Georgia Power Company
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 877-7122

C. K. McCoy
Vice President, Nuclear
Vogtle Project

Georgia Power
the southern electric system

April 29, 1992

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Docket Nos. 50-424
50-425

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
1991 ANNUAL REPORT - PART 2

In accordance with the applicable regulatory requirements, Georgia Power Company hereby submits Part 2 of the 1991 Annual Report of operating information. It includes the remainder of the 1991 reports not previously submitted.

Sincerely,

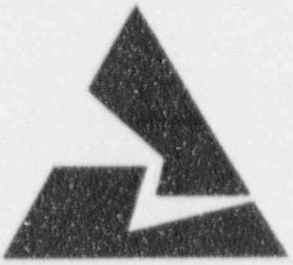
C. K. McCoy

CKM/JLL/gmb

Enclosure: Annual Report - Part 2

xc: Georgia Power Company
Mr. W. B. Shipman
Mr. M. Sheibani
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
Mr. D. S. Hood, Licensing Project Manager, NRR
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle



VOGTLE ELECTRIC GENERATING PLANT

GEORGIA POWER

COMPANY

PLANT VOGTLE UNITS 1 & 2

1991

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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VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2

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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 fourth fuel cycle. Unit 2 received its operating license on February 9, 1989, and began commercial operation on May 20, 1989. Unit 2 is in a refueling outage, preparing to enter its third fuel cycle.

II

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2

NRC DOCKET NOS. 50-424 AND 50-425

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PLANT MODIFICATIONS AND TEST OR EXPERIMENTS

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PLANT MODIFICATIONS

II
1991 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

PLANT DESIGN CHANGES

Subject: DCP 87-V1E0098, Revision 0, Sequence 1

Description : This change replaces the ultrasonic transmitter system for crud tank level indication with a pressure transmitter system. This system will measure tank head pressure and provide indication and annunciation at the remote backflushable filter panel for a more reliable level indicating system.

Safety Evaluation: This change provides local indication of Crud Tank level prior to starting the Crud Tank Pump. This change will have no effect on accidents described in the FSAR nor will any new accident scenarios be introduced. The margin of safety is increased by providing a more reliable back flushable crud tank level indicating system.

Subject: DCP 87-V1E0099, Revision 0, Sequence 1

Description: This change deletes Containment Isolation Phase "A" function from radiation monitors 1RE- 0005 &0006 and the associated annunciation with reset functions. Annunciation windows will be blanked and spared along with the reset switches.

Safety Evaluation: Deletion of this input from the Containment isolation phase A does not affect the accident evaluations of FSAR chapter 15. This change does not increase the chance for any accident, there is sufficient input from several redundant features that will isolate Containment prior to a high radiation signal. This change does not disable the function of the radiation monitors and they will provide the required level of accident monitoring.

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Subject:	DCP 87-V1E0134, Revision 0, Sequence 1
Description:	This change relocates the card readers on doors 121111125 & 191 to reduce the number of false alarms being generated during normal use.
Safety Evaluation:	This change impacts no system required to operate in order to mitigate the consequences of an accident. This relocation was performed to increase the reliability of the door alarm functions.
Subject:	DCP 87-V1E0177, Revision 0, Sequence 1
Description:	This change provides an automatic stop of the Auxiliary Building Normal HVAC Exhaust and Supply fans upon a containment ventilation isolation (CVI) signal.
Safety Evaluation:	This change provides an automatic function where a manual action was previously required. It does not affect the design accident condition previously evaluated in the FSAR nor any components required to function during an accident. The control room manual stop and monitoring functions are not affected by this change.
Subject:	DCP 87-V1E0200 Revision 0, Sequence 1
Description:	This change provides a storage building inside the plant secure area to store plant fire protection equipment. This building will be erected in accordance with applicable codes and standards.
Safety Evaluation:	The building is not exposed to any safety related equipment, systems, or structures. It is located in the yard area of the plant and is constructed to applicable plant design requirements.

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Subject: DCP 87-VCE0249 Revision 0, Sequence 1

Description: This change rewired the trouble alarm circuit in non-1E switchgear ANB28 to correct wiring and drawing errors.

Safety Evaluation: This change corrects errors in the wiring of the trouble alarm circuit to allow proper operation. This switchgear does not affect safety related components.

Subject: DCP 87-V1N0273 Revision 0, Sequence 1

Description: This change adds hour meters to waste water sump pumps in order to monitor pump operating times. These meters are located in wall mounted boxes close to the control switch box for each pump.

Safety Evaluation: The change does not affect the operation of the pumps but does allow monitoring for run times to detect abnormal demand. This will allow plant personnel to determine and evaluate the cause.

Subject: DCP 87-VCE0304 Revision 0, Sequence 2

Description: This change completes the installation of piping, valves, and instrumentation to allow the TPCW system to supply seal and cooling water to the Unit 1 Circ. Water Pumps. Sequence 1 of this DCP added two 2" lines with isolation valves, one from Utility Water and one from TPCW discharge header .

Safety Evaluation: This change does not affect any safety related systems or components. This change affects only the Turbine Plant Cooling Water system and the Utility Water system neither of which will compromise a safety related system or prevent a safe shut down should they fail.

Revision of FSAR section 9.2.11 and FSAR Figures 10.4.5-1, sheet 2 of 2 and 9.2.11-1 sheet 1 of 3. were required by this change

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Subject: DCP 87-V1N0362 Revision 0, Sequence 1

Description: This change adds a temperature switch to the Auxiliary/Turbine Building Train A Electrical Tunnel and removes the automatic operation of the ventilation system for this area. This is required due to the tunnel flow path being blocked by fire doors at either end.

Safety Evaluation: The change does not affect the ability of the ventilation system to maintain the tunnel temperature below the environmental qualification temperature. The temperature switches will provide an alarm in the control room to alert plant operators to take action.

Subject: DCP 87-V1N0462 Revision 0, Sequence 1

Description: This change replaced two 3/4" - 1500 p.s.i. flanges located on the end of a double valved test vent located on the Safety Injection line "B" train. This change was required to enable the vent piping to withstand OBE (Operating Basis Earthquake) stresses within the code allowances.

Safety Evaluation: This change was made between outside containment isolation valve HV-8802B and Train "B" S.I. pump. This change does not affect the Containment test valves or the testing acceptance criteria.

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10 CFR50.59(b) REPORT

Subject: DCP 87-V1N0471 Revision 0, Sequence 1

Description: This change adds a protective relay to the "B" train RHR pump room cooling fan control circuit to prevent loss of control power in case of a fire. This change was required due to both trains of RHR pump room temperature controllers being located in the same fire area.

Safety Evaluation: This change provides control power protection and does not affect the design operation of the fan. All modifications are located inside the existing MCC cubicle. The change involves only fire event safe shutdown and assures that the RHR pump room cooler system is available.

Subject: DCP 88-VCN0025 Revision 0, Sequence 1

Description: This change replaces 11 portable dry chemical fire extinguisher, intended for suppression of control, remote shutdown, and computer rooms, with portable Halon 1211 fire extinguisher.

Safety Evaluation: This change adds a new type of fire extinguisher in the plant in order to mitigate the effects of extinguisher discharge on sensitive equipment. This change affected no equipment assumed to function in an accident.

FSAR figures 9A-19, and 9A-23 required revision as a result of this change.

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Subject: DCP 88-V1N0046 Revision 0, Sequence 1

Description: This change extended fire suppression system #079 by extending coverage to Control building room R-178. This is required because of the significant amount of safety related equipment in the room and its inaccessibility for manual fire suppression.

Safety Evaluation: This change is necessary to meet the requirements of CMEB 9.5-1. and provides the necessary protection for cable tray in the room.

The following FSAR pages required revision: Page 9A.1.86-3, Table 9.5.1-10b(2 of 5), Figure 9A-21, Page 9.5.1-11, Figure 9.5.1-1 (8 & 10) as did the fire protection pre-plans.

Subject: DCP 88-V1N0068 Revision 0, Sequence 1

Description: This change eliminates the actuation of sprinkler system 1-2301-S4-077 upon an alarm from fire protection zone "133A". This restores the protection scheme to the design configuration of system -077 serving zones "133B" and "176" and system -108 serving zone "133A".

Safety Evaluation: This change to the fire protection local zone indicating panel restores the system to the design configuration as described in the FSAR. This change will not reduce the ability of safety related components to function as required to mitigate the consequences of an accident.

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Subject: DCP 88-V1N0077 Revision 0, Sequence 1

Description: This change modifies the Data Processing Module counting function and high and low alarm default parameters for the plant radiation monitors. This change is to reduce the high number of false and spurious radiation alarms being generated.

The count changed from 16 counts to 1024 counts to provide a more representative sample, the counting period remained at 245 ms. The Data Processing Module (DPM) default value for high and low radiation alarms was changed to 7.77 E 29 to reduce the probability of high radiation alarms when the DPM is turned-on or reset after a power failure.

Safety Evaluation: This change does not affect the ability of the radiation monitors to function as designed. Unnecessary operator action and erroneous input into the SSPS are eliminated. The new default settings are displayed on a loss of power or DPM reset to indicate to the operator that a DPM reset has occurred. This change will not affect the response times of any equipment assumed to function in an accident.

Subject: DCP 88-VCE0110 Revision 0, Sequence 1

Description: This change modifies the fire detection system to reflect the completion of Unit 2 as follows: changes fire protection computer addresses; allows actuation of Unit 2 sprinkler system 013 by Unit 1 zone 12; reconnects Unit 2 detection zones connected to Unit 1 during construction.

Safety Evaluation: This change does not does not affect any safety related equipment nor does it impact any safety/accident analysis described in the FSAR. The change is a completion of the original design intent.

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Subject: DCP 89-V1N0003 Revision 0, Sequence 1

Description: This change replaces the existing solenoid operated Nuclear Sampling System globe valve 1HV-8220 with a solenoid operated gate valve. This change will minimize in-line leakage and provide more reliable position indication.

Safety Evaluation: This new solenoid operated gate valve meets all design requirements of the original valve, provides greatly reduced in line leakage and provides more reliable valve indication. The intended function of the valve as described in the FSAR is not affected. This change does not affect the valve closure time specified in FSAR Table 6.2.4-1.

FSAR Table 6.2.4-1(3 of 10), Figure 6.2.4(11 of 12), and Figure 9.3.2-1(2 of 2) required revision as a result of this change.

Subject: DCP 89-V1N0015 Revision 0, Sequence 1

Description: This change installed pressure gauges and isolation valves on the MSIV's actuator's hydraulic and nitrogen systems. This was to enhance the operator's ability to determine the hydraulic and nitrogen system pressure in a more expeditious manner and determine the cause of control room alarms.

Safety Evaluation: This change does not effect the operation of the MSIV's or their ability to respond as required by the FSAR. The change enhances the trouble shooting of alarms to aid the operator in determining plant status and corrective actions. This modification maintains the design criteria and the qualification of the MSIV's.

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Subject: DCP 89-V2E0018 Revision 0, Sequence 1

Description: This change installed pressure gauges and isolation valves on the MSIV's actuator's hydraulic and nitrogen systems. This was to enhance the operator's ability to determine the hydraulic and nitrogen system pressure in a more expeditious manner and determine the cause of control room alarms.

Safety Evaluation: This change does not effect the operation of the MSIV's or their ability to respond as required by the FSAR. The change enhances the trouble shooting of alarms to aid the operator in determining plant status and corrective actions. This modification maintains the design criteria and the qualification of the MSIV's.

Subject: DCP 89-V2E0019 Revision 0, Sequence 1

Description: This change relocates and replaces the MSIV reservoir filler filter with a breather cap to reduce moisture intrusion into the hydraulic fluid reservoir. It also revises the air/hydraulic pump and thermal relief valve set points. This eliminates a potential pressure overload which would cause the air/hydraulic pump to cycle excessively

Safety Evaluation: This change does not affect the function of the MSIV's. The new breather cap is classified 62J (non seismic) and FSAR Table 10.3.3-1 was revised to reflect this. The breather, filler cap and tubing have been determined not to effect MSIV operation should they fail. The setpoint changes reduce excessive pump cycling and better maintains the design pressures.

FSAR Table 10.3.3-1 required revision as a result of this change.

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Subject: DCP 89-V1N00041 Revision 0, Sequence 1

Description: This change reduces the quantity of snubbers for that portion of the Spent Fuel Pool Cooling system analyzed in pipe stress calculation number MEC01007.

Safety Evaluation: Based on a review of the piping support calculations the pipe stresses associated with the Spent Fuel Pool Cooling System are still within the Code allowable and are consistent with the original design basis for this system. Any redistribution of piping loads within the system as a result of reducing the quantity of snubbers has been evaluated including adequacy of pipe supports.

Subject: DCP 89-V1N0058 Revision 0, Sequence 1

Description: This change adds new supports to each NSCW transfer pump. These supports for each pump consist of two rigid horizontal members between the NSCW pumphouse walls and the pump discharge head.

Safety Evaluation: The NSCW transfer pumps are described in FSAR sections 7.3.9, 9.2.1, and 9.2.5. This change only affects the vibration characteristics of the pump/motor assemblies. It does not affect the system operation or response as presented in the FSAR.

Subject: DCP 89-V1N0060 Revision 0, Sequence 1

Description: This change completed the removal of the Boron Injection System by determinating and sparing all circuitry, removing all annunciator windows and removing data input to the 7300 system. This eliminated nuisance alarms in the control room during normal operation of the Centrifugal Charging Pumps.

Safety Evaluation: This change does not affect the function of any system required to mitigate the effects of a design basis accident.

Revision of FSAR Figure 6.3.2-1, Sheet 1A and deletion of Paragraph 6.3.5.2.1 were required by this change.

Subject: DCP 89-V1N0062 Revision 0, Sequence 1

Description: This change adds a permanent submersible pump in the Unit 1 Cooling Tower Make-up Water valve pit sump and the Cooling Tower Blowdown valve pit sump. This provides automatic water removal from each of the valve pits.

Safety Evaluation: This change will not effect any safety related system or component. The discharge into the respective sumps will not degrade the system function.

FSAR Figures 2.4.13-1 sheet 1 and 10.4.5-1 sheet 2 required revision to reflect this change.

Subject: DCP 89-VCN0063 Revision 0, Sequence 1

Description: This change replaced 7 globe valves in the dechlorination portion of the Waste Water Effluent system with diaphragm valves.

Safety Evaluation: This change of valves in this system does not change the system operation or cause the system to be less reliable. The system is not required to operate in any accident analysis. This change does not affect the conclusion of any previous accident analysis.

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10 CFR50.59(b) REPORT

Subject: DCP 89-V2N0075 Revision 0, Sequence 1

Description: This change adds provisions for an electrically powered air compressor to be used as the supply of breathing air in lieu of bottled air. This also deletes the control room annunciation f ow air pressure.

Safety Evaluation: This change does not affect any system assumed to function during an accident. The breathing air system is only in service during plant outages.The low breathing air pressure alarm will be replaced with local alarms on portable bottled backup supplies.

FSAR Section 9.3.1, Table 3.2.2-1,and 6.2.4-1 required revision to reflect this change.

Subject: DCP 89-VCE0077 Revision 0, Sequence 1

Description: This change modified the access and egress into the Radiologically Controlled Area (RCA). This was accomplished by the addition of removable partitions resulting in separate pathways into and out of the RCA.

Safety Evaluation: This change is a is a physical modification to the facility but does not affect the plant description of FSAR Section 1.2. The change is located in a seismic category 2 area and will have no effect on any safety related equipment or plant response to an accident.

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Subject: DCP 89-VCE0090 Revision 0, Sequence 1

Description: This change replaced the bolted blind flange on the LLRT Test Connections with a 3/8" globe valve and swagelok cap. This was done to prevent tubing bending that was occurring due to the high torque values required to fasten/loosen the blind flanges.

Safety Evaluation: The change is in accordance with the approved design of allowing either a valve in series with a blind flange or a valve in series with another valve. The change meets the design, material, construction, and quality standards applicable to the system being modified.

FSAR Figures 6.2.4-1, sheets 2 and 11 required revision to reflect the new test configuration.

Subject: DCP 89-VCE0097 Revision 1, Sequence 1

Description: This change makes miscellaneous minor architectural furnishing changes to the plant control rooms (R-163 and R-164, Control Bldg).

Safety Evaluation: This change is non-seismic category 1 installations located in a seismic category 1 area. The failure of any of the items being added will not affect the function of any equipment assumed to function in any accident analyzed in the FSAR.

Subject: DCP 89-V2N0099 Revision 0, Sequence 1

Description: This change removes the protective ring from the Reactor Internals Lifting Device. The protective ring is used during refueling to protect the Reactor Vessel flange O-Ring surface.

Safety Evaluation: The removal of the ring does not affect the accident analysis of fuel damage. The ring is to protect the flange not to absorb the impact of dropping internals. The flange O-Ring surface is inspected for defects prior to vessel assembly per plant procedure.

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Subject: DCP 89-V2N0116 Revision 0, Sequence 2

Description: This change adds three 480 volt, 3 phase electrical power feeders to provide permanent supply points for outage needs. One supply is located at the Auxiliary Maintenance Building and the other two side U2 Containment Building level 1.

Safety Evaluation: The additional temporary electrical feeder to the Auxiliary Maintenance Building is powered from 2NB02. This supply is non-1E from a seismic category 2 structure and will have no effect on the plant.
The power supplies to the Containment required a change out of overcurrent protection to a Microversa Trip instead of the ECS type. This required revision of FSAR Figure 8.3.1-7(sheet 9 of 19) to demonstrate proper penetration overcurrent protection coordination. Table 16.3.5 was revised to add circuit breakers 2NB0902 and 2NB0914 as the penetration overcurrent protection devices. The feeder is not required during plant operation and was installed using qualified splices, materials and methods.

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Subject: DCP 89-V1N0251 Revision 0, Sequence 1

Description: This change added a time delay to the Steam Generator Sample line isolation valves to allow them to be opened 30 seconds after an Auxiliary Feedwater actuation. This is to allow the plant operator a positive method of determining whether a steam generator tube leak has occurred.

Safety Evaluation: Installation of a time delay relay in the control circuitry of the steam generator sample line to allow opening of the valve following an AFW auto-start signal will have no effect on the ability of the AFW system to perform its intended safety function. Sufficient margin exists following the opening of one steam generator sample valve to ensure that adequate AFW is delivered to the intact steam generators.

Plant Emergency Operating procedures were revised to reflect this change and to limit the sample line opening to one line at a time.

This modification will not effect the ability of the steam generator sample line to close upon receipt of the AFW auto-start signal and due to the time delay relay can only be opened 30 seconds after valve closure. This change did not affect the control room indication or ability of the plant operator to manually close the steam generator sample valve at any time.

FSAR Sections 7.3.7.1 and 9.3.2.2.3 required revision to reflect this change.

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Subject: DCP 89-V1N0252 Revision 0, Sequence 1

Description: This change provided qualified penetration seals at 3 locations in the plant. These are, two embedded conduits in Auxiliary Building R-142, and one embedded conduit in Fuel Handling Building R-105.

Safety Evaluation: These seals do not affect any plant system or component. They are being installed to the same criteria as original installations.

Subject: DCP 89-V1N0256 Revision 0, Sequence 1

Description: This change replaced the auxiliary steam drains collection chamber, vent, and drains and added a drain mixing chamber supplied with utility water. This was required to properly size the auxiliary steam drains collection system and to cool the condensate going to the turbine building floor drains.

Safety Evaluation: This system does not interface with any safety related component or system, it will not affect the plant response to any accident scenario. The FSAR does not specifically address the auxiliary steam drains collection system, however it is included in Figure 9.5.9-1 which was revised to reflect the new installation.

Subject: DCP 89-V2N0291 Revision 0, Sequence 1

Description: This change added packing leakoff drains and welded a disc nut retainer to the disc stem of the Extraction Steam check valves. This change was made to comply with the vendor's recommendations.

Safety Evaluation: Extraction Steam is a non-safety related system which is enveloped by the accident analysis of FSAR sections 3.5, 15.3, and 15.5. This change makes the check valves more reliable and will not adversely affect their operation.

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Subject: DCP 89-V1N0294 Revision 0, Sequence 1

Description: This change replaced two existing swing check valves with sliding plate check valves on the discharge of the Unit 1 and Common reciprocating air compressors. These compressors are used to supply Instrument and Service Air systems. This change improved reliability and reduce maintenance on the check valves (ref. SCER 86-03).

Safety Evaluation: Although there are safety-related air operated valves that are supplied air by the affected systems, none of these devices require a source of air to perform their safety related function. The system function is not affected and these changes should increase the reliability of the check valves and decrease the maintenance demands on them

Subject: DCP 89-V1N0313 Revision 0, Sequence 1

Description: This change Provides for the replacement of Steam Generator Feed Pump Turbine (SGFPT) 15V DC and 30V DC power supplies with General Electric supplied equivalent power supplies. This is required because the original power supplies were discontinued.

Safety Evaluation: The replacement of the 15V DC and 30 V DC power supplies does not alter the function or operation of any existing safety related system. This change is to non-safety related, non 1E equipment, whose function or operation does not change

Subject: DCP 89-V2N0314 Revision 0, Sequence 1

Description: This change Provides for the replacement of Steam Generator Feed Pump Turbine (SGFPT) 15V DC and 30V DC power supplies with General Electric supplied equivalent power supplies. This is required because the original power supplies were discontinued.

Safety Evaluation: The replacement of the 15V dc and 30 V DC power supplies does not alter the function or operation of any existing safety related system. This change is to non-safety related, non 1E equipment, whose function or operation does not change.

Subject: DCP 89-V1E0317 Revision 0, Sequence 1

Description: This change eliminated the nuisance alarm "RMS CHANNEL FAILURE" window and replaced it with a blank tile.

Safety Evaluat : Although this alarm alerts personnel to a channel problem it is a nuisance in the Control Room. There are several other methods available to detect a channel problem in the Control Room i.e. alarm printer, safety related display console and the communications console. This change will not affect the ability of safety related systems to perform their design function.

Subject DCP 89-V2E0318 Revision 0, Sequence 1

Description: This change eliminated the nuisance alarm "RMS CHANNEL FAILURE" window and replaced it with a blank tile.

Safety Evaluation: Although this alarm alerts personnel to a channel problem it is a nuisance in the Control Room. There are several other methods available to detect a channel problem in the Control Room i.e. alarm printer, safety related display console and the communications console. This change will not affect the ability of safety related systems to perform their design function.

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Subject: DCP 89-V2N0320 Revision 0, Sequence 1

Description: This change alters the display of Main Feedwater Isolation Bypass Valves to provide a positive Closed/Not Closed indication to the Emergency Response Facilities (ERF) Computer.

Safety Evaluation: Since the function of the Main Feedwater Isolation Bypass Valves is not changing, the requirements of the Aux. Feedwater system are not affected. The ERF computer is not addressed in the Tech Specs nor is this level of detail discussed in the FSAR.

Subject: DCP 89-V1N0321 Revision 0, Sequence 1

Description: This change modified the containment spray flow indication circuit from a square log function to a linear function. Linearizing the flow signal and replacing the indicator with a 0-10 VDC linear scale indicator will provide a more accurate and discernable indicator reading for verifying the proper sodium hydroxide flow.

Safety Evaluation: This signal is used for control room indication only and does not have any control function which could interact with equipment or components.
Tech Spec Bases B3/4.6.2 are not affected by this change to the containment spray additive tank eductor flow signal.

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Subject: 90-V1N0008 Revision 0, Sequence 1

Description: This change provided separate power supplies to the AX auxiliary relays in HV-8804A and HV-8804B control circuitry. This was to provide power to maintain the HV-8804 A & B valve closed permissive interlock. This enabled operation of the refueling water storage tank valves and RHR suction isolation valve during Modes 4, 5, and 6 from the main control board.

Safety Evaluation: This change did not add any capabilities or operational characteristics that differ from the original design. Operation is provided from the main control board of the refueling water storage tank valves and RHR suction isolation valve when power is removed from HV-8804 A & B to comply with the Fire Event Safe Shutdown Analysis. All safety interlocks are maintained.

Subject: DCP 90-V1N0019 Revision 0, Sequence 1

Description: This change removed the internals from the check valves for NSCW pump motor bearing cooling lines. This was to prevent loss of cooling to the pump due to a check valve failure.

Safety Evaluation: Removal of the check valve internals does not alter the system operation but does remove the possibility of malfunction as a result of a valve sticking shut.
FSAR Figures 9.2.1-1, sheets 1 & 2 of 5; 9.2.1-1 and Table 3.9.B.3-9, sheet 1 of 6 were revised to reflect the check valve internals removal.

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Subject: DCP 90-V1N0040 Revision 0, Sequence 1

Description: This change allows replacement of the existing Crosby Watts safety valves with Consolidated safety valves for the diesel generator air start compressor safety valves. These valves provide overpressure protection for the compressor, aftercooler and the interconnecting piping.

Safety Evaluation: The Consolidated valves meet or exceed the design operating parameters of the original valves. Due to a much higher temperature rating and the use of stronger materials, these replacement valves will provide more reliable service. This change will have no affect on the capability of the safety-related portions of the diesel generator starting air system to perform its function.

Subject: DCP 90-V2N0041 Revision 0, Sequence 1

Description: This change allows replacement of the existing Crosby Watts safety valves with Consolidated safety valves for the diesel generator air start compressor safety valves. These valves provide overpressure protection for the compressor, aftercooler and the interconnecting piping.

Safety Evaluation: The Consolidated valves meet or exceed the design operating parameters of the original valves. Due to a much higher temperature rating and the use of stronger materials, these replacement valves will provide more reliable service. This change will have no affect on the capability of the safety-related portions of the diesel generator starting air system to perform its function.

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10 CFR50.59(b) REPORT

Subject: 90-V1N0061 Revision 0, Sequence 1

Description: This change replaced Auxiliary Bldg. doors 140 and 207 with fire and pressure rated doors capable of withstanding the pressure and temperature required for the High Energy Line Break Analysis (HELBA) conditions in the rooms they access.

Safety Evaluation: These replacement doors are not addressed in chapter 15 of the FSAR and are not a factor in the evaluation of any accidents described in the section. The design function of the doors as pressure and fire barriers will mitigate any incident at the door openings in regard to the communication of steam, heat, or radiation from a postulated pipe break or fire as described in Sections 3.6, 3.11, and 9.5.1 of the FSAR. Furthermore, the doors will ensure that the door openings conform to the design basis described in the FSAR.

Subject: DCP 90-V1N0064 Revision 0, Sequence 1

Description: This change replaced the thermal relief valves on high pressure feedwater heaters 6A and 6B with more reliable pilot operated relief valves. This is to resolve reoccurring leakage problems with the existing valves.

Safety Evaluation: The replacement valves meet the requirements of the original specification and the valve setpoints do not change. The replacement valves will enhance the system reliability and performance because they are better suited to handle the rapid pressure pulsations and reseat following the return to normal system pressure.

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Subject:	DCP 90-V1N0067 Revision 0, Sequence 1
Description:	This change removed the internal components of check valves associated with the unit 1 ESF chilled water system (trains A & B). This was done because these check valves were not required for the chilled water system.
Safety Evaluation:	These valves were originally provided in the chilled water system as standard engineering practice and not to prevent any particular backflow concern. The prevention of backflow is not a concern with the ESF chilled water system. There are no normally open parallel flow paths around the single chilled water pump and the system is a closed loop. FSAR Table 3.9.B.3-9, 9.2.9-3 and Figure 9.2.9-1 required revision to reflect this change.

II
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Subject: DCP 90-V2N0072 Revision 0, Sequence 1

Description: The lower taps for steam generator narrow range level instruments were lowered to locations below the transition cones of the steam generators. This stabilized the steam generator narrow range level system at low power levels and lowered the potential for level-related reactor trips.

Safety Evaluation: No new performance requirements are being imposed on the level system or steam generator such that any design criteria will be exceeded. System and component integrity are maintained commensurate with criteria discussed in the FSAR.
The predicted doses presented in the FSAR for such transients as rod ejection, steam generator tube rupture and LOCA remain valid since the mass release will not exceed that which is currently assumed in the FSAR.
Fission product barrier integrity is not affected by this modification nor is any equipment which is assumed to mitigate the radiological consequences of an accident.
No new failure modes were defined for any system or component modification nor has any new single limiting single failure been identified.

Technical Specification Table 2.2-1, low-low steam generator water level trip setpoint and Table 3.3-3, ECF actuation system setpoints were revised to reflect this modification.

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The following FSAR sections required revision as a result of this change Table 15.0.3-2 (sheet 1 of 3); Table 15.0.6-1; Section 15.1.2.1, 15.1.2.2.1, 15.1.2.2.2, 15.1.2.3; Section 15.1 reference; Figure 15.1.2-1, 15.1.2-2; Table 15.1.2-1 (sheet 1 of 2); Section 15.2.6.1, 15.2.6.2.1, 15.2.6.2.2, 15.2.6.4; Figure 15.2.6-1, 15.2.6-2; Table 15.2.3-1 (sheet 3 of 5), 15.2.3-1 (sheet 2 of 5); Section 15.2.7.1, 15.2.7.2.1, 15.2.7.2.2; Figure 15.2.7-1, 15.2.7-2; Section 15.2.8.1, 15.2.8.2.2, 15.2.8.3; Section 15.2 reference; Table 15.2.3-1 (sheet 3 of 5), 15.2.3-1 (sheet 4 of 5), 15.2.3-1 (sheet 5 of 5); Figure 15.2.8-1, 15.2.8-2, 15.2.8-3, 15.2.8-4,15.2.8-5, 15.2.8-6, 15.2.8-7.

Subject: DCP 90-V1N0073 Revision 0, Sequence 1

Description: This change replaced the existing blind flange on the water drain connection on the Diesel Fuel Oil Storage (DFOS) Tanks with a pipe flange, pipe spool piece, and threaded cap. This change was made to facilitate performance of the Tech Spec Surveillance requirements for these tanks.

Safety Evaluation: The new fittings were installed such the connections were water tight and will not allow for water intrusion into the tanks. The modification will perform the same function as the original installation and will not change the operation of the system.

FSAR Figure 9.5.4-1 required revision to reflect this change.

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Subject:	DCP 90-V2N0074 Revision 0, Sequence 1
Description:	This change replaced the existing blind flange on the water drain connection on the Diesel Fuel Oil Storage (DFOS) Tanks with a pipe flange, pipe spool piece, and threaded cap. This change was made to facilitate performance of the Tech Spec Surveillance requirements for these tanks.
Safety Evaluation:	The new fittings were installed such the connections were water tight and will not allow for water intrusion into the tanks. The modification will perform the same function as the original installation and will not change the operation of the system. FSAR Figure 9.5.4-1 required revision to reflect this change.

II
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Subject: DCP 90-V1N0075 Revision 0, Sequence 1

Description: This change deleted 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 the boards in the QBCP associated with the temperature indications, will remain in place.

Safety Evaluation: 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. The worst case design basis accident (loss of feedwater due to a line break) remains unchanged. Therefore the deletion of the main and auxiliary feedwater temperature monitoring system is enveloped by existing system accident analyses.

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Subject: DCP 90-V2N0081 Revision 0, Sequence 1

Description: This change installed two splice boxes and replaced a damaged section of cable 2AY2A04SA which provides power to the Containment Area (High Range) Radiation Monitor data processing module.

Safety Evaluation: The replacement cable was spliced together in splice boxes, which will be independently supported. The new cable and splice boxes are environmentally qualified and seismically installed. The change meets the original design specifications and is functionally equivalent to the original installation.

Subject: DCP 90-V2N0084 Revision 0, Sequence 1

Description: This change modified the originating alarm circuitry associated with the security system power supply equipment. This was to decrease the spurious alarms being generated due to line noise.(Safeguards)

Safety Evaluation: This change will not affect any component or system assumed to function in any design basis accident.

Subject: DCP 90-V2N0087 Revision 0, Sequence 1

Description: This change added two manual vents to the Spent Fuel Pool Cooling system return lines from the train A and B spent fuel pit heat exchangers. This was done to allow maintenance on the heat exchangers and downstream components without lowering the level in the spent fuel pool below Tech Spec limits.

Safety Evaluation: The vents are safety-related, project class 313, once installed they do not perform any active safety function and serve to maintain pressure integrity. The installation of these vents complies with the design criteria applicable to the Spent Fuel Pool Cooling system.

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Subject: DCP 90-V1N0096 Revision 0, Sequence 1

Description: This DCP involved several changes:
A) Relocated the reactor protection system(RPS) / turbine emergency trip supply (ETS) fluid pressure transmitters 1PT-6161, 6162, 6163 sensing points from the sensing port on the fast-acting solenoid valves to the supply side tubing of the control valve.
B) Included an isolation and calibration valve at each pressure transmitter installation.
C) Relocated the pressure transmitters from the control valve to tubing supports near the control valves to reduce vibration influence.
D) Replaced a portion of the rigid electro-hydraulic control (EHC) tubing near the control and stop valves with 24 flexible Teflon hose assemblies with stainless steel braided outer jacket.
E) Added isolation valves in the ETS and fluid actuation supply (FAS) tubing to provide isolation of EHC fluid for control and stop valve maintenance.
F) Changed the project class designations for the EHC hydraulic fluid power units and control coolers in FSAR Table 3.2.2-1 from Class 424 to Class 626.

Safety Evaluation: A) The new connections meet the same classification requirements as the original tap points. This change removes the direct reactor trip above 50% power when the main control valves are closed without a turbine trip. The reactor trip on turbine trip will still occur above 50% power when a valid turbine trip signal is generated and the ETS pressure is relieved. This change required revision of FSAR section 10.1.2.

B) The added valves are environmentally qualified and mounted in accordance with plant design criteria. The instrumentation installation, including all tubing connections meet the project class requirements for their installation. Consequently, this change meets all current design criteria for the link between the transmitters and the sensing points.

C) Location of the pressure transmitters do not require seismic mounting since they are located in the turbine building. The tubing and connections required to support this relocation meet the original design and project class requirements.

D) The flexible hose installations meet the requirements of the original rigid tubing installations. This change will affect neither the operation nor response of the EHC system, including the related turbine overspeed protection system.

E) The isolation valves are suitable for hydraulic service and can operate with a process pressure of 1600 psi and temperature of 180 degrees Fahrenheit. The valves provide positive indication of position and may be locked in position. Isolation of an ETS or FAS line before the affected main stop or control valve is closed results in a condition outside the analyzed configuration of the turbine overspeed analysis. Administratively controlling the position of the isolation valves will assure the isolation valves are not closed when the main stop or control valves are open. Any time an ETS or FAS fluid line is required to be isolated, the affected main stop or control valve must be closed first.

F) The EHC system hydraulic fluid power units, control coolers and some piping were engineered, procured and installed to project class 424 requirements, this is an incorrect project class designation for this system. Project class 424 components also meet the requirements for class 626, which is the correct classification of the system. Changing the project classification will not have any effect on the system as the existing 424 components meet the requirement for 626 classification.

II
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Subject: DCP 90-V2N0097 Revision 0, Sequence 1

Description: This DCP involved :
A) Relocated the reactor protection system (RPS) / turbine emergency trip supply (ETS) fluid pressure transmitters 2PT-6161, 6162, 6163 sensing points from the sensing port on the fast-acting solenoid valves to the supply side tubing of the control valve.
B) Included an isolation and calibration valve at each pressure transmitter installation.

Safety Evaluation:

A) The new connections meet the same classification requirements as the original tap points. This change removes the direct reactor trip above 50% power when the main control valves are closed without a turbine trip. The reactor trip on turbine trip will still occur above 50% power when a valid turbine trip signal is generated and the ETS pressure is relieved.

This change required revision of FSAR section 10.1.2.

B) The added valves are environmentally qualified and mounted in accordance with plant design criteria. The instrumentation installation, including all tubing connections meet the project class requirements for their installation. Consequently, this change meets all current design criteria for the link between the transmitters and the sensing points.

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Subject: DCP 90-V1N0103 Revision 0, Sequence 1

Description: This change added a retaining bolt through the crank-arm spring pin fastener of damper 1-TV-12097A (Diesel Generator ESF HVAC System)actuator linkage to prevent dislocation of the pin and subsequent damper actuation failure. This damper is located in the Unit 1 Train A Diesel Generator Building.

Safety Evaluation: The addition of the spring pin retainer will prevent damper failure caused by dislocation of the spring-pin, and maintain the original design function of the Diesel Generator Building ESF HVAC System.

Subject: DCP 90-V2E0113 Revision 0, Sequence 1

Description: This change installed flange joints down stream of the drain valves to the steam generator blowdown heat exchargers. This will allow removal of the Steam Generator blowdown heat exchanger heads without cutting the drain lines.

Safety Evaluation: The portion of the system that was modified is outside containment and is classified as non-safety. It performs no function related to the safe shutdown of the plant and is not involved in any accident described in the FSAR. The modification meets all criteria for its project class.
FSAR Figure 10.4.8-1 was revised to reflect this change.

II
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Subject:	DCP 90-V1E0115 Revision 0, Sequence 1
Description:	This change provided the option to use a split or cartridge type mechanical seal or the existing packing on the Turbine Plant Cooling Water (TPCW) Pumps. This change also routed utility water to the TPCW pumps to use as cooling and flush water for the mechanical seals.
Safety Evaluation:	The TPCW pumps serve no safety function nor do they impact the operation of any safety related components. Therefore, this modification will have no impact on the plant accident response. This change revised FSAR Figures 9.2.11-1 (sheet 1 of 3), and 10.4.5-1 (sheet 2 of 2).

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Subject: DCP 90-V2N0119 Revision 0, Sequence 1

Description: This change added a time delay to the Steam Generator Sample line isolation valves to allow them to be opened 30 seconds after an Auxiliary Feedwater actuation. This is to allow the plant operator a positive method of determining whether a steam generator tube leak has occurred.

Safety Evaluation: Installation of a time delay relay in the control circuitry of the steam generator sample line to allow opening of the valve following an AFW auto-start signal will have no effect on the ability of the AFW system to perform its intended safety function.
Sufficient margin exists following the opening of one steam generator sample valve to ensure that adequate AFW is delivered to the intact steam generators.
Plant Emergency Operating procedures were revised to reflect this change and to limit the sample line opening to one line at a time.
FSAR Sections 7.3.7.1 and 9.3.2.2.3 required revision to reflect this change.
This modification will not effect the ability of the steam generator sample line to close upon receipt of the AFW auto-start signal and due to the time delay relay can only be opened 30 seconds after valve closure. This change did not affect the control room indication or ability of the plant operator to manually close the steam generator sample valve at any time.

II
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Subject: DCP 90-V1N0123 Revision 0, Sequence 1

Description: This DCP replaced ASCO solenoid valves on Instrument Air System Dryers with ASCO long life valves. This will decrease down time and maintenance.

Safety Evaluation: This change enhances the performance of the instrument air system. This system is non-safety related and will not affect the required response of any air operated safety related component as these components are designed to perform their safety function without air pressure available.

Subject: DCP 90-V2N0124 Revision 0, Sequence 1

Description: This DCP replaced ASCO solenoid valves on Instrument Air System Dryers with ASCO long life valves. This will decrease down time and maintenance.

Safety Evaluation: This change enhances the performance of the instrument air system. This system is non-safety related and will not affect the required response of any air operated safety related component as these components are designed to perform their safety function without air pressure available.

II
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Subject:	DCP 90-V1N0125 Revision 0, Sequence 1
Description:	This change modified the three Unit 1 condensers as follows: A) A new sparger and supports was added to the main steam drain pot manifold (connection 61 on condenser "B") B) The connections on condensers "A" & "C" corresponding to connection 61 on "B" condenser were renumbered to differentiate them. These will continue to have an internal baffle only. C) A note was added to the condenser drawings to allow installation of the hot well suction screens in sections (condensers "A", "B", & "C").
Safety evaluation:	These changes were made to correct internal damage discovered during 1R1 refueling outage. These changes were designed and installed to the original design and project class criteria. They will not affect the operation of the condensers, design capacities, or radiation monitoring of the air removal.
Subject:	DCP 90-V1N0130 Revision 0, Sequence 1
Description:	This change added strut support members to RHR pump motor tag number 1-1205-P6-002-M01 to reduce operating vibration level.
Safety Evaluation:	The additional strut support members will not violate the seismic qualification of the RHR pump and motor assembly or support. This modification will not adversely affect the operation of the RHR or any other safety-related system.

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Subject: DCP 90-V1N0130 Revision 0, Sequence 1

Description: This change allowed the use of 1 7/8" diameter SA-193 Gr. B7 hold down bolts on RHR pump tag number 11205P6002 in lieu of the 2" diameter SA-193 Gr. B7 bolts originally supplied. The new bolts were torqued to 240-250 ft-lbs.

Safety Evaluation: The equipment manufacturers (Westinghouse and Ingersoll-Rand) were contacted concerning the use of smaller hold down bolts. Westinghouse stated that the original seismic analysis assumed a 1 7/8" diameter SA-193 Gr. B7 bolt. Therefore, the 1 7/8" diameter bolts meet the original analysis and will not adversely affect the RHR system response.

Subject: DCP 90-V1N0134 Revision 0, Sequence 1

Description: This DCP documents the "as-found" cold setting of snubbers and modifies pipe support (V1-1201-117-H601) to facilitate the snubber design cold setting, located on the branch lines (RTD return and Reactor Coolant Loop Drain) of the RCS Loop 2 crossover leg.

Safety Evaluation: The cold setting position of the snubbers on the RCS branch line piping has been analyzed and conforms to the original design criteria. Any redistribution of piping loads within the system as a result of the "as-found" cold position of snubbers were evaluated and compensated for, where necessary, with verification to the existing pipe support system. All supports within the piping system were reviewed to assure adequacy of pipe support design as a result of changes in loads/displacements resulting from the piping evaluations.

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Subject:	DCP 90-V1N0141 Revision 0, Sequence 1
Description:	As a result of the Station Blackout Analysis the 30 amp breakers 1AY1A-05 and 20 amp breakers 1CY1A-05 and 1DY1B-05, in the Vital 120V AC distribution panels 1-1807-Q3-VI1, VI2,VI3, and VI4 were replaced with 35 and 30 amp breakers respectively. Similarly 15 amp breakers 1AD12-08 and 1BD12-03 in the 125V DC distribution panels 1-1806-Q3-DA2 and DB2 were replaced with 20 amp breakers.
Safety Evaluation:	The Breaker ratings breaker coordination(including short circuit analysis) and the associated cable sizes were analyzed for adequacy and safety in the and found acceptable. This modification will prevent inadvertent tripping of the breakers during Station Blackout condition due to loss of ventilation to the AC and DC switchgear rooms.

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Subject: DCP 90-V1N0143 Revision 0, Sequence 1

Description: This change added uninterruptible power supply (UPS) units for the Emergency Notification Network (ENN), Emergency Notification System (ENS), Administrative Decision Line (ADL), and PABX system Merlin Equipment. Additionally, duplex wall receptacles with twist lock receptacles were added to prevent inadvertent removal of power to the UPS units. The plug for the control room ENN will be replaced with a NEMA L5-15P plug to prevent inadvertent power removal.

Safety Evaluation: 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 between the non-1E lighting panels and the safety-related load centers which feed them is maintained. The batteries in the UPS units are the sealed maintenance-free type and produce no gasses when charging.
The UPS unit and battery module in the control room will be positioned to prevent contact with the QEAB panel during a seismic event by placing the units side by side on a skid resistant mat. Due to the dimensions and weight of the equipment, non-seismic supports utilized.

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Subject: DCP 90-V2N0149 Revision 0, Sequence 1

Description: This change inverted the reactor vessel level instrumentation system (RVLIS) reactor vessel head pressure transducer. This was to reduce calibration inaccuracies caused by air in-leakage during refueling operations.

Safety Evaluation: The RVLIS provides control room operators with information to monitor and assess the reactor coolant inventory following an accident to ensure that adequate core cooling is available. By re-orienting the pressure transducer and minimizing the effects of air in-leakage, which affect instrument calibration, the safety-related function of the system will be enhanced. Remounting of the pressure transducer was performed in accordance with the original design details so as not to affect the seismic qualification of the equipment.

Subject: 90-V1N0153 Revision 0, Sequence 1

Description: This change corrected the control and coordination logic of the Regenerative Heat Exchanger inlet and outlet isolation valves and reduced the possibility of damage to the Regenerative Heat Exchanger.

Safety Evaluation: No new components are being added by this change, only the timing of valves 1HV-8149A, B, & C are being changed. Letdown isolation, containment isolation, and HELB isolation on this line are not affected.

Subject: 90-V1N0162 Revision 0, Sequence 1

Description: This change remodeled and refurbished the control room kitchen.

Safety Evaluation: The kitchen equipment used was reviewed for affects to other systems, equipment, and components with no impacts found. The new installations meet all original and current design standards and applicable codes.

II
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Subject: 90-VCN0177 Revision 1, Sequence 1

Description: This change removed the 30 meter temperature instrumentation from the 60 meter meteorological tower and swapped power connector pin for the 60 meter wind speed instrumentation to a spare pin.

Safety Evaluation: The meteorological instrumentation is used for monitoring plant area weather conditions. When specific parameters are not available, plant specific default parameters are used in determining dispersion and other release characteristics. The 30 meter temperature instrumentation was installed to assist in correlation of parameters between the 60 and 45 meter towers which are no longer utilized.

Subject: DCP 90-V1N0181 Revision 0, Sequence 1

Description: This change replaced the flashing between the Tendon Access Shaft covers and the Containment building with a three piece, partially removable flashing. This was to facilitate flashing removal and reuse.

Safety Evaluation: The primary purpose of the flashing is to prevent rain water and debris from entering the tendon access shaft. The new flashing meets the functional requirements and was designed and installed in accordance with applicable plant document .

Subject: DCP 90-V2N0182 Revision 0, Sequence 1

Description: This change replaced the flashing between the Tendon Access Shaft covers and the Containment building with a three piece, partially removable flashing. This was to facilitate flashing removal and reuse.

Safety Evaluation: The primary purpose of the flashing is to prevent rain water and debris from entering the tendon access shaft. The new flashing meets the functional requirements and was designed and installed in accordance with applicable plant documents.

II
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Subject: DCP 90-V2N0183 Revision 0, Sequence 1

Description: This change rotated NSCW Spray Header Bypass Valve 2HV-1668B 22.5 degrees about the axis of the piping to locate the operator in an upward and east direction. This was done to facilitate MOVAT testing.

Safety Evaluation: Orientation of this valve does not affect its operation or function. The EQDP for this valve was reviewed and verified that the valve was qualified for orientation in any position. Stress calculations were performed and verified that valve orientation did not piping stress to exceed the allowable values.

Subject: DCP 90-V2N0185 Revision 0, Sequence 1

Description: This change allowed the replacement of inoperable or damaged in-core thermocouple LEMO B type connectors with series WC (CONAX) connectors.

Safety Evaluation: Any accuracy differences associated with the in-core thermocouple post-accident core exit temperature due to the replacement connector are bounded by the Emergency Operating Procedures set point determinati n. No new performance requirements are being imposed on the system or components such that any design criteria will be exceeded. The replacement connectors will not degrade the fission product barrier nor prevent actions assumed or described in the radiological dose evaluation from being executed as modeled in the analysis.
FSAR Table 3.11.n.1-1(sheet 21 of 54) was revised to include CONAX thermocouple connectors.

II
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Subject: DCP 90-V1N0186 Revision 0, Sequence 1

Description: This change added a one amp fuse in the Haskell Pump air supply solenoid circuit and added a conduiet in the conduit between the vendor's splice box and the hydraulic fluid reservoir on each Main Steam Isolation Valve. The fuse was added in order to maintain proper electrical separation in the MSIV control circuit

Safety Evaluation: The addition of fuses does not adversely affect the auxiliary relay panels. The Haskel pump solenoid is not environmentally qualified and is not required to operate under accident conditions. These changes will insure the MSIV control and indication circuit is not affected by the potential failure of the unqualified solenoid valve.

Subject: DCP 90-V2N0197 Revision 0, Sequence 1

Description: This change stiffened motor supports for Auxiliary building normal HVAC supply units 2-1551-A7-001 & 002 to reduce fan motor vibration.

Safety Evaluation: The normal HVAC system has no safety design basis and is not required to function after a safe shutdown earthquake (SSE). This change will allow the air handling units to operate within the original limitations for maximum allowable vibration and will not affect the normal system operation or response.

II
1991 ANNUAL REPORT - PART 2
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Subject	DCP 90-V2N0198 Revision 0, Sequence 1
Description:	This change relocated the pressure transmitters for the Reactor Protection System from the control valve to tubing supports near the control valves to reduce vibration influence. Replaced a portion of the rigid electro-hydraulic control (EHC) tubing near the control and stop valves with 24 flexible Teflon hose assemblies with stainless steel braided outer jacket.
Safety Evaluation:	Location of the pressure transmitters do not require seismic mounting since they are located in the turbine building. The tubing and connections required to support this relocation meet the original design and project class requirements. The flexible hose installations meet the requirements of the original rigid tubing installations. This change will affect neither the operation nor response of the EHC system, including the related turbine overspeed protection system.

II
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Subject: DCP 91-V1N0015 Revision 0, Sequence 1

Description: This change provided for one of the following options to be performed on the steam line drain pot high level drain valves:
1. a) change out existing stainless steel trunion and bonnet bushings with aluminum-bronze bushings. b) Change out existing ribbon-wound graphite packing to teflon packing. c) Upgrade existing actuator spring assembly with a stiffer spring assembly.

2.) a) Change out existing stainless steel trunnion and bonnet bushings with aluminum-bronze bushings. b) replace existing Fisher actuator with Orbit actuator equipped with gas-over-oil reservoir. 3.) Change out existing stainless steel trunnion and bonnet bushings with aluminum-bronze bushings.

Safety Evaluation: The drain valves modified by this package perform no functions which are required to mitigate the consequences of an accident evaluated by the FSAR. These valves are non-safety related and do not interface with any equipment important to safety.

Subject: DCP 91-V1N0031 Revision 0, Sequence 1

Description: Safety Injection Accumulator level system bellows will be rotated 180 degrees (calibration fitting pointing up). This is to allow complete venting of the bellows and less drift of the transmitters.

Safety Evaluation: The output of Accumulator Tank level transmitters is non-safety related. However the diaphragms of the bellows sensing system must maintain the pressure boundary of the Safety Injection Accumulator Tanks. Rotation of the bellows by 180 degrees does not does not affect the pressure boundary integrity.

II

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Subject: DCP 91-V1N0054 Revision 0, Sequence 1

Description: This change replaced five Chemical and Volume Control System (CVCS) diaphragm valves with gate valves to reduce leakage past the valves.

Safety Evaluation: The new gate valves meet the design, material, quality and construction standards applicable to the CVCS. The replacement valves are functionally equivalent to the diaphragm valves. The additional weight of each gate valve has been evaluated for impact on pipe stress analysis and support loading and been found acceptable.
FSAR Figure 9.3.4-1 (sheet 3 of 6) required revision to reflect this change.

Subject: DCP 91-V1N0056 Revision 0, Sequence 1

Description: This change modified the Main Turbine Lube Oil Reservoir and Conditioner to provide continuous oil flow to the conditioner from the reservoir and to provide a permanent hookup point for a portable oil polisher for moisture removal.

Safety Evaluation: The components affected by this change are not safety related. Malfunction of the lube oil system may result in loss of bearing oil to the turbine which would result in a turbine trip, however these changes will not affect the turbine lube oil reservoir level.
FSAR Figure 10.2.2-1 (sheets 5 and 6) required revision as a result of this change.

Subject: DCP 91-V1N0057 Revision 0, Sequence 1

Description: This change modified the Steam Generator Feed Pump Turbine (SGFPT) Lube Oil Reservoir and Conditioner to provide continuous oil flow to the conditioner from the reservoir and to provide a permanent hookup point for a portable oil polisher for moisture removal.

Safety Evaluation: The Steam Generator Feed Pumps / Turbines and the associated lube oil systems are not safety related and are not relied on for safe shutdown of the plant during an accident. Low lube oil will result in a SGFPT trip. This change had no adverse affect on reservoir lube oil level since the flow tubes are set above the reservoir low level alarm. This will prevent any adverse affect on the SGFPs due to oil level.
FSAR Figure 10.2.2-1 (sheets 5 and 6) required revision as a result of this change.

Subject: DCP 90-V1N0070 Revision 0, sequence 1

Description: This change eliminated the redundant Main turbine Trip provided via the 386M lockout relay located in protective relay panel 1-1816-U3-008. The protective relay panel is located in the main control room.

Safety Evaluation: Neither the overspeed protection system nor the turbine trip logic is affected by this change. This change will not affect the ability of the 386M relay to perform its intended function. The 386M contacts which input to the mechanical and electrical turbine trip circuits perform no useful function since the turbine has already received a trip signal and is locked out prior to 386M actuation. This change has no affect on the circuits which trip the turbine on a reactor trip or trip the reactor on a turbine trip.
FSAR Sections 7 & 10 were revised as a result of drawing corrections made during research of the DCP.

II
1991 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

Subject: DCP 91-V1N0075 Revision 0, Sequence 1

Description: This change modified the return line from the Spent Fuel Pool Cooling and Purification System to the refueling cavity. This modification consists of the addition of removable piping segments interconnected by quick disconnect fittings. These removable sections and their supports will be installed during refueling outages with the reactor in modes 5 or 6 and will be removed following refueling for decontamination and storage outside containment.

Safety Evaluation: The Failure modes of the additional piping were evaluated for postulated accident scenarios which could occur during the period this piping is installed. This evaluation revealed no accident scenarios that were not bounded by existing evaluations. The piping is equipped with a siphon vent to prevent backflow from reducing refueling canal inventory.

Subject: DCP 91-V1N0081 Revision 0, Sequence 1

Description: This change modified the closure permissive on the Steam Generator Feed Pump Turbine (SGFPT) exhaust valve from a main turbine trip to the associated feedwater turbine trip.

Safety Evaluation: The permissive to isolate SGFPT from the main condenser can occur while the main turbine continues to run. This design change does not affect any transients or accidents that have been postulated which could result in a reduction of the capacity of the secondary system to remove heat generated in the reactor coolant system.

II
1991 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

Subject: DCP 91-V1N0084 Revision 0, Sequence 1

Description: This modification replaced Auxiliary Component Cooling Water (ACCW) flow indicating switches with switches that do not require a 120V AC power supply. This change was performed in order to prevent a Containment entry each time the valves needed resetting.

Safety Evaluation: The installation of the new flow switches eliminated the false alarms formerly generated upon an interruption of power. The operation and responses of the new flow indicating devices is identical to the old flow indicating switch.

Subject: DCP 91-V1N0102 Revision 0, Sequence 1

Description: This change replace the underwater tubing portion of the bubbler type level transmitters for the NSCW towers with 3/4" tubing and installed a local scale in the NSCW basin to permit visual level indication.

Safety Evaluation: The bubbler systems which measure the NSCW basin level are seismically mounted non-safety related. The 3/4 inch tubing and scale will be seismically mounted to prevent any adverse interaction with safety related components during and following an earthquake.
FSAR Figure 9.2.1-1 (sheet 1 & 2 of 5) required revision.

Subject: DCP 91-V2E109 Revision 0, Sequence 1

Description: This change removed the internals from check valves associated with the Feedwater Heater Moisture Separator drain tank's high level dump line.

Safety evaluation: This change does not impact any system assumed to function in order to mitigate the consequences of an accident.

II
1991 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

Subject: DCP 91-V1N0113 Revision 0, Sequence 1

Description: This change modified three areas of the Emergency Diesel Generators (EDG):
A) Converted the high temperature jacket water engine trip on each train of the EDGs to trip on normal start only (group II).
B) Removed the low pressure jacket water alarm from the first-out circuitry. Low pressure jacket water trip was not removed.
C) Added test connections and manual isolation valves to the engine trip sensor's air supply pneumatic lines.

Safety Evaluation: A) This change enhances the performance of the EDG by decreasing the probability of an inadvertent diesel generator trip during an emergency start. The manual trip function is still available to the operator should a high jacket water temperature alarm be generated and will provide adequate engine protection.
B) The disconnection of the low pressure jacket water alarm from the first-out circuitry will not affect the performance or response of the diesel generator. The first-out annunciator circuitry for the low pressure jacket water trip will remain.
C)The addition of the valved tees and manual isolation valves in the air supply lines only affects the leak testing of the associated lines and sensors. During normal EDG operation, these components will not be active.
The following FSAR sections required revision:
A) FSAR Sections 8.3.1.1., 8.3.1.1.3 (Table 8.3.1-1) 9.2.1.3 (Table 9.2.1-2), 9.5.5.2.2, 9.5.5.3 (Table 9.5.5-2), 9.5.5.5, 9.5.5.7.2.2, 14.2.8.1.64, Figure 8.3.1-3

II
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Subject: DCP 91-V1N0115 Revision 0, Sequence 1

Description: This change replaces the shuttle valves on the pneumatic control board number 1A-6952 on each Emergency Diesel Generator (EDG) with an "OR" element. The second part of this change added a two second time delay to the jacket water temperature circuits.

Safety Evaluation: Replacement of the shuttle valves with a more reliable "OR" element will enhance the performance of the EDG by increasing the start-up reliability. The tubing and logic changes required to make this change will meet all the criteria of the original design. The two second delay will eliminate spurious alarms and improve reliability of the early warning annunciations and operator response. No trip functions are affected by this change.

Subject: DCP 91-V1N0147 Revision 0, Sequence 1

Description: This change replaced the Main Feed Water Isolation Valves (MFIV) normally open 3-way solenoid valves with lower wattage solenoid valves. This is to eliminate reactor trips caused by MFIV closure due to intermittent coil failure.

Safety Evaluation: The new components were fully qualified to the original requirements and will not compromise the safety function of the MFIV actuators.

II
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Subject: DCP 91-V2N0153 Revision 0, Sequence 1

Description: This change removed the thermostatic vent from steam trap 2XCV-16620 and installed a threaded plug in its location. The steam trap is used to drain condensate to the main condenser from the steam seals, upstream of the steam packing exhauster.

Safety Evaluation: This change allows the steam trap to perform its design function while preventing air in-leakage to the condenser. The reliability of the steam seals system in supporting main turbine operation was not affected by this change. Monitoring and processing of effluent from the steam packing exhauster was not affected by the change.

Subject: DCP 91-V1N0161 Revision 0, Sequence 1

Description: This change repaired the rotor shaft of the Steam Generator Feed Pump Turbine (SGFPT) 2A. The original shaft was machined at the low pressure end and a new stub shaft installed in accordance with vendor drawings. The new shaft is similar to the original with minor modifications to prevent a similar failure.

Safety Evaluation: This change only affected the 2A SGFPT and the ability to drive the 2A feedpump. The SGFP turbines and pumps are not assumed to function in accidents analyzed in the FSAR. The engineering for this change was provided by the original equipment manufacturer and the modification meet the original design criteria.

II
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Subject: DCP 91-V1N0161 Revision 0, Sequence 1

Description: This change revised the overpower delta-T and overtemperature delta-T setpoints to support VANTAGE 5 fuel upgrade. These setpoints are calculated and used in the reactor trip system to ultimately prevent the onset of departure from nucleate boiling (DNB).

Safety Evaluation: The overpower delta-T and overtemperature delta-T setpoints are being revised to support the VANTAGE 5 fuel upgrade. The revision of these setpoints does not create the possibility of a new or different type of accident from those previously evaluated. It adjusts fuel related parameters related to the VANTAGE 5 fuel upgrade.

Subject: DCP 91-V1N068 Revision 0, Sequence 1

Description: This change disconnected cables 1NRV57EXA & 1XRV574EXB, which run between the Steam Generator Blowdown Panel and the inoperable Solidification Processing Panel. This removed instruments LI-1165B & PI-1166B and made loops 1165 and 1166 operable with the Radwaste Building abandoned.

Safety Evaluation: This change removed the instruments from the inoperable Solidification Processing panel and did not affect any safety system postulated to function in any FSAR accident analysis.

FSAR Figure 10.4.8-1(sheet 2/2) required revision.

II
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Subject: DCP 91-V1N0169 Revision 0, Sequence 1

Description: This change disconnected cables 2NRV57EXA & 2XRV574EXB, which run between the Steam Generator Blowdown Panel and the inoperable Solidification Processing Panel. This removed instruments LI-1165B & PI-1166B and made loops 1165 and 1166 operable with the Radwaste Solidification Building abandoned.

Safety Evaluation: This change removed the instruments from the inoperable Solidification Processing panel and did not affect any safety system postulated to function in any FSAR accident analysis.

Subject: DCP 91-V1N0176 Revision 0, Sequence 1

Description: This change added a variable spring support on the 10 inch Steam Packing Exhaust Blower Discharge Piping in the Turbine Building in order to prevent damage to this equipment.

Safety Evaluation: The variable spring support does not affect the radiation monitor in the condenser vacuum exhaust filter system. The new support will reduce the stress in the piping and decrease the compressive load on the blowers.

Subject: DCP 91-V1N0179 Revision 0, Sequence 1

Description: This change raised the high voltage tap setting on Reserve Auxiliary Transformer (RAT) 1NXRA and 1NXRB from 98.75% to 100% as evaluated in the Unit 1 load study (calculation X3CA18).

Safety Evaluation: Changing the tap setting from 98.75% to 100% on RATs 1NXRA and 1NXRB will be a beneficial change in that the negative effects of overvoltage on class 1E electrical equipment will be reduced. According to calculation X3CA18 the RAT tap change from 98.75 to 100% will not affect the ability of class 1E motors to operate when required including those class 1E motors required for Loss of Coolant Accident mitigation.

II
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10 CFR50.59(b) REPORT

Subject:	DCP 91-V1N0180 Revision 0, Sequence 1
Description:	This change replaced four feedwater flow elements with elements equipped with inspection/cleanout ports. The inspection/cleanout ports will be plugged with a carbon steel plug secured with a 900 lb blind flange connection.
Safety Evaluation:	The operation of the flow element remains unchanged, the consequence of a failure remains unchanged. The new flow element is designed to the same parameters as the original flow element. This will not affect the operation of the Condensate and Feedwater system. The cleanout port flange/plug assembly is designed not to disrupt the flow in the flow element. The port will only be used for cleaning/inspection activities, and at other times the operation of the flow will be the same as the original installation.
Subject:	DCP 91-V2N0182 Revision 0, Sequence 1
Description:	This change replaced the Backflushable Filter Crud Tank level indicator with a digital indicator with a display range of 0-200 inches of water.
Safety Evaluation	The crud tank level indicator does not provide any setpoint alarms or control functions which may affect any plant operation or any equipment assumed to function in an accident analyzed in the FSAR. This design did not degrade the original design intent of functional capabilities.

II
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10 CFR50.59(b) REPORT

Subject:	DCP 91-V1N0183 Revision 0, Sequence 1
Description:	This change replaced the underfrequency relays for the Reactor Coolant Pump Motors with functionally identical but improved relays.
Safety Evaluation:	The new relays did not affect the system performance or operation. The RCP trip for an underfrequency condition greater than approximately 2.4 HZ will not be changed. The new relays are certified to the original requirements and will not adversely affect the seismic or environmental qualification of the 13.8 KV switchgear.
Subject:	91-V1N0195 Revision 0, Sequence 1
Description:	This change replaced two 3/4" check valves with a functionally equivalent 3/4" check valve, suitable for use in the Reactor Coolant System due to the unavailability of identical replacement valves .
Safety Evaluation:	The replacement check valves satisfy all original design and functional requirements. The installation of the new valves did not adversely impact the seismic qualification or allowable stresses of the existing piping installation.

II
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10 CFR50.59(b) REPORT

Subject: DCP 91-V1N0213 Revision 0, Sequence 1

Description: This change added a restriction flow orifice to the discharge line of the train A Centrifugal Charging Pump on the Chemical Volume Control System (CVCS) in order to use a replacement impeller. It also modified the piping to allow the orifice installation.

Safety Evaluation: The new orifice plate did not affect the operation or qualification of the CVCS charging pump. The orifice plate is a passive component designed to restrict the maximum flow rate to 555 gpm. It does not create any new failure modes for the pump or any safety related components.

The installation of the plate required cutting and shortening the pipe at an existing weld. The pipe was modified and tested in accordance with plant procedures an applicable codes.

Subject: DCP 91-V1N0218 Revision 0, Sequence 1

Description: This change cut and capped the abandoned Boron Injection Tank (BIT) bypass line and abandoned the line in place. This deletes containment isolation valves 1-1204-U4-007 and 1-1204-X4-314.

Safety Evaluation: Removal of the BIT bypass line will have no effect on the capability of the Safety Injection system to perform its safety function. Replacement of the containment isolation valves with a welded cap will provide a closed barrier for this line. The line was examined after the modification to ensure pressure integrity was maintained.

II
1991 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

Subject: MDD # 89-V1M043

Description: The following changes are to Sigma Refueling Machine:

1) To cut two 4 inch dia. access holes in the trolley safety fence.
2) To install a new mast position transducer mounting bracket

Similar changes have been already made on Unit 2 by FCRs. The holes in fence greatly facilitate lubrication of the trolley wheels and reduce exposure. The new bracket will reposition the mast hoist transducer to prevent cable from dragging or surrounding items.

Safety Evaluation: The proposed changes have no affect on the operation or description of the refueling machine per review of section 9.1.4 and does not involve change to procedures in FSAR. Load cut off limits per Technical Specification 3/4.9.6 are not affected. Therefore no changes are required.

Subject: MDD # 89-VCM044

Description: This deletes unused multiplexers from the security system (Safeguards).

Safety Evaluation: The multiplexer units being deleted by this design were not referenced in FSAR or Technical Specifications. No change to FSAR or Technical Specification required. It does not affect any procedures.

Subject: MDD # 89-V2M085

Description: Replace the existing self-clinching fasteners for the main control board access covers with J-Type nut retainers (Ref Letter SM-89069).

Safety Evaluation: The proposed change merely replaces the existing self-clinching fasteners for the MCB access covers with J-Type nut retainers. The subject is not a part of FSAR, procedures and the Technical Specifications. The Seismic Qualifications or safety margin are not affected.

II
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Subject: MDD # 89-V1M091

Description: Adds astragals to Unit 1 security doors to prevent unauthorized tampering to the locking mechanism of vital area doors.

Safety Evaluation: A review of FSAR section 13.6 does not indicate that a change is required. Addition of astragals does not affect any procedures. This subject is not discussed in Technical Specification.

Subject: MDD # 89-V1M093

Description: This MDD reverses the operation of five manual push button controllers. They are TIC-5498, 5499, 7097, 7116 and 7356. Presently operation of raise push button causes the associated cooling water valve to travel in open direction thereby causing the controlled process temperature to decrease. NRC Letter ELV-00503 requires that operational convention of these OIM's be such that operation of raise push button causes an increase in the controlled parameter and vise-versa for the down push button.

Safety Evaluation: The proposed change involves physical change in the facility, however, the portion of the facility involved is not described in FSAR sections 10.2.2 and 10.4.7. Subject OIMs are not mentioned any where in Technical Specifications. The procedures covering these OIMs are not described in FSAR.

Subject: MDD # 89-V2M094

Description: This MDD reverses the operation of five manual push button controllers. They are TIC-5498, 5499, 7097, 7116 and 7356. Presently operation of raise push button causes the associated cooling water valve to travel in open direction thereby causing the controlled process temperature to decrease. NRC Letter ELV-00503 requires that operational convention of these OIM's be such that operation of raise push button causes an increase in the controlled parameter and vise-versa for the down push button.

Safety Evaluation: The proposed change involves physical change in the facility, however, the portion of the facility involved is not described in FSAR sections 10.2.2 and 10.4.7. Subject OIMs are not mentioned any where in Technical Specifications. The procedures covering these OIMs are not described in FSAR.

Subject: MDD # 89-VAM098

Description: Reduce false alarms on UPS system (Safeguards)

Safety Evaluation: The alarms generated or the power supply components in this change were not referenced by any FSAR or Technical Specification sections. No change to these documents is required. It does not affect any procedures.

Subject: MDD # 89-V2M102

Description: During normal operation rapid pressure fluctuations cause controller to improperly position valves. This change adds pressure snubbers to common sensing line of heater drain pump seal injection controller 2PC-4380 and 2PC-4386 for pump B.

Safety Evaluation: This change does not affect the facility as discussed in FSAR section 10.3.6. The snubbers appear on installation drawings only. P&IDs in FSAR do not change. There are no procedures affected by this change. The heater drain pumps are not safety related and as such are not addressed in Technical Specifications.

Subject: MDD # 89-V1M116

Description: This change installs additional bolted hardware on room cooler 1555-A7-010-000 to reduce axial vibrations at the outboard end of fan housing.

Safety Evaluation: Technical Specifications 3/4.7.11 provides operability requirements for the room coolers. This MDD does not affect performance of room coolers. The description of room coolers contained in FSAR is of General Nature (section 9.4.3.2.2.C). No change to FSAR or procedures is required.

II
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Subject: MDD # 90-V1M100

Description: The existing hole (2" dia.) of the boraflex coupon tree hanger/hook is too small for lifting the coupon tree out of the spent fuel pool for removal the boraflex test coupons. Design an optional boraflex (neutron absorbing material) coupon tree hook for 1-2202-A6-001 and A6002 that has a larger diameter "lifting eye" (coupon tree hook/crane hook interface) and to provide for a larger hook for hanging the coupon tree in the spent fuel pool.

Safety Evaluation: The fuel storage and handling system is described in FSAR section 9.1. The FSAR does not provide the level of detail that would encompass this change. The change represented by this modification does not affect any procedures or evaluations contained in the FSAR. The portion of the fuel storage and handling system addressed in this change is not the subject of any Technical Specification.

Subject: MDD 90-V1M101

Description: Existing flow switches 1FSH-11734 and 1FSH-11776 for the NSCW cross-tie high flow alarm are being replaced with an ITT Barton Model 321 Blind D/P switch. This was necessary due to the calibration problems (switch setpoint was in close proximity to the low range of the existing switch) that had been encountered on the previously installed switch. The new switch has a range that will allow the setpoint to actuate at approximately mid-span.

Safety Evaluation: The NSCW system is discussed in FSAR section 9.2. The replacement of the NSCW cross-tie high flow alarm D/P switch does not change the function of the switch or system operation as described in the FSAR. The alarm setpoint was not altered by this change. This change does impact any safety related function of the NSCW system. The flow switches and alarm function are not the subject of any Technical Specification.

Subject: MDD # 90-V2M102

Description: Existing flow switches 2FSH-11734 and 2FSH-11776 for the NSCW cross-tie high flow alarm have been replaced with an ITT Barton Model 321 Blind D/P switch. This was necessary due to the calibration problems (switch setpoint was in close proximity to the low range of the existing switch) that had been encountered on the previously installed switch. The new switch has a range that will allow the setpoint to actuate at approximately mid-span.

Safety Evaluation: The NSCW system is discussed in FSAR section 9.2. The replacement of the NSCW cross-tie high flow alarm D/P switch does not change the function of the switch or system operation as described in the FSAR. The alarm setpoint was not altered by this change. This change does impact any safety related function of the NSCW system. The flow switches and alarm function are not the subject of any Technical Specification.

Subject: MDD # 90-V1M105

Description: The change revises relay setpoints, adds delay relays and defeats ground fault trips for selected breakers to obtain proper protective relay coordination for the common 4160V swgr. The instantaneous ground fault overcurrent trip for common swgr feeder breakers 1NA01-11, 1NA04-05 and 1NA04-12. In addition, the phase instantaneous overcurrent trip setpoint was decreased and a time delay installed to add 16 cycles to the instantaneous trip for the overcurrent relays of the common swgr feeder breakers 1NA01-11, 1NA04-05, 1NA04-12, 2NA01-11, 2NA04-05 and 2NA04-12. This results in an increase in the instantaneous overcurrent trip time delay for swgr feeder breakers 1NA01-01 & 03, 1NA04-01 & 03, 2NA01-01 & 03 and 2NA04-01 & 03.

Safety Evaluation: On-site power systems are addressed in FSAR section 8.3. The change initiated by this modification involves the non-class 1E on-site power system only. The changes will enhance the protective relay reliability and coordination for the common 4160 swgr.

The operation and function of the common 4160V swgr is not affected by this change. The non-class 1E switchgear are not the subject of any Technical Specification.

Subject: MDD # 90-VCM111

Description: The modification replaced the antenna system 50 ohm attenuators in control building R-115 and auxiliary building R-D104 and R-D105 with quarter wave, unity gain, magnetic mount antennas. The installation of the antennas will improve the radio transmission and reception at the H.P. Control Point Area (Control Building., R115) and 480V swgr room (Aux. Bldg., R-D105) and meet the design requirements of the emergency plan and the fire event safe shutdown.

Safety Evaluation: The addition of the antennas in the specified areas will improve operation of the radio communications system. This addition will not result in a change to the plant or to plant procedures as described in FSAR sections 9.5, 13.5, 18.1 or the Emergency Plan section F and appendix 8.0. The radiax antenna system does not impact any safety related equipment. In plant radio communications is not the subject of any Technical Specification.

Subject: MDD # 90-V1M116

Description: The setpoints of the CCW pressure safety valves (PSVs) at the RHR heat exchanger and the spent fuel pool cooling heater exchanger have been raised from 135 $\pm$ 4 psig to 145 $\pm$ 5,-0 psig. This will prevent the inadvertent opening of the CCW PSV's upon CCW pumps start.

Safety Evaluation: A review of FSAR sections 5.4, "RHR"; 9.1 "Spent Fuel Pool Cooling and Purification" and 9.2, "CCW" indicates that there is no affect on these systems as described in these sections. Section 9.2 specifically addresses the thermal relief valves affected by this change however actual setpoint specifics are not presented. The system will continue to operate as before. The change does not impact any procedures as described in the FSAR. Technical Specifications do not address the PSV's affected by this change.

Subject: MDD # 90-V2M117

Description: The setpoints of the CCW pressure safety valves (PSVs) at the RHR heat exchanger and the spent fuel pool cooling heater exchanger have been raised from 135 $\pm$ 4 psig to 145 $\pm$ 5,-0 psig. This will prevent the inadvertent opening of the CCW PSV's upon CCW pumps start.

Safety Evaluation: A review of FSAR sections 5.4, "RHR"; 9.1 "Spent Fuel Pool Cooling and Purification" and 9.2, "CCW" indicates that there is no affect on these systems as described in these sections. Section 9.2 specifically addresses the thermal relief valves affected by this change however actual setpoint specifics are not presented. The system will continue to operate as before. The change does not impact any procedures as described in the FSAR. Technical Specifications do not address the PSV's affected by this change.

Subject: MDD # 90-VCM121

Description: Upgrade the alarm station operator keyboards. (Safeguards)

Safety Evaluation: There is no impact to FSAR, Technical Specifications or change to procedures in FSAR.

II
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Subject: MDD # 90-V1M122

Description: Coupling guards have been fabricated and installed on both the NSCW pumps and the NSCW transfer pumps. Coupling guards were installed by drilling and tapping four holes on each side of the pump stand around the coupling openings and attach using 1/4" bolts.

Safety Evaluation: The NSCW system is described in FSAR section 9.2. The modification involved drilling and tapping holes in a section of the pumps which does not serve as part of the same pressure boundary. The effect of this change on the structural integrity and operability of the pumps during a seismic event was evaluated in calculation X4CPS.0075.311. The calculation indicated that the change would have no adverse impact on the availability of the NSCW system during an accident. System operation is not affected by this change.

Technical Specifications place requirements on NSCW system availability during various modes of plant operation. As the availability has not been affected by the change, there is no impact on Technical Specifications.

Subject: MDD # 90-V1M123

Description: Coupling guards have been fabricated and installed on both the NSCW pumps and the NSCW transfer pumps. Coupling guards were installed by drilling and tapping four holes on each side of the pump stand around the coupling openings and attach using 1/4" bolts.

Safety Evaluation: The NSCW system is described in FSAR section 9.2. The modification involved drilling and tapping holes in a section of the pumps which does not serve as part of the same pressure boundary. The effect of this change on the structural integrity and operability of the pumps during a seismic event was evaluated in calculation X4CPS.0075.311. The calculation indicated that the change would have no adverse impact on the availability of the NSCW system during an accident. System operation is not affected by this change.

Technical Specifications place requirements on NSCW system availability during various modes of plant operation. As the availability has not been affected by the change, there is no impact on Technical Specifications.

Subject: MDD # 90-V1M126

Description: Wiring configuration for control room annunciator 1ALB01A05, "Servair Swing Compressor Misaligned" was corrected to permit annunciation when the proper conditions are met (Air compressor number 4 selected to Unit 2 and valve 2-2401-U4-510 not 100% open). This change was accomplished by changing the AX-3 relay in the annunciator circuit from a normally open contact to a normally closed contact.

Safety Evaluation: Section 9.3 discusses basic system operation. Receipt of this alarm initiates an operator response. In this case the response is not affected as the change has validated the alarm. Figure 9.3.1 (Sheet 1 of 9) identifies the existence of the misalignment alarm only and does not describe its actuation conditions or operation. The change corrects a condition which prevented proper operation of the alarm. The control room annunciator is not addressed in any Technical Specification.

Subject: MDD # 90-V1M128

Description: Cables 1NCAAB04BUR and 1NCAAB04BUS coming from the high voltage switchyard to the under frequency panel were only grounded at one end. This change provided for the grounding of these cables in the under frequency panel therefore providing these cables with greater shielding protection against spuriously induced signals. This improves the stability and reliability of the under frequency relay.

Safety Evaluation: FSAR sections 8.0, "Electrical Power Systems" and 10.2, "Turbine Generator" describe the on-site and off-site electrical power distribution systems. Grounding requirements for the shielded cables addressed by this change are not included as part of the FSAR description. The change will not affect system

operation or the manner in which the system is operated. The particulars of this change are not the subject of any Technical Specification.

Subject: MDD # 90-V1M129

Description: The modification consist of changing the flow direction through the heater drain tank dump valves (LV-4333 and LV-4334) from the normal "forward" direction to the normal "reverse" direction. This was accomplished by rotating the valve body 180 degrees. The change was implemented to reduce bushing wear and subsequently reduce valve leakage which has been a continuing problem.

Safety Evaluation: The heater drain tank high level dump valves are generally discussed in FSAR section 10.4. The internals of the valve are not included as part of this discussion. Rotation of the valves does not affect system operation or any operating or maintenance procedure associated with the heater drain system operation. The heater drain system is not the subject of any Technical Specification.

Subject: MDD 90-V2M130

Description: The modification consist of changing the flow direction through the heater drain tank dump valves (LV-4333 and LV-4334) from the normal "forward" direction to the normal "reverse" direction. This was accomplished by rotating the valve body 180 degrees. The change was implemented to reduce bushing wear and subsequently reduce valve leakage which has been a continuing problem.

Safety Evaluation: The heater drain tank high level dump valves are generally discussed in FSAR section 10.4. The internals of the valve are not included as part of this discussion. Rotation of the valves does not affect system operation or any operating or maintenance procedure associated with the heater drain system operation. The heater drain system is not the subject of any Technical Specification.

II
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Subject: MDD 90-V2M134

Description: The steam generator top head insulation support ring bolted connection has been modified to allow for the use of hex head bolts with nuts tack welded to the support ring in lieu of hex head bolts tapped into the support ring and to allow for the use of carbon steel or stainless steel hex head bolts/nuts with coarse threads in lieu of stainless steel hex head bolts with fine threads.

Safety Evaluation: FSAR section 5.4.2 discusses the design and operation of the steam generators. The steam generator top head insulation is not specifically addressed in this section. The change does not impact any plant procedures. The steam generator top head insulation is not addressed in the Technical Specifications.

Subject: MDD # 90-VCM135

Description: The change involved the addition of globe valves and flange connection points to the recirculation return lines of the clean and dirty lube oil storage tanks (A-1307-T4-001 & 002) to allow for return flow to the respective tank from the temporary vacuum polisher.

Safety Evaluation: The clean and dirty lube oil storage systems are discussed in FSAR section 10.2.2. The addition of the return flow connections does not change system operation as described in this section however figure 10.2.2-1 required a revision to depict the added valves. Operating procedures for these systems were revised to reflect the current configuration of the systems. The lube oil systems affected by this change are not addressed in the Technical Specifications. Failure of lube oil storage can not affect any safety related component.

II
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Subject: MDD # 90-V1M136

Description: The internals of check valves 1-1305-U4-501, 502, 508 and 509 in the feedwater heater drain system have been removed. The valves are located in the high level drain lines off of each of the moisture separators. Problems had been encountered with the check valves as a result of their cyclic action during operation. This resulted in stem failure. The check valves are not necessary due to the low pressure and low energy conditions in the main condenser which is not conducive to creating a backflow in these lines.

Safety Evaluation: Sections 10.2 and 10.4.7 of the FSAR discuss the turbine generator and condensate and feedwater systems. The modified check valves are not specifically addressed in either of the discussions. These check valves do not affect the operation or function of any safety related equipment and are not required to operate in the event of an accident. Removal of the internals does not impact any operating procedure. System operation is not affected by the change. The affected valves are not the subject of any Technical Specification.

Subject: MDD # 90-V2M137

Description: The elementary diagram and annunciator window ALB20F03 engraving involving the turbine bearing oil header pressure were revised to reflect the proper switch contact configuration and window engraving as specified by the General Electric (Vendor) turbine control diagram (2X4AA11-281).

Safety Evaluation: The turbine generator and its support systems are addressed in FSAR section 10.2. The annunciators on the main control boards are discussed in section 18.1 of the FSAR. The implementation of this change does not affect the description presented in these sections. The function of the low bearing oil header

pressure switch remains the same. Operator actions upon receipt of the annunciator are not affected by this change. The pressure switch does not impact any safety related components. The change does not affect the turbine cycle or turbine operation and therefore does not affect Technical Specifications.

Subject: MDD # 90-V1M138

Description: The pressure switches that were originally used for 1PDS-5200A/B and 1PDS-5201A/B, "Feed Pump Discharge Pressure" are no longer available through the manufacturer, SOR, Inc. SOR provides a direct replacement for the discontinued switch. The change permits the installation of the new model switch as necessary to replace the existing switches.

Safety Evaluation: The condensate and feedwater systems are discussed in FSAR section 10.4. The specifics of the discharge pressure switches are not included in this discussion. The new replacement switch is equivalent in design except for the switch housing and functions in the same manner as the previously installed switch. Portions of the condensate and feedwater systems applicable to this change are not the subject of any Technical Specifications.

Subject: MDD # 90-V2M193

Description: The pre-modification shutdown logic design on the diesel generators employed a 0.028 flow restricting orifice to provide enough pressure drop during a group II (active only during non-emergency operating condition) sensor trip actuation to Depressurize Port A of NOT-13 allowing air flow from Port B to C which provides the normal signal to shutdown the engine. A 0.020 orifice was installed in place of the 0.028 orifice.

This change provides for a more consistent and responsive engine shutdown following a group II sensor trip.

Safety Evaluation: The diesel generators are addressed in section 8.3 of the FSAR which describes the standby power systems. The size requirements of the orifice are not specified in this section. The change only affects diesel shutdown capability from a group II sensors which are only functional during non-emergency operating conditions. The orifice size does not impact any safety function of the diesel generators. The function and operation of the diesel generator shutdown logic board is not affected only enhanced by the change. Although the diesel generators are addressed in the Technical Specification, the level of detail provided does not include orifice sizing.

Subject: MDD # 90-V1M194

Description: The pre-modification shutdown logic design on the diesel generators employed a 0.028 flow restricting orifice to provide enough pressure drop during a group II (active only during non-emergency operating condition) sensor trip actuation to Depressurize Port A of NOT-13 allowing air flow from Port B to C which provides the normal signal to shutdown the engine. A 0.020 orifice was installed in place of the 0.028 orifice. This change provides for a more consistent and responsive engine shutdown following a group II sensor trip.

Safety Evaluation: The diesel generators are addressed in section 8.3 of the FSAR which describes the standby power systems. The size requirements of the orifice are not specified in this section. The change only affects diesel shutdown capability from a group II sensors which are only functional during non-emergency operating conditions. The orifice size does not impact any safety function of the diesel generators.

The function and operation of the diesel generator shutdown logic board is not affected only enhanced by the change. Although the diesel generators are addressed in the Technical Specification, the level of detail provided does not include orifice sizing.

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Subject: MDD # 91-V2M004

Description: 0.109 inch inside diameter orifices are added to "P" port of the fast acting solenoids (2XY6001A, 6002A, 6003A, 6004A, 6009A, 6010A, 6011A, 6012A, 6013A and 6014A) on the main turbine main stop valves and intermediate stop valves. These orifices are intended to reduce spurious reactor trips due to drop in E. T. S. pressure while testing the subject valves.

Safety Evaluation: The Turbine Generator is discussed in FSAR but addition of these orifices does not have any effect on closure of the valves as part of the speed control, strong test or turbine trip functions described. The valve closure time will not be affected and valves will close as required per Technical Specifications. The change does not change system function and does not require any procedural changes.

Subject: MDD # 91-V1M005

Description: 0.109 inch inside diameter orifices are added to "P" port of the fast acting solenoids (1XY6001A, 6002A, 6003A, 6004A, 6009A, 6010A, 6011A, 6012A, 6013A and 6014A) on the main turbine main stop valves and intermediate stop valves. These orifices are intended to reduce spurious reactor trips due to drop in E. T. S. pressure while testing the subject valves.

Safety Evaluation: The Turbine Generator is discussed in FSAR but addition of these orifices does not have any effect on closure of the valves as part of the speed control, strong test or turbine trip functions described. The valve closure time will not be affected and valves will close as required per Technical Specifications. The change does not change system function and does not require any procedural changes.

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Subject: MDD # 91-V1M007

Description: The MDD changes setpoint for the time delay for auto start of the standby condensate pump. The time delay is changed from 10± 0.5 sec to 2± 0.1 sec to allow condensate pump adequate time to restore system pressure thereby preventing unnecessary feed pump trip on low suction pressure.

Safety Evaluation: The auto start of standby condensate pump on low feed pump suction pressure is not addressed in the FSAR. Therefore revision to FSAR is not required. The system function or operation is not altered. The change does not affect the Technical Specification or the procedures in FSAR.

Subject: MDD # 91-V1M009

Description: The high vibration trips on reciprocating air compressors #3 and #4 (1-2401-C4-503 & 504) are defeated to eliminate spurious actuations due high vibrations associated with vibration switches.

Safety Evaluation: The FSAR states that compressed air systems have automatic protection trips. The high vibration alarms will remain functional to warn operators can then take compensatory actions. The annunciator response procedure will be reviewed but procedures in FSAR are not affected. This change does not involve any requirements of Technical Specifications.

Subject: MDD # 91-V2M010

Description: The high vibration trips on reciprocating air compressors #3 (2-2401-C4-503 & 504) are defeated to eliminate spurious actuations due high vibrations associated with vibration switches.

Safety Evaluation: The FSAR states that compressed air systems have automatic protection trips. The high vibration alarms will remain functional to warn operators can then take compensatory actions.

The annunciator response procedure will be reviewed but procedures in FSAR are not affected. This change does not involve any requirements of Technical Specifications.

Subject: MDD # 91-V2M011

Description: This change involves modification of one BPRA insert for the spent fuel storage racks. The fingers of BPRA are bent and will not fit in the existing insert plate. The modification involves cutting away enough of the plate to accept the damaged BPRA. This is a spent BPRA and will not be removed from the spent fuel pool in the near future.

Safety Evaluation: The fuel storage racks are discussed in FSAR, but the rack inserts are not. Modification of insert does not change the FSAR. Modified insert will have sufficient strength to support design loads, supporting calculations are provided. The procedures are not affected in the FSAR. Technical Specification describes allowable crane travel over the spent fuel storage areas. This change to BPRA insert has no effect on Technical Specification.

Subject: MDD # 91-V1M012

Description: Seal weld of all steam dump valve packing leak-off plug to prevent steam leak.

Safety Evaluation: The turbine bypass system is discussed in FSAR but the steam dump valve bonnet plugs are not detailed. The modification does not affect the operation of the valve function therefore no change to FSAR is required. This activity does not impact any procedures in FSAR. Turbine bypass system serves no safety function and has no safety design basis and as such is not included in Technical Specification.

Subject: MDD # 91-V2M013

Description: Seal weld of all steam dump valve packing leak-off plug to prevent steam leak.

Safety Evaluation: The turbine bypass system is discussed in FSAR but the steam dump valve bonnet plugs are not detailed. The modification does not affect the operation of the valve function therefore no change to FSAR is required. This activity does not impact any procedures in FSAR. Turbine bypass system serves no safety function and has no safety design basis and as such is not included in Technical Specification.

Subject: 91-VCM014

Description: Essential chilled water systems 1592 for both Unit 1 and Unit 2 use temperature module provided by action instruments in the trane chiller control panel. This module is not made by the manufacturer. The change allows use of substitute module made by action instruments.

Safety Evaluation: The details of instruments are not discussed in the FSAR. Therefore no change to the FSAR is required. This does not affect any procedures and the change does not impact safety margin therefore no change to Technical Specifications is required.

Subject: MDD # 91-V1M016

Description: The change revises the high governor speed for the steam driven auxiliary feed pump from 4200 RPM to 4230 RPM. This speed will correspond to a control room demand signal of 100% at discharge pressure of approximately 1715 psig with pump operating on mini-flow. Running in automatic mode the pump will search for a Delta P of 530 psig between disc pressure and steam line pressure and will not exceed 1715 psig.

Safety Evaluation: The maximum running pressure with speed loop set at 4230 RPM is 1715 psig. This is below the pump pressure design of 2000 and line design of 1975. Increasing the turbine speed does not require change to FSAR nor does not violate any applicable code. FSAR table 10.4.9-1 lists speed of 4200 RPM for supply flow of 1175 gpm at head of 3500 ft. to steam generators. Revising running speed to 4230 does not require change to FSAR.

Monthly testing of turbine driven pumps is discussed in FSAR and is performed under procedure 14546-1. Raising the pump running speed to 4230 rpm will allow the acceptance criteria to be met with slightly greater margin but does not directly affect the tests performance. No change to FSAR procedures is required. The acceptance criteria of 14546-1 satisfies the requirements of Technical Specification 4.7.1.2.1.a.2, since raising the speed from 4200 to 4230 rpm does not alter the requirements of Technical Specification therefore no change is require to Technical Specification.

Subject: MDD # 91-V1M018

Description: This change will replace the existing EHC fullers earth filter canister with a new canister having different head design. The change will include tube re-routing and filter enclosure modifications for installation of canister. All design and operational design criteria are unchanged.

Safety Evaluation: FSAR discusses EHC system but filter specifics are not discussed also filter design or operational parameters are not affected therefore no change to FSAR is required. This is not safety related equipment and based on Technical Specifications review no change is required.

Subject: MDD # 91-V1M020

Description: The main turbine EHC control cabinet is being modified to delete the throttle pressure limiter input to the control valve flow reference signal. This function is not used at VEGP and a malfunction of the card can adversely effect turbine load control.

Safety Evaluation: FSAR describes the turbine control but not to the detail of pressure limiter. No changes to procedures in FSAR are required the plant procedure 13800-1 already keeps the throttle pressure limiter off. Main turbine load controls are not subject to any Technical Specification, turbine tripping is not effected.

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Subject: MDD # 91-V2M021

Description: The main turbine EHC control cabinet is being modified to delete the throttle pressure limiter input to the control valve flow reference signal. This function is not used at VEGP and a malfunction of the card can adversely effect turbine load control.

Safety Evaluation: FSAR describes the turbine control but not to the detail of pressure limiter. No changes to procedures in FSAR are required the plant procedure 13800-2 already keeps the throttle pressure limiter off. Main turbine load controls are not subject to any Technical Specification, turbine tripping is not effected.

Subject: MDD # 91-V2M022

Description: The local level sight glasses are being deleted from the Unit 2 reheater drain tanks. The sight glasses will physically remain attached to the piping but the pressure connections will be plugged, this will prevent the possibility of steam leakage from the sight glasses which can require a power reduction to repair.

Safety Evaluation: The heater drain tank sight glasses are not described in FSAR. There are no procedures to be changed. The reheater drain tanks are not the subject of any Technical Specification and have no environmental impact.

Subject: MDD # 91-V1M025

Description: The air regulator pressure for valves 1LV-4331 and 1LV-4332 is being increased from 35 psig to 40 psig. The orifice size in 1LY-4331 and 1LY-4332 is being increased from 3/32" to 1/8". These changes will allow the heater drain pump discharge valves to continue to operate properly in presence of normal wear in the actuator internals.

Safety Evaluation: The heater drain system is generally discussed in FSAR. The air set pressure, solenoid model number and orifice size are not provided. The proposed change will not effect the function of the valves.

No changes to procedures are required. The heater drain system is not the subject of any Technical Specification and does not have any environmental effect.

Subject: MDD # 91-V1M028

Description: A section of instrument air tubing which supplies 1PI-4150 is being relocated approximately 2.5 ft. below its current location. The present routing presents a safety hazard to pedestrians.

Safety Evaluation: The instrument air system is described in FSAR section 9.3. The condenser air removal system of which 1PIC-4150 is a component is described in section 10.4 of FSAR. The FSAR does not discuss or imply the routing of subject tubing. The P&ID which are FSAR figures are not affected. No procedure change is required. Applicable portion of instrument air and condenser air removal system is not the subject of any Technical Specification.

Subject: MDD # 91-V1M029

Description: Protective cages are installed around the vibration probes at main turbine bearings 2 through 8. These cages are intended to prevent spurious turbine/reactor trip due to probe heads being bumped by personnel working in the area.

Safety Evaluation: The main turbine and its instrumentation are discussed in FSAR. The details of vibration probe covers are not discussed. No change to the procedures is required. This portion of the main turbine is not the subject of any Technical Specifications.

Subject: MDD # 91-V2M034

Description: This change adds a union piping connection of line 2-1414-L4-628-1/2" to allow removal of this line and its associated valves, strainers during the maintenance of valve 2HV-30325.

Safety Evaluation: The addition of union connection does not change the facility as described or implied in the FSAR. The P&ID in FSAR does not require any change. The function of system is not changed by addition of union therefore no procedural changes are required. The condensate clean up system does not have a safety related function nor does its failure compromise the ability to shut-down the plant. This change is not the subject of any Technical Specifications.

Subject: MDD # 91-V2M036

Description: Internal wiring is added to main generator shorting breaker cubicle to indicate status of field shorting breaker. This input is to the plant computer. The information is useful in evaluation of generator trip sequences.

Safety Evaluation: The main generator is generally discussed in the FSAR shorting breaker and its wiring is not described. FSAR does not contain a list of proteus points. No procedure change is required. The main generator shorting breaker is not subject of discussion in the Technical Specifications.

Subject: MDD # 91-V1M037

Description: Removal of abandoned support on mezzanine platform of turbine building level 210'-0" near column TF/T15 the support is 2' long and is personnel safety hazard.

Safety Evaluation: This is abandoned support and its removal does not impact FSAR. It does not require change to any procedure. The abandoned support does not have any design function and thus can not affect the Technical Specifications.

Subject: MDD # 91-V2M038

Description: Removal of two abandoned supports on mezzanine platform of turbine building at elevation 210 -0" near column TF/T6. The supports are 2' tall and are safety hazard.

Safety Evaluation: These are unused supports not connected to any system therefore their removal does not affect the FSAR or any procedures. They are in non safety related area and are not discussed in Technical Specifications.

Subject: MDD # 91-V2M041

Description: This change consists of changing the type of filter used on the rotary air compressor bearing filtration system. The new filter will contain a fiberglass filter media versus a cellulose filter media previously supplied. Replacement of the filter will also require the installation of a different housing assembly.

Safety Evaluation: FSAR describes the compressed air system, but it does not discuss the particular filter media for bearing oil filter. Therefore no change to the FSAR is required. This does not affect any procedures in FSAR. The compressed air system is not included as a part of the Technical Specifications.

Subject: MDD # 91-V1M042

Description: The alarm lockout switch for field ground detector is being relocated to the front of the excitation panel 1328-P5-GEC to reduce tripping hazards. The existing wiring is extended to reach the relocated switch.

Safety Evaluation: The field ground switch location is not discussed in the FSAR therefore no change is required. This does not change function of the system. No change to the procedures is required. The turbine generator is not a part of the Technical Specifications therefore no change is required.

Subject: MDD # 91-V1M048

Description: This design change adds stiffening members and changes plate thicknesses to the internal vent box assembly of the condensate demineralizer filters on Unit 1.

Safety Evaluation: The addition of stiffening members and plate thickness changes will not change the facility as described in FSAR. The condensate clean-up system and P&ID in FSAR do not require any change. There are no procedure changes required. The Technical Specifications do not reference condensate clean-up system. The system has no safety related function and does not compromise safety margin.

Subject: MDD # 91-V2M049

Description: This changes setpoints of instruments, valve controller 2-PC-17208 & 2PC-17224 for TPCW pump mini-flow valves from 115 psig to 90 psig. This is to reduce vibrations due to reduced flow.

Safety Evaluation: Turbine plant cooling water is discussed in FSAR but the setpoint for mini-flow of TPCW valve controller is not mentioned. Therefore no change to FSAR is required the change does not impact any procedures in FSAR. TPCW is not a part of any discussion in Technical Specifications. Therefore it does not require change to Technical Specification.

Subject: MDD # 91-V1M050

Description: This activity modifies the MSIV balanced isolation valves. The currently installed valves utilize a C-Ring connector to hold the plug on the valve stem. Failure of C-Ring disengages the plug making it impossible to move off the seat. The new design utilizes extended threaded stem, nut and cotter pin.

Safety Evaluation: The activity will improve the reliability of the MSIV manifold isolation valves. The normal operation and safety function of the MSIVs are not in any way impacted. FSAR discusses MSIV's but does not require revision due to this change. There are no procedures affected and no changes are required.

The activity improves the reliability of the MSIV balanced isolation valves. There is no affect on the ability of MSIVs to perform their safety function. A change to Technical Specifications is not required due to the activity.

Subject: MDD # 91-V1M057

Description: This activity changes model number of transmitter currently used for CST degassifier transfer pump flow indicator FT-5068. A 0-500 gpm gauge will also be installed in lieu of the current 0-400 gpm gauge in conjunction with the increased range transmitter.

Safety Evaluation: The activity increases accuracy of CST transfer pump flow indicator. There is no control function associated with the indicator, for this reason the plant as described in FSAR is not impacted. There are no procedures impacted. The activity affects a non safety related transmitter that supplies indication only, for this reason there is no change to the Technical Specifications.

Subject: MDD # 91-V1M060

Description: In normal operating conditions, when switching from one ACCW pump to the standby pump, both pumps are running simultaneous for a short period of time. At this time the flow rate reaches 247 gpm, causing valve HV-2041 to close. Raising the setpoint for the loop associated with FT-2043, which is the transmitter controlling HV-2041, to 253 gpm will eliminate valve isolation while switching ACCW pumps.

Safety Evaluation: The valves and their function are described in sections 7.6.6.4, 9.2.8, and the active valve table 3.9.B.3-9. Valves 1/2HV-2041 are designed to close on high flow or high pressure, however the specific transmitter setpoint is not referenced. Isolation of the ACCW in the event of a thermal barrier leak is not specifically referenced in the discussion of RCS pipe breaks in section 3.6.

Sections 15.6.2 and 15.6.5 discuss loss of coolant inventory and small break LOCA's, however no reference to the thermal barrier isolation flow is made. Therefore, this change does not represent a change to the plant as described in the FSAR.

Plant operating procedures are not affected by setpoint change. Technical Specification section 3/4.7.12 refers to the isolation of the ACCW in the event of a thermal barrier leak. The isolation function is designed to prevent a spill of the reactor coolant from a postulated breached thermal barrier should a break occur in the non safety related ACCW piping downstream of the isolation valve. As stated above, the valve setpoint is not addressed. The isolation valve is designed to close in the event of an RCS leak which would result in a flow rate much higher than the normal ACCW flow. Raising the setpoint to allow for normal flow transients will not require a change to the Technical Specifications. Review of the FSAR sections 3.6, 3.9.N.1, 5.2.5.2, 5.2.5-6, 7.6.6.4, 9.2.8, 11.5.2, and chapter 15 indicates that the proposed change will have no adverse effect on the consequences of a malfunction of equipment important to safety.

Subject: MDD # 91-V1M062

Description: Replace existing gross megawatt hour meter in panel 1NCQPRP-10 with digital, scientific columbus type GEM-2. New meter to be located in panel 1NCQPRP-9.

Safety Evaluation: The watt hour meter and the protection panel details are not discussed in FSAR. Therefore no change to the FSAR is required. The change does not impact any procedures. Watt hour meter and the panels involved are not any subject in the Technical Specifications and this does not change the margin of safety. No change to Technical Specification is required.

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Subject: MDD # 91-V1M065

Description: Replacement of internal septum lift plate in the condensate polishing vessels with a plate and locking assembly. This change is already made on Unit 2.

Safety Evaluation: The replacement of internal lift plate will not change the vessel as described in FSAR. No procedures will be affected. The vessel will perform same as before. The change does not affect any component required for safe shutdown of plant. Review of Technical Specifications indicates no change is required.

Subject: MDD # 91-V1M072

Description: This change consists of installing a support for the excitation bus for the main generator. The support is located in the collector housing. The change is recommended by General Electric.

Safety Evaluation: Turbine generator details are not discussed in the FSAR. Therefore no change to FSAR is required. The function of bus does not change any procedures. The main generator is not discussed in Technical Specifications.

Subject: MDD # 91-V1M075

Description: This minor departure from design (MDD) revises the existing hydraulic thermal relief valve (1PSV-3006AH & BH, 1PSV-3016AH & BH, 1PSV-3026AH & BH, and 1PSV-3036AH & BH) setpoints on the MSIV Actuators (1HV-3006A & B, 1HV-3026A & B, and 1HV-3036A & B) from 4350 psig to 4275 psig.

The setpoints are being changed to eliminate the potential for overpressurizing the Keane solenoid valves beyond their 4500 psig pressure rating.

The current thermal relief valve setpoint (with an instrument inaccuracy of ±5%) creates the possibility of pressurizing the hydraulic system to 4,567.5 psig when all the positive instrument inaccuracy is considered. This is above the 4500 psig pressure rating of the Keane solenoid valves. However, the manufacturer (Keane Engineering) states that pressure excursions to 4,600 psig will not be a concern.
Enertech did state that the maximum hydraulic pressure allowed should be lowered below 4500 psig.

Safety Evaluation: This change will revise (i.e., reduce) the setpoint of the thermal relief valves on the hydraulic system of the MSIV actuators to eliminate the possibility of overpressurizing the Keane solenoid valves. This change does not change the intended function of the MSIV's, or the actuators, as described, or implied in the FSAR. There will be no change to the procedures described or implied in the FSAR as a result of revising the MSIV hydraulic thermal relief valve setpoints.

This change involves reducing the setpoint (and adding a setpoint tolerance) of the thermal relief valves on the hydraulic system of the MSIV actuators. This change will not have any impact on the safety function of the valve, which is to close upon receipt of the appropriate signal. The potential for overpressurizing the Keane solenoid valves, when adding the positive instrument inaccuracies to the relief valve setpoint, will be eliminated by this change. There is no decrease in the margin of safety as defined in Technical Specifications. No change is required to Technical Specifications.

Subject: MDD # 91-V1M082

Description: The lateral supports for the Main Steam Dump Spargers will be replaced with heavier members. These are the two lower main steam dump spargers that turn down and are located in the hotwells. Also, a pad/wrapper plate will distribute impact loads more evenly into the pipe.

Safety Evaluation: The Main Condensers and the Turbine Bypass System are discussed in FSAR sections 10.4.1 (Main Condensers) and 10.4.4 (Turbine By-Pass System), but not to detail for the internal piping or supports. The Condenser operation, design capacities, or radiation monitoring of the air removal is unaffected. Therefore, there are no changes to the facility as described or implied in FSAR. The internal changes do not effect the operation of the Main Condensers or radiation monitoring of air removal. The Main Condenser are not addressed in the Technical Specifications based upon a review including Section 3/4.7.1 (Plant Systems-Turbine Cycle) of Technical Specifications.

Subject: MDD # 91-V1M086

Description: Replacement of 8 X 20 inch reducers downstream of feedwater heater drain control valve 1LV-4282 and 4283. Replacement of pipe reducers will be of a different material that is more erosion resistant. Existing fitting is a carbon steel, while the replacement fitting will be made of stainless steel.

Safety Evaluation: The fitting material change will not change the system as described or implied in the FSAR. FSAR Section 10.4.7.2.2.7-Low Pressure Feedwater Heaters discusses the cascade of No. 5 shell contents to the No. 4 heater, but does not describe pipe material type.

The fitting material change will not change any operational characteristic of the system nor will it change any procedure described or implied in the FSAR. System is not discussed in the Technical Specifications nor can its complete failure effect the operation of any safety related component. Reference the review of Technical Specification Section 3/4.7-Turbine Cycle.

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Subject: MDD # 91-V1M087

Description: This change addresses removal of six(6) 3/4" diameter capped drains attached to the slow fill lines of the nuclear service cooling water (NSCW) system. The lines are cracked. They will be remove along with their associated valves. Pipe cap will be welded to the remaining short portion of piping.

Safety Evaluation: The drain lines for the slow fill lines are not specifically discussed, and, therefore, a revision to the FSAR text is not required. However, FSAR Figure 9.2.1-1, sheets 1 and 2, must be revised to reflect the removal of the drain lines from the P&ID. This will be accomplished by the periodic FSAR update. It does require changes to the procedures. Sections 3/4.7.4 and 3/4.7.5 discuss the NSCW system and Ultimate Heat Sink. However, they do not specifically address the 3/4" drain lines and, therefore, a change to the Technical Specifications is not required.

Subject: MDD # 91-V1M094

Description: This change will address several modifications due to damage discovered during visual inspection of the expansion bellows associated with the 24 inch extraction steam piping inside each main condenser.

Safety Evaluation: The modifications being performed under this design change will not represent a change to the FSAR. This conclusion was reached based upon review of FSAR sections 1.2.4 (Steam and power conversion), 10.1 (Summary description of steam and power), 10.2 (Turbine-generator), 10.4 (Other features of steam and power conversion).

This change will not require a change to procedures described in the FSAR since the extraction steam system is not described to this level of detail.

This change will not require a change to the Technical Specifications and/or environmental protection plan. The replacement expansion bellows has been reviewed by SCS and approved as meeting or exceeding the original design criteria for this joint. Based on review of the Technical Specifications and the environmental protection plan the extraction steam system is not described in sufficient detail to warrant a change. Reference Technical Specification section 3/4.7 (Turbine Cycle).

Subject: MDD # 91-V1M108

Description: The addition of sleeves to the MSR Pocket Line Drains (575-1", 576-1") in the areas of heavy pipe wall erosion. This will provide additional wall thickness in the event that erosion rates increase greatly, and to prevent possible pressure boundary failure during this fuel cycle.

Safety Evaluation: The facility is not effected as described or implied in the FSAR. Reference a review of FSAR sections 10.2-Turbine/Generator, 10.3-Main Steam Supply System, 10.4.1-Main Condensers.

Change does not effect any procedure described or implied in the FSAR. Reference FSAR Chapter 10 and 15 review.

Change does not effect any safety related system or component nor does the system failure effect any safety related system or component nor does the system failure effect any safety related system or component based upon a review of Technical Specification 3/4.7-Plant Systems.

Subject: MDD # 91-V1M111

Description: The installation of a stem packing injection pathway into the stuffing box of valve 1LV-6187. This change will provide a connection point for a stem packing injection to the valve on-line: or when the valve is repacked conventionally, a threaded plug to seal the valve stuffing box.

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Safety Evaluation: The facility is not changed as described or implied in the FSAR. Reference a review of section 10.3-Main Steam Supply System and 10.4.1-Main Condensers. Valve will continue to serve its design function.

Change does not effect any procedures described or implied in the FSAR. Change does not effect the operation of the valve or its purpose to provide water induction protection of the Main Steam Dump Spargers and condensers/turbine.

Change does not effect any safety related component or system based upon a review of Technical Specifications 3/4.7-Plant Systems.

Subject: MDD # 91-V1M112

Description: The installation of a stem packing injection pathway into the stuffing box of valve 1-HV-6203. This change approves the drilling of an injection pathway into the stuffing box and installation of an injection valve or plug as appropriate.

Safety Evaluation: This activity does not impact the function of 1HV-6203 nor is the valve specifically described in FSAR. For these reasons, this activity does not require a revision to FSAR. Sections 10.2, "Turbine Generator", and 10.3, "Main Steam Supply System", reviewed.

This activity does not impact procedures described or referenced in FSAR.

This activity does not involve or impact any safety related components. This design change does not require a revision to Technical Specifications or the Environmental Plan.

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Subject: T-ENG-91-01

Description: This procedure tests the manual and automatic control features of make-up well water system and the design change made to that system under DCP #90-VCN0070.

Safety Evaluation: This test does not involve any safety related system or equipment. The changes in the DCP allow the plant make-up well water system to run according to the design intent. Changes to FSAR are required, but there is no unreviewed safety question. Changes to Technical Specifications are not involved.

Subject: T-ENG-91-02

Description: This procedure allows for flow and pressure measurement for portions of the ACCW System. The data will be used to evaluate possible setpoint change for valve 2HV-2041.

Safety Evaluation: This procedure operates the ACCW System within design limits. The valve 2HV-2041 is blocked open, which is covered by Technical Specification 3.7.12 LCO. Failure of thermal barrier and small break LOCA are analyzed in FSAR section 9.2.8 and 15.6. Margin of safety as defined in bases of Technical Specification 3.7.12 will not be reduced. Safety related system or components are not impacted by this test.

Subject: T-ENG-91-05

Description: This procedure describes the method for flushing the liquid radwaste microfiltration system installed per DCP 90-VAN0108.

Safety Evaluation: The Liquid Waste Gas System (1901) is non safety related. Its failure does not impact any safety related systems or equipment. There is no need to change the Technical Specification since this is an enhancement over the existing system. Affected portions of FSAR have been reviewed and changes submitted.

II
1991 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

Subject: T-ENG-91-06

Description: This procedure functionally tests the liquid radwaste microfiltration system functions per requirements of DCP 90-V1N0108.

Safety Evaluation: The Liquid Waste Gas System (1901) is non safety related. Its failure does not impact any safety related systems or equipment. There is no need to change the Technical Specification since this is an enhancement over the existing system. Affected portions of FSAR have been reviewed and changes submitted.

Subject: T-ENG-91-07

Description: C.V.I. Block Switch Function Test, Unit 1. The procedure provices for the functional testing per DCP 90-V1N0063.

Safety Evaluation: No change to the Technical Specification is required. However, changes to FSAR are required to show the blocking switches. Procedures in FSAR are not affected but plant annunciator response procedure require change. The design change does not affect the function of equipment or systems assumed to be functional in accident analysis in FSAR.

Subject: T-ENG-91-08

Description: Functional test of isolation first out annunciator ALB09. Per DCP 89-V1N0094.

Safety Evaluation: The procedure tests proper operation of annunciator system. It does not affect the FSAR therefore no changes are required. There are no changes to procedures in FSAR or the plant procedures. The Technical Specifications were reviewed and no changes are required. Annunciator system is isolated electrically and does not affect safety related systems.

II
1991 ANNUAL REPORT - PART 2
10 CFR50.59(b) REPORT

Subject: T-ENG-91-09

Description: The proposed procedure tests the Proteus Hardware and Software modification made to Unit 1 and Unit 2 systems under MDD 90-V1M131 and 90-V2M132. The procedure performs system diagnostics for new hardware and performs software tests to prove operability as required by FSAR and Technical Specification.

Safety Evaluation: The modification does not require change to FSAR or Technical Specifications. The system function complies with requirements of both the FSAR and Technical Specification.

Subject: T-ENG-91-011

Description: Functional test of DCP 89-V2N0305. The test consists of verification that the simulated signal for CVI is blocked by the switches.

Safety Evaluation: No change to the Technical Specification is required; however, changes to FSAR to show the blocking switches are needed. No procedures in FSAR require a change but plant annunciator response procedure will require a change. The design change does not affect the function of equipment or component assumed to be functional in accident analysis in FSAR.

Subject: T-ENG-91-012

Description: This test is conducted to collect electrical data on certain equipment during the ESFAS test. Non-intrusive test equipment is used to record data for Train A.

Safety Evaluation: Use of non-intrusive test equipment during the performance of ESFAS procedure will have no impact on either the ESFAS procedure or the plant. This procedure does not alter the intent of ESFAS procedure. This test is not described in FSAR therefore considered a special test. Review of Technical Specification reveals no impact from the non-intrusive installation of equipment.

Performance of this test does not create malfunction or failure not already evaluated in FSAR.

Subject: T-ENG-91-013

Description: This test is conducted to collect electrical data on certain equipment during the ESFAS test. Non-intrusive test equipment is used to record data for Train B.

Safety Evaluation: Use of non-intrusive test equipment during the performance of ESFAS procedure will have no impact on either the ESFAS procedure or the plant. This procedure does not alter the intent of ESFAS procedure. This test is not described in FSAR therefore considered a special test. Review of Technical Specification reveals no impact from this non-intrusive installation of test equipment. Performance of this test does not create malfunction or failure already not evaluated in FSAR.

T-OPER-91-004

This procedure was intended to identify and stop RCS pressure boundary leakage from pressurizing the Safety Injection header through SI cold leg second isolation check valves. This involves running both SI pumps individually on miniflow and running one SI pump to initiate flow through each SI cold leg isolation check valve to the SI test header back to the RWST. The leak will be stopped by attempting to reseat the check valves.

1. The test does not affect FSAR analysis and does not create an accident not previously evaluated. If an SI actuation occurred during the test, the SI test header valves would automatically isolate containment and the additional flow path back to the RWST. In addition, the SI system remains capable of delivering borated water to the RCS throughout the test. Therefore, this test does not decrease the margin of safety defined by Technical Specifications.

T-OPER-91-006

This procedure performs the required ECCS flow balance test as specified by Technical Specifications 4.5.2g and 4.5.2h. In addition, Centrifugal Charging Pump operating characteristics were observed between 470 gpm and 575 gpm, and the suction boost provided to the Centrifugal Charging Pumps during recirculation mode will be determined. The later two portions of the test are separate from the ECCS flow balance sections of this test and were recommended by Westinghouse.

1. This test does not deviate or create an accident or malfunction different from FSAR analysis. During the test, shutdown cooling was maintained by the RHR train not being tested. In addition, adequate procedural steps were included to insure action is taken if CCP abnormal operating characteristics are observed. Also, steps were included to prevent overpressurization of the ECCS ring header during the suction boost section.

2. Technical Specification 4.5.2g and 4.5.2h were met as required and therefore do not deviate from the margin of safety. The CCP and suction boost portions of the test are performed when in mode 6, with the Reactor head off, when ECCS systems are not required for ECCS injection mode. With these criteria met and one boration flowpath available, the limitations of Technical Specifications are satisfied.

III

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

EMERGENCY CORE COOLING SYSTEMS OUTAGE DATA REPORT

III

VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 & 2

1991 ANNUAL REPORT - PART 2

EMERGENCY CORE COOLING SYSTEM

OUTAGE DATA REPORT

This report contains:

a) outage dates and duration of outage
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 159 hours and 46 minutes in 1991.

1. a) 1-20-91 11 minutes
   b) & c) Train A RHR pump was placed in pull-to-lock for performance of surveillance 14825-1.
   d) Surveillance performed and system restored to service.

2. a) 1-29-91 1 hour and 20 minutes
   b) & c) Train A RHR pump was removed from service for performance of surveillance 14805-1.
   d) Surveillance performed and system restored to service.

3. a) 1-29-91 2 hours and 50 minutes
   b) & c) Train B RHR pump was removed from service for performance of surveillance 14805-1.
   d) Surveillance performed and system restored to service.

4. a) 1-29-91 40 hours and 56 minutes
   b) & c) Train B CCP system removed from service for scheduled maintenance.
   d) Maintenance completed, surveillances performed and system restored to service.

5. a) 3-1-91 10 minutes
   b) & c) Train B RHR pump was placed in pull-to-lock for performance of surveillance 14825-1.
   d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 1 (CONTINUED)

6. a) 3-5-91 8 hours and 40 minutes
b) & c) Train B RHR system removed from service for preventative maintenance on bypass valve 1-FV-619B.
d) Maintenance completed, surveillances performed and system restored to service.

7. a) 3-12-91 35 hours and 41 minutes
b) & c) Train A CCP system removed from service for preventative maintenance and MOVATs.
d) Maintenance completed, surveillances performed and system restored to service.

8. a) 3-21-91 28 minutes
b) & c) Valve 1-HV-8485A closed for surveillance 14608-1 rendering train A CCP inoperable.
d) Surveillance performed and system restored to service.

9. a) 3-21-91 47 minutes
b) & c) Valve 1-HV-8485A closed for surveillance 14608-1 rendering train A CCP inoperable.
d) Surveillance performed and system restored to service.

10. a) 3-22-91 7 hours 51 minutes
b) & c) Train A RHR system removed from service for Channel calibration and AOV checkout for RHR Heat Exchanger outlet valve HV-606.
d) Surveillances performed and system restored to service.

11. a) 4-2-91 35 hours and 11 minutes
b) & c) Train B SI pump removed from service for scheduled maintenance.
d) Maintenance completed, surveillances performed and system restored to service.

12. a) 4-7-91 8 minutes
b) & c) Train A RHR pump was placed in pull-to-lock for valve stroking of heat exchanger inlet valve.
d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 1 (CONTINUED)

13. a) 4-14-91 9 minutes
b) & c) Train A RHR pump was placed in pull-to-lock for performance of surveillance 14825-1.
d) Surveillance performed and system restored to service.

14. a) 5-1-91 5 hours and 46 minutes
b) & c) Train B RHR pump was removed from service for preventative maintenance, loop calibration, on heat exchanger outlet HV-607 procedure 24369-1.
d) Maintenance completed surveillance performed and system restored to service.

15. a) 5-24-91 8 minutes
b) & c) Train B RHR system was removed from service for performance of surveillance 14825-1.
d) Surveillance performed and system restored to service.

16. a) 6-4-91 1 hour and 33 minutes
b) & c) Train A CCP for performance of surveillance 14808-1.
d) Surveillance performed and system restored to service.

17. a) 6-5-91 5 hours and 8 minutes
b) & c) Train A SI, CCP and RHR systems removed from service for maintenance on the A Train NSCW system.
d) Maintenance completed and system restored to service.

18. a) 6-13-91 2 minutes
b) & c) Train A CCP pump discharge closed for functional test of alarm circuit.
d) Functional test performed and system restored to service.

19. a) 6-13-91 1 hour and 41 minutes
b) & c) Train A CCP for performance of surveillance 14608-1.
d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 1 (CONTINUED)

20. a) 6-28-91 18 minutes
b) & c) Train A SI pump was placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

21. a) 7-7-91 18 minutes
b) & c) Train A RHR pump was placed in pull-to-lock for performance of surveillance 14825-1.
d) Surveillance performed and system restored to service.

22. a) 8-2-91 7 minutes
b) & c) Train A SI pump was placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

23. a) 8-3-91 2 minutes
b) & c) Train B CCP system was removed from service due to closing 1-HV-8438 for performance of surveillance 14825-1.
d) Surveillance performed and system restored to service.

24. a) 8-8-91 9 minutes
b) & c) Train A SI pump was placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

25. a) 8-15-91 9 minutes
b) & c) Train A SI pump was placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

26. a) 8-16-91 37 minutes
b) & c) Train B CCP system was removed from service due to closing pump discharge valve 1-HV-8485 for performance of surveillance 14609-1.
d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 1 (CONTINUED)

27. a) 8-22-91 3 minutes
b) & c) Train A SI pump was placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

28. a) 8-27-91 23 minutes
b) & c) Train A CCP pump was removed from service due to closing discharge valve 1-HV-8485A for performance of surveillance 14808-1.
d) Surveillance performed and system restored to service.

29. a) 9-6-91 19 minutes
b) & c) Train A CCP pump was removed from service due to closing discharge valve 1-HV-8485A for performance of surveillance 14608-1.
d) Surveillance performed and system restored to service.

30. a) 11-16-91 38 minutes
b) & c) Train A SI rendered inoperable due to closing 1-HV-8821A while filling accumulators.
d) System restored to service.

31. a) 11-29-91 42 minutes
b) & c) Train B CCP pump was removed from service due to closing discharge valve 1-HV-8485B for performance of surveillance 14609-1.
d) Surveillance performed and system restored to service.

32. a) 11-30-91 45 minutes
b) & c) Train B SI pump was placed in pull-to-lock for performance of surveillance 14619-1.
d) Surveillance performed and system restored to service.

33. a) 12-1-91 2 hours and 19 minutes
b) & c) Train A CCP pump was removed from service due to closing discharge valve 1-HV-8485A for performance of surveillance 14808-1.
d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART 2
ECCS OUTAGE DATA REPORT

UNIT 1 (CONTINUED)

34. a) 12-1-91 2 hours and 19 minutes
b) & c) Train A CCP pump was removed from service due to closing discharge valve 1-HV-8485A for performance of surveillance 14808-1.
d) Surveillance performed and system restored to service.

35. a) 12-22-91 10 minutes
b) & c) Train A RHR system was removed from service for surveillance 14825-1.
d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART2
ECCS OUTAGE DATA REPORT

- UNIT 2 -

Unit 2 Emergency Core Cooling System components were out of service a total of 147 hours and 57 minutes in 1991.

1. a) 1-1-91 5 hours and 1 minute
   b) & c) Train B SI, CCP and RHR systems removed from service for maintenance on the B Train NSCW system .
   d) Maintenance completed and system restored to service.

2. a) 1-4-91 1 hours and 16 minutes
   b) & c) Train B RHR system removed from service for preventative maintenance on train B RHR miniflow valve.
   d) Maintenance completed, surveillances performed and system restored to service.

3. a) 1-20-91 13 minutes
   b) & c) Valve stroking for surveillance 14825-2 rendered train A RHR inoperable.
   d) Surveillance completed and system restored to service.

4. a) 2-1-91 41 minutes
   b) & c) Train A RHR system was removed from service for surveillance 14805-2.
   d) Surveillance performed and system restored to service.

5. a) 2-1-91 29 minutes
   b) & c) Train B RHR system was removed from service for surveillance 14805-2.
   d) Surveillance performed and system restored to service.

6. a) 3-1-91 6 minutes
   b) & c) Train B RHR pump was placed in pull-to-lock for performance of surveillance 14825-2.
   d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

7. a) 3-13-91 18 minutes
b) & c) Train A CCP system was removed from service due to closing pump discharge valve 2-HV-8485A for performance of surveillance 14808-2.
d) Surveillance performed and system restored to service.

8. a) 3-19-91 65 hours and 7 minutes
b) & c) Train A CCP system removed from service for scheduled maintenance.
d) Maintenance completed, surveillances performed and system restored to service.

9. a) 3-22-91 1 hour and 28 minutes
b) & c) Train A SI rendered inoperable due to closing 2-HV-8821A while filling accumulators.
d) System restored to service.

10. a) 3-23-91 22 minutes
b) & c) Train B RHR system was rendered inoperable due to valve realignment for surveillance 14450-2.
d) Surveillance performed and system restored to service.

11. a) 3-23-91 22 minutes
b) & c) Train A RHR system was rendered inoperable due to valve realignment for surveillance 14450-2.
d) Surveillance performed and system restored to service.

12. a) 4-14-91 9 minutes
b) & c) Train A RHR pump was placed in pull-to-lock for performance of surveillance 14825-2.
d) Surveillance performed and system restored to service.

13. a) 4-23-91 3 hours and 54 minutes
b) & c) Train A RHR pump was declared inoperable due to low flow per 2-FI-618 with miniflow valve 2-FV-610 open. Miniflow was found to be isolated.
d) Proper valve alignment was restored, pump surveillances performed and the system restored to service.

III
1991 ANNUAL REPORT - PART2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

14. a) 5-12-91 51 minutes
b) & c) Train A SI and CCP systems removed from service for surveillance on 14825.
d) Surveillances performed and system restored to service.

15. a) 5-24-91 36 minutes
b) & c) Train B RHR system was removed from service for performance of surveillance 14825-2.
d) Surveillance performed and system restored to service.

16. a) 5-30-91 1 hour and 36 minutes
b) & c) Train B CCP system was removed from service due to closing pump discharge valve 2-HV-8485B for performance of surveillance 14808-2.
d) Surveillance performed and system restored to service.

17. a) 6-6-91 1 hour and 24 minutes
b) & c) Train A CCP pump was removed from service due to closing 2-HV-8485A for performance of surveillance 14808-2.
d) Surveillance performed and system restored to service.

18. a) 6-25-91 19 hours and 3 minutes
b) & c) Train B SI system removed from service for preventative maintenance on SI B pump motor.
d) Maintenance completed, surveillances performed and system restored to service.

19. a) 7-16-91 2 minutes
b) & c) Train B CCP pump removed from service due to discharge valve being closed to troubleshoot Group 1 monitoring light alarm circuit.
d) Maintenance completed, surveillances performed and system restored to service.

20. a) 7-17-91 5 minutes
b) & c) Train B CCP system removed from service due to discharge valve being closed to troubleshoot Group 1 monitoring light alarm circuit.
d) Maintenance completed, surveillances performed and system restored to service.

III
1991 ANNUAL REPORT - PART2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

21. a) 7-23-91 41 hours and 48 minutes
b) & c) Train B CCP system tripped on overload during 14604-2 also subsequently tagged out to perform maintenance.
d) Power restored maintenance completed, surveillances performed and system restored to service.

22. a) 8-2-91 32 minutes
b) & c) Train A SI pump placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

23. a) 8-8-91 15 minutes
b) & c) Train A SI pump placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

24. a) 8-10-91 5 hours and 40 minutes
b) & c) Train A SI, CCP and RHR systems removed from service for maintenance on the A Train NSCW system.
d) Maintenance completed and system restored to service.

25. a) 8-15-91 7 minutes
b) & c) Train A SI pump placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

26. a) 8-16-91 39 minutes
b) & c) Train B RHR pump was removed from service r performance of surveillance 14825-1.
d) Surveillance performed and system restored to service.

27. a) 8-22-91 1 hour and 11 minutes
b) & c) Train A SI pump was placed in pull-to-lock for performance of surveillance T-OPER-91-003.
d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

28. a) 9-4-91 23 minutes
b) & c) Train A CCP system removed from service due to discharge valve HV-8485B being closed for OSP 14608-2.
d) Surveillances performed and system restored to service.

29. a) 9-17-91 1 hour and 4 minutes
b) & c) Train B CCP system removed from service due to discharge valve HV-8485B being closed for OSP 14808-2.
d) Surveillances performed and system restored to service.

30. a) 9-29-91 5 minutes
b) & c) Train A RHR pump was placed in pull-to-lock for performance of surveillance 14825-2.
d) Surveillance performed and system restored to service.

31. a) 11-8-91 19 minutes
b) & c) Train B RHR system was rendered inoperable due to valve stroking for surveillance 14825-2.
d) Surveillance performed and system restored to service.

32. a) 12-6-91 45 minutes
b) & c) Train A RHR system was rendered inoperable due to valve realignment for surveillance 14805-2.
d) Surveillance performed and system restored to service.

33. a) 12-6-91 40 minutes
b) & c) Train B RHR system was rendered inoperable due to valve realignment for surveillance 14805-2.
d) Surveillance performed and system restored to service.

34. a) 12-22-91 1 hour and 2 minutes
b) & c) Train A RHR pump was placed in pull-to-lock for performance of surveillance 14825-2.
d) Surveillance performed and system restored to service.

III
1991 ANNUAL REPORT - PART2
ECCS OUTAGE DATA REPORT

UNIT 2 (CONTINUED)

35. a) 10-22-91 1 hour and 2 minutes
b) & c) Train A RHR pump was removed from service due to heat exchanger outlet isolation valve preventative maintenance.
d) Maintenance performed and system restored to service.

36. a) 12-31-91 1 hour and 22 minutes
b) & c) Train B RHR pump was removed from service due to realigning valve 2-HV-8716A for surveillance 14805-2.
d) Surveillance performed and system restored to service.

IV

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

ANNUAL RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT
CALENDAR YEAR 1991

VOGTLE ELECTRIC GENERATING PLANT
RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT

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ACRONYMS

CL	Confidence Level
EL	Environmental Laboratory (Georgia Power Company)
EPA	Environmental Protection Agency
GPC	Georgia Power Company
HNP	Edwin I. Hatch Nuclear Plant
LLD	Lower Limit of Detection
MDA	Minimum Detectable Activity
MDD	Minimum Detectable Difference
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
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications

VOGTLE ELECTRIC GENERATING PLANT
RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT

1.0 INTRODUCTION

This is the fifth 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) 1991. Hence all dates in this report are for 1991 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 91, 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	Continuous sampler operation with sample collection weekly, or more frequently if required by dust loading	Radioiodine Cannister: I-131 analysis weekly
	Five locations close to the site boundary in different sectors;		Particulate Sampler: Gross beta analysis (1) following filter change and gamma isotopic analysis(2) of composite (by location) quarterly
	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.		

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 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
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	0	Savannah River Site (SRS) River Road	N	5.5	D
18	0	SRS D Area	NNE	5.1	D
19	0	SRS Road A.13	NE	4.7	D
20	0	SRS Road A.13.1	ENE	4.8	D
21	0	SRS Road A.17	E	5.8	D
22	0	River Bank Downstream of Buxton Landing	ESE	5.2	D
23	0	River Road	SE	4.6	D
24	0	Chance Road	SSE	4.9	D
25	0	Chance Road near Highway 23	S	5.2	D
26	0	Highway 23 Mile 15.5	SSW	4.6	D
27	0	Highway 23, Mile 17	SW	4.8	D
28	0	Claybon Road	WSW	5.0	D
29	0	Claxton-Lively Road	W	5.0	D
30	0	Nathaniel Howard Road	WNW	5.0	D
31	0	River Road at Allen's Church Fork	NW	5.0	D
32	0	River Bank	NNW	4.8	D
33	0	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)

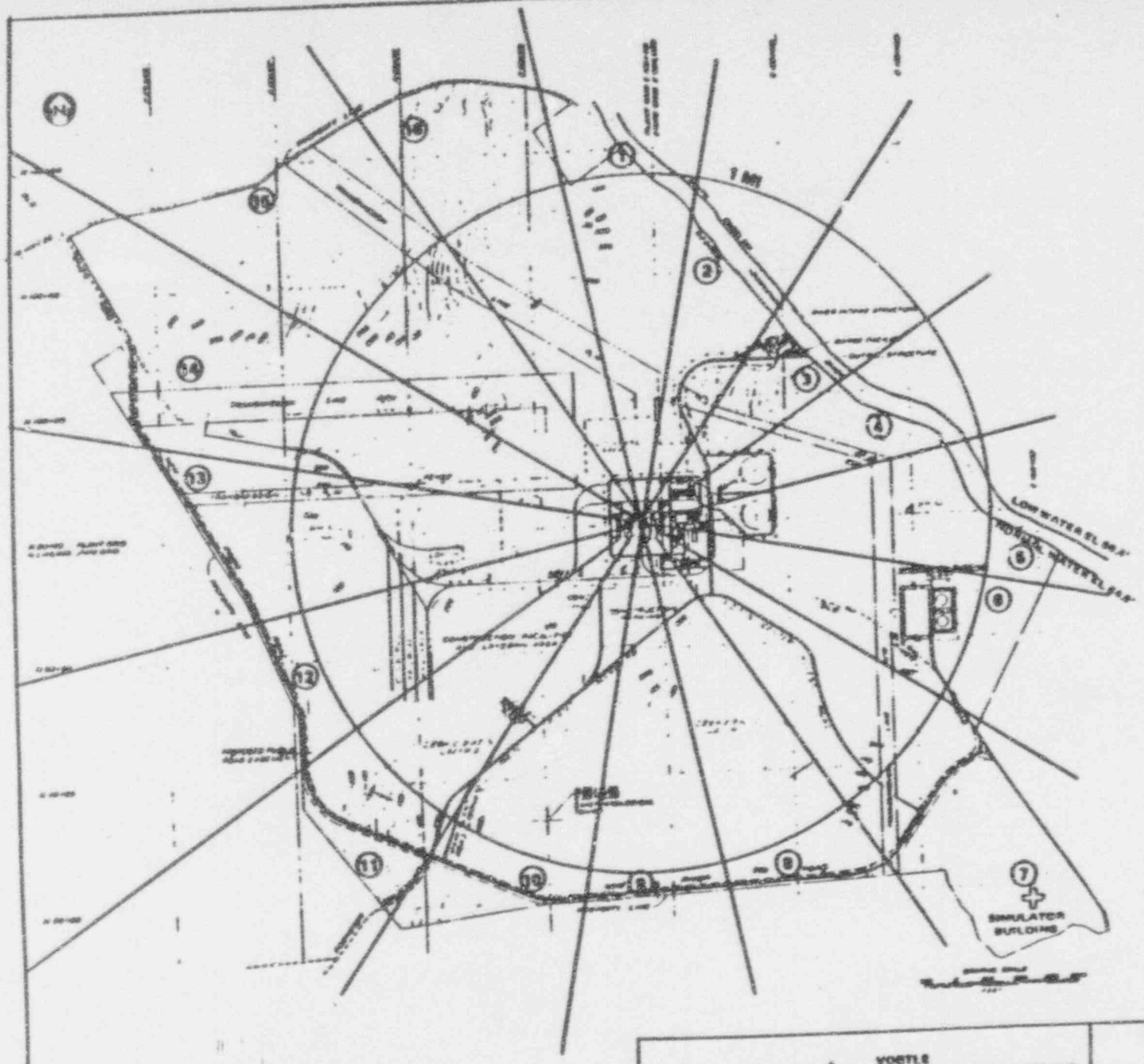
(4) The intake for the Augusta Water Treatment Plant is located on the Augusta Canal. The entrance to this canal is at River Mi (RM) 207 on the Savannah River. The canal effectively parallels the river. The intake to the pumping station is 3.6 miles down the canal and only a tenth of a mile across a 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.

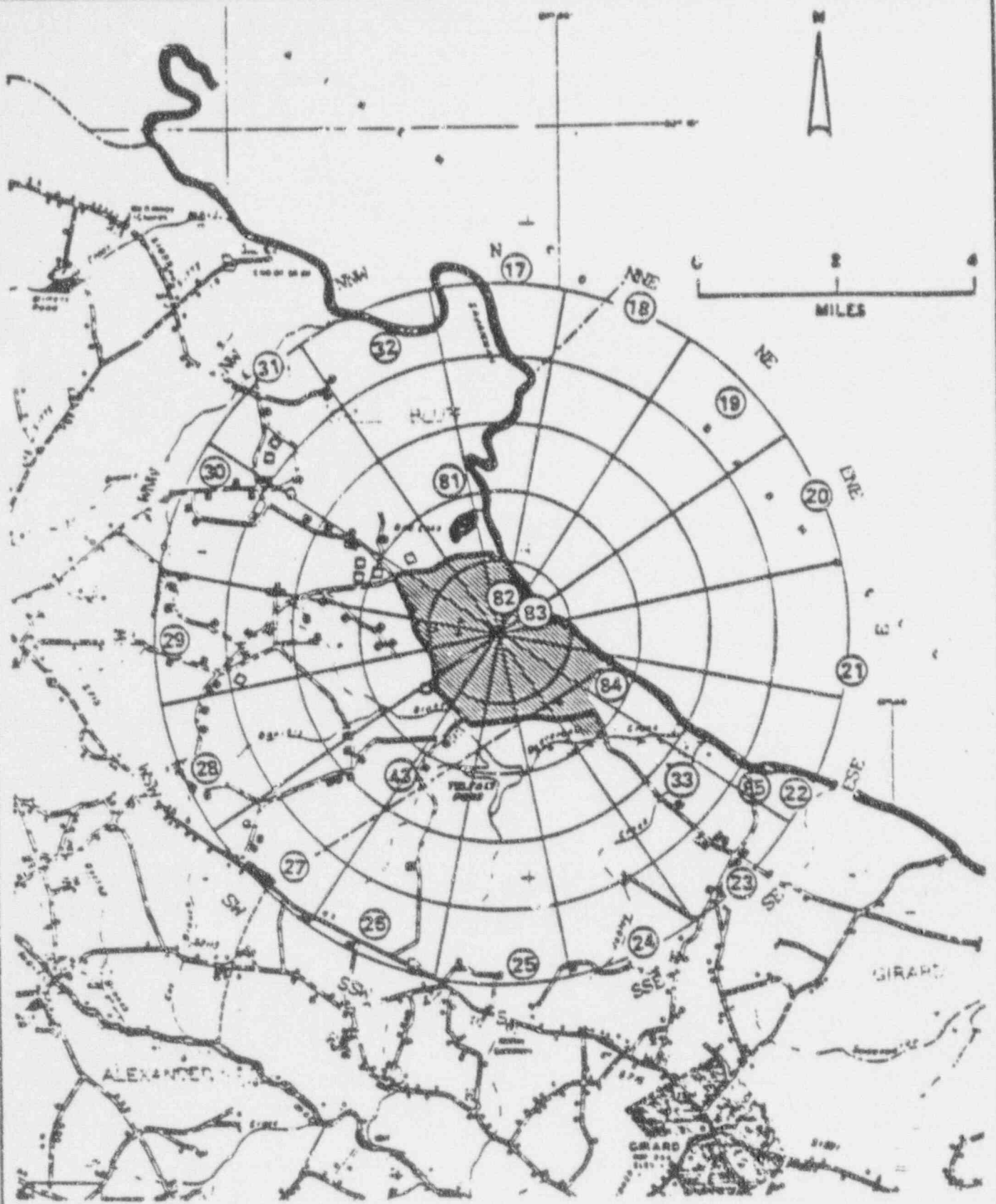


Georgia Power

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

TERRESTRIAL STATIONS NEAR SITE BOUNDARY

FIGURE 2-1



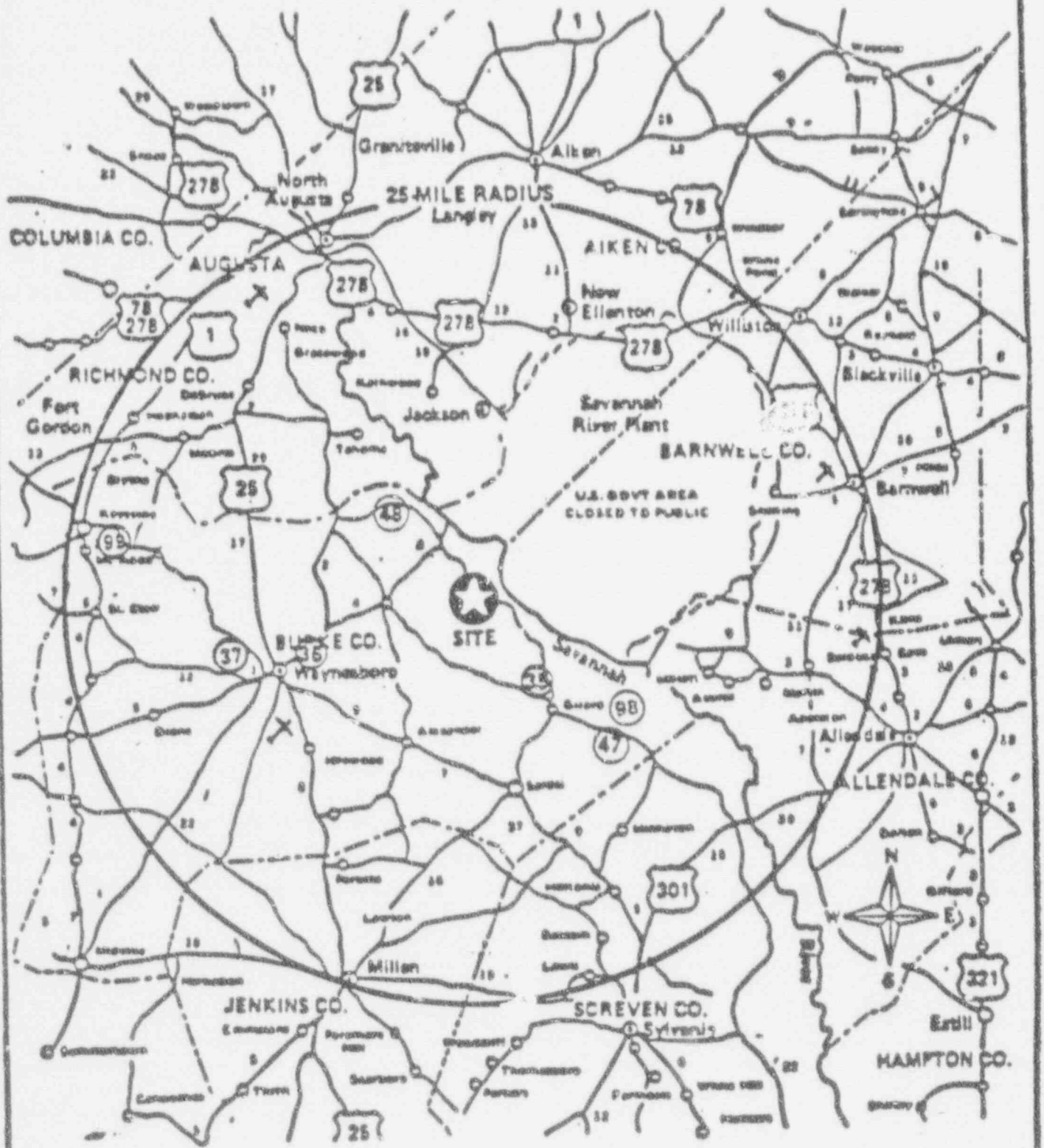
Georgia Power

VOGTLE
ELECTRIC GENERATING PLANT
UNIT 1 AND UNIT 2

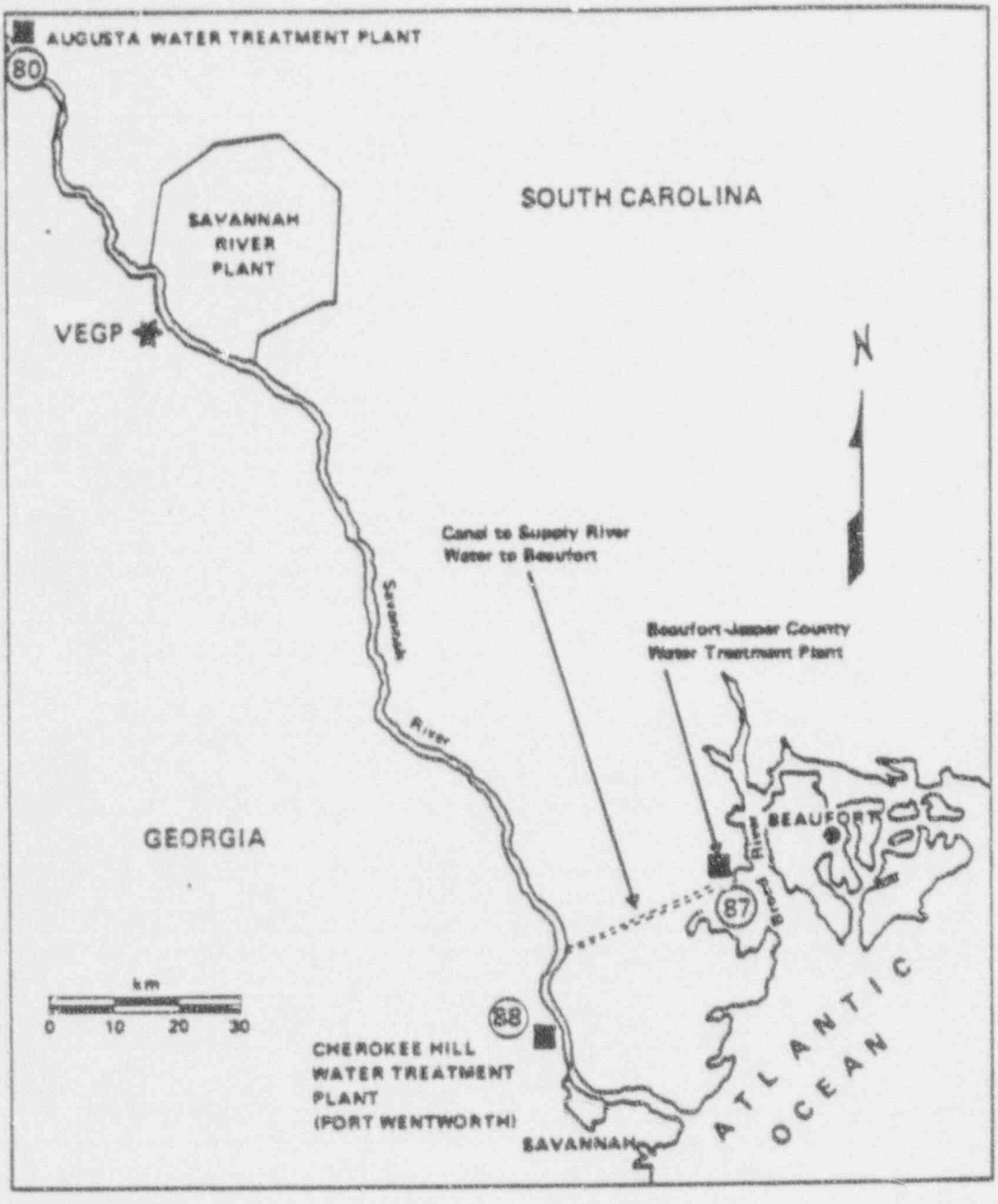
TERRESTRIAL STATIONS BEYOND SITE BOUNDARY OUT TO APPROXIMATELY SIX MILES AND AQUATIC STATIONS

FIGURE 2-2

425-0



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 and 50-425
Burke County, Georgia, Calendar Year 1991

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 Reportable Occurrences
Airborne Particulates (fCi/m^3)	Gross Beta 310	10	19.3 5-47 (258/258)	No. 7 Simulator 1.7 miles SE	19.8 10-47 (51/51)	19.2 8-46 (52/52)	0
	Gamma Isotopic 28						
	Cs-134	50	NDM (c)		NDM	NDM	0
	Cs-137	60	NDM		NDM	NDM	0
Airborne Radioiodine (fCi/m^3)	I-131 310	70	NDM		NDM	NDM	0
Direct Radiation (mR/91 days)	Gamma Dose 80	NA (d)	16.9 13-26 (64/64)	No. 3 River Bank 0.7 miles NE	22.0 18-26 (4/4)	17.1 11-23 (16/16)	0

TABLE 3-1 (SHEET 2 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia, Calendar Year 1991

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
Milk (pCi/l)	Gamma Isotopic 54						
	Cs-134	15	NA		NDM	NDM	0
	Cs-137	18	NA	No. 98 Dixons 9.8 miles SE	14.1 14-14 (1/27)	14.3 14-14 (1/54)	0
	Ba-140	60	NA		NDM	NDM	0
	La-140	15	NA		NDM	NDM	0
	I-131 54	1	NA		NDM	NDM	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 and 50-425
Burke County, Georgia, Calendar Year 1991

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-137	80	35.3 18-58 (5/24)	No. 37 Substation 17.5 miles WSW	62.4 62-62 (1/12)	62.4 62-62 (1/12)	0
River Water (pCi/l)	Gamma Isotopic 24						
	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 and 50-425
Burke County, Georgia, Calendar Year 1991

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	1300 880-1540 (4/4)	No. 83 Downriver 0.4 miles	1300 880-1540 (4/4)	828 530-1200 (4/4)	0
Water Near Intakes to Water Treatment Plants (pCi/l)	Gross Beta 36	4	2.83 1.3-4.8 (21/24)	No. 87 Beaufort Downriver 112 miles	3.18 1.8-4.8 (11/12)	3.08 1.1-10.0 (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 and 50-425
Burke County, Georgia, Calendar Year 1991

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
	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	1630 910-3200 (8/8)	No. 88 Port Went Downriver 122 miles	2040 1600-3200 (4/4)	165 150-180 (2/4)	0

TABLE 3-1 (SHEET 6 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia, Calendar Year 1991

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	1.9 1.1-3.1 (24/24)	No. 88 Port Went Downriver 122 miles	2.04 1.1-3.1 (12/12)	1.53 0.9-2.5 (12/12)	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 and 50-425
Burke County, Georgia, Calendar Year 1991

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	1470 670-3900 (8/8)	No. 88 Port Went Downriver 22 miles	1700 670-3900 (4/4)	225 180-290 (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 and 50-425
Burke County, Georgia, Calendar Year 1991

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	12 12-12 (1/1)	No. 81 Upriver 4.7 miles	12 12-12 (1/1)	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
	Cs-134	130	NDM		NDM	NDM	0
	Cs-137	150	105 27-330 (5/5)	No. 81 Upriver 4.7 miles	211 26-890 (6/6)	211 26-890 (6/6)	0 0

TABLE 3-1 (SHEET 9 OF 10)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia, Calendar Year 1991

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
Sediment (pCi/kg dry)	Gamma Isotopic 4						
	Be-7	300 (e)	826 740-910 (2/2)	No. 83 Downriver 0.6 miles	826 740-910 (2/2)	427 400-450 (2/2)	0
	Co-60	40 (e)	113 113-113 (1/2)	No. 83 Downriver 0.6 miles	113 113-113 (1/2)	NDM	0
	Cs-134	150	NDM		NDM	NDM	0
	Cs-137	180	246 200-290 (2/2)	No. 83 Downriver 0.6 miles	246 200-290 (2/2)	100 82-120 (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 1991

TABLE NOTATIONS

a. The LLD is derined 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 reference made in this section to the results of a previous period will be the 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. Near the end of the fourth quarter of CY 91, approximately 7,500 curies of tritium were released from SRS to the Savannah River. (This release is discussed fully in the report "Release of 7,500 Curies of Tritium to the Savannah River from the Savannah River Site," Prepared by Georgia Department of Natural Resources, Environmental Protection Division, Environmental Radiation Program, January 1992.) Tritium was detected in drinking water at downstream stations (Nos. 87 and 88). However, the tritium concentrations in drinking water are determined from quarterly composited samples. Therefore, the effect on the annual average of tritium in drinking water was minimal (see Section 4.6). 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 15. 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.

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 in CY 90 and continued in CY 91. 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, Principles 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	ANIMAL	RESIDENCE	GARDEN
N	*	1.6	*
NNE	*	*	*
NE	*	*	*
ENE	*	*	*
E	*	*	*
ESE	*	*	*
SE	*	4.3	*
SSE	*	4.0	*
S	*	4.4	*
SSW	*	4.7	*
SW	*	3.0	4.9
WSW	*	1.2	3.1
W	*	3.7	*
WNW	*	2.6	*
NW	*	1.6	*
NNW	*	*	*

* 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.

Two of the air particulate and two of the airborne radioiodine samples were deemed to be unacceptable. In CY 90, three of the air particulate and two of the airborne radioiodine samples were found to be unacceptable.

The samples collected on August 13, at Station 3 were excluded due to low volume as a consequence of air pump failure due to lightening striking a transformer. Both samples failed Chauvenet's Criterion. When collecting the samples at Station 7 on December 3, it was discovered that a fuse had blown, thus stopping pump operation after 29.3 hours, as shown by the system clock. Both samples failed Chauvenet's Criterion and were excluded from the results.

As seen in Table 3-1, the average weekly gross beta activity during the year for the indicator stations was 0.1 fCi/m^3 greater than that for the control station. However, there is no discernible difference between these stations since the difference is less than the calculated MDD of 2.6 fCi/m^3.

The average weekly gross beta activity in units of fCi/m^3 for the indicator, community and control stations during CY 91 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 91	19.3	19.2	18.6
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 91 are seen to be about one percent less than that for CY 90, 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, CY 89, and CY 90, no positive results for manmade radionuclides were found during CY 91 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 for Cs-134 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 is about 30 percent of this value. The RL for I-131 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) is over 10 miles from the plant. 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. During the first quarter, it was learned that the badges at Stations 23 and 31 had been stolen. Replacements were installed and then the replacement badge at Station 23 was stolen. Last year two badges were lost in the field, one of which was burned in a brush fire.

As may be seen from Table 3-1, the average quarterly dose of 16.9 mR acquired at the indicator stations was 0.2 mR less than that acquired at the control stations; this difference was not discernible since it was less than the calculated MDD of 1.9 mR. The quarterly doses acquired at the outer ring stations ranged from 13.1 to 28.0 mR with an average of 16.7 mR which is 0.2 mR less than that found for the inner ring. This difference is not discernible since it is less than the calculated MDD of 1.0 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 TLD stations), and the range of annual averages obtained during the calendar years of preoperation.

Period	Indicator	Control	Outer Ring
CY 91	16.9	17.1	16.7
CY 90	16.9	16.6	16.3
CY 89	17.9	18.4	17.2
CY 88	16.0	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 91 were roughly within 3 percent of those found during previous years of operation and approximately 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 91	17.3	19.6	17.0
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.

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 91 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 91	14.1	14.1	14.1	0.018
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 the same as that during preoperation, the average level was only about 60 percent of that during preoperation. The level of the one positive result found (at Dixon Dairy) in CY 91 is seen to be about 80 percent of the average level found during preoperation. No trend is recognized from these results. The LLD and RL for Cs-137 in milk, as reeequired 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.

During previous years of operation, I-131 was detected in two milk samples, both in CY 90. (See Plant Vogtle Annual Radiological Environmental Surveillance Report for CY 90 for a discussion of the circumstances associated with these results.) 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 percent 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 27.1 pCi/kg wet greater than that at the indicator stations. A standard MDD calculation to compare results from the indicator stations with those from the control station was not possible due to the fact that only one positive observation was made at the control location. A modified t-test was performed that compared a single observation with the mean of a sample. The conclusion was that there is no statistical difference at the 99 percent CL between the indicator and control stations. For CY 90, Cs-137 levels were also higher at the control stations than at the indicator stations, with the difference being indiscernible.

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	Fraction
CY 91	35.3	0.208	62.4	0.083
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 91.

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 1300 pCi/l found at the indicator station was 472 pCi/l greater than that at the control station; this difference is not discernible since it is less than the calculated MDD of 626 pCi/l. There was a discernible difference in the tritium levels between these two stations in CY 88 and CY 89. At the special station (No. 84), the result ranged from 620 to 1700 pCi/l with an average of 1081 pCi/l. The required 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 91	CY 90	CY 89	CY 88	CY 87
Control Station	828	392	538	427	524
Indicator Station	1300	1142	1293	843	680
Special Station	1298	1081	1268	1430	1411
$L_i - L_c$	472	750	755	416	156
MDD	626	766	518	271	416
Releases	1094	1172	916	390	321

These data show a generally upward trend for plant releases through CY 90, with CY 91 results decreasing to approximately 60 percent of CY 90 levels. 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 472 pCi/l was conservatively calculated to be 0.049 mrem or 1.6 percent of the TS limit.

The tritium release from SRS in December, which was mentioned in Section 4.0, entered the Savannah River downstream of the indicator station for river water (No. 83). Therefore, that release had no affect on the river water samples. (See Section 4.6 for a discussion of the effect of that release on drinking water taken from the Savannah River.)

On September 24 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 in CY 91 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 0.25 pCi/l greater for the control station than for the indicator stations. However, this difference is not discernible since it is less than the calculated MDD of 2.47 pCi/l. For finished drinking water, the average gross beta activity was 0.37 pCi/l greater for the indicator stations than for the control station. This difference is not discernible since it is less than the calculated MDD of 0.47 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 91	2.83	3.08	-0.25
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 91	1.90	1.53	0.37
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 in CY 87 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 27 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 discernible difference between the average gross beta 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 91	1630	165	1465	1537
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 91	1470	225	1245	1082
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, with the exception of finished drinking water for CY 90, there was always a detectable difference between tritium concentrations at the indicator and control stations. (A detectable difference exists when the absolute value of $(L_i - L_c)$ exceeds the MDD.) The tabulations also show a decided decrease in the tritium levels at the indicator station during CY 90 and CY 91. During preoperation the result were similar to those for CY 87 through CY 89.

As stated in Section 4.0, in late December a liquid release occurred at SRS in which 7,500 Ci of tritium were released to the Savannah River. The actual release occurred between December 22 and December 25. The release entered the Savannah River via Steel Creek. Due to the approximately 100 river miles distance between the point at which Steel Creek enters the Savannah River and the intake points for the water treatment plants (Stations 87 and 88), the plume containing the released tritium did not reach the intakes for the water treatment plants until about December 29. (See the report referenced in Section 4.0.) The early notification of water treatment plant operators by SRS, and the few days delay between the time the release occurred and the time the plume reached the water treatment plant intakes, allowed the water treatment plant operators and governmental officials to take action to counter the potential impact on drinking water supplies. These circumstances

coupled with the fact that the release occurred so late in the quarter, with tritium concentrations being determined [illegible] analysis of quarterly composite samples, caused the effect on raw and [illegible] drinking water sample results (for Station Nos. 87 and 88) to be less [illegible] might be expected from a release of this magnitude. As shown in the above table, for raw drinking water, the annual tritium value for the indicator stations was not discernible from the control station. For finished drinking water, the tritium value for the indicator stations is discernible from the value for the control station, but the result is in the same range as those for previous years of operation.

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 0.13 to 0.56 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. Further, 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 25, American shad, an anadromous species, was collected at Station 81. The only radionuclide of interest detected was Cs-137 at a level of 12 pCi/kg wet. In CY 88, CY 89 and CY 90, 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 15 and October 21, the composition of the catches at the indicator and control stations were as follows:

Date	Indicator	Control
April 15	Channel Catfish Redbreast Sunfish	Channel Catfish Largemouth Bass Redear Sunfish
October 21	Largemouth Bass Channel Catfish Redbreast Sunfish	Channel Catfish Largemouth Bass Redear Sunfish

As indicated in Table 3-1, Cs-137 was the only radionuclide of interest found in the semiannual collections of commercially or recreationally important species. Since operation began, the only other radionuclide of interest detected was I-131 which was detected in CY 89 and CY 90 at levels of 18 and 13 pCi/kg wet, respectively.

As seen in Table 3-1, the average level of 105 pCi/kg wet for Cs-137 at the indicator station is 106 pCi/kg wet less than that at the control station. This difference is not discernible, however, since it is less than the calculated MDD of 198 pCi/kg wet. Since operations began, positive values for Cs-137 have been found in all but one of the 47 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.

Peri	Indicator	Control
CY 91	105	211
CY 90	103	249
CY 89	117	125
CY 88	66	116
CY 87	337	119

No trend is recognized in this data.

4.6 Sediment

Sediment was collected along the shoreline of the Savannah River on April 1 and September 30 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 and Station 83 is an indicator station located about 0.6 miles downriver of the L-Area discharge structure at RM 150.2. The indicator samples for April and September were collected at RM 150.2 while the control samples were collected at RM 153.3. 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 91	328	1.0	427	1.0
CY 90	405	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 91	113	0.5		
CY 90	46	0.5		
CY 89	46	1.0		
CY 88	62	0.5		

Period	Indicator	Frequency	Control	Frequency
		Cs-137, LLD=180		
CY 91	246	1.0	100	1.0
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 91 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 826 pCi/kg dry for the indicator station is 399 pCi/kg dry greater than that for the control station; however, this difference is not discernible since it is less than the calculated MDD of 614 pCi/kg dry. For Cs-137, the average reading of 246 pCi/kg dry for the indicator station is 146 pCi/kg dry greater than that for the control station; this difference is not discernible, however, since it is less than the calculated MDD of 335 pCi/kg dry. There has been no discernible 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 product Co-60 is seen to be present again this year at the indicator station at about twice the level as last year and 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 in CY 88 and CY 89 was not present in CY 90 or CY 91. Since the Co-60 was only found at the indicator station, its presence is believed to be due to plant releases. Co-60 was found in sediment samples during preoperations.

The radiological impact due to the presence of Co-60 in the shoreline sediment was assessed by calculating the whole body dose due to direct radiation (from the sediment) to an individual using the methodology and parameters of NRC Regulatory Guide 1.109, Revision 1, October 1977, and comparing this dose with that permitted by Section 3.11.1.2b of the TS (3 mrem per year). The theoretical dose was conservatively determined to be 4.5 microrem per year or 0.15 percent of the TS limit. This extremely low potential dose, although calculable, poses no measurable negative environmental or public health impact. The theoretical doses due to the activation products in CY 88, CY 89, and CY 90, were found to be 3.6, 2.6, and 2.5 microrem, respectively.

5.0 INTERLABORATORY COMPARISON PROGRAM

Section 3.16.3 of the TS requires that analyses be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program approved by the 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 4.16.3 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 the 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 tritium and gamma isotopic 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 three standard deviations was established by the EPA as the control limit. An absolute value of two 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 was exceeded for the Cs-137 analysis on air filters on March 29 and August 30. The warning limit was exceeded for the Ru-106 analysis in water on February 8 and October 4. Also the warning limit was exceeded for the Co-60 analysis in water on October 4.

For Cs-137 on air filters, the investigation into the positive bias for normalized deviations led to the conclusion that this condition was the result of differences between the geometry of the calibration standard and the EPA Crosscheck sample. Geometry corrections are being developed.

For Ru-106 and Co-60 in water, the investigation led to the conclusion that the positive bias for normalized deviations probably resulted from changes in background count rate following relocation of the detectors. Computer software is being developed to evaluate background data to revise peak background correction values.

One sample, collected June 7, had a normalized range of 2.28 for Ba-133 in water. The sample analysis results were investigated, found to be correct, and no reason was found for the higher normalized range value. All other normalized range values for Ba-133 in water have been within the two standard deviations warning limit. The result was not investigated further since the result was within the three standard deviations control limit and no trend was indicated.

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	03/29/91	124.0	6.0	122.67	1.53	-0.38	0.30
	08/30/91	92.0	10.0	92.67	0.58	0.12	0.06
Cs-137	03/29/91	40.0	5.0	46.67	4.51	2.31	1.12
	08/30/91	30.0	5.0	36.33	1.15	2.19	0.24
			Milk (pCi/l)				
I-131	04/26/91	60.0	6.0	59.67	3.79	-0.10	0.69
	09/27/91	108.0	11.0	104.33	3.79	-0.58	0.38
Cs-137	04/26/91	49.0	5.0	50.67	1.53	0.58	0.35
	09/27/91	30.0	5.0	31.67	4.51	0.58	1.12
			Water (pCi/l)				
H-3	02/22/91	4418.0	442.0	4726.67	75.06	1.21	0.17
	06/21/91	12480.0	1248.0	13200.00	173.20	1.00	0.12
	10/18/91	2454.0	352.0	2713.33	64.29	1.28	0.20
Co-60	02/08/91	40.0	5.0	39.33	3.21	-0.23	0.71
	06/07/91	10.0	5.0	13.67	2.52	1.27	0.59
	10/04/91	29.0	5.0	35.00	3.46	2.08	0.71
Zn-65	02/08/91	149.0	15.0	152.33	3.21	0.38	0.24
	06/07/91	108.0	11.0	115.67	14.05	1.21	1.96
	10/04/91	73.0	7.0	78.33	6.43	1.32	1.02

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
			Water (pCi/l) (Continued)				
Ru-106	02/08/91	186.0	19.0	217.00	6.24	2.83	0.37
	06/07/91	149.0	15.0	141.00	5.20	-0.92	0.35
	10/04/91	199.0	20.0	225.33	8.02	2.28	0.47
Cs-134	02/08/91	8.0	5.0	11.00	0.00	1.04	0.00
	04/16/91	24.0	5.0	22.00	4.58	-0.69	1.12
	06/07/91	15.0	5.0	17.00	0.00	0.69	0.00
	10/04/91	10.0	5.0	11.33	1.15	0.46	0.24
Cs-137	02/08/91	8.0	5.0	9.33	0.58	0.46	0.12
	04/16/91	25.0	5.0	26.67	1.15	0.56	0.24
	06/07/91	14.0	5.0	18.67	4.62	1.62	0.95
	10/04/91	10.0	5.0	11.67	1.53	0.12	0.35
Ba-133	02/08/91	75.0	8.0	73.00	2.65	-0.43	0.37
	06/07/91	62.0	6.0	63.33	8.62	0.38	2.28
	10/04/91	98.0	10.0	98.00	2.65	0.00	0.30

6.0 CONCLUSIONS

This report confirms the licensee's conformance with Section 3/4.12 of the TS during the year. It shows that all data were carefully examined. A summary and a discussion of the results of the laboratory analyses for each type sample collected are presented. All results indicate no measurable adverse radiological impact to the environment as a result of plant discharges to the river or to the atmosphere.

V

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

ANNUAL ENVIRONMENTAL OPERATING REPORT FOR 1991
(NONRADIOLOGICAL)

VOGTLE ELECTRIC GENERATING PLANT - UNIT 1 AND UNIT 2
ANNUAL ENVIRONMENTAL OPERATING REPORT (NONRADIOLOGICAL)
1991

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 1991.

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 GA0026786; there was no additional requirement for aquatic monitoring during 1991. Two NPDES noncompliance events were reported to the State of Georgia during 1991.

2. Terrestrial Monitoring - Terrestrial monitoring is not required.

3. Maintenance of Transmission Line Corridors

a. Right-of-way re-clearing was conducted on the VEGP-Thalman 500 kV line from June 1, 1991 to August 2, 1991. Work was performed with rotary mowers equipped with low ground pressure tires. In cultural resource areas, clearing was conducted by hand utilizing chain saws and brush axes.

The herbicide Accord was used on approximately 60 acres of wetland swamps along the VEGP-Thalman 500 kV line between structures 117-118; 119-122; 125-126; 135-137; 419-422; and 424-430 between July and October 1991. The product is registered by the Environmental Protection Agency for this type of application and was applied by licensed applicators in strict compliance with the herbicide label.

The VEGP-Goshen 230 kV line between structures 0 and 79 was re-cleared between January 1 and January 3, 1991. Low ground pressure tires were utilized in the two cultural properties along this route; hand clearing along this route is not required by the Final Cultural Resource Management Plan.

The VEGP-South Carolina portion of the corridor was also re-cleared during 1991.

There was no transmission line corridor maintenance performed on the VEGP-Scherer 500 kV line in 1991.

b. There were no clearing or maintenance activities conducted within the Ebenezer Creek or Francis Plantation areas during 1991.

c. Routine maintenance activities within the designated cultural properties along transmission line corridors were conducted in accordance with the Final Cultural resources Management Plan.

4. Noise Monitoring - There were no complaints received by Georgia Power Company during 1991 regarding noise along the VEGP-related high voltage transmission lines.

B. **Comparison of the 1991 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 1991.

D. **Environmental Protection Plan (EPP) Noncompliances and Corrective Actions**

There were no EPP noncompliances during 1991.

E. **Changes in Station Design or Operation, Tests, or Experiments Made in Accordance with EPP Subsection 3.1 which involved a Potentially Significant Unreviewed Environmental Question**

There were no changes in station design or operation, tests, or experiments during 1991 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 in 1991.