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NUCLEAR REGULATORY COMMISSION
REGION II
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December 20, 2001

Southern Nuclear Operating Company, Inc.
ATTN: Mr. D. N. Morey
Vice President
P. O. Box 1295
Birmingham, AL 35201

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - NRC SUPPLEMENTAL INSPECTION REPORT 50-348/01-09 AND 50-364/01-09

Dear Mr. Morey:

By letters dated August 31 and October 22, 2001, you were informed that the NRC would conduct a supplemental inspection at your Farley Nuclear Plant. The enclosed inspection report presents the results of that supplemental inspection which was completed on November 21, 2001. The results of this inspection were discussed on November 20, 2001, with Mr. M. Stinson and other members of your staff.

This supplemental inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records and interviews with personnel. Specifically, the inspectors reviewed the issues and circumstances surrounding the White inspection finding related to your performance during the July 2000 Operational Safeguards Response Evaluation and the resulting root cause evaluation completed by your staff on October 25, 2001.

No findings of significance were identified during the inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be publicly available 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/NRC/ADAMS/index.html* (the Public Electronic Reading Room).

Sincerely,

/RA/

Leonard D. Wert, Acting Deputy Director
Division of Reactor Projects

Docket Nos. 50-348 and 50-364
License Nos. NPF-2 and NPF-8

Enclosure: NRC Inspection Report 50-348/01-09
and 50-364/01-09

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-348 and 50-364
License Nos.:	NPF-2 and NPF-8
Report No.:	50-348/01-09 and 50-364/01-09
Licensee:	Southern Nuclear Operating Company, Inc.
Facility:	Farley Nuclear Plant, Units 1 and 2
Location:	7388 N. State Highway 95 Columbia, AL 36319
Dates:	November 19 to November 21, 2001
Inspector:	S. M. Shaeffer, Senior Resident Inspector, McGuire
Approved by:	Stephen J. Cahill, Chief Reactor Projects, Branch 2 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000348-01-09, IR 05000364-01-09, on 11/19/2001 - 11/21/2001, Southern Nuclear Operating Company, Joseph M. Farley Nuclear Plant, Units 1 & 2, Supplemental Inspection for White inspection finding in the area of Physical Protection

This inspection was conducted by an NRC Senior Resident Inspector in consultation with regional security inspectors. The inspection identified no new inspection findings. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated "No Color" or by the severity of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process (ROP) website at *http://www.nrc.gov/NRR/OVERSIGHT/index.html*.

Cornerstone: Physical Protection

This supplemental inspection was performed to assess the licensee's evaluation and corrective actions for a White inspection finding related to performance during the July 2000 Operational Safeguards Response Evaluation (OSRE). This finding was initially documented as Unresolved Item 50-348,364/00-09-02, Failure to Prevent Mock Adversaries from Gaining Access to Target Sets. After further review, the NRC characterized this finding as having low to moderate risk significance (White) in a letter dated August 17, 2001. Per the Action Matrix in NRC Manual Chapter 0305, Operating Reactor Assessment Program, a supplemental inspection, performed in accordance with NRC Inspection Procedure 95001, is required for a White inspection finding.

The inspector determined that the licensee had performed an adequate investigation and evaluation of the issues which either caused or contributed to the White inspection finding. The licensee identified the primary root cause as a less than adequate philosophy which did not seek all available inputs for improvement in the security area, including a lack of benchmarking performance against other plants or the use of outside consultants. The licensee further characterized it as a compliance versus a continuous improvement approach. The licensee's root cause also identified several contributing causes for the White inspection finding including the lack of adequate target set development and related hardware vulnerabilities. The overall thoroughness of the root cause was adequate, but the inspector identified some possible contributing causes that had not been reviewed by the licensee, including security force workload and tracking of controller performance.

The licensee implemented a variety of corrective actions to prevent recurrence including physical security (hardware), procedural, and training upgrades. The licensee established several monitoring provisions to identify and correct potential degraded performance prior to recurrence. These included a scheduled effectiveness evaluation by the Safety Audit and Engineering Review group to assess the adequacy of the root cause and the corresponding corrective actions. Training exercises incorporated significantly expanded target sets which enhanced the overall response capability of the security force. The inspection identified some areas for potential security program enhancements which were subsequently documented in the licensee's corrective action system as indicated in the report. Several of these were related to a lack of structured, long term performance monitoring of security.

Based on the overall satisfactory results of the inspection, the licensee's performance in completing the root cause assessment for the identified White inspection finding was considered adequate. Implementation of the licensee's continuing corrective actions will be further reviewed and verified during future security inspections.

Report Details

01 Inspection Scope

This supplemental inspection was performed to assess the licensee's evaluation of the White[1] inspection finding in the area of Physical Protection. The purpose of the inspection was to provide assurance that the root cause and contributing causes of risk significant performance issues were adequately understood, the extent of condition was identified, and the corrective actions were sufficient to prevent recurrence.

The inspector, in consultation with regional security inspectors, reviewed the root cause evaluation for the White inspection finding, which received final licensee review on October 25, 2001, and associated plant procedures, drawings and corrective action documents. The inspector interviewed personnel associated with the White inspection finding, root cause evaluation, and completed/planned corrective actions. Plant tours were conducted to verify the implementation of key hardware upgrades and compliance with the established site security plan. In addition, the inspector reviewed drill scenarios and drill evaluation critiques to assess their adequacy and implementation. Personnel contacted and documents reviewed during this inspection are listed in the attachment to this report.

02 Evaluation of Inspection Requirements

02.01 *Problem Identification*

a. *Determine that the evaluation identifies who (i.e. licensee, self revealing, or NRC), and under what conditions the issue was identified.*

The finding was identified during the July 2000 Operational Safeguards Response Evaluation (OSRE) drills which resulted in the failure of a limited portion of the licensee's protective strategy and the loss of a target set. Although the root cause did not specify who identified the issue, it was generally considered self revealing by the licensee. The licensee documented this finding in Condition Reports (CR's) 2001002040 and 2000005064.

The root cause evaluation was initiated on August 17, 2001, based on the issuance of the White inspection finding by a letter of the same date. The timeliness of the root cause evaluation was predicated on the issuance of the White inspection finding per the licensee's procedures.

b. *Determine that the evaluation documents how long the issue existed and prior opportunities for identification.*

The licensee's evaluation documented that an NRC inspection finding due to the loss of two target sets, documented in Inspection Report 50-348,364/99-09, was a missed opportunity. The licensee had only addressed the specific items cited in that finding and did not take a broad look at the security program for other weaknesses or areas for

[1]This issue was originally identified as Unresolved Item 50-348,364/00-09-02, Failure to Prevent Mock Adversaries from Gaining Access to Target Sets. It was reclassified as White Finding 50-348,364/00-09-02 in an NRC to SNC letter dated August 17, 2001.

improvement. Although not specifically documented, the inspector concluded that the lack of adequate target set analysis was not identified until the July 2000 OSRE.

c. *Determine that the evaluation documents the plant specific risk consequences (as applicable) and compliance concerns associated with the issue.*

The root cause evaluation did not specifically evaluate the White inspection finding in terms of plant risk consequences due to the inherent difficulty of quantifying risk consequences in the security area. The inspector discussed plant risk consequences with the licensee and concluded that the licensee fully understood that loss of one or more target sets represented an increase in risk. The inspector considered many of the licensee's corrective actions would address problems which could be considered programmatic in nature and would therefore address any related risk consequences.

The finding was not considered a compliance issue by the NRC; therefore, the licensee did not address compliance concerns.

02.02 *Root Cause and Extent of Condition Evaluation*

a. *Determine that the problem was evaluated using a systematic method to identify root causes and contributing causes.*

The licensee used procedures FNP-0-ACP-9.0, Root Cause Program, and FNP-0-ACP-9.1, Root Cause Investigation, to evaluate this finding. The procedures required interviews with key personnel, data collection, and document review. The primary root cause was identified by conducting a historical review of security events, evaluating identified events for repeat problems, performing word search and trend analysis utilizing the licensee's corrective action and work order computer data bases, and reviewing safeguards information as applicable. Although other systematic methods such as barrier, change, and event and causal factor analysis were not used, the inspector considered that some of these methods were not appropriate for this finding.

b. *Determine that the root cause evaluation was conducted to a level of detail commensurate with the significance of the problem.*

The licensee's root cause evaluation was generally thorough and identified the primary root cause as well as addressing several related contributing causes and causal factors. The root cause was identified as a less than adequate philosophy which did not seek all available inputs for improving the security area, including a lack of benchmarking against other plants or the use of outside consultants to the Farley security area. The licensee also considered the approach to security was a compliance versus a continuous improvement approach.

Through review of the root cause evaluation and discussions with the root cause author and security personnel, the inspector determined the licensee also identified the following contributing causes:

- Lack of adequate target sets and associated target set analysis documentation.

- Lack of responder training for specific shooting challenges.
- Lack of recognition that site physical characteristics were better suited to certain defense strategies.
- Failure to have an established systematic approach for target set development.
- Target set (hardware) vulnerabilities based on the original target set protective strategies.

These contributing causes were not specifically identified in the final root cause, but corrective actions were appropriately established.

The inspector also identified two potential contributing causes that had not been specifically explored or addressed. The first included the potential effect of security force staffing levels and/or security management workload. However, the inspector noted that the licensee had recently increased security force staffing levels and decreased security management workloads to facilitate improvements in these areas.

The second was that the licensee's evaluation did not specifically identify, discuss, or provide corrective actions for the controller problems and drill artificialities which were discussed in the August 17, 2001 letter. The inspector reviewed how drill controllers were selected and trained with security personnel. The licensee was not tracking individuals who were trained as controllers to identify experienced controllers to reduce drill artificialities. In addition, the performance of exercise controllers was not being actively critiqued during the most recently performed exercises to identify controllers that needed addition training. Other areas not being actively critiqued following drills included camera adequacy and Central Alarm Stations/Secondary Alarm Stations actions. The licensee wrote CR 2001002911 to further evaluate these issues.

c. *Determine that the root cause evaluation included a consideration of prior occurrences of the problem and knowledge of prior operating experience.*

The inspector determined that the licensee did consider prior occurrences of the problem. As noted in Section 2.01 b., the licensee considered a previous NRC inspection finding was a missed opportunity. The licensee only addressed the specific items cited and did not take a broad look for other weaknesses or areas for improvement. Lack of incorporation of operating experience within the security area was also identified as a contributing cause. This also included the recognition of a lack of benchmarking trips to other utilities.

The licensee's evaluation did not include a review of NRC Information Notices and other operating experience to see if similar problems had previously been reported within the industry (for example, the results of other utilities' OSRE's).

d. *Determine that the root cause evaluation included consideration of potential common cause and extent of condition of the problem.*

The licensee considered the potential for common cause and conducted a broadness review (extent of condition) associated with the identified White Inspection Finding. The licensee's evaluation was limited to the security area. The licensee did not consider that the underlying causal factors may be applicable to other safety-related equipment and/or programs.

02.03 *Corrective Actions*

a. *Determine that appropriate corrective actions are specified for each root/contributing cause or that there is an evaluation that no actions are necessary.*

Based on the root and contributing causes identified in Section 02.02.b., the inspector verified that the licensee planned or implemented appropriate corrective actions for the identified items. Corrective actions implemented as of the inspection included:

- Development of new target set analysis and associated procedures.
- Numerous hardware upgrades based on the updated target set.
- Modified security response strategies to optimize site characteristics.
- Tactical and training improvements for responders.
- Significant increase in the number of security drills since July 2001 in preparation for implementing the upgraded security response strategy.
- Establishment of a corporate Security Coordinator facilitating increased security area communications.

Planned long term corrective actions included:

- Security Safety Audit and Engineering Review (SAER) Audit to evaluate the effectiveness of the completed corrective actions (scheduled to be completed by April 1, 2002.)
- Improve the FNP procedure regarding self-assessments.
- The security self-assessment and benchmarking program will be enhanced. The licensee has established a goal of two trips outside Southern Nuclear Company sites in 2002.

The inspector and licensee discussed several areas where corrective actions could have been improved or more thoroughly implemented. These included increased training on procedure FNP-0-SP-33, FNP Target Sets, improving the performance of security exercise drill critiques, procedurally incorporating guidance for one-on-one controller observations, and the periodic performance of SAER audits of the security area. In addition, the inspector identified that the licensee did not have structured performance measures for the security area similar to those developed for other site area disciplines. Other areas identified for improvement included security documentation and identification of safeguards information. The licensee wrote CR's 2001002900, 2001002911, and 2001002916 for these issues.

b. *Determine that the corrective actions have been prioritized with consideration of the risk significance and regulatory compliance.*

The licensee implemented the corrective actions in a logical order to facilitate effective changes. Specifically, the licensee developed a systematic approach to target set analysis, developed a target set procedure in parallel with hardware upgrades, modified the overall defense strategy for the site, developed procedures, and conducted personnel training. The inspector verified that all remaining corrective actions were considered long term and properly prioritized. The inspector concluded the priority assigned would provide improved protection of identified target sets.

c. *Determine that a schedule has been established for implementing and completing the corrective actions.*

The licensee's root cause evaluation contained a schedule for all corrective actions including established end dates. Revisions to these dates would require Plant Manager approval. The root cause and the corrective actions had been reviewed and approved by the Operating Experience Review Board. The inspector reviewed the list of corrective actions and noted that, at the time of the inspection, the majority of significant actions had been completed.

d. *Determine that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence.*

Although not specified in the root cause evaluation, the licensee has established a quantitative measure of zero target sets lost during planned security exercises. No other quantitative measures were specifically established. Qualitative measures established included the results of a SAER to be conducted by April 1, 2002, and any future OSRE. In addition, security management was actively involved in day-to-day events and the scheduled management observation program. The Human Performance Monitoring Tool program included the security area. These provided frequent opportunities to assess security performance. However, as stated in Section 02.03.a, the security area lacked performance measures similar to those established for other site disciplines.

MANAGEMENT MEETING

Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on November 20, 2001. The licensee acknowledged the findings presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 18, 2001, S. Cahill, Chief, Branch 2, Division of Reactor Projects, met with Mr. M. Stinson and other members of licensee management to discuss the results of this inspection. The meeting fulfilled the Manual Chapter 0305, Operating Reactor Assessment Program, Action Matrix requirement for a management meeting.

Attachment: As stated

PERSONS CONTACTED

Licensee

R. V. Badham, Safety Audit Engineering Review Supervisor (root cause team)
C. D. Collins, Operations Manager
K. Dyer, Site Security Manager
S. Fulmer, Plant Training and Emergency Preparadness Manager
J. S. Gates, Administration Manager
D. E. Grissette, Assistant General Manager - Operations
R. R. Martin, Engineering Support Manager
C. D. Nesbitt, Assistant General Manager - Plant Support
L. M. Stinson, Plant General Manager - FNP

NRC

D. H. Thompson, Regional Security Specialist
J. H. Wallo, Regional Security Specialist

DOCUMENTS REVIEWED

CR 2001002040	Failure of a limited portion of FNP's protective strategy and the loss of a complete target set during one exercise during OSRE
CR 2001002911	Items noted during the NRC review for the White OSRE findings for possible improvements (inspection generated)
CR 2001002900	During review of drill critique paperwork it was determined that all paper work was properly completed, but some paperwork was not reviewed and marked as safeguards (inspection generated)
CR 2001002912	Unable to determine if FNP has a single document listing all critical operator action times and a clear basis for validation and verification of those times (inspection generated)
CR 2001002916	Evaluate and develop performance indicators for the Security department (inspection generated)
CR 2001002917	Search discrepancies repetitive of CR 1948 (inspection generated)

Security Department Audits dated March 26, 2001 and February 11, 2000

Human Performance Monitoring Tool Evaluations 4508, 4488, 4712, 4415, 2791

FNP-0-ACP-9.3	Focused Self-Assessments
FNP-0-SP-3	Security Response Drills and Exercises
FNP-0-SP-33	FNP Target Sets
FNP-0-SP-34	Security Response
FNP–0-SP-22	Testing of Security Systems