UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-321/90-11 and 50-366/90-11

Licensee: Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

Docket Nos.: 50-321 and 50-366 License Nos.: DPR-57 and NPF-5

Facility Name: Hatch 1 and 2

Inspection Conducted: April 16-20, 1990

Inspectors: William F. Forster for 5/3/90
R. Wright Date Signed

R. R. Moore 5/3/90
R. Moore Date Signed

Accompanying Personnel: F. Jape (April 19-20, 1990)

Approved by: Frank Jape 5/3/90
F. Jape, Section Chief Date Signed
Quality Performance Section
Operations Branch
Division of Reactor Safety

SUMMARY

Scope:

This routine, announced inspection was conducted in the area of Actions on Previous Inspection Findings.

Results:

In the areas inspected, violations or deviations were not identified. Licensee attention to resolution of SSFI identified items has been generally good. Evaluations provided to resolve issues have been comprehensive and well documented. The remaining open items (9 of 27) require either more extensive analyses or implementation of physical modifications. The licensee has developed a schedule for completion of the remaining items. Future NRC inspections will monitor the completion progress of the items.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*L. Adams, Supervisor, Nuclear Security
J. Branum, Project Engineer, Hatch Project Support, Licensing
*S. Brunsen, Senior Plant Engineer I, Nuclear Safety and Compliance
*C. Coggin, Manager Training
*W. Drinkard, Manager Safety, Audit and Engineering Review
*P. Fornel, Manager Maintenance
*O. Fraser, Supervisor, Safety Audit and Engineering Review
*G. Goode, Manager, Engineering Support
*M. Googe, Manager, Outages and Planning
*B. Manning, Nuclear Specialist
*C. Moore, Assistant General Manager, Plant Support
*R. Musgoue, Acting Manager, Operations
*H. Nix, General Manager, Nuclear Plant
*J. Payne, Senior Plant Engineer I, Nuclear Safety and Compliance
*D. Read, Assistant General Manager, Plant Services
*L. Summer, Assistant General Manager, Plant Operations
*S. Tipps, Manager, Nuclear Safety and Compliance

Other licensee employees contacted during this inspection included, engineers and administrative personnel.

Other Organizations

T. Anderson, Manager, Electrial Design Department, Southern Company Services
M. Shah, Deputy Supervisor, Electrical Design, Bechtel

NRC Resident Inspectors

*J. Menning, Senior Resident Inspector
*L. Zerr, Reactor Engineer, Nuclear Reactor Regulation

*Attended exit interview

2. Action on Previous Inspection Findings (97702)

(Closed) Violation 50-321,366/89-30-01, Inadequate Design Controls Related to the Use of Commercial Grade Relays

The licensee response dated January 2, 1990, was considered acceptable by Region II.

The inspector examined SCS Calculation No. SCN-89-078 transmitted to GPC by letter dated February 2, 1990, (File DCR 85-007, Log DCR-0-2-0096).

This documented seismic analyses verifies SCSs original engineering judgement, "that the subject installed relays will maintain their structural integrity, during and after a design basis seismic event." The engineering evaluation demonstrated that the Agastat 7022AD and 7022AE time delay relays located in instrument panels 1H11-P612 and 1H11-P613 satisfy the Seismic II/I criteria for this application.

Telephone conversations with Bechtel's Electrical Deputy Supervisor, and cursory examination of Bechtel Engineering Calculation 87 verified that the subject circuits' 5 amp fuses coordinate properly with the 20 amp breakers. Consequently, any electrical failure of the subject relays will not adversely affect the function of safety-related equipment.

Bechtel, SCS and GPC corporate nuclear engineering and licensing personnel which support Plant Hatch have been made aware of this problem and the necessity of having a documented basis for all statements/conclusions made in safety evaluations.

The inspector concluded that the licensee has determined the full extent of the violation, taken action to correct current conditions, and developed corrective actions needed to preclude recurrence of similar problems. Corrective actions stated in the licensee response have been implemented.

This item is closed.

3. Action on Previous Inspection Findings (92701)

(Closed) IFI 50-321,366/89-08-02, Seven Day Fuel Storage Capacity.

This item addressed the discrepancy between the FSAR specified seven day diesel fuel storage requirement and the Technical Specification (TS) requirement. In the absence of Emergency Diesel Generator (EDG) loading limits the TS minimum requirement provided adequate capacity for only three EDGs for seven days rather than all five of the site EDGs.

Corrective actions were based on providing adequate fuel storage capacity for four EDGs for seven days. Design Basis required four of five EDGs operable for the design base accident. The following actions were implemented to establish and maintain the prescribed seven day diesel fuel storage:

1. Administrative controls were implemented to maintain a minimum of 175,000 gallons of fuel oil onsite, (161,280 gallons are required for seven days operation of four EDGs at 3250KW).

2. Administrative controls were implemented to limit diesel loading during accident conditions to 1300 KW, (four EDGs at 3250 KW each).

3. Technical Specification change request was submitted to require minimum onsite diesel fuel oil storage at 33,000 gallons per tank or 165,000 gallons.

The inspector reviewed the applicable procedures and TS change request to verify implementation of controls. Additionally, the tank levels were measured and verified to comply with the stated requirements. Licensee resolution of this issue was adequate, therefore this issue is closed.

(Closed) IFI 50-321,366/89-08-05a, PSW Pump Pit Design

The valve pit sump pump is capable of pumping 40 gallons per minute whereas the direct pit inflow contributed by the 100-year design rainfall referenced in the Unit 2 FSAR corresponds to only 0.55 gallons per minute.

GPC reviewed the design and inspected the adequacy of the valve pit curbing and area grading to assure local runoff would not flow into and flood the valve pit. The licensee concluded the existing grading and curbing heights were appropriate to direct the local runoff to the plants existing grated drain system.

The inspectors walked down the subject valve pit area and although not confirmed it appeared to them that the licensee has improved the pit area grading since this concern was first identified.

This item is closed.

(Open) IFI 50-321,366/89-08-08, Seismic Qualification of EDG Low Lubricating Oil Pressure Switches

SCS letter to GPC dated April 17, 1990, Pressure Switch Seismic Testing, (File REA HT-9653) states ANCO Engineers, Inc. testing for the Allen Bradley 836-C3 and the Detroit 222-10 switches is complete. Initial reports are that the test results were acceptable for all tests performed; however, SCS does not have nor have they reviewed the actual test reports to date.

This item will remain open pending the subject test report reviews for acceptablity by both the licensee and the NRC.

(Closed) IFI 50-321,366/89-08-09, Ventilation Louver Motors in Diesel Rooms

The licensee performed Calculation SCN-89-026, Revision 0, dated May 18, 1989, after the start of the SSFI which justified the seismic qualification of the Honeywell louver motor model M445-0001. Revision 1 to the subject calculation dated January 2, 1990, (pages 9 through 11) performs a seismic assessment of Honeywell louver motor model M-436A and concludes these motors are seismically qualified for their locations in the Hatch diesel generator building.

Subsequent to the SSFI, the licensee obtained from the louver vendor "Construction Specialists" copies of the vendor's seismic calculations for both Units (Calculations S70897, S43889) diesel generator building louvers Mark Nos LV-4,5,6,7 and 8.

Inspector examination of the above motor and louver calculations verified the subject equipment was seismically qualified.

This item is closed.

(Open) IFI 50-321,366/89-08-10, Electrothermal Links on Diesel Room Roll-up Doors and Fire Dampers

The inspector examined calculation SCN-89-030 documenting the seismic capability of the roll-up door and the roll-up door electrothermal fusible link. However, no such qualification documentation was available for the fire damper electrothermal fusible link per its application.

(Closed) IFI 50-321,366/89-08-11, Diesel Battery Rack Mounting

The SSFI inspection team concluded from the documentation available that the anchoring for the diesel battery racks, particularly the bolt pattern was not the same as used in the vendor seismic qualification reports.

A licensee comparison of the vendor qualification reports, vendor drawings, and as-built field conditions was performed and documented in Calculation SCN-90-006. It was demonstrated that the qualification reports, the as-built conditions and the drawings are compatible for both Unit 1 and the Unit 2 diesel generator battery racks in every detail influencing seismic integrity, including anchor bolt location. The one exception to this high correlation was that concrete expansion anchors were used to anchor the racks in both units, whereas the qualification test for Unit 1 used steel-to-steel bolting and the qualification analysis for Unit 2 assumed cast-in-place anchors. However, the as-built anchoring system using expansion anchors was evaluated by the licensee in calculation SCN-90-006 and found to be seismically adequate.

This item is closed.

(Closed) IFI 50-321,366/89-08-13, Diesel Battery Specification

In response to the subject IFI, Bechtel prepared a report (Enclosure A to letter B-GP-16239, dated February 2, 1990) which reconstructed and established the design requirements and QA documentation that were used to purchase Hatch Unit 1's, Class IE, Emergency Diesel Generator Batteries.

GPC purchase order No. G-5208 dated May 12, 1981, and Design Change Request No. 81-146 dated May 13, 1981, which was transmitted both by telephone and letter to the vendor, C&D Battery, collectively specify applicable ANSI, Federal Specification, IEEE and industrial criteria to be met by the generator batteries.

Although a specification was not formally written for the batteries, the above combined procurement requirements placed on the batteries' vendor resulted in obtaining batteries that were in conformance with industry-recognized standards.

Based on the results of this review, it appears the Unit 1 diesel generator batteries were purchased to adequate design and QA requirements. The batteries are of a quality consistent with their Class IE function, and are adequately sized to support Class IE loads.

This item is closed.

(Closed) IFI 50-321,366/89-08-14, Diesel Battery Overvoltage

Bechtel investigated this matter and based on their design review, the conclusion stated in their report entitled, "Emergency Diesel Generator Battery Overvoltage for Edwin HNP Units 1 and 2" is that all safety-related DC components associated with Class IE Emergency Diesel Generator Batteries are acceptable during normal float and equalizing operation of the batteries at elevated system voltages. The various DC components investigated, their maximum voltage ratings, and reasons for acceptance are covered in Appendix A to the Bechtel report.

This item is closed.

(Closed) IFI 50-321,366/89-08-15: Transient Load for Unit 1

This item addressed the incomplete Unit 1 transient load analysis for LOSP/LOCA. The analysis evaluated the EDG transient response to anticipated loading of Unit 1 EDGs via sequencer during LOSP/LOCA.

The Unit 1 transient analysis was completed by Colt Industries (EDG Vendor) on July 28, 1987. GPC reviewed the analysis and identified errors regarding excessively conservative initial loading values. The transient analysis was resubmitted to Colt Industries, September 6, 1989. SCS letter dated February 8, 1990, (File: REA HT-9653) stated the SCS engineering review of the Unit 1 transient analysis determined that the Unit 1 EDGs were capable of recovering from the automatic loading associated with a LOSP/LOCA event.

Based on the completion of the Unit 1 transient analysis and licensee review of the analysis for impact on Unit 1 EDG operation during the LOSP/LOCA event this item is closed.

(Closed) IFI 50-321,366/89-08-16: EDG Electrical Loading Calculations

This item addressed the EDG electrical loading calculations for Unit 1 and 2 which did not include MOV loads and incorporated incorrect values for EDG heater loads.

The applicable calculations were revised to include MOV loads and corrected EDG heater loads. Southern Company Services calculations SEN 89-009, Revision 3 (Unit 1) and SEN 89-015, Revision 3, (Unit 2) were reviewed to verify corrections. The load changes were reflected as steady state loads on the 0-10 minute load analyses as 4160/600 volt bus loads.

Based on the incorporation of the corrected load values in the applicable calculations, this item is closed.

(Closed) IFI 50-321,366/89-08-17: Diesel Fuel Oil Storage Tank Design

This item addressed a concern regarding sludge build up in the diesel fuel oil storage tank. Tank design did not provide an effective on-line method to quantify or remove the sludge which accumulates in the tanks over long periods of time. Sludge build-up could impact fuel transfer pump capacity, clog filters, and result in fuel starvation of the EDGs as occurred in November 1986.

The diesel fuel oil storage tank sampling method in use did not assure that potentially damaging sludge volume would be identified before impacting EDG operations.

The method of tank sampling was changed in September 1989. The current sampling method uses the recommended sampling technique of ASTM D270-65, Standard Method of Sampling Petroleum and Petroleum Products-1971, for indication of bottom sludge build-up. Preventive maintenance now requires semi-annual tank sampling and tank cleaning at least every ten years.

Based on the improved capability to identify sludge build-up provided by the revised sampling method and periodic tank cleaning requirement incorporated in the preventive maintenance program, this item is closed.

(Closed) IFI 50-321,366/89-08-19: Gaitronics Communications

This item addressed the control room operators' reliance on the Gaitronics public address system during a simulator accident scenario which potentially included loss of the public address system power supply. Specifically the simulator did not accurately reflect the loss of this power supply on a LOSP and the EOPs did not clearly address the potential communications loss.

The simulator has been updated to accurately reflect the loss of the Gaitronics during LOSP. Simulator Change Request 9003004 incorporating this change was completed on March 26, 1990. Review of the following procedures verified the potential communications loss was addressed in applicable operator actions:

34AB-OPS-016-25, Revision 3, Loss of Essential AC Distribution Buses.

3450-R51-001-25, Revision 1, Communications Systems Operating Procedure.

Based on the completed simulator change and verification of procedure incorporation of the potential communication loss, this item is closed.

(Closed) IFI 321,366/89-08-21: Emergency Diesel Generator 1B PSW Supply

This item addressed the potential impact on the swing diesel (EDG 1B) if an in-line orifice was not removed prior to supplying cooling water from an alternate supply when the normal dedicated standby PSW pump is lost.

The engineering evaluation performed stated that the orifice required change-out to reduce flow to the EDG 1B heat exchanger to avoid errosion and impingement damage by the higher capacity Unit 1 and 2 PSW systems. Engineering evaluated the potential for permanently installing the downsized orifice and determined this would result in potentially inadequate cooling flow when utilizing the normal swing diesel PSW supply. The evaluation concluded that the orifice replacement was necessary and operation without the orifice change provided potential damage to the 1B EDG.

Based on completion of the evaluation this item is closed.

(Open IFI 50-321,366/89-08-24: Comparison of Unit 1 and 2 Technical Specifications

This item addressed the disparity between TS required surveillances for Unit 1 and 2 EDGs. Unit 2 TS incorporated a commitment to Regulatory Guide 1.108, Periodic Testing of Diesel Generator Units used as onsite Electric Power Systems, Revision 1 which resulted in more comprehensive surveillance testing requirements for Unit 2 EDGs.

This item remains open. Although the licensee has completed comprehensive evaluations and initiated a TS change to address this disparity, the Unit 1 EDG surveillance activity has not yet included the proposed upgrades. The evaluations performed regarding this issue include a comparison of Regulatory Guide 1.108 line items to Unit 2 TS and a comparison of Unit 1 and 2 TS. Document Change Request, DCR 89-23, Revision 1 dated November 30, 1989, was submitted on January 10, 1990, to the NRC to request TS changes resulting from the above evaluations. This item remains open pending incorporation of the proposed additional Unit 1 EDGs' surveillance requirements into the surveillance program.

4. Exit Interview

The inspection scope and results were summarized on April 20, 1990, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed below. Proprietary information is not contained in this report.

5. Acronyms and Initialisms

AMP	Ampere
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
DC	Direct Current
DCR	Document Change Request
EDG	Emergency Diesel Generator
EOP	Emergency Operating Procedure
FSAR	Final Safety Analysis Report

GPC	Georgia Power Company
HNP	Hatch Nuclear Plant
IFI	Inspection Followup Item
IEEE	Institute of Electrical and Electronics Engineers
KW	Kilowatts
LOCA	Loss of Coolant Accident
LOSP	Loss of Offsite Power
MOV	Motor Operated Valve
NRC	Nuclear Regulatory Commission
PSW	Plant Service Water
QA	Quality Assurance
SCN	Southern Civil Nuclear (calculation)
SCS	Southern Company Services
SEN	Southern Electrical Nuclear (calculation)
SSFI	Safety System Functional Inspection
TS	Technical Specification