I. OPERATIONS SUMMARY

A. Changes in Facility Design

1. The following changes required authorization from the Commission.

a) EDCR 79-02, Recirc Pump/Analog Trip System

EDCR 79-02 was completed on 12/18/80.

This EDCR adds a Recirculation Pump Trip (RPT) System to the plant protection systems. It also replaced certain level and pressure switches within the Reactor Protection System and the Emergency Core Cooling Systems with analog circuitry and equipment. Authorization for a Technical Specification Revision related to this design change was received from the NRC on December 18, 1980.

PORC reviewed EDCR 79-02, agreed that it did not involve any unreviewed safety questions as addressed in 10 CFR 50.59 (a)(2) based on the information presented; it does not increase the probability of occurrence or consequences of an accident previously analyzed, and it does not create the possibility of a different type of accident.

b) EDCR 80-34, Containment Hydrogen Monitor

EDCR 80-34 was completed on 12/8/80.

In order to assure the ability to obtain a containment atmosphere sample in spite of a single active failure, it was necessary to re-align the power sources and controls for the inboard and outboard isolation valves in each sample line. It was also required that differen lines be powered from redundant sources. In order to achieve the above, it was necessary to re-wire the control circuits for the valves. In addition, it was necessary to re-wire Control Room Panel 9-47 to establish the required electrical separation. Because the inboard and outboard valves (FSO-109-75A through D-1 and 2, VG-24, 25, 33, 34, 75A3 and 75A4) are no longer required to perform a automatic containment isolation function, the Primary Containment Isolation System signals were removed from the control circuits. At least one of the two valves is capable of being manually isolated if required. Authorization for a Technical Specification Revision related to this design change was received from the NRC on November 3, 1980.

PORC reviewed EDCR 80-34, agreed that it did not involve any unreviewed safety questions as addressed in 10 CFR 50.59(a)(2) based on the information presented; it does not increase the probability of occurrence or consequences of an accident previously analyzed, and it does not create the possibility of a different type of accident.

2. The following changes did not require prior Commission approval but were reviewed by PORC. It was agreed that each did not involve any unreviewed safety questions as addressed in 10 CFR 50.59(a)(2) based on the information presented; that they do not increase the probability of occurrence or consequences of an accident previously analyzed. They do not create the possibility of a different type of accident.

a) EDCR 78-18, Diesel Generator Room Ventilation Modification

EDCR 78-18 was completed on 5/21/80.

This design change modified the Diesel Generator Room ventilation system such that separate ventilation air supplies are provided to each diesel room. This change increases the "fire resistance" of the ventilation penetration between these rooms to a "three hour fire barrier". A louvered penthouse was constructed on the roof slab over Diesel Generator "B". Diesel Generator "A" will continue to be supplied air via the existing ventilation system but its communication path with Diesel "B" was sealed.

b) EDCR 79-7, ENC 1 Shutdown Iodine Filter

EDCR 79-7, ENC 1 was completed 12/26/80.

Flow from the combined hogger/gland exhauster fan discharges is directed through a new filter. In the filter, flow is first passed through a demister and heater. By doing this, the flow stream's relative humidity is reduced from 100% to 70%. It is then passed through a pre-filter and finally through a charcoal filter where iodine is absorbed. After exiting the filter, flow is directed back into the exhaust pipe (16" -0G-1) and out the stack.

c) EDCR 79-35, PCIS Modification

EDCR 79-35 was completed on 2/2/80.

The purpose of this change was to modify the existing Primary Containment Isolation System (PCIS) logic to prevent any isolation valve from automatically opening when the PCIS logic is reset. This change requires the operator to place the control switches for isolation valves into the close position before he receives a permissive to reset PCIS logic. This change does not affect any other function of the PCIS.

d) EDCR 79-46, Safety Valve Acoustic Accelerometers

EDCR 79-46 was completed 2/2/80.

The Main Steam Safety Valve Status Monitoring System incorporated acoustic monitoring techniques to provide the operator with a positive indication of safety valve position. The system consists of two separate channels; one each for the two safety valves (SV's). The noise signal provided by the flow through the monitored valve is sensed by the accelerometer transducer and is transmitted to the control module located in the Main Control Room via the charge converter. The accelerometer transducer is mounted on the valve piping using a clamp. This clamping arrangement eliminates any need to modify the valve or piping. A vendor supplied LOCA qualified cable connects the transducer to the wall mounted NEMA 4 enclosed charge converter.

e) EDCR 79-57, PAM Torus Water Level and Containment Pressure Instruments

EDCR was completed on 11/28/80.

This change installed post accident monitoring (PAM) instrumentation as required by the NRC for torus water level and containment pressure.

f) EDCR 80-02, Containment High Range Radiation Monitoring

EDCR 80-02 was completed on 11/28/80.

This change provided two, independent, high range radiation monitoring channels to measure radiation levels inside the drywell following a LOCA or MSLB. Each channel consists of a detector, associated cabling, a monitor, an indicator, and a recorder.

g) EDCR 80-11, Torus Modifications

Installation of EDCR 80-11 was completed on 11/21/80. Testing of SRV's will be performed at a later date.

The following modifications were made to increase the structural integrity of the torus:

a. Addition of Support Saddles under the torus at each ring girder. Saddles were welded to the torus shell and anchored to the basemat.

b. Replacement of SRVDL Ramsheads with T-Quenchers and the addition of T-Quencher Supports.

c. Addition of Vent Header Deflectors under the vent header. The Deflectors are of 16" Sch 120 pipe with angles welded to the sides. They are designed to reduce the load on the Vent Header produced by pool swell uplift.

d. Modification of Downcomer Ties. These are made up of a section of pipe connected to clamps at either end which are clamped to the downcomers, to prevent their separation under an accident condition.

e. RHR Return Line Reroute and Support in Torus. The two RHR return lines were rerouted to direct water around the Torus and were supported from the ring girders.

f. One 10" vacuum breaker was installed on each safety relief valve discharge line.

g. Replace existing wetwell-drywell vacuum breaker cast aluminum disc assembly with a wrought aluminum disc assembly.

h. Reinforcement of 4" Torus Spray Header Support.

i. Modifications to Submerged Piping. Loads on submerged piping (RCIC turbine exhaust) produce very high local stress at torus shell penetrations. This piping is not supported in the torus. By cutting this line, both the area over which the impact and drag loads act and the moment arms are reduced, significantly reducing local shell stresses.

j. Cut and capped vent headers 1" drain line.

h) EDCR 80-36, Reactor Coolant System Leakage Deflector

EDCR 80-36 was completed 12/8/80.

Leakage from the Main System, RCIC, HPCI, FDWTR, and RHR Systems had the potential to bypass the drywell sump leakage detection system; however, the Main Steam, HPCI, and RCIC leakage can be detected by the CAM and floor drains because of their high temperature and activity. Therefore, only leakage from the feedwater piping and the RHR supply and return piping had the potential to go unmonitored. This EDCR added deflector plates under the appropriate feedwater and RHR piping areas to prevent leakage from entering the torus through a vent pipe. The deflector plate addition assures that all leakage from these two piping systems will flow into the dyrwell sump and leakage detection system.

i) PAR 80-44, Main Steam Lines Pressure Averaging Manifold

PAR 80-44 was completed on 12/11/80.

This alteration provided for the installation of a pressure averaging manifold across the main steam lines as discussed in GE SIL No. 26. The manifold supplies the Main Turbine pressure regulators with the average pressure of all the steam lines instead of the pressure in only the "A" steam line.

j) EDCR 80-46, Scram Discharge Volume Water Level Measurement

EDCR 80-46 was completed 12/17/80.

This change increased the reliability of the scram discharge volume by installing a water level measurement system into each volume.

k) EDCR 80-52, Core Spray Sparger Clamp, Including the Installation Procedure

EDCR 80-52 was completed 11/1/80.

Visual examination of core spray sparger junction box "C" revealed cracking around a welded inspection plug. This EDCR added a clamp around the junction box to prevent a loss of the plug.

l) EDCR 80-53, CRD System Seismic Hangers

EDCR 80-53 was completed 12/17/80.

This change installed seismic hangers on the vertical run of the CRD insert and withdrawal piping inside the drywell.

m) EDCR 80-55, RWCU Line CUW-18 Penetration Replacement

EDCR 80-55 was completed 12/17/80.

This change addressed the modifications of the primary containment piping penetration for RWCU line CUW-18 necessary to replace portions of the clean-up process piping which had evidence of IGSCC.

n) PDCR 78-03, Supplement 1, Replacement of Time Delay Relays in RHR, CS, RCIC, and HPCI

PDCR 78-03, Supplement 1 was completed 12/6/80.

This change consisted of installing 8 new Agastat TR relays in RHR, 2 in Core Spray, 2 in RCIC, and 2 in HPCI. All but one of the 2 relays totally replaced the existing relays with instantaneous contacts will remain (Gland Seal Condensor Condensate Pump and Isolation Valve). This change also replaced pneumatic time delay relays with a more accurate electronic solid state time delay relay which is not affected by long periods of de-energization.

o) PDCR 78-8, Supplement 1, Diesel Fire Pump Flow Switch

PDCR 78-8, Supplement 1 was completed on 11/3/80.

This supplement provided a flow switch for the existing diesel fire pump sprinkler system. Ths switch was tied into the common alarm-intake structure annunciator located in the Control Room. A detector panel indicating flow in the sprinkler system was installed next to the existing detector panels in the intake structure.

p) PDCR 79-05, Fire Barrier Sealing

PDCR 79-05 was completed 7/9/80.

This change involved the updating and installation of fire stops in all electrical and mechanical penetrations through walls and floors that are considered fire barriers. All areas have 3-hour protection except the Battery Room and the wall around the Diesel Fire Pump which will be 1 hour. Most of the forming material that was used is fiberglass which melts at approximately 1200°F. This is below the temperature that can be expected when cables are burning.

q) PDCR 79-20, Supplement 1, MSIV Limit Actuators

PDCR 79-20 was completed 10/20/80.

This design change involved the relocation of the inboard and outboard MSIV limit switches, using different switches for the 10% closed position, and the replacement of the actuator arms.

r) PDCR 80-02, S/RV Accumulator Check Valve Replacement

PDCR 80-02 was completed 2/3/80.

This design change provided details for the testing and upgrading of the leak tightness of the SRV air accumulator system. The hard seated Hancock lift check valves (which maintain a sufficient air supply in the accumulator in the event of the loss of the instrument and containment air systems) were replaced with a viton seated, spring loaded Nupro check valve. The need to investigate the leak tightness of the accumulator system resulted from commitments made to the NRC in regard to I&E Bulletin 80-01.

s) PDCR 80-09, Switchgear Room Fire Barrier Sealent

PDCR 80-09 was completed 11/1/80.

This change involved the coating of cables with Flamemastic for a minimum distance of 5 feet where conduit containing safety related cable from one division crossing cable trays containing safety related cable from a redundant division in the Switchgear Room. In addition, fire stops were installed in conduit connecting one safety train to the other and in conduit connecting a neutral tray with a safety related tray.

t) PDCR 80-11, CRD Scram Dishcarge Header Cleanout Connections

PDCR 80-11 was completed 10/31/80.

To facilitate periodic decontamination, this change involved the installation of blind flanges in the ends of the scram discharge header, and the installation of a spool piece just ahead of the 6" to 2" reducer on the 6" side.

u) PDCR 80-12, Recirc. MG Set UV Detector Redesigns

PDCR 80-12 was completed 11/4/80.

This change removed the UV detectors and controller from the Recirc MG set fire detection system and cross zoned the remaining ionization and thermal detectors from system actuation. Also, eight (8) new ionization detectors were added. The UV control in the turbine loading bay was relocated outside of the fire area.

v) PDCR 80-13, ECP Modification

PDCR 80-13 was completed 5/30/80.

This change encompassed several minor modifications to the Electrochemical Potential (ECP) Test System. These modifications are outlined as follows:

A. Installation of a warmup/bypass valve, restrictor bypass tube, and attendant instrumentation. The valve and bypass tube were located on the ECP autoclave inlet.

B. Installation of cooling water jacketed ECP electrodes including their cooling water connections to and from the RBCCW manifolds that were installed in the "A" reactor cleanup compartment as part of PDCR 78-6.

C. Installation of magnetic tape data acquisition equipment and its input signals as follows:

1) ECP

2) ECP autoclave temperature

3) ECP system flow

4) Reactor water conductivity

5) Reactor water dissolved oxygen

w) PDCR 80-15, Plant Modifications Necessary for the CBI Torus Project

PDCR 80-15 was completed 10/1/80.

This change installed four penetrations in the East reactor building wall for supporting services, i.e. air, welding machines, etc. Also included was the installation of an idler plate on the south wall of the reactor building to aid in material rigging.

x) PAR 78-37, Reactor Coolant Conductivity Monitor

PAR 78-37 was completed 10/28/80.

This alteration would allow reactor water conductivity monitoring to continue in the event of a RCUW system isolation by cross-connecting with another sample point. This would provide a sample of reactor coolant to the monitoring instruments, thereby eliminating the necessity of having Health Physics Department personnel manually sample every four hours. The alteration additionally would help to minimize areas of unnecessary radiation exposure to that department's personnel.

y) PAR 79-11, Stack Sample Line Flow Integrator

PAR 79-11 was completed 1/14/80.

The original measurment of gas flow through the stack gas samplers did not consider irregularities in flow over the sampling period of one week. The addition of total flow meters to the system ensures a more adequate measure of the volume of gas over the test period. Therefore, this addition will enable accurate measurement from which a more precise analysis may be performed.

z) PAR 79-13, Diesel Generator Fan/Damper Temperature Control Switch

PAR 79-13 was completed 1/16/80.

In the previous design, the diesel generator room exhaust fan started automatically when the diesel started. During most of the year there was not any problem with this mode of operation, but in the cold weather, the room became too cold while the diesel is in operation. This design change installed a thermostat to control operation of the exhaust fan.

aa) PAR 79-19, Air Compressor Cooling Water Modification

PAR 79-19 was completed on 12/10.80.

The plant air compressors steel pipe was replaced with copper pipe.

bb) PAR 80-01, Turbine Building Sample Panel

PAR 80-01 was completed 11/28/80.

This alteration installed additional feedwater sampling points to better evaluate the corrosion produce concentrations at various locations in the feedwater system.

cc) PAR 80-02, Condensate Phase Separator Floating Suction

PAR 80-02 was completed 9/12/80.

This alteration installed floating suction lines in the Condensate Phase Separator (CPS) tanks to enable the transfer of CPS decanted liquid to the waste collector tank with a minimum of resin carryover.

dd) PAR 80-03, Containment Air Compressor Suction Line Modification

PAR 80-03 was completed 1/25/80.

In order to insure a dedicated air supply to the compressor, this alteration: 1) removed a section of the compressor suction line (the compressor will now draw a suction on the reactor building) and 2) removed the compressor motor trip on a group 3 PCIS signal.

ee) PAR 80-07, Alterrex Service Water Line Replacement

PAR 80-07 was completed 11/8/80.

This PAR replaced the 2" carbon steel pipe to the Alterrex cooler with copper pipe. This change corrects observed plugging of the Alterrex lines and is part of the overall program to eliminate corrosion in small steel service water lines.

ff) PAR 80-09, Condensate Demineralizer Air Surge System

PAR 80-09 was completed 11/26/80.

This alteration provides an improved method for backwashing the Con. Demin. filter elements that will result in significant reductions in liquid and solid radwaste inventories and longer run times for the demineralizers.

gg) PAR 80-18, Welding Booth Vent Hood

PAR 80-18 was completed 8/15/80.

This alteration installed a ventilation hood over the welding booth in the maintenance shop. The hood was tied into the existing HVAC system coming from the old decon room.

hh) PAR 80-23, Cooling Tower Inspection Report

PAR 80-23 was completed on 5/15/80.

In order to provide access for internal inspection of the circulating water inlet lines to the cooling towers, a 24" manway was installed on the east circulating water inlet riser on the east cooling tower.

ii) PAR 80-30, Removal of V60-13

PAR 80-30 was completed on 4/1/80.

This alteration removed the Main Turbine Generator Steam Seal Regulator Steam supply root valve and replaced it with piping.

jj) PAR 80-34, Containment Air Compressor Suction Line Reroute

PAR 80-34 was completed 12/7/80.

This PAR addressed the necessary short-term alterations for maintaining an inerted containment. They are:

A) The air compressor sunction line (removed per PAR 80-3) was reconnected. This change will ensure satisfactory N_2 concentration in the containment by running containment instrument air services with N_2 rather than the main station IA system.

B) A bypass air line (with globe valve) was added to the containment air compressor piping (from discharge to suction) to improve compressor performance. This bypass line increases inlet pressure at the compressor. Poor compressor performance previously occurred when inlet pressure was about 10 psi below design pressure. (This additional pressure drop was caused by a long compressor sunction line).

C) Necessary connections was installed to allow for the tie-in of the N_2 bottle bank as a backup supply to the containment air compressor. This bank will extend, by approximately 3 hours, the time between compressor failure and main steam relief valve accumulator pressure drops below the minimum of 64 psig. The extended time will allow for more complete repairs. N_2 bottles system will be installed at a later date.

kk) PAR 80-37, SJAE Radmonitor Rotameter Bypass

PAR 80-37 was completed on 10/4/80.

This alteration installed a rotameter bypass which will channel all normal gaseous flow around the rotameter; the rotameter would only be used when system flow rate measurements were needed. This change permits isolation of the rotameter from most system disturbances while maintaining all radiation monitoring capabilities. Because of the low flow rates, the addition of isolation valves will not cause significant flow restriction and system performance will remain the same.

11) PAR 80-42, Off-Gas Sampling System Reroute

PAR 80-42 was completed 10/31/80.

This PAR provided for rerouting the sample system exhaust line. The alteration consists of a tie line from the existing sample line exhaust to the main condenser. Two isolation valves were also installed. This will permit the use of the existing sample system exhaust (if required) or the new sample system exhaust.

mm) PAR 80-50, Fuel Pool Cooling System Tie-In to Facilitate

PAR 80-50 was completed on 9/27/80.

To expedite the draining and processing to torus water, a high-volume submersible pump was used to pump water from the torus to a portable filtration system that removed a majority of the crud; the water was then pumped to the fuel pool demineralizers via a tie-in into 6" FPC - 16 between SF-16 and the inlet to the fuel pool demineralizers. In addition, a gate valve was temporarily installed in 6" FPC-19 between V-19-18 and the 6" branch connection to the CST. This gate valve provided the isolation necessary to route the discharge of the fuel pool demineralizers to the CST.

nn) PAR 80-52, Services to Steam and Service Water Condenser Area

PAR 80-52 was completed on 10/3/80.

The alteration consisted of the addition of 2" and 3" piping and valves to the condenser for use in cleaning the tubes.

oo) PAR 80-53, CRD Air Supply Header Reroute

PAR 80-53 was completed 10/16/80.

This PAR rerouted the 3/4" and 1 1/2" CRD air supply piping to the southside CRD control units. Rerouting was required to eliminate interference with the scram discharge header spool piece installation (see PDCR 80-11).

pp) PAR 80-56, Scram Pilot Valve Air Header Pressure Indicator

PAR 80-56 was completed 12/1/80.

This PAR provided for the installation of a pressure transmitter measuring Scram Pilot Valve Air Header Pressure and an associated indicator to be mounted on CRP 9-5.

B. Safety and Relief Valve Failures and Challenges

During 1980 there were no challenges to or failures of the safety and relief valves.