ENCLOSURE

INITIAL SALP BOARD REPORT

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

INSPECTION REPORT NUMBERS

50-424/89-26 AND 50-425/89-30

GEORGIA POWER COMPANY

VOGTLE, UNITS 1 AND 2

OCTOBER 1, 1988 - SEPTEMBER 30, 1989

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I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) program is an integrated Nuclear Regulatory Commission (NRC) staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance on the basis of this information. The program is supplemental to the normal regulatory processes used to ensure compliance with NRC rules and regulations. It is intended to be sufficiently diagnostic to provide a rational basis for the allocation of NRC resources and to provide meaningful feedback to the licensee's management regarding the NRC assessment of their facility's performance in each functional area.

An NRC SALP Board, composed of the staff members listed below, met on November 21, 1989, to review the observations and data on performance and to assess licensee performance in accordance with Chapter NRC-0516, "Systematic Assessment of Licensee Performance." The guidance and evaluation criteria are summarized in Section II of this report. The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

This report is the NRC's assessment of the licensee's safety performance at Vogtle for the period October 1, 1988, through September 30, 1989.

The SALP Board for Vogtle Units 1 and 2 was composed of the following individuals:

Board Chairman

A. F. Gibson, Director, Division of Reactor Safety (DRS), Region II (RII)

Board Members

W. E. Cline, Chief, Nuclear Materials Safety and Safeguards Branch (NMSSB), Division of Radiation Safety and Safeguards (DRSS), RII
C. W. Hehl, Deputy Director, Division of Reactor Projects (DRP), RII
A. R. Herdt, Chief, Reactor Projects Branch 3, DRP, RII
J. B. Hopkins, Project Manager, Project Directorate II-3 (PDII-3), Office of Nuclear Reactor Regulation (NRR)
D. B. Matthews, Director, PDII-3, NRR
J. F. Rogge, Senior Resident Inspector, Vogtle, Reactor Projects Section 3B (RP3B), DRP, RII

Other attendees at the SALP Board Meeting

S. S. Adamovitz, Senior Radiation Specialist, Radiological Effluents and Chemistry Section, Emergency Preparedness and Radiological Protection Branch (EPRPB), DRSS, RII
K. E. Brockman, Chief, RP3B, DRP, RII
D. M. Collins, Chief, EPRPB, DRSS, RII
L. P. Crocker, Project Manager, PDII-3, NRR
W. Gloersen, Senior Radiation Specialist, Facilities Protection Section, EPRPB, DRSS, RII
J. J. Lenahan, Reactor Inspector, Test Programs Section, Engineering Branch, DRS, RII
D. R. McGuire, Chief, Safeguards Section, NMSSB, DRSS, RII
L. R. Moore, Reactor Inspector, Quality Performance Section, Operations Branch, DRS, RII
W. H. Rankin, Chief, Emergency Preparedness Section, EPRPB, DRSS, RII
T. A. Reed, Project Manager, PDII-3, NRR
W. E. Scott, Jr., Senior Operations Engineer, NRR
R. D. Starkey, Resident Inspector, Vogtle, RP3B, DRP, RII
L. Trocine, Project Engineer, RP3B, DRP, RII

A. Licensee Activities

During this assessment period, Unit 1 conducted one refueling outage. Unit 2 completed its construction phase, loaded fuel, completed startup testing, and commenced operation. For the remainder of the period, both units were in power operation with short outages lasting approximately one week in duration. Most of these outages followed plant trips. Six unplanned reactor trips occurred on Unit 1, and four unplanned reactor trips occurred on Unit 2.

Unit 1 was on-line for a total of 285 days with a unit capacity factor of 76.82 percent during this SALP period. Unit 1 also conducted a 53-day refueling outage which began in October 1988. Since being declared commercial on May 20, 1989, Unit 2 was on-line for 131 days with a unit capacity factor of 96.7 percent. The forced outage rates were 6.94 percent and 2.2 percent for Units 1 and 2, respectively.

B. Direct Inspection and Review Activities

In addition to 55 routine inspections, 9 special inspections were performed for the Vogtle facility by the NRC staff during this assessment period. These special inspections are listed in Section V.K of this report.

II. CRITERIA

Licensee performance is assessed in selected functional areas, depending upon whether the facility is in a construction or operational phase. Functional areas normally represent areas significant to nuclear safety and the environment. Some functional areas may not be assessed because of little or no licensee activities or lack of observations. Special areas may be added to highlight significant observations.

The following evaluation criteria were used, as applicable, to assess each functional area:

- assurance of quality (including management involvement and control),
- approach to the resolution of technical issues from a safety standpoint,
- responsiveness to NRC initiatives,
- enforcement history,
- operational and construction events (including response to, analyses of, reporting of, and corrective actions for),
- staffing (including management), and
- effectiveness of training and qualification programs.

However, the NRC is not limited to these criteria and others may have been used where appropriate.

On the basis of the NRC assessment, each functional area evaluated is rated according to three performance categories. The definitions of these performance categories are as follows:

- Category 1 - Licensee management attention and involvement are readily evident and place emphasis on superior performance of nuclear safety or safeguards activities with the resulting performance substantially exceeding regulatory requirements. Licensee resources are ample and effectively used so that a high level of plant and personnel performance is being achieved. Reduced NRC attention may be appropriate.
- Category 2 - Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are good. The Licensee has attained a level of performance above that needed to meet regulatory requirements. Licensee resources are adequate and reasonably allocated so that good plant and personnel performance is being achieved. NRC attention may be maintained at normal levels.

- Category 3 - Licensee management attention to and involvement in the performance of nuclear safety or safeguards activities are not sufficient. The licensee's performance does not significantly exceed that needed to meet minimal regulatory requirements. Licensee resources appear to be strained or not effectively used. NRC attention should be increased above normal levels.

The SALP Board may also include an appraisal of the performance trend of a functional area. This performance trend will be used only when both a trend of performance within the evaluation period is discernible and the Board believes that continuation of the trend may result in a change of performance level. The trend, if used, is defined as:

- Improving - Licensee performance was determined to be improving during the assessment period.

- Declining - Licensee performance was determined to be declining during the assessment period, and the licensee had not taken meaningful steps to address this pattern.

III. SUMMARY OF RESULTS

A. Overall Facility Performance

Vogtle Electric Generating Plant is staffed and operated with knowledgeable and qualified personnel. With the transition of Unit 2 from a construction to operational status, the management structure and philosophy made commensurate adjustments. This has been accomplished expeditiously and, on the whole, effectively. Delays during preoperational and startup testing were minimal, and planning was evident throughout the period. The NRC issued a Full Power Operating License to Vogtle Unit 2 on March 31, 1989. The 100-hour warranty run was completed on May 19, 1989, and the licensee declared the unit to be commercial on May 20, 1989.

During this assessment period, management completed its reorganization in anticipation of the formation of a new holding company. Many of the organizational structures which will be utilized within the holding company concept have been installed and activated. This has resulted in new managers being placed in senior positions in charge of nuclear activities. This reorganization appears to have been implemented smoothly, and it appears to have had no adverse impact on plant operations.

During the period, the units experienced ten unplanned reactor trips. The unplanned trips could be grouped into two basic categories. First, three trips were related to personnel errors, primarily due to a lack of attention to detail. Second, seven trips were equipment related. Of these seven trips, six were in balance-of-plant systems

with five being feedwater components. It should be noted, however, that during July and August 1989, both units were concurrently on-line at full power operation.

While the overall performance demonstrated by the plant is comparable to that of the last SALP period, the following concerns and/or observations are presented for review and action, as appropriate.

- The Security Program's implementation has not been consistent or at the level of effectiveness expected. Deficiencies concerning both personnel and control of safeguards information have been noted. These deficiencies are repetitive in nature to incidents over the past several years and do not reflect that adequate attention is being given to the identification of the root cause of the problem or to the implementation of effective corrective action(s).

- Attention to detail by the plant staff continues to be a recurring source of both operational and administrative problems. In this regard, procedural inadequacies, both in content and application, are contributing factors. Management expectations for procedural compliance have not been effectively conveyed to the plant staff. Further, the staff has not been aggressive in identifying and correcting procedural deficiencies.

B. Facility Performance Overview

Functional Area	Rating Last Period		Rating This Period
	Unit 1	Unit 2	Both Units
Plant Operations	2	NR	2
Radiological Controls	2	NR	2(I)
Maintenance/Surveillance	2	NR	1
Emergency Preparedness	1	NR	2
Security and Safeguards	2	NR	2(D)
Engineering/Technical Support	2	1	2
Safety Assessment/Quality Verification	2	1	2
Preoperational Testing (Unit 2 Only)	NR	1	1
Startup Testing (Unit 2 Only)	NR	NR	1

NR - Not Rated
(I) - Improving Trend
(D) - Declining Trend

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

During this assessment period, inspections of plant operations and fire protection were performed by the resident and regional inspection staffs.

Overall, operational performance during the assessment period was good. The performance of Unit 2 through startup, low-power testing, and initial commercial operations was better than the early operating performance of Unit 1. The licensee demonstrated that lessons learned during the Unit 1 startup sequence had been well analyzed and integrated into Unit 2's startup planning. The startup and low-power testing programs were accomplished with minimal interruptions or unplanned transients and allowed for a rapid movement into power operations.

Staffing of the operations department has been at a consistently satisfactory level throughout the assessment period. Key changes have taken place at both the manager and the superintendent levels. Replacements have been prompt to preclude a loss of function. A review of the control of overtime revealed that overtime, in general, remained low. This was considered to be a strength.

Management involvement with plant operations has been at a high level. Daily operational status meetings were attended by both site and corporate management. These meetings promoted teamwork and facilitated problem resolution. Representation by the maintenance, outage planning, and engineering departments was noted as being a key element in promoting safety within the operations function.

During the previous SALP assessment, fluid system leaks in both primary and secondary systems were identified as an ongoing problem. While improvements were noted, this difficulty continued to impact plant operations. A forced outage was necessitated by excessive Reactor Coolant System leakage. Continued attention is needed in this area.

Although plant management has been involved in the planning of operations activities, an aggressive in-plant follow-up program has not been evident. Management presence in the control room has decreased as the staff has become more proficient in conducting day-to-day operations. Late in the assessment

period, a dedicated program of management walkdowns began to exert a positive influence, by its identification of programmatic weaknesses. A continued emphasis on getting all levels of managers into the work spaces should prove beneficial in the future. The NRC resident inspection staff was, on occasion, invited to accompany these managers on their tours. This step at developing communications channels between the NRC and the licensee is seen as positive, and its continued and expanded use is encouraged.

The licensee's resolution of safety issues was considered to be a strength. During this period reactor trips were predominately due to equipment failures. Investigation of these events was performed by Event Critique Teams composed of Operations, Engineering, Independent Safety Engineering Group, and Quality Assurance personnel. Direct inspection of the licensee's event investigation process determined that the procedures, and their implementation, were effective in resolving issues. A weakness was noted, however, in that the initial collection of data was by the on-shift personnel for post-trip reviews. Using those people who were involved in the event to identify and then collect any, and all, needed data imbedded the potential for overlooking potentially important information. An example of this was the data collected for the Unit 2 reactor trip of May 22, 1989. Because of the limited data that was collected, the root cause of the trip was not properly ascertained. This resulted in the submission of an inadequate Licensee Event Report.

Operations personnel were responsive to most NRC initiatives. This was particularly evident when questions were addressed to either the shift supervisor or the On-Shift Operations Supervisor (OSOS) regarding current plant status and ongoing and upcoming safety related evolutions. On occasion, however, the control room staff was not responsive to NRC initiatives. Prior to the startup of Unit 1 from refueling, the resident inspectors conducted a tour of the Unit 1 containment building. Several discrepancies were identified which were not corrected until elevated to management level by the NRC.

During the last SALP period, there was an identified problem concerning attention to detail with the operations organization. This problem has continued, as was exemplified by two events which were based in part on personnel errors. The first one occurred on March 9, 1989, when both trains of the Unit 2 residual heat removal system were rendered inoperable. This event was caused by operations personnel attempting to depressurize the system using the test return valves. The lack

of approved procedural guidance, the lack of closed loop communications, and inadequate system status sensitivity by the operations personnel resulted in the return line valves being left open for approximately 14 hours. The second event occurred on March 18, 1989, when the operation of incorrect hand switches resulted in a Unit 2 safety injection actuation. To preclude this from reoccurring, emphasis was placed on the importance of verifying that the proper switches are operated, the colors of the safety injection/steam line reset/block hand switch plates were changed, caution placards were added to the hand switches, and details of this event were incorporated into training.

During this assessment period, Unit 1 experienced six unplanned reactor trips. All but one of these trips were manually actuated. One was partially due to personnel error in that the operator failed to use a procedure while performing a functional test of the service air dryer. Two of the five equipment-related trips resulted from spurious main feed pump trips on high vibration. Two other of the trips were caused by intermittent failures of a solenoid in the loop 4 main feedwater isolation valve. The final equipment-related trip was due to a failure of the Loop 1 bypass feedwater regulating valve. (Refer to Section V.I of this report for additional information regarding these reactor trips.)

Unit 2 experienced four unplanned reactor trips during this assessment period. All of the unplanned reactor trips were automatic trips. Two were partially due to personnel error. Both of these were largely due to a lack of attention to detail. The first occurred on a loss of power to Nuclear Instrument (NI) channel 43 while conducting a surveillance on NI channel 44. The control room operators failed to notice that the wrong bistable (NI 43) had tripped. The second trip occurred when the main turbine intercept valves failed to open when required. While the direct cause of this trip was the failure of the intercept valve to open, the condition was further complicated in that operators failed to recognize the condition. The other two unplanned trips experienced by the unit were unrelated equipment failures. (Refer to Section V.I of this report for additional information regarding these reactor trips.)

The overall pattern of failures and the resultant corrective actions taken by the plant staff indicate an operational maturity that has begun to develop over this assessment period. Noteworthy in this maturing process has been the continued improvement in professionalism. Control room access was strictly controlled and noise levels were continually reduced. Except as noted above, procedural compliance was improved.

Throughout the removal of the control room interim barrier, the licensee was innovative in providing noise abatement and dust control measures. Operator responsiveness to observed plant transients was noted to be prompt and correct. These licensee-identified and implemented initiatives were indicative of the striving for a high level of professionalism and a standard of excellence.

Operators were attentive and knowledgeable. A support shift supervisor, located outside the control room, continued to provide technical and administrative assistance to the operations shift supervisor. This contributed to the reduced noise levels and traffic flow in the control room. Turnover checklists were thorough and detailed. Plant procedures were concise and succinct, and provided adequate guidance to the operating staff. Shift turnovers between plant equipment operators were observed to be detailed and complete. However, on two separate occasions, the licensee failed to conduct proper control room rounds regarding verification of the proper operation of the control room chart recorders. This failure to ensure proper operation of the recorders resulted in two violations; the second of which was considered to be a repeat violation. Management failed to provide proper direction to the shift supervision concerning their responsibilities in control room, thus allowing another instance of inattention to detail to occur.

Control room log book entries were neat, legible, and adequately reflected the plant status. Significant operational events, unusual parameters, and alterations to safety-related system alignments were consistently recorded. Log book entries were made on a real time basis. Control room drawings were acceptable; however, many of the As-Built Notices were illegible due to support staff providing and operations personnel accepting poor quality drawings. This issue is discussed further in Section IV.F of this report.

The licensee continued to maintain an "Information Limiting Condition for Operations Log" to track situations which would restrict unit operation in another mode, prevent a mode change, or become an Information Limiting Condition for Operations Log entry upon loss of certain other technical specification equipment. This was valuable in aiding the shift supervisors in carrying out their duties.

Operations management continued to take initiatives to improve the areas of housekeeping, labeling, and management communication. Early in the assessment period, the licensee began color coding some of the secondary plant systems in an effort to achieve a higher level of system definition. This helped all plant activities with component identification and contributed to a look of professionalism.

The licensee demonstrated a clear understanding of NRC guidance in the fire protection area. The annual reviews conducted by the licensee of its program were pertinent and complete. Corrective actions for identified discrepancies were effective. A weakness was identified involving the failure of the licensee's staff to develop timely justification for its position that embedded conduits provided three-hour shutdown fire barrier separation for safe shutdown cables.

The licensee's implementation of Fire Brigade training was effective as demonstrated by the performance of the Fire Brigade and Brigade Leaders during fire drills. A Fire Brigade leadership course has improved the communications practices of the personnel. More emphasis is required on the command and control functions of the brigade leader.

Two initial licensed operator examinations were administered during this assessment period. Additionally, examinations administered at the end of the previous assessment period were graded. Overall, fourteen of seventeen Senior Reactor Operator candidates and all of thirteen Reactor Operator candidates passed. These examinations were the first dual plant license examinations administered at Vogtle.

Operators with Unit 1 licenses were individually tested prior to amending their current license to include Unit 2 operations. The examinations emphasized differences between the two units and included individual plant walkthroughs. By the end of the assessment period, 53 Unit 1 licenses had been amended. Two of the fifty-three amendment candidates required reexamination.

2. Performance Rating

Category: 2

Trend: None

3. Recommendations

None

B. Radiological Controls

1. Analysis

The activities addressed in this functional area included occupational radiation protection, radioactive materials and contamination controls, radiological surveys and monitoring, As Low As Reasonably Achievable (ALARA) Programs, radioactive waste management, radiological effluent control and monitoring, offsite dose calculations, plant chemistry, radiological environmental monitoring, confirmatory measurements, and transportation of radioactive materials. This assessment was based on several routine inspections conducted throughout the assessment period.

The licensee's radiation protection staffing levels, including Health Physics (HP), Radwaste, Chemistry, and Transportation were considered to be adequate to support routine and outage operations. Contract HP technicians were used during outage operations to supplement the permanent staff. The licensee allocated 43 HP technician positions of which 42 were filled. Although the licensee's organizational analysis since the last assessment period resulted in a reduction of 11 HP technicians, the staffing was still considered adequate, as was the knowledge and experience level of the site HP staff. Additionally, the training programs for HP technicians and General Employee Training in radiation protection were adequate.

As noted in the previous SALP, there were several problems in radiological controls. The licensee has significantly improved its regulatory compliance. During the last SALP period, nine violations were cited, and during this SALP period, only one violation was cited. During this assessment period, the licensee placed an individual, who had a strong radwaste operations and management background, into the position of Manager of Health Physics and Chemistry. This organizational change improved management control over the Radiation Protection Program.

Radiological control audits performed by the onsite audit organization were generally complete and thorough; however, the quality of the audits in the area of radwaste shipping was a weakness. Audits performed in this area did not adequately address the use of packaging, waste classification, and waste stability characteristics. The licensee recognized the need to provide additional training to personnel performing audits in this area to assure that suitable proficiency was achieved and maintained.

The health physics performance reflected professional health physics practices in performing investigations, and the health physics staff was knowledgeable, experienced, and thorough. The licensee had the capability to perform complex evaluations of problems as demonstrated by the health physics investigation of a foreign visitor following the detection of CS-137 during an exit whole body count. The health physics review determined that the visitor had been contaminated by Chernobyl fallout.

In general, the licensee demonstrated adequate ALARA planning. However, during the Unit 1 1988 refueling outage, a weakness was displayed when the licensee lifted the reactor vessel head in preparation for defueling. General area dose rate monitors alarmed and a containment ventilation isolation occurred. An air sample showed elevated airborne radioactivity concentrations. There were 68 individuals in containment at the time, 50 of whom showed positive results on subsequent whole body counts. Health Physics personnel had failed to consider possible contingencies during this evolution and, specifically, had not required that respirators be worn by all containment personnel during head lift and cavity filling activities.

During the assessment period, the licensee experienced 169 personnel contamination events. During the previous assessment period, there were 93 contamination events at the plant. Although the licensee's personnel contamination events have increased significantly since the previous assessment period, this increase was expected since the licensee experienced its first refueling outage during this time frame.

During this assessment period, the licensee's collective radiation dose was 145 person-rem per reactor. This represented an increase from the previous assessment period (46 person-rem for Unit 1); however, as noted above, this increase was expected due to the Unit 1 refueling outage. As of September 30, 1989, the collective dose per reactor was 12 person-rem. This low collective dose is attributable to the fact that the plant is relatively new and that there was no refueling outage in 1989.

During this assessment period, the average area of the plant controlled as contaminated was 4,297 square feet. This was well within the license's 6,750 square foot goal for 1989. During the previous assessment period, the licensee maintained an average of 3,000 square feet of the plant controlled as contaminated. This was still well within the licensee's 1988 goal of 4,000 square feet. In 1989, the Licensee increased the goal to 6,750 square feet due to the startup of Unit 2 and to the increase in radiologically controlled area (RCA) space. The increase in contaminated floor space during this assessment period was expected due to the first Unit 1 refueling outage and the addition of RCA space.

The performance of the count room staff and equipment was considered to be a licensee strength. Samples counted in the licensee's chemistry and HP count room were in agreement with the Region II mobile laboratory for all measured isotopes. Ninety-two percent of the licensee's measurements were within ten percent of NRC values.

Liquid and gaseous radioactive effluents were within the technical specification limits for radiation compliance with 40 CFR Part 190 limits for radiation dose and radioactivity concentrations in effluents. (Effluent releases are summarized in Section V.J of this report.) Liquid fission and activation products decreased by almost a factor of ten during the first half of 1989. This decrease was attributed to several factors which included the use of recycle water to fill the Unit 2 spent fuel pool, the installation of the 20,000 gallon waste monitor tanks, daily checks for inleakage treated in various collection tanks, and a reduction in the amount of washdown water. The increase in gaseous effluents was attributed to the startup of Unit 2; however, Unit 1 noble gas effluents decreased, as indicated by the reduction in whole body dose rates from 2.69 mrem/year in 1988 to 7.12 E-3 mrem/year in the first half of 1989. This reduction in offsite dose was due in part to the reduction in containment purging operations.

One unplanned gaseous release occurred on April 17, 1989, when a Unit 1 containment purge was initiated without a purge permit. Additionally, on April 21, 1989, a purge permit was issued but a vent was performed. Since purge operations do not provide for the processing of waste gasses, radiation levels released were greater than anticipated. The licensee identified these problems and issued the appropriate permits after the fact. The activity released was within regulatory limits.

Licensee management was effective in reducing the number of out-of-service channels in the process and effluent radiological monitoring systems. A special action group was formed, and out of a total of 76 Unit 1 and common channels, the average number of out-of-service channels decreased from 23 in 1988 to 8 in 1989. Out of a total of 54 Unit 2 channels, the average number of out-of-service channels averaged 6 for 1989.

The licensee has maintained an effective chemistry control program. Primary chemistry was well within technical specification limitations and secondary chemistry, except for minor transients, was maintained within the guidelines recommended by the Steam Generators Owners Group. Unit 1 sludge lancing during 1988 resulted in only 80 pounds of sludge being removed from all four steam generators. Additionally, eddy current testing of selected Unit 1 steam generator tubes led to the preventative plugging of only one tube.

2. Performance Rating

Category: 2

Trend: Improving

3. Recommendations

The Board recognized the improvements which were initiated and implemented during the current assessment period. The licensee has made significant changes within its management structure. This has been reflected in numerous ways, to include the improved regulatory compliance status of the facility. As the health physics staff attains more operating experience and integrates this into improved contamination and exposure control practices, exposures such as that which occurred during the reactor pressure vessel head lift should be eliminated.

C. Maintenance/Surveillance

1. Analysis

During this assessment period, NRC inspections were conducted in the area of maintenance, surveillance, and refueling activities. The inspections included review of the administrative controls, the technical adequacy of the procedures, and the implementation of the Maintenance and Surveillance Programs. Activities inspected also included corrective maintenance, preventive maintenance, equipment control, equipment status tracking, functional testing, and housekeeping were conducted.

Staffing of the maintenance department was considered to be adequate for the planning and accomplishment of work. Turnover within the management and supervisory ranks was low. This resulted in a strong work planning effort. Additionally, there has been an emphasis on reducing staffing size from construction to operational levels. This has been accomplished primarily by reductions in the contractor maintenance work force. The training and qualifications of maintenance personnel at all levels has provided for effective work accomplishment. Personnel were knowledgeable of their work functions, skilled in their performance, and capable of interfacing with other plant groups.

The licensee was effective in identifying and correcting programmatic weaknesses in the maintenance area. Weaknesses in preventive and corrective maintenance were highlighted by both corporate and site management. Their resolution has been identified as one of the the site's priority improvement issues.

To accomplish this, increased emphasis was placed on the development of detailed work plans and the establishment of personal accountability. Maintenance issues were reviewed daily during the morning status meeting and, where appropriate, elevated for further management attention.

Productivity was tracked daily by reviewing individual task completions and on a long-term basis by reviewing the backlog of maintenance work orders. Work order backlog control received significant attention to ensure that appropriate maintenance support is provided. During the previous assessment period, the licensee established a program wherein the three oldest work orders were given specific management attention. This program has evolved into a special weekly meeting which reviews and plans the closure of all work orders over one year old. This focus has been responsible for reducing both the planned and corrective maintenance backlogs by approximately 50 percent. This reduction and control of work is considered to be a significant strength.

As an additional tool in the implementation of the Preventive Maintenance Program, the licensee initiated safety-system outages. These outages focused on individual safety system trains for the performance of all required surveillance and maintenance activities. This concentrated effort allows for more efficient maintenance work and enhanced management control over maintenance activities. It has also had a direct influence on the scope of work activities required to be accomplished when the plant enters a forced or refueling outage and has allowed these outages to be completed in a minimal time frame.

The first refueling outage was relatively short in duration; likewise, forced outages required minimal time for completion. This is directly attributable to the completion of required work activities during the safety-system outages. The number of tasks which were outstanding at the beginning of these other outages were minimal, and they could be addressed on an "as time permitted" basis. After the Unit 1 refueling outage, the licensee conducted an intense lessons learned review and integrated these lessons into the planning process for the upcoming Unit 2 outage.

Corrective maintenance was effective in maintaining the material condition and general appearance of the plant at acceptable levels. Management dedicated resources for a Painting and Preservation (Coatings) Program and considers this to be one of the top ten priorities at the site. Over this assessment period, the turbine building benefitted most from this decision, as the systems' piping and equipment was color coded. A three year program for further improvements has been scheduled to commence in 1990.

Adequate programs existed to control post-maintenance testing, deferred preventive maintenance, maintenance work order reviews prior to mode changes, and operating experience reviews. Post-maintenance reviews of completed work were effective. This was demonstrated by the identification of a missed inservice test on a blowdown isolation valve after the completion of corrective maintenance on its companion valve. The ability of the program to recognize and correct performance shortcomings is considered to be a strength.

The implementation of the Inservice Inspection Program was examined during the refueling outage for Unit 1. Management involvement in the program was evidenced in the prior planning of inspection activities and the tracking of results. The inservice inspection examination personnel were well qualified and cognizant of examination requirements. Well defined procedures were established and available. The outage staffing and performance in this area was adequate to facilitate timely performance of the examinations.

Surveillance programs were adequate in the scheduling of work and the monitoring of its accomplishment. The weakness which was identified in the previous SALP assessment, concerning the timely completion of technical specification required surveillance activities was, effectively, resolved. However, isolated instances of missed surveillance still occurred. Typically, the missed surveillances were those performed on a high frequency basis, such as room temperature monitoring. Once discovered, the licensee promptly performed the surveillance.

The licensee adequately responded to NRC concerns and initiatives during the assessment period. The response to NRC Bulletin 85-03, concerning motor operated valve failures, was excellent. The licensee's response was beyond the scope of the bulletin and resulted in the development of setpoint documents and a predictive maintenance program in this area.
The licensee's implementation of snubber functional testing went beyond the minimum NRC requirements. In this regard, the licensee took a consistently conservative approach in interpreting technical specification surveillance requirements.

2. Performance Rating

Category: 1

Trend: None

3. Recommendations

None

D. Emergency Preparedness

1. Analysis

This functional area involved evaluation of activities related to the implementation of the Emergency Plan and procedures, support and training of onsite and offsite emergency response organizations, and licensee performance during emergency exercises. Performance was also evaluated in event notifications, recovery actions, protective actions, and interactions between onsite and offsite emergency response organizations during exercises. Inspections performed by the NRC staff during this assessment period included a routine inspection, a follow-up to the Emergency Preparedness Implementation Appraisal (EPIA) of Unit 2, and evaluation of an emergency exercise with partial offsite state and full county participation.

The routine inspection disclosed findings that were representative of an Emergency Preparedness Program that received strong management support to ensure that the licensee maintained the basic elements needed to promptly identify, correctly classify, adequately staff, and to implement the key elements of the Radiological Emergency Plan and the respective procedures for response to emergency events. The routine inspection identified the following program strengths: a strong management commitment to the Emergency Response Program; an effective tracking system for ensuring that prompt and adequate corrective action is taken on items identified during drills and exercises; an onsite emergency organization that was adequately staffed and trained in accordance with the emergency plan implementing procedures; and monthly and quarterly equipment inventories and operability checks which were well documented including actions taken to resolve noted discrepancies.

The licensee continued to maintain adequate facilities and equipment to respond to an emergency, including: the Technical Support Center (TSC), the Emergency Operations Facility (EOF), and the emergency communications systems. The licensee upgraded the communications equipment by upgrading computer capabilities in the TSC and EOF and by combining the South Carolina and Georgia Emergency Notification Network circuits. The latter action provided simultaneous emergency notifications to each state and local government entity within the ten-mile Emergency Planning Zone. Another program enhancement was the remodeling of the Operations Support Center to allocate floor space for greater useability.

The licensee continues to maintain an effective Emergency Preparedness Training Program. During walkthrough evaluations with the OSOS and a health physics foreman, a good familiarity with emergency procedure, emergency equipment, emergency detection, classification, and protective action recommendations was demonstrated. Also both onsite and offsite training was determined to be fully consistent with the training requirements of the Vogtle Emergency Plan.

The licensee conducted detailed and comprehensive plant and corporate audits of the Emergency Preparedness Program. Audit findings, proposed corrective actions, and schedules were reviewed by both plant and corporate management and were tracked to completion. Exercise and drill findings were also tracked to completion. The licensee's use of an emergency planning tracking system known as the "Vogtle EP Action Item Report" was noted as particularly effective.

The EPIA follow-up inspection for Unit 2 was conducted to review the licensee's program improvements and to review the completion of actions for items identified during the EPIA conducted in August 1988. This follow-up inspection determined that all EPIA corrective and improvement actions were completed adequately.

The emergency exercise demonstrated that the licensee could effectively implement the Emergency Plan and procedures. The licensee demonstrated the ability to identify plant off-normal conditions, classify events in the appropriate emergency category, notify appropriate offsite authorities, and make appropriate protective action recommendations. An exercise weakness was identified, however, for failure to make a timely General Emergency classification and protective action recommendations. The delay occurred because the Emergency Director was en route to the EOF when the General Emergency should have been declared. The Emergency Director had not designated an alternate while he was en route, thus delaying the classification until he arrived at the EOF.

Overall, the licensee demonstrated a capability to implement critical aspects of the emergency preparedness during simulated and actual events.

2. Performance Rating

Category: 2

Trend: None

3. Recommendations

Although the licensee continued to maintain an effective emergency preparedness capability during the assessment period, the loss of command control and the failure to make a timely General Emergency declaration during the July 1989 exercise indicated that increased management attention is warranted in this area.

E. Security and Safeguards

1. Analysis

The physical security and safeguards functional area involved the evaluation of the adequacy of the Security Program to provide protection for the plant vital systems and equipment. To determine the adequacy of the security program, specific attention was given to the identification and resolution of technical issues, the responsiveness to NRC initiatives, enforcement history, staffing, and the effectiveness of training and qualification. The scope of this evaluation included all licensee activities associated with access control, physical barriers, detection and assessment, armed response, alarm stations, power supply, communications, compensatory measures for degraded security systems and equipment, security licensing actions, and material control and accountability.

Authority and responsibilities associated with the Security Program were delineated in the Security Plans and implementing procedures. The proprietary security force was adequately manned to provide protection of vital resources in accordance with licensee commitments and regulatory requirements. The Security Training and Qualification Plan was implemented on a continuing basis by dedicated training personnel. The security force had adequate procedures.

During this assessment period four revisions to the Security Plan were submitted pursuant to 10 CFR 50.54(p). The revisions met the timely reporting requirements. However, the revision dated August 21, 1989, described a facility which had not yet been constructed but was reflected in the plan as an operational structure. Earlier, the licensee had requested a meeting with the regional staff to discuss this proposed change to the security plan involving the construction of an alternate personnel access building. This meeting was beneficial and reflected proper effort by the licensee to assure that security requirements would be adequately addressed during the planning and construction phases. Overall, the licensee's planning staff has been responsive to requests from the NRC.

During this assessment period, the licensee prepared for the licensing and fuel load of Unit 2. The site security staff applied lessons learned from the licensing of Unit 1. As an example, the Vice President, Construction, established a special task force of engineers and security staff to ensure that all aspects of the Security Program were appropriately addressed. The site security staff worked closely with the NRC staff to ensure that all safeguards issues were resolved in advance of license issuance and fuel load. The effectiveness of the Security Program for Unit 2 resulted from the fact that licensee top management was involved and supportive of the Security Program during the entire licensing process.

The licensee has discontinued the use of contract security forces to augment the proprietary security force. Personnel changes in the Plant Administrative Manager and Security Manager positions (security organization reporting chain) also occurred during this period resulting in a reduced level of security management effectiveness.

With respect to the implementation of the Security Program, inspection results revealed that the licensee is continuing to experience problems and difficulties in the management and effectiveness of the Security Program at the day-to-day operational level.

The extent and scope of the Security Program deficiencies are demonstrated by the continuing occurrence of violations relating to failure to properly control safeguards material, failure to log and report safeguards events, degraded vital area barriers, failure to conduct physical searches, and failure to comply with access control requirements. Additionally, violations were identified in the areas of security training, alarm station operations, medical evaluations/examinations, and the accountability of access authorizations. Several of the violations that occurred during this evaluation period were identified by the licensee. In addition, three of the violations included in this evaluation occurred during the previous rating period but were identified during the current period as a result of allegations.

The continuing violations were attributable primarily to personnel error. It should be noted that several of the repeated violations (e.g., failure to secure vital area portals and failure to protect safeguards information) were caused by personnel who were not part of the security organization. This reveals a failure on the part of site management to take effective corrective action. As a result of the repeat nature of these violations, a management meeting was held on August 4, 1989, to discuss the licensee's performance initiatives.

In the area of material control and accountability, the licensee had established, maintained, and followed approved written material control and accountability procedures for controlling and accounting for new fuel, spent fuel, fission chambers, and calibration sources; for receiving, storing, and shipment; for inventory burn-up calculations; and for record keeping and reporting. The licensee was found to be following all applicable NRC guidelines and was maintaining an adequate and effective program for controlling and accounting for special nuclear material in its possession.

2. Performance Rating

Category: 2

Trend: Declining

3. Recommendations

The Board recognized the application of lessons learned from Unit 1 in the licensing efforts of Unit 2 which resulted in an improved Security Program for Unit 2 facilities. However, the continued recurrence of violations relating to program implementation and the lack of security management effectiveness during the latter part of the assessment period detracted from the overall effectiveness of the Security Program. The Board recommends increased management emphasis in these areas.

F. Engineering/Technical Support

1. Analysis

The engineering/technical support functional area addressed the adequacy of engineering and technical support for all plant activities. It included licensee activities associated with plant modifications, technical support provided for operations, maintenance, testing and surveillance, and configuration management. This evaluation was based on routine and special inspections conducted in this area and related functional areas. Performance in this functional area has been adequate during the assessment period.

Design changes have been developed and implemented in conformance to plant commitments for design change activity. Effective engineering support was effective in the ATWS Mitigating System Actuating Circuitry (AMSAC) modification. The AMSAC design change was developed and implemented in a timely manner. NRC inspectors identified an example where incorrect system operating information was incorporated into the operating

procedure concerning inservice power levels and at-power testing. This weakness was indicative of a communication deficiency between the engineering and operations departments. With the above exception, post-modification activities (e.g., revision of procedures and drawings, post modification testing, etc.) were adequate. The Temporary Modification Program was adequately controlled and implemented.

Refueling operations were impacted by unreliable refueling equipment. The assignment of a system engineer to evaluate and resolve persistent refueling equipment failures contributed to the successful completion of fuel handling activities at Vogtle. This was an example of effective engineering support of plant activities. An example of such equipment malfunctions was the failure of the electronic position indicator. Subsequently, due to inadequate direct visibility and lack of mechanical indication, a fuel bundle did not properly seat and came to rest against an adjacent fuel cell. Recovery operations directed by plant management were commensurate with the potential hazard.

Corporate engineering support was effective on several plant issues and events. The technical content of these issues was thorough, however communications with the NRC regarding some issues was weak. The Pre-service Inspection and Inservice Test Programs for Unit 2 were developed by engineering and demonstrated a good technical understanding of program requirements. These programs were in compliance with ASME Section XI requirements and were completed to support Unit 2 licensing. Communication with the NRC on these issues was timely and comprehensive. Corporate engineering's initial evaluation of the potential safety impact of the Pen Branch geological fault on Plant Vogtle was aggressive. Following licensee determination that the fault provided no significant safety concern, the follow-up interface with the NRC to document the basis for this determination was weak. Communications between corporate engineering and the NRC staff on the seismic monitoring instrument placement issue was also weak although eventual resolution was adequate. Corporate engineering rapidly responded to the issue of pressurizer surge line thermal stratification by coordinating activities between the nuclear steam system supplier and architect engineering organizations and the plant. This coordination of engineering resources contributed to the timely evaluation and resolution of the issue.

Engineering support for the plant by the onsite engineering organization was effective, as evidenced by operational issues related to the residual heat removal (RHR) system leakage event and identification of a pressurizer code safety loop seal drain line weld failure. Technical support personnel were cooperative with the NRC team which reviewed the March 9, 1989, event,

during which two RHR system check valves leaked high pressure reactor coolant into the lower design pressure RHR system. Technical information provided by these personnel contributed to the review team's evaluation and to the licensee's corrective actions developed to prevent recurrence. Engineering's Vibration Monitoring Program was successful in identifying and locating a weld failure on the pressurizer code safety valve drain manifold. This identification permitted a controlled plant shutdown and precluded the occurrence of a more significant operational event.

A review of the use of the emergency operating procedures in the simulator, including the observation of a set of accident scenarios used in annual licensee requalification training, determined that operator actions were adequate. The inspector observed that the instructors conducted thorough critiques at the end of the simulator training sessions which were an asset to the training program crews in improving their response capabilities.

In June 1989, an inspection identified that the quality of critical drawings in the control room and TSC was not satisfactory. A violation was issued concerning this matter. Corrective actions included making the engineering personnel responsible for drawing preparation more aware of the need for clarity and establishing a quality control check prior to distribution. While legibility has improved, problems have continued in this area, particularly with As-Built Notices. Continued attention is needed to ensure that drawings maintained in remote (e.g., control room) locations are accurate and legible.

A general concern during examination activity was the inadequacy of the simulator to model some plant conditions. As a result of this simulator weakness, operators were trained under conditions which, in some cases, did not accurately reflect actual plant response. A simulator certification request was submitted to the NRC during this assessment period. Certification was not granted due to the need for simulator modifications to upgrade models for the core, reactor coolant system, steam generator, and containment.

A programmatic weakness was identified in the medical certification of operators. Due to the time lag in receiving medical test results, the NRC Form 396 certifications were being signed by the medical representative while the test results were still pending. Consequently, operators could have been performing duties for which they had not been properly medically

certified to perform. For example, the medical results of three operators were not consistent with their NRC Form 396 information. One operator's certification lacked a condition for corrective lenses and the other two operators' certifications contained unnecessary conditions. At the close of the assessment period, the license was aware of this programmatic deficiency and was developing controls for correction.

2. Performance Rating

Category: 2

Trend: None

3. Recommendations

None

G. Safety Assessment/Quality Verification

1. Analysis

This section included an assessment of licensee activities associated with the implementation of licensee safety policies; licensee activities related to amendment, exemption, and relief requests; and licensee responses to Generic Letters, Bulletins, and Information Notices, and other NRC initiatives. This section also includes licensee activities related to the resolution of safety issues and self assessment activities.

The Safety Audit and Engineering Review (SAER) group performs the quality assurance audit activities onsite. These activities have resulted in effective audits that have resulted in corrective actions that served to improve the overall plant performance.

The performance based approach was utilized in auditing and evaluations. A significant achievement was that all of the site auditors were certified as Lead Auditors and the department maintained a high level of experience. Audit effectiveness was enhanced by the use of outside technical experts to ensure that a sufficient level of commercial operating experience existed.

Audit scheduling was provided on a twelve month basis. One strength of the scheduling was that most audits with a required annual performance frequency were conducted at least three times over the calendar year thus providing for a timely evaluation of line activities.

At the end of the assessment period, the SAER group was staffed with a sufficient number of auditors to conduct performance based observations and program review. This resulted in rapid assessment and consequential feedback to the line organizations and was a significant contributor to the completion of the Startup Program. In July 1989, the Plant Review Board (PRB) membership was changed from supervisory to management level personnel. Concurrently, the Operations Management Council was disbanded. This consolidated the key plant managers responsible for safety decisions into one group. The PRB, has been a significant contributor to the self-assessment function of the plant and has reflected the strong corporate interest in the quality assurance area.

Licensee Event Reporting was adequately implemented during the assessment period. Most of the reports required by 10 CFR 50.72 were made within their prescribed time frames. One telephone report was late when the licensee failed to recognize that loss of power to a 1E bus was reportable until questioned by the NRC. Written report content was normally outstanding in the level of detail provided. One trend was noted at the end of the assessment period, which resulted in a violation. Written reports did not contain a complete narrative when personnel errors were identified. On another occasion, the licensee had to be prompted to submit a supplemental report to correct the description of a transient. In this event, the NRC noted that the licensee's root cause determination failed to identify the correct transient response prior to the written submittal. This was due to management ineffectiveness in ensuring that the correct information was transmitted to the NRC.

The licensee's submissions with respect to proposed changes to technical specifications or the Final Safety Analysis Report and in response to generic letters and other issues were generally timely, clear, and complete. This indicated prior planning, assignment of priorities, and conscientious efforts to comply with regulations, other requirements, and commitments.

In response to the potential safety problems associated with thermal stratification in the pressurizer surge line, the licensee committed to revise plant operating procedures to direct prompt depressurization in the event of a leak in that line so as to minimize the stress on it. The requested modification of the technical specifications for containment structural integrity enhanced the level of containment safety.

The licensee's decisions were usually made at a level that ensured adequate management review. The licensee provided timely written and oral responses to NRC staff requests for information.

In one instance, however, the licensee's submission was below standard. Although timely and, for the most part, complete, the response to Generic Letter 88-17, "Loss of Decay Heat Removal," did not address all items in sufficient detail for thorough review by the NRC staff.

Additionally, one license amendment concerning increased fuel enrichment was submitted without any environmental consideration to support it. When pointed out by the NRC staff, the licensee did provide adequate environmental justification.

Prior to the licensing of Unit 2, management established a task force to provide an independent, thorough review of the Quality Concerns Program to identify any weaknesses which, when corrected, would make the program more effective. An NRC review of this program was conducted. The overall evaluation of the Quality Concerns Program was good and considered to be a strength. The Quality Concerns Program was self initiated, and recommendations for improving it were well received.

The licensee's corrective action program was not implemented at the levels expected. Its inadequacy was continually demonstrated throughout the assessment period by the licensee's failure to effect corrective actions which resolved technical issues and precluded their recurrence. Examples included the following: operating with a ground on a vital DC bus; effectively upgrading the quality of the control room drawings, to include As-Built Notices; and failure to establish controls over the required reading book. In all of these cases, the completed corrective actions for the identified problems were found to be unacceptable. This is seen as a significant programmatic shortcoming.

2. Performance Rating

Category: 2

Trend: None

3. Recommendations

None

H. Preoperational Testing (Unit 2 Only)

1. Analysis

During the assessment period, inspections were conducted in the area of preoperational testing. The preoperational testing program was continued from the previous assessment into this SALP assessment period and completed. The inspections in this area included procedure reviews, observations of testing, and evaluations of completed test results.

During review of the preoperational test procedures, weaknesses were identified concerning lack of details in some of the procedures, and minor discrepancies in others. These discrepancies were discussed with licensee management, and promptly corrected.

Observations of preoperational tests indicated that test procedures were adhered to during test performance. Test results were thoroughly evaluated by the licensee and any discrepancies were identified and resolved in a timely manner.

Preoperational testing proceeded ahead of schedule. Senior licensee management attention was noticeable by their attendance at morning briefings, their participation in the initial turbine roll test prebriefing, and in discussions with them regarding the status of systems and equipment, such as steam relief valves and condensate storage tank piping design. Discussions also addressed Unit 1 testing experiences which were incorporated into the Unit 2 Preoperational Testing Program, and Unit 2 equipment inspection and testing results which were evaluated for their effect on Unit 1 in-service equipment.

All preoperational testing of Unit 2 radwaste systems was satisfactorily completed. Test personnel were knowledgeable, experienced, well trained, and cognizant of testing requirements. Staffing was adequate.

The licensee's methods for correcting test deficiencies were acceptable. Management was involved in the preoperational test results review process, as evidenced by the thorough and detailed reviews being conducted. Management was also involved in the overall preoperational test program as evidenced by the establishment of a "mode" prioritized work order system. This system was used to track and prioritize outstanding work to determine progress toward completing preoperational testing and startup testing.

In summary, the Preoperational Test Program was effective. The experience and lessons learned on Unit 1 were incorporated into the program. One weakness (e.g., the timely review of test results for Unit 1), which had previously impacted the NRC's conduct of the post test reviews, was eliminated as a problem on Unit 2. The completeness of the testing resulted in no NRC concerns regarding unfinished testing which would have to be performed during the startup program. The incorporation of experiences from Unit 1 directly contributed to the success of the engineered safety features test and the hot functional testing.

2. Performance Rating

Category: 1

Trend: None

3. Recommendations

None

I. Startup Testing (Unit 2 Only)

1. Analysis

During the assessment period, inspections were conducted in the area of startup testing Inspections in this area included review of startup test procedures, review of completed test results, and observation of precritical tests. Fuel loading, initial criticality, low power physics tests, the shutdown from outside the control room test, the loss-of-offsite-power test, and the 100 percent loss-of-load test were also witnessed.

Overall, the startup test procedures were found to meet regulatory requirements and commitments. However, the following weaknesses were identified:

- The startup test procedures incorporated the Unit 1 lessons learned with one exception. The omission resulted in a feedwater isolation when the steam dumps were commanded to the full open position. Management stopped the program progression to facilitate procedure reviews for other potential omissions. Procedures for all planned tests were reviewed prior to actual performance.

- The proposed startup test procedure to demonstrate remote shutdown capability permitted use of more operators than the licensee had represented as required for the shutdown. It also exceeded the minimum shift crew size as specified in the technical specifications and as described in the Final Safety Analysis Report. Following extensive discussions with the licensee and Region II management, a determination was made that the test must be conducted with the minimum crew size of four, only one of whom could be a Senior Reactor Operator. The licensee issued Revision 1 to the procedure to conduct the test within these guidelines.

An inspection was performed as part of the readiness review process to evaluate the adequacy of procedures governing activities within the maintenance, operations, and emergency response organizations and the implementation of staff training. Several procedural discrepancies were identified wherein common procedures directed the operator to a Unit 1 specific procedure but not to a Unit 2 procedure, wherein Unit 1 valves were erroneously specified in Unit 2 procedures, and wherein required notes did not appear in both applicable Unit procedures. Subsequent responsive action by the licensee addressed these inadequacies in a timely manner to support Unit 2 startup.

Fuel loading was first delayed and later interrupted by several equipment failures. Each was evaluated conservatively and thoroughly, and appropriate corrective action was completed before proceeding with fuel loading. Proper functioning of permanent and temporary neutron monitoring channels was checked rigorously throughout the activity, including periods when fuel loading was suspended.

During the Startup Program, operator performance was considered to be a weakness. Prior to NRC unit licensing for full power operation, it became evident that the proper balance of experience among the crews was not present. In particular, one crew was responsible for both the first facility inadvertent safety injection and failing to station a dedicated steam generator level watch to prevent level problems. The need for a person dedicated to monitor levels was a lesson that had been learned during the Unit 1 startup, and the failure to establish the watch resulted in an unnecessary feedwater isolation. Poor communication practices resulted in a condition where the RHR system was placed in a degraded condition. Since the event occurred prior to the initial criticality of Unit 2, a more severe problem did not occur and management focus was directed to equalize the operator experience level amongst the different shift compliments.

Review of startup test records showed that the tests were performed with care and that the results were evaluated and verified. The test data met the appropriate acceptance criteria.

The Startup Test Program was successful. Test personnel directed a smooth fueling, heatup, and power testing program. As a result of a thorough preoperational program and the maintenance department's efforts, the unit was able to eliminate a ten day planned outage. Program accomplishment differed significantly from Unit 1 in that only two unplanned reactor trips occurred. This improvement was considered significant in that the swift completion of the Startup Program in less than 100 days was an achievement which had not been equaled since 1973 among Westinghouse pressurized water reactors.

One noteworthy strength of the licensee program was the decision to perform both the remote shutdown test and loss of offsite power test during the day shift. Due to the magnitude and number of personnel involved in these tests, alertness and preparedness was enhanced. These tests were executed in a professional manner with deliberateness of purpose.

2. Performance Rating

Category: 1

Trend: None

3. Recommendations

None

V. SUPPORTING DATA SUMMARIES

A. Investigation Review

There have been no significant investigations within this SALP assessment period.

B. Escalated Enforcement Action

None

C. Significant Management/Enforcement Conferences

1. NRC/Licensee Meetings

Date	Purpose
December 19, 1988	GPC Corporate organization for SONOPCO, GPC Corporate Office, Birmingham, AL
February 1, 1989	Enforcement Conference, NRC Region II (to discuss the potential willful violation of reporting requirements of 10 CFR 73.71 for two security incidents which had occurred in 1987)
March 22, 1989	Enforcement Conference, NRC Region II (While trying to depressurize the RHR system for the test, two normally locked closed valves were left open for 12-14 hours allowing an open flow path to the RWST. These valves were operated without an approved procedure.)
August 4, 1989	Management Meeting Re: Security, NRC Region II

2. Commission Meetings

March 30, 1989 - Briefing on Vogtle Unit 2 status for issuance of a full power license

D. Confirmation of Action Letters

None

E. Discretionary Enforcement Action

None

F. Review of Licensee Event Reports

During the assessment period, a total of 69 Licensee Event Reports (LER) (44 for Unit 1 and 25 for Unit 2) were submitted. Reports submitted during this assessment period also addressed events which occurred prior to the assessment period. The distribution of these events by cause, as determined by the NRC staff, was as follows:

Cause	Unit 1	Unit 2	Total
Component Failure	9	7	16
Design	5	1	6
Construction, Fabrication, or Installation	3	1	4
Personnel			
- Operating Activity	9	9	18
- Maintenance Activity	3	1	4
- Test/Calibration Activity	8	4	12
- Other	5	1	6
Other	2	1	3
Total	44	25	69

Note 1: With regard to the area of "Personnel," the NRC considers lack of procedures, inadequate procedures, and erroneous procedures to be classified as personnel error.

Note 2: The "Other" category is comprised of LERs where there was a spurious signal or a totally unknown cause.

G. Licensing Activities

1. Licenses Issued

NPF-79, February 9, 1989 - Vogtle Unit 2 Low Power License

NPF-81, March 31, 1989 - Vogtle Unit 2 Full Power License

2. Reliefs Granted

January 26, 1989 - Vogtle Unit 2 Pre-service Inspection Program, including reliefs

April 25, 1989 - Vogtle Unit 1 Inservice Test Program, Revision 4, including one relief

3. Exemptions

October 7, 1988 - Exemption from the schedule requirements of the Property Insurance Rule for Unit 1

October 27, 1988 - Exemption and Authorization for use of solvent iodine canisters for Unit 1

4. Emergency or Exigent Technical Specification Amendments

March 8, 1989 - Emergency technical specification amendment to increase the maximum allowable charging pump flow rate for Unit 2

5. Significant License Amendments

Amendment Number Unit 1/Unit 2	Description	Date
11/--	Allowed a slightly positive moderator temperature coefficient	October 4, 1988
18/--	Combined Unit 1 and Unit 2 technical specifications	February 9, 1989
23/04	Revised containment tendon surveillance requirements	September 12, 1989

H. Enforcement Activities

Functional Area	No. of Deviations and Violations in Each Severity Level					
	Dev.	V	IV	III	II	I
Plant Operations	0	0	7	0	0	0
Radiological Controls	0	0	1	0	0	0
Maintenance/Surveillance	0	0	0	0	0	0
Emergency Preparedness	0	0	0	0	0	0
Security and Safeguards	0	0	10	0	0	0
Engineering/Technical Support	0	0	3	0	0	0
Safety Assessment/Quality Verification	0	1	5	0	0	0
Preoperational Testing	0	0	0	0	0	0
Startup Testing	0	0	0	0	0	0
Total	0	1	26	0	0	0

I. Reactor Trips

Unit 1

Six unplanned reactor trips occurred on Unit 1 during this evaluation period and are listed below.

- December 15, 1988 - manual trip from 99 percent power due to low steam generator level on loss of instrument air. While performing a functional test of the service air dryer, instrument air was isolated from the turbine building resulting in a reduction of main feedwater flow and decreasing water level in the steam generators.

- December 17, 1988 - manual trip from 16 percent power due to bypass feedwater regulating valve component failure. A malfunctioning solenoid valve caused the bypass feedwater regulating valve close, causing steam generator No. 1 water level to drop rapidly.

- February 10, 1989 - manual trip from 60 percent power due to trip of the "A" main feed pump on high vibration resulting in a rapid decrease in steam generator levels. The cause of the high vibration trip could not be positively identified.

- May 9, 1989 - automatic trip from 100 percent power due to a failed vibration monitoring card which caused the "B" main feed pump trip and subsequent reactor trip on steam generator low-low level.

- July 8, 1989 - manual trip from 100 percent power due to failure of the main feedwater isolation valve (MFIV) in loop 4. The failure of a normally energized solenoid valve (1 HY-5230A) was believed to be the root cause.

- August 3, 1989 - manual trip from 100 percent power due to failure of the MFIV in loop 4. The failure of a normally energized solenoid valve (1 HY-5230A) was the direct cause of the MFIV closure.

Unit 2

Four unplanned reactor trips occurred on Unit 2 during this evaluation period and are listed below.

- May 2, 1989 - automatic trip from 63 percent power due to a failure of a turbine overspeed trip test device during performance of a weekly operability test.

- May 12, 1989 - automatic trip from 78 percent power due to a loss of power to Nuclear Instrument (NI) Channel N43 during a surveillance test of NI Channel N44. The loss of power could not be duplicated. A control room operator failed to notice that a wrong bistable had tripped during the surveillance.

- May 22, 1989 - automatic trip from 12 percent power due to a failure of the turbine intercept valves to open and a failure of the operator to follow procedure in verifying that the intercept valves had opened. The trip occurred on steam generator low-low level.

- July 26, 1989 - automatic trip from 100 percent power due to a failure of a pressurizer pressure channel circuit card.

J. Effluent Release Summary

Effluent Release Summary
for Vogtle, Units 1 and 2

Activity Released (curies)	*1988	(First half) 1989
Gaseous Effluents		
Fission and Activation Produces	1.15 E+2	3.46 E+2
Iodines and Particulates	1.75 E-5	1.19 E-3
Liquid Effluents		
Fission and Activation Products	1.66 E+0	1.94 E-1
Tritium	3.90 E+2	3.39 E+2

*Only Unit 1 was in operation during 1988.

K. Special Inspections

IR No. (Unit 1/Unit 2)	Date	Type
88-42/88-54	September 9-12 and November 12-16, 1988	Unit 2 Piping Thermal Expansion and Vibration Testing and Cont. Bldg. Struct. Integrity Test/ Unit 1 Snubber Prog. Results of Bldg. Tendon Surveillance Program
88-49/88-59	October 17-21, 1988	Appendix R

IR No. (Unit 1/Unit 2)	Date (Continued)	Type
-----/88-67	October 31 - November 3, 1988	Closeout of Readiness Review Modules/Elect. Cable and Equip. Insp. Program
88-53/-----	November 2, 1988 - January 6, 1989	Security Operational Activities and Handling and Protection of Safeguards Materials
88-52/-----	November 14-18, 1988	EQ of Electrical Equipment
88-60/88-77	December 19-21, 1988	Corporate Organization
89-01/89-01	January 17-19, 1989	Eval. of GPC Resp. to Unit 2 Emerg. Prep. Impl. Appraisal
89-09/-----	February 2-3, 1989	Security Allegations
-----/89-20	May 16-20, 1989	Response to Loss of Load Transient