UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

January 3, 2003

Southern Nuclear Operating Company, Inc.
ATTN: Mr. J. Gasser, Vice President
P. O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: VOGTLE ELECTRIC GENERATING PLANT - NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT NOS. 50-424/02-05 AND 50-425/02-05

Dear Mr. Gasser:

On December 6, 2002, the NRC completed a team inspection at the Vogtle Electric Generating Plant, the enclosed report documents the inspection findings, which were discussed with Mr. George Frederick and other members of your staff during an exit meeting December 5, 2002.

The inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and with the conditions of your operating license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

On the basis of the sample selected for review, there were no findings of significance identified. The team concluded that problems were properly identified, evaluated, and resolved within the problem identification and resolution programs. A very low threshold for entering problems into your corrective action program was observed. However, during the inspection, examples of minor problems were identified, including conditions adverse to quality that were not being entered into the corrective action program and narrowly focused corrective actions. Also, human performance errors contributed to two recent manual reactor trips and a dual unit shutdown.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS).

ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Brian R. Bonser, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Docket Nos. 50-424 and 50-425
License Nos. NPF-68 and NPF-81

Enclosure: NRC Inspection Report 50-424/02-05 and 50-425/02-05

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PUBLIC

PUBLIC DOCUMENT (circle one): YES

OFFICE	RII:DRP	RII:DRP	RII:DRS				
SIGNATURE	by e-mail	by e-mail	by e-mail				
NAME	TJohnson	TMorrissey	RMoore				
DATE	12/30/2002	12/26/2002	12/30/2002				
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.	50-424 and 50-425
License Nos.	NPF-68 and NPF-81
Report Nos:	50-424/02-05 and 50-425/02-05
Licensee:	Southern Nuclear Operating Company, Inc. (SNC)
Facility:	Vogtle Electric Generating Plant Units 1 and 2
Location:	7821 River Road Waynesboro, GA 30830
Dates:	November 12-15, December 2-6, 2002
Inspectors:	T. Johnson (Lead Inspector), Farley Senior Resident Inspector R. Moore, Reactor Inspector, Region II T. Morrissey, Vogtle Resident Inspector
Approved by:	Brian R. Bonser, Chief Reactor Projects Branch 2 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000424-02-05, IR 05000425-02-05, on November 12-15, and December 2-6, 2002, Southern Nuclear Operating Company; Vogtle Electric Generating Plant, Units 1 and 2, biennial baseline inspection of the identification and resolution of problems.

The inspection was conducted by a senior resident inspector, a resident inspector, and a regional reactor inspector. The inspection focused on corrective action program performance in the period since the previous inspection in January 2001. No findings of significance were identified.

Identification and Resolution of Problems

Overall, the licensee's Corrective Action Program (CAP) was effective at identifying, evaluating, and correcting problems. The threshold for entering problems into the CAP was low, resulting in a large number of Condition Reports (CRs). Problems entered into the CAP were adequately evaluated and appropriate actions were taken to resolve the problem. Recent events, including two reactor trips during low power feed water operations, and a dual unit shutdown due to secondary chemistry problems, were caused in part by human performance errors combined with weak supervisory oversight. The licensee is currently addressing these common root causes and developing corrective actions.

Some instances of missed problem identification were noted. System engineers were found to use the CAP effectively to address equipment issues. Quality Assurance organization audits were effective in identifying issues. Self-assessments were appropriate and findings were entered into the CAP. A safety conscious work environment was found where employees felt free to raise safety issues in CRs or the employee concerns program.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (PI&R)

a. Effectiveness of Problem Identification

(1) Inspection Scope:

The inspectors reviewed issues and items selected across the seven cornerstones of safety that were either documented in NRC inspection reports or entered into the licensee's corrective action program (CAP) since the last performance of an NRC PI&R inspection in January 2001 (Inspection Report (IR) No. 50-424 and 425/2001-02). The inspectors assessed whether these items were being properly identified, characterized, and entered into the CAP for evaluation and resolution. The inspectors discussed PI&R observations from the baseline NRC inspection program with the resident inspectors.

The inspectors reviewed condition reports (CRs) for risk significant systems and discussed them with the responsible system engineer to determine whether problems were effectively identified and evaluated. The risk significant systems the inspectors reviewed included the following: Emergency Diesel Generator (EDG), electrical power, Residual Heat Removal (RHR), Safety Injection (SI), Component Cooling Water (CCW), Nuclear Service Cooling Water (NSCW), and Auxiliary Feedwater (AFW). A walkdown of each system was conducted to assess the material condition and determine if any unidentified degraded equipment conditions existed. The walkdowns were conducted with the system engineer or discussed with the system engineer after the walkdown. The condition of the system, past performance issues, and any planned modifications were discussed. System health reports were also reviewed.

The inspectors verified that problems in CRs were properly evaluated using the Maintenance Rule when appropriate. Selected maintenance work orders were reviewed to verify proper classification of deficiencies as either work orders or CRs.

The inspectors reviewed 15 licensee operating experience (OE) items to determine if they were appropriately evaluated for applicability and if identified problems were entered into the CAP.

During the inspection ongoing plant activities were reviewed including a review of the following: shift turnover meetings, plant status and plan of the day meetings, surveillance testing and maintenance, operational activities including unit trip recovery, startup, and power operation, a Safety Review Board (SRB) meeting, a Human Performance Review Board (HPRB) meeting, and a Plant Review Board (PRB) meeting; operating logs and the Major Problem Status Report (June 2002); and, discussion of issues with plant employees. The inspectors spot-checked completed technical specification surveillances for accuracy and timeliness. In addition, maintenance scheduling was reviewed to verify appropriate risk management was utilized. A sampling of maintenance work orders (MWOs) from calendar years 2001 and 2002 were reviewed to verify proper classification of deficiencies as either work orders or

CRs. The inspectors attended the daily work control meeting to evaluate the interfaces between the work control process and the CAP. Several equipment problems discussed during the plan of the day meetings were selected by the inspectors to verify the issues had been entered into the CAP, if necessary.

The inspectors reviewed self-assessment reports, audit reports, internal assessment reports, HPRB data, and minutes of the PRB and SRB meetings to determine if oversight activities were effective and if self-identified issues were appropriately entered into the CAP. Documents reviewed are listed in the attachment.

(2) Issues:

The licensee's program for identification of problems was effective and provided a suitable mechanism for the identification and documentation of plant problems. The threshold for entering issues was low and employees were encouraged to enter items. Initiators of CRs were from all plant groups which demonstrated the plant staff was familiar and involved with the corrective action program. However, the inspectors found several instances where minor housekeeping problems, fire protection deficiencies, and equipment material issues were not documented in the CAP. Examples included AFW system oil/water leaks, low oil bubbler level, valve position labeling, RHR Limitorque plastic cover, area housekeeping, and fire protection issues. When these issues were identified to the licensee, appropriate actions were taken.

Quality Assurance (QA) group audits were effective in identifying issues. The scope of PRB and SRB meetings was consistent with the documented charter for those activities and addressed CRs, procedure changes, license document changes and modifications in a thorough and questioning manner. The HPRB process provided valuable feedback for the selected human performance related CRs.

As documented in IR 50-424 and 425/2001-02, some issues from the assessments were not entered into the CAP. During this inspection, the inspectors found that self-assessments of the CAP were appropriately scoped and issues identified during the self-assessments were properly entered into the CAP. Self-assessments were performed by most departments.

The licensee was effective in identifying and placing OE issues into the CAP. The inspectors found several examples of actions necessary to address OE issues not entered and tracked in the CAP. In these cases, necessary actions were the responsibility of a cognizant individual, such as a system engineer.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed the licensee's quarterly trend reports to determine whether identified trends were placed in the CAP. The inspectors also reviewed the Major Problem Status Report (June 2002) and selected completed CRs to determine whether the conditions identified had been resolved. The licensee classified CRs on safety significance ranging from Severity Level (SL) 1 (high significance) through SL 5 (little or no significance). All SL 3 and above CRs required a formal root cause determination.

During the period reviewed, several SL 2 CRs for plant trips were issued. The inspectors reviewed these SL 2 CRs and selected SL 3, SL 4, and SL 5 CRs. A sample of voided CRs was also reviewed to verify they were voided for appropriate reasons.

(2) Issues:

The licensee was generally effective in the use of trending, problem status reports, and SL classification of CRs to prioritize and evaluate issues. Quarterly trend report issues were entered into the CR program as SL 3 CRs and were appropriately evaluated. Classification levels were appropriate for the sample of CRs reviewed.

A concern with the licensee's resolution of configuration control problems was identified in IR 50-424 and 425/01-02. The effectiveness of corrective actions was limited and the condition of excessive mis-positions was not captured in an overall trend CR. Therefore, a scope analysis and comprehensive corrective action plan had not been developed. In response to this concern, the licensee initiated CR 2001000135 which resulted in the licensee performing a scope analysis and developing a comprehensive corrective action plan. The inspectors found that the corrective actions in this plan were extensive and included increased management oversight, training, individual evaluations of mis-position occurrences, benchmarking mis-positions at another nuclear station, a place-keeping policy for procedures which manipulate components, and post job briefings to specifically address configuration restoration. Additionally, "valve, breaker, switch mis-positions" were tracked as an area of interest in the Station Quarterly Trend Report.

The inspectors identified that CRs 2002002570 and 2002002796 did not address all the root causes. CR 2002002570, a SL 3 CR regarding a maintenance preventable functional failure, did not properly address the human performance root cause. The licensee documented this issue in the CAP as CR 2002003540. CR 2002002796 concerned a personnel error (wrong train event) during surveillance testing. During the HPRB, the licensee also identified that the root cause and corrective actions were narrowly focused. The licensee took actions for additional review of the CR.

c. Effectiveness of Corrective Actions

(1) Inspection Scope:

The inspectors reviewed root cause evaluations, corrective actions, the backlog of open items and actions items, and selected CRs to determine if appropriate corrective actions were documented, assigned, and implemented. This included verification of Action and Open Item Tracking activities and maintenance work orders or modification packages which implemented corrective actions. Where possible field verification of corrective actions was performed. The inspectors attended an HPRB meeting.

The inspectors reviewed licensee actions relative to two reactor trips, Unit 1 on April 20, 2002, and Unit 2 on November 13, 2002, caused partly by human error. The inspectors were also briefed by the licensee of an on-going event investigation of a forced dual unit shutdown on November 24, 2002, due to secondary chemistry problems. The inspectors reviewed the related CRs, event investigations, trends, and selected

corrective actions to evaluate effectiveness. The inspectors also attended several event investigation meetings associated with the Unit 2 reactor trip.

(2) Issues:

In general, corrective actions were effective. System engineers were knowledgeable of equipment issues and effectively used the CAP to deal with equipment issues. The inspectors monitored the effectiveness of corrective actions and concluded the backlog of open items and action items were manageable.

The Open and Action Item Tracking processes were effective in verifying the completion of specified corrective actions in CRs and LERs. The inspectors were able to verify that the specified corrective actions were performed. With respect to configuration control issues discussed in the previous P&IR report, although mis-positioning continued to occur, the trending information showed improvement which indicated the corrective actions were having a positive effect on station activities.

The root causes for two unit trips and the dual unit shutdown were similar. This included procedural non compliances (not following the procedure or unaware of procedure existence) and weak supervisory oversight. The oversight weaknesses included missed or weak pre-job briefings, conducting risk significant activities in parallel, weak command and control, and poor communications. While some initiatives had been implemented, the licensee had not yet achieved positive results from their corrective actions.

The inspectors found the multi-discipline event team assembled for the most recent Unit 2 reactor trip was effective in developing corrective actions. The event team appropriately reviewed the effectiveness of the corrective actions associated with a similarly caused trip of Unit 1. The inspectors found the corrective actions associated with the Unit 1 trip were adequate. However, the corrective actions focused primarily on the specifics of the trip. Operator performance, including procedure use during startup and lower power feed water operations was not addressed. Also, there were no corrective actions relative to supervisory performance or command and control expectations. The inspectors characterized this as a missed opportunity.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope:

The inspectors assessed if any conditions existed causing employees' reluctance to raise safety issues. This included identifying deficient conditions through the CAP and the understanding and use of the employee concerns program (ECP) . The inspectors also reviewed the ECP procedure and a summary of employee concerns and interviewed the ECP supervisor to assess visibility of the program.

(2) Issues:

The inspectors determined the licensee had established and maintained a safety-conscious work environment as evidenced by the number of CRs written, a visible ECP, and the results of the NRC discussions during the course of the inspection.

All employees were aware of the process and the location and accessibility of the ECP coordinator. The inspectors concluded that employees felt free to raise issues.

4OA6 Management Meetings

Exit Meeting Summary

Inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on December 5, 2002. The licensee acknowledged the findings presented. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

W. Bargeron, Plant Support Assistant General Manager
W. Burmeister, Manager Engineering Support
G. Frederick, Plant General Manager
T. Petrak, Maintenance Supervisor
P. Rushton, Plant Operations Assistant General Manager
M. Sheibani, NSAC Supervisor
T. Tynan, Operations Manager

LIST OF DOCUMENTS REVIEWED

Licensee Procedures:
00150-C, Condition Reporting and Tracking System
80014-C, Handling of Condition Reports for Deficient Conditions
80016-C, Trend Identification and Reporting
00040-C, Self Assessment Program
00414-C, Operating Experience Program
VSAER-WP-03, Safety Audit and Engineering Review Field Audits
VSAER-WP-05, Annual SAER Department Assessment
00058-C, Root Cause Determination
00409-C, Action Item, Open Item, and Commitment Tracking
VNS-AP-16, Condition Reporting and Tracking System
SNOC Concerns Program Procedure
00057-C, Event Investigation
50028-C, Engineering Maintenance Rule Implementation
50023-C, System Health and Monitoring Program
00354-C, Maintenance Scheduling
29540-C, Risk Assessment Monitoring
29542-C, Shutdown Risk Assessment
10000-C, Conduct of Operations
00002-C, Plant Review Board - Duties and Responsibilities
VSRB-05, Southern Nuclear Vogtle Project Support, Safety Review Board
00056-C, 10 CFR 50.59 Screening and Evaluations
28707-C, 480 Volt Air Circuit Breaker Maintenance and 60 Month Check
00404-C, Surveillance Test Program
00409-C, Action Item, Open Item, and Commitment Tracking
10024-C, Equipment Troubleshooting
81060-C, Open Item/Commitment Tracking Program Coordination
VSAER-WP-03, Safety Audit and Engineering Review Field Audits

Operating Experience:
IN 2001-09, Main Feedwater System Degradation in Safety-Related ASME Code Class 2 Piping inside the Containment of a Pressurized Water Reactor

IN 2002-09, Potential for Top Nozzle Separation and Dropping of a Certain Type of Westinghouse Fuel Assembly
IN 2002-24, Potential Problems with Heat Collectors on Fire Protection Sprinklers
IN 2002-25, Challenges to Licencees' Ability to Provide Prompt Public Notification and Information During an Emergency Preparedness Event
IN 2002-02, Supplement 1, Recent Experience with Plugged Steam Generator Tubes
IN 2002-18, Effect of Adding Gas into Water Storage Tanks on the Net Positive Suction Head for Pumps
SER 2-01, EDG Failure Resulting from Inadequate Performance Monitoring and Inadequate Response to Symptoms of Impending Failure
SER 3-02, Workers Exit Plant Site with Detectable External Radioactive Contamination
SER 5-01, 4-kV Breaker Failure, Switchgear Fire and Turbine Generator Damage
SEN 220, Pressure Boundary Leakage at Palisades
SEN 226, Stress Corrosion Cracking on a Portion of Safety Injection System Piping
SEN 230, Pressurizer Spray Valve Failure Resulting in Reactor Scram and Safety Injection
RIS 01-015, Performance of DC- Powered Motor-Operated Valve Actuators
RIS 01-009, Control of Hazard Barriers
OE 14513, Concern with Boron Concentration in Mode 3 below P-11 with SI Blocked

Condition Reports:

2001000203	2001002960	2001000162	2001001064	2001000434	2001001069
2001000468	2001001106	2001000598	2001001837	2001001460	2001001853
2001000727	2001002194	2001000529	2001002198	2001000533	2001002246
2001000970	2002000103	2001000971	2002001700	2001001443	2002002212
2001001444	2002002645	2001001514	2001003040	2001001516	2002000744
2001001582	2002000745	2001002097	2002000856	2001002951	2001000006
2001001580	2001001704	2001000165	2001000464	2001000581	2001002138
2001001907	2001002139	2001000960	2001002142	2002000319	2001002141
2001000681	2002000090	2001000178	2002000264	2002000301	2001000043
2001000132	2001000299	2001000307	2002002295	2001000310	2001000423
2001000519	2001003034	2001000723	2001002083	2002000723	2002001319
2000001563	2001000031	2001000113	2001000501	2001001022	2001002604
2002000107	2002000518	2002002281	2002001328	2001000361	2002002581
2002003295	2002002023	2002001647	2002001371	2002000589	2002002430
2002002685	2002001992	2002002302	2002002429	2002001841	2002002122
2002002224	2001000988	2001001061	2001001686	2001002177	2001002250
2001002570	2001002711	2001002771	2002000088	2002000431	2002000756
2002000859	2002001062	2002001088	2002001129	2002001299	2002001540
2002001655	2002001837	2002002385			

Maintenance Work Orders:

Maintenance Work Orders for SI, RHR, AFW, EDG, CCW, NSCW, AC power

10101119	20200276	20100832	20101733	20101413	20102735
10101119	20200276	20102735	20101413	20101733	10100044
10100539	10101390	10101430	10101639	10102299	10102307
10103500	10200764	10101084	20102150		

Licensee Audits and Self-Assessments:

SAER Audit of Corrective Actions, OP21-02/15, VSAER-2002-079
SAER Audit of Corrective Actions, OP21-01/01, VSAER-2001-013

SAER Audit of Corrective Actions, OP21-00/14, VSAER-2000-077
SAER Audit of Corrective Actions, OP21-02/01, VSAER-2002-019
SAER Audit of Corrective Actions, OP21-01/16, VSAER-2001-071
SAER Audit of Outage Activities, OP06/16/17/25/26-01/08,VSAER-2001-039
SAER Audit of Fire Protection Program, OP20-02/11, VSAER-2002-062
Count Room and Chemistry Self-Assessment, NOH-02449, July 2002
Maintenance Fire Protection Self-Assessment, NOM-02252, May 2002
Training Department Self-Assessment, February 2002
Health Physics Self-Assessment, NOH-02452, July 2002
Engineering Support Department Self-Assessment, NOE-03480, November 2001
Equipment Reliability Self-Assessment, NOE-03493, July 2002
2002 Operations Self Assessment, NOP 01357, June 2002

Safety Review Board (corporate) Meeting Minutes
Major Meetings: 02-02, 02-03, 02-05, 01-02, 01-04, 01-05, 01-08

Plant Safety Review Board (station) Minutes
9/11/02, 9/10/02, 8/30/02, 8/27/02, 8/20/02, 8/13/02

NRC Violations
NCV 50-424,425/00-05-02 (CR 2000001563)
NCV 50-424,425/00-06-01 (CR 2001000521)
NCV 50-424,425/01-03-01 (CR 2001000477)
NCV 50-424,425/01-03-02 (CR 2001000694)
NCV 50-424,425/01-08-01 (CR 2001002851)
NCV 50-424,425/02-02-01 (CR 2002001165, 2002001172, 2002001322)
NCV 50-424,425/02-02-02 (CR 2002001346, 2002001392, 2002001697)
NCV 50-424,425/02-02-03 (CR 2002001251)
NCV 50-424,425/02-02-04 (CR 20020000723, 2002001223)

Vogtle Quarterly Trend Reports
May - July, 2002
February - April, 2002
November, 2001 - January 2002
August - October, 2001
May - July, 2001

LERs, Event Investigation Reports (EIR)
LER 1-2001-001, Unit 1 Reactor Trip Due to Loss of Generator Excitation
EIR 1-2003-03, Reactor Trip due to Generator Excitation Loss
LER 1-2002-001, Improperly Wired Interlock Affects ECCS Re-circulation Valve
LER 2-2001-001, Reactor Trip While Testing Main Feedwater Pump Trip Signals
EIR 2-2001-01, Reactor Trip Due to Loss of Feedwater Flow
LER 1-2002-003, Loss of Main Feedwater ESF Actuation and Manual Reactor Trip
EIR 1-2002-001, Loss of Main Feedwater and Manual Reactor Trip
LER 1-2002-002, Containment Isolation Valve Rendered Inoperable
EIR 2-2002–002, Both Units Shutdown Due to Wrong Chemicals Added to Feed Systems
EIR 2-2002–001, Manual Reactor Trip Due to SG#3 HI-HI Level