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NUCLEAR REGULATORY COMMISSION
REGION II
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January 8, 2002

Southern Nuclear Operating Company, Inc.
ATTN: Mr. H. L. Sumner, Jr.
Vice President
P. O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT - NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 50-321/01-09 AND 50-366/01-09

Dear Mr. Sumner:

On November 30, 2001, the NRC completed an inspection at your Hatch Units 1 and 2 reactor facilities. The enclosed report presents the inspection findings which were discussed on November 30, 2001, with Mr. P. Wells and other members of your staff.

This 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 the conditions of your operating license. Within these areas, the inspection involved selected examination of procedures and representative records, observations of activities, and interviews with personnel.

On the basis of the sample selected for review, no findings of significance were identified during this inspection. The inspectors noted that your staff had implemented a new Corrective Action Program which had addressed many of the problems identified during the previous Problem Identification and Resolution inspection. Overall, the inspectors found there was a general improvement in the Hatch Corrective Action Program and concluded that problems were properly identified, evaluated, and corrected. The inspectors did find that previous issues with identification of repetitive problems and departmental self-assessments continued, and that there were minor deficiencies with the implementing procedures.

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Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Stephen J. Cahill, Chief
Reactor Projects Branch 2
Division of Reactor Projects

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

Enclosure: NRC Inspection Report 50-321/01-09
and 50-366/01-09

cc w/encls: (See page 3)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-321, 50-366
License Nos:	DPR-57, NPF-5
Report No:	50-321/01-09 and 50-366/01-09
Licensee:	Southern Nuclear Operating Company (SNC), Inc.
Facility:	E. I. Hatch Nuclear Power Plant, Units 1 & 2
Location:	P. O. Box 2010 Baxley, Georgia 31515
Dates:	November 13 -16 and November 26-30, 2001
Inspectors:	C. Rapp, Senior Project Engineer (Lead Inspector) J. Munday, Senior Resident Inspector, Plant Hatch K. O'Donohue, Operations Engineer
Approved by:	Stephen J. Cahill, Chief Reactor Projects Branch 2 Division of Reactor Projects

Enclosure

Summary of Findings

IR 05000321-01-09, IR 05000366-01-09, on 11/13-16/2001 and 11/26-30/2001, Southern Nuclear Operating Company, Inc., Edwin I. Hatch Nuclear Plant, Units 1 & 2, annual baseline inspection of the identification and resolution of problems.

The inspection was conducted by a regional Senior Project Engineer, a regional Operations Engineer, and the Plant Hatch Senior Resident Inspector. No findings of significance were identified.

Identification and Resolution of Problems

The inspectors determined that the licensee's threshold for identifying problems remained sufficiently low and that the licensee was effective at evaluating problems and developing corrective action. No findings of significance were identified. General improvement was noted since the last NRC Problem Identification and Resolution (PI&R) inspection, which was documented in IR 50-321/01-02 and 50-366/01-02, dated March 16, 2001. Since then, the licensee had implemented a new corrective action program (CAP) which strengthened the implementing procedures, increased department management involvement, and established a separate group to manage the CAP as a full-time function. Particularly noteworthy was establishment of a dedicated Trend Coordinator position and a Corrective Action Program Coordinator (CAPCO) position for each department. The Trend Coordinator was responsible for monitoring the CAP and identifying adverse trends. The CAPCO's were responsible for coordinating the resolution of condition reports assigned to their department.

Although the new CAP had only been in place since August, 2001, the inspectors also noted improvement with the consistency of the problem evaluation and resolution. However, the inspectors did find that previous issues with identification of repetitive problems and departmental self-assessments continued, and that there were minor deficiencies with the implementing procedures.

Enclosure

Report Details

4. Other Activities (OA)

4OA2 Problem Identification and Resolution

a. Effectiveness of Problem Identification

(1) Inspection Scope

To assess the effectiveness of the licensee's corrective action program (CAP), the inspectors reviewed corrective action documents for selected risk significant systems and other areas such as human performance. This review included examination and evaluation of Condition Reports (CR's) for problems in each system and associated documentation such as Action Item Tasks (AIT's) and Maintenance Work Orders (MWO's). This review was performed to determine if individual and repetitive problems had been captured in the licensee's CAP and to evaluate if problems were appropriately documented. The selected systems included High Pressure Coolant Injection (HPCI), Reactor Core Isolation Cooling (RCIC), Plant Service Water (PSW), Safety/Relief Valves (S/RV's), and plant Direct Current (DC) Electrical.

The inspectors also reviewed the results of the licensee's evaluations of Operating Experience (OE) items, Maintenance Rule (MR) component failures, selected self-assessments, audits, and trend reports and management observations to assess the licensee's effectiveness at identifying problems. In addition, the inspectors attended daily plant status meetings, daily CAPCO meetings, and held discussions with various plant personnel to determine the level of management attention and oversight given to issues entered into the CAP.

The inspectors reviewed procedures and documents associated with the CAP and self-assessment processes and compared licensee performance to the procedures and document requirements to ensure the requirements were being met. Documents and records reviewed are listed in the attachment to this report.

(2) Findings

Since the last NRC Problem Identification and Resolution (PI&R) inspection (documented in IR 50-321/01-02 and 50-366/01-02, dated March 16, 2001) and an external audit of the Hatch corrective action program (CAP), the licensee had implemented a new corrective action program (CAP) in August 2001. The new program addressed many of the issues identified in those previous reviews by strengthening the implementing procedures, by increasing department management involvement in the CAP, and by establishing a separate group to manage the CAP as a full-time function. The separate group included a dedicated Trend Coordinator and a Corrective Action Program Coordinator (CAPCO) position in each plant department. The inspectors noted that the new CAP had resulted in an overall improvement from the previous PI&R inspection, particularly with the consistency of problem resolution.

The inspectors determined that the licensee continued to identify problems at a low threshold and initiate appropriate corrective actions. However, several examples of repetitive problems not being identified were noted including missed ASME

code-required inspections, turbine building chiller system functional failures, and setpoint drift of 4kv undervoltage relays. The inspectors found that there was a general reliance on individual corporate memory to identify repetitive equipment failures because of inconsistent entry of CR's into the CR database. This inconsistency limited the licensee's ability to search the CR database for previous occurrences of a condition. With the new CAP, detailed trend codes were assigned to each CR. These trend codes allowed searching of the CR database to identify adverse trends for either specific plant equipment or across multiple systems. Further, the new CAP has improved this process through the use of a dedicated trend coordinator and department CAPCO's. During the daily CAPCO meetings, the inspectors noted the trend codes were being consistently assigned and effectively used to identify repetitive problems. For example, the licensee identified an adverse trend when reviewing CR 2001010379 regarding security equipment problems and a Severity Level (SL) 3 CR was written to evaluate this repetitive condition. (Note: the licensee CAP grades CR's at five SL's, with 1 being the most significant and 5 the least).

Departmental self-assessments were completed in all areas required by licensee procedures. However, as noted in the previous PI&R inspection, some assessments continued to be narrowly focused on resolving known problems. For example, self-assessments of vehicle use in the protected area and the security badge issue process were performed after multiple CR's were written identifying problems in these areas. Additionally, CR's were not written consistently to document the areas in need of improvement. When CR's were written they were usually classified as Severity Level (SL) 5. Under the new CAP, SL 5 CR's were written for trending only and corrective actions were not required. These CR's were assigned detailed cause codes which allowed searching of the CR database for prior occurrences and adverse trends. The new CAP had not been in place long enough for the inspectors to assess this function. The licensee had previously conducted an assessment of the self-assessment program and also found weaknesses both programmatically and functionally. The licensee stated they were reviewing ways to make departmental self-assessments more effective.

The inspectors reviewed three CAP trend reports; two issued by the licensee's quality assurance organization (Nuclear Safety and Compliance [NSAC]) and one issued by the CAP Trend Coordinator. The inspectors found that trend assessments were performed quarterly and that the CAP-issued trend report identified the CR or AIT written for each recommendation. However, the inspectors noted that the new CAP did not address two problems identified during the previous PI&R inspection. The Trend Coding and Analysis Handbook did not provide written guidance on the frequency or content of trend reports and trend reports were issued over two months after the end of the assessment period.

The licensee continued using the AIT program, which was independent of the CAP, to track corrective actions. The inspectors noted that the new CAP allowed SL 4 CR's to be closed to AIT's. The inspectors considered that this allowance created vulnerabilities in the new CAP. Specifically, there would be no further involvement by the CAP organization to monitor for completion of corrective actions, the assigned AIT due date could be extended by the department managers without the CAP organization's approval, and there was no requirement to trend AIT's for SL 4 CR's nor was an action

level established to prompt increased management attention for SL 4 CR's. However, these vulnerabilities did not exist for the more significant SL 1, SL 2, and SL 3 CR's. The inspectors also noted that, while the backlog of AIT's associated with SL 1, SL 2, and SL 3 CR's was low, the backlog of AIT's associated with SL 4 CR's was higher and that many due dates either had been missed or were over a year after the CR was initiated. The licensee stated they were taking action to reduce the AIT backlog.

Condition Reports were reviewed by engineering personnel for functional failure determination. This review was generally effective; however, the inspectors found several examples where the condition was not recognized as a functional failure. These included CR's 2001007846, 2001007847, 2001008598, 2001008600, associated with the Turbine Building Chiller and Area Cooling system, and 2001007171, and 2001007014, associated with the Control Rod Drive system. The inspectors reviewed the MR a(1) status report and determined the report was current and the actions appear to be appropriate for the condition.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

Selected corrective action documents were reviewed to determine if the severity level was correctly assigned and if root cause and apparent cause evaluations met the licensee's procedural requirements. The inspectors attended several CAPCO meetings to determine if severity level classification for new CR's met licensee procedure requirements and licensee management expectations. The inspectors also attended a Corrective Actions Review Board (CARB) meeting to assess management's level of involvement in the CAP.

(2) Findings

Most problems entered into the CAP were properly characterized and classified. However, the inspectors noted that several CR's did not contain correct information, all necessary information, or were vague about the specific problem. This resulted in differing severity levels considered for the same CR or required additional follow-up before a severity level could be assigned. For example, CR 2001010367 was written for an inoperable card reader in the Technical Support Center. When this CR was discussed at the daily CAPCO meeting, the term "card reader" was first thought to refer to a security card reader and the CR was discussed as being SL 4. However, after it was mentioned the term "card reader" was referring to an aperture card reader used for viewing plant drawings the CR was assigned a severity level of 5.

During the CARB meeting, the evaluation for CR 2001007171 was reviewed. The CR was written for failure of the 1A Control Rod Drive (CRD) pump and was classified as a SL 3 CR. It therefore received an apparent cause determination which concluded component ageing was the cause. While the licensee found this acceptable, the licensee noted that little additional effort would have been be necessary to develop corrective actions to prevent recurrence. The inspectors also noted that, although there were two CRD pumps per unit, no extent-of-condition review was conducted. The new CAP required corrective actions to prevent recurrence and an extent-of-condition review

only for SL 1 and SL 2 CR's. The inspectors reviewed Attachment 1 to the CAP Process Expectations Handbook, which provided broad examples to aide in determining severity level, and concluded the assigned severity level was correct. However, the inspectors considered several of these broad examples for SL 3 could represent potential significant conditions adverse to quality. These included reactivity mismanagement events, handling of new fuel that resulted in damage, spurious actuation of the Engineered Safety Features system, significant radioactive spill involving spread of contamination, and NRC Severity Level IV violations. Since 10 CFR 50, Appendix B, Criterion XVI, requires corrective actions to prevent recurrence for significant conditions adverse to quality, the license was considering whether some of these broad examples would be more appropriate as SL 2 CR's.

While most evaluations reviewed were thorough, the inspectors identified a SL 2 CR which was not as comprehensive. The inspectors reviewed the evaluation for CR 2001007908 which was written for repeat failures to perform ASME code-required inspections. This CR required a formal root cause, an extent-of-condition review, and corrective actions to prevent recurrence. The inspectors noted that the licensee had grouped these failures into four broad categories. The licensee then performed a root-cause evaluation and extent-of-condition review for each specific category. This approach did not evaluate for potential programmatic common-causes nor provide an extent-of-condition review for the general condition of repeatedly failing to perform ASME code-required inspections; both of which the inspectors determined were key elements in developing corrective actions to prevent recurrence of the problem.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed selected CR's and CAP documents to evaluate the effectiveness of corrective actions. This included human performance CR's, Non-Cited Violations (NCV's), and Licensee Event Reports (LER's). Additionally, the inspectors reviewed problems to verify that the extent of condition was appropriately considered and that open corrective actions did not result in an inappropriate risk condition. The inspectors also held discussions with licensee personnel concerning their perceptions as to the effectiveness of the CAP.

(2) Findings

Based on the discussion with licensee personnel and a sample of condition reports selected for review, the inspectors found that, generally, the licensee's corrective actions for significant issues were properly prioritized and effective. The inspectors did not identify any open corrective actions that increased plant risk. Although not specifically required by their process, the licensee appeared to consider risk when scheduling corrective actions.

The new CAP required an effectiveness review for SL 1, SL 2, and SL 3 CR's. An AIT was issued to track completion of this review. Also, NSAC was required to conduct an effectiveness review for actions identified through departmental self-assessments. Completed self-assessments were to be sent to NSAC who would then issue an AIT for the effectiveness review. However, the inspectors found an example were the completed self-assessment was not forwarded; therefore, no effectiveness review was

scheduled. The licensee had previously found other self-assessments were not forwarded for NSAC to schedule the effectiveness review.

During a CARB meeting, the licensee noted that an interim corrective action for CR 1999005419 was to initiate an MWO. However, process-related corrective actions were not allowed by their Cause Determination Handbook. When the CARB members did not question this interim corrective action, the inspectors asked if process-related corrective actions were acceptable for interim corrective actions. The licensee said it was not appropriate for interim corrective actions and that the handbook guidance was intended to cover all corrective actions.

The inspectors also noted the Cause Determination Handbook contained an allowance that a condition does not have to be corrected if it was an acceptable risk should the condition recur. This allowance existed for SL 1, SL 2, and SL 3 CR's. The inspectors also noted the corrective actions to prevent recurrence were required for SL 1 and SL 2 CR's. The inspectors discussed this allowance with the licensee; specifically regarding SL 1 and SL 2 CR's. The licensee agreed this allowance was inconsistent with both management expectations and regulatory requirements and revised the handbook for SL 1 and SL 2 CR's, but not SL 3 CR's because corrective actions for SL 3 CR's are not required to prevent recurrence. The inspectors did not identify any examples of uncorrected conditions.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

During the course of the inspection, the inspectors held discussions with various licensee employees to determine if an environment conducive to the identification of issues existed. In addition, the inspectors discussed the employee concerns program (ECP) with the Concerns Coordinator and reviewed issues resulting from the ECP. The review and discussions were performed to ensure site procedure requirements were met, to determine if personnel used and had confidence in the ECP program, and that a safety-conscious work environment existed.

(2) Findings

The inspectors concluded employees were not reluctant to report problems either through the CAP or the ECP, and that a safety-conscious work environment existed.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. P. Wells, Plant Manager, and other members of licensee management at the conclusion of the inspection on November 30, 2001. The licensee acknowledged the findings presented.

The inspectors asked the licensee if any other materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Attachment: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

LICENSEE PERSONS CONTACTED

J. Betsill, Assistant General Manager-Plant Support
M. Googe, Maintenance Manager
J. Hammonds, Engineering Support Manager
G. Johnson, Safety Audit and Engineering Review Supervisor
D. Madison, Assistant General Manager-Operations
P. Roberts, Outage and Planning Manager
J. Thompson, Nuclear Security Manager
S. Tipps, Nuclear Safety and Compliance Manager
R. Varnadore, Operations Support Superintendent
P. Wells, General Manager
K. Underwood, CAP Manager

DOCUMENTS REVIEWED

CAP Implementing Documents

Procedures: AG-MGR-63-0598N, Self Assessment Process
AG-MGR-64-1198N, Condition Report Processing
10AC-MGR-004-0S, Corrective Action Program

Handbooks: Effectiveness Review, Cause Determination, CAP Process Expectations, Corrective Action Review Board (CARB), Trend Coding and Analysis

Audits, Self-Assessments, and Trend Reports

01-FP-1: Audit of the Fire Protection Program
Self Assessment of the Security Badge-Issue Process (Jul/Aug '01)
Chemistry Self Assessment 2/20 - 23/01
BWROG Work Control 6/4 - 5/01
Operations Self Assessment - Outage Readiness 8/14/01
Self-Assessment of Plant Hatch's Self-Assessment Program
CAP Trend Report July through December 2000
CAP Trend Report January through March 2001
CAP Trend Report April through August 2001
Audit of Corrective Action Program dated January 2001
Audit of Corrective Action Program dated July 2001

Operating Experience Evaluation Packages

10 CFR 21 response "Crane Nuclear Motor Power Monitor Evaluation Letter # LS-2001-002
10 CFR 21 Cutler-Hammer PIN-00-01 (Westinghouse Type BF and NBF AC Relay)
ABB Product Advisory Letter # PAL041001 (Potential Defect Type CV-7 Relay)
10 CFR 21 response "Potential To Refurbish A Plant Service Water Pump/Motor without Oil ports Being Drilled For The Lower Bearing"
10 CFR 21 response "Woodward Electronic Controls With Electrolytic Capacitors"
10 CFR 21 response "Emergency Diesel Generator Refurbished Governor Determined To Be Substantial Safety Hazard During Emergency Diesel Generator Operation"

10 CFR 21 response “Rosemount 10CFR 21 Notification Model 353C & 353C1 Conduit Seals”
10 CFR 21 response “Seismic Qualification Of Electrically Operated GE AK Circuit Breakers”
10 CFR 21 response “HPCI Stop Valve Would Not Trip Remotely”
10 CFR 21 response “Westinghouse Potential Light Socket Cracking”
10 CFR 21 response “Potential For Some PSW & RHRSW Pump Flows To Be Overstated By Johnston Pump”
10 CFR 21 response “1A PSW Pump Motor Failure Potential 10 CFR 21"

Non-Cited Violations (NCV’s) and Licensee Event Reports (LER’s)

NCV 50-321, 366/00-006-01
NCV 50-366/00-003-01
NCV 50-321, 366/2001-04-01
LER 50-321/2001-002
LER 50-366/2001-001

Condition Reports (Not specifically mentioned in the Report)

2000000981, 2001000027, 2001000624, 2001000633, 2001001178, 2001001691, 2001001836, 2001001966, 2001001973, 2001002226, 2001002422, 2001002428, 2001003285, 2001003631, 2001003721, 2001004250, 2001004289, 2001004744, 2001005110, 2001005696, 2001005852, 2001006095, 2001006130, 2001006221, 2001006222, 2001006379, 2001007635, 2001007666, 2001007667, 2001007680, 2001007778, 2001007971, 2001008065, 2001008088, 2001008300, 2001008397, 2001008808, 2001008809, 2001009801, 2001009841, 2001005474 ,2001005487, 2001001966, 2001003709, 2001003006, 2001001322, 2001005393, 2001002118, 2001001008, 2001004690, 2001003805, 2001009819, 2001009809, 2001000694, 2001007962, 2001002984, 2001002233, 2001001235, 2001006831, 2001001975, 2001009657, 2001008249, 2001004418, 2001006529, 2001005586, 2001003882, 2001006938, 2001000784, 2001005586, 2001009657, 2001010315, 2001001168, 2001003595, 2001003631, 2001006864, 2001007635