



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30333

Report Nos.: 50-348/91-24 and 50-364/91-24

Licensee: Southern Nuclear Operating Company, Inc.
600 North 18th Street
Birmingham, AL 35291-0400

Docket Nos.: 50-348 and 364

License Nos.: NPF-2 and NPF-8

Facility Name: Farley 1 and 2

Inspection Conducted: December 16 thru December 20, 1991

Inspector: J. S. Mellen
L. Mellen, Team Leader

1/8/92
Date Signed

Team Members: D. Desaulniers
L. King

Accompanying Personnel: J. Shackelford

Approved by: R. V. Crlenjak
R. V. Crlenjak, Section Chief
Operational Programs Section
Operations Branch
Division of reactor Safety

1/9/92
Date Signed

SUMMARY

Scope:

This was a special unannounced Emergency Operating Procedure (EOP) followup inspection. Its purpose was to review the revised Farley EOPs, Abnormal Operating Procedures (AOP), Unit Operating Procedures (UOP), and Annunciator Response Procedures (ARP) to ensure that previously identified deficiencies had been adequately addressed.

Results:

The overall assessment concluded that the EOPs, AOPs, UOPs, and ARPs adequately covered the broad range of accident and equipment failures necessary for safe shutdown of the plant. The comments from the previous EOP inspection were generally adequately addressed. A few remaining items are discussed in Paragraph 2. The licensee's timeliness was commensurate with the limited resources used to resolve previously identified discrepancies.

REPORT DETAILS

1. Persons contacted

Licensee Employees

J. Deavers, Senior Plant Instructor
*S. Fulmer, Superintendent of Operations Support
*J. Horn, Outage Planning Supervisor
*C. Nesbitt, Operations Manager
*T. Nesbit, Generating Plant Engineer
J. Osterholtz, Manager Technical - Nuclear
*P. Webb, SAER Engineer
*D. Morey, General Manager
*L. Stinson, AGM OPS

Other licensee employees contacted included engineers, technicians, operators and office personnel.

NRC Personnel

*G. Maxwell, Senior Resident Inspector
*M. Morgan, Resident Inspector

Abbreviations are listed in Appendix A

*Attended exit meeting on December 20, 1991.

2. Followup On Previously Identified Items (92701)

A. (Closed) IFI 348,364/90-02-1, EOP nomenclature and labeling deficiencies.

During EOP walkdowns the team compared the equipment and annunciator nomenclature in the EOPs, AOPs, UOPs, and ARPs with the labeling on control board panels, local panels and installed equipment. The team noted an improved correlation between the procedures and in plant labeling; however, some minor discrepancies were still noted:

1) 1-AOP-28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room.

a. Step 9: The procedure step stated "PRZR PORV ISO Q1B31MOV8000A". The panel label stated "PRZR PORV ISO Q1B13MOV8000A".

- b. Step 10.2: The procedure step stated "SEAL INJECTION INLET FILTER N1E21HS0186-N". The panel label stated "SEAL WATER INJ N1E21FCV0186".
- c. Step 10.2: The procedure step stated "Q1N11PCV3371A". The panel label stated "Q1N11PV3371A". The procedure step stated "Q1N11PCV3371B". The panel label stated "Q1N11PV3371B". Step 10.2: The procedure step stated "Q1N11PCV3371C". The panel label stated "Q1N11r 3371C".
- d. Step 13.2: The procedure step stated "STM. GEN. 1A WIDE RANGE LVL LI-0477A". The panel label stated "1A SG WR LVL N1N11L1477A". The procedure step stated "STM. GEN. 1B WIDE RANGE LVL LI-0487A". The panel label stated "1B SG WR LVL N1N11L1487A". The procedure step stated "STM. GEN. 1C WIDE RANGE LVL LI-0497A". The panel label stated "1C SG WR LVL N1N11L1497A".
- e. Step 19.0: The procedure stated "CHG HDR FLOW CONTROL VLV Q1E21FCV0122". The panel label stated "CHG FLOW N1E21FCOV122".

These comments were also valid for the same steps in FNP-1-AOP-28.2, Fire in the Control Room. The licensee stated that these items would be corrected.

2) EEP-0, Reactor Trip or Safety Injection

- a. Section B.III: The label for PB-496A on the main control board was incorrectly written as FB-496A. This was corrected prior to completion of this inspection.

The majority of the equipment annunciator labeling matched the procedures. There were no other examples of control board labeling that did not match the procedures. The licensee had progressed satisfactorily in this area. This item is closed.

B. (Closed) IFI 348,364/90-02-2, EOP technical and human factors deficiencies.

The team reviewed the ECPs for technical and human factors deficiencies. The team found that the licensee had adequately dispositioned most of the previously identified technical comments. The following are examples of EOP technical comments that have not been resolved:

1) FNP-1-EEP-3

- a. Step 18.1: This step addressed the equipment which must be available to achieve RCS pressure reduction during a steam generator tube rupture accident. The procedural

guidance addressed the availability of normal pressurizer spray. However, the guidance in the current procedure did not point out the fact that the RCPs must be available for the successful completion of this step. The licensee stated that their continuing training program would eliminate the need for this information. The team concluded that this would be adequate corrective action.

2) FNP-1-EEP-1

- a. Step 11.2: The caution statement which preceded this step implied a positive operator action to manually restart the RHR pumps if they were secured and RCS pressure fell below 265 psig. The licensee stated that to phrase this particular statement in the form of an action statement would require a complex logic structure which would lead to confusion. Additionally, the writer's guide allowed for this type of caution statement to be incorporated into the procedural guidance. The team concluded that this type of caution statement could cause confusion and may be more appropriately addressed as procedural steps. The licensee stated that they would reconsider the guidance in their writer's guide.
- b. Step 4.2.1: Brackets delineating check-off spaces for some items in the table were not separated from the items (e.g., []322BAA). This could reduce the readability of these items. This was a generic concern in the ERPs. The licensee stated that this was a limitation of their word processing system. Due to word processing limitations, space was not always available; therefore the licensee elected to use this methodology for consistency. The licensee stated that they will reevaluate the use of the brackets when their word processing system is upgraded.

The team reviewed the AOPs for technical and human factors deficiencies. The team found that the licensee had adequately dispositioned most of the previously identified technical comments. Several of the AOPs had been replaced by ARPs. In all cases the ARPs adequately addressed previously identified concerns. The following are examples of AOP technical comments that have not been resolved:

1) AOP-21.0. Severe Weather

- a. Symptoms 1.a, 1.b: The entry conditions for this procedure include reports of a tornado or a tornado warning and sustained winds in excess of 89 miles per hour forecast for the plant site within 24 hours by the

National Weather Service. The plant has no formal methods for obtaining this information. The licensee was still evaluating their options for correcting this deficiency.

- b. Step 9.0: This step required the operators to evaluate placing both units in mode 3. There were no criteria to evaluate and no apparent method for determining when this step was applicable. The licensee was still evaluating their options for correcting this deficiency.
- 2) FNP-1-AOP-28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room.
 - a. Step 16: This step was not preceded by a caution statement that warned the operator that a differential pressure SI was possible due to the fact that the TDAFWP was drawing steam from the B and C steam lines. Additionally, there were no instructions to adjust the atmospheric relief valves to minimize the possibility of the differential pressure SI. The licensee stated that this would be corrected.
 - b. Steps 38.1, 38.9, 40.1, and 40.9: These steps referred to FNP-0-RCP-25, Appendix 5, for Chemistry personnel to sample RCS for boron concentration. This procedure was actually used for Health Physics activities during a radiological accident. The procedure for sampling boron was actually FNP-1-CCP-651, Sampling the Reactor Coolant System. The licensee stated that they would correct this example and review their program to ensure that changes to referenced support procedures are adequately reviewed for their EOP or AOP impact.
- 3) FNP-1-AOP-28.2, Fire in the Control Room
 - a. Steps 38.1, 38.9, 40.1, and 40.9: See Comment for FNP-1-AOP-28.1 on the same steps.

The team determined that the licensee demonstrated adequate progress in the resolution of the previously identified technical and human factors comments. This item is closed.

- c. (Closed) IFI 348,364/90-02-3, EOP writer's guide deficiencies.

The team reviewed FNP-0-AP-74, Emergency Response Procedures Writer's Guide, Attachment 2, to evaluate the adequacy of this guidance for ensuring that ERPs are usable, accurate, complete, and acceptable to control room personnel. This review focused on concerns which the NRC staff had previously identified as inadequacies in the ERP writer's guide.

In inspection report numbers 50-348/90-02 and 50-364/90-02 the NRC staff stated that the ERP writer's guide was non-restrictive and consequently could allow for inconsistencies in the structure and wording of the ERPs. The licensee has revised the ERP writer's guide to adequately address specific concerns regarding use of abbreviations, all caps, and check-off lines.

The ERP writer's guide stated that the use of passive action statements within cautions should be avoided when practical but it does not completely restrict their use. The use of passive action statements within cautions may increase the potential for operators to overlook these actions. The licensee stated that the ERPs had been revised to minimize the occurrence of passive action statements and that they had no evidence from operator training or shift performance that the few passive actions in cautions have not been observed. Passive action statements were allowed in cautions statements only in cases where restating the passive action as a directed action in the text of the procedure would have made the procedure more confusing or otherwise decreased the usability of the procedure. The licensee stated that they would review their use of passive actions in caution statements.

The EOP inspection report identified several aspects of the EOPs which were not adequately addressed in Revision 3 of the ERP writer's guide. The team reviewed Revision 4 of the ERP writer's guide and found that most of the previously identified concerns had been adequately addressed. However, the team found that Revision 4 of writer's guide did not provide guidance for the location of the EOPs in the control room and the techniques that will be used to differentiate EOPs from other plant procedures. These concerns had been previously identified in the EOP inspection report. Discussions with the ERP writer revealed that the licensee had decided not to require a specific location for the EOPs in the control room or implement a method for differentiating the EOPs from other procedures in the control room. While this was not specifically delineated in the writer's guide, the licensee's administrative guidelines for controlled documents gives the specific location of the control room EOPs. The licensee stated that they will consider the differentiation of EOPs from other procedures.

The team concluded that FNP-0-AP-74 provided adequate guidance to ensure that the ERPs are usable, technically correct, complete, and appropriately maintained.

AOP Writer's Guide

The team reviewed FNP-0-SOP-0.9, Abnormal Operating Procedures Writer's Guide, Revision 0. In general, the AOP writer's guide contained only minor differences from the ERP writer's guide. Consequently, the comments provided concerning the ERP writer's guide also apply to the AOP writer's guide. One substantive

difference between the ERP writer's guide and the AOP writer's guide was that the latter does not require AOPs to be submitted to the same verification and validation process required for the ERPs. Consequently, there was less formal assurance that AOPs which direct actions in direct support of ERPs will be usable, complete, and technically correct. However, the team discussed this with the licensee and determined that the licensee had adequately performed an informal V&V of the more significant AOPs. The licensee stated that they would evaluate their AOP review process to ensure that the AOPs are usable, complete, and technically correct.

FNP-0-SOP-0.9 stated that some AOPs are in a dual column format and some AOPs are in a single column format. The writer's guide did not provide any criteria for this procedure formatting decision. This lack of guidance can result in inconsistent decisions in procedure development. The licensee stated that they would review their procedure formatting guidance.

- D. (Closed) IFI 348,364/90-02-4, V&V weaknesses in control room design and the SGT procedure.

The team reviewed AOP-2.0, Steam Generator Tube Leakage, to determine if adequate guidance was provided to direct the operators to transition to the EOP if the RCS leak rate was excessive. The procedure had been revised to provide appropriate instructions for transition to EEP-0, Reactor Trip or Safety Injection following a manual reactor trip and a subsequent SI. These instructions were consistent with Westinghouse Owners Group Guidelines. This item is closed.

- E. (Closed) IFI 348,364/90-02-5, Fire protection procedure deficiencies.

The team reviewed AOP-28.1, Fire or Inadvertent Fire Protection System Actuation in the Cable Spreading Room, and AOP-28.2, Fire in the Control Room to determine if the procedures contained adequate instructions for calculation of shutdown margin and had been revised to not require containment entry after opening the vessel head vent. The procedures had been revised to include cautions prior to containment entry and instructions for shutdown margin calculations. The team identified some additional discrepancies these are listed in Paragraph 2 B. This item is closed.

- F. (Closed) IFI 348,364/90-02-6, SER V&V deficiencies.

The NRC staff's February 5, 1990, SER on the PGP stated that "The verification and validation programs should be expanded to include the following objective - ERPs should be usable; that is, operators be able to follow ERPs with a minimum of delays, confusion and errors."

The team reviewed FNP-0-AP-74, Development and Revision of Emergency Response Procedures, Revision 4. This procedure provided the following objective for the ERP verification program: "The language and level of information presented in the ERPs are compatible with the qualifications, training, and experience of the operating staff." An objective for the validation program is "ERPs are usable, i.e., they can be understood and followed without confusion, delays, or errors." These objectives adequately address the concerns identified in the SER. This item is closed.

G. (Closed) IFI 348,364/90-02-07, SER training deficiencies.

The SER on the PGP identified the following concern: "The training program states that training on major revisions will be conducted in the classroom if both the plant and the simulator are unavailable. Classroom training is appropriate as an alternative for simulator or walkthrough training only as a temporary measure. The training program should be revised to state that classroom training will be used as a substitute only when the introduction of new procedures would otherwise be delayed due to simulator or control room unavailability. Retraining on the simulator or in the control room should occur as soon as possible."

The team reviewed Revision 4 of FNP-0-AP-74, "Development and Revision of Emergency Response Procedures." This procedure has been revised to adequately address the concerns identified in the SER. This item is closed.

3. Exit Interview

The inspection scope and findings were summarized on December 20, 1991, with those persons indicated in paragraph 1. The NRC described in detail the inspection findings listed below. No proprietary material is contained in this report. No dissenting comments were received from the licensee.

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
IFI 348,364/90-02-1	Closed	EOP nomenclature and labeling deficiencies.
IFI 348,364/90-02-2	Closed	EOP technical and human factors deficiencies.
IFI 348,364/90-02-3	Closed	EOP writer's guide deficiencies.
IFI 348,364/90-02-4	Closed	V&V weaknesses in control room design and the SGTI procedure.

IFI 348,364/90-02-5	Closed	fire protection procedure deficiencies.
IFI 348,364/90-02-6	Closed	SER V&V deficiencies.
IFI 348,364/90-02-7	Closed	SER training deficiencies.

APPENDIX A
ABBREVIATIONS

AOP	Abnormal Operating Procedures
ARP	Annunciator Response Procedures
EOP	Emergency Operating Procedure
ERP	Emergency Response Procedure
IFI	Inspector Followup Item
PGP	Procedure Generation Package
PORV	Power Operated Relief Valve
PRZR	Pressurizer
PSIG	Pounds per Square Inch
RCP	Reactor Coolant Pump
RCS	reactor Coolant System
RHR	Residual Heat Removal
SER	Safety Evaluation Report
SI	Safety Injection
SGTL	Steam Generator Tube Leak
TDAFWP	Turbine Driven Auxiliary Feedwater Pump
UOP	Unit Operating Procedures
V&V	Verification and Validation