ATS(CL)	OD
8-31	33%	1.2" ATS(CL)	OD
9-31	36%	1.2" ATS(CL)	OD
10-31	24%	0.9" ATS(CL)	OD
11-31	20%	6.6" ATS(CL)	OD
12-31	#20%	2.7" ATS(CL)	OD
13-31	24%	1.4" ATS(CL)	OD
15-31	20%	1.4" ATS(CL)	OD
16-31	#20%	1.3" ATS(CL)	OD
17-31	#20%	0.6" ATS(CL)	OD
18-31	#20%	0.6" ATS(CL)	OD
20-31	DI	0.2" ATS(CL)	OD
21-31	DI	0.2" ATS(CL)	OD
41-31	29%	#1TSP(CL)	OD
4-32	29%	0.6" ATS(CL)	OD
5-32	#20%	0.9" ATS(CL)	OD
6-32	35%	0.6" ATS(CL)	OD
7-32	28%	2.0" ATS(CL)	OD
8-32	#20%	0.9" ATS(CL)	OD
9-32	38%	1.0" ATS(CL)	OD
10-32	#20%	1.0" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
11-32	28%	1.6" ATS(CL)	OD
12-32	#20%	1.5" ATS(CL)	OD
13-32	28%	1.1" ATS(CL)	OD
14-32	#20%	1.0" ATS(CL)	OD
16-32	#20%	0.5" ATS(CL)	OD
17-32	#20%	1.0" ATS(CL)	OD
18-32	37%	1.1" ATS(CL)	OD
19-32	#20%	0.7" ATS(CL)	OD
20-32	DI	0.3" ATS(CL)	OD
21-32	DI	0.2" ATS(CL)	OD
22-32	38%	#1TSP(CL)	OD
4-33	34%	0.6" ATS(CL)	OD
5-33	33%	1.2" ATS(CL)	OD
6-33	32%	1.2" ATS(CL)	OD
7-33	32%	1.3" ATS(CL)	OD
8-33	#20%	1.0" ATS(CL)	OD
9-33	33%	0.9" ATS(CL)	OD
10-33	36%	1.1" ATS(CL)	OD
11-33	#20%	0.9" ATS(CL)	OD
12-33	36%	1.5" ATS(CL)	OD
13-33	20%	0.9" ATS(CL)	OD
14-33	#20%	1.3" ATS(CL)	OD
15-33	#20%	1.3" ATS(CL)	OD
16-33	#20%	1.3" ATS(CL)	OD
17-33	#20%	1.3" ATS(CL)	OD
18-33	24%	1.1" ATS(CL)	OD
19-33	22%	0.8" ATS(CL)	OD
20-33	DI	0.2" ATS(CL)	OD
21-33	26%	0.8" ATS(CL)	OD
4-34	#20%	0.6" ATS(CL)	OD
5-34	22%	0.9" ATS(CL)	OD
6-34	30%	1.2" ATS(CL)	OD
7-34	28%	1.1" ATS(CL)	OD
8-34	24%	0.7" ATS(CL)	OD
9-34	21%	2.0" ATS(CL)	OD
10-34	30%	1.1" ATS(CL)	OD
11-34	#20%	0.9" ATS(CL)	OD
12-34	#20%	1.0" ATS(CL)	OD
13-34	23%	0.9" ATS(CL)	OD
14-34	#20%	1.1" ATS(CL)	OD
15-34	#20%	1.1" ATS(CL)	OD
16-34	#20%	0.9" ATS(CL)	OD
18-34	23%	0.8" ATS(CL)	OD
19-34	21%	0.8" ATS(CL)	OD
20-34	DI	0.4" ATS(CL)	OD
4-35	28%	1.5" ATS(CL)	OD
5-35	32%	0.5" ATS(CL)	OD
6-35	#20%	0.8" ATS(CL)	OD
7-35	36%	0.9" ATS(CL)	OD
8-35	#20%	0.9" ATS(CL)	OD
9-35	30%	0.9" ATS(CL)	OD
10-35	27%	1.0" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
11-35	#20%	0.9" ATS(CL)	OD
12-35	28%	1.1" ATS(CL)	OD
13-35	#20%	1.2" ATS(CL)	OD
14-35	#20%	0.8" ATS(CL)	OD
15-35	#20%	1.3" ATS(CL)	OD
16-35	27%	0.7" ATS(CL)	OD
18-35	34%	0.9" ATS(CL)	OD
19-35	#20%	0.7" ATS(CL)	OD
20-35	DI	0.4" ATS(CL)	OD
21-35	#20%	0.6" ATS(CL)	OD
4-36	#20%	0.8" ATS(CL)	OD
5-36	28%	0.6" ATS(CL)	OD
6-36	#20%	0.3" ATS(CL)	OD
8-36	20%	2.3" ATS(CL)	OD
9-36	24%	1.9" ATS(CL)	OD
10-36	29%	1.7" ATS(CL)	OD
11-36	36%	1.4" ATS(CL)	OD
12-36	22%	0.8" ATS(CL)	OD
13-36	24%	1.2" ATS(CL)	OD
14-36	32%	1.2"ATS(CL)	OD
15-36	#20%	0.9" ATS(CL)	OD
16-36	22%	0.8" ATS(CL)	OD
17-36	#20%	0.6" ATS(CL)	OD
18-36	#20%	0.8" ATS(CL)	OD
19-36	#20%	1.3" ATS(CL)	OD
20-36	21%	0.9" ATS(CL)	OD
21-36	DI	0.5" ATS(CL)	OD
22-36	DI	0.4" ATS(CL)	OD
23-36	28%	1.0" ATS(CL)	OD
4-37	#20%	0.6" ATS(CL)	OD
5-37	27%	0.9" ATS(CL)	OD
6-37	#20%	1.4" ATS(CL)	OD
7-37	36%	0.5" ATS(CL)	OD
8-37	20%	0.7" ATS(CL)	OD
9-37	#20%	1.5" ATS(CL)	OD
10-37	#20%	1.0" ATS(CL)	OD
11-37	20%	0.8" ATS(CL)	OD
12-37	30%	0.9" ATS(CL)	OD
13-37	26%	0.9" ATS(CL)	OD
14-37	22%	0.8" ATS(CL)	OD
15-37	24%	0.9" ATS(CL)	OD
16-37	#20%	0.6" ATS(CL)	OD
17-37	#20%	0.5" ATS(CL)	OD
18-37	#20%	1.0" ATS(CL)	OD
19-37	#20%	1.5" ATS(CL)	OD
20-37	#20%	1.0" ATS(CL)	OD
21-37	30%	1.0" ATS(CL)	OD
23-37	21%	0.9" ATS(CL)	OD
3-38	#20%	0.8" ATS(CL)	OD
4-38	DI	0.4" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
5-38	DI	0.3" ATS(CL)	OD
6-38	26%	0.7" ATS(CL)	OD
7-38	#20%	0.5" ATS(CL)	OD
8-38	33%	2.2" ATS(CL)	OD
9-38	22%	0.8" ATS(CL)	OD
10-38	30%	1.0" ATS(CL)	OD
11-38	#20%	0.8" ATS(CL)	OD
12-38	26%	0.9" ATS(CL)	OD
13-38	25%	0.6" ATS(CL)	OD
14-38	#20%	0.9" ATS(CL)	OD
15-38	#20%	0.9" ATS(CL)	OD
16-38	#20%	0.6" ATS(CL)	OD
17-38	#20%	0.8" ATS(CL)	OD
18-38	25%	1.2" ATS(CL)	OD
19-38	22%	1.2" ATS(CL)	OD
20-38	26%	1.2" ATS(CL)	OD
21-38	28%	0.6" ATS(CL)	OD
22-38	#20%	0.6" ATS(CL)	OD
23-38	#20%	0.5" ATS(CL)	OD
4-39	#20%	0.9" ATS(CL)	OD
5-39	29%	0.6" ATS(CL)	OD
6-39	DI	0.6" ATS(CL)	OD
7-39	33%	2.1" ATS(CL)	OD
8-39	#20%	2.2" ATS(CL)	OD
9-39	#20%	2.0" ATS(CL)	OD
10-39	26%	0.6" ATS(CL)	OD
11-39	28%	0.9" ATS(CL)	OD
12-39	30%	1.0" ATS(CL)	OD
13-39	30%	0.9" ATS(CL)	OD
14-39	#20%	1.0" ATS(CL)	OD
15-39	20%	0.8" ATS(CL)	OD
16-39	#20%	0.8" ATS(CL)	OD
17-39	22%	1.1" ATS(CL)	OD
18-39	#20%	0.9" ATS(CL)	OD
19-39	#20%	0.6" ATS(CL)	OD
20-39	26%	0.5" ATS(CL)	OD
21-39	28%	0.5" ATS(CL)	OD
23-39	DI	0.4" ATS(CL)	OD
34-39	36%	#1TSP(CL)	OD
4-40	#20%	0.8" ATS(CL)	OD
5-40	34%	0.6" ATS(CL)	OD
6-40	#20%	0.4" ATS(CL)	OD
7-40	24%	0.6" ATS(CL)	OD
8-40	#20%	0.5" ATS(CL)	OD
9-40	32%	0.8" ATS(CL)	OD
10-40	27%	0.5" ATS(CL)	OD
11-40	#20%	0.8" ATS(CL)	OD
12-40	#20%	1.2" ATS(CL)	OD
13-40	36%	0.8" ATS(CL)	OD
14-40	#20%	0.6" ATS(CL)	OD
15-40	#20%	0.5" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
16-40	23%	1.5" ATS(CL)	OD
19-40	27%	0.5" ATS(CL)	OD
20-40	DI	0.6" ATS(CL)	OD
21-40	21%	0.3" ATS(CL)	OD
22-40	31%	0.5" ATS(CL)	OD
23-40	#20%	0.8" ATS(CL)	OD
3-41	DI	0.3" ATS(CL)	OD
4-41	#20%	0.7" ATS(CL)	OD
5-41	22%	0.6" ATS(CL)	OD
6-41	23%	0.7" ATS(CL)	OD
7-41	27%	0.5" ATS(CL)	OD
8-41	#20%	0.6" ATS(CL)	OD
9-41	29%	0.6" ATS(CL)	OD
10-41	31%	0.8" ATS(CL)	OD
11-41	#20%	0.9" ATS(CL)	OD
13-41	24%	0.9" ATS(CL)	OD
14-41	24%	0.9" ATS(CL)	OD
15-41	#20%	0.6" ATS(CL)	OD
16-41	#20%	0.7" ATS(CL)	OD
17-41	#20%	0.6" ATS(CL)	OD
18-41	27%	0.7" ATS(CL)	OD
19-41	#20%	0.5" ATS(CL)	OD
20-41	24%	0.4" ATS(CL)	OD
22-41	23%	0.4" ATS(CL)	OD
23-41	#20%	0.7" ATS(CL)	OD
3-42	#20%	0.4" ATS(CL)	OD
4-42	DI	0.3" ATS(CL)	OD
5-42	26%	0.8" ATS(CL)	OD
6-42	28%	0.7" ATS(CL)	OD
7-42	26%	0.6" ATS(CL)	OD
8-42	#20%	0.6" ATS(CL)	OD
9-42	#20%	0.8" ATS(CL)	OD
10-42	27%	0.8" ATS(CL)	OD
11-42	#20%	1.3" ATS(CL)	OD
12-42	26%	1.2" ATS(CL)	OD
13-42	25%	1.1" ATS(CL)	OD
14-42	25%	0.9" ATS(CL)	OD
15-42	#20%	0.9" ATS(CL)	OD
16-42	#20%	0.7" ATS(CL)	OD
17-42	#20%	0.6" ATS(CL)	OD
18-42	27%	0.6" ATS(CL)	OD
19-42	24%	0.6" ATS(CL)	OD
20-42	#20%	0.6" ATS(CL)	OD
21-42	28%	0.9" ATS(CL)	OD
5-43	23%	0.7" ATS(CL)	OD
6-43	21%	0.7" ATS(CL)	OD
7-43	27%	0.8" ATS(CL)	OD
8-43	23%	1.0" ATS(CL)	OD
9-43	23%	1.9" ATS(CL)	OD
10-43	23%	1.8" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
12-43	33%	1.2" ATS(CL)	OD
13-43	25%	1.2" ATS(CL)	OD
14-43	30%	1.0" ATS(CL)	OD
15-43	DI	0.7" ATS(CL)	OD
16-43	21%	0.8" ATS(CL)	OD
17-43	DI	0.3" ATS(CL)	OD
18-43	30%	0.9" ATS(CL)	OD
19-43	30%	0.5" ATS(CL)	OD
20-43	#20%	0.5" ATS(CL)	OD
21-43	25%	0.6" ATS(CL)	OD
22-43	#20%	0.6" ATS(CL)	OD
23-43	#20%	0.7" ATS(CL)	OD
3-44	#20%	0.8" ATS(CL)	OD
4-44	#20%	0.7" ATS(CL)	OD
5-44	21%	0.8" ATS(CL)	OD
7-44	35%	0.9" ATS(CL)	OD
8-44	24%	1.8" ATS(CL)	OD
9-44	#20%	1.9" ATS(CL)	OD
10-44	#20%	1.2" ATS(CL)	OD
11-44	28%	1.1" ATS(CL)	OD
12-44	22%	1.7" ATS(CL)	OD
14-44	21%	1.2" ATS(CL)	OD
15-44	27%	1.2" ATS(CL)	OD
16-44	21%	0.8" ATS(CL)	OD
17-44	21%	0.9" ATS(CL)	OD
18-44	#20%	0.9" ATS(CL)	OD
19-44	33%	0.9" ATS(CL)	OD
20-44	#20%	0.9" ATS(CL)	OD
21-44	22%	1.0" ATS(CL)	OD
22-44	#20%	1.3" ATS(CL)	OD
23-44	#20%	0.9" ATS(CL)	OD
3-45	#20%	0.9" ATS(CL)	OD
4-45	22%	0.9" ATS(CL)	OD
5-45	36%	0.4" ATS(CL)	OD
6-45	34%	0.5" ATS(CL)	OD
8-45	26%	2.4" ATS(CL)	OD
9-45	28%	1.8" ATS(CL)	OD
11-45	33%	1.2" ATS(CL)	OD
12-45	26%	2.0" ATS(CL)	OD
13-45	25%	1.5" ATS(CL)	OD
14-45	26%	2.2" ATS(CL)	OD
15-45	#20%	1.4" ATS(CL)	OD
16-45	25%	0.5" ATS(CL)	OD
17-45	28%	1.0" ATS(CL)	OD
18-45	30%	0.8" ATS(CL)	OD
19-45	28%	0.8" ATS(CL)	OD
22-45	#20%	1.2" ATS(CL)	OD
23-45	23%	1.0" ATS(CL)	OD
3-46	#20%	0.9" ATS(CL)	OD
4-46	#20%	0.9" ATS(CL)	OD
5-46	32%	1.2" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
12-46	35%	1.0" ATS(CL)	OD
13-46	#20%	0.9" ATS(CL)	OD
14-46	31%	0.5" ATS(CL)	OD
15-46	#20%	0.6" ATS(CL)	OD
16-46	26%	1.8" ATS(CL)	OD
17-46	21%	1.7" ATS(CL)	OD
18-46	39%	0.5" ATS(CL)	OD
19-46	#20%	0.9" ATS(CL)	OD
21-46	#20%	2.4" ATS(CL)	OD
23-46	#20%	1.0" ATS(CL)	OD
29-46	#20%	#1TSP(CL)	OD
33-46	28%	#1TSP(CL)	OD
34-46	#20%	#1TSP(CL)	OD
41-46	29%	#1TSP(CL)	OD
43-46	#20%	#1TSP(CL)	OD
4-47	#20%	1.1" ATS(CL)	OD
5-47	22%	1.3" ATS(CL)	OD
10-47	39%	1.3" ATS(CL)	OD
13-47	38%	1.5" ATS(CL)	OD
14-47	27%	0.8" ATS(CL)	OD
15-47	29%	0.7" ATS(CL)	OD
16-47	32%	2.0" ATS(CL)	OD
17-47	#20%	2.7" ATS(CL)	OD
18-47	32%	1.2" ATS(CL)	OD
19-47	#20%	1.1" ATS(CL)	OD
20-47	#20%	1.2" ATS(CL)	OD
21-47	22%	2.7" ATS(CL)	OD
23-47	24%	1.9" ATS(CL)	OD
3-48	#20%	1.2" ATS(CL)	OD
4-48	#20%	0.9" ATS(CL)	OD
5-48	26%	0.6" ATS(CL)	OD
6-48	34%	1.6" ATS(CL)	OD
7-48	29%	1.7" ATS(CL)	OD
8-48	30%	1.5" ATS(CL)	OD
10-48	#20%	1.3" ATS(CL)	OD
12-48	30%	0.9" ATS(CL)	OD
13-48	29%	0.8" ATS(CL)	OD
14-48	25%	0.7" ATS(CL)	OD
15-48	32%	0.6" ATS(CL)	OD
16-48	#20%	0.7" ATS(CL)	OD
17-48	#20%	0.5" ATS(CL)	OD
19-48	28%	1.1" ATS(CL)	OD
20-48	27%	1.4" ATS(CL)	OD
21-48	36%	0.9" ATS(CL)	OD
22-48	#20%	0.6" ATS(CL)	OD
23-48	28%	1.0" ATS(CL)	OD
24-48	#20%	0.9" ATS(CL)	OD
33-48	34%	#1TSP(CL)	OD
6-49	21%	0.9" ATS(CL)	OD
7-49	24%	0.6" ATS(CL)	OD
8-49	#20%	0.7" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
9-49	20%	1.4" ATS(CL)	OD
11-49	20%	1.3" ATS(CL)	OD
12-49	22%	1.1" ATS(CL)	OD
13-49	20%	1.1" ATS(CL)	OD
14-49	28%	0.8" ATS(CL)	OD
15-49	20%	0.8" ATS(CL)	OD
16-49	#20%	0.5" ATS(CL)	OD
17-49	#20%	0.8" ATS(CL)	OD
18-49	32%	0.8" ATS(CL)	OD
19-49	24%	1.0" ATS(CL)	OD
20-49	36%	1.1" ATS(CL)	OD
21-49	#20%	1.1" ATS(CL)	OD
22-49	24%	0.7" ATS(CL)	OD
23-49	21%	1.2" ATS(CL)	OD
24-49	23%	0.9" ATS(CL)	OD
25-49	DI	0.4" ATS(CL)	OD
30-49	35%	#1TSP(CL)	OD
6-50	21%	1.1" ATS(CL)	OD
7-50	20%	2.3" ATS(CL)	OD
8-50	#20%	0.5" ATS(CL)	OD
9-50	27%	1.0" ATS(CL)	OD
10-50	#20%	1.1" ATS(CL)	OD
11-50	23%	0.6" ATS(CL)	OD
12-50	#20%	1.0" ATS(CL)	OD
13-50	#20%	1.1" ATS(CL)	OD
14-50	21%	0.8" ATS(CL)	OD
15-50	#20%	0.6" ATS(CL)	OD
16-50	#20%	0.7" ATS(CL)	OD
17-50	#20%	0.8" ATS(CL)	OD
18-50	30%	0.7" ATS(CL)	OD
19-50	39%	0.8" ATS(CL)	OD
20-50	#20%	0.7" ATS(CL)	OD
21-50	32%	0.9" ATS(CL)	OD
22-50	30%	0.8" ATS(CL)	OD
23-50	26%	1.1" ATS(CL)	OD
24-50	#20%	0.7" ATS(CL)	OD
4-51	24%	0.6" ATS(CL)	OD
6-51	26%	1.8" ATS(CL)	OD
7-51	21%	0.9" ATS(CL)	OD
8-51	#20%	0.5" ATS(CL)	OD
9-51	38%	0.4" ATS(CL)	OD
10-51	22%	1.7" ATS(CL)	OD
11-51	26%	0.7" ATS(CL)	OD
12-51	#20%	0.8" ATS(CL)	OD
13-51	23%	0.9" ATS(CL)	OD
14-51	#20%	0.9" ATS(CL)	OD
15-51	22%	0.8" ATS(CL)	OD
16-51	32%	1.0" ATS(CL)	OD
17-51	#20%	0.7" ATS(CL)	OD
18-51	35%	0.9" ATS(CL)	OD
19-51	24%	0.8" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
20-51	#20%	1.4" ATS(CL)	OD
21-51	24%	0.7" ATS(CL)	OD
22-51	24%	0.7" ATS(CL)	OD
23-51	26%	0.6" ATS(CL)	OD
24-51	27%	0.6" ATS(CL)	OD
25-51	#20%	0.6" ATS(CL)	OD
28-51	24%	#1TSP (CL)	OD
4-52	#20%	0.7" ATS(CL)	OD
5-52	#20%	0.3" ATS(CL)	OD
6-52	25%	0.9" ATS(CL)	OD
7-52	30%	0.5" ATS(CL)	OD
8-52	26%	0.6" ATS(CL)	OD
9-52	23%	0.4" ATS(CL)	OD
10-52	#20%	0.6" ATS(CL)	OD
11-52	20%	0.6" ATS(CL)	OD
12-52	#20%	0.7" ATS(CL)	OD
13-52	20%	0.7" ATS(CL)	OD
14-52	#20%	0.8" ATS(CL)	OD
15-52	28%	0.7" ATS(CL)	OD
16-52	22%	0.8" ATS(CL)	OD
17-52	#20%	0.9" ATS(CL)	OD
18-52	#20%	1.2" ATS(CL)	OD
19-52	22%	1.0" ATS(CL)	OD
20-52	#20%	0.6" ATS(CL)	OD
21-52	38%	0.8" ATS(CL)	OD
23-52	25%	0.7" ATS(CL)	OD
24-52	32%	0.6" ATS(CL)	OD
3-53	22%	0.7" ATS(CL)	OD
4-53	DI	0.3" ATS(CL)	OD
5-53	#20%	0.8" ATS(CL)	OD
6-53	34%	0.7" ATS(CL)	OD
7-53	21%	0.8" ATS(CL)	OD
8-53	#20%	0.5" ATS(CL)	OD
10-53	#20%	0.6" ATS(CL)	OD
11-53	23%	1.6" ATS(CL)	OD
12-53	#20%	0.7" ATS(CL)	OD
13-53	#20%	1.2" ATS(CL)	OD
14-53	#20%	1.2" ATS(CL)	OD
15-53	39%	0.9" ATS(CL)	OD
16-53	35%	0.9" ATS(CL)	OD
17-53	#20%	0.8" ATS(CL)	OD
18-53	22%	0.9" ATS(CL)	OD
19-53	25%	0.7" ATS(CL)	OD
20-53	24%	1.1" ATS(CL)	OD
21-53	33%	0.8" ATS(CL)	OD
22-53	39%	0.9" ATS(CL)	OD
23-53	24%	0.6" ATS(CL)	OD
24-53	26%	0.7" ATS(CL)	OD
25-53	23%	0.2" ATS(CL)	OD
26-53	#20%	0.4" ATS(CL)	OD
3-54	DI	0.2" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
5-54	#20%	0.6" ATS(CL)	OD
6-54	23%	1.0" ATS(CL)	OD
7-54	31%	2.5" ATS(CL)	OD
8-54	22%	0.9" ATS(CL)	OD
9-54	39%	1.5" ATS(CL)	OD
10-54	#20%	1.9" ATS(CL)	OD
11-54	25%	1.8" ATS(CL)	OD
12-54	#20%	1.9" ATS(CL)	OD
14-54	#20%	1.2" ATS(CL)	OD
15-54	25%	1.0" ATS(CL)	OD
16-54	23%	1.1" ATS(CL)	OD
17-54	22%	1.0" ATS(CL)	OD
18-54	25%	1.4" ATS(CL)	OD
19-54	37%	1.6" ATS(CL)	OD
20-54	30%	1.5" ATS(CL)	OD
21-54	21%	1.2" ATS(CL)	OD
22-54	#20%	1.0" ATS(CL)	OD
24-54	33%	0.6" ATS(CL)	OD
25-54	27%	0.4" ATS(CL)	OD
26-54	#20%	0.5" ATS(CL)	OD
28-54	#20%	7.6" ATS(CL)	OD
38-54	22%	#1TSP(CL)	OD
3-55	DI	0.3" ATS(CL)	OD
5-55	#20%	1.0" ATS(CL)	OD
6-55	25%	1.1" ATS(CL)	OD
7-55	#20%	0.9" ATS(CL)	OD
8-55	38%	1.2" ATS(CL)	OD
9-55	21%	1.3" ATS(CL)	OD
10-55	27%	1.5" ATS(CL)	OD
11-55	37%	1.7" ATS(CL)	OD
14-55	#20%	1.3" ATS(CL)	OD
15-55	#20%	1.2" ATS(CL)	OD
16-55	#20%	1.0" ATS(CL)	OD
17-55	#20%	1.2" ATS(CL)	OD
18-55	#20%	1.1" ATS(CL)	OD
19-55	21%	1.2" ATS(CL)	OD
21-55	21%	0.6" ATS(CL)	OD
22-55	33%	1.4" ATS(CL)	OD
23-55	21%	1.0" ATS(CL)	OD
24-55	37%	1.3" ATS(CL)	OD
25-55	29%	0.3" ATS(CL)	OD
4-56	#20%	1.2" ATS(CL)	OD
5-56	DI	0.2" ATS(CL)	OD
6-56	#20%	0.9" ATS(CL)	OD
7-56	25%	0.6" ATS(CL)	OD
8-56	DI	0.3" ATS(CL)	OD
9-56	#20%	1.5" ATS(CL)	OD
10-56	#20%	1.7" ATS(CL)	OD
11-56	21%	1.5" ATS(CL)	OD
12-56	25%	1.5" ATS(CL)	OD
13-56	#20%	1.3" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
14-56	#20%	1.2" ATS(CL)	OD
15-56	29%	1.4" ATS(CL)	OD
16-56	#20%	1.7" ATS(CL)	OD
17-56	#20%	1.7" ATS(CL)	OD
18-56	21%	1.6" ATS(CL)	OD
19-56	#20%	1.6" ATS(CL)	OD
20-56	#20%	1.0" ATS(CL)	OD
21-56	22%	1.5" ATS(CL)	OD
22-56	21%	1.5" ATS(CL)	OD
23-56	25%	0.8" ATS(CL)	OD
24-56	35%	0.9" ATS(CL)	OD
25-56	#20%	0.9" ATS(CL)	OD
26-56	#20%	0.4" ATS(CL)	OD
3-57	#20%	0.3" ATS(CL)	OD
4-57	24%	0.4" ATS(CL)	OD
5-57	DI	0.4" ATS(CL)	OD
6-57	31%	0.2" ATS(CL)	OD
7-57	#20%	0.7" ATS(CL)	OD
8-57	DI	0.4" ATS(CL)	OD
9-57	23%	0.4" ATS(CL)	OD
10-57	#20%	1.6" ATS(CL)	OD
11-57	22%	0.8" ATS(CL)	OD
12-57	25%	1.0" ATS(CL)	OD
13-57	25%	1.4" ATS(CL)	OD
14-57	#20%	1.2" ATS(CL)	OD
15-57	#20%	1.1" ATS(CL)	OD
16-57	#20%	1.1" ATS(CL)	OD
17-57	#20%	0.9" ATS(CL)	OD
18-57	27%	1.1" ATS(CL)	OD
19-57	28%	1.2" ATS(CL)	OD
21-57	#20%	1.2" ATS(CL)	OD
22-57	23%	0.8" ATS(CL)	OD
23-57	32%	0.8" ATS(CL)	OD
24-57	#20%	0.6" ATS(CL)	OD
25-57	31%	0.3" ATS(CL)	OD
3-58	#20%	0.4" ATS(CL)	OD
4-58	21%	0.5" ATS(CL)	OD
7-58	29%	0.6" ATS(CL)	OD
8-58	22%	0.5" ATS(CL)	OD
9-58	#20%	0.5" ATS(CL)	OD
10-58	#20%	0.8" ATS(CL)	OD
11-58	#20%	0.9" ATS(CL)	OD
12-58	28%	1.1" ATS(CL)	OD
13-58	#20%	1.2" ATS(CL)	OD
14-58	#20%	1.0" ATS(CL)	OD
15-58	#20%	1.1" ATS(CL)	OD
17-58	#20%	1.0" ATS(CL)	OD
18-58	31%	0.8" ATS(CL)	OD
19-58	37%	1.5" ATS(CL)	OD
20-58	#20%	0.8" ATS(CL)	OD
21-58	#20%	0.9" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
22-58	#20%	0.6" ATS(CL)	OD
23-58	22%	0.9" ATS(CL)	OD
24-58	25%	0.6" ATS(CL)	OD
25-58	#20%	0.6" ATS(CL)	OD
33-58	28%	#1TSP(CL)	OD
5-59	#20%	0.5" ATS(CL)	OD
6-59	27%	0.6" ATS(CL)	OD
7-59	26%	0.8" ATS(CL)	OD
8-59	25%	0.9" ATS(CL)	OD
10-59	31%	1.0" ATS(CL)	OD
11-59	34%	0.8" ATS(CL)	OD
12-59	22%	1.1" ATS(CL)	OD
14-59	#20%	0.9" ATS(CL)	OD
15-59	23%	0.9" ATS(CL)	OD
16-59	#20%	0.7" ATS(CL)	OD
17-59	#20%	0.8" ATS(CL)	OD
18-59	26%	0.7" ATS(CL)	OD
19-59	32%	0.6" ATS(CL)	OD
20-59	#20%	0.7" ATS(CL)	OD
21-59	#20%	1.0" ATS(CL)	OD
22-59	#20%	0.6" ATS(CL)	OD
23-59	29%	0.8" ATS(CL)	OD
24-59	33%	0.6" ATS(CL)	OD
25-59	#20%	0.6" ATS(CL)	OD
3-60	DI	0.4" ATS(CL)	OD
4-60	31%	0.3" ATS(CL)	OD
6-60	36%	0.3" ATS(CL)	OD
7-60	32%	0.5" ATS(CL)	OD
8-60	26%	1.0" ATS(CL)	OD
9-60	25%	0.3" ATS(CL)	OD
10-60	#20%	0.8" ATS(CL)	OD
11-60	29%	1.4" ATS(CL)	OD
12-60	#20%	1.3" ATS(CL)	OD
13-60	#20%	1.1" ATS(CL)	OD
14-60	#20%	1.2" ATS(CL)	OD
16-60	#20%	1.0" ATS(CL)	OD
17-60	#20%	0.9" ATS(CL)	OD
18-60	#20%	1.0" ATS(CL)	OD
19-60	#20%	1.2" ATS(CL)	OD
20-60	#20%	0.6" ATS(CL)	OD
21-60	28%	1.0" ATS(CL)	OD
22-60	21%	0.9" ATS(CL)	OD
24-60	35%	1.0" ATS(CL)	OD
25-60	#20%	0.4" ATS(CL)	OD
4-61	21%	0.2" ATS(CL)	OD
5-61	25%	0.9" ATS(CL)	OD
6-61	25%	0.8" ATS(CL)	OD
7-61	22%	0.4" ATS(CL)	OD
8-61	27%	1.2" ATS(CL)	OD
9-61	24%	0.9" ATS(CL)	OD
10-61	#20%	0.8" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
11-61	31%	1.3" ATS(CL)	OD
13-61	#20%	1.4" ATS(CL)	OD
15-61	21%	1.2" ATS(CL)	OD
16-61	22%	0.9" ATS(CL)	OD
17-61	#20%	1.1" ATS(CL)	OD
18-61	#20%	0.8" ATS(CL)	OD
19-61	#20%	0.6" ATS(CL)	OD
21-61	#20%	0.8" ATS(CL)	OD
22-61	37%	0.9" ATS(CL)	OD
23-61	21%	0.9" ATS(CL)	OD
24-61	#20%	0.9" ATS(CL)	OD
37-61	20%	#1TSP(CL)	OD
39-61	24%	#1TSP(CL)	OD
3-62	DI	0.1" ATS(CL)	OD
4-62	#20%	0.4" ATS(CL)	OD
5-62	#20%	0.9" ATS(CL)	OD
6-62	#20%	0.8" ATS(CL)	OD
7-62	24%	1.7" ATS(CL)	OD
8-62	22%	0.9" ATS(CL)	OD
9-62	24%	0.9" ATS(CL)	OD
10-62	22%	1.6" ATS(CL)	OD
11-62	25%	0.5" ATS(CL)	OD
12-62	#20%	1.3" ATS(CL)	OD
13-62	#20%	1.5" ATS(CL)	OD
14-62	#20%	2.1" ATS(CL)	OD
15-62	25%	2.0" ATS(CL)	OD
16-62	31%	2.0" ATS(CL)	OD
17-62	#20%	0.7" ATS(CL)	OD
18-62	#20%	0.8" ATS(CL)	OD
19-62	#20%	0.7" ATS(CL)	OD
21-62	#20%	1.1" ATS(CL)	OD
22-62	#20%	0.9" ATS(CL)	OD
23-62	#20%	0.6" ATS(CL)	OD
24-62	23%	0.4" ATS(CL)	OD
25-62	#20%	0.2" ATS(CL)	OD
37-62	24%	#1TSP(CL)	OD
39-62	20%	#1TSP(CL)	OD
3-63	#20%	0.7" ATS(CL)	OD
4-63	26%	0.7" ATS(CL)	OD
5-63	#20%	0.7" ATS(CL)	OD
6-63	21%	0.8" ATS(CL)	OD
7-63	30%	0.2" ATS(CL)	OD
8-63	#20%	0.6" ATS(CL)	OD
9-63	22%	0.5" ATS(CL)	OD
10-63	#20%	1.2" ATS(CL)	OD
11-63	#20%	0.7" ATS(CL)	OD
12-63	#20%	2.1" ATS(CL)	OD
13-63	#20%	2.0" ATS(CL)	OD
14-63	#20%	1.2" ATS(CL)	OD
15-63	#20%	2.0" ATS(CL)	OD
16-63	28%	1.3" ATS(CL)	OD
17-63	#20%	1.3" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
18-63	#20%	0.6" ATS(CL)	OD
19-63	#20%	0.6" ATS(CL)	OD
21-63	#20%	1.0" ATS(CL)	OD
22-63	25%	0.8" ATS(CL)	OD
23-63	#20%	0.6" ATS(CL)	OD
24-63	24%	0.3" ATS(CL)	OD
3-64	DI	0.5" ATS(CL)	OD
4-64	#20%	0.8" ATS(CL)	OD
5-64	#20%	0.4" ATS(CL)	OD
6-64	21%	0.5" ATS(CL)	OD
7-64	22%	0.6" ATS(CL)	OD
8-64	#20%	0.6" ATS(CL)	OD
10-64	#20%	0.8" ATS(CL)	OD
11-64	#20%	1.3" ATS(CL)	OD
12-64	#20%	0.8" ATS(CL)	OD
13-64	#20%	1.2" ATS(CL)	OD
14-64	#20%	0.7" ATS(CL)	OD
15-64	24%	0.6" ATS(CL)	OD
16-64	24%	0.8" ATS(CL)	OD
17-64	21%	0.7" ATS(CL)	OD
18-64	34%	0.6" ATS(CL)	OD
19-64	#20%	2.1" ATS(CL)	OD
20-64	#20%	1.2" ATS(CL)	OD
21-64	32%	1.4" ATS(CL)	OD
22-64	37%	0.8" ATS(CL)	OD
23-64	27%	1.1" ATS(CL)	OD
24-64	29%	0.5" ATS(CL)	OD
25-64	#20%	0.9" ATS(CL)	OD
27-64	#20%	0.5" ATS(CL)	OD
36-64	#20%	#1TSP(CL)	OD
4-65	#20%	1.3" ATS(CL)	OD
5-65	#20%	0.3" ATS(CL)	OD
6-65	23%	0.5" ATS(CL)	OD
7-65	37%	0.4" ATS(CL)	OD
8-65	34%	0.7" ATS(CL)	OD
10-65	#20%	0.5" ATS(CL)	OD
11-65	20%	0.4" ATS(CL)	OD
12-65	#20%	0.5" ATS(CL)	OD
13-65	31%	1.2" ATS(CL)	OD
15-65	#20%	0.7" ATS(CL)	OD
16-65	#20%	1.5" ATS(CL)	OD
17-65	#20%	0.9" ATS(CL)	OD
18-65	#20%	1.4" ATS(CL)	OD
19-65	#20%	0.9" ATS(CL)	OD
20-65	#20%	0.6" ATS(CL)	OD
21-65	#20%	0.6" ATS(CL)	OD
22-65	21%	1.3" ATS(CL)	OD
24-65	#20%	0.9" ATS(CL)	OD
36-65	#20%	#1TSP(CL)	OD
3-66	DI	0.4" ATS(CL)	OD
4-66	21%	0.9" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
5-66	#20%	0.9" ATS(CL)	OD
6-66	26%	0.5" ATS(CL)	OD
7-66	24%	1.3" ATS(CL)	OD
8-66	23%	0.9" ATS(CL)	OD
9-66	25%	1.2" ATS(CL)	OD
10-66	#20%	0.6" ATS(CL)	OD
11-66	30%	0.3" ATS(CL)	OD
12-66	#20%	0.5" ATS(CL)	OD
13-66	23%	0.4" ATS(CL)	OD
14-66	#20%	0.9" ATS(CL)	OD
15-66	21%	0.9" ATS(CL)	OD
16-66	26%	0.7" ATS(CL)	OD
17-66	#20%	0.5" ATS(CL)	OD
18-66	34%	0.5" ATS(CL)	OD
19-66	21%	0.9" ATS(CL)	OD
20-66	24%	1.0" ATS(CL)	OD
21-66	#20%	0.9" ATS(CL)	OD
22-66	#20%	0.9" ATS(CL)	OD
23-66	23%	0.3" ATS(CL)	OD
4-67	#20%	0.9" ATS(CL)	OD
5-67	#20%	0.5" ATS(CL)	OD
6-67	#20%	0.4" ATS(CL)	OD
7-67	39%	1.1" ATS(CL)	OD
8-67	#20%	0.6" ATS(CL)	OD
9-67	32%	1.0" ATS(CL)	OD
10-67	24%	0.5" ATS(CL)	OD
11-67	21%	0.6" ATS(CL)	OD
12-67	#20%	0.6" ATS(CL)	OD
13-67	#20%	0.5" ATS(CL)	OD
14-67	#20%	0.8" ATS(CL)	OD
15-67	28%	0.8" ATS(CL)	OD
16-67	#20%	0.7" ATS(CL)	OD
17-67	#20%	0.8" ATS(CL)	OD
18-67	20%	0.6" ATS(CL)	OD
19-67	38%	1.2" ATS(CL)	OD
20-67	#20%	0.8" ATS(CL)	OD
21-67	#20%	0.6" ATS(CL)	OD
22-67	26%	0.3" ATS(CL)	OD
4-68	#20%	0.8" ATS(CL)	OD
5-68	#20%	0.6" ATS(CL)	OD
6-68	24%	0.6" ATS(CL)	OD
7-68	28%	0.6" ATS(CL)	OD
8-68	30%	0.8" ATS(CL)	OD
9-68	32%	1.0" ATS(CL)	OD
10-68	#20%	0.9" ATS(CL)	OD
11-68	32%	0.5" ATS(CL)	OD
12-68	28%	0.4" ATS(CL)	OD
13-68	#20%	0.7" ATS(CL)	OD
14-68	28%	0.7" ATS(CL)	OD
15-68	21%	0.5" ATS(CL)	OD
16-68	25%	1.0" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
17-68	28%	1.0" ATS(CL)	OD
18-68	28%	0.5" ATS(CL)	OD
20-68	#20%	0.6" ATS(CL)	OD
21-68	DI	0.3" ATS(CL)	OD
4-69	#20%	0.9" ATS(CL)	OD
5-69	DI	0.6" ATS(CL)	OD
6-69	24%	0.6" ATS(CL)	OD
7-69	35%	0.6" ATS(CL)	OD
8-69	#20%	0.7" ATS(CL)	OD
9-69	29%	0.9" ATS(CL)	OD
10-69	#20%	0.4" ATS(CL)	OD
11-69	#20%	0.4" ATS(CL)	OD
12-69	24%	0.7" ATS(CL)	OD
13-69	21%	0.9" ATS(CL)	OD
14-69	29%	1.1" ATS(CL)	OD
15-69	DI	0.5" ATS(CL)	OD
16-69	#20%	0.7" ATS(CL)	OD
17-69	29%	0.5" ATS(CL)	OD
18-69	28%	1.0" ATS(CL)	OD
19-69	22%	0.9" ATS(CL)	OD
20-69	DI	0.3" ATS(CL)	OD
27-69	38%	#1TSP(CL)	OD
36-69	28%	#1TSP(CL)	OD
4-70	#20%	0.6" ATS(CL)	OD
5-70	#20%	0.4" ATS(CL)	OD
6-70	#20%	0.6" ATS(CL)	OD
7-70	#20%	0.8" ATS(CL)	OD
8-70	29%	1.0" ATS(CL)	OD
9-70	22%	0.9" ATS(CL)	OD
10-70	28%	0.9" ATS(CL)	OD
11-70	#20%	1.2" ATS(CL)	OD
12-70	27%	0.7" ATS(CL)	OD
13-70	#20%	0.3" ATS(CL)	OD
14-70	#20%	0.3" ATS(CL)	OD
15-70	26%	0.3" ATS(CL)	OD
16-70	22%	0.3" ATS(CL)	OD
17-70	#20%	0.6" ATS(CL)	OD
18-70	DI	0.7" ATS(CL)	OD
19-70	DI	0.4" ATS(CL)	OD
5-71	#20%	0.4" ATS(CL)	OD
6-71	#20%	1.1" ATS(CL)	OD
7-71	#20%	0.6" ATS(CL)	OD
8-71	#20%	0.7" ATS(CL)	OD
9-71	23%	0.9" ATS(CL)	OD
10-71	#20%	0.9" ATS(CL)	OD
11-71	#20%	0.8" ATS(CL)	OD
12-71	#20%	0.2" ATS(CL)	OD
13-71	#20%	0.7" ATS(CL)	OD
14-71	#20%	0.5" ATS(CL)	OD
15-71	#20%	1.0" ATS(CL)	OD
6-72	#20%	0.9" ATS(CL)	OD

Row - Column	Indication %	Location	Origin
7-72	#20%	0.6" ATS(CL)	OD
9-72	37%	0.7" ATS(CL)	OD
10-72	#20%	0.6" ATS(CL)	OD
11-72	23%	0.8" ATS(CL)	OD
12-72	#20%	0.4" ATS(CL)	OD
13-72	DI	0.4" ATS(CL)	OD
14-72	#20%	0.9" ATS(CL)	OD
4-73	#20%	0.8" ATS(CL)	OD
5-73	21%	0.9" ATS(CL)	OD
9-73	#20%	0.3" ATS(CL)	OD
10-73	#20%	0.3" ATS(CL)	OD
11-73	DI	0.1" ATS(CL)	OD
12-73	DI	0.3" ATS(CL)	OD
4-74	#20%	0.5" ATS(CL)	OD

6.0 REACTOR COOLANT SYSTEM RELIEF VALVE CHALLENGES

There were no challenges to the Unit 1 or Unit 2 reactor coolant system power operated relief valves or safety valves in 1985.

Wisconsin Electric POWER COMPANY
231 W. MICHIGAN, P.O. BOX 2046, MILWAUKEE, WI 53201

(414) 277-2345

VP-NPD-86-102
NRC-86-21

February 28, 1986

Mr. J. G. Keppler, Regional Administrator
Office of Inspection and Enforcement,
Region III
U. S. NUCLEAR REGULATORY COMMISSION
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

DOCKET NOS. 50-266 AND 50-301
ANNUAL RESULTS AND DATA REPORT
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Enclosed are two copies of the Annual Results and Data Report for the Point Beach Nuclear Plant, Units 1 and 2, for the year 1985. This report is submitted in accordance with Technical Specification 15.6.9.1.B and pursuant to the requirements of 10 CFR 50.59(b). The report contains information regarding operational highlights of Units 1 and 2, descriptions of facility changes, tests and experiments, personnel occupational exposures, steam generator inservice inspections, and reactor coolant system relief valve challenges.

Very truly yours,

C. W. Fay

C. W. Fay
Vice President
Nuclear Power

Enclosure

Copies to NRC Resident Inspector
Director, Office of Inspection and Enforcement (40 copies)

IE24
1/40

Blind copies to R. W. Britt/R. H. Gorske/A. W. Finke,
Sol Burstein, Gerald Charnoff, G. M. Krieser,
E. J. Lipke/R. A. Newton, J. J. Zach
NRC