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Georgia Power
the southern electric system

April 29, 1991

ELV-02749
0941

Docket Nos. 50-424
50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
1990 ANNUAL REPORT - PART 2

In accordance with the applicable regulatory requirements, Georgia Power Company hereby submits Part 2 of the 1990 Annual Report of operating information. It includes the remainder of the 1990 reports not previously submitted.

Sincerely,

C. K. McCoy

CKM/JLL/gmb

Enclosure: Annual Report - Part 2

xc: Georgia Power Company
Mr. W. B. Shipman
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Mr. P. D. Rushton
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
Mr. D. S. Hood, Licensing Project Manager, NRR
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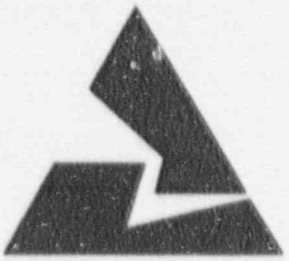

VOGTLE ELECTRIC GENERATING PLANT

GEORGIA POWER

COMPANY

PLANT VOGTLE UNITS 1 & 2

1990

ANNUAL REPORT

- PART 2 -

DOCKET NUMBERS 50 - 424/425
LICENSE NUMBERS NPF-68/81

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2

NRC DOCKET NOS. 50-424 AND 50-425

FACILITY OPERATING LICENSE NOS. NPF-68 AND NPF-81

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INTRODUCTION

The Vogtle Electric Generating Plant Units 1 and 2 are powered by pressurized water reactors, each rated at 3411 megawatts thermal. It is located on the Savannah River in Burke County Georgia, 34 miles southeast of Augusta. The Unit 1 operating license was received on January 16, 1987 and commercial operation started on May 31, 1987. Unit 1 is operating in its third fuel cycle. Unit 2 received its operating license on February 9, 1989, and began commercial operation on May 20, 1989. Unit 2 is operating in its second fuel cycle.

II

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNIT 1 AND UNIT 2

NRC DOCKET NOS. 50-424 AND 50-425

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PLANT MODIFICATIONS AND TEST OR EXPERIMENTS

1990 ANNUAL REPORT - PART 2

10 CFR50.59(b)

PLANT MODIFICATIONS

II
1990 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

DCP's

87-V1E0031

This is a "SAFEGUARDS" DCP, the following abbreviated information has been declassified for this report. This modification creates a vital area barrier for the security radio repeater.

1. This modification does not involve equipment important to safety, only the addition of security barriers. Therefore, there is no increase in the probability of occurrence or consequences of an accident or malfunction of equipment important to safety previously evaluated in FSAR section 15.

2. Only security barriers are added, no equipment important to safety is involved. Therefore, there is no possibility of a different type of accident that needs to be evaluated in the safety analysis report.

3. Technical Specifications do not address the plant security system or barrier requirements. Therefore, this modification does not reduce the margin of safety as described in the bases for any technical specification.

87-V1E0047

A. This change involved the addition of automatic door closers to Aux. Bldg. doors D65, C47,B18, and A17. The door closers hold these doors open during normal operating conditions, thereby providing a vent path for escaping steam pressure in the event of a postulated high energy line break (HELB). During a fire, the door closers automatically close the doors, assuring the integrity of the rated fire barriers. For those held-open doors where health/physics access control is a concern, wire mesh gates were installed within the same door opening to allow positive control of personnel access. This design solution satisfies the three separate requirements of pressure venting, fire rating, and access control.

B. Also, Aux Bldg. doors C54 and A09 will be replaced with wire mesh gates, and door C73 will be deleted entirely. Aux. Bldg. Service Stair #6 was derated.

1. The proposed change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. This included a review of FSAR Chapter 15 (Accident Analyses) 3.4 (Flooding Analysis) and 3.6 (HELBA).

2. The proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in Chapter 15 of the FSAR. There is no change to the FSAR hazard analysis of 3.4 and 3.6.

3. The proposed change does not decrease the margin of safety defined by the bases of the Technical Specifications. This included review of Sections 2, 3/4, and 6.11.

87-V1E0117

The liquid waste processing system (LWPS) spent resin sluce pump will be downgraded from ASME Section III to manufacturer's standards and the N-Stamp removed. The design pressure rating of the pump and discharge components will be raised from 150 psig to 240 psig. Appropriate pressure gauges will be changed out to allow monitoring of line pressures.

The nitrogen supply pressure will be increased to 91 psig to efficiently transfer the spent resin to the disposal facility from the spent resin storage tank.

1. The changes involve a non-safety related system. They do not increase the probability of an accident or malfunction of equipment important to safety. There is no effect on FSAR section 15.7.2 (Radioactive liquid waste system leak or failure). These changes have no effect on the equipment or components assumed to function in the accident analyses of FSAR section 15.

2. An increase in spent resin sluice pump discharge pressure and change out of pressure gauges are the only physical changes involved. Since all piping and components are designed to accomodate the new pressure system, operation is not otherwise affected. No new possibilities for accident or failures are created.

3. The changes as described do not affect the bases as defined in section B 3/4.11.1 of the Technical Specifications.

87-V1E0124

This DCP adds remote valve operators to the Liquid Waste Processing System (LWPS) (1901) valves located in enclosed pits. This portion of the LWPS has piping connections between different flow paths depending on liquid volume or operations requirements. The LWPS is designed to control, collect, process, handle, store, and dispose of liquid radioactive waste generated as the result of normal operation, including anticipated operational occurrences. Cross connections are available such that additional flexibility to store and process liquid waste from one unit can be provided by the liquid waste system of the second unit and to other collection/processing facilities.

1. The probability or consequence of the malfunction of any equipment is not changed as a result of this modification. The externally added reach rods will be supplied with torque - limiting components. This system is not assumed to function in accidents analyzed in the FSAR. This is based on review of FSAR Chapters 11 and 15.

2. This modification does not create the possibility of any accident or malfunction that is not described and analyzed in the FSAR. The valve reach rods will have their own supporting system and torque-limiting components. This included review of Chapter 11 and 15.

3. There is no decrease in the margin of safety defined by the Technical Specifications as a result of this modification. The bases for Tech. Spec 3/4.11.1.3 are not affected by this modification.

87-V1E0150

Re-route Waste Gas compressor suction lines from the Recycle Evaporator Vent condenser to eliminate low point drain and check valve installed at low point. Install a check valve at a more preferable location. The Boron Recycle System is discussed in FSAR section 9.5.4.2.

1. There is no change to the probability of occurrence or malfunction consequences assumed in FSAR chapter 15, 9.5, Appendix 9A or 9B.

2. This change does not create a scenario which is not bounded by FSAR chapter 15, 9.5, Appendix 9A or 9B.

3. The Boron Recycle system is not discussed in the Technical Specifications. Therefore, there can be no adverse affect on the Technical Specification bases. This is based on review of Technical Specification 3/4.1 bases.

87-V1E0155

This DCP adds drain lines to three systems (1204, 1208, and 1212) at the containment piping penetrations identified below. Each system includes containment isolation valves which must receive a local leak rate test (LLRT). The piping's physical routing has low points at or near the penetration which can not be gravity drained for the LLRT. This modification will add drain lines and valves at these locations. Line 1204-148-3/4", Lines 1208-055-3", Line 1212-001-3/8" and Line 1212-033-3/8".

1. The proposed change does not increase the probability of any accident discussed in the FSAR. The drain valves being added meet all the FSAR commitments with regard to containment isolation (6.2.4), leakage testing (6.2.4, 6.2.6), high energy line evaluation (3.6) and system parameters (6.3, 9.3.2, 9.3.4). The addition of these drain valves does not increase the probability of any accident discussed in Chapter 6 or 15.

The probability or consequences of malfunction of any equipment is not changed as a result of this modification. Addition of the drain valves does not increase the probability of any accident discussed in Chapter 6 or 15.

2. This change does not create the possibility of any accident or malfunction that is not described and analyzed in the FSAR. The modification does not introduce any new stress or high energy line considerations that are not enveloped by the existing Chapter 6 analysis. The postulated accidents of Chapter 15 are not affected by this change.

3. There is no decrease in the margin of safety defined by the Technical Specifications as a result of this modification. The bases for Technical Specifications 3/4.6.1, 3/4.6.2, 3/4.6.3, 3/4.5.2 and 3/4.5.3 are not affected by this modification.

87-V1E0160
Seq 1

Chillers 1-1592-C7-001/002 have flowswitches which alarm and trip on low water flow through the chiller evaporator. These flowswitches are set @ 410 GPM (alarm) and 400 GPM (trip). The proposed change will reduce the setpoint of the alarm flowswitches to 385 GPM and the setpoint of the trip flowswitches to 370 GPM.

1. The change of chiller low-flow setpoints will not increase the probability of malfunction of this equipment or components assumed for protection for the chiller evaporator to prevent tube freezing which could result from reduced water flow. There are two additional existing methods of preventing evaporator tube freezing which is accomplished by temperature sensors for the liquid refrigerant and of the leaving chilled water temperature. The flow switches will still detect a complete loss of flow without causing unnecessary chiller trips on reduced chiller loads. This design change does not increase the probability or consequences of any equipment

malfunction related to the coolers serviced by the essential chilled water system. This is based on review of the text and Failure Modes and Effects Analysis (FMEA) presented in the following FSAR sections:

System 1531 FSAR section 6.4.4
System 1532 FSAR section 9.4.5
System 1539 FSAR section 9.4.1
System 1555 FSAR section 9.4.3
System 1561 FSAR section 9.4...3
(Ref. FSAR Section 9.2.9.1 and 15.0)

2. The lower chilled water flow through the chiller will not cause equipment malfunction as verified with the chiller manufacturer. Unnecessary chiller trips will be avoided by lowering the flow setpoints to the levels which are possible during chiller operation. The essential chilled water system and coolers serviced by this system do not have any new component malfunction created as a result of this design change. This is based on review of FSAR sections including associated FMEA's for 6.4, 9.2.9, 9.4.1, 9.4.3, 9.4.5, and 15.

3. This change does not decrease the margin of safety defined in the Technical Specification 3/4.7 bases.

87-V1E0100
Seq 2

A. Setpoints for flow switches 1FSL-1802/1803 and 1FIS-1802/1803 (Chiller Condenser Water Flow) are revised to correspond with the minimum condenser flow provided by throttling valves 1TV-11675 and 1TV-11740. The FIS's provided a low-flow alarm and the FSL's provide a low-flow trip for the chillers. The minimum flow provided by the throttling valves is 500 GPM. The alarm setpoint is 425 GPM and the trip setpoint is 250 GPM.

B. A time delay is added to the chilled water pump auto-start circuit (SI/CRI/Toxic Gas) to delay the chiller compressor start past the point of NSCW flow transients which occur following a LOSP.

C. The chiller recycle inhibit is activated by the compressor power circuit breaker instead of the chiller control circuit.

1. The proposed changes do not affect the design safety function of the chillers as described in FSAR Section 9.2.9.1.1. The chiller condenser design flow rate of 1100 GPM will continue to be available during design heat loads and accident conditions. The added time delay in establishing chilled water flow to essential HVAC does not impact design ambient temperatures (Ref. RER 88-0860). Single failure effects of the added time delay would only affect one train chiller (other train available - FMEA 9.2.1-2). The time delay is not activated if a SI/CRI/toxic gas signal is received while the chiller is in the manual mode of operation.

2. The proposed changes do not affect the safety design function of the chillers. No change is required to the accident analysis of the FSAR based on review of sections 9.2.1, 9.2.9 and 15.0.

3. The essential HVAC systems served by the chillers will continue to maintain acceptable ambient air temperatures. The proposed changes do not affect the margin of safety as defined in Technical Specification sections 2,3 and 4, and their bases.

87-V1E0206

This DCP will revise the diesel fuel oil storage tank low level alarm setpoint from 45" $\pm$ 3.6" above the centerline of the tank to 56" $\pm$ 3.6" above the centerline of tank.

1. This design change gives an advance warning to operations that the Technical Specification limit of 68,000 gallons is being reached and does not increase the probability of occurrence or consequence of an accident described in the FSAR. This includes a review of FSAR chapter 15, 16, and 9.5.4.5. Although the alarm function is not part of the Technical Specifications, it is a good practice to be forewarned of the impending Technical Specification condition.

2. This design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This includes a review of the Failure Modes and Effects Analysis (Table 9.5.4-2) and FSAR section 9.5.4.3. The function of the two level switches (LIS-9022 and 1LIS-9023) has not been changed and no safety limit settings or setpoints are affected.

3. This design change does not decrease the margin of safety defined by the bases of the Technical Specifications. There is no change to the bases of Technical Specification as listed below:

Section 3/4.3
Section 3/4.7
Section 3/4.8.1

87-V1E0209

This change involves replacement of the original hinge pins in valves 1-1305-U4-052 and 060 and 1-1304-U4-002, 005,008, 012, 172, 175, 178 and 182. The new hinge pins are of the same material as the originals. However the thickness and diameter of the head has been increased and the overall length has been increased. Valves 1-1305-U4-052 and 060 are located on the Train A&B Feedwater Pump discharge lines and serve to protect the pumps from reverse flow. The B04 system valves are on drain lines off of the reheater drain tanks (A through D) and are designed to prevent possible backflow of water into the drain tanks in the event of a feedwater heater tube rupture.

1. This change does not affect system function or operation and therefore does not increase the probability of occurrence or the consequences of any accident described in sections 10.4 or 15.0.

2. This change does not affect any system, equipment, or component's function or operation and based on a review of sections 10.4 and 15.0, would not create the possibility of an unanalyzed or undescribed accident, or equipment/component malfunction.

3. This change does not affect any system/equipment function or operation and therefore does not affect the safety margin defined in Technical Specification section B 3/4.7.

87-V1E0216

Additional HVAC is added to the following elevator equipment rooms to prevent heat buildup: 1) R-502 (Control Bldg) 2) R-217 (Aux Bldg) 3) R-301 (Aux Bldg). The additional HVAC consists of a fan/coil unit located in each equipment room with an associated condensing unit located outside of each room. Condensing units for rooms 502 and 301 are located outside of the building on the roof. The condensing unit for room 217 is located on the roof of the elevator equipment room which is enclosed in the fuel handling building corridor, Room 127. There is no safety related equipment or safety function associated with the elevators.

1. The additional HVAC equipment is not associated with any system assumed to function in the accident analysis of section 15.0 of the FSAR. The additional equipment operates independently from other HVAC systems for the Aux. Bldg. and Control Bldg. referenced in FSAR 9.4.1 and 9.4.3. As identified in revised Table 3.5.1-1, there is no missile that can be postulated which will adversely affect any equipment assumed to function in the FSAR accident analysis.

2. The HVAC equipment added by this change is non-safety related and does not serve safety related equipment assumed to function in the accident analysis (FSAR section 15.0). The HVAC equipment serves only the elevator equipment.

3. This change does not decrease the margin of safety defined in the Technical Specification 3/4.7 bases.

87-V1E0217

This design change will involve the replacement of low tank level annunciation of the liquid hydrogen storage tank. The present switch will be replaced with a differential pressure switch. The

requirements for hydrogen service are satisfied since the replacement switch meets the explosion proof class I, group B, C & D specifications. The project class for the switch is 62J, non-safety related, non seismic.

1. The replacement of the level switch was performed to allow for more reliable annunciation of tank low level conditions. The replacement switch meets the same standards as the original switch. FSAR section 9.3.5.1.1 states that the Auxiliary Gas System does not provide any safety function. By using a switch which meets the intent and design of the original switch, the probability of occurrence, or the consequences of an accident or malfunction of equipment important to safety is not increased.

2. The Auxiliary Gas System is not relied upon to provide any safety function as stated in FSAR section 9.3.5.1.1. As the new switch meets the original design intent and specifications, no new accident scenarios or malfunctions of any type not previously evaluated in the FSAR are created. There is no effect on the chapter 15 analysis.

3. Station Technical Specifications 3/4.3 and 3/4.7 do not address the Auxiliary Gas System or any components within the system. Therefore, the change does not reduce the margin of safety defined in any Technical Specification bases.

87-V1E0219 This design change modifies the operation of tornado damper 1-1533-W7-407 located in the Control building freight elevator shaft. The existing design requires the tornado damper to remain in a normally closed position and open upon a signal to vent by the local fire zone indicating panel. This design change will disable the damper actuator which will allow the damper to be held in a normally open position by the damper's springs. The tornado damper will close only on an excess outflow velocity which would be caused by a tornado.

1. The subject tornado damper is required to close when subjected to excess outflow velocity caused by a tornado. This design change has no affect on the damper's intended safety function by changing from normally closed to normally open. The damper actuator being disabled is designed to open the tornado damper during a fire to exhaust smoke from the elevator shaft. The damper actuator performs no safety function. This design change does not increase the probability of a malfunction to this damper or any equipment assumed to function during accidents. This includes a review of FSAR sections 9.4, 9.5.2 and 15.0.

2. This design change does not prevent the tornado damper from closing when required by excess outflow velocity. The elevator shaft will continue to have an exhaust path for smoke removal provided by the normally open damper configuration. This change does not create any new accidents not described in the FSAR since there is no change to the safety function of the tornado damper. This includes review of FSAR sections 9.4, 9.5.1 and 15.0

3. The margin of safety as defined in the Technical Specifications bases sections 2, 3 and 4 is not affected by the proposed change. The safety design function of the damper is not affected.

87-VCE0230

The CVCS common chiller unit A-1208-E6-008 control circuit is designed so that the chiller can be started either from Unit 1 MCB or from Unit 2 MCB with proper indication of indication lights on the control handswitches located in both MCB's (Unit 1 and Unit 2). These lights indicate the common chiller unit status point of starting (from Unit 1 or from Unit 2). Presently, the two indicating lights are wired in series with the chiller starting relay coil and because of insufficient voltage drop across the starting relay coil, the chiller can not be started with proper indication. This DCP is to correct the wiring of the common chiller control circuit so that the chiller can be started with

proper indication as designed, by rewiring the internal wiring of the control handswitch 1HS-0390 and the control circuit wiring to agree with the approved EFCRB-16899 of the chiller elementary diagram drawing AX3D-BD-C01E.

1. The change improves the CVCS common chiller operation reliability, and does not increase the probability of equipment malfunction. The CVCS common chiller is non-safety related and is not assumed to function during an accident. This includes review of FSAR Chapter 15.

2. The CVCS common chiller is non-Q. This change improves chiller operation reliability and does not create the possibility of an accident or equipment malfunction not described in the FSAR. This includes review of FSAR section 9.3 and 15.

3. The CVCS common chiller is non-safety related. This change improves system reliability. Therefore, the change does not decrease the margin of safety defined by the bases for Technical Specification. This included review of the Technical Specification bases of 3/4.4 and 3/4.7.

87-V1E0231

This change involves changing the span of preasure transmitters 1PT-6018A, 1PT-6018B, 1PT-6168A and 1PT-6168B. This change requires calibration changes only, there are no hardware chr ges required. These instruments are pressure transmitters associated with the reheater steam which perform no safety-related function.

1. The change to the turbine generator components referenced does not increase the probability or consequences of an accident based on review of FSAR section 10.2 or chapter 15.

2. The change does not present a failure mode or impact any component not previously reviewed in analysis presented in FSAR chapter 15.

3. The Technical Specification bases do not restrict the span of these transmitters in order to maintain safety margin.

87-VCE0235

This modification adds spent resin dewatering capability to the condensate filter demineralizer system (1414). This dewatering system will contain two independent trains for holding and dewatering spent resins from the condensate filter demineralizers. Each train will consist of a holding tank, dewatering pump with two cartridge type filters, recirculation pump, filter pump, pressure filter skid assembly, and associated piping, instrumentation and controls. The spent resin dewatering system will be located in the Turbine Building, Level A, primarily in the NE quadrant. It will be a common system and will process all Unit 1 and Unit 2 condensate filter demineralizer spent resins.

1. This change is to add spent resin dewatering capability to the condensate filter demineralizer system (1414). This change does not increase the probability of occurrence or the consequences of any equipment important to safety. There is no affect on equipment or components which are assumed to function in an accident as analyzed in the FSAR, section 15.

2. All systems that are impacted by this change (1414, 1418, 2401, 2420, 2301, 2419) are non-safety related, and not required to function in the event of an accident. No new accident type is created by this modification. The FSAR is not compromised by this change. This included review of chapter 15 accident analysis.

3. This change is associated with systems 1414, 1418, 2401, and 2420. There is no decrease in Technical Specification safety margins since these systems have no safety design bases. Ref: Technical Specification bases review, sections 3/4.11.1, 3/4.11.2, 3/4.11.3, 3/4.7, 6.12 and FSAR review, sections 9.3.1, 9.2.3, 10.4.6, 15.1 and 15.7.

87-V1E0239

The turbine building sump pumps 1-2412-P4-003, 4, 5 and 6 are being replaced with four submersible sump pumps capable of flowing approximately 300 gpm at 100 ft.

1. The turbine building drain system is not safety-related and is not relied upon to mitigate the consequences of an accident. The increased flow rate will not affect the ability of radiation monitor RE-848 to perform its intended design function. Thus, the capability of the turbine building drain system to direct the pump discharge to the turbine building drain tanks, in the event of contamination of the effluent, will not be affected by this modification. Therefore, this modification does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. FSAR sections 9.3.3 and 15.0 of the FSAR were reviewed.

2. This system is not safety related. Its components are not required to function in post-accident conditions. Failure of the sump pumps will have no effect on the capability to operate the plant safely or to accomplish safe shutdown. In addition, this change has no effect on the FMEA presented in FSAR section 9.3.3. Therefore, this modification does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. This change involves sump pump and motor replacement for a system which is not described in the Technical Specification. It does not decrease the margin of safety as described in the bases of the Technical Specifications. Sections 3/4.7, 3/4.11 and 3/4.12 were reviewed.

87-V1E0247

A pressure point sample connection will be added to lines 1-1574-505-4" and -506-4" downstream of SJAE 'A' and 'B'. The root valve for the

connections will be a globe valve and a 3/8" tube -to-pipe adapter with cap and will be installed on the valve outlet to allow for test instrument connection.

1. The design change does not create a malfunction mode of any system or component not previously analyzed in FSAR chapter 15.

2. This design change does not effect plant operations or accident conditions analyzed in FSAR chapter 15.

3. There is no change to the bases of the Technical Specification in section 3/4.7 plant systems.

87-V1E0263

The MFIV air reservoir pressure switches 1PS-5227B, 1PS-5227C, 1PS-5228B, 1PS-5228C, 1PS-5229B, 1PS-5229C, 1PS-5230B and 1PS-5230C are currently Barksdale Model B1T-A12SS. These are being replaced with Barksdale Model B1T-H12SS pressure switches. The vendor (Anchor/Darling Valve) recommends that the pressure switches be changed to a model with a smaller differential (deadband). The new pressure switches are qualified to the same requirements as the original pressure switches and will not invalidate the MFIV qualification.

1. The operation of the MFIV's will not change as a result of implementing this DCP. Therefore, the MFIV's can still be assumed to function in the accidents analyzed. There is no change to the FSAR analysis of chapter 15 or 6.2. The new pressure switch meets the same requirements as the original switch. This change will not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety that has been previously evaluated in the FSAR.

2. The new pressure switches are qualified to the same requirements as the original pressure switches. With the only difference being

the switch deadband, this will not create the possibility of an accident or malfunction of a different type not previously evaluated in the FSAR. Therefore, there is no change to chapter 6.2, 7.3, 10.4 and 15 analysis.

3. By using pressure switches of the same proven quality as the original pressure switches, there will be no reduction in safety margin as defined in the Technical Specification bases. There is no change in the Technical Specification bases of 3/4.6.3 and 3/4.3.

87-V1E0278

Modify the Steam Jet Air Ejector (SJAE) Radiation Monitor as follows:

- Replace existing filter holder with SAIC filter holder that will allow for use of quick disconnect. Add flex-line between new filter holder and cooler.
- Add low point drain addition at discharge of double heat pump.
- Add a flow totalizer for the sample flow stream.
- Modify piping between cooler and gas detector.
- Replace filter entrance piping heat trace with "TZ-10 super flow" set at 215 ^{O}F.
- Heat trace midstream piping from cooler outlet including the gas detector with TZ-5 heat tracing set at 120 ^{O}F.
- Add water source to existing loop seal.

1. This change does not affect the performance of any equipment assumed to function in the FSAR accident analysis. This included review of FSAR chapters 11 and 15. There is no impact on the monitor's capability of responding to a postulated steam generator tube rupture described in FSAR section 15.6.3.

2. This change does not create the possibility of any malfunction not described and analyzed in FSAR section 15 and 11.5.

3. Based on review of bases 3/4.3.10, "Radioactive gaseous effluent monitoring instrumentation", and 3/4.11.2, "Gaseous Effluents", this change does not affect the margin of safety as defined in the bases reference section of Technical Specification.

87-V1E0310

This design change adds air release valves, vent valves, and associated piping to the water side of the Main Generator Hydrogen Coolers. This piping is part of the Turbine Plant Cooling Water System, System 1405. It is non-safety related, project class 626. This system has no safety function. Failure of this system will not compromise the ability of the plant to accomplish a safe shutdown.

1. Equipment affected by this design is not assumed to function in an accident analyzed in section 15 of the FSAR (Accident Analyses). Installation of the proposed change will not cause the malfunction of other equipment assumed to function. The Flooding and Seismic analysis is not impacted. The new piping and valves are not safety related or seismic category 1, and neither are the existing piping or valves. This change does not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR.

2. This design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR which could affect the health and safety of the public. This was based on a review of FSAR section 15 (Accident Analyses), section 9.2 and 10.2. New components are added to improve the function of the existing systems.

3. This change is associated with system 1405 and does not decrease Technical Specification safety margins since it has no safety design bases. This is based on review of Technical Specification bases, including section B 3/4.11.

87-V1E0321

Two recorders (1PDJR-41321 & 1PR-41302) will be removed from existing backflush filter panel 1-1224-P5-FRP and be replaced by more reliable new solid state switches (Bi-stables), located near the backflush filter panel. This new panel will contain the bi-stables necessary to provide contact output for the panel annunciator, and are also in common with the Control Room annunciator. The alarms processed in this new panel will be Crud Tank high, high-high and filter differential high (for each backflushable filter).

1. This change does not affect operation of the backflushable filter system. The change provides more direct indication of system status to the operator. Therefore, this design change will not increase the probability of occurrences or consequences of an accident described in FSAR section 15.

2. This change does not affect backflushable filter system operation. This change provides a different method of alarming system parameters. Therefore, this change does not create the possibility of any malfunction not described and analyzed in FSAR section 15.

3. Based on review of Bases for Technical Specifications 3/4.3 and 3/4.11, this change does not affect the margin of safety.

87-V1N0341

This modification will provide the addition of personnel platform structures and associated ladders for enhanced access to essential valves, controllers, and other equipment inside the Unit 1 Turbine Building.

1. The proposed change does not increase the probability of occurrence or consequences of any equipment malfunction for equipment assumed to function in FSAR chapter 15 accidents.

2. The proposed change does not create the possibility of an accident or equipment malfunction not described in the FSAR. This included review of FSAR sections 3.0 and 15.

3. The proposed change does not decrease the margin of safety defined in the Technical Specifications. This included review of bases for Technical Specification 3/4.7

87-V1N0342 Add float check valve tag number 1-2403-X4-419 to the pneumatic line associated with instrument 1LI-19192. Add float check valve tag number 1-2403-X4-420 to the pneumatic line associated with instrument 1LI-19193.

1. The check valves 1-2403-X4-419 and 1-2403-X4-420 are non-safety related valves serving a non-safety related function in Project Class 424 pneumatic tubing. This change will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in FSAR sections 15.0 and 9.5.4.

2. The check valves 1-2403-X4-419 and 1-2403-X4-420 are non-safety related valves serving a non-safety related function in Project Class 424 pneumatic tubing. This change will not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR sections 15.0 and 9.5.4.

3. The proposed change does not decrease the margin of safety defined by the bases of the Technical Specification 3/4.8.1.

87-V1N0351 Install valves 1-1407-U4-207, 1-1407-U4-208, 1-1407-U4-209, and associated piping on the steam generator blowdown system downstream of the existing backflushable filter. Valves 1-1407-U4-207 and 1-1407-U4-208 will be normally closed while valve 1-1407-U4-209 shall be normally open.

1. This modification does not affect the probability of occurrence or consequences of any equipment malfunction or component assumed to function in an FSAR postulated accident. This included review of FSAR chapter 15 accidents.

2. Although this design does require a new component installation, the portion of the Steam Generator where this component is to be installed is non-safety related. There is no new component malfunction created by this change that has not been considered in the existing FSAR chapter 15 analysis.

3. There is no change to the Technical Specification margin of safety. This included review of the bases of Technical Specifications 3/4.3.3, 3/4.4.5, 3/4.7.2, and 3/4.11.1.

87-V1N0358

The Diesel Generator (D-G) building oily waste sump level switch float displacer suspension cable is too long because the last displacer is sitting on the bottom of the sump when the water level is at the low level setpoint. The low level switch setting is raised to correct the problem without changing the displacer suspension cable.

1. This design change has no affect on accidents postulated in the FSAR because failure of the level switch will not initiate any accident described in the FSAR. Design change insures the accurate operation of the D-G building oily waste sump level switch low level setpoint. Therefore, this change does not increase the probability of occurrence or consequences of an accident described in the FSAR.

2. No new potential accidents or events are created as a result of this modification. Changing the low level setpoint does not affect other systems to create the possibility of an accident or equipment malfunction not described and analyzed in the FSAR.

3. There are no Technical Specification bases defined or inferred for the D-G building oily waste sump level setpoint. Therefore, the setpoint change does not decrease the margin of safety defined by the bases of the Technical Specification.

87-V1N0385

This DCP changes the AC power feed of an emergency sealed beam lighting fixture from 1NLP36-13 to 1NLP31-4. This fixture is located in Room 123 of the Unit 1 Control Building and it's lampheads are directed at valve 1HV-3019. This 8 hour rated battery fixture provides emergency illumination for local manual operation of valve 1HV-3019. 1HV-3019 is the Steam Generator #2 outlet to the Turbine Driven Auxiliary Feedwater pump. The new power feed will be field routed from an adjacent emergency fixture that also has it's AC power feed from 1NLP31-4. The new feeder will be ALS (aluminum sheathed cable). The existing AC power feeder is also ALS. It will be abandoned, determinated, wires cut and taped.

1. This change does not affect safety systems, setpoints or other equipment or components assumed to function in accidents analyzed in the FSAR (sections 8.3.1, 9.5.3 and 15). This change allows for the proper operation of the emergency lighting system (FSAR section 9.5.1, 9A.1.64-7).

2. The changing of the AC power feed to this emergency light does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR (sections 8.3.1, 9.5.3, 9A.1, 15).

3. The margin of safety as defined by the bases of the Technical Specification (section 3/4.8) is not affected by this change.

87-V1E0392

This a "SAFEGUARDS" DCP, the following abbreviated information has been declassified for this report. Add steel collars to main feedwater lines to eliminate a protected area to vital area security breach.

1. The addition of steel barriers around the main feedwater lines has no impact on equipment important to safety. Therefore, there is no increase in the probability of occurrence or consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR section 15.

2. The installation of these steel security barriers does not increase the possibility of an accident or malfunction of a different type than was previously evaluated in the FSAR. This was determined by performing a review of all applicable FSAR sections including 3.6 to 3.11 and 11.3. Other factors considered in the development and final implementation of this DCP included an interference and material consideration for possible seismic issues.

3. Technical Specifications do not address the plant security system or barrier requirements. Therefore, this modification does not reduce the margin of safety as described in the bases for any Technical Specification.

87-V1E0408

This DCP replaces various piston type check valves with flapper type check valves in the systems identified below. The sumps identified perform the same generic function of collecting waste effluent and processing it for recycling or disposal.

- System 1214 - Containment and Auxiliary Bldg. Drain System - Radioactive
- System 1215 - Auxiliary Bldg. Drain System - Non-Radioactive
- System 1225 - Control Building Drain System
- System 1227 - Fuel Handling Building Drains
- System 1420 - Waste Water Effluent System

1. The probability or consequence of the malfunction of any equipment is not changed as a result of this modification. These systems are not assumed to function in accidents analyzed in the FSAR. This is based on review of section 9.3, 11 and 15.

2. This modification does not create the possibility of any accident or malfunction that is not described and analyzed in the FSAR. This is based on a review of FSAR section 9.3, 11 and 15.

3. There is no decrease in the margin of safety defined by the Technical Specification as a result of this modification. The bases for Technical Specification 3/4 3.3.9, 3/4 7.1.2, 3/4 11.1 and 3/4 12.1 are not affected by this modification.

87-V1E0409

This DCP adds extended remote operators to valves 1-1215-U4-294, 277, 269, 267, 265, 263, and 261 of the Auxiliary Building non-radioactive drain system located in the Auxiliary feedwater pump house. The principle function of the system is to drain normally non-radioactive equipment and floor liquid waste from open areas of the auxiliary building to the floor drain tank via the auxiliary building or the penetration room sump. The auxiliary building non-radioactive drain system is not required for the safe shutdown of the plant. All new components are located in room K-104.

1. The probability or consequence of the malfunction of any equipment is not changed as a result of this modification. The externally added reach rods will be supplied with torque-limiting components. This system is not assumed to function in accidents analyzed in the FSAR. There is no change to the accident analysis of chapter 15 as a result of this modification.

2. This modification does not create the possibility of any accident or malfunction that is not described and analyzed in the FSAR. The valve reach rods will have their own supporting system and torque-limiting components. There is no change to any component malfunction analyzed in the FSAR. This is based on review of FSAR sections 9.3, 10.4 and 15.

3. There is no decrease in the margin of safety defined by the Technical Specification as a result of this modification. The bases for Technical Specification 3/4 3.3.9, 3.7.1.2 and 3/4 11.1.1 is not affected by this modification.

87-V1N0435

This DCP will remove 1PV-5795C from the control loop for valves 1FV-5795A & B. Tubing will be installed in place of 1PV-5795C to allow 1HIC-5795 to directly control 1PV5795A & B.

1. The Auxiliary steam system is non-safety related and not assumed to operate in an accident. This change does not affect any safety related equipment or safety systems settings. This is based on a review of FSAR sections 15.1, 15.2, 9.5 and 10.1.

2. This design change will not affect plant conditions. Also, as a result of a review of FSAR sections 15.1, 15.2, 9.5 and 10.1, there is no FSAR accident condition change.

3. This design change does not affect the Technical Specification bases section B3/4.7.

87-V1N0452

This DCP adds hour meters to monitor run time of each ESF fan supplying flow through the charcoal of the ESF filtration systems.

Each meter provides positive indication of fan run time for the ESF charcoal filter. This design uses a contact of the 480 volt load center breaker or 480 volt MCC breaker in conjunction with an auxiliary relay to energize the hour meter cicuit when ESF fans are operating. These meters are installed in wall mounted panels. Each meter is powered by a non-Class 1E circuit which is separated from the Class 1E circuit by an auxiliary breaker position switch or contactor position contact for the fan control circuit. Installation of these meters will not have any detrimental effect on the ESF filtration system operation.

1. This design does not change the operation of the affected equipment described in FSAR sections 9.4.1, 9.4.2 and 9.4.5. The new equipment is powered from a non-Class 1E source separated from the other Class 1E equipment. Therefore, the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR is not increased.

2. The new equipment and associated power supply is non-Class 1E and separate from the Class 1E equipment. Failure of this equipment will not adversely impact the operation of the emergency filtration system and other safety system equipment. Therefore, the change will not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. No change to Technical Specification section 3/4 7.6, 3/4 7.7, and 3/4 9.12 is necessary as a result of this design change package. This design is to enhance monitoring the usage of the emergency filtration system to ensure Technical Specification surveillance requirements are satisfied. Therefore, there is no decrease in the margin of safety defined by the bases of the Technical Specification.

88-V1N0011

This design package involves installing a resistive voltage divider network in the de-excitation cubicle of the Generrex panels. The outputs of this network are to then be routed over to the plant fault recorder located in the control room in order to provide a ground reference. The inputs to the network will be connected to the generator field supply with the circuit rated for 2 KV service as stipulated by General Electric. The components of this network will be assembled on an insulated industrial plate mounted inside the de-excitation cubicle of the main generator Generrex excitation cabinet.

1. The only function this change serves is to relay information after a trip by the generator due to a grid fault - it will not affect any equipment or component assumed to function during an FSAR analyzed accident. Review section 15, 8, and 10.2.

2. Again, this change provides post turbine trip ground fault detection information. There is no equipment required to mitigate the effects of any Chapter 15 accident which will malfunction due to this change.

3. The bases of the Technical Specifications do not address the plant fault recorder nor the de-excitation cubicle. Review Technical Specification sections B 3/4 7.1 and B 3/4 8.4.

88-V1N0020

This is a "SAFEGUARDS" DCP, the following abbreviated information has been declassified for this report. Add security barriers to penetrations in the auxiliary building.

1. The change adds security barriers over existing openings in the auxiliary building. There is no equipment important to safety involved. Therefore, there is no increase in the probability of occurrence or the consequences of and accident or malfunction of equipment important to safety as described in FSAR section 15.

2. Only security barriers are added, no equipment important to safety is involved. Therefore, there is no possibility of a different type of accident that needs to be evaluated in the safety analysis report.

3. Technical Specifications do not address the plant security system or barrier requirements. Therefore, this modification does not reduce the margin of safety as described in the bases for any Technical Specification.

88-V1N0023

Install reach rods on equipment drain valves 1-1218-U4-080 (CVCS Centrifugal Charging Pump Room, Train "B"), 1-1218-U4-081 (CVCS Centrifugal Charging Pump Room, Train "A"), and 1-1218-U4-082 (CVCS Positive Displacement Pump Room) and install chain operators on valves 1-1218-U4-068 (RHR Heat Exchanger Room, Train "B") and 1-1218-U4-069 (RHR Heat Exchanger Room, Train "A"). These valves will still be required to be locked closed.

1. The addition of reach rods and/or chain operators on the subject valves will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. This included a review of section 9.3.3 and chapter 15 (Accident Analysis).

2. A review of FSAR section 15.7 shows that this design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. There is no change to the negative pressure boundary or flood retaining features of this room.

3. This design change does not decrease the margin of safety defined in bases of Technical Specification 3/4.11 or 3/4.3.3.

88-V1N0026

This is a "SAFEGUARDS" DCP. The following abbreviated information has been declassified for this report. This modification adds seven (7) barriers to penetrations and vents that breach vital areas.

1. The addition of steel barriers to secure penetrations into vital areas has no impact on equipment important to safety. Therefore, there is no increase in the probability of occurrence or consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR section 15.

2. Only security barriers are added, no equipment important to safety is involved. There is no possibility of a different type of accident that needs to be evaluated in the safety analysis report.

3. Technical Specifications do not address the plant security system or barrier requirements. Therefore, this modification does not reduce the margin of safety as described in the bases for any Technical Specification.

88-V1N0035

The proposed change will permanently incorporate the modifications made by TMR's 1-87-269 and 1-87-402, which provided the changes necessary to drive the CRT on the main control board from the Emergency Response Facilities (ERF) Computer. This was accomplished by running three (3) coax cables from the ERF display on the Shift Supervisor's stand to the CRT on the QMCB and disconnecting the three Proteus cables at the back of the CRT.

1. Since the ERF and Proteus computer systems are not assumed to function in an accident, the proposed change does not increase the probability of occurrence or consequences of the malfunction of any equipment or components assumed to function in the accidents analyzed in the FSAR.

2. The proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. The computer systems perform monitoring functions only and are not required in any accident scenarios.

3. The proposed change involves the ERF and Proteus computer systems, which are not addressed in the Technical Specifications. Therefore, this change does not decrease the margin of safety defined by the bases of the Technical Specificaitons.

88-VCN0056

This change adds an overhead bridge crane of 40 ton capacity to the existing Alternate Radwaste Building (ARB). This crane replaces a hydraulic crane of lower capacity (Ref. DCP 88-VCE0061-0-1). The modification encompasses the following work activities:

1) Core bore for anchor bolts
2) Crane support structure design/installation details
3) Electrical wiring and conduit installation for
   a) Power
   b) Remote control panel
   c) Video camera system

1. Addition of the bridge crane does not change the consequences or probability of malfunction of any equipment assumed to function for accidents analyzed in the FSAR. This is based on review of sections 9.1.5 and 15.

2. No new equipment malfunction or accident is created as a result of this change. This is based on review of the heavy load analysis of 9.1.5 and chapter 15.

3. There is no change to the margin of safety as defined in the bases of Technical Specifications 3/4 11 and 6.14.

88-V1N0070

This DCR inserts a RELAY DRIVER board and a RESET MODULE board into each diesel generator (DG) load sequencer logic cabinet (1-1821-U3-001 for train A and 1-1821-U3-002 for train B). This modification will allow the DG sequencer to be reset by an operator should an undervoltage start sequence occur followed by a restoration of offsite power during the DG loading sequence.

1. This design change reduces the chance of a malfunction associated with the diesel generator logic sequencer since the ability to reset the

sequencer after restoration of power, following a loss-of-offsite power, has been enhanced and the consequences of a malfunction have been reduced.

2. The change of the logic cabinets does not alter the sequencer system operation as described in the FSAR. The manual reset function is inhibited for 60 seconds during the undervoltage start and loading of the DG sequencer. Therefore, the new design does not create an accident or a malfunction not described in the FSAR.

3. This change effects the manner of restoring the DG sequencer logic clock to the normal mode when power has been restored, following a loss-of-power, and does not change the margin of safety as defined in sections 3/4.8 and B 3/4.8 of the Technical Specification.

88-V1N0079

The Unit 1 Control Building Control Room (CBCR) ESF Nuclear Filtration Units (1-1531-N7-001/002) were modified to produce a lead/lag fan control logic to prevent more than one fan from running when a Control Room Isolation (CRI) signal is present. The associated outside air dampers will be changed from Normally Closed (NC) to Locked Open (LO). The CBCR HVAC isolation dampers (1HV-12146, 47, 48, 49, 2HV-12146, 47, 48, 49) will close immediately upon receipt of a CRI signal from either Unit 1 or Unit 2.

1. This design change does not change the consequences or probability of any equipment malfunction, for equipment assumed to function in an FSAR postulated accident. This design change does not adversely affect the capability of the control room emergency HVAC system from meeting the design requirements of FSAR section 6.4.

2. This change does not create the possibility of an accident or equipment malfunction that is not described and analyzed in the FSAR. There is no single failure that prevents the control room emergency HVAC system from meeting the design requirements of FSAR section 6.4.

3. The bases of control room HVAC Technical Specification 3/4.7.6 and ESFAS instrumentation Technical Specification 3/4.3.2 do not change. After this design change, the Technical Specifications retain the same criteria. The criteria of 10CFR50, GDC19 are met with the design. Therefore, there is no decrease in the margin of safety as defined in the Technical Specifications. There is a change to one of the timing parameters, FSAR Table 16.3-2, referenced in bases of Technical Specification 3/4.3.2. This does not affect the margin of safety, since with the new time parameters, the safety analysis still meets GDC 19 requirements.

88-V1N0088

The presently used URAL board and the AC Volts/URAL Gate boards in panel 1-1328-P5-GRC will be replaced with redesigned boards. The exchange of boards involves adding two wires to the backplate of the regulator control section, installing jumpers on both boards, adjusting pots on the URAL board (as outlined in G.E. change notice ECN G314-028 and Instruction Book 1X4AA01-275) and a performance check with the new boards in place (also per ECN G314-028). Also, this change provides documentation to make permanent a Synchronizer III board which is presently installed by temporary modification 1-88-046.

1. The proposed change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. This included a review of section 10.2 and chapter 15 of the FSAR.

2. The proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This change does not alter operability of the system and malfunction of the equipment/components will not change due to this modification. This includes a review of the following FSAR sections 15.0.8, 15.1, and 15.2.

3. This proposed change does not decrease the margin and safety defined by the bases of the Technical Specifications. This includes a review of the following Technical Specification sections 3/4.7, 3/4.8.

88-V1N0094

This document allows the nitrogen dome pressure switches on [illegible] MSIV actuator to be changed from Whitman Ge[illegible] to Barksdale. To accomplish this, modifications to the tubing and conduit are required. The function and wiring do not change. [illegible]ng modifications required to accomplish [illegible]ge have been analyzed seismically and are [illegible]e to prevent loss of nitrogen during a [illegible]ent.

1. Since the switch was qualified for its intended function and configuration by test and calculations, the probability of occurrence or consequences of the malfunction of the MSIV's is not impacted, including review of FSAR chapter 6.2, 10, and 15. In addition, there is no change to the FMEA of Table 10.3.3-1.

2. Since the switch was qualified for its intended function by test and calculations, there is no new possibility for an accident or equipment/ component malfunction, including, review of FSAR chapters 6.2, 10 and 15.

3. There is no decrease in the margin of safety defined by the bases of the Technical Specifications. This is based on review of the bases for Technical Specification 3/4.7.1.

88-V1N0096

This change adds six lightning protection down conductors to the containment building. These down conductors will be coursed down the side of the containment building and through the tendon gallery access shaft. Core drills through the tendon gallery access shaft basemat will provide penetrations through which ground rods (6) will be driven to serve as ground terminals. These ground

terminals will be tied together with a "counterpoise" conductor coursed through the tendon gallery which serves to equalize inbalance in discharge currents to ground. This conductor will further serve to bond the forming steel of the tendon gallery roof, the building/site grid, and miscellaneous bodies of conductance and inductance to the lightning grid and ground rods.

1. During an electrical discharge (lightning) the counterpoise serves to equalize the discharge currents to ground as well as equalize ground potentials between building/ equipment grounds and the lightning protection grounds such that any ground potential rise remote to the containment building ground terminals will be nearly equal. This serves to decrease the probability of equipment damage or malfunction due to current surges and/or side flashes between grounds of different potentials and thereby increases the reliability of the equipment described in FSAR section 15.0 during electrical storms.

2. Since lightning protection serves only to shunt lightning discharge currents to ground and is Non-1E, the proposed design change does not create a potential for accidents or equipment malfunctions as described in FSAR section 15.0. Additionally, this proposed change is an addition to an existing grid system which betters its operation. There is no change to the ground water consideration of FSAR section 2.

3. The proposed design improves the lightning protection and thereby equipment reliability. There is no change to the margin of safety as described in Technical Specification bases 3/4.8.

88-V1N0097 Modification of various floor penetration seals and containment electrical penetration boxes to provide water tight/leak proof seals. Scope of work to be performed and location of penetrations are specifically addressed in NPFSG Letter 2591,

from R. L. George to S. H. Chesnut. These modified seals will meet all hazards and fire protection design criteria. The modifications to the penetration seals were performed per procedure 00432-C (Penetration Seal Control).

1. This change does not involve any equipment or component. The hazard analysis is not affected by this change. The proposed change provides increased protection of safe shutdown and water sensitive safety related components. There is no change to the fire hazard analysis of chapter 9 or accident analysis of chapter 15.

2. This change does not create the possibility for any accident or equipment malfunction not previously described and analyzed in the FSAR. The material used does not adversely affect the fire protection requirements of FSAR section 9.

3. This change meets the margin of safety defined by bases for the Technical Specifications. This included a review of the bases of Technical Specification 3/4.7.6.

88-VCE0102

The BTRS (Boron Thermal Regenerative System) operation is unitized with independent water chiller and pumps in the chilled water loop with the provisior of a common chiller to serve either Unit 1 or Unit 2 BTRS operation in the event any of the unitized chillers is down for maintenance or repair. The existing design only provides for the return of the common chiller oil cooler water to the Unit 1 chilled water loop. This design change calls for addition of a one inch bypass line with an isolation valve to enable the common chiller oil cooler water to be returned back to the Unit 2 chilled water loop when the common chiller is used to support Unit 2 BTRS operation.

1. The proposed change added a 1" bypass line with an isolation valve to enable the backup common chiller to support Unit 2 BTRs operation without

the opening of the 6" common valve located at the pump suction. This proposed change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. This is based on review of FSAR sections 9.3.4 and 15.

2. This change does not create the probability of an accident or equipment/component malfunction not described and analyzed in the FSAR. This is based on review of section 9.3.4 and 15 of the FSAR.

3. This change does not decrease the margin of safety defined by the bases of the Technical Specification sections 3/4.4, 3/4.7 and 3/4.9.

88-V1N0106

This design adds a conduit seal assembly to the Main Steam Isolation Valves (1-HV-3006A&B, 1-HV-3016A&B, 1-HV-3026A&B, 1-HV-3036A&B). The seal assembly will be placed between the valve junction box and the full open and full closed limit switches. To allow for this change, the existing vendor supplied junction box will be replaced with a box which will be mounted approx. 8 inches off of the valve yoke. The design encompasses the support structure required to maintain the box intact during a seismic event. Wiring changes are also implemented to ensure that failure of non-qualified devices do not impact PAMS indication.

1. Since this indication is a category 2 device, it is not assumed to function in accidents, but rather, it can fail and there are sufficient back-up devices to provide similar information. Also, this change will enhance the probability that this device functions during an accident. Therefore, there is no change to the accident analysis or PAMS consideration of FSAR sections 7.5.2 and 15.

2. This change involves only MSIV position indication and only one train of redundant electrical equipment per MSIV. Therefore, this change does not create the possibility of an accident or equipment/ component malfunction that has not been previously analyzed. This is based on review of FSAR section 7.5 and 15.

3. There is no Technical Specification applicable to the components involved in the modification (other than the MSIV Technical Specification 3.7.1.5 which is not impacted by this change). Therefore, the margin of safety of any Technical Specification bases is not affected.

89-V2E0011

This is a "SAFEGUARDS" DCP. The following abbreviated information has been declassified for this report. Allow access to the electrical tunnels through the level "B" control building doors. Weld rebar barriers into the electrical chase in the diesel generator building.

1. Relocation of the vital area boundary is a passive physical modification to the facility, which enhances access to the tunnels and conforms with FSAR section 3.6. The proposed change does not affect the environment in the area, nor does it affect any equipment important to safety as described in FSAR section 15.

2. Relocation of the vital area boundary is a passive physical modification to the facility which enhances access to the tunnels and conforms to FSAR section 13.6. The modification does not create the possibility of an accident or malfunction of a different type than previously evaluated in the FSAR.

3. The security system and security barriers are not discussed in the Technical Specifications. The security plan is discussed in the Technical Specifications, section 6, in relation to plant audits. This change does not affect the margin of safety as defined in the bases for any Technical Specification.

89-V1N0016

This design change relocates the existing filler/ breather cap on the MSIV actuator hydraulic reservoir and replaces it with a desiccant type filler/breather assembly. This design affects control valve tag numbers 1HV-3006A&B, 1HV-3026A&B, and 1HV-3036A&B.

1. This design change does not modify the design function or the operation of the MSIV's. Therefore, there is no increase in the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analysed in the FSAR. This included a review of FSAR table 10.3.3.1 (Main Steam System - Failure Modes and Effects Analyses) and FSAR section 15.0 (Accident Analyses).

2. A review of the results of the FMEA calculation MX4CPS.0075.259 indicate that the failure of the desiccant type filter/breather cap will not impact the operation and qualification of the MSIV's. This was based on a review of FSAR section 6.2 (Essential- Containment Systems), 7.3.8 (ESFAS - Main Steam and Feedwater Isolation), and FSAR table 10.3.3.1 (Main Steam System - Failure Modes and Effects Analyses).

3. This design change does not decrease the margin of safety defined by the bases of the Technical Specifications. This included a review of Technical Specification 3/4.7.1.5 and its bases.

89-V1N0017

This design change removes the existing MSIV actuator hydraulic manifold isolation valve inserts and replaces them with a "balanced" manifold isolation valve insert. This design change affects control valve tag numbers 1HV-3006A&B, 1HV-3026A&B, and 1HV-3036A&B.

1. This design change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analysed in the FSAR. This included a review of FSAR table 10.3.3.1 (Main Steam System - Failure Modes and Effects Analyses) and FSAR section 15.0 (Accident Analyses).

2. This design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This was based on a review of FSAR sections 6.2 (Essential - Containment Systems), 7.3.8 (ESFS - Main Steam and Feedwater Isolation), and FSAR table 10.3.3.1 (Main Steam System - Failure Modes and Effects Analyses).

3. This design change does not decrease the margin of safety defined by the bases of the Technical Specifications. This included a review of Technical Specification 3/4.7.1.5 and its bases.

89-V1NC027

The MFIV fast closing operation scheme contains a redundant control relay. This control relay contact is wired to initiate the de-energization of the MFIV pilot solenoid valve when the control relay coil is de-energized. De-energizing the pilot solenoid valve will cause the MFIV to close in the fast close mode. During normal operation the redundant control relay coil is continuously energized. If the relay coil fails due to either a short or open circuit, the pilot solenoid valve will de-energize and initiate the undesired fast closing operation of the MFIV. This change involves rewiring the MFIV control circuitry to disconnect the redundant relay coil and contact from the MFIV fast closing control scheme.

1. The control wiring change does not change the MFIV operation and no new component is added to the existing control circuit to make this change. Therefore, the change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. This minor wiring change does not change the original system operation and no new component is added to the existing control circuit to make this change. Therefore, the change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The change is designed to meet the intent of the original system design bases while increasing the electrical control circuit design reliability. Therefore, the change does not decrease the margin of safety defined by the bases of the Technical Specification, particularly sections 3/4.4.5 (Steam Generator) and 3/4.6.3 (Containment Isolation Valves).

89-V1N0028

An orifice with a bore diameter of 0.109 inch is installed in the "P" port of the fast acting solenoid valve for each of the Main Turbine Control Valves 1XV-6005, 6006, 6007, and 6008.

1. The following conclusion is based on review of FSAR sections 10.2 and 15. The main turbine control valves are non-safety related. The turbine overspeed protection feature of the control valves, so as to prevent potentially damaging missiles from striking safety related structures, is unimpaired.

2. The design change affects only the internal flow/pressure characteristics of ETS fluid to the control valves and is completely enveloped by existing descriptions and analyses in FSAR sections 10.2 and 15. No new accident possibilities or malfunctions are created.

3. The design change does not affect the operability or overspeed protection functions of the control valves as discussed in Technical Specifications bases Section 3/4.3.4.

89-V1N0029

Orifice plate 1FO-5552 in line 505-2" is being removed. Gate valve 1-1326-U4-527 is being replaced with a globe valve that can be used for throttling. The valve is also in line 505-2" on the Stator Cooling Water Skid. General Electric has recommended this change for both units. This change is to a non-safety, non-seismic system located in the Turbine Building.

1. The Stator Cooling Water System is not safety-related and is not assumed to function in any accident analyzed in FSAR including section 15.

2. This change does not affect plant conditions. There is no change to section 15 or section 11 and 12.

3. The Stator Cooling Water System serves no safety function and has no safety design bases. Bases to Technical Specifications are not affected.

89-V2E0030

This DCP adds additional lightning protection bonding for the Unit 2 containment building HVAC ventilation duct, and the adjacent ladder. The bonding is to be installed where the dome ring conductors pass under the metal components at the lower end of the vent duct, and ladder runs. Bonding to the existing down conductors will be required.

1. The design change provides additional bonding for the containment building exterior HVAC vent duct, and ladder, which decreases the probability of malfunction for this equipment, and increases the reliability of the existing components as described in the FSAR section 15.0, during an electrical storm. Therefore, decreasing the probability of occurrence or consequences of an accident or malfunction of equipment important to safety.

2. This design change adds non-class 1E bonding connections to the existing containment building lightning protection system and does not create any potential for accident or equipment malfunction to the plant grounding system, FSAR section 8.0, or to any equipment assumed to function as described in FSAR section 15.

3. The design change improves the lightning protection and thereby improves the equipment reliability. There is no change to the margin of safety as defined in bases of the Technical Specification 3/4.8.

89-V2E0031

This design change adds a heat insulator between the process connection and Fisher controller for the following instruments:

TAG NO.	DESCRIPTION
2LCL-4361	MSDT A
2LCL-4362	MSDT B
2LCL-4371	RDT A
2LCL-4373	RDT A
2LCL-4372	RDT B
2LCH-4374	RDT B
2LCL-4522	MSDT C
2LCL-4523	MSDT D
2LCL-4532	RDT C
2LCH-4534	RDT C
2LCH-4533	RDT D
2LCH-4535	RDT D

1. This change does not adversely affect the performance of any component assumed to function in the accident analysis of chapter 6 or 15. There is no increase in the probability or consequences of any equipment assumed to function in accidents analyzed in the FSAR.

2. This change does not create the possibility of any accident or component malfunction not presently analyzed in the FSAR. This included a review of FSAR section 7, 10 and 15.

3. There is no change to the margin of safety defined by the bases of the Technical Specification. This included review of Technical Specification 3/4.3, 3/4.7 and 3/4.11.

89-V1N0032

This design change adds a heat insulator between the process connection and the Fisher controller for the following instruments:

TAG NO.	DESCRIPTION
1LCL-4361	MSDT A
1LCL-4362	MSDT B

1LCL-4371	RDT A
1LCL-4373	RDT A
1LCL-4372	RDT B
1LCH-4374	RDT B
1LCL-4522	MSDT C
1LCL-4523	MSDT D
1LCL-4532	RDT C
1LCH-4534	RDT C
1LCL-4533	RDT D
1LCH-4535	RDT D

In addition, the air regulators are to be removed from the following level controllers and mounted remotely.

TAG NO.	DESCRIPTION
1LCL-4361	MSDT A
1LCH-4363	MSDT A
1LCL-4362	MSDT B
1LCH-4364	MSDT B
1LCL-4522	MSDT C
1LCH-4524	MSDT C
1LCL-4523	MSDT D
1LCH-4525	MSDT D
1LCL-4371	RTD A
1LCH-4373	RDT A
1LCL-4372	RDT B
1LCH-4374	RDT B
1LCL-4532	RDT C
1LCH-4534	RDT C
1LCL-4533	RDT D
1LCH-4535	RDT D

The function of each of the above instruments is to control the level of its associated drain tank (moisture separator or reheater drain tanks). All affected instruments are non-seismic, non-safety related class 62J instruments.

1. This change does not adversely affect the performance of any component assumed to function in the accident analysis of chapters 6 or 15, or any other section of the FSAR. There is no increase in the probability or consequences of any equipment assumed to function in accidents analyzed in the FSAR. All instruments and equipment affected by this change are non-seismic/non-safety related.

2. This change does not create the possibility of any accident or component malfunction not presently analyzed in the FSAR. This included a review of FSAR section 7, 10, and 15.

3. This design change does not decrease the margin of safety defined by Technical Specifications B 3/4.3, B 3/4.7 and B 3/4.11 and their bases.

89-V1N0034

The proposed change will modify the existing Control Rod Drive Mechanism (CRDM) Unit 1 Seismic Support Lugs. This modification will involve the elongation of a 3" diameter nominal hole in the radial and torsional support lugs. The elongation of the subject lugs will enhance the mode changes during plant operation and reduce refueling duration by allowing the seismic tie rods to be removed without returning the reactor vessel to operating temperature.

1. This design change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analysed in the FSAR. This included a review of FSAR sections 3 and 15. The proposed design package only modifies the Seismic Support Lugs of the CRDM and does not affect the function of the CRDM during an earthquake.

2. This design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This was based on a review of FSAR sections 3 and 15.

3. This design change does not change the margin of safety defined by the bases of the Technical Specifications. This included a review of Technical Specification 3/4.4.10 and its bases.

89-V1N0036

A. This DCP involves replacing the Lovejoy motor controller and its associated components on the Unit 1 Sigma Refueling Machine (1-2101-R6-003) with a Veearc Super 7000 Controller, a joystick power supply and associated components. Also included in this change is the addition of a fault relay. The main difference between the controllers is that the motor speed for the Veearc can be set digitally, whereas the Lovejoy is set in an analog manner. Westinghouse safety evaluation checklists SECL-89-1096-C and SECL-89-1187 address this change.

B. In addition, to prevent the refueling machine power cable from snagging on bolts protruding from the stairwell wall, a pipe/roller assembly will be added to act as a standoff, preventing damage to the cable.

1. a. This change involves the replacement of the motor controller on the Unit 1 Sigma Refueling Machine. DC-1010, Rev. 5 indicates the refueling machine as a non-safety related, Seismic Category 2 mechanical system. The refueling machine does not constitute part of the protection system and it is not specified as electrical Class 1E. FSAR section 15.7.4 addresses accidents involving the refueling machine.

b. The pipe/roller assembly added to act as a standoff preventing damage to the refueling machine power cable has been designed to Seismic Category 1 criteria precluding any Seismic 2 over one interactions.

Therefore, this change does not increase the probability of occurrence or consequences of a malfunction of any equipment assumed to function in an accident.

2. a. This change involves replacing the Unit 1 Sigma Refueling Machine motor controller to improve reliability and maintainability of the machine. The new controller is functionally similar to the original one and it does not degrade the performance of the machine. Also, it does not impact the fuel handling accident analyses or the operation of safety-related equipment as described in the FSAR.

   b. The pipe/roller assembly added to act as a standoff preventing damage to the refueling machine power cable has been designed to Seismic Category 1 criteria precluding any Seismic 2 over one interactions.

   Therefore, this change does not create the possibility of an accident or equipment/component malfunction not already described in the FSAR. Sections 9.1.4 and 15.0 were reviewed.

3. The replacement of the motor controller on the refueling machine and the addition of the pipe/roller assembly has no effect on the margin of safety defined by the bases of the Technical Specifications, section 3/4.9.6.

89-V1N0053

This change is the replacement of the existing Crane model GVH-20k Unit 1 Reactor Coolant Drain Tank Pumps (1-1901-P6-001 and 1-1901-P6-002) with Crane model 4301 canned motor pumps, and the replacement of their associated 100A containment penetration backup breakers with 125A breakers. The Reactor Coolant Drain Tank pumps are part of the Liquid Waste Processing System (1901), which is addressed by FSAR section 11.2. It is non-safety related, project class 427. This system has no safety function. Failure of this system will not compromise the ability of the plant to

accomplish a safe shutdown. Containment penetration protection is provided by the backup breaker.

1. Equipment affected by this design is not assumed to function in an accident analyzed in chapter 15 of the FSAR (Accident Analyses). Installation of the proposed change will not cause the malfunction of other equipment assumed to function. There is no increase in the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety. The flooding and seismic analysis is not impacted. The new pump and piping are not safety related or seismic category 1 and neither are the existing piping or valves. Containment penetration backup protection is provided in accordance with DC-1823 and FSAR section 8.3.1.1.12.

2. This design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR which could affect the health and safety of the public. This was based on a review of FSAR chapter 15 (Accident Analyses) and section 11.2. The new pumps are being added to improve the function of the existing system. Containment penetration backup protection is provided per DC-1823 and FSAR section 8.3.1.1.12.

3. This change is associated with system 1901 and does not decrease Technical Specification safety margins since it has no safety design bases. This is based on review of the Technical Specification bases, including Section B 3/4.11, "Radioactive Effluents", and also section B 3/4.4 "Reactor Coolant System". Containment penetration backup protection is provided and the margin of safety as described in Technical Specification bases 3/4.8.4 is not decreased.

89-V1E0057

For heater drain pumps 1-1304-P4-001 & 002:

1) Perform seal weld of pump lower aligning ring to pump shell.
2) Change type gasket used between pump shell and pump discharge head from red rubber to a Garlock gasket.
3) Drill hole to accomodate 1/4" thread top thru one of the thirty-six bolts holding the discharge head to the shell. Tap the drill hole to accomodate a 1/4" machine screw.
4) Remove grout at pump mounting flange such that top of grout is even with bottom of pump mounting base flange.

1. The changes do not impact any equipment or component analyzed in FSAR sections 15.1 or 15.2. The changes are to non-safety related, non-1E components. Failure of replacement gasket or integrity of seal weld or bolt could lead to condensate/steam leaks at the foundation area but would not impact safe secondary side operation. There is no change to the FMEA of Table 10.4.7-1.

2. The changes do not affect the reliability of the heater drain pumps. The changes are made to reduce the possibility of condensate leakage from the non-safety related heater drain system. This is based on a review of FSAR sections 15.1 and 15.2. There is no change to FMEA Table 10.4.7-1.

3. Based on review of the Bases for Technical Specifications B 3/4.7 the changes have no effect of margin of safety.

89-V1N0059

This design change: (a) Replaces the welded end caps of spare penetrations (#5, 55 and 90 located in the containment building) with bolted blind flanges, (b) Adds flange "fixtures" during Mode 5 and/or Mode 6 for outage related work activities which require containment penetration. The flange "fixtures" will replace the blind flanges for the insertion of eddy current, sludge lancing

& ISI equipment during a Unit 1 outage. The outage "fixture" is made-up of a flange plate with threaded sleeve ports. These sleeve ports allow access for cables and connection points for lead-in hoses during outage related work.

1. This change (a) does not increase the probability of occurrence or consequences of the malfunction of any equipment or components assumed to function in the accident analyzed in the FSAR including those of Sections 3, 6, 9 or 15 or FSAR. The design criteria, analytical methods and construction procedures for these penetrations are the same as those used for other mechanical penetrations. Thus, there is no impact on the integrity of the containment liner plate fission product barrier. This design change (b) meets the intent of FSAR chapters 6.2.4.1 (Containment Isolation), 15.7.4 (Fuel Handling Accident) and GL 88-17 (Loss of Decay Heat Removal) in that the outage "fixtures" prevent the direct communication of the containment environment with the outside environment under the postulated conditions of a refueling accident. Therefore, this change does not increase the probability of occurrence or consequences of the malfunction of any equipment or components assumed to function in the accident analyzed in the FSAR including those in sections 3, 6, 9 or 15 of the FSAR. The "fixture" being installed is considered temporary, and will only be installed when the plant is in Mode 5 (cold shutdown) or 6 (Refueling). It will only have to perform its design funciton under the worst case conditions of a refueling accident and GL 88-17, which does not postulate containment pressurization. This "fixture" does not have to be designed to function for other postulated design basis Accidents. Therefore, this fixture does not have to be designed, fabricated, or installed to the ASME Section III, Class 2, requirements of the penetration. A seismic evaluation has been

performed to insure that the structural integrity of the penetration (and "fixture") is maintained during a Design Basis Earthquake. Thus, there is no impact on the integrity of the containment liner plate fission product barrier.

2. This design change for the modified condition of the penetrations maintains a boundary that will prevent the exchange of the containment environment with the outside environment under postulated refueling accident conditions. The modified penetrations meets the intent of all applicable Technical Specifications under normal and postulated refueling accident conditions as defined in the FSAR. This change does not impact any system, equipment or component's function or operation and based on a review of FSAR sections 3,6, 9 and 15 would not create the possibility of an unanalyzed or undescribed accident or equipment/component malfunction.

3. After testing of the penetrations in accordance with the LLRT procedures, the new configuration will meet the currently existing basis for containment leakage. This design change maintains the containment penetration in a condition that will prevent the direct communication of the containment environment with the outside environment in accordance with the bases for Technical Specifications 3/4.9.4 for normal and postulated refueling accident conditions during core alterations. Therefore, these changes impact do not affect safety margin defined by the bases of Technical Specification 3/4.6.1 and 3/4.6.2.

89-V1N0070 This modification strengthens the left bank intercooler plenums for both A & B train diesel generators. These plenums, which supply combustion air to the diesel engines, are modified by attaching external ribbing arranged to complement

the existing stiffening schemes and by improving the internal vane attachment to the shell. In addition, a 1/2" coupling is added to facilitate inspection in accordance with Delaval instructions in SIM-365, Rev. 2.

1. This modification only involves the diesel generator intercooler plenums and does not degrade the function of the diesel generator or any other equipment or component. Therefore, it will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR section 15.

2. The proposed modification reinforces existing intercooler plenums by attaching external ribbing and improves the internal air vane attachment to the shell. It does not affect the operation of diesel generators in any way. Therefore, it can not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The proposed modification does not decrease the margin of safety defined by the bases of the Technical Specifications, sections 3.0/4.0.

89-V1N0072

Remove the undervoltage trip function of the CVQ relays for the non-1E 13.8KV and 4.16KV switchgear. Motors fed from the non-1E 13.8KV switchgear buses 1NAA and 1NAB and 4.16KV switchgear buses 1NA01 and 1NA04 will no longer be tripped for undervoltage conditions. Annunication of undervoltage conditions will be retained. The removal of the trip functions will be accomplished by disconnecting jumper wires in each affected feeder breaker.

1. The removal of undervoltage and negative sequence trips for non-1E switchgear will not increase the probability of occurrence or consequences of an accident described in the FSAR including chapters 8 and 15.

The undervoltage relay trips being disconnected are part of the non-1E bus protective relaying and are separate from the reactor coolant pump motors' 1E breaker undervoltage and underfrequency relays as discussed in the FSAR section 15.3. Removal of the trips will enhance the function of the RCP's undervoltage relays by eliminating nuisance trips due to miscoordination between the non-1E and 1E undervoltage relays.

2. The undervoltage trips, which are to be removed, served two functions. The first was to load strip motors in the event of a dead bus. The second was to protect motors from damaging undervoltage conditions.

   The transformers feeding the buses affected by this DCP (1NAA, 1NAB, 1NA01 & 1NA04) are not capable of starting all motor loads connected to the bus at the same time. Therefore, in the event of a dead bus, the operator will be required to strip the motor loads before the bus is re-energized.

   The probability of the station service voltage being degraded to 90% or lower and remaining at that level long enough to damage motors is very low. The low voltage condition would probably be caused by a failure of a protective device to clear a fault. Backup protection should clear the fault before motors are damaged by undervoltage. Tripping of critical motors (RCP) during this period could result in an unnecessary unit trip. The 1E switchgear buses are not affected by this change.

3. The margin of safety as described by the bases for Technical Specification 3/4.8 is not decreased by this change.

89-V1N0074

The breathing air system supplies breathing air to containment workers during refueling outages. It is class 626 except at the containment penetration which is class 212. This DCP will accomplish the following:

1. Extend and enlarge breathing air header supply piping. All header pipe to be 1 1/2". Remove filters and existing bottle supply system. Add electrical power supply. Portable compressor to be located outside at the east end of the Auxiliary Building at Main Steam Tunnel 1T1.

2. Delete control room annunciation.

3. Containment isolation valve, 1-2401-U4-211 will be replaced with a 1 1/2" equivalent valve.

2. The Breathing Air System does not interface with any equipment assumed to function in accidents analyzed in the FSAR and is not essential for the response to any accidents analyzed in the FSAR. (Chapters 9.3.1 and 15.0 reviewed)

3. This change does not create the possibility of an accident which could jeopardize the reactor coolant pressure boundary or the health and safety of the public. Only moderate energy lines are being added to the Aux./Cont. Bldgs. Pipe hangers will be seismically analyzed and the piping will be supported such that it cannot fall and damage any equipment or components assumed to function in accidents. The rotary compressor (a possible missile source) is located outside the Auxiliary Building and cannot fail in such a way as to damage safety related equipment. Containment isolation will not be changed by this proposed change.

3. The Breathing Air System is not discussed in the Technical Specification. However, section 3.6.3 states that containment isolation valves shall be operable. Therefore, valve 1-2401-U4-211 will not be changed until after plant shutdown, and the original design, QA, and operability requirements will be met by the new larger valve.

89-VCN0086

This DCP involves replacing the Lovejoy motor controller and its associated components on the the common fuel handling machine (A-2203-R6-002) with a Veearc Super 7000 controller and associated components. The main difference between the controllers is that the motor speed for the Veearc can be set digitally, whereas the Lovejoy is set in an analog manner. Also included in this change is the replacement and addition of relays associated with the new controller.

1. This change involves the replacement of the motor controller on the fuel handling machine. DC-1010, Rev. 5, identifies the fuel handling machine as a safety-related, seismic category 1 mechanical system. However, the fuel handling machine does not constitute part of the protection system and it is not specified as electrical class 1E. FSAR section 15.7.4 addresses accidents involving the fuel handling machine. This change will occur during normal reactor operation during which time the fuel handling machine is not in use. Therefore, this change does not increase the probability of occurrence of malfunction of any equipment assumed to function in an accident.

2. This change involves replacing the fuel handling machine motor controller to improve reliability and maintainability of the machine. The new controller is functionally similar to the original one and it does not degrade the performance of the machine. Also, it does not impact the fuel handling accident analyses or the operation of safety-related equipment as described in the FSAR.

Therefore, this change does not create the possibility of an accident not already described in the FSAR. Sections 9.1.4 and 15.0 were reviewed.

3. The replacement of the motor controller on the fuel handling machine has no effect on the margin of safety defined by the bases of the Technical Specifications.

89-V1N0089

The proposed change will replace the bolted blind flange on the LLRT Test Connections with a 3/8" globe valve and a threaded cap. The test connections are used to perform local leak rate testing of the containment isolation valves associated with penetrations 2[illegible] 67A, and 67B. The design is in accordance w[illegible] the requirements of General Note 13.h of the Piping Material Classification (Doc. # AX4DR001, Rev. 19). The isolation provisions for each test connection will consist of two globe valves in series versus the current design of a globe valve and a blind flange. Four of the test connections are project class 212 and are part of the Reactor Coolant System. The remaining six are project class 424 and are part of the Nuclear Sampling System. Several of these valves interface with the Post Accident Sampling System.

1. Replacing the LLRT test connection blind flange with a second valve is in accordance with the approved design given in document AX4DR001. The change does not affect any equipment or component assumed to function in accidents analyzed in the FSAR. Criteria for leak testing in 10CFR50 App. A, GDC 54, is satisfied.. Operation of the Reactor Coolant System, Post-Accident Sampling System and the Nuclear Sampling System is not affected by the change. Furthermore, the ability to perform the LLRT is enhanced. Therefore, the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR is not increased.

2. The change is in accordance with existing approved design requirements. Implementation of the modification will be in accordance with existing plant approved specifications and procedures. The worst case accident would be a breach of the Reactor Coolant System pressure boundary which is analyzed in the FSAR section 15.6.2 and bounds this change. The modifications required by this DCP do not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The modifications required by this DCP are to be implemented in accordance with plant approved specifications and procedures. The modifications required by this DCP will be completed in accordance with the Design Criteria and the Codes and Standards applicable to VEGP. In addition, applicable Technical Specifications (section 3/4.6.1.2 and 3/4.4.6.2), including the associated basis, have been reviewed and determined not to be affected by this change. Therefore, the modifications required by this DCP do not decrease the margin of safety defined by the bases in the Technical Specification.

89-V2E0091

The main turbine high exhaust hood temperature trip feature is to be converted to a high-high temperature alarm. This will be accomplished by deleting internal wiring to the EHC cabinet connecting the exhaust hood temperature sensors (TSH-6417, 6420, 6423) to the 125 VDC trip bus. The temperature sensor inputs to the EHC cabinet will be re-connected directly to the high high temperature alarm and computer output of the EHC cabinet. The annunciator window reading "Exhaust hood hi-hi temperature turbine trip" will be changed to read "Exhaust hood hi-hi temperature". The computer alarm (Proteus) will be similarly revised.

1. The design change does not increase the probability of occurrence or consequences of the malfunction of any equipment (safety analyzed or otherwise) since the change is associated with a non-safety system which is not relied upon in any accident analysis or accident condition. There are several layers of protection for a high-high exhaust hood temperature condition. (1) Hood sprays (2) High temperature alarm (200 degrees fahrenheit) (3) Hood temperature indication on the main control board (4) Local hood temperature gauges (5) Low vacuum trip (2/3 logic). The addition of a high alarm (200 degrees fahrenheit) will give the operator sufficient final warning for a manual trip if necessary.

2. This design change does not create the possibility of an accident or malfunction of safety equipment or system not already described and analyzed in the FSAR. A back-up of turbine hood spray is provided. FSAR turbine missile analysis is based on low and high speeds of the turbine which is unrelated to exhaust hood temperature transients.

3. The proposed change will not affect the margin of safety defined in the Technical Specifications since the function is not addressed in sections 3/4.3.4 and 3/4.7.1 of the Technical Specification and is not relied upon in any accident analyses in chapter 15.

89-V1N0098

This change removes the protective ring from the Reactor Internals Lifting Device (1-2206-R6-001). Westinghouse Refueling Equipment Engineering Group was advised of this change request. Although they do not recommend the removal of the protective ring they do not prohibit its removal and non-use by the operating companies.

1. The protective ring is not for fuel protection and is not assumed to function during a refueling accident discussed in the FSAR section 15.7.4.

2. This does not create the possibility of an accident damaging the O-Rings because the possibility of damage has always been present. Inspection of the O-Ring surface for defects is done prior to vessel assembly per procedure 93240-C, "Reactor Vessel Assembly/Disassembly Instructions", section 4.21, "Head and O-Ring Installations".

3. This change does not decrease the margin of safety as defined in Technical Specification bases. This includes a review of section 3/4.9.

89-V1N0102

The following changes are being made in the Turbine EHC Panel (1-1615-Q5-EHC). The Valve Position Driver Boards which control the four Turbine Control Valves (1XV-6005, 6, 7, & 8), three Intercept Valves (1XV-6009, 10, & 11), and one Stop Valve (1XV-6002) are being modified. The modification consists of adding a jumper on the backplate of the board from test point TP5 to test point TP11 (ground). This jumper will disable the closing bias circuit. The purpose of the closing bias circuit was to cause the valves to go slowly closed if the control signal is lost.

1. The proposed change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. This includes a review of the following sections: 10.2, 15.1 and 15.2

2. The proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This includes a review of the following sections: 15.0.8, 15.1, and 15.2.

3. The proposed change does not decrease the margin of safety defined by the bases of the Technical Specifications. This include a review of the following sections: 2.2.1, 3/4.3.4.

89-VCN0108

This DCP provides for transfer of the power supply source to lighting transformer ANBA16X and distribution panel ANLP82, from MCC ANBA to MCC ANBS. Also, the power supply to the solenoid valves for River Make-Up pumps 003 & 004 and one Battery Room exhaust fan in the River Intake Structure Building are transfered from 120 VAC distribution panel ANYA1 to ANLP82 with the implementation of this DCP. This change requires lighting transformer ANBA16X to be re-numbered to ANBS03X and one new cable to be installed (from panel ANLP82 to JB6257) in existing raceway. All other cables are existing and are to be disconnected from their present power sources, re-numbered and reconnected at the new power source. One new conduit is also to be installed from panel ANLP82 to an existing tray.

1. The changes provided in the DCP are to be made to non-class 1E equipment/system. The operation and function of the affected components are not changed. There are no seismic or environmental concerns involved. The new cable used was procured as class 1E. The capability of MCC ANBS to feed the 45 kva lighting transformer ANBS03X has been evaluated and found acceptable. These changes will not introduce any new interfaces, or alter setpoints to any safety related equipment or system. Therefore, these changes do not increase the probability or occurrence or consequences of the malfunction of any equipment or component assumed to function in accident analyzed in the FSAR.

2. These changes enhance the availability of the river water make-up system which has no safety, environmental, or seismic concerns. These changes do not affect the function/operation of the equipment/system involved, nor will they affect the operation of any safety related equipment. Therefore, these changes do not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The DCP provides for changes to non-safety related equipment/system. There is no reduction to the margin of safety as defined in the bases for any Technical Specification involved.

89-V2E0111

This change adds a new floor drain to Auxiliary Building Room A99. The new drain piping will be routed to an existing drain located in Auxiliary Building Room B135. The drain discharges to the floor drain tank for eventual processing in the radwaste system.

1. The addition of the floor drain to Auxiliary Building Room A99 has no effect on the equipment or systems assumed to function in FSAR section 15.0 accident analyses. Therefore, the change will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accident analyzed in the FSAR.

2. The addition of the floor drain to Auxiliary Building Room A99 is enveloped by existing FSAR analyses, and therefore, will not create an accident or equipment/component malfunction not described and analyzed in the FSAR. Sections 9.3.3, 9A.2, 13.5 and 15.0 were reviewed.

3. The addition of the floor drain to Auxiliary Building Room A99 has no effect on the margin of safety as defined by the bases of the Technical Specifications.

89-V2E0113

The proposed change is the addition of a Gaitronics telephone/page wall mounted handset to Auxiliary Building Room #A103 and one wall mounted handset with speraker in the Fuel Handling Building Room #A01. The handset to be located in Room A101 will be powered from a handset on the floor below which will require a core drill and penetration seal.

The handset to the added in Room A103 will be powered from an existing amplifier located within the room. Based on the size of the room, no speaker will be required for the new handset since there is a speaker connected to the existing amplifier.

1. The proposed change to plant communications does not affect any equipment or component which is assumed to function during an accident analyzed in FSAR section 15.

2. Since the communication system is non-safety related, the proposed change does not create a potential for accidents or equipment malfunctions as described in FSAR section 15.0 based on a review of FSAR sections 9.5.2, 9B-69 and 15.

3. The addition of telephone/page handsets will not affect the margin of safety defined by Section B3/4.9.5 which addresses having proper communications during re-fueling. This requirement is satisfied by the soundpowered phones as referenced in FSAR 9B-69.

89-VCN0115

This design change package provides permanent electrical power feeders for use during the Unit 1 outages. These power feeders are all 480 volt, 3 phase feeders and the source and rating are as follows. One 100 amp service will be provided from load center 1NB02 to the alley between the Turbine and Control Buildings. Second, a 400 amp feeder from load center 1NB12 will service Level 3 (Turbine Deck) of the Turbine Building. Third, a 600 amp supply will be fed from load center ANB06A to an area outside the Demineralizer Building on the south west corner. Because this load center has a tie-through breaker to ANB06B, interlocks have been provided to prevent simultaneous operation of the outage feeder and the tie-through breaker, thus overload of either switchgear transformer is prevented. Last, two

separate 230 amp services will be provided on Level 1 of the Containment Building. Two services were required since the Electric Penetration Assemblies (E.P.A) were only rated at 355 amps for the Low Voltage Penetrations. Three of the existing 500 MCM feedthrough conductors are being upgraded from 258 amps to 355 amps to supply the continuous rated current required. All of these power supplies are non-1E and are fed from non-1E sources.

1. The Containment Building feeders are not required during reactor operation. The terminations to the EPA will be performed using prequalified terminations and insulating materials in accordance with FSAR section 8.3.1.1.12. There is no addition of aluminum. Raceways to be added in the Containment Building will be rigid steel and will be constructed in accordance with construction specification X3AR01 E.8 to provide the proper train separations. Also, these raceways and disconnects will be supported per applicable seismic category 1 criteria. The design of these feeders is such that series redundant overcurrent protection is provided by 480 volt breakers 1NB0902. Although three of the E.P.A. feedthrough conductor ampacity ratings were increased from 258 amps to 355 amps, calculations have been performed to analyze this configuration which have been performed, reviewed and approved by Conax Corp. (vendor). The E.P.A.s have been previously qualified to IEEE 317 - 1976 and Specification, X3AB03. Thus, because the original design criteria is being met by this proposed design change, there is no increase in the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. This includes a review of FSAR sections 6.4, 8.3, and 15.

2. Based on a review of FSAR chapter 15, the proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This included review of section 15A.2.1, "Accident Release Pathways", for which the Electric Penetration Assemblies are not listed. The containment feeders are not required during reactor operation and the E.P.A.s are qualified per IEEE 317, 1976 and Specification X3AB03.

3. Revision is made to FSAR section 16.3 Technical Specification improvement program which will include the additional load center 1NB09 breakers into Table 16.3-5, and thereby assure periodic testing of these containment penetration conductor overcurrent devices. Therefore there is no decrease in the margin of safety defined by the bases of the Technical Specifications, including the bases to Technical Specification section 3/4.8.4.

89-V1N0117

The proposed change is an addition of a Gaitronics telephone/page wall mounted handset to Auxiliary Building Room #C106 near the steam generator blowdown panel. This is an extension of the existing system such that the additional handset will be powered from an existing speaker amplifier (A05) located in the adjacent room #C105. The additional telephone/page equipment and raceway are seismic category 2 equipment which will be installed in a seismic category 2/1 area and supported to seismic category 1 criteria. Per FSAR section 9.5.2.1, the communications system is non-safety related and serves no safety function.

1. The change to plant communications does not affect any equipment or component which is assumed to function during an accident analyzed in FSAR section 15. However, only seismic category 1 support design will be used in the support of raceways during implementation of this design. Therefore, there are no seismic category 2/1 concerns.

2. Since the communications system is non-safety related, and this change is seismically supported and electrically separated per FSAR 8.3, and passes through a penetration which is not required to be sealed, the proposed change does not create a potential for accidents or equipment malfunctions not already described in FSAR section 15.0, based on a review of the FSAR including sections 8.3, 9.5.2, 9B-69 and 15.

3. The addition of telephone/page handsets will not affect the margin of safety defined by Technical Specification section B3/4.9.5, which addresses having proper communications during re-fueling. This requirement is satisfied by the soundpowered phones as referenced in FSAR 9B-69.

89-V2N0119

The change will replace the existing distribution class arresters with intermediate class arresters for non-class 1E transformers. Surge arresters provide electrical insulation protection due to switching impulses generated in the operation of the electrical system. The lower switching surge rating of the replacement arresters will provide an increased margin of protection against switching surges and consequently increase the reliability of the transformers.

1. The change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. The proposed change will involve only non-1E transformers. The transformers and the loads supplied from these transformers are not required to function for accident mitigation or for safe shutdown. The loss of any non-1E transformer is bounded by the Loss of Non-emergency AC power to the Plant Auxiliaries analysis. This includes a review of FSAR sections 8.3.1 and 15.0, specifically sections 15.2.6 and 15.0.8.

2. The change does not create the possibility of an accident or equipment or component malfunction not described and analyzed in the FSAR. The change involves changes to non-1E transformers. The consequences of failure of these transformers is bounded by the Loss of Non-emergency AC power to the Plant Auxiliaries analysis. This includes a review of FSAR sections 8.3 and 15.0 specifically section 15.2.6 and 15.0.8.

3. The change does not decrease the margin of safety defined by the bases of the Technical Specifications. The change involves only non-1E transformers. These transformers do not supply safety related equipment required for safe shutdown or mitigation and control of accident conditions. This includes a review of Technical Specification bases 3/4.8.

89-V1N0220

This DCP corrects a wiring error so that the Local Suppression Indicating Panel 1-2301-Q3-F013 can transmit a trouble signal to the fire protection console in the control room. This will be accomplished by relocating conductors at panel 1-2301-Q3-F013 from TB1-23 to TB1-24 and from TB1-22 to TB1-23.

1. The change is inside a non-1E panel and does not affect the probability of occurrence or consequences of a malfunction of any safety related equipment or component assumed to function in accidents analyzed in the FSAR. The wiring change reflects the design as described in FSAR sections 9.5.1.2.2, Table 9.5.1-9 (NFPA 72D-1979), and 9B.C.6.C(2), and agrees with vendor design document 1X4AX03-5041.

2. Relocating of the existing conductors at the terminal block inside Local Suppression Indicating Panel to agree with design intent does not create the possibility of an accident or equipment/ component malfunction not described and analyzed in the FSAR.

3. This change will maintain the safety margin defined in the Technical Specification bases for systems and components associated with the affected fire zones because the modification does not change the operability or design of these systems and components.

89-V2N0287

This DCP involves replacing the Lovejoy motor controller and its associated components on the Unit 2 Sigma Refueling Machine (2-2101-R6-003) with a Veearc Super 7000 controller, a joystick power supply and associated components. Also included in this change is the addition of a fault relay. The main difference between the controllers is that the motor speed for the Veearc can be set digitally, whereas the Lovejoy is set in an analog manner.

1. This change involves the replacement of the motor controller on the Unit 2 Sigma Refueling Machine. DC-1010, Rev. 5 identifies the refueling machine as a non-safety related, seismic category 2 mechanical system. The refueling machine does not constitute part of the protection system and it is not specified as electrical class 1E. FSAR section 15.7.4 addresses accidents involving the refueling machine. This change will occur during the first refueling outage after core loading verification. Therefore, this change does not increase the probability of occurrence or consequences of a malfunction of any equipment assumed to function in an accident.

2. This change involves replacing the Unit 2 Sigma Refueling Machine motor controller to improve reliability and maintainability of the machine. The new controller is functionally similar to the original one and it does not degrade the performance of the machine. Also, it does not impact the fuel handling accident analyses or the operation of safety-related equipment as described in the FSAR. Therefore, this change does not create the possibility of an accident or equipment/component malfunction not already described in the FSAR. Sections 9.1.4 and 15.0 were reviewed.

3. The replacement of the motor controller on the Refueling Machine has no effect on the margin of safety defined by the bases of the Technical Specifications, section 3/4.9.6.

89-V1N0290

This DCP contains two basic modifications to the Extraction Steam check valves. The first change is to add packing leakoff drains. These leakoff drains will be piped to the existing, normally closed, drain lines for the Extraction Steam drain pots. The second modification is the welding of the disc nut to the disc stem. Valves which will be modified are UV-4112, UV-4113, UV-4114, UV-4115, UV-4112, UV-4113, UV-4132, UV-4133, and UV-4134. These valves are located in the Extraction Steam supply lines to the number 6A & 6B, 5A & 5B, 4A & 4B, and 3A, 3B, & 3C feedwater heaters. The Extraction Steam System (1303) is described in the FSAR section 10.1 and 10.2, and has no safety design basis. Valves are project class 424, Seismic Category 2.

1. This change does not affect the probability of occurrence or consequences of a malfunction of any equipment assumed to function in the accident analyses in FSAR Chapter 15. This change is to a non-safety related system (1303), whose failure will not impact any safety related equipment, or compromise the ability of the facility to effect a safe shutdown. This is based on a review of FSAR sections 10.1, 10.2, and 15.0.

2. This change does not affect the operation or function of any component. It will not, based on review of FSAR sections 10.1, 10.2, and 15.0, create the possibility of an accident or component malfunction not described and analyzed in the FSAR.

3. This change does not affect the operation of the system or any component of the system. This change is to system 1303 which, based on review of the Technical Specifications, FSAR sections 10.1, and DC-1303, has no safety design basis and is not required or assumed to function in the event of an accident. There is, therefore, no decrease in the margin of safety and the Technical Specifications do not require any change.

89-V1E0302

The following cable terminations are to be lifted and taped in the control room annunciator cabinets: 1NCPWEPVA, ANKUAVW, 1NCBEM2A1VA, 1NCBEM2A1VB, 1NCBEM2A1VC, 1NCBEM1A1VT, and ANCPREPVA. Annunciator window tiles ALB54F01, ALB60C04, ALB60C05, ALB60C06, ALB60D06, ALB60E06, ALB63B06, and ALB63C06 will be replaced with blank tiles. The cables and annunciator windows are related to the radwaste facility and the recycle and waste evaporators. The annunciator system is safety class 61J.

1. The change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR since the affected systems are not in operation. This includes a review of chapter 15, Section 11.2.

2. The change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR since the affected systems are not in operation. This includes a review of chapter 15, Section 11.2.

3. The change does not decrease the margin of safety defined by the bases of the Technical Specifications. This includes a review of the Technical Specification bases including the bases to the following sections: 3/4.11.1, 3/4.11.3, 6.12, 6.14.

89-V1N0306

This design change revises the existing hydraulic pump and thermal relief valves (1-PSV-3006AH & BH, 1-PSV-3016AH & BH, 1-PSV-3026AH & BH and 1-PSV-3036AH & B). The thermal relief valves setpoint will be increased to 4,350 psig, and the pneumatic pressure regulator will be set to correspond to a hydraulic fluid pressure of 3,650 psig. This will eliminate the overlap of the

hydraulic air pump stall pressure of 3,960 psi and the relief valve reseat pressure of 3,511 psi. The new setpoints will achieve a hydraulic air pump stall pressure (plus gauge accuracy) of 3,700 psig and a relief valve reseat pressure of 3,726 psi.

1. Revising the setpoint of the thermal relief valve and the hydraulic pump on the MSIV actuators will not increase the probability of occurrence or consequences of the malfunciton of any equipment or component assumed to function in accidents analyzed in the FSAR, because the fast closure ability of the MSIV's will not be adversely affected. This included a review of FSAR section 10.3, FSAR table 10.3.3.1 (Main Steam System - Failure Modes and Effects Analyses), and FSAR section 15 (Accident Analyses).

2. Revising these set points will not create the possibility of an accident or equipment/component malfuntion not described and analyzed in the FSAR and does not affect the health or safety to the public. This was based on a review of the FSAR, including sections 6.2 (Essential - Containment Systems), 7.3.8 (ESFS - Main Steam and Feedwater Isolation), and FSAR table 10.3.3.1, and FSAR chapter 15.

3. Revision of these set points does not adversely affect the MSIV's, or any other system function, operation or response. Therefore, there is no decrease in the margin of safety defined by the bases of the Technical Specifications. This included a review of Technical Specification 3/4.7.1.5 and its bases.

89-V1N0307

The change is the addition of a Gaitronics telephone/page wall mounted handset to Auxiliary Building Room #A09 and one wall mounted handset with speaker in the Fuel Handling Room #A10. The handset to be located in Room A10 will be powered from a handset on the floor below, which will require a core drill and penetration seal.

The existing speaker amplifiers in Room A09 will be replaced will a wall mounted handset which will be relocated to an area near the Reactor Coolant Pump (R.C.P.)seal injection valves. These additional telephone/page handsets are category 2 equipment which will be supported per seismic category 1 criteria, along with all associated raceways. Per FSAR section 9.5.2.1, the communications system is related and serves no safety function.

1. The change to plant communications does not affect any equipment or component which is assumed to function during an accident analyzed in FSAR section 15. Both the communications equipment and associated raceway will be installed to seismic category 1 criteria such that there are no seismic category 2 over 1 concerns. Also, per construction specification X3AR01- E.8.7.A, the raceway supports shall be designed to seismic category 1 criteria.

2. Since the communications system is non-safety related, the change does not create a potential for accidents or equipment malfunctions as described in FSAR section 15.0, based on a review of FSAR sections 9.5.2, 9B-69 & 15.

3. The addition of telephone/page handsets will not affect the margin of safety defined by section B3/4.9.5, which addresses having proper communications during re-fueling. This requirement is satisfied by the soundpowered phones as referenced in FSAR 9B-69.

89-V2N0308

This DCP removes the undervoltage trip function of the CVQ relays for the non-1E 13.8KV and 4.16KV switchgear. Motors fed directly from the non-1E 13.8KV switchgear buses 1NAA and 1NAB and 4.16KV switchgear buses 1NA01 and 1NA04 will no longer be tripped for undervoltage conditions. Annunciation of undervoltage conditions will be retained.

Disable the undervoltage trips for motors fed directly from non-1E 480V switchgear buses except buses 2NB01 and 2NB10 which are supplied from 1E buses.

1. This change has no effect on any accident described in the FSAR. (Based on a review of FSAR chapters 8 and 15.) The motors affected by this change, with the exception of the RCP motors which have 1E undervoltage protection, are non-1E and are not included in the analysis.

2. The undervoltage trips, which are to be removed, served two functions. The first was to strip motors in the event of a dead bus. The second was to protect motors from damaging undervoltage conditions. The transformers feeding the 13.8KV, 4.16KV and 480V buses affected by this DCP are not capable of starting all motor loads connected to the bus at the same time. Therefore, in the event of a dead bus, the operator will be required to strip the motor loads before the bus is (re)energized. Some of the 480V buses which only feed one or two motors may not require load stripping before (re)energization. The probability of the station service voltage being degraded to 90% or lower and remaining at that level long enough to damage motors is very low. The low voltage condition would probably be caused by a failure of a protective device to clear a fault. Backup protection should clear the fault before motors are damaged by undervoltage. Tripping of critical motors (RCPs) during this period could result in an unnecessary unit trip. The 1E switchgear buses are not affected by this change.

3. The margin of safety as described by the bases for Technical Specification 3/4.8 is not decreased by this change. No changes to safety related equipment or the function of safety related equipment is made by this DCP. In addition, the bases for the containment penetration conductor overcurrent protection devices discussed in 3/4.8.4.1 and safety related motor operated valves thermal overload protection discussed in 3/4.8.4.2 are both unaffected by these changes.

89-V2N00310

This DCP will remove the existing 4" 90 degree elbow on the river water make-up lines to the NSCW Towers, upstream of valves 21402U4013 and 21402U4015 for Trains A and B, respectively, and replace them with a 4" tee. A 4" gate valve will be welded to the tee with a flange on the downstream side of the valve and a 2" reducing flange with a threaded cap on the 2" nipple. The project class for the piping system is 626. The chemical injection will be provided by the plant using portable equipment. The chemicals will be existing chemicals presently used by the plant.

1. The river water make-up pipe is non-safety related and no failure of the make-up pipe caused by this modification would result in a malfunction of any equipment or component assumed to function in any accident analyzed in the FSAR. This includes a review of sections 2.4.11, 9.2.1, 9.2.5, 10.4.5 and 15.

2. The river water make-up pipe is non-safety related and this modification does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This includes a review of FSAR sections 2.4.11, 9.2.1, 9.2.5, 10.4.5 and 15.

3. This change is to provide a chemical injection point and flush point to the make-up piping from the river water to the NSCW System and does not decrease the margin of safety defined by the bases of the Technical Specifications. This includes a review of Technical Specifications sections B 3/4.7.4 and B 3/4.7.5.

89-V1E0315

This DCP determinates leads K and K1 from switches 1ZS-17801, -17802, -17803, -17804 at junction boxes 1NRJB4831 and 1NRJB4835. These leads come from position switches on the doors of the RHR Train A & B pump rooms and the containment spray Train A & B pump rooms. The purpose of the switches is to alert the control room operator of the status of the watertight doors via annunciator window ALB61F06, "Level D leak detection", and the position status lights on the misc. system equipment panel ZLB-12.

Leads K and K1 are for the input to the annunciator window. Lifting and taping back the K and K1 leads will eliminate the door inputs to the annunciator window and retain the status lights on the misc. systems equipment panel 1-1605-Q5-PCP (QPCP). These switches and the annunciator system are not safety related.

1. Removal of the door inputs to the annunciator window does not affect the accident mitigating equipment assumed to function in FSAR sections 3, 5, 6, 9, and 15. This included review of Appendix 3F. The RHR and containment spray system operation is not affected and the pump room doors will continue to be maintained closed.

2. Removal of the door inputs to the annunicator window will not create the possibility of an accident or malfunction not described and analyzed in the FSAR including sections 3, 5, 6, 9, and 15 as discussed above.

3. The door inputs to the annunciator window has no affect on the margin of safety defined by the Technical Specifications bases, including bases B 3/4.4.6, B 3/4.5, and B 3/4.6.2. The doors will be maintained closed, so the requirements of fire protection, flooding, post-loca recirculation filter system and redundancy will be maintained.

89-V2E0316

This DCP determinates leads K and K1 from switches 2ZS-17801, -17802, -17803, and -17804 at junction boxes 2NEJB4831 and 2NRJB4835. These leads come from position switches on the doors of the RHR Train A & B pump rooms and the containment spray Train A & B pump rooms. The purpose of the switches is to alert the control room operator of the status of the watertight doors via annunciator window ALB61F06, "Level D leak detection", and the position status lights on the misc. systems equipment panel 2LB-12. Leads K and K1 are for the input to the annunciator window. Lifting and taping back the K and K1 leads will eliminate the door inputs to the annunciator window and retain

the status lights on the miscellaneous systems equipment panel 2-1605-Q5-PCP (QPCP). These switches and the annunciator system are not safety related.

1. Removal of the door inputs to the annunicator window does not affect any accident mitigating equipment assumed to function in FSAR sections 3, 5, 6, 9, and 15. This included review of Appendix 3F. The RHR and containment spray system operation is not affected and the pump room doors will continue to be maintained closed.

2. Removal of the door inputs to the annunciator window will not create the possibility of an accident or malfunction not described and analyzed in the FSAR including sections 3, 5, 6. 9 and 15 as discussed above.

3. The door inputs to the annunciator window has no affect on the margin of safety defined by the Technical Specifications bases, including bases B 3/4.4.6, B 3/4.5, and B 3/4.6.2. The doors will be maintained closed, so the requirements of fire protection, flooding, post-loca recirculation filter system and redundancy will be maintained.

89-[illegible]N0322

This design change modifies the containment spray flow indication circuit from a square log function to a linear function. This design change requires the modification of existing hardware currently shown on 2X6AU01-451, Rev. 8. This DCP routes the analog input signal to the RPU associated with the PSMS computer through the new NLP1 card instead of the existing NQP1 card. However, no change is made to the signal, i.e.; both cards are 61J and the 1-5 VDC signal is still proportional to NaOH delta-p. There is no change to the PSMS. The PSMS is a safety-related post-accident information processing system. This change will correct HED 1148, identified during the control room design review, which addresses a problem with reading the containment spray additive flow on existing

indicator 2FI-930. Linearizing the flow signal and replacing the indicator with a 0-10 VDC linear scale indicator will provide a more accurate and discernible indicator reading for verifying the proper NaOH flow.

1. The square root function card (NMD1) and the power supply card (NLP1) are 6IJ cards in the non-safety related cabinet 2-1604-Q5-PC3. This change complies with IEEE 279 which requires that this indicator modification for the spray additive tank eductor flow not affect the function or operation of any process instrumentation protection system function. The installation of the circuit cards will be per the physical separation criteria of IEEE 279 and 384. Therefore, this design change does not increase the occurrence or consequences of the malfunction of any equipment/components assumed to function in a accidents analyzed in the FSAR. This loop is utilized for indication only and has no control function.

2. This change linearizes the containment spray additive tank eductor flow signal. The signal is used for control room indication only and does not have any control function which could interact with equipment/components or cause any accident. The integrity of the containment spray indication function is not degraded by this modification. The qualification of the control room panel and the 7300 panels is not adversely affected. Electrical separation and seismic mounting are maintained. Therefore, this proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. Technical Specification bases, particularly B 3/4.6.2, are not affected by this change to the containment spray additive tank eductor flow signal. This signal is used for indication only and does not alter the flow rates, system performance criteria or other assumptions made in the radiological assessments presented in the FSAR.

89-V1N0323

Increase the setpoint on hydraulic pump start pressure switch (41A) from 1500 + 25 psi to 2000 + 25 psi on valves 1-PV-3000, 3010, 3020 and 3030. These valves are in the main steam line atmospheric relief valves (ARV's) which are project class 212 and required for safe shutdown from the hot standby mode. The pressure relief setpoint of the valve is not being changed, only the hydraulic pump start pressure.

1. This setpoint change will change the ARV accumulator pressure range from 1500-2500 psi to 2000-2500 psi. The smaller delta-p has a positive effect on the fatigue life of the accumulator, but has no effect on the maximum stress. The hydraulic pump and motor may cycle more frequently and therefore experience increased wear. However, the maximum pressure is unchanged. Vendor recommendation on hydraulic pump cycling is not changed. It therefore does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR including chapters 7.4, 10.3 and 15.

2. This design raises the low pressure setpoint in the ARV actuator. This does not adversely affect any other component in the valve and any other equipment with the possible exception of the hydraulic pump and motor due to increased cycling. However, the vendor recommendation on hydraulic pump cycling is not changed. It, therefore, does not increase the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. This change does not decrease the margin of safety as defined in the Technical Specification bases since the function and operation of the valve is not changed. This includes a review of the bases in sections 3/4.3 and 3/4.7.

89-V2N0324

This DCP increases setpoint on hydraulic pump start pressure switch (41A) from 1500 +25 psi to 2000 + 25 psi on valves 2-PV-3000, 3010, 3020 and 3030. These valves are the main steam line atmospheric relief valves (ARV's) which are project class 212 and required for safe shutdown from the hot standby mode. The pressure relief setpoint of the valve is not being changed, only the hydraulic pump start pressure.

1. This proposed setpoint change will change the ARV accumulator pressure range from 1500-2500 psi to 2000-2500 psi. The smaller delta-p has a positive effect on the fatigue life of the accumulator, but has no effect on the maximum stress. The hydraulic pump and motor may cycle more frequently and therefore experience increased wear. However, the maximum pressure is unchanged. Vendor recommendation on hydraulic pump cycling is not changed. It, therefore, does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR including chapters 7.4, 10.3 and 15.

2. This design raises the low pressure setpoint in the ARV actuator. This does not adversely affect any other component in the valve or any other equipment with the possible exception of the hydraulic pump and motor due to increased cycling. However, the vendor recommendation on hydraulic pump cycling is not changed. It, therefore, does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. This change does not decrease the margin of safety as defined in the Technical Specification bases since the function and operation of the valve is not changed. This includes a review of the bases, sections 3/4.3 and 3/4.7.

89-V1N0326

This change involves connecting and removing lighting fixtures to/from the Normal or Essential lighting system. The Normal and Essential lighting system are both safety class 6, Seismic category 2, per table 3.2.2-1 in the FSAR and Design Criteria DC-1808.

1. This change does not affect safety systems, setpoints or other equipment or components assumed to function in accidents analyzed in the FSAR, including sections 8.3, 9.5.3 and 15.

2. This change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR, including sections 8.3.1, 9.5.3, 15 and the Plant Security Plan. The fixtures are not mounted over any equipment or safety related conduit or cables.

3. The margin of safety as defined by the bases of the Technical Specification section 3/4.8 is not affected by this change.

89-V2N0327

These changes involve connecting lighting fixtures to the Normal lighting system. The Normal lighting system is safety class 6, Seismic category 2, per table 3.2.2-1 in the FSAR and Design Criteria DC-1808.

1. This change does not affect safety systems, setpoints or other equipment or components assumed to function in accidents analyzed in the FSAR, including sections 8.3, 9.5.3 and 15.

2. This change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR, including sections 8.3.1, 9.5.3, 15 and the Plant Security Plan. The fixtures are not mounted over any equipment or safety related conduit or cables.

3. The margin of safety as defined by the bases of the Technical Specification section 3/4.8 is not affected by this change.

90-V1N0015

This modification affects the electro-hydraulic actuators for the atmospheric relief valves (1PV-3000/3010/3020/3030). The modification involves the installation of a separate drain line from the valve port of the pilot-to-open check valve (285*) to the oil reservoir to eliminate pressure build-up downstream of the check valve.

To accomplish this, the existing [illegible] pilot-to-open check valve (item [illegible] 18* is removed, and new tubing, from [illegible] oil reservoir of the hydraulic power unit, [illegible] be installed. Connection for valve 18* is to be plugged. * - Vendor drawing item number

1. This modification improves the reliability of the ARV by eliminating the back pressure concern at the pilot port. All changes are made internal to the hydraulic actuator and no other safety related equipment or system is affected. Tubing added is safety-related. There is no change in the quanity of combustibles. All material/equipment used in this modification will meet original design requirements. Therefore, the change does not affect the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. This modification involves tubing internal to the ARV hydraulic actuator to improve the availability and reliability of the ARV. No other equipment or system will be involved in the proposed change. Following installation, testing will be performed to ensure operability of the valves after multiple stroking. Therefore, the proposed change will not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The change improves the reliability of the ARVs. Therefore, the margin of safety defined in Technical Specifications will not be decreased by the change.

90-V1N0033

A. It is proposed to delete the active valve status associated with valves 1LV-459 and 1LV-460. These valves are project class III.

The position of these valves is determined by their pilot solenoid valves project class 11J. This will be a paper change to change the solenoid valves project class from 11J to 62J, and will not affect the shell pressure boundary function of the valves and will not necessitate changes to plant hardware.

B. This design change proposed to move the speed control needle valves for valves 1LV-459 and 1LV-460. It also proposes to install check valves around the speed control valves to allow for quick opening of the process valves. The process valves (1LV-459 and 460) are project class 111. The solenoid valves are currently project class 11J but are being reclassified to project class 62J since item (A) above has determined that the solenoid valves are not required to perform a safety-related function. The sensing line was originally installed as project class 212 but is being reclassified as project class 424 based on the solenoid valve reclassification.

1. a. Historically, the LOCA-related accident analyses have assumed that the letdown isolation valves close, as designed. A failure of the letdown isolation valves to close was postulated and reviewed. This review included the potential for long-term loss of pressurizer heater function (due to uncovering the heaters) and also mass and energy releases from the Reactor Coolant System. This review concluded that these valves do not need to be assumed to close in an accident situation. This review is documented in the Revision 1 response to RER 88-0861 and Westinghouse letter GP-14369, dated March 31, 1989. Therefore, this change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accident analyzed in the FSAR.

b. This design change will improve the reliability of the letdown isolation valves and therefore will not increase the probability of malfunction of these valves. The consequences of malfunction are covered in (a) above.

2. a. During certain accident scenarios, the Pressurizer Relief Tank (PRT) rupture disks may open due to flow from the thermal relief valve on the letdown line inside Containment, should the letdown isolation valves not close. This has been reviewed and failure of the PRT rupture disks under these conditions is bounded by the existing plant safety analyses. Therefore, this change does not create the possibility of an accident or equipment/ component malfunction not described and analyzed in the FSAR.

b. If a check valve fails in the open position, the quick closure of the associated letdown isolation valve could cause water hammer or flashing to occur in the regenerative heat exchanger. The effects would be localized to the heat exchanger. Repeated water hammer or flashing in the heat exchanger may cause damage to the tubes. However, damage to the shell of heat exchanger is unlikely due its design for high pressure service. If a break were to occur at the heat exchanger, the consequences have already been analyzed as part of the high energy line break analyses and are acceptable. Since reactor coolant flows on both the shell side and tube side of this heat exchanger, a heat exchanger tube rupture would not be a breach of the reactor coolant pressure boundary or would radioisotopes carry over to other systems.

3. The letdown isolation valves provide a means of securing the normal clean-up, purification and inventory control flowpath. These valves are not operated by the Reactor Trip or Engineered Safety Features Actuation Systems (3/4.3.1 and 3/4.3.2). They are not required for high energy line break isolation (3/4.3.3.11), or containment isolation (3/4.6.3). The bases for establishing the RCS leakage requirements of section 3/4.4.6.2 are not impacted by the changes being made to these valves since the operators can determine any RCS inventory letdown through this flowpath. Therefore, the margin of safety defined for the bases of the Technical Specifications listed above is not decreased.

90-V1N0036

With the present design, if a leak or rupture were to occur in the turbine building instrument air supply, the turbine air header would isolate when the low instrument air pressure is sensed. This isolation action would assure that the primary plant had sufficient instrument air pressure to operate. This design change removes the automatic isolation valve function by removing actuator air supply, disconnecting power to the valve pilot solenoid, and eliminating one setpoint output from pressure switch 1PLS-19414. The instrument air header isolation valve will no longer isolate the turbine building supply header. However, the low air pressure alarm will remain operable to alert the operator.

1. The design change removes the automatic signal required to isolate the instrument air supply header. Valve function remains the same for the manual action. The instrument air system provides supply air to the safety related valves identified in FSAR Table 9.3.1-2. As specified in FSAR Section 9.3.1.3, pneumatically operated valves which are essential for safe shutdown and accident mitigation are designed to assume a fail safe

position upon loss of air pressure. Performance of the modification has no affect on the assumed failure position of these valves. The valve will continue to fail as designed during a postulated accident following implementation of this modification. Therefore, this change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. No new potential accidents are created as a result of this modification since no new failure modes are introduced. This change eliminates the possibility of spurious valve operation leading to unit trips. In addition, the worst scenario associated with this modification would result in failure to isolate the turbine building portion of the instrument air system following a line break downstream of the instrument air header isolation valve. This occurrence would result in reduced air supply to the safety-related pneumatic valves. However, as described in FSAR section 9.3.1.3, these valves fail in their fail safe position. Therefore, this modification does not create the possibility of an accident or equipment component malfunction not described and analyzed in the FSAR.

3. This modification will enhance the availability of the turbine building instrument air header and will provide the control room operator with annunciation should low air pressure exist within the instrument air header. Therefore, this modification does not reduce the margin of safety as defined in the bases of Technical Specifications.

90-V2N0037

If a leak or rupture occurred in the turbine building instrument air supply, the turbine air header is isolated when the low instrument air pressure is sensed. This isolation action assured that the primary plant had sufficient instrument air pressure to operate. This design change removes the automatic isolation valve function

by removing actuator air supply, disconnecting power to the valve pilot solenoid, and eliminating one set point output from pressure switch 2PSL-19414. The instrument air header isolation valve will no longer isolate the turbine building supply header. However, the low air pressure alarm will remain operable.

1. The design change removes the automatic signal required to isolate the instrument air supply header. Valve function remains the same for the manual action. The instrument air system provides supply air to the safety-related valves identified in FSAR Table 9.3.1-2. As specified in FSAR section 9.3.1.3, pneumatically operated valves which are essential for safe shutdown and accident mitigation are designed to assume a fail safe position upon loss of air pressure. Performance of the modification has no affect on the assumed failure position of these valves. The valves will continue to fail as designed during postulated accidents following implementation of this modification. Therefore, this change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. No new potential accidents are created as a result of this modification since no new failure modes are introduced. This change eliminates the possibility of spurious valve operation leading to unit trips. The worst scenario associated with this modification would result in failure to isolate the turbine building portion of the instrument air system following a line break downstream of the instrument air header isolation valve. This occurrence would result in reduced air supply to the safety related pneumatic valves.

   However, as described in FSAR section 9.3.1.3, these valves fail in their fail safe position. Therefore, this modification does not create the possibility of an accident or equipment component malfunction not described and analyzed in the FSAR.

3. This modification will enhance the availability of the turbine building instrument air header and will provide the control room operator with annunciation should low air pressure exist within the instrument air header. Therefore, this modification does not reduce the margin of safety as defined in the bases of Technical Specifications.

90-V2N0068

This DCP involves removal of the internal components of check valves 2-1592-U4-186 and 2-1592-U4-187 associated with the Unit 1 essential chilled water systems (Train A&B) as shown on P&ID 2X4DB221. The check valves and associated piping are project class 313.

1. Removal of the check valve internal components eliminates the original concern of possible damage to the valve components caused by disc oscillations in the present configuration. No new components are added to the check valves which could restrict the chilled water flow path. Since the chilled water flow is not impacted and backflow prevention is not required, there will be no increase in the probability of a malfunction of the essential chilled water system or any other equipment or components assumed to function in accidents analyzed in the FSAR. This includes a review of the FSAR, including sections 7.3, 9.2.9, 9.4 and 15.

2. The safety function and normal operation of the essential chilled water system is not impacted by eliminating backflow prevention. No new failures and/or accidents are created by the proposed valve modification. This is based on a review of the FSAR, including sections 7.3, 9.2.9, 9.4 and 15.

3. The essential chilled water system will continue to perform this function since removal of the check valve's internal components will have a negligible effect on the system flowrate and results in no change to the system operation. Therefore, this change does not decrease the margin of safety defined by the bases of the Technical Specifications, including section 3/4.7.11.

90-V1N0071

This DCP provides the an extended narrow range level tap on the loop 4 steam generator (1-1201-B6-004). The following design and construction work will be performed by Westinghouse in accordance with Field Change Notices (FCNs) GAEO-40524, 40525 and 40525A (Log Numbers 1X6AA19-20, 004 and 20, 005). This work will involve penetrating the secondary side of the steam generator below the transition cone. A new nozzle and root valve will be added and tubing will connect this tap to the low pressure side of a new differential pressure transmitter (1LT-10548). The high pressure side of 1LT-10548 will be connected to the drain valve on the high pressure sensing line of 1LT-548. 1LT-10548 will be mounted on the same floor stand with 1LT-548. 1LT-10548 will not be permanently wired.

1. The new level tap, additional piping and tubing connected to steam generator number 4 has been designed in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section III, subsection NB, NC, and NF. The margin of safety inherent in the use of this code is sufficient to ensure that the structural integrity of the steam generator pressure boundary is not reduced, compared to that of the original design. The existing steam generator instrumentation remains operable. The operation of the plant is not being changed by this DCP. All the existing setpoints, alarms, and trips will still be operable and are not affected by this change, with the exception of the PRT level alarm which will be disabled during power ascension. Annunciator Response Procedure 17012-1 states that no initial operator actions are required for this alarm. Since the PRT level will be indicated on the main control board, operation with the alarm disabled will have no adverse affect on plant safety. Instrument 1LT-10548 is connected to the high pressure sensing line of 1LT-548.

1LT-548 is used to monitor steam generator narrow range level in conjunction with the reactor control, reactor protection, and emergency safety features actuation systems. 1LT-10548 is seismically qualified to the same requirements as 1LT-548. The interconnecting tubing installation conforms to the ASME Section III, Class 2 code, which is the same class and code that the 1LT-548 installation conforms to. There is no electrical connection shared between the two devices. The accident analyses documented in FSAR sections 3.6, 6.2, 10.3 (Table 10.3.3-1), and 15 are not adversely impacted by this design change.

2. The data acquisition configuration changes the location of pressurizer relief tank (PRT) level indication on the main control board from 1LI-470 to 1LI-462. Also the PRT high/low alarm will be out of service. The operators will need to use a temporary data logger if RCS leak rate trending is required during the data acquisition period. Data will be collected during power ascension following the 1R2 refueling outage. The data collection is estimated to take less than 72 hours and the PRT level loop L-470 will be restored to its normal configuration as quickly as possible. The data acquisition configuration has been evaluated by operations personnel for impact. Based on these evaluations, this change will not create the possibility of an unanalyzed accident or equipment failure.

3. The bases for the Technical Specifications, including sections 2.2, 3/4.3, 3/4.4.5, 3/4.4.10 and 4.0.5, are not adversely impacted by this change. No safety limits, limiting safety system settings, reactor trip instrumentation, or essential instrumentation is adversely affected by this change and data acquisition process.

90-V2N0076
SEQ 2

This DCP involves the deletion of the main and auxiliary feedwater temperature monitoring system by deleting all system temperature indication, differential temperature indication, and differential temperature alarms from the main control board. The remaining system thermowells, temperature elements and cabling up to and including those boards (In the QBCP) associated with the temperature indications, will remain in place. All cards associated with differential temperature indications and the differential temperature alarms will be removed. If necessary, the temperature indication outputs can be utilized to derive backup plant calorimetric temperature data.

Currently, the main and auxiliary feedwater temperature monitoring system senses the line temperature at two separate points of both the main feedwater and auxiliary feedwater line upstream of the steam generators. These temperature sensors serve to detect the back leakage of steam and/or hot water from the steam generator into the feedwater lines. This temperature information is used to minimize the possibility of water hammer due to the introduction of cold feedwater should back leakage occur.

1. The Vogtle main and auxiliary feedwater system configuration (separate main and auxiliary feedwater lines, multiple in-line check valves, and pipe routing) and the S/G design minimize the potential for steam backleakage and therefore the potential for feedwater line water hammer. In addition, to compensate for the deletion the main and auxiliary feedwater temperature monitoring system, Westinghouse has recommended the implementation of additional feedwater system maintenance and

startup procedural changes. These maintenance and procedural changes, in conjunction with the feedwater system design, will serve to further preclude feedwater system water hammer conditions immediately upstream of the steam generators.

Deletion of the temperature indicators, differential temperature indicators, and differential temperature alarms from the main control board will have no effect on either main or auxiliary feedwater system operation. These temperature readouts were not employed in the performance of normal main or auxiliary feedwater system actions as other system readouts are available. In addition, these temperature readouts and alarms were not relied on to assess or perform auxiliary feedwater system operations during an accident. Westinghouse recommended operating procedural changes call for increased maintenance of those valves which prevent system backflow, and maintaining closer control of feedwater flow rates during those low power operations under which water hammer may occur. Therefore, their removal will not affect either the normal or emergency feedwater system operation.

Therefore, the deletion of the main and auxiliary feedwater temperature monitoring system will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. The feedwater temperature monitoring system is non-safety related and is utilized only during low power operations. Its deletion will therefore have no effect on the safety function of the auxiliary feedwater system.

Although the potential for feedwater system water hammer has not been entirely eliminated, the possible existence of conditions in the feedwater piping necessary for water hammer have been significantly reduced by a combination of feedwater piping configuration, steam generator design, and procedural changes. Therefore, the monitoring of the feedwater temperature adjacent to the steam generator is no longer required and the main and auxiliary feedwater temperature monitoring system can be deleted.

With or without the feedwater temperature monitoring system, the worst case design bases accident (loss of feedwater due to a line break) remains unchanged. Therefore, the proposed deletion of the main and auxiliary feedwater temperature monitoring system is enveloped by existing system accident analyses. The main control board (MCB) has been seismically qualified by Westinghouse. Removal of the temperature indicators and alarms from the MCB, along with their replacement covers, does not adversely affect the dynamic responses of the MCB and therefore has no impact on its seismic qualification.

Based on the above, the proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The plant Technical Specifications do not contain any specific references to main or auxiliary feedwater system start-up differential temperature limits at the steam generators. Despite the deletion of the main and auxiliary feedwater temperature monitoring systems, this change will not alter or reduce the ability of the auxiliary feedwater system to mitigate the consequences of the design basis loss of feedwater accident.

Relevant sections of the Technical Specifications (3/4.3 and 3/4.7) have been reviewed and there is no decrease in the margin of safety defined by the bases of the Technical Specifications.

90-V1N0077

This design change modifies the Unit 1 Natural Draft Cooling Tower by: (a) adding pipe extensions at the perimeter of the tower, (b) adding additional nozzles (256 locations) at the perimeter of the tower, (c) replacing nozzle assemblies at the flume bottoms with french sprayers, (d) replacing all remaining single-splashplate assemblies with sonic-welded double-splash plate nozzle assemblies (R-C type), (e) rearranging nozzle sizes to provide more water at the outer portions of the tower, reduced water loading in the center, (f) adding diverters (stainless steel angles) to improve entering flow to the distribution laterals in the first section of the flumes at the second and third risers, and (g) adding PVC fill at the perimeter and center of the tower.

1. The Circulating Water Cooling Towers are not assumed to function in an accident described in FSAR chapter 15 (Accident Analysis). Installation of the proposed change will not cause the malfunction of other equipment assumed to function.

2. This design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR which could affect the health and safety of the public. The Circulating Water Cooling Towers are not assumed to function during the limiting cases described in FSAR chapter 15 (Accident Analysis).

3. This design change is associated with system 1401 and does not decrease Technical Specification safety margins since it has no safety design bases. This is based on review of the Technical Specification bases, including section B 3/4.7.

90-V1E0082

Replace all bearings of heater drain pumps 1-1304-P4-001, 1-1304-P4-002 and the spare pump, with the new tri-land design bearings to eliminate vibration problems. Further, replace pump's discharge head/mounting flange present gasket with a new flexitallic gasket to prevent leakage problems. In addition, run a high pressure flush line from 2nd stage to bottom bearing of the pumps to prevent cavitation problem. The heater drain pumps are located in the turbine building and are project class 424.

1. The modifications are internal to the heater drain pumps. The pumps are non-safety related, and are not assumed to function during postulated accidents. No safety-related components will be compromised as a result of implementing the design change. This included a review of FSAR section 10.4.7, and chapter 15.

2. The modifications to the heater drain pumps will be performed in accordance with the design, material and quality standards applicable to the pump. The modifications are internal to the pump and will not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. Based on review of Technical Specification 3/4.7 and B 3/4.7, the changes have no effect on the margin of safety.

90-V2E0083

Replace all bearings of heater drain pumps 2-1304-P4-001 and 2-1304-P4-002 with the new tri-land design bearings to eliminate the vibration problems. Furthermore, replace pumps's discharge head/mounting flange present gasket with a new flexitallic gasket to prevent leakage problems. In addition, run a high pressure flush line from 2nd stage to the bottom bearings to improve lubrication and extend the life of the bearings. The heater drain pumps are located in the turbine building and are project class 424.

1. The modifications are internal to the heater drain pumps. The pumps are non-safety related, and are not assumed to function during postulated accidents. No safety-related components will be compromised as a result of implementing the design change. This included a review of FSAR section 10.4.7, and chapter 15.

2. The modifications to the heater drain pumps will be performed in accordance with the design, material and quality standards applicable to the pump. The modifications are internal to the pump and will not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. Based on review of Technical Specification 3/4.7 and B 3/4.7, the changes have no effect on the margin of safety.

90-VCN0088

This DCP provides a routing for unscheduled, non-safety related "fiber optics" communication cable in existing underground duct run (outside the power block) between the Service Building and the Production Warehouse.

1. This modification routes unscheduled, non-safety related "fiber optics" communication cable in an underground conduit adjacent to other conduits carrying non-1E cables between the Service Building and the Production Warehouse. No equipment or component assumed to function in accident analysis are affected directly or indirectly as a result of this change. In addition, this modification does not affect fire protection/safe shutdown analysis. Hence, the proposed change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. No new potential accidents or events are created as a result of this modification since no new failure modes are introduced. The proposed routing of "fiber optics" communication cable is non-safety related. No other safety system will be affected by this change. Therefore, this change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. This change does not affect the Technical Specification bases for any portion of the Technical Specification since there are no bases defined or inferred for installing non-safety related "fiber optics" cable in an underground duct.

90-V1N0094

The design change is to replace the existing two coil Main Turbine Electric Trip Solenoid Valve (ETSV) with a new, one coil ETSV. The previous four wire, two coil circuit consisted of two cables in one conduit for each of the two coils that are wired in parallel. The four wires are grouped together at the receptacle of the two coil ETSV. The replacement single coil ETSV will reuse the two cables in each of the two conduits and a loss of continuity in the wiring in one conduit will not de-energize the single coil ETSV and trip the Turbine. Therefore, the redundancy of the external wiring from the ETSV will remain. The redundancy of two coil ETSV is replaced with a one coil design that is more reliable overall. The ETSV is a non-seismic class 62J device and is part of non-safety related system 1613.

1. This change should decrease the probability of occurrence of the malfunction of the ETSV that is assumed to function during a Turbine trip that is analyzed in the FSAR, sections 15.2.2, 15.2.3, 15.2.5 and 15.2.6. The consequences of the malfunction of the ETSV are unchanged since the present two coil solenoid and replacement one coil solenoid are both fail-safe devices in that their failure results in a Turbine trip.

2. The ETSV is a fail-safe device in that, upon its failure, a Turbine trip will occur. Therefore, the change does not create the possibility of an accident or the malfunction of equipment/components not described and analyzed in FSAR section 15.2.2, 15.2.3, 15.2.5 and 15.2.6. This change does not affect the response time on turbine trip - oil pressure that is listed in Table 7.2.1-3.

3. The ETSV retrofit will decrease the probability of Turbine trips and the ETSV will remain a fail-safe device in that its failure will achieve a turbine trip. Therefore, the change does not affect the margin of safety defined by bases 2.2.1, 3/4.1, 3/4.3.2, and 3/4.7.1 in the Technical Specifications for Turbine Trip and Reactor Trip System Interlocks.

90-V2N0095

The design change is to replace the existing two coil Main Turbine Electric Trip Solenoid Valve (ETSV) with a new one coil ETSV. The previous four wire, two coil circuit consists of two cables in one conduit for each of the two coils that are wired in parallel. The four wires are grouped together at the receptacle of the two coil ETSV. The replacement single coil ETSV will reuse the two cables in each of the two conduits and a loss of continuity in the wiring in one conduit will not de-energize the single coil ETSV and trip. Therefore, the redundancy of the external wiring from the ETSV will remain. The redundancy of two coil ETSV is replaced with a one coil design that is more reliable overall. The ETSV is a non-seismic class 62J device and is part of non-safety related system 1613.

1. This change should decrease the probability of occurrence of the malfunction of the ETSV that is assumed to function during a Turbine trip that is analyzed in the FSAR, sections 15.2.2, 15.2.3, 15.2.5 and 15.2.6. The consequences of the malfunction of the ETSV are unchanged since the present two coil solenoid and replacement one coil solenoid are both fail-safe devices in that their failure results in a Turbine trip.

2. The ETSV is a fail-safe device in that, upon its failure, a Turbine trip will occur. Therefore, the change does not create the possibility of an accident or the malfunction of equipment/ components not described and analyzed in FSAR section 15.2.2, 15.2.3, 15.2.5 and 15.2.6. This change does not affect the response time on turbine trip - oil pressure that is listed in Table 7.2.1-3.

3. The ETSV retrofit will decrease the probability of Turbine trips and the ETSV will remain a fail-safe device in that its failure will achieve a turbine trip. Therefore, the change will not affect the margin of safety defined by bases 2.2.1, 3/4.3.1, 3/4.3.2, and 3/4.7.1 in the Technical Specifications for Turbine Trip and Reactor Trip system Interlocks.

90-V1N0098

This change makes a section of piping on lines 1-1301-384-1" and 1-1314-159-2" removable by adding a flanged section of piping to each line. These lines are small bore piping, project class 424. This change also modifies the pipe support design for supports V1-1301-384-H631, V1-1305-080-H068 and V1-1314-159-H612 by making them removable. The supports are seismic category 2, ANSI B31.1, designed to meet 2 over 1 design criteria. The system function or support integrity is not effected by the changes as substantiated by calculations, as referenced in the DCP calculation record. Supports and piping are only to be removed during an outage and must be reinstalled before system operation.

1. This piping and supports in this DCP were reviewed for impact to interconnecting equipment and components. This review, and calculations performed for this change, demonstrate the adequacy of the modifications. Therefore, based on a review of the FSAR, including section 15, this change does not affect any equipment or component function.

2. The piping and supports in this DCP are substantiated by calculations that show the change is within the design criteria and code allowables. The change is for piping, flanges and supports, and does not affect any equipment/component, function or operation and, therefore, does not create any possibility of accident or malfunction.

3. The calculations performed for this DCP show the piping and support stresses to be in accordance with the applicable design criteria, codes and standards as identified in the Design Input Record of this DCP. These criteria establish the design bases for piping and support stresses. Inherent in these design bases is the same margin of safety as the original design. Since the calculations are within design criteria, the margin of safety as defined in the bases of the Technical Specifications, including the bases of Technical Specification 3/4.7, is not decreased.

90-V1N0109

This change is the addition of two bypass lines around Heater Drain Pump discharge control valves LV-4331 & LV-4332. These lines, (1-1304-570-8", 1-1304-571-8") will be 8", sch. 40, ASTM A-105 piping with a single globe valve (1-1304-U4-760 and 1-1304-U4-761) in each line. These lines will be in the 1304 (Heater Drain) system which is non-safety related and project class 424.

1. The change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component which is assumed to function in the FSAR accident analysis. FSAR section 15 does not identify LV-4331 and LV-4332 as components which are assumed to function in the event of an accident, and the failure or rupture of a bypass line will not cause the malfunction of any equipment assumed to function in accidents analyzed in the FSAR.

2. The piping and supports in this DCP are substantiated by calculations that show the change is within the design criteria and code allowables. The change is for piping, flanges and supports, and does not affect any equipment/component, function or operation and, therefore, does not create any possibility of accident or malfunction.

3. The calculations performed for this DCP show the piping and support stresses to be in accordance with the applicable design criteria, codes and standards as identified in the Design Input Record of this DCP. These criteria establish the design bases for piping and support stresses. Inherent in these design bases is the same margin of safety as the original design. Since the calculations are within design criteria, the margin of safety as defined in the bases of the Technical Specifications, including the bases of Techrical Specification 3/4.7, is not decreased.

90-V1N0109

This change is the addition of two bypass lines around Heater Drain Pump discharge control valves LV-4331 & LV-4332. These lines, (1-1304-570-8", 1-1304-571-8") will be 8", sch. 40, ASTM A-105 piping with a single globe valve (1-1304-U4-760 and 1-1304-U4-761) in each line. These lines will be in the 1304 (Heater Drain) system which is non-safety related and project class 424.

1. The change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component which is assumed to function in the FSAR accident analysis. FSAR section 15 does not identify LV-4331 and LV-4332 as components which are assumed to function in the event of an accident, and the failure or rupture of a bypass line will not cause the malfunction of any equipment assumed to function in accidents analyzed in the FSAR.

2. This change does not create the possibility of an accident or the malfunction of equipment or components not described or analyzed in the FSAR. This is based on a review of the FSAR, including section 15 (Accident Analysis). This piping modification will meet original design requirements of the Heater Drain System.

3. Based on a review of Technical Specification bases, including sections 3/4.4 and 3/4.7, this change does not decrease the margin of safety.

90-V2N0110

This change is the addition of two bypass lines around Heater Drain Pump discharge control valves LV-4331 and LV-4332. These lines, (2-1304-570-8", 2-1304-571-8") will be 8", Schedule 40, ASTM A-106 piping with a single globe valve (2-1304-U4-760 and 2-1304-U4-761) in each line. These lines will be in the 1304 (Heater Drain) system which is non-safety related and project class 424.

1. The change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component which is assumed to function in the FSAR accident analysis. FSAR section 15 does not identify LV-4331 and LV-4332 as components which are assumed to function in the event of an accident, and the failure or rupture of a bypass line will not cause the malfunction of any equipment assumed to function in accidents analyzed in the FSAR.

2. This change does not create the possibility of an accident or the malfunction on equipment or components not described or analyzed in the FSAR. This is based on a review of the FSAR, including section 15 (Accident Analysis). This piping modification will meet original design requirements of the Heater Drain System.

3. Based on a review of Technical Specification bases, including sections 3/4.4 and 3/4.7, this change does not decrease the margin of safety.

90-V2N0111

This design change adds flange "fixtures" to the spare penetrations (#5, 55 and 90) located in the containment building, during Mode 5 and/or Mode 6 for outage related work activities, which require containment penetration. The flange "fixtures" will replace the blind flanges for the insertion of eddy current, sludge lancing & ISI equipment during a Unit 2 outage. The outage "fixture" is made-up of a flange plate with threaded sleeve ports. These sleeve ports allow access for cables and connection points for lead-in hoses during outage related work.

1. This change does not increase the probability of occurrence or consequences of the malfunction of any equipment or components assumed to function in the accidents analyzed in the FSAR including those in sections 3, 6, 9 or 15 of the FSAR. The "fixture" being installed will only be installed when the plant is in Mode 5 (cold shutdown) or 6 (Refueling). It will only have to perform its design function under the worst case conditions of a refueling accident and GL 88-17, which does not postulate containment pressurization. This "fixture" does not have to be designed to function for other postulated Design Basis Accidents. Therefore, this fixture does not have to be designed, fabricated, or installed to the ASME Section III, Class 2, requirements of the penetration. A seismic evaluation has been performed to insure that the structural integrity of the penetration (and "fixture") is maintained during a Design Basis Earthquake. Thus, there is no impact on the integrity of the containment liner plate fission product barrier.

2. This design change for the modified condition of the penetrations maintains a boundary that will prevent the exchange of the containment environment with the outside environment under postulated refueling accident conditions. The modified penetrations meets the intent of all applicable Technical Specifications under normal and postulated refueling accident conditions as defined in the FSAR. Based on a review of FSAR sections 3, 6, 9 and 15, this design change would not create the possibility of an unanalyzed or undescribed accident or equipment/component malfunction.

3. This design change maintains the containment penetration in a condition that will prevent the direct communication of the containment environment with the outside environment in accordance with the bases for Technical Specifications 3/4.9.4 for normal and postulated refueling accident conditions during core alterations. Prior to ascending to Mode 4, the outage "fixture" will be replaced with the bolted blind flanges. After testing of the penetrations in accordance with the LLRT procedures, the new configuration will meet the currently existing basis for containment leakage. Therefore, this change does not affect the system, equipment function or operation, and does not affect the safety margin defined by the bases of Technical Specification 3/4.6.1, and 9.6.1.2.

90-V1E0112

This design change installs flange joints downstream of the 3/4" drain valves to the steam generator blowdown heat exchangers 1-1407-E6-001, 2, 3, 4, 5, 6, 7, 8. This portion of the SG blowdown system is non-safety related, project class 424. The new flanges will be located in the Auxiliary Building Room No. C-108.

1. The SG blowdown heat exchangers are non-safety related and no failure of the system caused by this modification would result in a malfunction of any equipment or component assumed to function in any accident analyzed in the FSAR. This includes a review of FSAR sections 10.4 and 15.

2. The SG blowdown heat exchangers are non-safety related and no failure of the system caused by this modification would create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. Original design criteria continues to be met for the line after modification. This includes a review of FSAR sections 10.4 and 15.

3. This design change does not decrease the margin of safety defined by the Technical Specification bases because neither the heat exchanger nor their functions are discussed in Technical Specifications, and all the original design criteria continue to be met by this change. This included a review of the bases of Technical Specification sections 3/4.4.5 and 3/4.7.

90-V2E0114

This design change addresses the installation of piping, valves, and instrumentation which will allow the Turbine Plant Cooling Water System to supply seal and cooling water to the Unit 2 Circulating Water pumps and motors as a backup supply in the event Utility Water is not available. Sequence 1 of the DCP will allow the installation of piping from the discharge of TPCW pump 2-1405-P4-501 to the first isolation globe valve on the new line (2-1405-L4-594). It will also cover modifications to Utility Water line 2-2419-L4-543 and the portion of the new line 2-2419-L4-543 and the portion of the new line (2-1405-L4-594) which taps into line 543 up to the first isolation globe valve. These lines will be installed during a plant outage and will be capped off. Sequence 2 of the DCP will remove the caps and join the two new lines to form one new line. The new piping is located at the Circulating Water pump structure.

1. Equipment affected by this design change is not assumed to function in an accident analyzed in chapter 15 (Accident Analyses) of the FSAR.

Installation of the changes proposed in the DCP will not cause the malfunction of other equipment assumed to function. The new piping is not safety related or seismically qualified. This is consistent with the existing criteria for these systems. The piping is not located in a seismic 1, or 2 over 1, area.

2. This design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR which could affect the health and safety of the public. This was based on a review of the FSAR, including section 15 (Accident Analyses).

3. The modifications described in this design change do not decrease Technical Specifications safety margins since the systems affected, systems 2419 and 1405, have no safety design bases. This is based on a review of Technical Specification bases, including section B 3/4.11.

90-V2E0116

This design change will allow the use of split or cartridge type mechanical seal or the existing packing on Turbine Plant Cooling Water Pumps (TPCW) 2-1405-P4-501 and 2-1405-P4-502. The change will also route utility water to the TPCW pumps for cooling and flushing of the mechanical seal, and add a blind flange to line 2-1401-L4-610 upstream of valve 2-1401-U4-545. The TPCW pumps are located at the circulating water pump basin pad and are project class 626.

1. The TPCW Pumps are non-safety related and no failure of the pumps caused by this modification would result in a malfunction of any equipment or component assumed to function in any accident analyzed in the FSAR. This includes a review of sections 9.2 and 15 of the FSAR.

2. The TPCW Pumps are non-safety related and this modification does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This includes a review of FSAR sections 9.2 and 15.

3. This change is to allow the use of a split or cartridge type mechanical seal or packing on TPCW Pumps 2-1405-P4-501 and 2-1405-P4-502 and does not decrease the margin of safety defined in the bases of the Technical Specifications. This includes a review of Technical Specifications section B 3/4.7.

90-V1N0122

This design change will increase the length of the check valve disc back stop on check valves 1-1306-U4-004 & 006 (MFP Turbine Driver Low Pressure Check Valves). The length of the disc stop will be increased by approximately 1-inch, which will limit the disc opening to a 60° angle, instead of the present 80°-85° angle. This change will have an insignificant effect on the flow capacity of the check valves. These check valves are a part of system 1306 (Turbine Drive Steam System), which is non-safety related, project class 424.

1. Modification of the opening angle of these check valves is being done to increase their reliability by decreasing the impact of flow turbulence on the check valve disc. This change will not have any adverse impact on the function of system 1306, or any other system. This design change will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. Check valves 1-1304-U4-004 and 006 are not identified as equipment/components which are assumed to function in the event of an accident. These check valves are installed to prevent high pressure steam from back-flowing to a lower pressure side during main turbine start-up. This included a review of FSAR sections 10.2, 10.4.7, and FSAR chapter 15.

2. This design modification only revises the full open angle of these check valves. There will be no changes to system operation or response to system 1306, or any other system, as a result of this change. This change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This included a review of FSAR sections 10.2, 10.4.7, and FSAR chapter 15.

3. Decreasing the full open angle of these check valves will not decrease the margin of safety as defined in the Technical Specification bases, including the bases to sections 3/4.7.1 or 3/4.7.2, as the flow resistance through the valve will not be appreciably increased and the valves should be more stable.

90-V2N0126

Implementation of this design change will result in the following modifications to the Unit 2 Condensers "A", "B", and "C", equipment tag number 2-1305-E4-005, 006, and 007, respectively.

1) The 20" diameter, Schedule 5, Heater Drain Tank "B" High Level Dump sparger (Condenser A, Connection 19) will be replaced with 20" diameter, Schedule 20 pipe, with pipe cap, and drilled per the original design. The new sparger hole pattern varies slightly from the original design due to additional field welds. These welds are required, since the replacement sparger will be installed in short sections due to limited access into the hotwell. The minor variances from the original design have been discussed with and approved by, the original supplier (Ecolaire). Additional drain holes are included to expedite drainage and minimize the potential for water/steam hammer in the event of rapid drain valve cycling. Also, a detail will be added to the Condenser "A" vendor drawing allowing the field to install stiffener plates in existing sparger support members, if required.

2) The new sparger (with design submitted by Ecolaire Condenser) will be added to connection 61 on Condenser "B" (Main Steam Drain Pot Mainifold). Presently, the internal design for this connection consists of a baffle plate. New support(s) will be required.

3) A note will be added to the appropriate condenser drawings for Condensers "A", "B", and "C", which will allow the field to install the condensate suction screens in the hot-well in sections, instead of one piece.

4) The lateral structural supports for the Main Steam Dump Spargers (connection 9, Main Turbine By-pass) will be replaced with heavier members. These are the two lower main steam dump spargers that turn down and are routed to the hot-well (2 on each Condenser). Also, a pad/bumper will be installed on the sparger where it contacts the lateral support surface to distribute impact loads more evenly into the pipe.

1. Based on a review of FSAR sections 15.1.3, 15.2.2, 15.2.3, 15.2.5, and 15.6.3 and the fact that the main condensers and the Turbine By-Pass System are non-safety related components, there will be no increase in the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. Based on the review of FSAR sections 15.1.3, 15.2.2, 15.2.3, 15.2.5 and 15.6.3, and because this design change will be accordance with the original design criteria, and the fact that the main condensers and the Turbine By-Pass System are non-safety related, this design change will not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The changes described in question 1 (Description of proposed change, test, or experiment) are internal to the main condensers. The main condensers are not addressed in the Technical Specifications or its associated bases. This is based on a review of Technical Specifications, including section 3/4.7.1 Plant System - Turbine Cycle) and its associated bases.

90-V2N0131

The 500KV breaker current transformers (CT's) which are located at PCB 161520 and PCB 161620 in the switchyard, for the Unit 2 main transformer differential relay (587U1), will be changed from the 3000/5A ratio tap to the 2000/5A ratio tap.

1. The change of the tap settings from 3000/5 to 2000/5 on the current transformers has no effect on the system design or operation of any equipent or component assumed to function in accidents analyzed in the FSAR, section 15. The offsite power system is not safety-related and is not taken credit for in the accident analyses. Therefore, this change does not increase the probability of occurrence or consequences of the malfunction of any equipment assumed to function in accidents analyzed in the FSAR.

2. The proposed change of the tap setting does not add any new sources of accidents. Therefore, it does not create the possibility of an accident not described and analyzed in the FSAR. This includes a review of FSAR sections 15 and 8. This change should prevent the misoperation of the breaker and still provide the correct balance of sensitivity with security.

3. This change will result in a more stable electrical switchyard and correct the problem which caused the Unit 2 trip on 3-20-90. This change in the protective relaying for the main transformer does not decrease the margin of safety as defined in the bases to the Technical Specifications, including the bases to section 3/4.8, 5 or 6.

90-V1N0132

A. Remove RTD Bypass loop 1 isolation valve 1-1201-U4-007 and replace it with a spool piece. Both the pipe and valve are project class 111. This design change is required because this valve will no longer function.

B. The addition of temporary shielding may be required around valve 007 while it is being cut out to reduce the radiation exposure to personnel in the area. Up to 200 pounds of shielding may be placed on the valve while plant is in Modes 5 or 6. The shielding must be removed before proceeding to Mode 4.

1. a. The RTD's on this bypass line are assumed to function in accidents analyzed in the FSAR, however, this design change will not adversely affect their operation or system calibration. This change does not adversely affect the HELBA results including pipe whip, jet impingement or environmental parameters.

b. The addition of the temporary shielding will not affect the operation of this line. The RTDs are not required to be operable in Mode 5 or 6 and the shielding and pipe removal process will be controlled to prevent any seismic 2 over 1 concerns. This will be completed by securing the shielding to the valve, and supporting the pipe segment with chain falls during its removal.

Therefore, neither the elimination of the valve, nor the addition of the temporary shielding will increase the probability of occurrence or consequences of an accident described in the FSAR, including those in sections 3.6, 6.2 or 15.

2. a. The RTD Bypass line will meet the original RCS piping design criteria. The valve is used only as a backup during maintenance to isolate the RCS loop 1 cold leg.

b. The addition of temporary shielding will not alter the system operation or permanent design margin and will not create a seismic 2 over 1 concern. Therefore, this design change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR, including sections 3.6, 6.2 and 15.

3. The system function, operation and calibration is not being changed. The original piping criteria is being met by this change. Therefore, the margin of safety defined in the bases of the Technical Specifications is not being changed, including the bases to sections 2, 3/4.1, 3/4.2, 3/4.3, 3/4.4 and 3/4.9.

90-V1N0133

Plant Vogtle uses two safety related diesel generators per unit to provide A.C. power to the essential loads when the offsite sources are not available. The diesel generators are project class 015 and provide power to the project class 1IE 4.16-KV switchgear. The controls for the diesel generators are project class 11J, 61J, 62J, or 015 depending on their function and location. This DCP proposes to disable several diesel engine automatic trips which provide engine protection for operation during a loss of offsite power (LOSP) event.

1. Bypassing the trips on LOSP start will have no effect on the probability of malfunction of the diesel generator or its components. This design change will require the operator to monitor the alarm status of the diesel generators during LOSP initiated operation. If the operator does not take appropriate action quickly enough and the diesel is damaged, the system response will be no different that if the diesel had tripped. Failure mode effect analysis shown on FSAR Table 8.3.1-3 (items 4 and 41) describes the consequences of failure of a diesel generator to start or run. This table shows that there is no adverse impact on equipment assumed to function in the accident analyzed in chapter 15. The consequences of a catastrophic failure (missile generation) have been evaluated as part of the hazard evaluations for the diesel generators and the results are not

affected. Adding contacts parallel to safety injection relay contacts K609, 15-16 has no affect on the performance of the Solid State Protection System (SSPS). The diesel generator control panels, the essential load sequencers, and the SSPS are all safety-related and train separated. This design change does not create any new train interconnections.

2. During LOSP initiated diesel generator operation, the operator in the control room will now have to determine whether or not to trip the diesel if it develops an alarm condition. Currently, the operator only has to perform this oversight during safety injection or emergency manual initiated operation. The effects of failure of the diesel generators to run are documented in FSAR Table 8.3.1-3 (items 4 and 41). The circuit modifications only involve moving the LOSP start contacts to the emergency start circuit on the diesel generator. The correct operation of this circuit is tested during surveillances required by the Technical Specifications. No new single failures are created. Therefore, this design change can not lead to an accident or malfunction not described or analyzed in the FSAR.

3. This design change will not decrease the margin of safety as defined by the bases of the Technical Specifications, including the bases for 3/4.4, 3/4.5, 3/4.8, 3/4.9, or the bases for Surveillance Requirement 3/4.8.1. The margin of safety of Engineered Safety Feature systems and refueling operation is related to the availability of the site electrical power system to provide sufficient power to the safety-related equipment required for the safe shutdown of the facility and the mitigation and control of accident conditions within the facility. A loss of offsite power is a

contributing event during other postulated accidents. The ability of the diesel generator to start and continue to run during events which contribute to accidents is an increase in the margin of safety. A faulted diesel generator would now continue to run instead of automatically tripping upon receipt of one of the bypassed trip signals. A single faulty sensor will not erroneously trip the diesel engine. The operability of the onsite A.C. power sources will not be degraded by implementing this design change.

90-V1N0135

This DCP adds a carbon steel plate to the Integrated Head Package CRDM Cooling Shroud assembly to seal an accessway which was cut during investigation of a canopy weld seal leak. The reactor vessel, reactor vessel head and CRDMs are project class 111. However, the CRDM cooling shroud does not perform a safety related function.

1. The Integrated Head Package CRDM Cooling Shroud helps to remove heat from the CRDMs. However, the shroud does not perform a safety function and is not required to function during an accident. The structural integrity and mounting of the shroud is not adversely impacted by this repair. Therefore, the shroud will not fail and damage other equipment during a seismic event. There will be no change to system operation, and the repair materials and coatings will be compatible with the original material. Therefore, this repair will not increase the probability of occurrence or consequences of malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR, including those in chapters 3, 4, or 15.

2. Restoration of the Integrated Head Package CRDM Cooling Shroud creates no possibility of an

accident or equipment/component malfunction not addressed in the FSAR, including sections 3.9.4, 4.5.1, 4.6.1, or 9.4.6. No change in system operation is being made.

3. This DCP does not decrease the margin of safety defined by the bases of Technical Specifications, including the bases to 3/4.1.3 and 3/4.10.

90-V1N0136

Reactor Vessel Level Instrumentation System (RVLIS) reactor vessel head sensors will be inverted (top to bottom) to accommodate calibration inaccuracies due to air in-leakage to the sealed portion of the sensor during refueling disassembly and maintenance. Westinghouse safety evaluation checklist SEL-891127-C addresses this change.

1. The RVLIS provides operators with information to monitor and assess the reactor coolant inventory following an accident to ensure that adequate core cooling is available. During implementation of this modification the plant will be in a cold shutdown condition. As described in Technical Specification 3/4.3.3.6, the RVLIS is not required to be operable in this mode of operation. By reorienting the transmitter and minimizing the effects of air inleakage which affect instrument calibration, the safety related function of the system will be enhanced. Remounting of the transmitter will be performed in accordance with the original design details so as not to affect the seismic qualification of the equipment. In addition, the anomalies with the RVLIS have been addressed by Westinghouse in NSD-TB-89-09, which provides a basis for the proposed changes. Therefore, the proposed change does not increase the probability of occurrence of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. During implementation of the modification, the plant will be in a cold shutdown condition. In this mode of operation, the RVLIS is not required to be operable. No new potential accidents are created as a result of this modification since no new failure modes are introduced. The function of the transmitter will be enhanced by this modification and will meet the original design requirements. Therefore, this modification does not create the possibility of an accident or equipment component malfunction not described and analyzed in the FSAR.

3. The Technical Specification bases for accident monitoring instrumentation indicates that the RVLIS is provided to ensure that sufficient information is available to monitor and assess selected plant variables following an accident. This modification will enhance the operability of the RVLIS and will provide the operator with more reliable and accurate information following an accident. Therefore, this modification does not reduce the margin of safety as defined in the bases of Technical Specifications.

90-V2N0137

Plant Vogtle uses two safety related diesel generators per unit to provide A.C. power to the essential loads when the offsite sources are not available. The diesel generators are project class 015 and provide power to the project class 11E 4.16-KV switchgear. The controls for the diesel generators are project class 11J, 61J, 62J, or 015, depending on their function and location. This DCP proposes to disable several diesel engire automatic trips which provide engine protection for operation during a loss of offsite power (LOSP) event.

1. Bypassing the trips on LOSP start will have no effect on the probability of malfunction of the diesel generator or its components. This design change will require the operator to monitor the alarm status of the diesel generators during LOSP initiated operation. If the operator does not take appropriate action quickly enough and the diesel is damaged, the system response will be no different

that if the diesel had tripped. Failure mode effect analysis shown on FSAR Table 8.3.1-3 (items 4 and 41) describes the consequences of failure of a diesel generator to start or run. This table shows that there is no adverse impact on equipment assumed to function in the accident analyzed in chapter 15. The consequences of a catastrophic failure (missile generation) have been evaluated as part of the hazard evaluations for the diesel generators and the results are not affected. Adding contacts parallel to safety injection relay contacts K609, 15-16 has no affect on the performance of the Solid State Protection System (SSPS). The diesel generator control panels, the essential load sequencers, and the SSPS are all safety-related and train separated. This design change does not create any new train interconnections.

2. During LOSP initiated diesel generator operation, the operator in the control room will now have to determine whether or not to trip the diesel if it develops an alarm condition. Currently, the operator only has to perform this oversight during safety injection or emergency manual initiated operation. The effects of failure of the diesel generators to run are documented in FSAR Table 8.3.1-3 (items 4 and 41). The circuit modifications only involve moving the LOSP start contacts to the emergency start circuit on the diesel generator. The correct operation of this circuit is tested during surveillances required by the Technical Specifications. No new single failures are created. Therefore, this design change can not lead to an accident or malfunction not described or analyzed in the FSAR.

3. This design change will not decrease the margin of safety as defined by the bases of the Technical Specifications, including the bases for 3/4.4, 3/4.5, 3/4.8, 3/4.9, or the bases for Surveillance Requirement 3/4.8.1. The margin of safety of the reactor coolant system, emergency core cooling system and refueling operation is related to the

availability of the site electrical power system to provide sufficient power to the safety-related equipment required for the safe shutdown of the facility and the mitigation and control of accident conditions within the facility. A loss of offsite power is a contributing event during other postulated accidents. The ability of the diesel generator to start and continue to run during events which contribute to accidents is an increase in the margin of safety. A faulted diesel generator would now continue to run instead of automatically tripping upon receipt of one of the bypassed trip signals. A single faulty sensor will not erroneously trip the diesel engine. The operability of the onsite A.C. power sources will not be degraded by implementing this design change.

90-V1N0138

This proposed change is to allow the emergency diesel generators 1A and 1B, project class 11E, to be started by an emergency signal and have the high jacket water trip bypassed, in addition to the other trips which are already bypassed by an emergency start signal (Safety Injection (SI), Loss of Offsite Power (LOSP), or Emergency Manual Start). This change will add isolation valves in the instrument tubing between the DG high jacket water temperature elements and the local DG control panel. The valves will normally be closed, but the valves may be opened to allow additional engine protection when performing a non-emergency manual start or surveillance of the diesels.

1. The valves being added are seismically and environmentally qualified for their environment and will be mounted in such a way as to not overstress the instrument tubing. Isolating this trip will not cause a malfunction of the diesel engine or any other equipment or components assumed to function in accidents analyzed in the FSAR. The valves will be located away from the engine, near a support, to prevent any significant vibration effects. Proper valve position will be ensured by administrative control. Incorrect positioning of the valves would only make the trip active, as it is currently.

2. There is no change to the DG trip logic, other than the blocking of the trip. A separate high jacket water temperature alarm is still available locally and in the control room. The safety benefit gained by the increased reliability of the DG when this trip is bypassed is judged to outweigh the effect of an additional operator decision to trip the DG if a high temperature alarm is received. This change does not create the possibility of an accident or equipment/component malfunction not described or analyzed in the FSAR, including the failure of the DG. As documented in the FMEA in FSAR Table 8.3.1-3, if one DG fails, the other is available. In addition, the operator can manually stop the DG if a high temperature alarm is received.

3. This design change will not decrease the margin of safety as defined by the bases of the Technical Specifications, including the bases of 3/4.4, 3/4.5, 3/4.8, 3/4.9, or the bases for the surveillance requirement in 3/4.8.1. The margin of safety of the Engineered Safety Feature systems and refueling operation is related to the availability of the site electrical power system to provide sufficient power to the safety-related equipment required for the safe shutdown of the facility and the mitigation and control of accident conditions within the facility. A loss of offsite power is a contributing event during other postualated accidents. The ability of the DG to start and continue to run during events which contribute to accidents is an increase in the margin of safety. Removal of this automatic trip would allow the DG to continue to operate in the event of a false high-jacket water temperature. The operability of the onsite A.C. power sources will not be degraded by implementing this design change, and will be enhanced in certain conditions.

90-V1N0139 This DCP modifies the (ATWS) Anticipated Transient Without Scram (AMSAC) Mitigating System Actuation Circuitry panel (1-1626-Q5-AMS). The modification is within the panel. This DCP

upgrades the diagnostic software by replacing the existing Erasable Programmable Read Only Memory (EPROMs) with new EPROMs and also modifies the AMSAC circuitry by relocating a wire from the ANA REF COM to 15V COM bus.

1. The change provided in the DCP is to be made to non-safety related equipment/system. This modification does not affect the isolation devices provided to buffer the AMSAC outputs from the safety-related final actuation device circuits. The system is considered as being a control system that is not required for plant safety as verified by Westinghouse safety evaluation SECL 90-119. Therefore, this change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. No new potential accidents or events are created as a result of this modification since no new modes of failure are introduced. The change covered in the DCP is to a non-safety related equipment/system. This change does not affect the function/operation of the equipment/system involved, nor will it affect the operation of any safety related equipment. Modification within the AMSAC panel will not affect seismic qualification of the panel. Therefore, this change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The DCP provides for change to a non-safety related equipment/system which is not addressed in the Technical Specifications. In addition, this modification does not affect the isolation devices provided to buffer the AMSAC outputs from the safety-related final actuation device circuits. Therefore, there is no reduction in the margin of safety defined by the bases of the Technical Specification.

90-V2N0142

This DCP allows 30 amp breakers 2AY1A-05 and 2BY1B-05 and 20 amp breakers 2CY1A-05 and 2DY1B-05, in the Vital 120V AC Distribution Panels 2-1807-Q3-VI1, VI2, VI3 and VI4 to be replaced with 35 and 30 amp breakers respectively. Similarly 15 amp breakers 2AD12-03, 2AD12-08 and 2BD12-03 in the 125V DC Distribution Panels 2-1806-Q3-DA2 and DB2 will be replaced with 20 amp breakers.

1. This increase in breaker sizes have no effect on the downstream loads because there is no increase of downstream loads on the breakers. The new breakers are same in form, fit and function as the existing breakers. This modification will eliminate the inadvertent tripping of the Breakers during a Station Black Out condition due to loss of ventilation to the Vital AC and DC SWGR rooms. Therefore, the change does not increase the probability of occurrence or consequences of malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. No new potential accidents are created as a result of this modification since no new failure modes are introduced. The increase in breaker ratings, breaker coordination and the associated existing cables have been analyzed in calculation number MX3CT08, Rev. A1, and found to be adequate and safe. The comparable Unit 1 panels are addressed in FSAR table 8.3.2-5. Failure of these panels have been evaluated and determined to be acceptable. Therefore, the proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The panels in which these breakers are located are listed in Technical Specification section 3.8.3.1 The increase in breaker rating to eliminate the potential of inadvertent tripping of the breakers during a Station Blackout condition due to loss of ventilation to the Vital AC and DC SWGR rooms does not affect the limiting condition for operation of the 120V AC/125V DC Vital busses. This modification will enhance the availability of the Class 1E Vital

120V AC/125V DC power supply from the Distribution Panels 2-1807-Q3-VI1, VI2, VI3 and VI4 and 2-1806-Q3-DA2 and DB2 subsequent to a Station Blackout. Therefore, the proposed change does not decrease the margin of safety defined by the bases of the Technical Specification.

90-V2N0144

The Private Automatic Branch Exchange (PABX) services the plant telephones and interfaces with Southern Bell. The PABX system switching unit is located in the Service Building. The Merlin units allow handsets to have multiple line appearances (multiple extensions which are switchable) to allow several handsets to have the same extension at one time. The Merlin units are connected via trunk lines to the PABX switching unit. This design change will add an uninterruptible power supply (UPS) unit for the Unit 2 PABX system Merlin equipment only. The UPS unit will be located in room R-A31. The UPS unit is sized to provide a 2 hour (min.) backup for the Merlin equipment only. Any additional loads added to the unit could decrease the backup time below the time required for PABX equipment in DC-1702.

1. The proposed change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component described in chapter 15 or sections 3F and 9.5.2 of the FSAR. The PABX equipment is not safety related and is not required for safe shutdown of the plant. Separation criteria is maintained by this design.

2. The proposed change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in sections 3F, 9.5.2, or chapter 15 of the FSAR. The batteries in these units are the sealed maintenance-free type and produce no gases when charging. A fault in a UPS unit cannot cause a malfunction in any safety related power source. The panels feeding the UPS units are not safety related. Separation criteria

has been met between the non-1E lighting panels and the safety related load center which feed them. The heat load generated by the UPS unit is 147 BTU/hr. The heat load was evaluated and determined to be negligible.

3. The proposed change does not decrease the margin of safety defined by the bases of the Technical Specifications, including the bases to sections 3/4.8.2 and 3/4.9.5. Separation criteria is not violated by the addition of the UPS units. The additional UPS units will ensure that the PABX equipment has battery back-up power in the event that both the normal power source and the diesel-backed source are de-energized.

90-V2N0150

The MFIV fast closing operation scheme contains a redundant control relay (AX6 for Train A, BX6 for Train B). This control relay contact is wired to initiate the de-energization of the MFIV pilot solenoid valve when the control relay coil is de-energized. De-energizing the pilot solenoid valve will cause the MFIV to close in the fast close mode. During normal operation the AX6 (BX6) control relay coil is continuously energized. If the relay coil fails due to either a short or open circuit, the pilot solenoid valve will de-energize and initiate the undesired fast closing operation of the MFIV. This change involves rewiring the MFIV control circuitry to disconnet the AX6 (BX6) relay coil and contact from the MFIV fast closing control scheme.

1. The control wiring change does not change the MFIV operation and no new component is added to the existing control circuit to make this change. Therefore, the change does not increase the probability of occurrence or consequences of the malfunction in accidents analyzed in the FSAR.

2. This minor wiring change does not change the original system operation and no new component is added to the existing control circuit to make this change. Therefore, the change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The proposed change is designed to meet the intent of the original system design bases while increasing the electrical control circuit design reliability. Therefore, the change does not decrease the margin of safety defined by the bases of the Technical Specification, particularly sections 3/4.4.5 (Steam Generator) and 3/4.6.3 (Containment Isolation Valves).

90-V2N0151

This design change will increase the length of the check valve disc back stop on check valves 2-1306-U4-004 and 006 (MFP Turbine Driver Low Pressure Check Valves). The length of the disc stop will be increased to limit the disc opening to approximately 60° angle, instead of the present 80°-85° angle. This change will have an insignificant effect on the flow capacity of the check valves. These check valves are a part of system 1306 (Turbine Drive Steam System), which is non-safety related, project class 424.

1. Modification of the opening angle of these check valves is being done to increase their reliability by decreasing the impact of flow turbulence on the check valve disc. This change will not have any adverse impact on the function of system 1306, or any other system. This design change will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR. Check valves 2-1306-U4-004 and 006 are not identified as equipment/components which are assumed to function in the event of an accident. These check valves are installed to prevent high pressure steam from back-flowing to a lower pressure side during main turbine start-up. This included a review of FSAR sections 10.2, 10.4.7, and FSAR chapter 15.

2. This design modification only revises the full open angle of these check valves. There will be no changes to system operation or response to system

1306, or any other system, as a result of this change. This change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR. This included a review of FSAR sections 10.2, 10.4.7 and FSAR chapter 15.

3. Decreasing the full open angle of these check valves will not decrease the margin of safety as defined in the Technical Specification bases, including the bases to sections 3/4.7.1 or 3/4.7.2, as the flow resistance through the valve will not be appreciably increased and the valves should be more stable.

90-V2N0154

This design change will determinate ZSC-0459 and ZSC-0460 "CLOSED" contacts and reterminate ZSO-0459 and ZSO-0460 "NOT OPEN" contacts in the non-Q (62E) control circuits or relays 2LCV-0459X and 2LCV-0460X, which control letdown orifice isolation valves 2HV-8149A, 8149B, and 8149C in the Chemical and Volume Control System. The ZSC & ZSO limit switches are project class 11J and valves 2HV-8149A, B, and C are project class 212.

1. The proposed change does not add any new mechanisms of failure or change the function of the letdown orifice isolation valves 2HV-8149A, B, & C; it only affects the timing of their operation. Therefore, this change does not increase the probability of occurrence or consequences of malfunction of any equipment or component assumed to function in accident analyzed in the FSAR. This includes a review of FSAR sections 6.2, 6.3, 7.6, 7.7, 15.4 and 15.6.

2. This change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR, based on a review including FSAR sections 6.2, 6.3, 7.6, 7.7, 9.3 and chapter 15. No new components are being utilized and only the timing of valves 2HV-8149A, B and C is being changed. Letdown isolation,

Containment isolation, and HELB isolation on this line is not affected. This change will help prevent damage to the Regenerative Heat Exchanger.

3. This change does not decrease the margin of safety as defined in the bases to the Technical Specifications, including the bases to sections 3/4.1.2 and 3.3.3.6. Technical Specifications section 3/4.1.2 requires a boron injection flow path via a charging pump to the Reactor Coolant System, and section 3.3.3.6 requires the operability of Pressurizer level instrumentaiton loops 459 and 460. This change has no affect on the bases of either of these sections.

90-VAN0156

This is a "SAFEGUARDS" DCP, the following abbreviated information is declassified for this report. This modification involves changes to non-class 1E, seismic category 2 equipment. The change replaces the existing distribution class arresters with intermediate class arresters for non-class 1E transformer ANB11X located in the PESB. Surge arresters provide electrical insulation protection due to switching impulses generated in the operation of the electrical system. The lower switching surge rating of the replacement arresters will provide an increased margin of protection against switching surges and consequently increase the reliability of the transformers. The electrical distribution system is described in section 8 of the FSAR and section 3/4.8 of the Technical Specification.

1. The change does not increase the probability of occurrence or consequences of the malfunction of of any equipment or component assumed to function in accidents analyzed in the FSAR. The change involves only one non-1E transformer. The transformer and the loads supplied from this transformer are not required to function for accident mitigation or for safe shutdown. The loss of any non-1E transformer is bounded by the Loss of Nonemergency AC Power to the Plant Auxiliary analysis. This includes a review of FSAR sections 8.3.1 and 15.0, specifically sections 15.2.6 and 15.0.8.

2. The change does not create the possibility of an accident or equipment or component malfunction not described and analyzed in the FSAR. The modification involves changes to a non-1E transformer. The consequences of failure of this transformer is bounded by the Loss of Non-emergency AC Power to the Plant Auxiliaries analysis. This includes a review of FSAR sections 8.3 and 15.0, specifically sections 15.2.6 and 15.0.8.

3. The change does not decrease the margin of safety defined by the bases of the Technical Specifications. The change involves only one non-1E transformer. The transformer does not supply safety related equipment required for safe shutdown or mitigation and control of accident conditions. This includes a review of Technical Specification bases 3/4.8.

90-V1E0157

This design change allows the use of the Diesel Generator Fuel Oil Transfer Pumps (tag numbers 1-2403-P4-001, 002, 003 and 004) with minimum of of 2 packing rings in the stuffing box. Vendor concurrence has been granted to exclude these pumps from the 6 packing ring requirement that is currently shown in the pump manual. The removed packing rings are to be replaced with lantern rings. This design change will also allow Plant Maintenance to use shims between the diesel fuel oil tank flange and fuel oil transfer pump discharge head as necessary to establish vertical alignment, replacing the previously applied tolerance with a vertical clearance of less than or equal to 1/8" between the pump discharge flange and the mating flange. Vendor concurrence has also been granted for this deviation from the current pump instruction manual.

1. This change will allow a reduction in the number of packing rings in the stuffing box of the Diesel Generator Fuel Oil Transfer Pumps, which are part of the Emergency Diesel Generator System (2403). Per ASME Section III, Subsection ND 3413.2, 1977 Edition, and Section XI, Subsection IWA-7400, 1983

Edition, the stuffing box is exempt from Section III and Section XI code requirements and is not considered to be within the pressure boundary of the pump. Therefore, this change will not degrade any equipment or components which are assumed to function in an accident as described in the FSAR, including sections 8.3, 9.5.4 and 15.

2. The proposed change reduces the number of packing rings in the pump stuffing box. A failure of the packing rings or lantern rings would not cause a complete failure of the pump. The pump could still operate and pump fuel oil even though the stuffing box was leaking due to a packing failure. In addition, even if the pump flowrate is reduced causing an insufficient makeup to the day tank or a low discharge pressure, the second transfer pump would auto start. Each pump is designed to supply fuel oil at a rate of approximately 3 times the demand at full load of the diesel. It will not introduce nozzle loadings nor significantly affect the pipe stress calculation for the pump to be installed within the manufacturer's prescribed vertical tolerance. Therefore, this change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. A failure in the packing would not lead to a failure in the ability of the pump to operate and deliver fuel oil to the day tanks, even if the packing leaks. Also, the diesel fuel oil system is designed such that if the flowrate to the day tanks is not sufficient to supply enough makeup or if the pump discharge pressure is low the second transfer pump would auto start. Each pump is also designed to supply fuel oil at a rate of approximately 3 times the demand at full load of the diesel.

Therefore, a failure of the packing will not decrease Technical Specification safety margins defined by the bases of the Technical Specification. This is based on a review of Technical Specification basis, including the bases of section 3/4.8.1.

90-V2E0158

This design change allows the use of the Diesel Generator Fuel Oil Transfer Pumps (tag numbers 2-2403-P4-001, 002, 003 and 004) with a minimum of 2 packing rings in the stuffing box. Vendor concurrence has been granted to exclude these pumps from the 6 packing ring requirement that is currently shown in the pump manual. The removed packing rings are to be replaced with lantern rings. This design change will also allow Plant Maintenance to use shims between the diesel fuel oil tank flange and fuel oil transfer pump discharge head as necessary to verify that the pump is vertical, replacing the previously applied tolerance with a minimum vertical clearance of 1/8" between the pump discharge flange and the mating flange. Vendor concurrence has also been granted for this deviation from the current pump instruction manual.

1. This change will allow a reduction in the number of packing rings in the stuffing box of the Diesel Generator Fuel Oil Transfer Pumps, which are part of the Emergency Diesel Generator System (2403). Per ASME Section III, Subsection ND 3413.2, 1977 Edition, and Section XI, Subsection IWA-7400, 1983 Edition, the stuffing box is exempt from Section III and Section XI code requirements and is not considered to be within the pressure boundary of the pump. Therefore, this change will not degrade any equipment or components which are assumed to function in an accident as described in the FSAR, including sections 8.3, 9.5.4 and 15.

2. The proposed change reduces the number of packing rings in the pump stuffing box. A failure of the packing rings or lantern rings would not cause a complete failure of the pump. The pump could still operate and pump fuel oil even though the stuffing box was leaking due to a packing failure. In addition, even if the pump flowrate is reduced causing an insufficient makeup to the day tank or a low discharge pressure, the second transfer pump would auto start. Each pump is designed to supply fuel oil at a rate of approximately 3 times the demand at full load of the diesel. No unanalyzed pipe stresses or nozzle loadings will result if the pump is installed within the manufacturer's prescribed vertical tolerance. Therefore, this change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. A failure in the packing would not lead to a failure in the ability of the pump to operate and deliver fuel oil to the day tanks, even if the packing leaks. Also, the diesel fuel oil system is designed such that if the flowrate to the day tanks is not sufficient to supply enough makeup, or if the pump discharge pressure is low, the second transfer pump would auto start. Each pump is designed to supply fuel oil at a rate of approximately 3 times the demand at full load of the diesel. Therefore, a failure of the packing will not decrease Technical Specification safety margins defined by the basis of the Technical Specification basis, including the bases to section 3/4.8.1.

90-V2N0161

This design change package modifies the return line (2-1213-047-3") from the Spent Fuel Pool Cooling and Purification System (SFPCPS) to the refueling cavity. The modification consists of the addition of removable piping segments interconnected by quick disconnect fittings. These removable piping segments and their supports will be installed during refueling outages with the reactor in Mode 5 or 6 and will be removed following refueling for decontamination and storage outside of containment.

1. Failure of the piping during installation or while the system is in operation during refueling outages will have no adverse effect on seismic category 1 structures, systems, and components in the vicinity of the piping. Extending the return line below the normal refueling cavity water level creates the possibility of gravity draining the cavity in the event of reverse system flow. To prevent this occurrence, an anti-syphon hole has been provided in the return line. Thus, the ability to maintain the minimum cavity water level and the decay heat removal of the spent fuel pool/refueling cavity will not be compromised.

2. Installation of non-seismic piping within the containment has been addressed and deemed acceptable since failure of the piping will not adversely affect the seismic category 1 structures, system, or components in the vicinity of the piping (Ref. FSAR Table 3.2.2-1, Note 2).

3. The SFPCPS is not specifically addressed in the Technical Specifications. Technical Specifications 3/4.9.10 and 3/4.9.11 and the associated bases address the water level in the spent fuel pool and the refueling cavity during refueling. The addition of the anti-syphon hole will ensure that any reverse flow in the SFPCPS will not drain the water level below the minimum Technical Specification requirements. Therefore, the margin of safety as defined in the Technical Specifications will not be reduced.

90-V2N0166

This proposed change is to allow the emergency diesel generators 2A and 2B, project class 11E, to be started by an emergency signal and have the high jacket water trip bypassed, in addition to the other trips which are already bypassed by an emergency start signal (Safety Injection (SI), Loss of Offsite Power (LOSP), or Emergency Manual Start).

This change will add isolation valves in the instrument tubing between the DG high jacket water temperature elements and the local DG control panel. The valves will normally be closed, but the valves may be opened to allow additional engine protection when performing a non-emergency manual start or surveillance of the diesels.

1. The valves being added are seismically and environmentally qualified for their environment and will be mounted in such a way as to not overstress the instrument tubing. Isolating this trip will not cause a malfunction of the diesel engine or any other equipment or components assumed to function in accident analyzed in the FSAR. The valves will be located away from the engine, near a support , to prevent any significant vibration effects. Proper valve position will be ensured by administrative control. Incorrect positioning of the valves would only make the trip active, as it is currently.

2. There is no change to the DG trip logic, other than the blocking of the trip. A separate high jacket water temperature alarm is still available locally and in the control room. The safety benefit gained by the increased reliability of the DG when this trip is bypassed is judged to outweigh the effect of an additional operator decision to trip the DG if a high temperature alarm is received. This change does not create the possibility of an accident or equipment/ component malfunction not described or analyzed in the FSAR, including the failure of the DG. As documented in the FMEA in FSAR Tables 3.3.1-3, if one DG fails, the other is available. In addition, the operator can manually stop the DG if a high temperature alarm is received.

3. This design change will not decrease the margin of safety as defined by the bases of the Technical Specifications, including the bases for 3/4.4, 3/4.5, 3/4.8, 3/4.9, or the bases for the surveillance requirement in 3/4.8.1. The margin of safety of the reactor coolant system, emergency

core cooling system and refueling operation is related to the availability of the site electrical power system to provide sufficient power to the safety-related equipment required for the safe shutdown of the facility and the mitigation and control of accident conditions within the facility. A loss of offsite power is a contributing event during other postulated accidents. The ability of the DG to start and continue to run during events which contribute to accidents is an increase in the margin of safety. Removal of this automatic trip would allow the DG to continue to operate in the event of a false high-jacket water temperature. The operability of the onsite A.C. power sources will not be degraded by implementing this design change, and will be enhanced in certain conditions.

90-V2N0173

This change makes pipe supports V2-1304-061-H057 and N058 on line 2-1304-061-6" (feedwater heater drain) and pipe support V2-1305-080-H060 on line 2-1305-080-6" (condensate and feedwater system) removable. The supports are seismic category 2 ANSI B31.1 designed to meet 2 over 1 design criteria. The system function or support integrity is not effected by these changes as substantiated by calculations as referenced in the DCP calculation record. Supports are only to be removed during an outage and must be reinstalled before system operation.

1. The piping and supports in this DCP were reviewed for impact to interconnecting equipment and components. This review and calculations performed for this change demonstrate the adequacy of the modifications. Therefore, based on a review of the FSAR, including section 15, this change does not affect any equipment or component function.

2. The supports in this DCP are substantiated by calculations that show the change is within the design criteria and code allowables. The change is for pipe supports and does not affect any equipment/component function or operation and therefore does not create any possibility of accident or malfunction.

3. The calculations performed for this DCP show the support stresses to be in accordance with the applicable design criteria, codes and standards as identified in the Design Input Record of this DCP. These criteria establish the design bases for piping and support stresses. Inherent in these design bases is the same margin of safety as the original design. Since the calculations are within design criteria, the margin of safety as defined in the bases of the Technical Specifications, including the bases to Technical Specification 3/4.7, is not decreased.

90-V1N0179

Electrical protection of the safety related, seismic category 1, diesel generators 1A and 1B during normal and loss of offsite power (LOSP) operation includes Loss of Field, Voltage Controlled Phase Overcurrent (OC), Ground Overcurrent (GOC), and other protection. The GOC trips for diesel 1A and 1B will be removed by disconnecting the ground fault auxiliary relay (151NX) contact from the diesel generator breaker lock-out relay 186B. This is accomplished by removing two jumpers and adding a third jumper in the generator control panels for diesel generators 1A and 1B.

1. Removing the diesel generator breaker ground overcurrent trip will have no effect on the probability of malfunction of the diesel generator or its components. This design change will require the operator to monitor the alarm status of the diesel generators during LOSP and normal initiated operation as he currently does for SI initiated operation. If the diesel is damaged due to a second ground fault with one of the faults occurring in the generator, the system response will be no different than if the diesel had tripped. FSAR Table 8.3.1-3 (items 4 and 41) describes the consequences of failure of a diesel generator to start or run. This table shows that there is no adverse impact on equipment assumed to function in the accidents analyzed in FSAR chapter 15.

2. During LOSP and normal initiated diesel generator operation, the operator in the control room will now have to determine whether or not to trip the diesel if it develops a ground fault. Currently, the operator only has to perform this oversight during safety injection initiated operation. The effects of failure of the diesel generators to run are documented in FSAR Table 8.3.1-3 (items 4 and 41). The circuit modifications involve disconnecting the diesel generator ground overcurrent trip. For postulated fire initiating events, an additional single active failure (i.e. a second ground fault with one or both occurring in the generator) is not required to be postulated (ref. FSAR 9.5.1.3). No new single failures are created. Therefore, this design change can not lead to an accident or malfunction not described or analyzed in the FSAR.

3. This design change will not decrease the margin of safety as defined by the bases of the Technical Specifications including the bases for 3/4.4, 3/4.5, 3/4.8, 3/4.9 or the bases for Surveillance Requirement 3/4.8.1. The margin of safety of the reactor coolant system, emergency core cooling system and refueling operation is related to the availability of the site electrical power system to provide sufficient power to the safety-related equipment required for the safe shutdown of the facility and the mitigation and control of accident conditions within the facility. A loss of offsite power is a contributing event during other postulated accidents. The ability of the diesel generator to start and continue to run during events which contribute to accidents is an increase in the margin of safety. A diesel generator would now continue to run with a ground fault existing instead of automatically tripping on ground overcurrent. The operability of the onsite A.C. power sources will not be degraded by implementing this design change.

90-V2N0180

Electrical protection of the safety related, seismic category 1, diesel generators 2A and 2B during normal and loss of offsite power (LOSP) operation includes Loss of Field, Voltage Controlled Phase Overcurrent (OC), Ground Overcurrent (GOC), and other protection. Each of these conditions is detected by a protective relay which actuates an auxiliary relay. The auxiliary relays for OC, GOC, and loss of field actuate lock-out relay 186B which trips the diesel generator breaker. The GOC trips for diesel generators 2A and 2B will be removed by disconnecting the ground fault auxiliary relay (151NX) contact from the diesel generator breaker lock-out relay 186B. This is accomplished by removing two jumpers and adding a third jumper in the generator control panels for diesel generators 2A and 2B.

1. Removing the diesel generator breaker ground overcurrent trip will have no effect on the probability of malfunction of the diesel generator or its components. This design change will require the operator to monitor the alarm status of the diesel generators during LOSP and normal initiated operation as he currently does for SI initiated operation. If the diesel is damaged due to a second ground fault with one of the faults occurring in the generator, the system response will be no different than if the diesel had tripped. FSAR table 8.3.1-3 (items 4 and 41) describes the consequences of failure of a diesel generator to start or run. This table shows that there is no adverse impact on equipment assumed to function in the accidents analyzed in chapter 15.

2. During LOSP and normal initiated diesel generator operation, the operator in the control room will now have to determine whether or not to trip the diesel if it develops a ground fault. Currently, the operator only has to perform this oversight during safety injection initiated operation. The effects of failure of the diesel generators to run are documented in FSAR table 8.3.1-3 (items 4 and

41). The circuit modifications involve disconnecting the diesel generator ground overcurrent trip. For postulated fire initiating events, an additional single active failure (i.e. a second ground fault with one or both occurring in the generator) is not required to be postulated (ref. FSAR 9.5.1.3). No new single failures are created. Therefore, this design change can not lead to an accident or malfunction not described or analyzed in the FSAR.

3. This design change will not decrease the margin of safety as defined by the bases of the Technical Specifications including the bases for 3/4.4, 3/4.5, 3/4.8, 3/4.9 or the bases for Surveillance Requirement 3/4.8.1. The margin of safety of the reactor coolant system, emergency core cooling system and refueling operation is related to the availability of the site electrical power system to provide sufficient power to the safety related equipment required for the safe shutdown of the facility and the mitigation and control of accident conditions within the facility. A loss of offsite power is a contributing event during other postulated accidents. The ability of the diesel generator to start and continue to run during events which contribute to accidents is an increase in the margin of safety. A diesel generator would now continue to run with a ground fault existing instead of automatically tripping on ground overcurrent. The operability of the onsite A.C. power sources will not be degraded by implementing this design change.

90-V2N0187

This change involves adding two supports on the Turbine Generator Stator Cooling System. One support is for two, 1/2" diameter flow lines for flow element 2FE-6859 and the other is for flow switch 2FS-6832. The hanger supporting the two, 1/2" flow lines is attached to the 6" diameter pipe they originate from. The flow switch is braced off of the Stator Cooling Water Storage Tank. The Turbine Generator Stator Cooling System

is located in the Turbine Building and is a non-safety related system. The 1/2" flow lines, 6" pipe, flow switch, and storage tank are all Project Class 424 items.

1. By adding the supports required under this proposed change, the resulting reduction in vibrations of the subject flow devices will improve the reliability of the Turbine Generator Stator Cooling System and improve the reliability of the Turbine Generator. However, both systems serve no safety function and have no safety design basis and, therefore, are not assumed to function in accidents analyzed in the FSAR.

2. The purpose of the supports is to reduce the vibration in the flow devices so as to reduce the possibility of an unnecessary turbine trip. Therefore, the proposed change has been analyzed so as to improve the operation of the system and does not create the possibility of an accident or an equipment/component malfunction not described and analyzed in the FSAR.

3. The proposed change improves the reliability of the Turbine Generator Stator Cooling System and improves the reliability of the Turbine Generator by reducing the vibrations in two flow devices which eliminates a source of a possible unnecessary turbine trip. Therefore, the margin of safety as defined by the bases of the Technical Specifications, including the basis to section 3/4.7, Plant Systems, is not decreased.

90-V1N0189

This design change adds a test connection between CVCS letdown containment isolation valve HV-8152 and containment penetration 48. The connection includes one, 3/4" manual globe valve, one flange connection and blind flange, and 3/4", Sch. 40S pipe (Class 212, HGO).

1. This portion of the CVCS is not assumed to function during an accident. No new pipe break locations are created and no hazard analyses are affected by the addition of the 3/4" test connection. This includes a review of FSAR sections 15 and 9.3.

2. The accident which is described in the FSAR for the normal letdown is a full pipe break and is not affected by this change. The operation of the letdown isolation valves and the containment isolation valves are unaffected by this change. This includes a review of FSAR sections 3, 6, and 15.

3. Technical Specification bases 3/4.6.3 describes requirements for containment isolation valves. The valve added by this design change will be normally closed and blind flanged which gives double isolation. Containment isolation and the function of the CVCS is unaffected. Therefore, this design change does not decrease the margin of safety as defined by the Technical Specification bases, including the bases to sections 3/4.6.3, 3/4.1 and 3/4.4.

90-V2N0194

This design change provides the following:

A. For each Main Steam Isolation Valve (MSIV), add qualified 1 amp fuses in the Haskell Pump air supply solenoid circuit. The fuses will be located in spare fuse blocks mounted in Auxiliary Relay Panels. Designate the circuit from the fuses to the solenoid valves as an associated circuit. The MSIVs are project Class 212 and considered safe shutdown components.

B. At each MSIV, insert a condulet in the conduit run between the vendor installed splice box and the hydraulic fluid reservoir. The condulet will facilitate splicing to the fluid level switch pigtails. The switches are project classification 11E.

1. a. The design change does not alter any existing equipment or component assumed to function in accidents analyzed in the FSAR. The addition of fuses as described in responses 1a and 4a does not constitute an alteration because the fuse blocks utilized

are spares and are already located in the auxiliary relay panels. The Haskel pump solenoid is not environmentally qualified and is not required to operate under accident conditions. The changes proposed will decrease the probability of occurrence and consequences of an accident by ensuring the MSIV control and indication circuit is not affected by the potential failure of the unqualified solenoid valve.

b. The additional condulet will provide a point of access to the Hydraulic Fluid Level Switch pigtails, thereby allowing substitution of a qualified splice in place of the existing unqualified splice. This will enhance the overall circuit reliability and decrease the probability and consequences of any accident which could alter the MSIV area environment. Reviewed FSAR sections 7.3.8, 8.3.1.4, 10.3, and chapters 8 and 15.

2. None of the proposed changes create the possibility of an accident or equipment/component malfunction. The changes are enhancements which improve reliability of the MSIV control and indicating circuits. The MSIV and its associated circuits and devices are functionally unaffected. The changes are only to bring the installed circuits into compliance with commitments made in the FSAR with regard to independence of Class 1E circuits and the use of qualified splices, as discussed in responses 4a and 4b. Reviewed sections 7.3.8, 8.3.1.4, 10.3 and chapter 8 and 15 of the FSAR.

3. Independence of Class 1E circuits and cable splicing are not addressed in the Technical Specification. It is assumed Class 1E and associated circuits are adequately separated or isolation from non-Class 1E circuits and components, or justified by analysis, and that qualified splices are used where appropriate. These implied

assumptions are still valid. None of the Main Steam System features or bases are affected in as much as there is no change to the MSIV control or indicating function characteristics.

91-V1E0016

This change replaces the existing non-safety related (limit switches for MOV 1HV-7244 and 1HV7245) plastic limit switch worm gear, limit switch wheel and add-on pak gear set (parts) with metal parts for valve tag nos. 1-HV-7244 and 1-HV-7245, which serve as circulating water pump discharge valves within the Circulating Water system (System No. 1401). The limit switches provide valve position and pilot light indication. In addition, the limit switch is interlocked with the circulating water pump-start electrical circuit. These valves are within the circulating water system which does not perform a safety related function as indicated in design criteria DC-1401, Para. 3.1.

1. Modifications associated with this DCP affect the Circulating Water System which has no safety design basis and is not assumed to function in any accident analysis described in the FSAR. The replacement of the plastic limit switch parts with metal parts is in accordance with the valve actuator manufacturer's (ROTORK) plant approved instruction manual. Therefore, there would be no adverse impact to the intended function of the valve limit switches.

   Implementation of the modifications permitted by this DCP, in accordance with existing plant approved specifications and procedures, will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. There are no new potential accidents or events created, nor are there any new failure modes introduced. Modifications associated with this DCP affect non-safety related system/components. There are no safety related systems affected by this DCP.

   Implementation of the modification permitted by this DCP will be in accordance with existing plant approved specifications and procedures. The modifications permitted by this DCP do not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The Technical Specifications do not address the Circulating Water System pump discharge valves or the Circulating Water System. However, the modifications required by this DCP are to be implemented in accordance with plant approved procedures and valve manufacturer instructions which will result in a design which is consistent with the original plant design requirements. The modifications required by this DCP will be completed in accordance with the Design Criteria applicable to VEGP (and as identified in the Design Input Record). Therefore, the modifications required by this DCP do not decrease the margin of safety defined by the bases in the Technical Specification.

91-V2N0032

Safety Injection Accumulator level system bellows for level transmitters (2LT-950, 2LT-951, 2LT-952, 2LT-953, 2LT-954, 2LT-955, 2LT-956 and 2LT-957) will be rotated 180 degrees (Calibration Swaglock fitting will be in vertical position pointed up).

1. This modification enhances performance of existing non-safety related Accumulator Level system.

The accumulator tanks are safety related equipment required to mitigate the consequences of a Loss of Coolant Accident (Section 15.6.5). The non-safety related instrumentation affected by this modification is not relied upon to actuate any safety-related equipment. Furthermore, following the modification, the instrumentation lines will be leak checked to ensure the pressure boundary is maintained. Therefore, this change does not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. No new potential accidents or events are created as a result of this modification since no new modes of failure are introduced. The change covered in the DCP for the level transmitters will not affect the seismic qualification of the transmitters. The pressure boundary of the instrumentation lines have not been adversely affected as a result of this modification and will be leak checked following rotation of the bellows. In addition, rotation of the bellows will enhance the instrumentation's performance. Failure of the instrument following the modification will be no worse than those failures postulated prior to rotating the bellows. Therefore, this change does not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. This DCP provides a change to the non-safety related level indicating system of the Safety Injection Accumulator tank. This modification enhances the system by indicating more accurate reading. Therefore, there is no reduction in the margin of safety as defined by the bases of the Technical Specification 3/4.5.1.

92-V2N0015

This design change adds flexible connections to the Electro-Hydaulic Control (EHC) tubing at the Main Turbine Control and Stop Valves. The EHC lines consists of the emergency trip supply (ETS), fast acting supply (FAS), and fluid cooler drain (FCD). Also, supports will be added to the existing, unsupported tubing clamps at the flexible connection locations. The Main Turbine EHC System is non-safety related and seismic category 2 (Project Class 424).

1. The Main Turbine EHC System performs no safety related function and is Project Class 424. The modifications required by this design change will meet the design, material, installation, non-destructive examination, testing and quality requirements of the existing system. Therefore, the proposed change will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. The Main Turbine EHC System performs no safety related function and is Project Class 424. The modifications required by this design change will meet the design, material, installation, non-destructive examination, testing and quality requirements of the existing system. The proposed change does not introduce a new accident, failure mode, or hazard to the plant. Implementation of the proposed change will be in accordance with existing plant approved specifications and procedures. Therefore, the proposed change will not create the possibility of an accident or equipment/component malfunction not described and analyzed in the FSAR.

3. The modifications required by this design change are to be implemented while the plant is in cold shutdown, and will be in accordance with plant approved specifications and procedures. The

modifications are to be completed in accordance with the Design Criteria and the Codes and Standards applicable to VEGP, which will result in a design which is in compliance with the existing plant design requirements. Technical Specifications 3/4.3.1, 3/4.3.4 and 3/4.7.1 have been reviewed and it has been determined that they are not affected by this design change. Therefore, the proposed change will not decrease the margin of safety defined by the bases of the Technical Specification.

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MDD's

89-VZM026

The addition of differential pressure gauges to the existing instrumentation on the polishing filter section of the Main Turbine and Steam Generator Feed Pump Turbine Lube Oil Conditioners.

1. The addition of the referenced instrumentation of the Lube Oil conditioners, which are non-safety related, would not cause a failure or malfunction of the systems they support, not previously evaluated in the FSAR. Furthermore, the instrumentation, or its failure, can not cause any malfunction of any safety related system or component not previously evaluated in the FSAR.

2. Failure of the oil conditioners or referenced instrumentation can not create an accident condition not previously reviewed in the FSAR.

3. The failure of the oil conditioners or the referenced instrumentation can not effect any safety related component and, therefore, does not effect any bases for any Technical Specification.

89-V1M030

Change time dial setting for the RCP Time Overcurrent Relays from 960 cycles at 500% of TAP to 1080 cycles at 500% of TAP and change High Dropout Unit Setpoint for the RCP Time Overcurrent Relays from tap 7 (480 amps) to tap 7 (560 amps).

1. The change does not increase the probability of occurrence or consequences of an accident as described in FSAR chapter 15. The new setpoints for the RCP overcurrent relays (560A) are below the design limit of the containment penetrations (636.6), Ref. Fig. 8.3.1-7, sheet 12 of 19.

2. The new setpoints for the RCP Time Overcurrent Relays simply allow all the RCP's to start reliably without nuisance tripping while still providing adequate locked rotor protection for the RCP's and adequate protection for the containment penetrations.

3. The change does not decrease the margin of safety defined by the bases for the Technical Specification (See section 3/4.8.4). The new setpoints are still below the design limits of the containment penetrations - Ref. FSAR Fig. 8.3.1-7, sheet 12 of 19.

89-V1M057

In DG1A and DG1B engine control panels, add a tee connection in lines E10-A, E10-B and E10-C before the lines exit the panel to connect low pressure lube oil switches on the engine. Install a 3/8" line from each tee with a 0.014" orifice in-line and connect to the pneumatic control air supply.

1. This MDD decreases the probability of occurrence or consequence of a malfunction of safety related equipment previously evaluated in the FSAR by improving the reliability of the low pressure lube oil trip system.

2. This MDD does not create the possibility for an accident or component previously evaluated, in the FSAR. Effect of losing one diesel already been evaluated in FSAR FMEA Table 8.3.1-3.

3. This MDD does not decrease the margin of safety defined by Technical Specification bases 3/4.0.

89-V1M063

Change the orientation of the condensate pumps seal water piping to allow for the installation of mechanical seals in the condensate pumps. Design of the pump allows for the option of a stuffing box

arrangement or mechanical seal in these pumps. Seal injection piping was originally designed to supply water to either pump sealing system, with only minor piping orientation changes required.

1. The orientation change of the non-safety related seal water piping and the replacement of the mechanical seal in the non-safety related condensate pumps was done in accordance with existing plant procedures and specifications. The condensate pumps have no safety design basis and are not assumed to function in any accident described in the FSAR, and therefore, will not increase the probability or consequences of an accident or malfunction of equipment important to safety, previously evaluated in the FSAR.

2. The change of the seal water orientation and replacement of a mechanical seal in the condensate pumps does not introduce any new possible failure modes and will not create the possibility of an accident or equipment/component malfunction not described in the FSAR.

3. The referenced change will not effect any safety related component, and therefore, will not decrease the margin of safety design bases in the Technical Specifications.

89-V1M064

This MDD removes internals from check valve 1-1322-U4-509.

1. The change effects only systems that are not safety related or required to mitagate the effects of any accident. This is based on a review of FSAR sections 3, 9, 10 and 15.

2. The change does not create the possibility of an accident not evaluated in the FSAR due to the system having no effect on safety related systems or having effects on any system accident evaluation done in FSAR sections 3, 9, 10 and 15.

3. The change does not effect the bases of Technical Specification as reviewed in section 3/4-7 (Plant Systems).

89-V1M070 Change pressure switch PS-50B setpoint from 45 psi (rising) to 40 psi (rising). Revise drawing 1X4AK01-52 to reflect the new setpoint and recalibrate pressure switches 1PS-4736 for Train A DG and 1PS-4846 for Train B DG. (Reference ODR T-2-88-073)

1. This MDD involves a setpoint change which will decrease the probability of occurrence or consequence of a component malfunction.

2. This MDD involves a setpoint change only and does not create the possibility for an accident or component malfunction of a different type than previously evaluated in FSAR section 15.

3. This MDD does not decrease the margin of safety defined by the bases for Technical Specifications.

89-V1M071 This MDD adds a 1/2" drain valve on each end of both intake manifolds for Unit 1 Train A and B Diesel Generators. Existing drains are 1/4" tubes which are open to the atmosphere.

1. The failure of these drain valves will have no adverse effect on or increase the consequences of a malfunction on the Diesel Generators.

2. The failure of these drain valves will not increase the possibility of component malfunction or Diesel Generator failure of a different type than previously evaluated.

3. The addition of these drain valves does not decrease the margin of safety as described in Technical Specification section 3/4.8.1.1.2.

89-V1M075

This MDD adds vent and drain valves to Steam Generator Feed Pump (SGFP) Seal Injection Duplex Filters to replace the existing threaded plugs used during maintenance of the filters.

1. The SGFP Seal Injection system has no safety design basis and is not assumed to function in any accident described in the FSAR. The vent and drain valves are only used during maintenance of the duplex filters. Implementation of the change will be in accordance with existing plant approved specifications and procedures, and will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. The change adds non-safety related vent and drain valves to the non-safety related SGFP Seal Injection system. It does not introduce any new possible failure modes. Implementation of the change will be in accordance with the existing plant approved specifications and procedures, and will not create the possibility of an accident or equipment/component malfunction not described in the FSAR.

3. The Technical Specifications do not specifically address the SGFP Seal Injection system. However, the change will be implemented in accordance with existing plant approved procedures and with the design criteria applicable to VEGP (and as identified in the Design Input Record). Therefore, the change will not decrease the margin of safety defined by the bases of the Technical Specifications.

89-V2M077

This MDD adds vent and drain valves to Steam Generator Feed Pump (SGFP) Seal Injection Duplex Filters to replace the existing threaded plugs used during maintenance of the filters.

1. The SGFP Seal Injection system has no safety design basis and is not assumed to function in any accident described in the FSAR. The vent and drain valves are only used during maintenance of the duplex filters. Implementation of the change will be in accordance with existing plant approved specifications and procedures, and will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. The change adds non-safety related vent and drain valves to the non-safety related SGFP Seal Injection system. It does not introduce any new possible failure modes. Implementation of the change will be in accordance with the existing plant approved specifications and procedures, and will not create the possibility of an accident or equipment/ component malfunction not described in the FSAR.

3. The Technical Specifications do not specifically address the SGFP Seal Injection system. However, the change will be implemented in accordance with existing plant approved procedures and with the design criteria applicable to VEGP (and as identified in the Design Input Record). Therefore, the change will not decrease the margin of safety defined by the bases of the Technical Specifications.

89-V1M078

This MDD removes existing aftercooler safety valves made by Kunkle Valve Company, Model # 6010D1 or 6000D1, 1/2", setpoint 275 psig, and installs Crosby valves, Model # 41A, Bronze, 1/2" x 3/4", setpoint 275 psig, service: fluid/air, relieving capacity: 606 SCFM and changes drawing 1X4AK01-54 to reflect the new valves to be installed.

1. This MDD decreases the probability of occurrence or consequence of a malfunction of safety related components by installing a more reliable brand of aftercooler safety valves.

2. This MDD does not create the possibility for an accident or component malfunction of a different type other than previously evaluated.

3. This MDD does not decrease the margin of safety defined by Technical Specification bases.

89-V2M081

This change replaces the existing 2 megaword (MW) fixed head drum storage devices presently used in the Proteus Computer System with solid state static memory devices (Megaram). A tape backup device (Megastream) will be installed on one of the two redundant Megarams, and controller cards interfacing the Megarams with the system will require revision. This change is a hardware change only and does not affect the functionality of the system software.

1. This change represents a change to the Proteus Computer Systems' memory hardware and does not degrade the software controlled functions. The software controlled functions provided by the computer system important to plant operations include rod bank position indication/deviation (Technical Specification 3/4.1.3), axial flux difference indication (Technical Specification 3/4.2.1), and the calorimetric calculation. Since the system software is unaffected by this change and these software functions are not included as functions available for mitigation of accident effects listed in FSAR section 15.0.8, then this change does not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR.

2. This change to the Proteus Computer affects system hardware only. The computer system does provide indication of plant parameters that would be helpful in the event of an accident. However, the system is not required for any safety related functions. Therefore, this change does not create the possibility of an accident or malfunction of a different type than previously evaluated in the FSAR.

3. This change does not affect the computer system software or the I/O hardware used to meet the Technical Specification requirements of sections 3/4.1.3 and 3/4.2.1. In addition, if the system is inoperable, procedures are in place to perform these functions manually on an increased surveillance cycle. Therefore, this change does not reduce the margin of safety as defined in the bases for the indicated Technical Specification sections.

89-V1M082 This MDD moves root valve 1-1305-X4-954 and 1PC-4446 process sensing connection downstream of 1PV-4446 to an area of laminar flow.

1. This design change does not affect safety related equipment or components. Therefore, it does not increase the probability of a malfunction of safety related equipment or components evaluated in FSAR section 15, "Accident Analyses".

2. No new equipment or component malfunctions are created by this modification. This included review of the FSAR section 10.4.7 and section 15, "Accident Analyses".

3. There is no change to the Technical Specification margin of safety by this modification. This included review of bases of Technical Specification 3/4.7.

89-VCM095

This MDD will lengthen the "depth of bury" for fire hydrant C-2301-U4-928 in order to raise the hydrant base to grade elevation.

1. The fire hydrant will operate exactly as the current configuration. It will only be more accessible. There is no increase in the probability or consequences of any accident or malfunction of any safety related equipment not already addressed in the FSAR.

2. This change only extends a fire hydrant bury depth. No new type of malfunction is possible.

3. VEGP Technical Specifications do not address fire hydrants. Therefore, the Technical Specification bases are not affected 3/4.7.0.

89-VCM096

This MDD revises the setpoints for time-delay relays (62-devices) for fans 1-1556-B7-007 (Control Building Piping Restraint Fan) and A-1531-B7-008 (CR Kitchen and Toilet Exh. Fan) and will also revise the setpoints for temperature switch 1TISH-22513, which starts fan 1-1540-B7-006 (East-West Normal Electrical Tunnel Exhaust Fan) on high tunnel temperature.

1. The proposed changes do not affect any safety related equipment, instrument, or other components and therefore will not increase the probability of occurrence or consequences of a malfunction of any safety related equipment or components previously evaluated in the FSAR.

2. The proposed changes will enable the affected equipment to operate as designed and as described by or implied in the FSAR. This equipment has no safety design function. Therefore, the changes will not create the possibility for an accident or equipment/component malfunction other than those which have been previously addressed in chapter 15 of the FSAR.

3. The equipment affected by the proposed changes is not addressed by the Technical Specifications. Therefore, there will be no decrease in the margin of safety defined by the bases for any of the Technical Specifications.

89-V2M098

This MDD deletes Annunciator ALB06D01, "HIDT THERMAL STRATIFICATION", and associated cables.

1. The piping temperatures are obtained on a regular basis instead of a response to an annunciator. Trends are obtained prior to annunciator alarm.

2. The monitoring of temperatures will determine if thermal stratification is occuring. A Technical Support Department program monitors critical piping temperatures using TJR-27734.

3. At the present time, the annunciator ALB06001 is not being used due to the constant monitoring program and as such, the annunciator is a nuisance alarm. There are no Technical Specifications or bases associated with the thermal stratification program.

89-V1M105

This MDD increases the "Fast Overload Shutdown" setpoint of Inverters 1AD1I11 & 1BD1I12 from 165% to 195% of inverter rating.

1. The proposed change will not increase the probability of occurrence or consequences of a malfunction of safety related equipment or component previously evaluated in FSAR chapter 15. Increasing the fast overload shutdown to 195% of inverter rating does not affect normal operation of the inverter.

2. The proposed change does not create the possibility for an accident or equipment component malfunction of a different type other than evaluated previously in the FSAR chapter 15. Increasing the fast overload shutdown to 195% of inverter rating does not affect normal operation of the inverter.

3. The proposed change does not decrease the margin of safety defined by the bases for the Technical Specifications. (Ref. chapter 16 bases for Technical Specifications.)

89-V2M105

This MDD increases the "Fast Overload Shutdown" setpoint of inverters 2AD1111 and 2BD1112 from 165% to 195% of inverter rating.

1. The proposed change will not increase the probability of occurrences consequences of a malfunction of safety-related equipment or component previously evaluated in FSAR chapter 15. Increasing the fast overload shutdown to 195% of interter rating does not affect normal operation of the inverter.

2. The proposed change does not create the possibility for an accident or equipment component malfunction of a different type other than evaluated previously in the FSAR chapter 15. Increasing the fast overload shutdown to 195% of Inverter rating does not affect normal operation of the inverter.

3. The proposed change does not decrease the margin of safety defined by the bases for the Technical Specification. (Ref. chapter 16 bases for Technical Specifications.)

89-V2M106

A. This MDD removes (flow orifice) FO-5560 from Steam Generator Feed Pump (SGFP) "A"lube oil drain to conditioner and removal of FO-5557 from SGFP "B".

B. Rotates valves 2-1307-U4-503 and 505 from a vertical to a horizontal stem position. Valve 505 will be moved to allow this rotation.

1. FSAR Table 10.4.7-1 addresses the loss of a steam generator feed pump. This change will not increase the probability or consequences of such a component failure. Complete loss of the lube oil conditioning system will not fail the feed pump.

2. The worst case failure of the lube oil conditioning system will not increase the probability or consequences of an accident described in FSAR chapter 15.0.

3. Steam Generator feed pumps are not included in the bases for Technical Specifications steam generator water level (loss of feedwater), Table 2.2-1 #13.

89-VZM107 This MDD modifies the Tendon access shaft covers. These covers are located at Containment Buttress No. 2 and 3. Unit #2.

1. This change will not reduce the structural integrity of the cover. The access cover cannot create the malfunction of any safety related equipment.

2. The cover will meet the same design criteria as original construction. The modification will not create an additional failure mode. The change will not create the possibility for an accident other than previously evaluated in the FSAR, chapter 15.

3. This change will have no affect of the bases for the Technical Specification. The modification will ensure the covers can be removed safely. The change will meet the codes and specifications used for plant construction.

89-V1M108 This MDD revises the Amertap system by removal of the ball circulation monitor and its associated functions.

1. There is no safety related equipment involved with this change. Per FSAR sections 2.2, 4, and 1.3, there are no safety design bases for the main condenser.

2. This change will only remove a monitor that serves no function due to its application. It cannot in any way create the possibility of an equipment malfunction not discussed in FSAR.

3. Condenser is not safety related and has no safety design bases in Technical Specifications.

89-V1M109

This MDD installs a top mounted handwheel type up (adjustable) travel stop on temperature control valve TV-6800. This will be accomplished by removing existing upper diaphram casing and installing a new diaphram casing which has a handwheel/stem travel stop incorporated into the casing.

1. The change does not effect any safety related system as described in the FSAR, nor is stator cooling water required for safe shutdown of the plant (Reference FSAR system definition - section 10.2).

2. The change to stator cooling does not nor can not cause an accident or malfunction of a component that is different from those described in FSAR sections 10.0, 15.1, and 15.2.

3. The change does not effect the margin of safety as defined in Technical Specifications section 3/4.7.

89-V2M110

This MDD installs a top mounted handwheel type up (adjustable) travel stop on temperature control valve TV-6800. This will be accomplished by removing existing upper diaphram casing and installing a new diaphram casing which has a handwheel/stem travel stop incorporated into the casing.

1. The change does not effect any safety related system as described in the FSAR, nor is stator cooling water required for safe shutdown of the plant reference FSAR system defininationn - section 10.2.

2. The change to stator cooling does not nor can not cuase an accident or malfunction of a component that is different from those described in FSAR sections 10.0, 15.1 and 15.2.

3. The change does not effect the margin of safety as defined in Technical Specifications section 3/4.7.

89-V1M113

This MDD involves removal of sight glasses from feedwater heaters, moisture separator drain tanks, heater drain tanks, and steam line drain collection points.

1. Removal of these sight glasses are not associated in any way with any safety related equipment as referenced in FSAR sections 10.0 and 10.1, on steam and power conversion and definitions.

2. Removal of sight glasses does not create the possibility of any accident or equipment malfunction not previously evaluated in FSAR sections 15.1 and 15.2.

3. Removal of sight glasses does not effect any item discussed in Technical Specifications. Reference section 3/4.7.

89-V2M114

This MDD involves removal of sight glasses from feedwater heaters, moisture separator drain tanks, heater drain tanks, and steam line drain collection points.

1. Removal of these sight glasses are not associated in any way with any safety related equipment as referenced in FSAR sections 10.0 and 10.1, on steam and power conversion and definitions.

2. Removal of sight glasses does not create the possibility of any accident or equipment malfunction not previously evaluated in FSAR sections 15.1 and 15.2.

3. Removal of sight glasses does not effect any item discussed in Technical Specifications. Reference section 3/4.7.

89-V1M115

This MDD deletes the automatic Steam Generator Feed Pump Turbine trip on high vibration. The high vibration alarm will remain active to ensure corrective actions can be taken in the event a high vibration condition actually exists.

1. The SGFPT's have been considered in failure analyses both on Table 10.4.7.1 and chapter 15.2. These deal with a loss/trip of the pump. This change will decrease the probability of a pump trip and the subsequent safety related actuations.

2. A SGFPT trip is evaluated in FSAR chapters 10.4.7 and 15.2.7. This change will decrease the probability of a pump trip and the associated safety related actuations.

3. The SGFPT trip on high vibration is not addressed in the Technical Specifications bases.

89-V2M117

This MDD deletes the automatic Steam Generator Feed Pump Turbine (SGFP) trip on high vibration. The high vibration alarm will remain active to ensure corrective actions can be taken in the event a high vibration condition actually exists.

1. The SGFPT's have been considered in failure analyses both on Table 10.4.7.1 and chapter 15.2. These deal with loss/trip of the pump. This change will decrease the probability of a pump trip and the subsequent safety related actuations.

2. A SGFPT trip is evaluated in FSAR chapters 10.4.7 and 15.2.7. This modification will decrease the probability of a pump trip an the subsequent safety related actuations.

3. The SGFPT trip on high vibration is not addressed in the Technical Specifications bases.

89-V1M118

This MDD replaces the original meter relay for 1TIS-6810 (stator cooling) with a different (model/manufacturer) type meter relay and changes terminal wiring at the meter relay to keep the circuit operation/logic the same.

1. The meter relay type changes does not affect the safety related system as described in the FSAR, nor is stator cooling water required for safe shutdown of the plant, as referenced in FSAR section 10.2.

2. The meter relay type change to stator cooling does not, nor can not, cause an accident or malfunction of a component that is different from those described and evaluated in FSAR sections 10.0, 15.1, and 15.2.

3. The change of meter relay type does not effect the margin of safety as defined in Technical Specifications section 3/4.7.

89-V1M119

The air supply regulator for the actuators of heater drain tank high level dump valves 1LV-4333 and 1LV-4334 is being increased from 60 psig to 80 psig. This may also require the actuator spring to be changed.

1. The proposed change is not to a safety related system and has no effect on any safety related equipment evaluated in chapter 15 of the FSAR.

2. The increased air supply pressure to the actuator does not change the valve's function. Failure of these valves is bounded by the Turbine Trip Analysis.

3. These valves are not addressed in Technical Specification 3/4.7 and they are not a part of any Technical Specification bases.

89-V2M120

The air supply regulator for the actuator of Heater Drain Tank high level dump valves 1LV-4333 and 1LV-4334 is being increased from 60 psig to 80 psig. This may also require the actuator spring to be changed.

1. The proposed change is not to a safety related system and has no effect on any safety related equipment evaluated in chapter 15 of the FSAR.

2. The increased air supply pressure to the actuator does not change the valve's function. Failure of these valves is bounded by the Turbine Trip Analysis.

3. These valves are not addressed in Technical Specification 3/4.7 and they are not a part of any Technical Specification bases.

89-V1M121

This change adds six flanges in the sprinkler piping for system 541 (Unit 1 T.B.) and replaces welded support steel members with bolted support steel members.

1. This change involves non-safety related sprinkler piping and supports located in the Turbine Building. There is no increase in the probability of occurrence or consequences of a malfunction of safety related equipment described in the FSAR.

2. This change does not alter the sprinkler system's function in any way. It only adds the capability for easier removal when needed. There is no possibility for any accident, failure or malfunction of any component or system that is not already evaluated in the FSAR.

3. VEGP Technical Specifications do not address Turbine Building sprinkler systems. This change only affects Turbine Building sprinkler system 541 and associated supports. Therefore, this change does not affect the Technical Specification margin of safety in any way.

89-V1M150

This MDD will add a pressure snubber to the common sensing line of the Heater Drain Pump (HDP) seal injection controller and pressure indicator 1PC-4379, 1PI-4385 for Pump A, 1PC-4380, 1PI-4386 for Pump B.

1. This change does not involve safety related equipment but it should be noted that even complete loss of the affected line (condensate system seal injection supply) will not cause a HDP trip. On loss of seal pressure, a back-up demineralized seal water supply will be provided through a normally closed check valve.

2. Loss of feedwater is evaluated in FSAR section 15.27. There is also no increased danger of flooding per review of section 3.4 - "Water Level (Flood) Design".

3. There is no decrease in the margin of safety defined or implied by Technical Specifications.

90-VCM089

This MDD isolates individual heating elements which are causing ground indication and alarms on 480 volt switchgear ANB13. It clarifies similar isolations previously done on A-1541-A7-002-H001/H02 per ABN 88-V1000A167.

1. The Fuel Handling air supply units A-1541-A7-001/002 are class 626 and the respective feeder breakers ANB13 and ANB14 are also non-Q. Therefore, this change cannot increase the probability of occurrence or consequences of an accident or malfunction of equipment important to safety as evaluated in FSAR section 15.

2. As all final design parameters are still being met, this change cannot affect the HVAC system function. This change cannot cause any type of accident.

3. The fuel handling normal system HVAC is not included in the Technical Specification bases. The normal cooling function which could affect some of the rooms listed in table 3.7-3 (Fuel B008) is not affected.

90-V1M091

This MDD replaces 1FSHL-1928 and 1FSHL-1929 with a flow switch that incorporates a five second time delay. This is in accordance with the recommendations made in REA VG-9638.

1. Addition of a short time delay to the alarm in no way affects the ability of safety related equipment to fulfill its safety function.

2. Addition of a five second time delay on a non-Q alarm function has no impact on safety related equipment. Therefore, this change does not create the possibility of an accident or malfunction different than previously analyzed in the FSAR.

3. This change does not decrease the margins of safety defined in the bases for any Technical Specifications, including 3/4.7.3.

90-V2M092

This MDD replaces 2FSHL-1928 and 2FSHL-1929 with a flow switch that incorporates a five second time delay. This is in accordance with the recommendations made in REA VG-9638.

1. Addition of a short time delay to the alarm in no way affects the ability of safety related equipment to fulfill its safety function.

2. Addition of a five second time delay on a non-Q alarm function has no impact on safety related equipment. Therefore, this change does not create the possibility of an accident or malfunction different than previously analyzed in the FSAR.

3. This change does not decrease the margins of safety as defined in the bases for any Technical Specifications, including 3/4.7.3.

90-V1M099

This MDD removes heat tracing from the electronic portion of Radiation Monitor 1RE-12444C. Update load chart drawing 1X3AF05-479 to reflect 41 feet of heat tracing for ckt C1-11 and a new low alarm setpoint of 90 ^{o}F.

1. Removing 39' of heat tracing from Radiation Monitor 1RE-12444C and reducing the low alarm setpoint to 90 ^{o}F for the heat tracing will not increase the probability of occurrence or consequences of a malfunction of safety related equipment or component previously evaluated in FSAR chapter 15.

2. The proposed change will not create the possibility for an accident or equipment/component malfunction of a different type other than any evaluated previously in FSAR chapter 15.

3. The proposed change will not decrease the margin of safety defined by the bases for the Technical Specifications . Reference Technical Specification bases 3/4.11.

90-V1M106

This MDD provides temporary rigging for lifting the Unit 1 Containment Equipment Hatch, which weighs approximately 32,000 lbs, with the polar crane. This temporary rigging will be used in lieu of the existing permanent hoists located above the equipment hatch. Add stiffeners and lifting lugs to the structural steel at elevation 269'-0" and 244'-7" to support snatch blocks and slings for the temporary rigging.

1. The temporary rigging will only be used during Mode 5 and 6. Failure of the temporary rigging may cause the drop of Equipment Hatch over on the structural steel beams and checker plate directly below the equipment hatch opening. As described in FSAR section 9.1.5.3.1.1, this will not impair decay heat removal or the maintenance of cold shutdown due to the physical separation of the RHR system and its power supplies. In addition, since the load path for lifting the equipment hatch cover using the polar crane is identical to the load path when using the installed hoists, the consequences of a failure would be no different than those associated with the failure of the permanently installed hoists and rigging. Therefore, the proposed temporary rigging will not increase the probability of occurrence or consequences of the malfunction of any equipment or component assumed to function in accidents analyzed in the FSAR.

2. Failure of the temporary rigging may create the possibility of the equipment hatch cover falling on the structural steel beams and checker plate located directly below. The possibility of an equipment hatch cover load drop is not specifically described in the FSAR. However, based on a review of FSAR section 9.1.5.3.1.1, this failure will not cause damage to any safety related equipment required during Mode 5 and 6, and will not preclude decay heat removal or maintenance of cold shutdown. Also, the consequences of this accident will be the same as the failure of existing hoists during the lifting of the equipment hatch cover. Utilizing the polar crane to lift the equipment hatch cover will not adversely affect the polar crane since the polar crane will be subjected to a straight vertical pull significantly less than its rated capacity. When in use, the polar crane will be under administrative controls to ensure that no lateral loads are applied to the crane. Therefore, utilization of temporary rigging does not create the possibility of an accident or equipment/ malfunction not implied or analyzed in the FSAR.

3. This modification will have no effect on the safety margins provided by Technical Specifications sections 3/4.6.1 and 3/4.9.4, or associated bases.

90-V1M107

This MDD changes position transmitter 1-2T-9450 (on cooling tower blowdown valve) from Fisher model 3552 to Fisher model 4211 and reduces the power supply voltage from 40 VDC to 24 VDC.

1. No malfunction of the cooling tower blowdown valve could result in an event more severe than the loss of circulating water, which is already analyzed in FSAR section 15.2.5. No safety related equipment is effected by circulating water.

2. As discussed above, any malfunction is still bounded by the analysis in FSAR section 15.2.5.

3. The circulating water system is not discussed in the basis for any Technical Specification based on a review of the bases for 3/4.5 and 3/4.7.

90-V1M108

The position transmitter on turbine lube oil temperature control valve 1TV7116 is being changed from a Fisher model 3552 to a model 4211. The power supply voltage is being reduced from 40 VDC to 24 VDC.

1. Any failure is bounded by a turbine trip, which is analyzed in FSAR section 15.2.3. No safety related equipment is effected by turbine lube oil or TPCW. Since the new part is similar to the old part, the failure probability is unchanged.

2. Any failure will, at worst, result in a turbine trip, which is analyzed in FSAR section 15.2.3.

3. Turbine lube oil and TPCW are not involved with the bases for any Technical Specification, including 3/4.5 and 3/4.7.

90-V1M109

This MDD provides an alternate method for installing the turbocharger exhaust flange bolting on the Emergency Diesel Generator (EDG). This method will be used when existing field conditions prevent installation of the bolts per the existing design drawings.

1. The alternate bolting method will not increase the probability of occurrence or consequences of a malfunction of safety related equipment. The alternate bolting has no more probability of failure than the original bolting material. This material and method of installation were recommended by the vendor. Therefore, it will not increase the probability of an EDG failure.

2. The alternate bolting method can not create an accident or equipment/component malfunction of a different type other than any evaluated in the FSAR. This change will have no affect on the single failure criteria assumed in the FSAR. The bolting material is recommended by the vendor. Therefore, it cannot change the FSAR analysis.

3. This change has no effect on the bases of the Technical Specification. This change has no effect on the operation of the EDG. This MDD will not require a change to Technical Specification bases 3/4.8.1 or 3/4.8.2.

90-V1M110 In the hotwell of the "A" main condenser (1-1305-E4-005), a broken baffle plate is being repaired and reinforced by adding various minor structural steel plate and angle members. The condenser will be returned to near the original design condition by repairing damage observed during 1R2 outage, which was most likely caused by other damage which was found and repaired during 1R1.

1. The condenser is not safety related, and is not assumed to function in accident conditions. No safety related equipment is affected by the condenser. FSAR 10.4.1.3 states that the condenser has no safety design basis.

2. Any malfunction of the condenser internals will at worst result in a loss of condenser vacuum (turbine trip) or loss of main feedwater, both of which are already analyzed in the FSAR Section 15.2.

3. The condensers are not discussed in the basis for any Technical Specification. This is based on a review of the bases for sections 2 and 3/4.7.

90-VQM112

The setpoint drawing and the logic diagrams associated with "Q" temperature switches 1/2-TISH-12051 and 1/2-TISH-12054 require revision to show the "as-built" condition in the field. These switches provide the auto start function for the second essential fan in the Diesel Generator building when the diesel is running and the temperature rises above 80°F. Revise Unit 1 switches to show the two stage action for the United Electric switch. Revise Unit 1 and Unit 2 reset values to be consistent. Revise logic diagrams to show a separate signal for the stop function, not just a termination of the start signal.

1. The affected temperature switches are not considered directly in the failure modes analysis included in FSAR section 9.4.7. As the switches are not being physically modified, no new chance for failure other than previously evaluated is anticipated.

2. This change is a drawing change to make setpoint and logic diagrams agree with the higher level elementaries and wiring diagrams. The setpoint change had previously been evaluated and approved for Unit 2 during the construction phase.

3. The margins of safety for Specification 3/4.7.13 are unaffected as the system will continue to function as shown on the elementaries. The establishment of the "stop" setpoints will ensure that the fan is allowed to run long enough to meet its design bases and prevent unnecessary cycling of the essential fan.

90-V1M113

This MDD removes type H6B and 4AS anchor bolts as shown on minor departure sketch drawings.

1. The removal of these bolts cannot cause the malfunction of any safety related equipment. The removal of these bolts is for personnel safety only.

2. As stated above, the removal of these bolts cannot create a component malfunction. The removal of these bolts will provide personnel safety.

3. The anchor bolts are not covered in the bases of the Technical Specification. The removal of these bolts will have no effect on the bases of the Technical Specification.

90-V2M114

This MDD adds a personal computer (PC) interface to the Unit 2 Proteus computer system. The equipment added is a WHD card to the switchable programmers bus, a cable (XW039) from the WHD card to the PC, and a PC, powered from a 120V distribution panel internal to Proteus. The necessary software change associated with this change will be controlled and documented per procedure 50015-C, CSCP CR-90-0020. The system response and/or operation of the computer system is not affected by this change. This PC will perform as a batch terminal to the system. This will allow for editing and some programming changes on-line.

1. The addition of the PC interface will not affect the probability of component failure. The Proteus Computer is not a safety related system and it does not directly interface with safety related components. The change therefore, does not increase the probability of occurrence of a malfunction of a safety related component in a manner described in the FSAR. It is not referenced in the accident analysis in section 15 of the FSAR.

2. The accident analysis described in section 15 of the FSAR was reviewed to determine that no possibility for an accident or equipment/component malfunction of a different type than described in the FSAR would be caused by the addition of the PC interface.

3. The Proteus Computer's function of monitoring for Axial Flux Difference and Rod Position Deviation are not changed or compromised in any way by this change. Therefore, the margins of safety defined by the bases for Technical Specifications 3/4.2.1 and 3/4.1.3.2 are not decreased by the addition of the PC interface.

90-V1M115 This MDD eliminates the internal flow switch from the filter unit heater for the Post-Loca Purge Exhaust, 1-1508-N7-001-H01.

1. The heater, the filter housing and all components downstream of the filter housing are non-safety related components and their failure has not been analyzed in the FSAR.

2. The heater malfunction is satisfactorily prevented by the redundant thermal protection provided and by the administrative guidelines found in procedure 13130-1. The accident analysis of FSAR section 15 are unaffected by this change.

3. This heater was designed to reduce the relative humidity of the incoming air to 70% R.H. where more efficient iodine adsorption can occur. However, the included flow protection was improperly designed for the extremely low velocity pressures seen at the heater coil. This change will allow the heater to operate as designed without undo risks. Therefore, the margin of safety for Technical Specification 3.11.2.4. is not reduced.

90-VCM120 This MDD rewires internal wiring on the Blowdown Sulfonator panel. These changes will provide manual operation of the Sulfonator skid.

1. Implementing this change simply makes operable the dechlorination system which is determined in the FSAR not to be a threat to personnel or equipment required for a safe shutdown. Reference section 2.2.3 of the FSAR. Thus, safety equipment malfunction probabilities and consequences are unchanged.

2. Implementing this change simply makes operable the dechlorination system which is determined in the FSAR not to be a threat to equipment or personnel required for a safe shutdown (per FSAR section 2.2.3). Thus, no new accidents or failures are created.

3. Neither the circulating water dechlorination system, cooling tower blowdown nor the chemicals used in these systems are a part of the Technical Specifications. A special review of section 3/4.11 was made. Thus, the Technical Specification margin of safety is unaffected.

90-V2M124

This MDD adds one support and the stiffening of another existing support on line 2-1326-505-2" in the stator cooling piping system area of flow switch 2FS-6832.

1. Loss of stator cooling water can not effect any safety related system as described in FSAR accident analysis sections 15.1, and 15.2, nor is stator cooling required for safe shutdown as described in FSAR section 10.2.

2. Loss of the stator cooling water system does not, nor can it cause, an accident or malfunction of a safety related component that has not been previously described in FSAR sections 10.0, 10.2, 15.1 and 15.2.

3. The change or loss of stator cooling water does not effect the margin of safety in Technical Specification because stator cooling can not effect any safety related component required for safe shutdown of the unit.

90-V2M125

This change replaces welded steel supports with bolted steel supports located in Unit 2 Turbine Building.

1. There is no increase in the consequences of an accident previously evaluated in the FSAR.

2. This change involves non-safety related supports located in the Unit 2 Turbine Building. Therefore, there is no increase in malfunction of equipment important to safety.

3. The support steel piping supports are located in turbine building Unit 2 and are non-safety related, so there is no increase of consequences of malfunctioning equipment important to safety previously evaluated in the Technical Specifications.

90-V2M133

This MDD adds a reducing pipe tee and root valve arrangement in the TPCCW cooling water outlet line of air compressor #3 aftercooler.

1. The failure of the compressed air system or TPCCW can not, thru their design or function, effect any safety related component.

2. The failure of the compressed air and TPCCW have been accounted for in the FSAR accident analysis section 15.0, with decrease/increase heat removal by secondary plant systems.

3. The bases for safe shutdown of the plant is not affected by complete failure of the compressed air system or TPCCW based on a review of Technical Specifications bases 3.0 and 4.0.

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TEST OR EXPERIMENTS

II
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TENG'S

TENG-90-03

This procedure obtains flow and pressure data for design engineering to determine the ACCW system setpoint change for valves 1/2HV-2041.

1. This procedure operates the ACCW system within all design limits. Valve 2HV-2041 is blocked open preventing a "loss of coolant to the thermal barrier" as described in FSAR section 9.2.8. Therefore, this procedure will not increase the occurrence or consequences of a malfunction as analyzed in the FSAR and Technical Specification.

2. The system is operated within FSAR and Technical Specification limits. The addition of pressure and flow gauges does not increase the chances of safety equipment malfunctions. The pressure gauges attached to the safety related piping will be rated for RCS pressures.

3. The ACCW system is operated within limits set by the FSAR and Technical Specification. Therefore, there is no decrease in the margin of safety.

T-ENG-90-05

The Turbine Torsional Vibration Test consists of TER # 90-004 for line-up and performing the test, and temporary modification #1-90-009, 10, and 12 to facilitate data collection and create conditions to perform the test. (Reference to TIL-1012-2, T-ENG-90-05, T-OPER-90-02 and 03 for detail)

1. This change does not increase the probability of malfunction of any equipment or component of safety related systems as described in FSAR section 15.0.8. The turbine generator is not affected as described in sections 10.2.4 and 10.2.1.

2. This test will not create accident other than evaluated in FSAR 10.2.4. The test is conducted at low power and is within the design limits of components. Any malfunction in turbine or generator is analyzed in sections 15.1.3 or 15.2.3.

3. The test does not alter any response time. Therefore, the margin of safety is not compromised. The generator serves no safety function and has no safety design base.

T-ENG-90-07

This Temporary Engineering Procedure demonstrates the proper bypass of the Diesel Generator automatic electrical trips upon receipt of an Emergency Start Signal during SI with concurrent LOSP.

1. This test procedure represents no physical or operational methodology change to the plant. For this reason, the probability and consequences of an accident or malfunction previously analyzed in the FSAR remains unchanged by this test.

2. Since this Technical Specification required testing represents no physical change to the plant, this test does not in any way affect the possibility of an unanalyzed accident. The function tested by this procedure is detailed in FSAR 8.3.1.1.3.c.

3. The non-physical methodology change nature of this test procedure ensures no impact to the margin of safety defined in the bases of the Technical Specifications. This testing is required by Technical Specification Surveillance Requirement 4.8.1.1.2.6.c.

T-ENG-90-09

This temporary procedure performs the following on both Train A and B Diesel Generators:

1) Runs the D/G at the 2 hour rating for about 10 minutes and monitors performance parameters,
2) Performs a largest single load rejection while monitoring performance parameters,
3) Runs the D/G at the continuous rating for about 8 hours and monitors performance parameters,
4) Performs a 100% load rejection while monitoring performance parameters.

In addition to these, the B train section (5.2) loads the SIP, RHRP, CSP, and the ESF Chiller onto the 1E Bus at the approximate time intervals as would the sequencer.

1. This temporary procedure performs testing which supplements test requirements called out in Technical Specification 4.8.1.1.2. Therefore, this temporary procedure actually decreases the probability of a malfunction of equipment important to safety by testing beyond the requirements of Technical Specifications. This temporary procedure has no affect on the probability of occurrence or consequences of an accident.

2. This temporary procedure operates each train DC independently and separately. No modifications affecting operating characteristics of any component are made under this procedure. Therefore, no new type of malfunction has been introduced by this procedure. This procedure has no affect on the potential for accidents or initiating events.

3. Since each DG train is operated independently, we are assured of remaining within the limiting conditions for operation as called for in Technical Specifications. Therefore, the margin of safety as defined in the bases of Technical Specifications 3/4.8.1 and 3/4.8.2 is not reduced.

T-ENG-90-10

This procedure provides detailed instructions to obtain contact operating times for auxiliary contacts used in the bus transfer scheme for switchgear 1NAA and 1NAB. This procedure provides instructions for obtaining breaker operating times which are also required to evaluate the operation of the bus transfer scheme. This procedure was necessary to facilitate the adjustment of the breaker auxiliary contacts and provide further information in the investigation of the 1NAA fast transfer failure.

1. This procedure only provided instructions for obtaining contact operating times. Therefore, since this procedure does not change the plant as described in the FSAR (section 8.3.1) or change the design configuration of the plant in any way, it does not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR.

2. The procedure will be performed during outage conditions when the switchgear or equipment supplied by the switchgear is not required. Therefore, performance of this procedure will not affect the plant or create the possibility of an accident or malfunction of a different type than previously evaluated in the FSAR.

3. The procedure only obtains contact timing information and does not reduce the margin of safety as defined in the bases for Technical Specifications section 3/4.8.

T-ENG-90-11

This procedure simulates, as close as possible, the conditions and sequence of events for Unit One A-Train Loss of Offsite Power incident which occurred March 20, 1990. Data collected during this test will be used to determine the root cause of the DG/Sequencer anomalies experienced during the March 20, 1990 LOSP event. This test alone is not intended to prove DG operability.

1. This temporary procedure will not increase the probability of occurrence or consequences of failure of any component evaluated in the FSAR. The procedure is being performed to identify the cause of the DG trips during the March 20, 1990 LOSP event. Corrective actions taken as a result of this information will provide the assurance that the DG is prepared to respond to an LOSP as described in section 8.3 of the FSAR. Testing will be performed as described in 3/4.8.1.2.h of the Technical Specifications and FSAR section 8.3.

2. This temporary procedure will not create the possibility for an accident or equipment component malfunction not previously evaluated in the FSAR. The structure and methodology of this procedure is similar to that of the ESFAS System testing specifically required by Technical Specification 3/4.8.1.1.2.h and described in FSAR section 8.3. This testing is being performed to ensure that the Diesel Generator and Sequencer is prepared to perform its safety related function in response to an LOSP.

3. The methodology and structure of this procedure is similar to that of the ESFAS System Tests, 54055-1 and 54065-1. The relative safety of this procedure is the same as that of the ESFAS procedures which are specifically required by Technical Specification 3/4.8.1.1.2.h and FSAR section 8.3.

T-ENG-90-12

This temporary procedure aligns the plant and simulates a Loss of Offsite Power. The plant's response is recorded, documenting the proper operation of the Diesel Generator, the Sequencer and various safety related, sequenced loads. The test equipment is removed at the end of the test, and the plant is restored under the control of the Unit 1 Shift Supervisor. The test structure and methodology is similar to that of the recently completed ESFAS surveillance procedures, 54055-1, and 54065-1.

1. This temporary procedure will not increase the probability of occurrence or consequences of failure of any component evaluated in the FSAR. The procedure is being performed to identify the cause of the DG1A trips during the March 20, 1990 LOSP event. Corrective actions taken as a result of this information will provide the assurance that the DG is prepared to respond to an LOSP as described in section 8.3 of the FSAR. Testing will be performed as described in 3/4.8.1.1.2.h of the Technical Specifications.

2. The structure and methodology of this procedure is similar to that of the ESFAS System testing specifically required by Technical Specification 3/4.8.1.1.2.h and described in FSAR section 8.3. This testing is being performed to ensure that the Diesel Operator and Sequencer are prepared to perform their safety related function in response to an LOSP.

3. The methodology and structure of this procedure is similar to that of the ESFAS System tests, 54055-1 and 54065-1. The relative safety of this procedure is the same as that of the ESFAS procedures which are specifically required by Technical Specification 3/4.8.1.1.2.h and FSAR section 8.3.

T-ENG-90-13

This test procedure performs testing of safety features sequencer circuitry. Testing is based on vendor recommendations but has not been reflected into a permanent plant procedure.

1. This testing has no negative affect on probability of occurrence or severity of consequences of an accident or malfunction evaluation in the FSAR. This testing is composed of normal operation of the Sequencer Test Panel as directed by the vendor in the supplied vendor manual. Any receipt of a valid UV or SI condition has been previously proven to place sequencer immediately out of the test mode and into the normal operating mode.

2. For the same reasons identified in the immediately preceding answer, this test has not created the possibility for any accident of a type not yet addressed by the FSAR.

3. Since this test is essentially operating the sequencer as designed and tested, the sequencer will immediately terminate an ongoing test upon SI or UV receipt. This test represents no challenge to the margin of safety defined in the bases for any Technical Specification (Reference Technical Specification 3/4.3, 3/4.8).

T-ENG-90-14

Test of the function of the Sequencer Reset Module added by DCP, and all attended circuitry and components.

1. Since this test was performed at a time when the associated components were not required for safe operation of the plant, the probability of occurrence and severity of consequences of an accident remain unaffected. This test is required to ensure the Safety Features Sequencer System can be reset in the event of a DG Breaker trip during stepping or a failure to close (Reference Technical Specification 3/4.3, 3/4.8).

2. Since this test is essentially design operation of the Sequencer as supplied from the vendor and modified by DCP (Separate SE was performed for DCP), this test does not place the Sequencer in any configuration other than that to which it normally might be expected to respond. The powering down of the 4160 V buss is acceptable since all equipment affected is not required for plant support at the time of the test.

3. Due to the conditions and controls identified in the two previous blocks, the margin of safety for the plant as defined in the bases of the Technical Specifications 3/4.3, and 3/4.8 is maintained within pre-established limits. The powering down of the 4160 V buss is a relatively small challenge and is acceptable in the plant condition the test was performed in.

T-ENG-90-15

Test of the function of the Sequencer Reset Module added by DCP, and all affected cicruitry and components.

1. Since this test was performed at a time when the associated components were not required for safe operation of the plant, the probability of occurrence and severity of consequences of an accident remain unaffected. This test is required to ensure the Safety Features Sequencer System can be reset in the event of a DG Breaker trip during stepping or a failure to close (Reference Technical Specification 3/4.3, 3/4.8).

2. Since this test is essentially design operation of the sequencer as supplied from the vendor and modified by DCP (separate SE as performed for DCP), this test does not place the Sequencer in any configuration other than that to which it normally might be expected to respond. The powering down of the 4160 V buss is acceptable since all equipment affected is not required for plant support at the time of the test.

3. Due to the conditions and controls identified in the previous blocks, the margin of safety for the plant as defined in the bases of the Technical Specifications 3/4.3 and 3/4.8 is maintained within pre-established limits. The powering down of the 4160 V buss is a relatively small challenge and is acceptable in the plant condition the test was performed in.

T-ENG-90-16

This test required removal of 1-TSH-19111 and installation of an RTD which would be connected to a chart recorder. 1TSH19111 is one three temperature sensors located in the Diesel Generator Jacket Water return line to the standpipe. This modification was recommended by Cooper Energy Services to obtain a temperature profile at the sensor during standby, engine start and operation unloaded.

1. The consequences of a Diesel Generator failure are as previously analyzed in the FSAR Table 8.3.1-3. The probability of an accident is not increased because there are two remaining high jacket water sensors in service which will trip in any mode. The high jacket water alarm was still in service and monitoring of the temperature is possible at the local panel. The local operator and engineering personnel will be present for the test.

2. Installation of an RTD in place of one temperature sensing device cannot create any new accident or malfunction not already analyzed in the FSAR. High Jacket Water tripping remains in effect on a two out of two basis and all alarms are still active.

3. The Diesel Generator system or subsystem are not made more unsafe by the modification. Two out of two High Jacket Water Trips are in service including alarming and monitoring capability. Reliabilities of the diesel is not decreased. (Technical Specification 3/4.8 bases)

T-ENG-90-17

DCP 90-V1N0133, Rev 0, disabled several diesel engine automatic trips such as "crank case pressure hi turbo and oil pressure low, Jacket Water pressure low high vibration engine bearing temperature hgh, lube oil temp hi, and loss of field or over-current (186 Block Out)", which provided engine trip during Loss of Offsite Power (LOSP) event. This change was performed by moving LOSP contact from auto start circuit to emergency circuit, by connecting parallel to SI contact. T-ENG-90-17 will verify that Design Change as properly implemented by injecting LOSP signal to start the engine and operate in emergency mode, each with all the normal engine trips (bypass) bypassed and engine trips from normal trip signal (bypassable) after reset of LOCA.

1. The test is to verify the result of the design change which was approved by NRC. The test is merely proving that diesel engine will not trip during Loss of Off Site Power (LOSP) from a bypassable trip just like during SI. All the jumpers installed are independently verified during installation and removal. All the operations are within the bounds of FSAR and chapter 15 of the FSAR accident analysis and controlled under procedural restrictions. Therefore, this test will not increase the probability of occurrence or consequence of an accident or malfunction of equipment or component important to safety previously evaluated in the safety analysis report.

2. This test is the functional test to prove this implementation of the design change DCP 90-V1N0133. This would be similar to a monthly surveillance test, except the signal is initiated by connecting a jumper in the sequencer panel. These jumpers are removed after initiating the signal. Both installation and removal are independently verified. The test will be conducted in a controlled manner and could be terminated at any time without any adverse effect to systems or component. Operation of the Diesel Generator is similar in function to other test conducted to prove operability. Therefore, this test does not create the possibility of an accident or malfunction of a different type than previously evaluated.

3. This test is performed on a Diesel Generator that is taken to inoperable status to perform the functional test for DCP 90-V1N0133. This testing will prove the Diesel Generator would be available during LOSP condition when there is an actual or spurious trip from bypassable trip signals. Margin of safety is enhanced by increasing the availability of the Diesel Generator. There are alarms in both the control room and local panel to alert operators in an event any bypassed trip parameters exceed the alarm setpoint which are below the trip point. Therefore, this test will not reduce the margin of safety as defined in the bases of Technical Specifications.

T-ENG-90-18

DCP 90-V1N0137, Rev 0, disabled several diesel engine automatic trips such as "crank case pressure hi turbo and oil pressure low, Jacket Water pressure low high vibration engine bearing temperature hgh lube oil temp hi, and loss of field, or over-current (186 Block Out)", which provided engine trip during Loss of Offsite Power (LOSP) event.

This change was performed by moving LOSP ocntact from auto start circuit to emergency circuit, by connecting parallel to SI contact T-ENG-90-18 will verify that Design Change was properly implemented by injecting LOSP signal to start the engine and operate in emergency mode, each with all the normal engine trips (bypass) bypassed and engine trips from normal trip signal (bypassable) after reset of LOCA.

1. The test is to verify the result of the design change which was approved by NRC. The test is merely proving that diesel engine will not trip during Loss of Off Site Power (LOSP) from a bypassable trip just like during SI. All the jumpers installed are independently verified during installation and removal. All the operations are within the bounds of FSAR and chapter 15 of the FSAR accident analysis and controlled under procedural restrictions. Therefore, this test will not increase the probability of occurrence or consequence of an accident or malfunction of equipment or component important to safety previously evaluated in the safety analysis report.

2. This test is the functional test to prove this implementation of the design change DCP 90-V1N0137. This would be similar to a monthly surveillance test, except the signal is initiated by connecting a jumper in the sequencer panel. These jumpers are removed after initiating the signal. Both installation and removal are independently verified. The test will be conducted in a controlled manner and could be terminated at any time without any adverse effect to systems or component. Operation of the Diesel Generator is similiar in function to other tests conducted to prove operability. Therefore, this test does not create the possibility of an accident or malfunction of a different type than previously evaluated.

3. This test is performed on a Diesel Generator that is taken to inoperable status to perform the functional test for DCP 90-V1N0137. This testing will prove the Diesel Generator would be available during LOSP condition when there is an actual or spurious trip from bypassable trip signals. Margin of safety is enhanced by increasing the availability of the Diesel Generator. There are alarms in both the control room and local panel to alert operators in an event any bypassed trip parameters exceed the alarm setpoint which below the trip point. Therefore, this test will not reduce the margin of safety as defined in the bases of Technical Specifications.

T-ENG-90-20

This procedure provides instructions to measure the response time of the Control Room Ventilation System in the Emergency Mode. The response timing will start when the slave relay K616 (Safety Injection) is energized. When this relay is energized, this will de-energize the Diesel Generator Unit/Parallel sequencer contact. This contact takes the Diesel Generator out of the Parallel mode and puts the Diesel Generator into the the Unit mode. The Unit mode is the normal mode during an emergency situation. While in the Unit mode, the Diesel should not be manually started and/or loaded to the grid for surveillance testing. If an LOSP or a valid SI signal is present, the performance of this procedure will not prohibit the normal emergency response of the system. In this procedure, the ESF fans are performing their design function when a differential pressure of 1/8" to the adjoining areas is reached. A review of the data collected from procedure 54054-1 shows that a differential pressure of 0.25" to atmosphere will meet the 1/8" differential pressure to the surrounding areas.

1. After reviewing FSAR sections 9.4.1 and 6.4.2, it is determined that this procedure does not increase the probability of occurrence or consequences of a malfunction of safety-related equipment previously evaluated in the FSAR. The Diesel Generator should not be manually started and/or loaded to the grid for surveillance testing when this procedure is being performed.

2. The procedure is written with the intent to operate the ESF Control Room Ventilation well within its design limitations. After reviewing section 9.4.1 and 6.4.2, it is determined that this procedure does not create the possibility for an accident or equipment malfunction of a different type other than any evaluated previously in the FSAR.

3. After reviewing section 3/4.7.6 of the Technical Specification bases, it is determined that the procedure does not decrease the margin of safety defined by the Technical Specification bases.

T-ENG-90-023

This procedure will test the modified Annunciator ALB09 (DCP-89-V2N0095) to ensure proper operation. The Self-Test mode as well as individual windows will be shown to be operational. The First Out function will be shown to be per design. The Design Objective of DCP-95 (Prevent loss of first out data) will be demonstrated. ALB10 will also be tested because it shares a Logic Chassis with ALB09 that is changed out.

1. The annunciator system is electrically isolated from class 1E equipment. Therefore, the system cannot increase the probability of occurrence or a malfunction in equipment important to safety.

2. The annunciator system is an information presentation system only. A system wide malfunction will not create the possibility of an accident. A window presenting incorrect

information may lead to operator error. However, this test does not change the annunciator inputs (except for jumpers placed and subsequently removed). Therefore, window displays are not changed and the possibility of operator error due to incorrect window presentation is avoided.

3. The annunciator system is not used for the basis of any Technical Specification. The margin of safety is not affected by this test.

T-ENG-90-024

This is a special test of the response time of the sequencer auto/manual block function in the auto start circuit of the Control Room Emergency Filtration System (CREFS) fan. It is intended that this test satisfy the requirements of Technical Specification 4.3.2.2, for Unit 1, Train "A".

The requirement to perform this or a similar test are delineated in Technical Specification 4.3.2.2 which was reviewed and approved by the NRC. The bases for this specification state "... sufficient redundancy is maintained to permit a channel to be out-of-service for testing or maintenance consistent with maintaining an appropriate level of reliability..". Thus, the probability of occurrence does not increase. FSAR sections 15.4.6 and 15.5.1 analyze the potential boron dilution and boron injection accidents associated with inadvertent operation of the CVCS and SIS respectively. Both of these potential accidents are analyzed for a spectrum of initial power conditions. Thus the consequences of an accident are not increased.

1. The electrical isolation of equipment (SSPS and DG) or placement in an operating mode which will not change as a consequence of this test (fans and pumps) results in a configuration consistent

which the design bases of the equipment. The test itself will simulate the occurrence of a single failure of the lead-lag logic for which the system is designed. The out-of-service time to perform this test will be less than the limitations of the Technical Specifications as described above. Thus the probability of occurrence of a malfunction is not increased.

2. The switches temporarily installed to perform this test are rated consistent with the design of the ESFAS, and will be removed at the completion of the test. No equipment will be required to operate outside of its design parameters. The isolation of the SSPS and DG is equivalent to the single failure of the train, should normal power be lost, for which the system is also designed. As described in FSAR 15.6.5, three trains running has been analyzed for potential impact on Post-LOCA control room doses and found to be acceptable. Thus, no new failure modes will be introduced.

3. The test will be performed within the time limitation of the ACTION statements for 3/4.3.2 and 3/4.8.1. Furthermore, the bases of 3/4.3.2 recognize the requirements to perform periodic testing of the ESFAS and state that sufficient redundancy is maintained to permit a channel to be out-of-service for this testing. Therefore, the margin of safety defined by the bases of the Technical Specifications will not be decreased.

III

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNIT 1 AND UNIT 2

NRC DOCKET NOS. 50-424 AND 50-425

FACILITY OPERATING LICENSE NOS. NPF-68 AND NPF-81

EMERGENCY CORE COOLING SYSTEMS OUTAGE DATA REPORT

III

VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 & 2
1990 ANNUAL REPORT - PART 2
EMERGENCY CORE COOLING SYSTEM
OUTAGE DATA REPORT

This report contains:

a) outage dates and duration of outages
b) ECCS systems or components involved in the outage
c) cause of the outage, and
d) corrective actions taken

- UNIT 1 -

Unit 1 Emergency Core Cooling System components were out of service a total of 232 hours and 16 minutes in 1990.

1. a) 1-1-90 1 hour and 31 minutes
   b) & c) Train B RHR removed from service for inservice testing.
   d) Testing completed and Train B restored to service.

2. a) 1-1-90 53 minutes
   b) & c) Train A RHR removed from service for inservice testing.
   d) Testing completed and Train A restored to service.

3. a) 1-7-90 24 minutes
   b) & c) Safety Injection Train B removed from service for valve stroke testing.
   d) Testing completed and Train B restored to service.

4. a) 1-18-90 24 minutes
   b) & c) Train A Centrifugal Charging Pump removed from service for inservice testing.
   d) Testing completed and pump restored to service.

5. a) 1-18-90 1 minute
   b) & c) Train B Centrifugal Charging Pump removed from service for inservice testing.
   d) Testing completed and pump restored to service.

6. a) 2-2-90 20 minutes
   b) & c) Train A RHR removed from service for inservice testing.
   d) Testing completed and Train A restored to service.

7. a) 2-2-90 53 minutes
   b) & c) Train B RHR removed from service for inservice testing.
   d) Testing completed and Train B restored to service.

III
1990 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 1 (CONTINUED)

8. a) 2-15-90 35 hours and 42 minutes
b) & c) Train A RHR pump removed from service to install design change.
d) Design change installed and pump returned to service.

9. a) 2-21-90 17 hours and 43 minutes
b) & c) Train B RHR pump removed from service to install design change.
d) Design change installed and pump returned to service.

10. a) 3-20-90 40 minutes
b) & c) Train A RHR rendered inoperable due to loss of power.
d) Power restored and Train A returned to service.

11. a) 4-14-90 13 minutes
b) & c) Train A Safety Injection removed from service for surveillance testing.
d) Testing complete and Train A restored to service.

12. a) 4-22-90 3 hours and 6 minutes
b) & c) RHR Train B removed from service for preventive maintenance on a miniflow switch.
d) PM completed and Train B returned to service.

13. a) 5-13-90 14 minutes
b) & c) RHR Train A pump placed in "Pull-to-Lock" for inservice testing.
d) Testing completed and Train A restored to service

14. a) 5-22-90 11 hours and 17 minutes
b) & c) RHR Train B removed from service for pump preventive maintenance.
d) PM completed and Train B returned to service.

15. a) 5-25-90 2 hours and 37 minutes
b) & c) RHR Train B removed from service for inservice and response time testing.
d) Testing completed and Train B restored to service

16. a) 6-1-90 44 hours and 11 minutes
b) & c) Train A RHR, Safety Injection, and Centrifugal Charging Pumps removed from service while NSCW Train A out of service for valve repair.
d) Valve repaired and systems restored to service.

III
1990 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 1 (CONTINUED)

17. a) 6-21-90 1 minute
b) & c) Centrifugal Charging Pump Train B removed from service for troubleshooting valve problem.
d) Troubleshooting completed and Train B restored to service.

18. a) 6-22-90 16 minutes
b) & c) RHR Train B removed from service for surveillance testing.
d) Testing completed and Train B restored to service.

19. a) 7-3-90 2 hours and 10 minutes
b) & c) Train A RHR miniflow valve removed from service for preventive maintenance.
d) PM completed and valve returned to service.

20. a) 7-11-90 40 hours and 2 minutes
b) & c) Train A RHR, Safety Injection and Centrifugal Charging pumps removed from service while NSCW Train A out of service for snubber work.
d) Work completed and systems restored to service.

21. a) 7-22-90 54 minutes
b) & c) Refueling Water Storage Tank suction valve removed from service to tighten packing.
d) Work completed and valve returned to service.

22. a) 8-9-90 18 hours and 41 minutes
b) & c) Train A RHR removed from service to rework pipe support struts.
d) Work completed and Train A restored to service.

23. a) 8-18-90 6 hours and 19 minutes
b) & c) Train A ECCS Subsystem removed from service for channel calibration and valve stroking.
d) Calibration and valve stroking completed and subsystem returned to service.

24. a) 9-14-90 6 minutes
b) & c) Train B RHR pump taken to "Pull-to-Lock" for inservice testing.
d) Testing completed and pump returned to service.

III
1990 ANNUAL REPORT - PART 2
ECCS OUTAGE DATE REPORT

UNIT 1 (CONTINUED)

25. a) 9-16-90 1 hour and 29 minutes
b) & c) Train B Containment Spray system removed from service for valve stroking.
d) Valve stroking completed and system restored to service.

26. a) 11-7-90 1 hour and 26 minutes
b) & c) Train A RHR removed from service for valve leak testing.
d) Testing completed and Train A returned to service.

27. a) 11-7-90 2 hours and 18 minutes
b) & c) Train B RHR removed from service for valve leak testing.
d) Testing completed and Train B returned to service.

28. a) 11-14-90 40 hours and 49 minutes
b) & c) Train B RHR, Safety Injection and Centrifugal Charging pumps removed from service while NSCW Train B out of service for valve repair.
d) Valve repaired and systems restored to service.

29. a) 12-7-90 39 minutes
b) & c) Train B RHR removed from service for valve leak testing.
d) Testing completed and Train B restored to service.

III
1990 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

- UNIT 2 -

Unit 2 Emergency Core Cooling System components were out of service a total of 61 hours and 15 minutes in 1990.

1. a) 1-12-90 37 minutes
   b) & c) Train A Centrifugal Charging Pump removed from service for inservice testing.
   d) Testing completed and pump restored to service.

2. a) 1-12-90 3 minutes
   b) & c) Train A Centrifugal Charging Pump removed from service for inservice testing.
   d) Testing completed and pump restored to service.

3. a) 2-2-90 2 hours and 56 minutes
   b) & c) Train A ECCS equipment taken out of service while cable tray support brackets loosened.
   d) Brackets retightened and torqued and Train A restored to service.

4. a) 2-27-90 3 hours and 48 minutes
   b) & c) Train A RHR removed from service for preventive maintenance on heat exchanger outlet valve.
   d) PM completed and Train A restored to service.

5. a) 3-18-90 3 minutes
   b) & c) Centrifugal Charging Pump Train A removed from service for valve stroking.
   d) Valve stroking completed and Train A restored to service.

6. a) 3-30-90 6 minutes
   b) & c) Train B RHR pump placed in "Pull-to-Lock" for inservice testing.
   d) Testing completed and pump returned to service.

7. a) 5-3-90 26 minutes
   b) & c) Accumulator #4 removed from service due to low pressure.
   d) Pressure restored, accumulator returned to service.

8. a) 5-13-90 28 minutes
   b) & c) Train A RHR pump placed in "Pull-to-Lock" for inservice valve testing.
   d) Testing completed and pump returned to service.

III
1990 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

9. a) 5-14-90 2 minutes
b) & c) Train A RHR removed from service for stroking of heat exchanger bypass valve following packing adjustment.
d) Valve stroking completed and Train A restored to service.

10. a) 6-19-90 4 hours and 8 minutes
b) & c) Train B RHR removed from service for stroking of heat exchanger outlet isolation valve following preventive maintenance.
d) Valve stroking completed and Train B restored to service.

11. a) 6-25-90 3 hours and 51 minutes
b) & c) Train B RHR removed from service for preventive maintenance on the containment sump suction isolation valve breaker.
d) PM completed and Train B restored to service.

12. a) 7-12-90 17 hours and 58 minutes
b) & c) Train A Safety Injection Pump removed from service for preventive maintenance to supply breaker.
d) PM completed and pump returned to service.

13. a) 8-5-90 19 minutes
b) & c) Train A RHR pump placed in "Pull-to-Lock" for valve stroking.
d) Valve stroking completed and pump returned to service.

14. a) 8-16-90 1 hour and 7 minutes
b) & c) Train B RHR removed from service for inservice testing.
d) Testing completed and Train B restored to service.

15. a) 8-16-90 40 minutes
b) & c) Train A RHR removed from service for inservice testing.
d) Valve stroking completed and Train A restored to service.

16. a) 9-5-90 5 hours and 33 minutes
b) & c) Train A RHR removed from service for valve stroke testing.
d) Testing completed and Train A restored to service.

III
1990 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

17. a) 9-15-90 21 minutes
b) & c) Train B RHR pump removed from service to test pump motor current indication.
d) Testing completed and Train B restored to service.

18. a) 9-19-90 35 minutes
b) & c) Train A Safety Injection pump removed from service for testing.
d) Testing completed and pump returned to service.

19. a) 11-6-90 2 hours and 1 minute
b) & c) Train A RHR removed from service for valve leak testing.
d) Testing completed and Train A returned to service.

20. a) 11-6-90 1 hour and 3 minutes
b) & c) Train B RHR removed from service for valve leak testing.
d) Testing completed and Train B returned to service.

21. a) 11-7-90 11 minutes
b) & c) Train A Safety Injection Pump removed from service for valve leak testing.
d) Testing completed and pump returned to service.

22. a) 11-7-90 21 minutes
b) & c) Train B Safety Injection Pump removed from service for valve leak testing.
d) Testing completed and pump returned to service.

23. a) 11-7-90 8 minutes
b) & c) Train A RHR removed from service for valve leak testing.
d) Testing completed and Train A returned to service.

24. a) 11-7-90 6 minutes
b) & c) Train B RHR removed from service for valve leak testing.
d) Testing completed and Train B returned to service.

III
1990 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

25. a) 11-8-90 4 minutes
b) & c) Train B Centrifugal Charging Pump removed from service for response time testing.
d) Testing completed and pump restored to service.

26. a) 11-8-90 24 minutes
b) & c) Train A Safety Injection Pump removed from service for valve leak testing.
d) Testing completed and pump restored to service.

27. a) 11-9-90 1 hour and 9 minutes
b) & c) Centrifugal Charging Pump discharge throttle injection needle valve unlocked for maintenance.
d) Maintenance completed and valve relocked.

28. a) 11-25-90 1 hour and 34 minutes
b) & c) Safety Injection flowpath valves removed from service for stroke time testing.
d) Testing completed and valves restored to service.

29. a) 11-30-90 4 hours and 46 minutes
b) & c) Train A RHR removed from service for flow switch calibration.
d) Calibration completed and Train A returned to service.

30. a) 12-5-90 8 minutes
b) & c) Accumulator removed from service due to low pressure.
d) Pressure restored and accumulator returned to service.

31. a) 12-7-90 10 minutes
b) & c) Train B RHR pump taken to "Pull-to-Lock" for valve testing.
d) Testing completed, pump restored to service.

32. a) 12-9-90 33 minutes
b) & c) Train B Safety Injection removed from service for valve testing.
d) Testing completed and Train B restored to service.

IV

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNIT 1 AND UNIT 2

NRC DOCKET NOS. 50-424 AND 50-425

FACILITY OPERATING LICENSE NOS. NPF-68 AND NPF-81

ANNUAL RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT
CALENDAR YEAR 1990

VOGTLE ELECTRIC GENERATING PLANT
RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT

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ACRONYMS

CL	Confidence Level
CY	Calendar Year
EL	Environmental Laboratory
EPA	Environmental Protection Agency
GPC	Georgia Power Company
LLD	Lower Limit of Detection
MDD	Minimum Detectable Difference
MDA	Minimum Detectable Activity
NA	Not Applicable
NDM	No Detectable Measurement(s)
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SRS	Savannah River Site
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications
VEGP	Alvin W. Vogtle Electric Generating Plant

VOGTLE ELECTRIC GENERATING PLANT
RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT

1.0 INTRODUCTION

This is the fourth Annual Radiological Environmental Surveillance Report for the Alvin W. Vogtle Electric Generating Plant (VEGP). It covers activities of the Radiological Environmental Monitoring Program (REMP) during calendar year (CY) 1990. Hence all dates in this report are for 1990 unless otherwise indicated. The specifications for the REMP are provided by Section 3/4.12 of the Technical Specifications (TS).

The objectives of the REMP are to ascertain the levels of radiation and the concentrations of radioactivity in the VEGP environs and to assess any radiological impact upon the environment due to plant operations. A comparison between the results obtained during the preoperational and operational phases provides some basis for such an assessment. A comparison between the results obtained at control stations (locations where radiological levels are not expected to be significantly affected by plant operations) and at indicator stations (locations where it is anticipated that radiological levels are more likely to be affected by plant operations) provides a further basis for this assessment.

The preoperational stage of the REMP started in August of 1981 when the initial collections of the radiological environmental samples were made; there was a phase-in period of a few years before the preoperational program was fully implemented. The transition from the preoperational stage to the operational stage hinged about initial criticality for Unit 1 which occurred on March 9, 1987.

A summary description of the REMP is provided in Section 2. This includes maps showing the sampling locations; the maps are keyed to a table indicating the distance and direction of each sampling location from a point midway between the two reactors.

An annual summary of the laboratory analysis results obtained from the main samples utilized for environmental monitoring is presented in Section 3. A discussion of the results including assessments of any radiological impacts upon the environment is provided in Section 4.

The results of the Interlaboratory Comparison Program are presented in Section 5. The chief conclusions are stated in Section 6.

2.0 SUMMARY DESCRIPTION

A summary description of the REMP is provided in Table 2-1. This table portrays the program in the manner by which it is being regularly carried out; it is essentially a copy of Table 3.12-1 of the TS which delineates the program's requirements. Sampling locations specified by Table 2-1 are described in Table 2-2 and are shown on maps in Figures 2-1 through 2-4. This description of the sample locations closely follows that found in the table and figures of Section 3.0 of the Offsite Dose Calculation Manual (ODCM).

It is stated in Footnote (1) of Table 3.12-1 of the TS that deviations are permitted from the required sampling schedule if specimens are unobtainable due to circumstances, such as, hazardous conditions, seasonal unavailability, and malfunction of sampling equipment. Any deviations are accounted for in the discussions for each particular sample type in Section 4.

For CY 90, all the laboratory analyses except for the reading of the thermoluminescent dosimeters (TLDs) were performed by Georgia Power Company's (GPC's) Environmental Laboratory (EL) in Smyrna, Georgia. The reading of the TLDs was provided by Teledyne Isotopes Midwest Laboratory in Northbrook, Illinois.

TABLE 2-1 (SHEET 1 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF REPRESENTATIVE SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
1. Direct Radiation	Thirty-nine routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, one in each meteorological sector in the general area of the site boundary; An outer ring of stations, one in each meteorological sector in the 6 mile range from the site; and Special interest areas such as population centers, nearby residences, schools and control stations.	Quarterly	Gamma dose quarterly

TABLE 2-1 (SHEET 2 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF REPRESENTATIVE SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
2. Airborne			
Radioiodine and Particulates	Samples from seven locations Five locations close to the site boundary in different sectors; A community having the highest calculated annual average ground-level D/Q; and A control location in the vicinity of a population center at a distance of about 15 miles.	Continuous sampler operation with sample collection weekly, or more frequently if required by dust loading	Radioiodine Cannister: I-131 analysis weekly Particulate Sampler: Gross beta analysis (1) following filter change and gamma isotopic analysis(2) of composite (by location) quarterly

TABLE 2-1 (SHEET 3 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF REPRESENTATIVE SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
3. Waterborne			
a. Surface(3)	One sample upriver Two samples downriver	Composite sample over 1-month period(4)	Gamma isotopic analysis(2) monthly. Composite for tritium analysis quarterly
b. Drinking	Two samples at each of the two nearest water treatment plants that could be affected by plant discharges Two samples at a control location	Composite sample of river water near the intake at each water treatment plant over 2-week period(4) when I-131 analysis is required to be performed on each sample, monthly composite otherwise; and grab sample of finished water at each water treatment plant every 2 weeks or monthly, as appropriate	I-131 analysis on each sample when the dose calculated for the consumption of the water is greater than 1 mrem per year(5). Composite for gross beta and gamma isotopic analyses(2) on raw water monthly. Gross beta, gamma isotopic and I-131 analyses on grab sample of finished water monthly. Composite for tritium analysis on raw and finished water quarterly
c. Sediment from Shoreline	One sample from downriver area with existing or potential recreational value One sample from upriver area with existing or potential recreational value	Semiannually	Gamma isotopic analysis(2) semiannually

TABLE 2-1 (SHEET 4 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF REPRESENTATIVE SAMPLES AND SAMPLE LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS
4. Ingestion			
a. Milk	Two samples from milking animals(6) at control locations at a distance of about 10 miles or more	Biweekly	Gamma isotopic analysis(2,7) biweekly
b. Fish	At least one sample of any commercially or recreationally important species in vicinity of plant discharge area	Semiannually	Gamma isotopic analysis(2) on edible portions semiannually
	At least one sample of any commercially or recreationally important species in an area not influenced by plant discharge		
	At least one sample of any anadromous species in vicinity of plant discharge	During spring spawning season	Gamma isotopic analysis(2) on edible portions annually
c. Grass or Leafy Vegetation	One sample from two onsite locations near the site boundary in different sectors	Monthly during growing season	Gamma isotopic analysis(2,7) monthly
	One sample from a control location at about 18 miles distance		

TABLE 2-1 (SHEET 5 OF 5)

SUMMARY DESCRIPTION OF
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

TABLE NOTATIONS

(1) Airborne particulate sample filters shall be analyzed for gross beta radioactivity 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air particulate samples is greater than 10 times the yearly mean of control samples, gamma isotopic analysis shall be performed on the individual samples.

(2) Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.

(3) The upriver sample is taken at a distance beyond significant influence of the discharge. The downriver samples are be taken in areas beyond and near the mixing zone.

(4) Composite sample aliquots shall be collected at time intervals that are very short (e.g., hourly) relative to the compositing period (e.g., monthly) in order to assure obtaining a representative sample.

(5) The dose shall be calculated for the maximum organ and age group, using the methodology and parameters in the ODCM.

(6) A milking animal is a cow or goat producing milk for human consumption.

(7) If gamma isotopic analysis is not sensitive enough to meet the Lower Limit of Detection (LLD) for I-131, a separate analysis for I-131 will be performed.

TABLE 2-2 (SHEET 1 OF 3)

RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS

Station Number	Station Type (1)	Descriptive Location	Direction (2)	Distance (2) (miles)	Sample Type (3)
1	I	Hancock Landing Road	N	1.1	D
2	I	River Bank	NNE	0.8	D
3	I	Discharge Area	NE	0.6	A
3	I	River Bank	NE	0.7	D
4	I	River Bank	ENE	0.8	D
5	I	River Bank	E	1.0	D
6	I	Plant Wilson	ESE	1.1	D
7	I	Simulator Building	SE	1.7	D,V,A
8	I	River Road	SSE	1.2	D
9	I	River Road	S	1.1	D
10	I	Met Tower	SSW	0.8	A
10	I	River Road	SSW	1.1	D
11	I	River Road	SW	1.2	D
12	I	River Road	WSW	1.2	D,A
13	I	River Road	W	1.3	D
14	I	River Road	WNW	1.8	D
15	I	Hancock Landing Road	NW	1.5	D,V
16	I	Hancock Landing Road	NNW	1.4	D,A
17	O	Savannah River Site (SRS) River Road	N	5.5	D
18	O	SRS D Area	NNE	5.1	D
19	O	SRS Road A.13	NE	4.7	D
20	O	SRS Road A.13.1	ENE	4.8	D
21	O	SRS Road A.17	E	5.8	D
22	O	River Bank Downstream of Buxton Landing	ESE	5.2	D
23	O	River Road	SE	4.6	D
24	O	Chance Road	SSE	4.9	D
25	O	Chance Road near Highway 23	S	5.2	D
26	O	Highway 23, Mile 15.5	SSW	4.6	D
27	O	Highway 23, Mile 17	SW	4.8	D
28	O	Claybon Road	WSW	5.0	D
29	O	Claxton-Lively Road	W	5.0	D
30	O	Nathaniel Howard Road	WNW	5.0	D
31	O	River Road at Allen's Church Fork	NW	5.0	D
32	O	River Bank	NNW	4.8	D
33	O	Hunting Cabin	SE	3.3	D

TABLE 2-2 (SHEET 2 OF 3)

RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS

Station Number	Station Type (1)	Descriptive Location	Direction(2)	Distance(2) (miles)	Sample Type (3)
35	O	Girard	SSE	6.6	D,A
36	C	Waynesboro	WSW	14.9	D,A
37	C	Substation (Waynesboro)	WSW	17.5	D,V
43	O	Employees Recreation Area	SW	2.2	D
47	C	Oak Grove Church	SE	10.4	D
48	C	McBean Cemetery	NW	10.3	D
80	C	Augusta Water Treatment Plant	NNW	27.5	W(4)
81	C	Savannah River	N	2.5	F(5),S(6)
82	C	Savannah River (RM 151.2)	NNE	0.8	R
83	I	Savannah River (RM 150.4)	ENE	0.8	R,S(6)
84	O	Savannah River (RM 149.5)	ESE	1.6	R
85	I	Savannah River	ESE	4.3	F(5)
87	I	Beaufort-Jasper County Water Treatment Plant; Beaufort, SC	SE	76	W(7)
88	I	Cherokee Hill Water Treatment Plant; Port Wentworth, GA	SSE	72	W(8)
98	C	W. C. Dixon Dairy	SE	9.8	M
99	C	Boyceland Dairy	WNW	24.5	M

TABLE NOTATION:

(1) Station Types
- C - Control
- I - Indicator
- O - Other

(2) Direction and distance are reckoned from a point midway between the two reactors

(3) Sample Types
- A - Airborne Radioactivity
- D - Direct Radiation
- F - Fish
- M - Milk
- R - River Water
- S - River Shoreline Sediment
- W - Drinking Water
- V - Vegetation

TABLE 2-2 (SHEET 3 OF 3)

RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS

TABLE NOTATIONS (Continued)

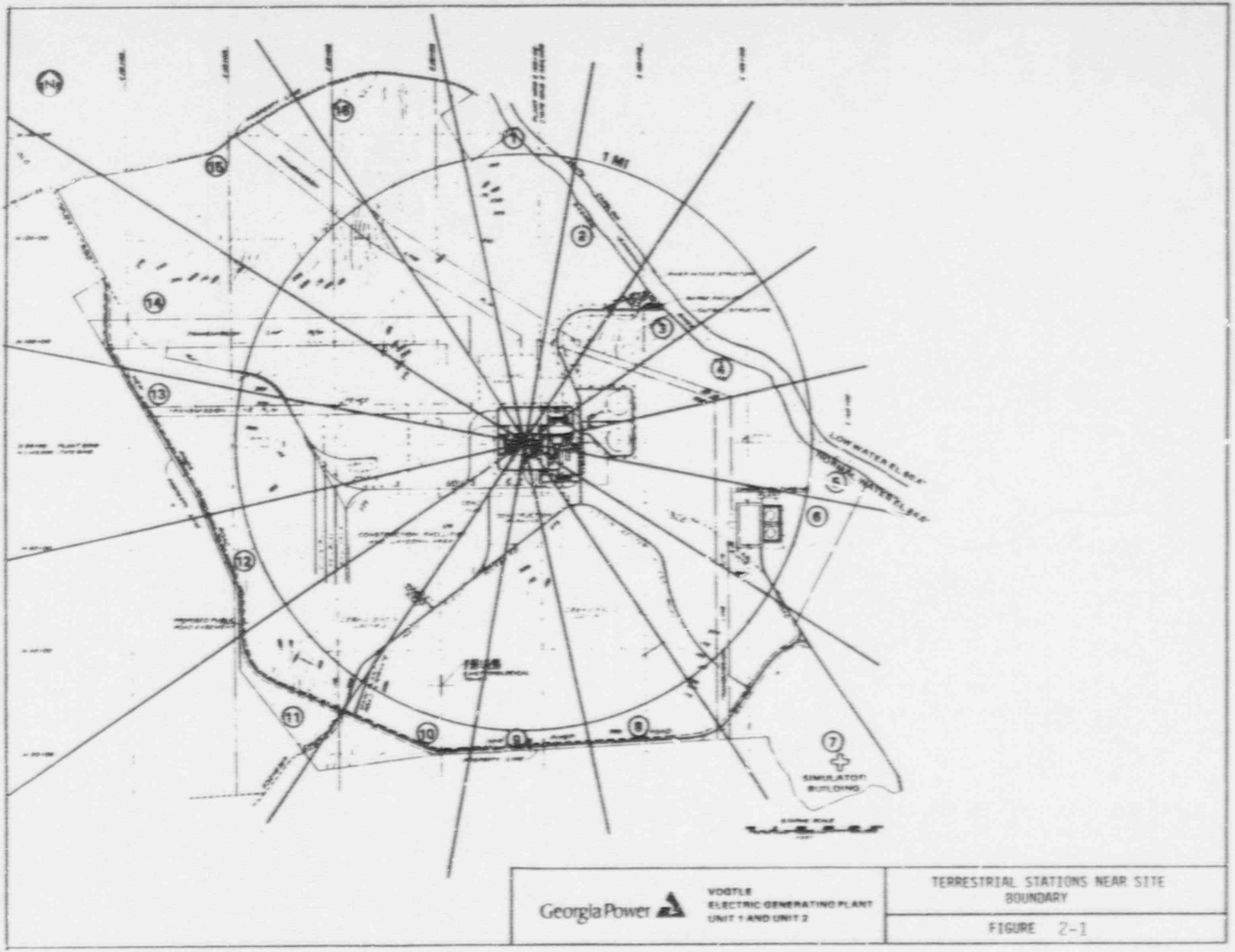
(4) The intake for the Augusta Water Treatment Plant is located on the Augusta Canal. The entrance to this canal is at River Mile (RM) 207 on the Savannah River. The canal effectively parallels the river. The intake to the pumping station is 3.6 miles down the canal and only a tenth of a mile across a narrow neck of land to the river.

(5) About a five mile stretch of the river is generally needed to obtain adequate fish samples. Samples are normally gathered between RM 153 and 158 for upriver collections and between RM 144 and 149.4 for downriver collections.

(6) Sediment is collected at locations with existing or potential recreational value. Because high water, shifting of the river bottom, or other reasons could cause a suitable location for sediment collection to become unavailable or unsuitable, a stretch of the river between RM 148.5 and 150.5 is designated for downriver collections while a stretch between RM 153 and 154 is designated for upriver collections. In practice, collections are normally made at RM 150.2 for downriver collections and at RM 153.3 for upriver collections.

(7) The intake for the Beaufort-Jasper County Water Treatment Plant is located at the end of a canal which begins at RM 39.2 on the Savannah River. This intake is about 16 miles by line of sight down the canal from its beginning on the Savannah River.

(8) The intake for the Cherokee Hill Water Treatment Plant is located on Abercorn Creek which is about one and a quarter creek miles from its mouth on the Savannah River at RM 29.

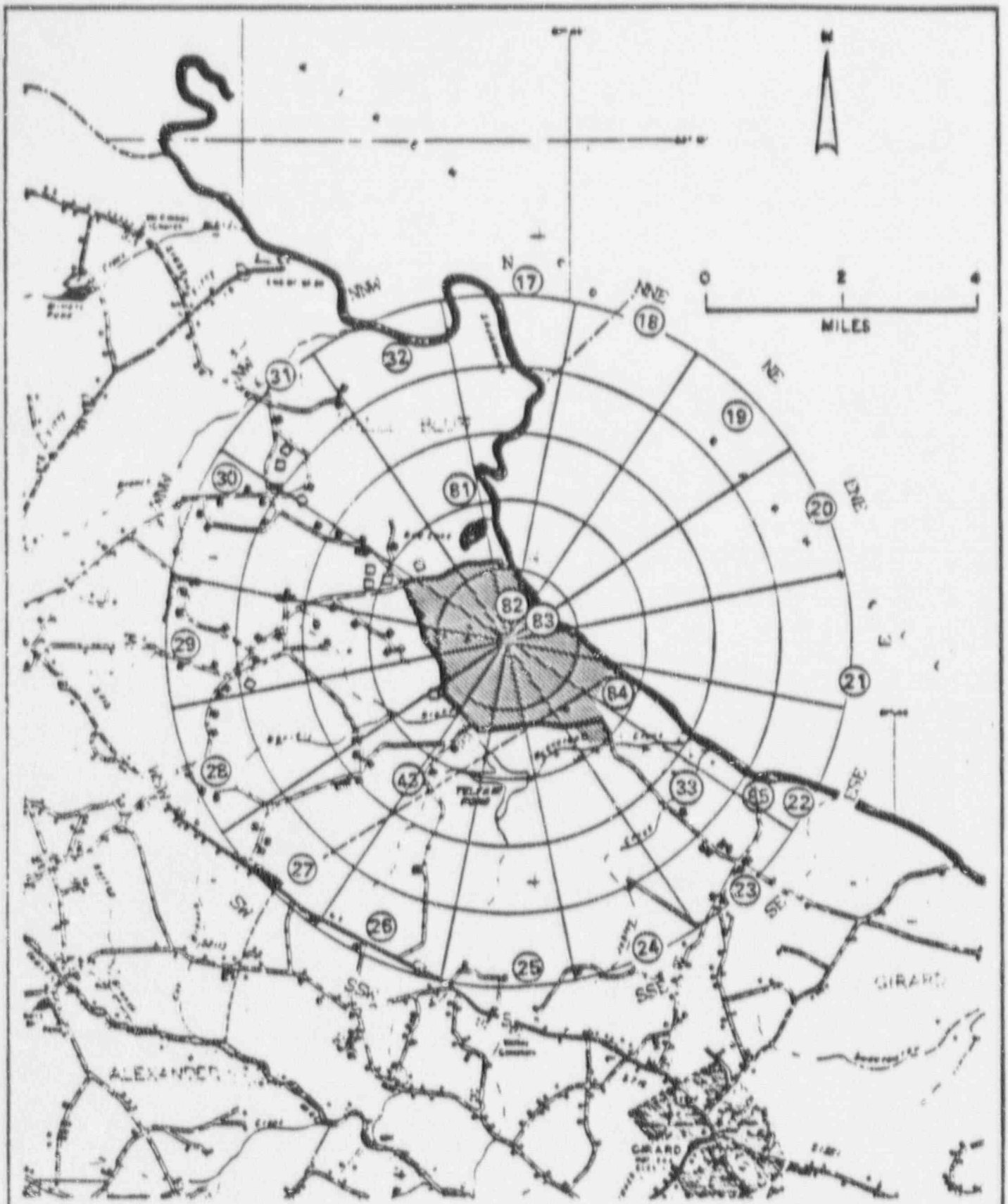


Georgia Power

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TERRESTRIAL STATIONS NEAR SITE BOUNDARY

FIGURE 2-1



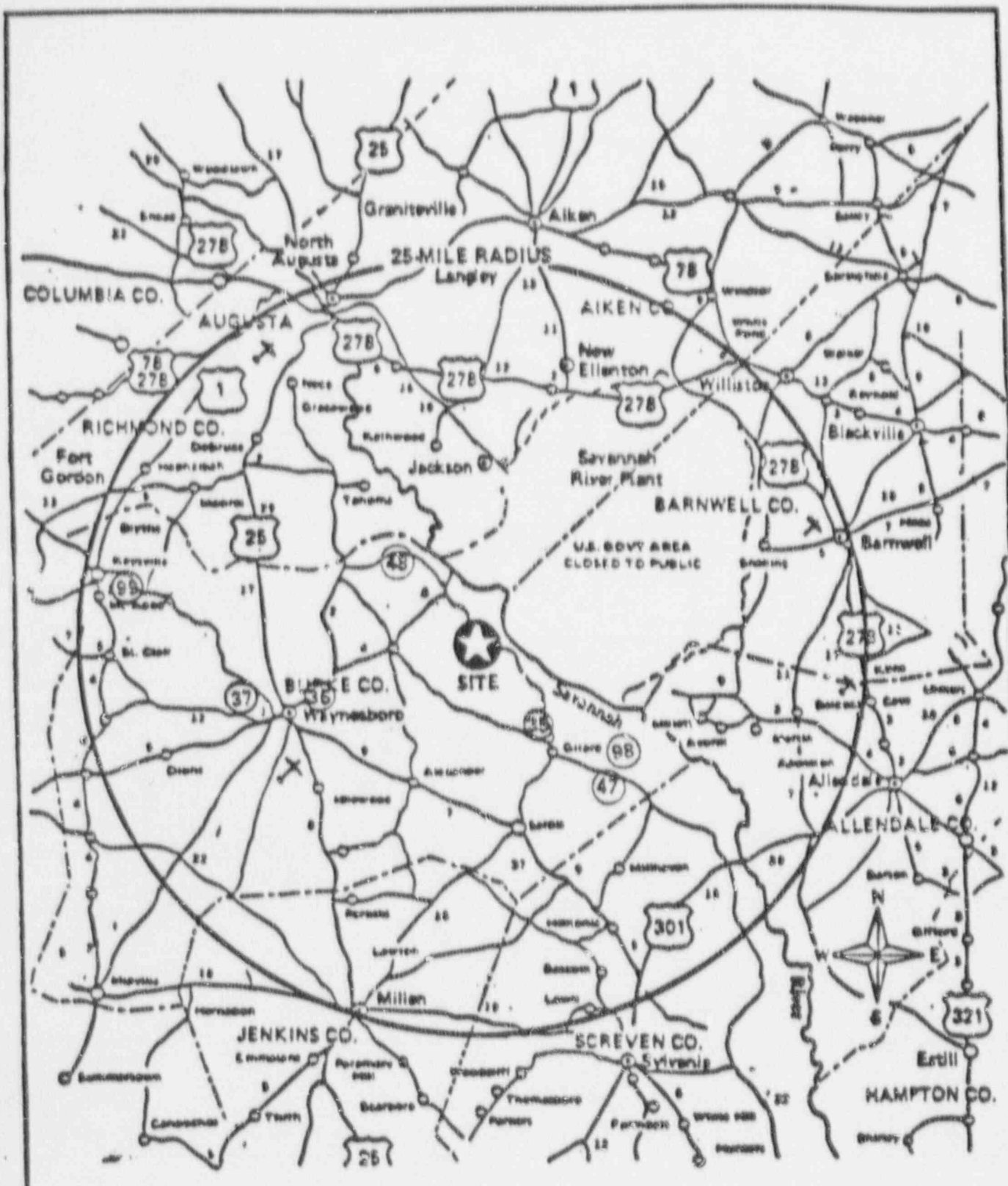
Georgia Power

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

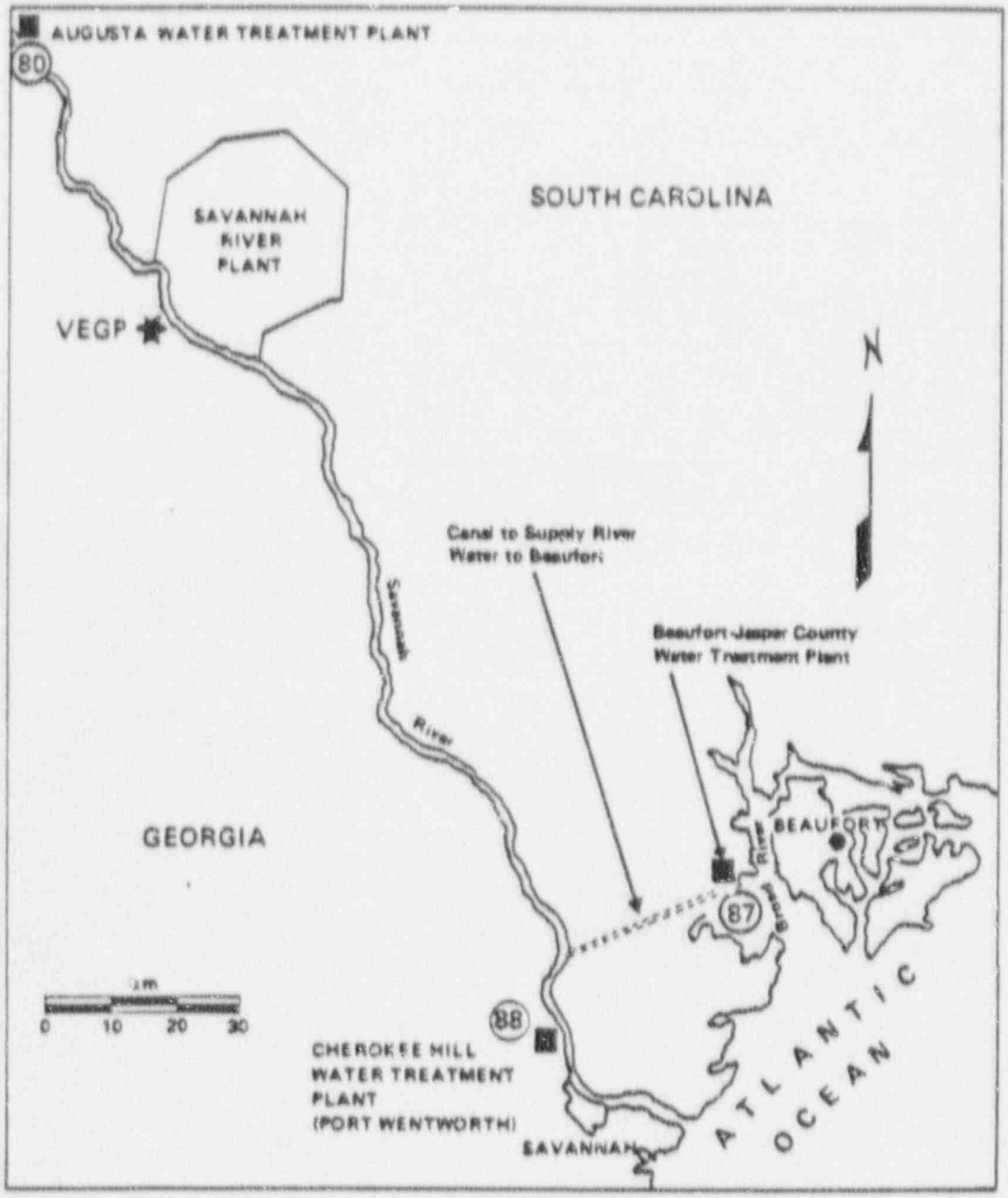
TERRESTRIAL STATIONS BEYOND SITE BOUNDARY OUT TO APPROXIMATELY SIX MILES AND AQUATIC STATIONS

FIGURE 2-2

433-9



Georgia Power VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	TERRESTRIAL STATIONS BEYOND 6 MILES FIGURE 2-3



Georgia Power	VOGTLE ELECTRIC GENERATING PLANT UNIT 1 AND UNIT 2	DRINKING WATER STATIONS
		FIGURE 2-4

433-9

3.0 RESULTS SUMMARY

In accordance with Section 6.8.1.3 of the TS, summarized and tabulated results of all of the regular radiological environmental samples and radiation measurements taken during the year at the designated indicator and control stations are presented in Table 3-1 in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. Results for samples collected at locations other than indicator or control stations or in addition to those stipulated by Table 2-1 are included in Section 4, the discussion of results section, for the type sample.

Naturally occurring radionuclides which are not included in the plant's effluent releases are not required to be reported. Naturally occurring Be-7 is produced in the reactors; miniscule quantities are found in the liquid releases. No other naturally occurring radionuclides are known to be included in the plant's effluent releases. Hence, the radionuclides of interest for the radiological environmental samples monitoring liquid releases (river water, drinking water, fish, and sediment) are manmade radionuclides plus Be-7, while only manmade radionuclides are of interest for the other radiological environmental samples.

TABLE 3-1 (SHEET 1 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
Airborne Particulates (fCi/m^3)	Gross Beta 316	10	19.5 7-43 (263/263)	No. 12 River Road 1.2 miles WSW	20.3 8-38 (52/52)	19.4 7-41 (53/53)	0
	Gamma Isotopic 24						
	Cs-134	50	NDM (c)		NDM	NDM	0
	Cs-137	60	NDM		NDM	NDM	0
Airborne Radioiodine (fCi/m^3)	I-131 316	70	NDM		NDM	NDM	0
Direct Radiation (mR/91 days)	Gamma Dose 79	NA (d)	16.9 13-23 (64/64)	No. 3 River Bank 0.7 miles NE	21.0 19-23 (4/4)	16.6 11-22 (15/15)	0

TABLE 3-1 (SHEET 2 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
Milk (pCi/l)	Gamma Isotopic 56						
	Cs-134	15	NA		NDM	NDM	0
	Cs-137	18	NA	No. 99 Boyceland 24.5 miles WNW	17.0 17-17 (1/28)	17.0 17-17 (1/56)	0
	Ba-140	60	NA		NDM	NDM	0
	La-140	15	NA		NDM	NDM	0
	I-131 56	1	NA		1.82 1.8-1.8 (1/28)	1.25 0.7-1.8 (2/56)	0
Grass (pCi/kg wet)	Gamma Isotopic 36						
	I-131	60	NDM		NDM	NDM	0
	Cs-134	60	NDM		NDM	NDM	0

TABLE 3-1 (SHEET 3 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
	Cs-137	80	30 25-35 (2/24)	No. 37 Substation 17.5 miles WSW	102 44-160 (2/12)	102 44-160 (2/12)	0
River Water (pCi/l)	Gamma Isotopic 36						
	Be-7	80 (e)	NDM		NDM	NDM	0
	Mn-54	15	NDM		NDM	NDM	0
	Fe-59	30	NDM		NDM	NDM	0
	Co-58	15	NDM		NDM	NDM	0
	Co-60	15	NDM		NDM	NDM	0
	Zn-65	30	NDM		NDM	NDM	0
	Zr-95	30	NDM		NDM	NDM	0
	Nb-95	15	NDM		NDM	NDM	0
	I-131	15	NDM		NDM	NDM	0

TABLE 3-1 (SHEET 4 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Location with Highest Annual Mean Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
	Cs-134	15	NDM		NDM	NDM	0
	Cs-137	18	NDM		NDM	NDM	0
	Ba-140	60	NDM		NDM	NDM	0
	La-140	15	NDM		NDM	NDM	0
	Tritium 8	3000	1142 610-1550 (4/4)	No. 83 Downriver 0.4 miles	1142 610-1550 (4/4)	392 284-578 (4/4)	0
Water Near Intakes to Water Treatment Plants (pCi/l)	Gross Beta 36	4	2.53 1.2-4.4 (24/24)	No. 87 Beaufort Downriver 112 miles	2.57 1.2-3.8 (12/12)	2.55 1.2-3.6 (10/12)	0
	Gamma Isotopic 36						
	Be-7	80 (e)	NDM		NDM	NDM	0
	Mn-54	15	NDM		NDM	NDM	0
	Fe-59	30	NDM		NDM	NDM	0

TABLE 3-1 (SHEET 5 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
	Co-58	15	NDM		NDM	NDM	0
	Co-60	15	NDM		NDM	NDM	0
	Zn-65	30	NDM		NDM	NDM	0
	Zr-95	30	NDM		NDM	NDM	0
	Nb-95	15	NDM		NDM	NDM	0
	I-131 (f)	15	NDM		NDM	NDM	0
	Cs-134	15	NDM		NDM	NDM	0
	Cs-137	18	NDM		NDM	NDM	0
	Ba-140	60	NDM		NDM	NDM	0
	La-140	15	NDM		NDM	NDM	0
	Tritium 12	3000	1320 803-1910 (8/8)	No. 88 Port Went Downriver 122 miles	1423 1130-1910 (4/4)	266 156-378 (4/4)	0

TABLE 3-1 (SHEET 6 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
Finished Water at Water Treatment Plants (pCi/l)	Gross Beta 36	4	2.08 1.2-3.6 (24/24)	No. 87 Beaufort Downriver 112 miles	2.18 1.5-3.6 (12/12)	1.92 0.9-3.1 (11/12)	0
	Gamma Isotopic 36						
	Be-7	80 (e)	NDM		NDM	NDM	0
	Mn-54	15	NDM		NDM	NDM	0
	Fe-59	30	NDM		NDM	NDM	0
	Co-58	15	NDM		NDM	NDM	0
	Co-60	15	NDM		NDM	NDM	0
	Zn-65	30	NDM		NDM	NDM	0
	Zr-95	30	NDM		NDM	NDM	0
	Nb-95	15	NDM		NDM	NDM	0
	Cs-134	15	NDM		NDM	NDM	0

TABLE 3-1 (SHEET 7 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
	Cs-137	18	NDM		NDM	NDM	0
	Ba-140	60	NDM		NDM	NDM	0
	La-140	15	NDM		NDM	NDM	0
	I-131 36	1	NDM		NDM	NDM	0
	Tritium 12	2000	1299 689-2330 (7/8)	No. 88 Port Went Downriver 122 miles	1460 979-2330 (3/4)	404 236-653 (3/4)	0
Anadromous Fish (pCi/kg wet)	Gamma Isotopic 1						
	Be-7	100 (e)	NDM		NDM	NA	0
	Mn-54	130	NDM		NDM	NA	0
	Fe-59	260	NDM		NDM	NA	0
	Co-58	130	NDM		NDM	NA	0
	Co-60	130	NDM		NDM	NA	0
	Zn-65	260	NDM		NDM	NA	0

TABLE 3-1 (SHEET 8 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Location with Highest Annual Mean Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
	Cs-134	130	NDM		NDM	NA	0
	Cs-137	150	NDM		NDM	NA	0
Fish (pCi/kg wet)	Gamma Isotopic 11						
	Be-7	100 (e)	NDM		NDM	NDM	0
	Mn-54	130	NDM		NDM	NDM	0
	Fe-59	260	NDM		NDM	NDM	0
	Co-58	130	NDM		NDM	NDM	0
	Co-60	130	NDM		NDM	NDM	0
	Zn-65	260	NDM		NDM	NDM	0
	I-131	15 (e)	13 13-13 (1/5)	No. 85 Downriver 4 miles	13 13-13 (1/5)	12 12-12 (1/6)	0
	Cs-134	130	NDM		NDM	NDM	0
	Cs-137	150	103 26-370 (5/5)	No. 81 Upriver 4.7 miles	249 28-1300 (6/6)	249 28-1300 (6/6)	0

TABLE 3-1 (SHEET 9 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Lower Limit of Detection (a) (LLD)	All Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)	Number of Nonroutine Reported Measurements
Sediment (pCi/kg dry)	Gamma Isotopic 4						
	Be-7	300 (e)	465 210-720 (2/2)	No. 81 Upriver 2.5 miles	545 300-790 (2/2)	545 300-790 (2/2)	0
	Co-58	25 (e)	140 140-140 (1/2)	No. 83 Downriver 1.3 miles	140 140-140 (1/2)	NDM	0
	Co-60	40 (e)	46 46-46 (1/2)	No. 83 Downriver 1.3 miles	46 46-46 (1/2)	NDM	0
	Cs-134	150	NDM		NDM	NDM	0
	Cs-137	180	155 110-200 (2/2)	No. 83 Downriver 1.3 miles	155 110-200 (2/2)	140 120-160 (2/2)	0

TABLE 3-1 (SHEET 10 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 & 50-425
Burke County, Georgia, Calendar Year 1990

TABLE NOTATIONS

a. The LLD is defined in table Notation 3 of Table 4.12-1 of the TS. Except as noted otherwise, the values listed in the column are those found in that table. In practice, the LLDs attained are generally much lower than the values listed.

b. Mean and range are based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis.

c. No Detectable Measurement(s).

d. Not Applicable.

e. The EL has determined that this value may be routinely attained. No value was provided in Table 4.12-1 of the TS.

f. Item 3b of Table 3.12-1 of the TS implies that an I-131 analysis is not required to be performed on these samples when the dose calculated from the consumption of water is less than 1 mrem per year.

4.0 DISCUSSION OF RESULTS

An interpretation and evaluation, as appropriate, of the laboratory results for each type sample are included in this section. Relevant comparisons were made between the difference in average values for indicator and control stations and the calculated Minimum Detectable Difference (MDD) between these two groups at the 99 percent Confidence Level (CL). The MDD was determined using the standard Student's t-test. A difference in the average values which is less than the MDD is considered to be statistically indiscernible. Pertinent results were also compared with past results including those obtained during the period of preoperation. The results were examined to perceive any trends. To provide perspective, a result might also be compared with its Lower Limit of Detection (LLD) and/or Reporting Level (RL) which are nominally provided by Tables 4.12-1 and 3.12-2 of the TS, respectively. Attempts were made to explain any RLs or other high radiological levels found in the samples. There were no failures in the laboratory analyses of each of the samples in attaining the LLDs required by Table 4.12-1 of the TS for this report period.

Unless otherwise indicated, any references made in this section to the results of a previous period will be results which have been purged of any obvious extraneous short term impacts. During preoperation these included the nuclear weapons tests in the fall of 1980, abnormal releases from the Savannah River Site (SRS), and the Chernobyl incident in the spring of 1986. During the part of 1987 after operation commenced, these included abnormal releases from SRS. There were no obvious extraneous short term impacts during CY 88, CY 89, and CY 90. Also unless otherwise indicated, any references to CY 87 will be to the operations portion of 1987. The SRS was previously called the Savannah River Plant.

The annual land use census required by Section 3/4.12.2 of the TS was conducted on April 16. The locations of the nearest milk animal, residence and garden of greater than 500 square feet producing broad leaf vegetation in each of the 16 meteorological sectors within a distance of 5 miles are tabulated in Table 4-1. Land within SRS was excluded from the census. Any consequences of the results of the land use census upon sample collections are discussed in Sections 4.3 and 4.4. The results of the annual survey conducted downstream of the plant to determine whether water from the Savannah River is being used for drinking or irrigation purposes are presented in Section 4.5.

As reported in CY 89, samples of an aquatic vegetation named Egeria densa but commonly called water weed were collected in the river upstream and downstream of the plant on a trial basis to determine its suitability as an environmental sample to monitor any radiological impact due to liquid releases. This vine-like densely foliaged plant grows underwater at a depth of 3 meters or less and acts somewhat like a

filter. The results of the gamma isotopic analysis performed on the water weed samples indicated that it indeed would be a good radiological environmental monitoring sample. Water weed samples were not available for analysis in CY 90.

To flag any result which differed from the others in its set by a relatively large amount, the practice of testing all results for conformance to Chauvenet's Criterion[1] was introduced this year. Identified outliers were investigated to determine reasons for deviating from the norm. If an equipment malfunction or other valid physical reason was found, the anomalous result was deemed non-representative and excluded from the data set. No datum was excluded for failing Chauvenet's Criterion only.

1. G. D. Chase and J. L. Rabinowitz, Principle of Radioisotope Methodology (Burgess Publishing Company, 1962) 87-90.

TABLE 4-1

LAND USE CENSUS RESULTS

Distance in Miles to Nearest Locations in Each Sector

SECTOR	MILK ANIMAL	RESIDENCE	LEAFY GARDEN
N	*	1.6	*
NNE	*	*	*
NE	*	*	*
ENE	*	*	*
E	*	*	*
ESE	*	*	*
SE	*	4.3	*
SSE	*	4.0	*
S	*	4.3	*
SSW	*	4.2	*
SW	*	2.8	4.9
WSW	*	1.2	4.6
W	*	1.9	*
WNW	*	1.8	*
NW	*	2.4	4.5
NNW	*	1.6	*

* None within 5 miles and outside of SRS.

4.1 Airborne

As indicated by Tables 2-1 and 2-2, airborne particulates and airborne radioiodine are collected at 5 indicator stations (Nos. 3, 7, 10, 12, and 16) which encircle the site boundary, at a nearby community (No. 35) and at a control station (No. 36). At these locations, air is continuously drawn through a particulate filter and a charcoal canister in sequence to retain airborne particulates and to adsorb airborne radioiodine, respectively. The filters and canisters are collected weekly. Each of the air particulate filters is counted for gross beta activity. A gamma isotopic analysis is performed quarterly on a composite of the air particulate filters for each station. Each charcoal canister is analyzed for I-131 by gamma spectroscopy.

Three of the air particulate and two of the airborne radioiodine samples were deemed to be unacceptable. Last year, six of the air particulate and four of the airborne radioiodine samples were found to be unacceptable.

The samples collected on January 30, at Station 16 were excluded due to low volume as a consequence of a pump failure; the gross beta result for the air particulate filter failed Chauvenet's Criterion. When collecting the samples at Station 12 on July 30, it was discovered that a storm had blown the cabinet off its base and broken glass had cut the tubing to the rotometer but the pump was still running; there was no way to determine the volume or flow rate. The gross beta result for the air particulate filter collected at Station 35 on November 6, failed Chauvenet's Criterion; an examination of the filter showed an unusual pattern of the deposit which indicated leakage around the filter due to defects in the filter; no reason was found to exclude the I-131 result.

As seen in Table 3-1, the average weekly gross beta activity during the year for the indicator stations was 0.2 fCi/m^3 greater than that for the control station. However, this difference is not discernable since it is less than the MDD which was calculated as 2.5 fCi/m^3.

The average weekly gross beta activity in units of fCi/m^3 for the indicator, community and control stations during CY 90 are compared below with those attained during previous years of operation, with the entire preoperational period (which began in September 1981 for the air monitoring stations) and with the range of annual averages during the calendar years of preoperation.

Period	Indicator	Control	Community
CY 90	19.6	19.4	18.8
CY 89	19.1	18.2	18.8
CY 88	24.7	23.7	22.8
CY 87	23.0	23.5	22.3
Preop Overall	22.9	22.1	21.9
Preop Range	18.1-28.1	18.3-26.5	18.3-26.5

The average weekly readings for CY 90 are seen to be a few percentage points greater than that for CY 89 and about 85 percent of that generally found during the previous years of operation and near the lower end of the range of annual averages for the years of preoperation. No trends were recognized in these data.

Like CY 88 and CY 89, no positive results for manmade radionuclides were found during CY 90 from the gamma isotopic analyses of the quarterly composites of the air particulate filters. During CY 87, Cs-137 was found in one indicator composite at a level of 1.7 fCi/m^3. During preoperation, Cs-137 was found in an eighth of the indicator composites and a seventh of the control composites with average levels of 1.7 and 1.0 fCi/m^3, respectively; the required LLD is 60 fCi/m^3. Also, during preoperation Cs-134 was found in about 8 percent of the indicator composites; the average level was 1.2 fCi/m^3; the required LLD is 50 fCi/m^3.

I-131 was not detected in any of the charcoal canisters during the year. There were no positive results during the previous years of operation. During preoperation, positive results were obtained only during the aftermath of the Chernobyl incident when levels as high as 182 fCi/m^3 were obtained. The maximum allowed LLD is 70 fCi/m^3; however, the LLD usually attained are about 30 percent of this value. The RL is 900 fCi/m^3.

4.2 Direct Radiation

Direct (external) radiation is measured by TLDs. A TLD badge is placed at each station; each badge contains 4 calcium sulfate TLD cards. Hence, each of the TLD badges consists of 4 dosimeters.

Two TLD stations are established in each of the 16 meteorological sectors about the plant. The inner ring of stations (Nos. 1 through 16) is located near the site boundary, while the outer ring (Nos. 17 through 32) is located at a distance of about 5 miles. The 16 stations forming the inner ring are designated as the indicator stations. Each of the 4 control stations (Nos. 36, 37, 47, and 48) are over 10 miles from the plant. After being used on a trial basis for 2 quarters, Stations 47 and 48 were added at the beginning of the year to enhance the statistical base for the control stations. Special interest areas consist of a hunting cabin (No. 33), the Town of Girard (No. 35), and the GPC employees' recreational area (No. 43).

Not infrequently, TLDs are lost due to theft or vandalism. Near the middle of each quarter, the vast majority (85 percent) of the stations (those readily accessible) are checked for missing or damaged badges; replacement badges are provided as needed. At the end of the first quarter, it was learned that the badge at Station 28 had been stolen and the badge at Station 48 had been burned in a brush fire. Last year a total of 5 badges were lost in the field and a sixth was lost in its shipment to the contract laboratory.

As may be seen from Table 3-1, the average quarterly dose of 16.9 mR acquired at the indicator stations was 0.3 mR greater than that acquired at the control stations; this difference was not discernable, however, since it was less than the MDD of 1.6 mR. The quarterly doses acquired at the outer ring stations ranged from 12.7 to 24.0 mR with an average of 16.3 mR which is 0.6 mR less than that found for the inner ring. There was no discernable difference between the averages for the inner and outer rings since this difference was less than the MDD of 0.9 mR.

Listed below for the indicator, control and outer ring stations, are the average levels in units of mR/91 days obtained during each year of operation and the entire period of preoperation (which began in October 1981, for the TLD stations), and the range of annual averages obtained during the calendar years of preoperation.

Period	Indicator	Control	Outer Ring
CY 90	16.9	16.6	16.3
CY 89	17.9	18.4	17.2
CY 88	16.8	16.1	16.0
CY 87	17.6	17.9	16.7
Preop Overall	15.3	16.5	14.7
Preop Range	15.1-16.9	14.1-18.2	12.5-16.2

Overall, the doses for CY 90 were roughly 4 percent less than those found during previous years of operation and nearly 10 percent greater than those found during preoperation. No trend is recognized in these data.

The average levels in units of mR/91 days for the special interest areas obtained during each year of operation and the entire period of preoperation along with the range of annual averages obtained during the calendar years of preoperation are listed below.

Period	Station 33	Station 35	Station 43
CY 90	16.8	18.9	16.2
CY 89	21.2	18.7	17.4
CY 88	19.7	18.1	14.8
CY 87	21.3	18.5	15.2
Preop Overall	16.6	15.1	15.3
Preop Range	13.6-19.9	12.6-17.6	13.9-25.0

The doses acquired at the special interest areas are seen to be somewhat typical and within the range of those acquired at the other stations. It is noticed that the average level at Station 35 is steady and 20 to 25 percent greater than its average level during preoperation.

4.3 Milk

As indicated by Tables 2-1 and 2-2, milk is collected biweekly from two control stations, Dixon Dairy (No. 98) and the Boyceland Dairy (No. 99). Gamma isotopic and I-131 analyses were performed on each sample.

Milk has not been available from an indicator station (a location within 5 miles of the plant) since April 1986 when the cow from which milk was being obtained went dry and was subsequently removed from the area. As indicated by Table 4-1, no milk animals were found in the land use census. The availability of milk within 5 miles of the plant was meager throughout preoperation. A milk animal is a cow or goat producing milk for human consumption.

As usual, the only manmade radionuclide found during CY 90 from the gamma isotopic analysis of the milk samples was Cs-137. Listed below are the average, minimum and maximum levels in units of pCi/l along with the fraction of detectable measurements during each year of operation as well as during preoperation.

Period	Average	Minimum	Maximum	Fraction
CY 90	17.0	17.0	17.0	0.018
CY 89	7.0	5.8	7.7	0.056
CY 88	6.9	4.9	8.1	0.058
CY 87	10.4	9.9	10.8	0.051
Preop	18.1	9.0	27.0	0.044

Although the fraction of detectable measurements during previous years of operation was about 30 percent greater than that during preoperation, the average level was only about 40 percent of that during preoperation. The level of the one positive result found (at Boyceland Dairy) this year is seen to be close to the average level found during preoperation. No trend is recognized from these results. The LLD and RL for Cs-137 in milk, as required by the TS are 18 and 70 pCi/l, respectively. During preoperation, Cs-134 was also detected in a sample from an indicator station, and during CY 87, Zn-65 was also detected in a sample from Boyceland Dairy.

Positive I-131 results of 1.82 and 0.67 pCi/l were found in the March 13 milk sample from Boyceland Dairy and the October 2 sample from Dixon Dairy, respectively. Positive activity for each of these samples was confirmed by recounting; the Boyceland sample was recounted 5 times while the Dixon sample was recounted only once. In each case, the half life estimation could not confirm or rule out I-131 (8.05 day half life) due to large counting uncertainties.

Using a regression analysis, the best fit of the data for the Boyceland sample provides an apparent half life of around 16 days. However, within the 95 percent CL, the half life extended from 7.3 days to infinity. The estimated half life at the 95 percent CL for the Dixon sample based upon the two counts was 3 $\pm$ 9 days.

Laboratory contamination was ruled out as a cause of the positive I-131 results when the Boyceland sample was reanalyzed and showed positive results after washing all glassware.

In the future, to confirm or rule out I-131 when positive results are obtained by beta-gamma coincidence counting, an energy spectra will be obtained of the gamma signal to identify interfering Ra-226 peaks. Also, reagent blanks will be processed with each batch, instead of quarterly, to obtain statistical information on reagent blank counting data.

During previous years of operation, I-131 was not detected in milk samples. During preoperation, positive I-131 results were found only during the Chernobyl incident; the levels ranged from 0.53 to 5.07 pCi/l. The LLD and RL required by the TS are 1 and 3 pCi/l, respectively.

4.4 Vegetation

The TS call for the gamma isotopic analysis of grass or leafy vegetation collected monthly from two onsite locations near the site boundary in different meteorological sectors (Stations 7 and 15) and one control location at about 15 or more miles from the plant (Station 37). Grass is collected at each of these locations.

No gardens were found in the land use census where the calculated dose commitment would be 20% greater than that of either of the indicator stations at which vegetation is being sampled.

As indicated in Table 3-1, Cs-137 was the only manmade radionuclide detected. The average level at the control station is seen to be 72 pCi/kg wet greater than that at the indicator station. This difference is not discernable, however, since it is less than the MDD of 405 pCi/kg wet.

Except for a short period following the Chernobyl incident, Cs-137 has been the only manmade radionuclide detected in vegetation samples by gamma isotopic analysis during both the preoperation and operation periods. As a consequence of the Chernobyl incident: I-131 was found in nearly all the samples collected over a period of several weeks, some at elevated levels; Cs-137 was also found in nearly all of the samples; and Co-60 was found in one of the samples.

The average level of Cs-137 found in vegetation samples in units of pCi/kg wet along with the fraction of detectable measurements at the indicator and control stations is shown below for each year of operation and the period of preoperation.

	Indicator Stations		Control Stations	
Period	Average	Fraction	Average	Fractions
CY 90	30.0	0.083	102.0	0.166
CY 89	9.7	0.042	0.0	0.000
CY 88	38.7	0.280	0.0	0.000
CY 87	24.4	0.318	61.5	0.250
Preop	54.6	0.573	4.4	0.193

No trend is recognized in these data. The LLD and RL are respectively 60 and 2000 pCi/kg wet.

4.5 River Water

Surface water is composited from the Savannah River at three locations using ISCO automatic samplers. Small quantities of river water are collected at intervals not exceeding a few hours. River water collected by these machines is picked up monthly; quarterly composites are made up from the monthly collections. The collection points consist of a control station (No. 82) which is located about 0.4 miles upriver of the plant intake structure, an indicator station (No. 83) which is located about 0.4 miles downriver of the plant discharge structure and a special station (No. 84) which is located about 1.3 miles downriver.

A gamma isotopic analysis was made on each monthly collection. As in all previous years of operation, there were no radionuclides of interest detected in the river water samples during CY 90.

A tritium analysis was performed on each quarterly composite. As usual, a positive result was obtained from each analysis. As indicated in Table 3-1, the average level of 1142 pCi/l found at the indicator station is 750 pCi/l greater than that at the control station; this difference is not discernable because it is less than the MDD of 766 pCi/l. There was a discernable difference in the tritium level between these two stations in CY 88 and CY 89. At the special station (No. 84), the results ranged from 620 to 1700 pCi/l with an average of 1081 pCi/l. The LLD is 3000 pCi/l and the RL is 10 times greater.

Listed below for each year of operation are the average tritium levels found at the control, indicator and special stations, the difference between the average values at the indicator and control stations (L_i-L_c), the MDD between these two stations and the annual liquid releases of tritium from the plant. All of these values are in units of pCi/l except for the releases which are in units of Ci.

Item	CY 90	CY 89	CY 88	CY 87
Control Station	392	538	427	524
Indicator Station	1142	1293	843	680
Special Station	1081	1268	1430	1411
L_i-L_c	750	755	416	156
MDD	766	518	271	416
Releases	1172	916	390	321

These data show an upward trend for plant releases and some correlation between (L_i-L_c) and plant releases. The releases are sufficient to account for the increased levels of tritium at the indicator station. The annual organ dose that the maximum exposed individual (a child) would receive from drinking water with an average tritium concentration of 750 pCi/l was conservatively calculated to be 0.078 mrem or 0.78 percent of the TS limit.

On October 12 the annual survey of the Savannah River was conducted downstream of the plant for approximately 106 river miles to identify any parties who may use river water for purposes of drinking or irrigation. The only parties found to be withdrawing river water for drinking purposes were the two downriver water treatment plants (Stations 87 and 88) from which samples are collected monthly. As in all previous surveys, no intakes for irrigation use were observed. The survey results were corroborated by contacting the Environmental Protection Division of the Georgia Department of Natural Resources and the South Carolina Department of Health and Environmental Control; it was found that no new surface or drinking water withdrawal permits had been issued this year for the Savannah River downstream of the plant.

4.6 Drinking Water

Samples were collected at a control station (No. 80), the Augusta Water Treatment Plant in Augusta, Georgia, which is located about 56 miles upriver and at two indicator stations (Nos. 87 and 88), the Beaufort-Jasper County Water Treatment Plant near Beaufort, South Carolina and the Cherokee Hill Water Treatment Plant near Port Wentworth, Georgia, which are respectively located about 112 and 122 miles downriver. These upriver and downriver distances in river miles are the distances from VEGP to the point in the river where water is diverted to the intake for each of these water treatment plants.

At each of the water treatment plants, monthly collections were made of river water which was composited near the plant's intake (raw drinking water) and of grab samples of finished drinking water; quarterly composites are made up from the monthly collections. Gross beta and gamma isotopic analyses were performed on each of the samples collected monthly. Tritium analyses were performed on the quarterly composites. Although an I-131 analysis is not required to be performed on these samples when the dose calculated from the consumption of water is less than 1 mrem per year (see Item 3b of Table 3.12-1 of the TS), an I-131 analysis was performed on each of the grab samples of finished water collected monthly since a drinking water pathway exists.

As indicated by Table 3-1, the average gross beta activity for raw drinking water was 0.02 pCi/l greater for the control station than for the indicator stations. However, this difference was not discernable because it was less than the MDD of 0.72 pCi/l. For finished drinking water, the average gross beta activity was 0.16 pCi/l greater for the indicator stations than for the control station. This difference was not discernable because it was less than the MDD of 0.58 pCi/l.

Listed below for each year of operation are the average gross beta levels for raw and finished drinking water in units of pCi/l at the indicator and control stations, and the difference between the average levels at these stations ($L_i - L_c$).

Period	Indicator	Control	$(L_i - L_c)$
		RAW	
CY 90	2.53	2.55	-0.02
CY 89	2.93	3.05	-0.12
CY 88	2.67	3.04	-0.37
CY 87	2.20	5.50	-3.30
		FINISHED	
CY 90	2.08	1.92	0.16
CY 89	2.36	2.38	-0.02
CY 88	2.28	2.35	-0.07
CY 87	2.10	1.80	0.30

With the exception of the high reading for the raw drinking water for the control station for CY 87, the above tabulations show fairly consistent results. The high reading was attributed to sediment being drawn into a few of the samples. Ignoring this high reading, the overall average gross beta reading for all years of operation is seen to be 22.5 percent greater for the raw drinking water than for the finished drinking water; this is expected since the finished water has been filtered. There has not been a discernable difference between the average values at the indicator and control stations during any of the years of operation.

As indicated in Table 3-1, there were no positive results for the radionuclides of interest from the gamma isotopic analyses of the monthly collections. Only one positive result has been found since operations began; Be-7 at a level of 68.2 pCi/l was found in the sample collected for September 1987 at Station 87.

Listed below for each year of operation are the average tritium levels found in the quarterly composites of raw and finished drinking water in units of pCi/l collected at the indicator and control stations, the difference between the average levels at these stations ($L_i - L_c$) and the MDD.

Period	Indicator	Control	($L_i - L_c$)	MDD
		RAW		
CY 90	1320	266	1054	572
CY 89	2508	259	2249	1000
CY 88	2630	240	2390	580
CY 87	2229	316	1913	793
		FINISHED		
CY 90	1299	404	895	1131
CY 89	2236	259	1977	627
CY 88	2900	270	2630	830
CY 87	2406	305	2101	1007

The above tabulations show that in previous years of operation, there was always a detectable difference between the indicator and control stations; as the absolute value of ($L_i - L_c$) exceeded the MDD. The tabulations also show a decided decrease in the tritium levels at the indicator station during CY 90. There was still a detectable difference between the average levels at the indicator and control stations for the raw drinking water, however. During preoperation the results were similar to those for CY 87 through CY 89.

As indicated in Table 3-1, there were no positive results from the I-131 analysis of the finished drinking water samples; each result was below its Minimum Detectable Activity (MDA) which ranged from 0.28 to 0.73 pCi/l. Similar results were obtained in previous years of operation. The TS call for a LLD and a RL of 1 and 2 pCi/l, respectively.

4.7 Fish

The TS call for the collection of at least one sample of any anadromous species of fish in the vicinity of the plant discharge during the spring spawning season. The TS also call for semiannual collections of any commercially or recreationally important species in the vicinity of the plant discharge area and in areas not influenced by plant discharges. Furthermore, the TS call for a gamma isotopic analysis on the edible portions of each sample collected.

About a five mile stretch of the river is generally needed to obtain adequate fish samples. For the semiannual collections, the control station (No. 81) extends from approximately 2 to 7 miles upriver of the plant intake structure and the indicator station (No. 85) extends from about 1.4 to 7 miles downriver of the plant discharge structure. For the anadromous species all collection points can be considered as indicator stations.

On March 27, American shad, an anadromous species, was collected at Station 81. Like CY 88 and CY 89, no positive results for the radionuclides of interest were obtained from the gamma isotopic analysis. In CY 87, Cs-137 was found in one of the three shad collected at a barely detectable level of 10 pCi/kg wet. The LLD for Cs-137 in fish as specified by the TS is 150 pCi/kg wet.

On April 24 and October 29, the composition of the catches at the indicator and control stations were as follows.

Date	Indicator	Control
April 24	Channel Catfish Redbreast Sunfish	Brown Bullhead Largemouth Bass Redear Sunfish
October 29	Largemouth Bass Redbreast Sunfish Redear Sunfish	Channel Catfish Largemouth Bass Redear Sunfish

As indicated in Table 3-1, I-131 and Cs-137 were the only radionuclides of interest found in the semiannual collections of commercially or recreationally important species. Since operation began, no other radionuclides of interest have been detected.

In the October catch, I-131 was found at a level of 12 pCi/kg wet in the redear sunfish from the control station and at a level of 13 pCi/kg wet in the redbreast sunfish from the indicator station. These upriver and downriver catches were separated by a distance of approximately 5 river miles. The range for these species is generally less than a mile. The annual thyroid dose that the maximum exposed individual (an adult) would receive from eating fish with an average I-131 concentration of 13 pCi/kg is 0.53 mrem or 5.3 percent of the TS limit.

Actual releases of I-131 to the river totaled 0.733 mCi for the fourth quarter. A conservative estimate of the I-131 level in fish that might result from these actual releases corresponds to a level of 0.426 pCi/kg wet or about 3 percent of that found in the downriver sample. Since the measured level of I-131 in the downriver fish sample does not correlate well with the actual release data, and the I-131 level in the upriver fish sample is nearly the same as that for the downriver sample (and the upriver fish sample is unlikely to have roamed downstream of the plant discharge structure), it is believed that the presence of I-131 in the fish can be attributed primarily to a source or sources other than plant releases.

In October 1989, a positive level of 18 pCi/kg wet was found in one of the samples from the indicator station. The LLD assigned for I-131 in fish is 15 pCi/kg wet.

As seen in Table 3-1, the average level of 103 pCi/kg wet for Cs-137 at the indicator station is 146 pCi/kg wet greater than that at the control station. This difference is not discernable since it is less than the MDD of 405 kCi/kg wet. Since operations began, positive values for Cs-137 have been found in all but one of the 36 samples collected.

Listed below for each year of operation are the average levels of Cs-137 in units of pCi/kg wet found in fish samples at the indicator and control stations.

Period	Indicator	Control
CY 90	103	249
CY 89	117	125
CY 88	66	116
CY 87	337	119

No trend is recognized in this data.

It is noted that a Cs-137 level of 1300 pCi/kg wet was found in one of the fish samples collected at the indicator station in April. The level was confirmed by a recount. The previous high level found during operation was 446 pCi/kg wet in a sample from the indicator station in CY 87. The RL is 2000 pCi/kg wet.

4.8 Sediment

Sediment was collected along the shoreline of the Savannah River on April 2 and October 2 at Stations 81 and 83. Station 81 is a control station located about 2.5 miles upriver of the plant intake structure at RM 153.3 while Station 83 is an indicator station located about 0.6 miles downriver of the plant discharge structure at RM 150.2. The indicator sample for April was collected at RM 148.6. A gamma isotopic analysis was performed on each sample.

Listed below for each year of operation are the average levels of radionuclides of interest in units of pCi/kg dry found in the regular samples collected at the indicator and/or control stations along with the frequency of occurrence and the LLDs. Each of these radionuclides is included in the plant's liquid releases.

Period	Indicator	Frequency	Control	Frequency
		Be-7, LLD=300		
CY 90	465	1.0	545	1.0
CY 89	1300	1.0	415	1.0
CY 88	970	1.0	810	1.0
CY 87	987	1.0	543	1.0
		Mn-54, LLD=50		
CY 89	18	0.5		
CY 88	22	0.5		
		Co-58, LLD=25		
CY 90	140	0.5		
CY 89	135	1.0		
CY 88	190	1.0		
		Co-60, LLD=40		
CY 90	46	0.5		
CY 89	46	1.0		
CY 88	62	0.5		
		Cs-137, LLD=180		
CY 90	155	1.0	140	1.0
CY 89	230	1.0	125	1.0
CY 88	175	1.0	175	1.0
CY 87	209	1.0	111	1.0

As in all previous years of operation, positive readings in CY 90 for Be-7 and Cs-137 were found in each sample and the readings were on the same order as found previously. For Be-7, the average reading of 465 pCi/kg dry for the indicator station is 80 pCi/kg dry less than that for the control station; there is no discernable difference, however, since this difference is less than the MDD of 2463 pCi/kg dry. For Cs-137 the average reading of 155 pCi/kg dry for the indicator station is 15 pCi/kg dry greater than that for the control station: there is no discernable difference since this difference is less than the MDD of 343 pCi/kg dry. There has also not been a discernable difference between the levels at the indicator and control stations for either Be-7 or Cs-137 during any past year of operation.

The activation products Co-58 and Co-60 are seen to be present again this year at the indicator station at about the same levels as last year but in only half of the samples. It is also noted that Mn-54 (also an activation product) which appeared in half of the samples from the indicator station the past 2 years was not present this year. Since the activation products were only found at the indicator stations, their presence is believed to be due to plant releases. The cobalts were not found in sediment samples during preoperation.

The radiological impact due to the presence of Co-58 and Co-60 in the shoreline sediment was assessed by calculating the whole body dose by direct radiation (from the sediment) to an individual using the methodology and parameters of Regulatory guide 1.109, Revision 1, October 1977 and comparing this dose with that permitted by Section 3.11.1.2.b of the TS (3 mrem per year). The theoretical dose was conservatively determined to be 2.5 micro rem per year or 0.084 percent of the TS limit. This extremely low dose, although calculable, poses no measurable negative environmental or public health impact. The theoretical doses due to the activation products in CY 88 and CY 89 were found to be 3.6 and 2.6 micro rem, respectively.

5.0 INTERLABORATORY COMPARISON PROGRAM

Section 3.12.3 of the TS requires that analyses be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program approved by the Nuclear Regulatory Commission (NRC). The Environmental Protection Agency's (EPA's) Environmental Radioactivity Laboratory Intercomparison Studies (Crosscheck) Program conducted by the Environmental Monitoring and Support Laboratory in Las Vegas, Nevada, provides such a program. Reported herein, as required by Section 4.12.5 of the TS are the results of the EL's participation in the EPA Crosscheck Program.

The Crosscheck Program was designed for laboratories involved with REMPs; it includes environmental media and a variety of radionuclides with activities at or near environmental levels. Participation in the program ensures that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed; REMP results can thereby be demonstrated to be reasonably valid.

Simulated environmental samples are distributed regularly to the participants who analyze the samples and return the results to the EPA for statistical analysis and comparisons with known values and results obtained from other participating laboratories. The Crosscheck Program provides each participant with documentation of its performance; this can be helpful in identifying any instrument or procedural problems.

The EL's participation in the program consists of analyses on the radioactive materials supplied by the program that correspond with those required by Table 2-1. Analyses were performed in a normal manner. Each sample was analyzed in triplicate as required by the program. Results obtained from the gross beta and gamma isotopic analyses of air filters, the gamma isotopic and I-131 analyses of milk samples, and the gross beta, tritium, gamma isotopic, and I-131 analyses of water samples are summarized in Table 5-1.

Delineated in Table 5-1 for each of the environmental media are the type analysis performed, EPA's collection date, the known value and expected precision (one standard deviation) provided by the EPA, the average result obtained by the EL, the standard deviation of the EL's result, the normalized deviation (from the known result), and the normalized range. The normalized deviation and normalized range were also provided by the EPA.

The normalized deviation from the known value provides a measure of the central tendency of the data (accuracy). The normalized range is a measure of the dispersion of the data (precision). An absolute value of 3 standard deviations was established by the EPA as the control limit.

TABLE 5-1 (SHEET 1 OF 2)

CROSSCHECK PROGRAM RESULTS

Analysis	Date Collected	Known Value	Expected Precision	Reported Average	Standard Deviation	Normalized Deviation	Normalized Range
			Air Filters (pCi/filter)				
Gross Beta	03/30/90	31.0	5.0	32.33	0.58	0.46	0.12
	08/31/90	62.0	5.0	63.33	1.15	0.46	0.24
Cs-137	03/30/90	10.0	5.0	12.33	2.31	0.81	0.47
	08/31/90	20.0	5.0	23.67	3.06	1.27	0.71
			Milk (pCi/l)				
I-131	04/27/90	99.0	10.0	114.33	3.21	2.66	0.35
	09/28/90	58.0	6.0	52.00	1.00	-1.73	0.20
Cs-137	04/27/90	24.0	5.0	25.00	4.00	0.35	0.95
	09/28/90	20.0	5.0	18.67	0.58	-0.46	0.12
			Water (pCi/l)				
Gross Beta	01/26/90	12.0	5.0	9.67	0.58	-0.81	0.12
	04/17/90	52.0	5.0	53.00	1.00	0.35	0.24
	05/11/90	15.0	5.0	8.33	.58	-2.31	0.12
	09/21/90	10.0	5.0	6.67	.58	-1.15	0.12
H-3	02/23/90	4976.0	498.0	5067.00	136.67	0.32	0.31
	06/22/90	2933.0	358.0	2963.33	64.29	0.15	0.20
	10/19/90	7203.0	720.0	7147.00	130.13	-0.13	0.43
Co-60	02/09/90	15.0	5.0	14.67	2.52	-0.12	0.59
	06/08/90	24.0	5.0	20.67	0.58	-1.15	0.12
	10/05/90	20.0	5.0	19.33	0.58	-0.23	0.12
Zn-65	02/09/90	139.0	14.0	136.67	6.51	-0.29	0.55
	06/08/90	148.0	15.0	142.67	13.20	-0.62	1.04
	10/05/90	115.0	12.0	107.00	6.24	-1.15	0.59

TABLE 5-1 (SHEET 2 OF 2)

CROSSCHECK PROGRAM RESULTS

Analysis	Date Collected	Known Value	Expected Precision	Reported Average	Standard Deviation	Normalized Deviation	Normalized Range
Ru-106	02/09/90	139.0	14.0	119.67	14.36	-2.39	1.26
	06/08/90	210.0	21.0	213.67	24.13	0.30	1.61
	10/05/90	151.0	15.0	138.67	6.51	-1.42	0.51
I-131	08/10/90	39.0	6.0	37.33	0.58	-0.48	0.10
Cs-134	02/09/90	18.0	5.0	16.33	3.21	-0.58	0.71
	04/17/90	15.0	5.0	16.33	0.58	0.46	0.12
	06/08/90	24.0	5.0	25.00	5.20	0.35	1.12
	10/05/90	12.0	5.0	11.67	2.08	-0.12	0.47
Cs-137	02/09/90	18.0	5.0	17.67	0.58	-0.12	0.12
	04/17/90	15.0	5.0	16.67	1.53	0.58	0.35
	06/08/90	25.0	5.0	25.67	2.52	0.23	0.59
	10/05/90	12.0	5.0	12.00	1.73	0.00	0.35
Ba-133	02/09/90	74.0	7.0	71.33	1.53	-0.66	0.25
	06/08/90	99.0	10.0	109.00	2.65	1.73	0.30
	10/05/90	110.0	11.0	103.33	3.79	-1.05	0.38

An absolute value of 2 standard deviations was established as the warning limit. The EL considers any value greater than the control limit as unacceptable. Investigations are undertaken whenever any value exceeds the warning limit or whenever a plot of the values indicates a trend.

As may be seen from Table 5-1, the normalized deviation and the normalized range in each case were within control limits but the warning limit for normalized deviation was exceeded for the I-131 analysis of milk for April 27, for the gross beta analysis of water for May 11, and for the gamma isotopic analysis of Ru-106 in water for February 9. In addition, a trend was recognized in plots of the values of the normalized deviation for the gross beta, Co-60, Ru-106, and Ba-133 in water. Each of the above out of limit and trending cases prompted an investigation.

The investigation of the high value of the normalized deviation for the I-131 in milk revealed nothing unusual about sample preparation or about the calculations. The investigation of the high normalized deviation value and trend for gross beta in water lead to the generation of a new beta efficiency curve and to the counting for gross beta activity before flaming the sample for alpha counting. The investigation of the high normalized deviation value for Ru-106 in water and of the trends of the normalized deviation values for Ru-106 as well as for Co-60 and Ba-133 in water lead to changes in the peak background correction values, a proper preamplifier pole zero adjustment on one of the detectors, and the preparation of samples with a more homogeneous mixture.

6.0 CONCLUSIONS

This report has shown the licensee's conformance with Section 3/4.12 of the TS during the year. It has shown that all data were carefully examined. A summary and a discussion of the results of the laboratory analyses for each type sample collected were presented. All results indicate no adverse radiological impact to the environment resulting from Plant Vogtle operation.

V

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNIT 1 AND UNIT 2

NRC DOCKET NOS. 50-424 AND 50-425

FACILITY OPERATING LICENSE NOS. NPF-68 AND NPF-81

ANNUAL ENVIRONMENTAL OPERATING REPORT FOR 1990
(NONRADIOLOGICAL)

VOGTLE ELECTRIC GENERATING PLANT - UNIT 1 AND UNIT 2
ANNUAL ENVIRONMENTAL OPERATING REPORT (NONRADIOLOGICAL)
(1990)

SPECIFICATION

In accordance with Section 5.4.1 of the Vogtle Electric Generating Plant Environmental Protection Plan (Nonradiological), Appendix B to Facility Operating License Nos. NPF-68 and NPF-81, this report is submitted describing implementation of the Environmental Protection Plan for the calendar year 1990.

REPORTING REQUIREMENTS

A. Summaries and Analyses of Results of the Environmental Monitoring Activities for the Report Period

1. Aquatic Monitoring - Liquid effluent monitoring was performed in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. GA0026786; there was no additional requirement for aquatic monitoring during 1990.

2. Terrestrial Monitoring - Not required.

3. Maintenance of Transmission Line Corridors

a. The herbicide Tordon 101 was used for cut surface treatment during the clearing of the Vogtle Scherer 500 KV line on the section from Plant Scherer to Georgia Highway 15. The product is registered by the Environmental Protection Agency for this type of application and approved by State of Georgia authorities. The product was applied in strict compliance with the herbicide label.

b. There were no clearing or maintenance activities within the Ebenezer Creek or Francis Plantation areas during 1990.

c. Routine maintenance activities within the designated cultural properties along transmission line corridors were conducted in accordance with the Final Cultural Resource Management Plan.

4. Noise Monitoring - There were no complaints received by Georgia Power during 1990 regarding noise along the VEGP-related high voltage transmission lines.

B. Comparison of the 1990 Monitoring Activities with Preoperational Studies, Operational Controls, and Previous Monitoring Reports

These comparisons were not required because no nonradiological monitoring programs were conducted during the reporting period beyond those performed in accordance with NPDES Permit No. GA0026786 referenced in Section A above.

C. An Assessment of the Observed Impacts of Plant Operation on the Environment

There was no significant adverse environmental impact associated with plant operation in 1990.

D. Environmental Protection Plan (EPP) Noncompliances and Corrective Actions

There were no EPP noncompliances during 1990.

E. Changes in Station Design or Operation, Tests, and Experiments Made in Accordance with EPP Subsection 3.1 Which Involved a Potentially Significant Unreviewed Environmental Issue

There were no changes in station design or operation, tests, or experiments during 1990 which involved a potentially significant unreviewed environmental question.

F. Nonroutine Reports Submitted in Accordance with EPP Subsection 5.4.2

There were no nonroutine reports submitted during 1990.