



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30323

Report No.: 50-400/87-04

Licensee: Carolina Power and Light Company  
 P. O. Box 1551  
 Raleigh, NC 27602

Docket No.: 50-400

License No.: NPF-53

Facility Name: Shearon Harris

Inspection Conducted: January 5-9, 1987

Inspector: *S.D. Stadler for* 4-1-87  
 F. R. McCoy Date Signed

Team Members: S. D. Stadler  
 C. A. Casto  
 C. L. Vanderniet  
 H. O. Christensen

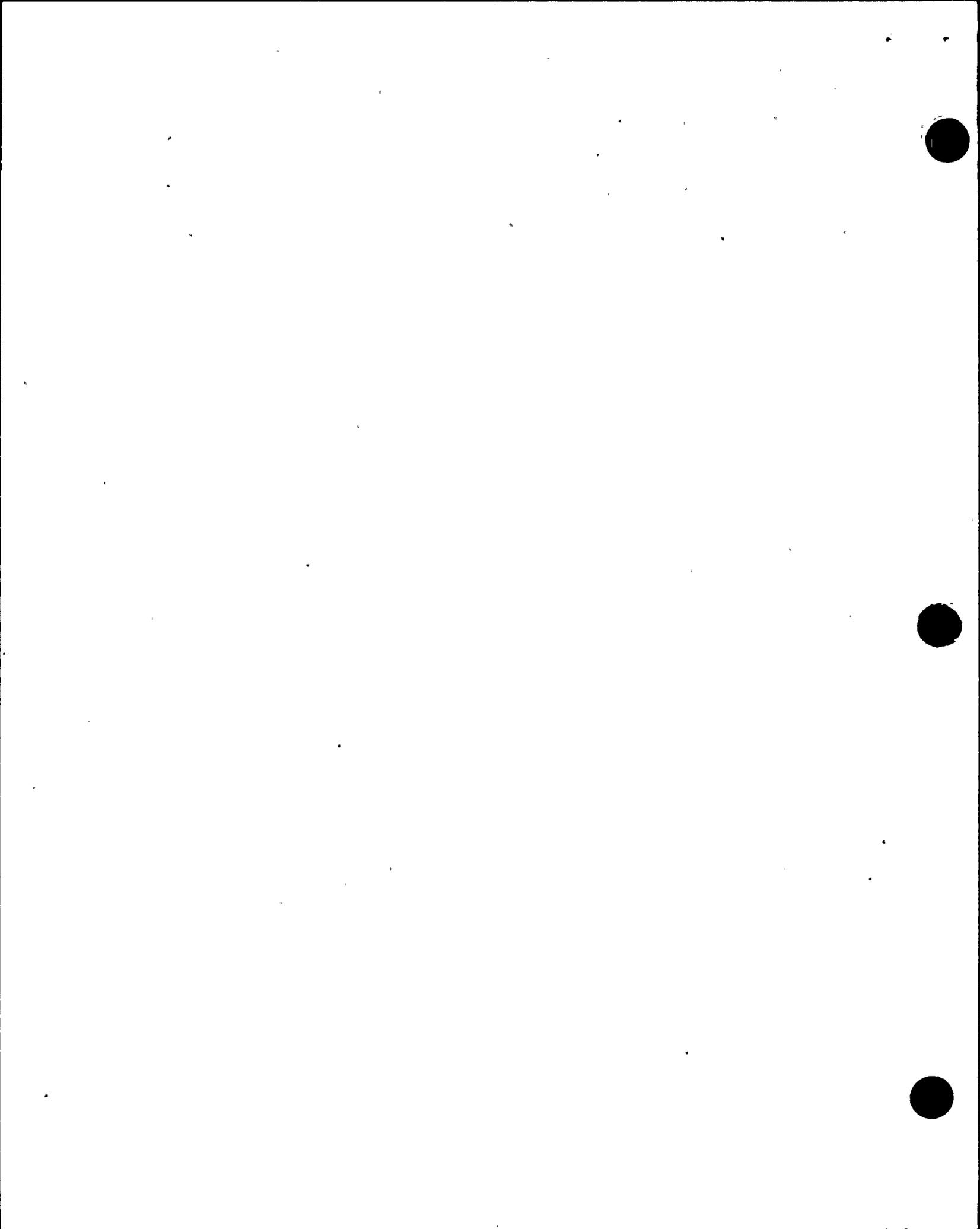
Approved by: *M.B. Shymlock* April 6, 1987  
 M. B. Shymlock, Chief Date Signed  
 Operational Programs Section  
 Division of Reactor Safety

SUMMARY

Scope: This routine, announced inspection was conducted in the area of operational readiness. This inspection was a followup to an inspection conducted September 22-26, 1986, documented in (Inspection Report No. 50-400/86-76).

Results: One violation was identified, the failure to follow procedure in the processing of a clearance and the control of system alignment. This violation is discussed in Section 6. No deviations were identified.

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The following unresolved items (URI) and inspector followup items (IFI) from Inspection Report No. 50-400/86-76 were reviewed:

<u>NUMBER</u>	<u>TYPE</u>	<u>STATUS</u>	<u>DESCRIPTION/REFERENCE PARAGRAPH</u>
400/86-76-01	IFI	Closed	Technical Upgrade and Revision of the Emergency Operating Procedure (EOP) Network, Setpoint Study, and Step Deviation Documents (paragraph 5.a).
400/86-76-03	IFI	Closed	EOP Training for Operations Personnel (paragraph 5.b).
400/86-76-05	IFI	Closed	Instrument and Valve Numbers for Auxiliary Feedwater (AFW) System Missing from Procedure OP-137 (paragraph 5.c).
400/86-76-06	IFI	Closed	Resolve Potential of Trapped Air in the AFW/Emergency Service Crossover Lines (paragraph 5.d).
400/86-76-07	IFI	Closed	Commitment to Provide Open/Closed Indication on Safety Related Dampers (paragraph 5.e).
400/86-76-08	IFI	Closed	Resolution of Concerns Associated with Air Supplies to Safety Related Dampers (paragraph 5.f).
400/86-76-10	IFI	Closed	Independent Verification of the Opening of Accumulator Discharge Valves and Breaker Racking Out (paragraph 5.g).
400/86-76-11	IFI	Closed	Review Adequacy of Abnormal, Annunciator, and Operations Work Procedures and Resolution of Associated Inspector Concerns (paragraph 5.h).
440/86-76-12	IFI	Closed	Resolution of Deficiencies Associated with Surveillance Procedures (paragraph 5.i).
400/86-76-13	IFI	Closed	Resolution of Concerns Associated with Stroke Times for Containment Spray and Purge Valves (paragraph 5.j).
400/86-76-14	URI	Closed	Inadequate Substitution of RHR Pump Preoperational Test for Technical Specification Surveillance Test Requirement 4.5.2.h.2 (paragraph 3).

400/86-76-15	IFI	Closed	Commitment to Evaluate Surveillance Requirements Which Were Baselined with Pre-Operational Test Data (paragraph 5.k).
400/86-76-16	URI	Closed	Failure to Temperature Compensate for Indicated Flow During RHR Pump Inservice Testing (paragraph 3).
400/86-76-20	IFI	Closed	Inadequacies of PNSC Review Involving Unreviewed Safety Questions Associated with AFW High Point Vents (paragraph 5.1).

The following new items associated with Inspection Report No. 50-400/87-04 were opened:

<u>NUMBER</u>	<u>TYPE</u>	<u>STATUS</u>	<u>DESCRIPTION/REFERENCE PARAGRAPH</u>
400/87-04-01	IFI	Open	License Commitments to Complete Revision of EOP Setpoint Study and the Cross-Referencing of EOP Flow Paths to Associated Path Guides. IFI 400/87-04-01 is related to IFI 400/86-76-01 which was closed (paragraph 5.a).
400/87-04-02	IFI	Open	Provisions for Operators or Non-Licensed Operators to Reset Tripped Diesel Generator. (paragraph 5.b).
400/87-04-03	IFI	Open	The Licensee's Commitment to Evaluate Need for Additional EOP Training in the Classroom the Plant, and the Simulator and Implementation of Identified Training. IFI 400/87-04-03 is related to IFI 400/86-76-03 which was closed (paragraph 5.b).
400/87-04-04	IFI	Open	Commitment to Resolve Additional EOP Related Deficiencies Identified During Additional EOP Training (paragraph 5.b).
400/87-04-05	IFI	Open	Completion of Providing Valve Numbers for the Instrument Air System and Revision of Effected Procedures. IFI 400/87-06-04 is related to IFI 400/86-76-05 which was closed (paragraph 5.c).
400/87-04-06	IFI	Open	Commitment to Increase Administrative Controls Over the Required Reading Program (paragraph 6.e.).

400/87-04-07	IFI	Open	Commitment to Upgrade Controls Over the Process Which Allowed A Cancelled Emergency Procedure and Flow Guides to Remain in the Control Room During Cancellation Process (paragraph 6.f).
400/87-04-08	IFI	Open	Resolution of Concerns Involving Identification of Controllers in the Control Room with No Control Power Potential Indicating Lights During Normal Operations (paragraph 6.g).
400/87-04-09	VIO	Open	Deficiency in Configuration Control As A Result of De-energized Breaker Associated With Steam Dump Control (paragraph 6.h).
400/87-04-10	IFI	Open	Further Evaluation of Relocation/ Identification of Control Board SI Switch Associated with December 11, 1986 Safety Injection Event (paragraph 7).



## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. L. Willis, Plant General Manager
- \*D. Tibbitts, Director - Regulatory Compliance
- \*R. B. Van Metre, Manager - Technical Support
- \*J. M. Collins, Manager - Operations
- \*G. Campbell, Manager - Maintenance
- \*J. R. Sipp, Manager - Effluent and Radiological Control
- \*C. R. Gibson, Director - Programs and Procedures
- \*G. L. Foreband, Director - Quality Assurance/Quality Control
- \*E. M. Steudel, Principal Engineer - Special Projects
- \*R. T. Biggerstaff, Principal Engineer - Onsite Nuclear Safety
- \*C. L. McKenzie, Principal Engineer - Quality Assurance
- \*L. Veeder, Operations
- \*J. H. Smith, Operations
- \*J. P. Thompson, Operations
- \*W. A. Slover, Technical Support
- \*D. Nummy, Maintenance
- \*G. T. Lew, Special Projects
- \*O. N. Hudson, Regulatory Compliance
- \*A. H. Powell, HTU

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

#### NRC Resident Inspectors

- \*G. E. Maxwell
- \*S. P. Burris

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on January 9, 1987, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters (92702)

(Closed) Unresolved Item 400/86-76-14 Inadequate Substitution of RHR Pump Preoperational Test for Surveillance Test. This item involved an inadequate baseline creditation of Technical Specification surveillance requirement 4.5.2.h.2 for the RHR pumps by performance of preoperational test procedure 1-2085-P-03, rather than surveillance test procedure EST-205. The inspectors reviewed the test data for the performance of EST-205 conducted on November 24, 1986, and confirmed that the results were satisfactory. Revision 2 to the procedure, which was implemented at the time of this test, provided for adequate temperature compensation of the flow element used in the performance of the test. This test demonstrated that the RHR system satisfactorily fulfilled Technical Specification surveillance requirement 4.5.2.h.2. This item is considered closed.

(Closed) Unresolved Item 400/86-76-16. Failure to Temperature Compensate for Indicated Flow During RHR Pump Inservice Testing. This item involved inadequate test performance and test data evaluation for RHR pump inservice testing due to failure to temperature compensate indicated flow during performance of surveillance test procedure OST-1108. Review of test data obtained during test performance on December 6-10, 1986, reflected satisfactory results. Advanced change 2/2, which was implemented at the time of test performance, provided for adequate temperature compensation of the flow element. This test demonstrated that the RHR pump satisfactorily fulfilled Technical Specification surveillance requirement 4.5.2.f.2 for pump operability. This item is considered closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Followup Of Previous Inspection Items From NRC Inspection Report 50-400/86-76 (92701)

- a. (Closed) Inspector Followup Item 400/86-76-01 Upgrade of EOPs and Supporting Documents. This item concerned the technical adequacy of EOPs and the implementation of commitments related to review and revision of the EOP network, setpoint study and step deviation documents.

Based on the resolution of NRC concerns and a sample review of EOP procedures and the setpoint study, the inspectors concluded that the licensee has adequately reviewed and revised the EOP network procedures and setpoint study. Commitments with regard to completion of step deviation documents and cross referencing of EOP flow paths to path guides were not yet required to be completed. Committed dates were January 31, 1987, for completion of step deviation

documents, and commercial operation for EOP flow path/path guide cross referencing. Completion of these two commitments will be identified as inspector followup item 400/87-04-01. Based on completion of actions as described herein, and reidentification of the above two outstanding commitments to a new inspector followup item (400/87-04-01), this item is considered closed.

- b. (Closed) Inspector Followup Item 400/86-76-03 EOP Training for Licensed Operators. This item identified concerns with the adequacy of EOP training for licensed operators. In reviewing the licensee's actions in resolving these concerns, the inspectors made the following observations.
- (1) Lesson Plans 86-410 and 86-304 were reviewed. It was concluded as a result of this review that licensed personnel received adequate training on the methods of verification of automatic actions for the flowpaths. Attendance records were reviewed and appeared accurate and adequate. Although training was not provided for every automatic action, a sufficient amount of material appeared to be covered to enable proper operator response to automatic actions.
  - (2) Existing simulator scenarios provided by the facility were reviewed for inclusion of passive failures such as instrument and alarm failures. The scenarios provided for a number of manipulations on these less than obvious passive failures. This item is closed.
  - (3) Attachment III to a letter dated September 18, 1986, identified licensee commitments to provide additional training for three EOP related tasks including:
    - (a) Locally dumping steam by manual manipulation of PORVs
    - (b) Minimizing secondary contamination through local operations by non-licensed operators
    - (c) Local operation of electrical switchgear
  - (4) A review of the training administered for these three tasks indicated it to be adequate to resolve identified concerns. In addition, the inspectors verified during walkthrough evaluations of two non-licensed operators that this training was apparently effective. Training was conducted on specific identified EOP deficiencies and on the latest EOP revisions under lesson plan RQ 86-40. The inspectors noted, however, that this training was relatively brief, approximately seven hours split between two major revisions, and that the simulator was not utilized. Also, no front-end evaluation was conducted by the training staff to

determine the most effective mode of training such as lecture, simulator, or in-plant. The decision not to perform this evaluation may have been influenced by the unavailability of the simulator, which was undergoing several months of modification work, and the time constraints imposed by the fact that the additional EOP training was a five percent power commitment. Of greater concern was the failure of the training staff to conduct any type of evaluation to determine if the training on the EOP had been adequate and effective. The training staff did indicate that some type of evaluation such as written or oral examination or simulator evaluations would normally be conducted for any type of formal training. This failure to conduct evaluations of EOP training effectiveness was of particular concern considering the methods used to conduct the training, the large number of changes made, and the relatively short duration of the training. In addition, several other factors which contributed to this concern included the following:

- (a) The EOP training was split between two major EOP revisions in less than a two month period.
- (b) Although heavy reliance is placed on the use of the flow path guides to provide operators with detailed information not on the flow paths, there is no established cross reference between flow path steps and related procedure steps. Until this cross reference is established by the licensee, there should be adequate training and evaluation to ensure operators can readily obtain detailed flow path information from the guide on a timely basis as needed.
- (c) The training on EOP Revisions 1 and 2 was administered in November and December of 1986 respectively, but the annual licensed requalification examination, also administered in December, was based on the outdated EOPs. In some cases the annual examination, utilizing the pre-revision EOPs, was administered to individuals after both EOP revisions were taught. Training on major and multiple revisions to EOPs and then being tested on the original versions had the potential to add an element of confusion for operators.
- (d) The inspectors performed a partial walkthrough of the EOPs and flowpaths with three randomly selected licensed operators. Although the walkthroughs indicated an overall satisfactory knowledge of the EOPs, several areas of concern were identified to the licensee. One of the operators, when required to refer to the EOP flowpath guides, utilized the outdated and cancelled guides instead of the revised flow path guides incorporated into the user's guide. These outdated flowpath guides contained

erroneous setpoints and referenced Emergency End Path Procedure (EPP) 16 which had also been cancelled. The outdated Flow Path Guides and EPP 16 were under a cancellation process and should not have been in the control room as detailed in Section 6.f. Since, however, the licensed personnel had received training on the new user's guide and the revised EOPs incorporated into it, it would have been reasonable to expect the operator to have utilized the user's guide versus the cancelled flowpath guides. Another concern that resulted from the walkthrough evaluations was that problems were encountered by all three operators in the restoration of offsite power. One operator indicated that he would dispatch an auxiliary operator to the switchgear room to reset the lockout (86) relay. This lockout relay is actually located in the control room. Another operator omitted the reset of the lockout relay which would have prevented the successful restoration of offsite power. The third individual attempted to locate a procedure for the restoration, a very positive effort, but there was no procedure available for restoration of the auxiliary transformers. He did, however, correctly talk through the required steps without procedural guidance.

- (e) Lesson plans indicated that licensed and non-licensed operators had received training on local operation of electrical switchgear which had been a commitment in Attachment III of the September 18, 1986, submittal. The inspectors walked two non-licensed operators through several of the local electrical operations required to support the EOPs. Although the two individuals displayed an adequate knowledge of the material contained in the EOP lesson plans, neither could correctly reset an emergency diesel generator overspeed trip, an essential evolution. One operator could not reset the diesel without prompting from the inspector and the other omitted essential steps to successfully complete the evaluation. In response to the concern over this deficiency, the licensee responded that licensed operators would normally be utilized to perform this function. The inspectors question, however, whether during accident conditions with a loss of offsite power, a licensed operator could be spared from control room responsibilities in order to reset a tripped diesel generator. The licensee should either ensure that enough licensed operators are always on site to accomplish such local operations during accident conditions, or should provide adequate training to ensure non-licensed operators are proficient. Resolution of this concern will be identified as an inspector followup item (400/87-04-02).

The inspector reviewed the lesson plans associated with Revisions 1 and 2 of the EOPs, and it appeared that the material adequately addressed the committed EOP training areas. Based on deficiencies noted during this review the inspectors consider that the extent of training and evaluation associated with the EOPs as they currently exist may not have been sufficient to demonstrate proper response to all EOP conditions by all licensed personnel. As an interim measure of assurance, the inspectors witnessed plant walkthrough evaluations of five additional licensed operators by members of the training staff. The walkthroughs were based upon identified concerns as well as the objectives from the EOP lesson plans. Although minor deficiencies were observed, these additional evaluations indicated adequate knowledge of the EOPs to support the plant startup. Use of the simulator would have provided more conclusive evidence of EOP proficiency but the Shearon Harris simulator was in an extended modifications outage at the time.

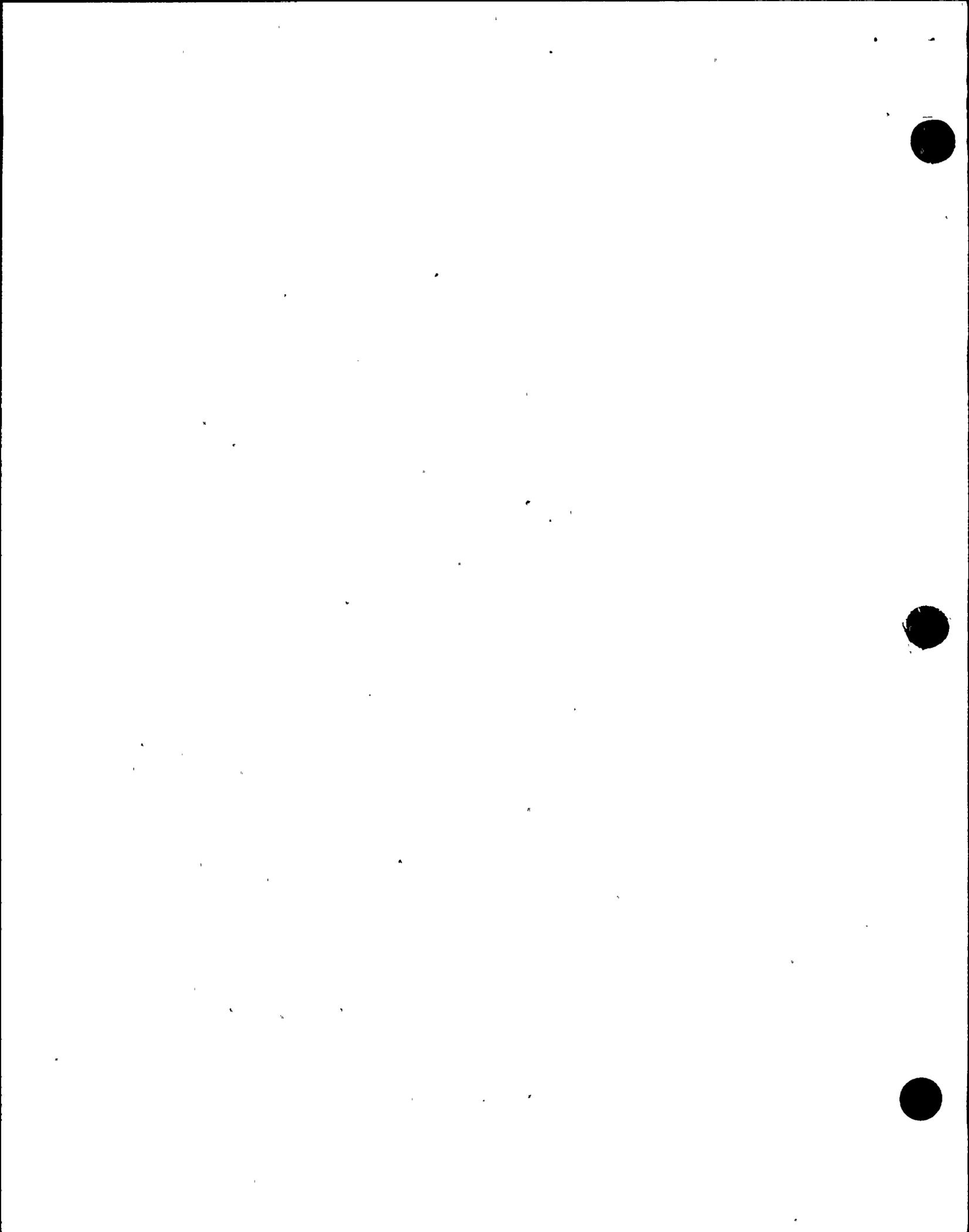
The inspectors consider that a comprehensive EOP training program should be implemented on an expedited basis consistent with completion of simulator modifications which were in progress and restoration of a five shift rotation operation program. The licensee submitted a letter (file number SHF/10-13510) dated January 9, 1987, which committed to further evaluate the EOP revisions to determine appropriate additional training to include the most effective method of training. The commitment included implementing this training in the form of shift drills commencing in February 1987, classroom training as a part of annual requalification commencing in March 1987, and simulator training as required as a part of annual requalification commencing in June 1987. The licensee committed to complete and evaluate this training by August 1987. NRC review of the licensee's evaluation and scope of programmed training and implementation of this training pursuant to the above schedule is identified as an inspection followup item (400/87-04-03).

As a result of observation associated with the restoration of offsite power both during these walkthroughs and post simulator examinations, the inspectors expressed concern that procedure details did not exist to accomplish this action. As a result of these concerns the licensee issued revision 3 to EOP-EPP-001, Loss of AC Power to 1A-SA and 1B-SB Busses, and Advanced Change 2/3 to OP 156.02, AC Electrical Distribution, on January 10, 1987. Subsequent NRC review of these changes reflected resolution of the specific concern.



The inspectors consider, however, that during conduct of the EOP training committed to in inspector followup item 400/87-04-03 above, the licensee should evaluate general directions in the EPPs and path guides generically for similar concerns and make revisions where appropriate. Generic resolution of these types of concerns during additional EOP training is identified as an inspector followup item (400/87-04-04).

- c. (Closed) Inspector Followup Item 400/86-76-05 Instrument and Valve Numbers for AFW System Missing From Procedure OP-137. All concerns addressed by this item have been completed with the exception of providing valve numbers for the instrument air (IA) system. The licensee is currently walking down the IA system to update the drawings and will revise procedure OP-137, Auxiliary Feedwater (AFW) System, and other effected procedures when the valve number information becomes available. The completion and review of addition of valve numbers for instrument air is identified as inspector followup item 400/87-04-05. This item is considered closed.
- d. (Closed) Inspector Followup Item 400/86-76-06. Licensee Evaluation of the Effect of Air in the AFW/Emergency Service Water (ESW) Cross Over Piping and Resolution of This Concern. The licensee reviewed the subject NRC concern and as a result implemented a modification (PCR-489) to maintain water in the AFW/ESW crossover piping. This modification was completed on December 11, 1986. The Shearon Harris FSAR is currently being updated to reflect the system modification. This item is considered closed.
- e. (Closed) Inspector Followup Item 400/86-76-07. Local Open/Closed Indication on Safety-Related Dampers. The licensee had previously committed to provide local open/closed indication on safety-related dampers. The licensee accomplished this action by completing corrective action program item 86H0990 on October 31, 1986. This item is considered closed.
- f. (Closed) Inspector Followup Item 400/86-76-08. Concerns on Air Supplies to Safety-Related Dampers. This item involved the revision of procedures OP-168 and OMM-11 to indicate that the air supply line to 1-CP-1 and 1-CP-7 was locked closed, and to specifically identify the switch removing control power from valves 1-CP-10 and 1-CP-4. These procedures were reviewed and confirmed to have been revised.
- g. (Closed) Inspector Followup Item 400/86-76-10. Independent Verification. This item involved review of general procedures (GP) to ensure adequate implementation of independent verification requirements. Additionally, GP-002 did not contain independent verification for the opening of the accumulator discharge valves and racking out of the respective breakers. The licensee revised GP-002 to include independent verification for the accumulator discharge valves. The Onsite Nuclear Safety Committee reviewed all GPs for proper independent verification and as a result, GP-001, 004, 007 and 008 were revised. This item is considered closed.



- h. (Closed) Inspector Followup Item 400/86-76-11. Adequacy of AOPs, APPs and OWPs. The licensee committed to complete reviews and walkdown of all abnormal operating procedures (AOP), annunciator panel procedures (APP), and operations work procedures (OWP), and to resolve specific concerns noted by the inspectors. All specific concerns noted by the inspectors in Inspection Report 400/86-76 have been adequately addressed or justified. The inspectors consider these issues to be appropriately resolved. Additionally, the inspectors conducted a selected review of the revised procedures. Selected portions of the following revised procedures were reviewed:

APP-ALB-007, Annunciator Panel Procedure, Main Control Board  
 APP-ALB-010, Annunciator Panel Procedure, Main Control Board  
 APP-ALB-011, Annunciator Panel Procedure, Main Control Board  
 APP-ALB-012, Annunciator Panel Procedure, Main Control Board  
 OWP-RC, Reactor Coolant  
 OWP-RP1, Rod Position Indication  
 OWP-RS, Remote Shutdown Monitoring Instrumentation  
 AOP-007, Turbine Trip Without Reactor Trip Below P-7  
 AOP-008, Accidental Release of Liquid Waste  
 AOP-026, Loss of Essential Service Chilled Water System

All procedures reviewed appeared to be in accordance with the applicable procedures writer's guides and appeared to be technically adequate. This item is considered closed.

- i. (Closed) Inspector Followup Item 400/86-76-12. Deficiencies Associated with Surveillance Procedures. This item involved resolution of deficiencies in surveillance test procedures. All previously identified technical deficiencies were resolved through procedure changes. Non-technical comments were either incorporated or adequately justified as acceptable. All procedure changes had been issued except for changes to OST 1824, 1B Safety Train B EDG 18 Month Operability Test, Modes 5 and 6; and, OST-1023, Offsite Power Availability Verification Weekly Modes 1, 2, 3 and 4. Resolution of deficiencies with these two procedures was not considered to be mandatory for power escalation. These changes were noted to be prepared with technical and safety reviews complete and were well into the review and approval cycle. This item is considered closed.
- j. (Closed) Inspector Followup Item 400/86-76-13. Concerns With Stroke Times for Containment Spray and Purge Valves. This item involved resolution of licensee identified concerns with stroke times of containment spray suction valves and pre-entry purge and exhaust valves. Containment spray suction valves CT-102, 71, 105, and 26 were modified by PCR 647 to replace pinion and worm gear sets in order to reduce valve stroking to approximately 80 seconds. This is well within the Technical Specification required value of 103 seconds for containment spray switchover to the sump on RWST low-low level.

These valves were satisfactorily tested by OST-1809, Vital Switching to Recirculation Sump: ESF Response Time, 18 Month Interval, Modes 5 and 6, on December 8, 1986. Response times for opening of the containment spray sump suction valves of RWST low-low level were determined to be satisfactory by completion of EST-314, Engineering Safety Features Response Time Evaluation Switchover to Recirculation Sump with CS, Attachment II, Item A and Attachment III on December 12, 1986. This item is considered closed.

- k. (Closed) Inspector Followup Item 400/86-76-15. Use of Preoperational Test in Lieu of Surveillance Test. This item involved a licensee commitment to re-evaluate all surveillance requirements which were baselined with preoperational test data, to confirm equivalency of test methodology, and acceptance criteria between surveillance test procedures and preoperational test procedures. The licensee stated that this commitment had been completed and provided documentation indicating that surveillance baseline requirements had been established by preoperational/startup test data rather than by surveillance test procedures in 35 instances. Of these, nine of the surveillance test procedures had been subsequently run for reasons that were not associated with this committed review. For one surveillance test procedure (MST-I0267, Motor Operated Valve Overload and Torque Switch Bypass Circuitry Test), the preoperational test data used to baseline the surveillance requirement was found by the licensee to not be fully equivalent to the surveillance test procedure. The inspectors confirmed that further testing was accomplished by the licensee prior to fuel load to correct the deficiency.

To confirm the adequacy of the licensee's evaluation, the inspectors reviewed three procedures where preoperational test data was used to baseline the surveillance requirement in lieu of performing the surveillance test procedure. One problem was identified with the use of startup test procedures 1-5232-P-01 and 1-5232-P-02 in lieu of surveillance test procedure MST-0014, which implements the battery charger Technical Specification surveillance requirement 4.8.2.1.C.4. This surveillance test procedure requires that every 18 months the licensee verify that the battery charger will supply at least 150 amperes at 125 volts for at least four hours. Review of MST-0014 reflects that this requirement would be implemented if MST-0014 were performed. However, at the time of this inspection, MST-0014 had not been performed, and startup test procedures 1-5232-P-01 and 1-5232-P-02 were being used instead to satisfy the surveillance requirement. Review of these startup test procedures reflected that the surveillance requirement had been adequately implemented for battery chargers 1A-SA and 1A-SB, but had not been implemented for battery chargers 1B-SA and 1B-SB. Specifically, for the 1B-SA and 1B-SB chargers, the test methodology merely demonstrated that following the service capacity test of the batteries and within 24

hours of completion of that test, the chargers were verified to maintain charge on the batteries while the batteries were loaded to 69 amperes each for 9 hours and 59 minutes with no required voltage maintenance. The inspector considered that this did not meet the requirement of Technical Specification 4.8.2.1.C.4 and that battery chargers 1B-SA and 1B-SB were inoperable. Technical Specification 3.8.2.1 requires, as a minimum, that the following DC electrical source be operable for Mode 1-4 operation.

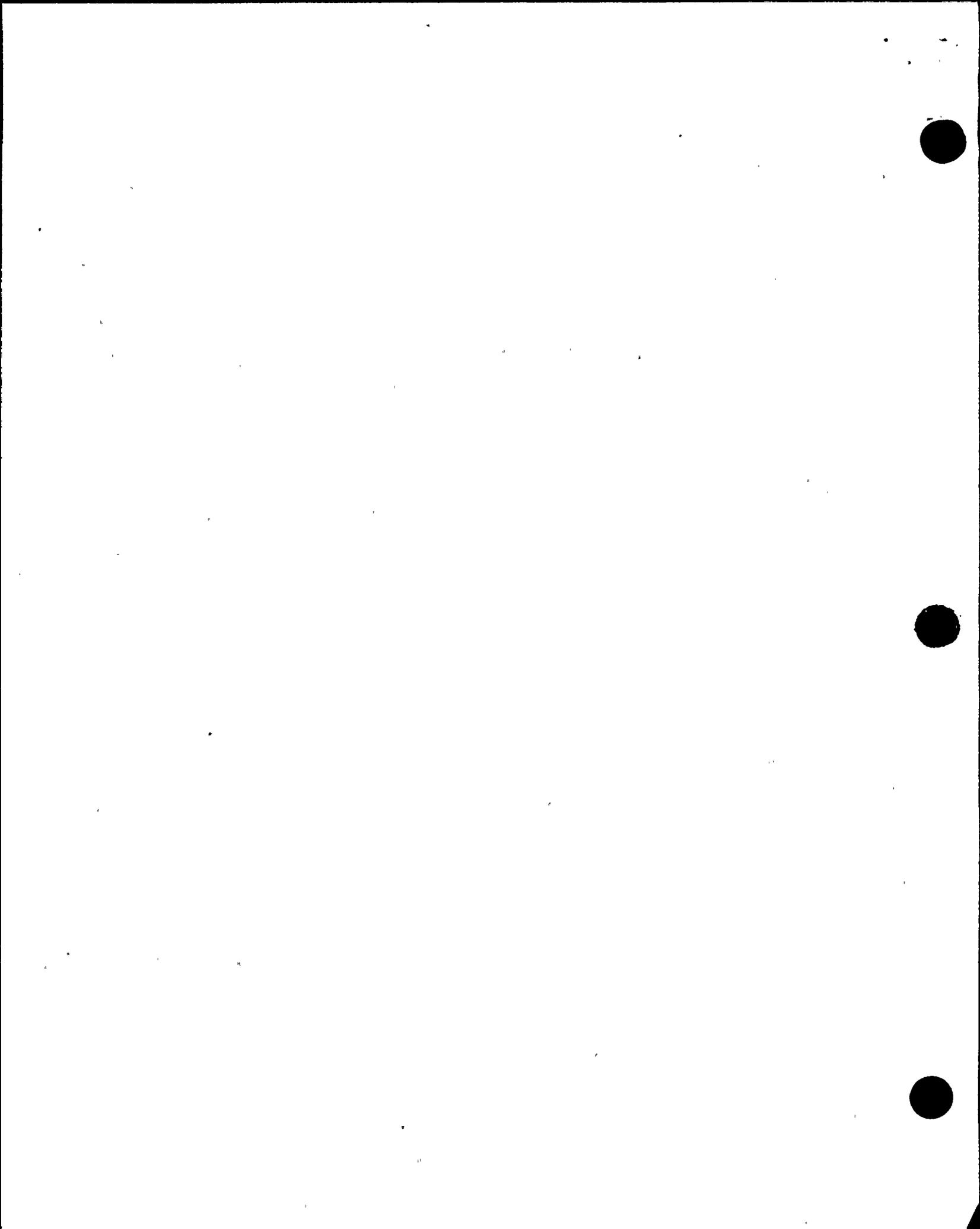
- 125-volt emergency battery bank 1A-SA and either full capacity charger, 1A-SA or 1B-SB
- 125-volt emergency battery bank 1B-SB and either full capacity charger, 1A-SB or 1B-SB.

The inspectors reviewed the reactor auxiliary building auxiliary operator log sheets for shift rounds from December 23, 1986, to the inspection date, noting that the licensee had stated that December 23, 1986, was the date which they had entered Mode 4 operation. This review reflected that only the properly tested A train chargers had been placed in service.

This demonstrated current and past compliance with Technical Specification 3.8.2.1 even with battery chargers 1B-SA and 1B-SB inoperable. When this condition was brought to the attention of the licensee, action was taken to enter the 1B-SA and 1B-SB chargers into the equipment inoperability record and to test these chargers pursuant to MST-0014. The licensee subsequently provided data that demonstrated satisfactory testing of charger 1B-SB on January 8-9, 1987, and charger 1B-SA on January 9, 1987.

Based on completion of licensee reviews, accomplishment of the additional NRC review, and resolution of the battery charger problem noted during the NRC review, this item is considered closed.

1. (Closed) Inspector Followup Item 400/86-76-20. AFW System High Point Vents. The item involved inadequacies in the PNSC review of a potential unreviewed safety question determination involving lack of AFW system high point vents. The inspectors confirmed that appropriate high point vents had been installed in the AFW system in accordance with PCR-259 on November 20, 1986. Also, the inspectors confirmed that appropriate high point vents had been installed in the SI and RHR systems pursuant to PCR-423 with all work completed by December 12, 1986. The inspectors also confirmed that selected operations and surveillance test procedures referenced the new valves.



The inspectors also reviewed documentation that demonstrated that PNSC members had adequately addressed the problems associated with the subject PNSC review and emphasized the need for formality and rigor in handling potential unresolved safety concerns. These were the only remaining actions requiring completion to resolve the item and consequently the item is considered closed.

## 6. Control Room Operations Review

The inspectors observed four different shift crews operate on both day and night shifts during the course of this inspection. The inspectors considered that overall control room operations, including communications, procedure use, log keeping, shift turnover and briefings, alarm response, control board attentiveness and access control, were satisfactory and very professional.

Some specific observations and comments noted during this review are as follows:

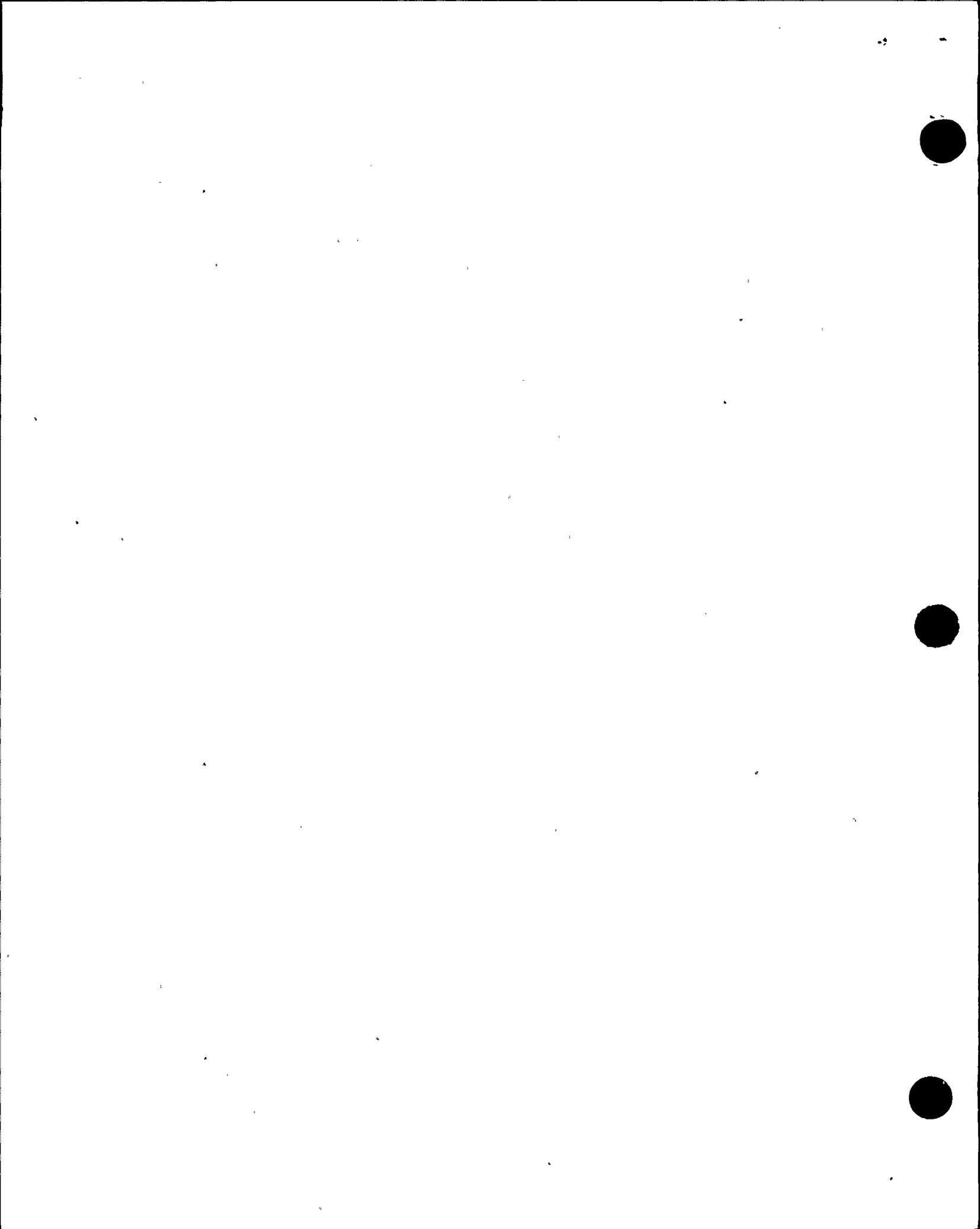
- a. The inspectors reviewed the process by which deficiencies are identified, tagged, and work requests are generated. White deficiency tags are used to identify any material and equipment problems at the facility. The tags are readily available at any of 18 deficiency centers around the site and employees are encouraged to use the tags. Each tag is numbered and must be entered in a log maintained at the deficiency center when it is used. Once the tags are hung and the deficiency entered in the log, the initiator will submit a work request (WR) in accordance with Maintenance Management Manual (MMM) 012, Revision 5, Work Control Procedure. These WRs are written on the automated maintenance management system (AMMS), a site-wide computerized system for tracking of WRs. The AMMS evaluates the new WR to determine if the WR is duplicating any previously written WRs or if it effects any safety-related equipment. The shift foreman or his designee has access to the AMMS from a terminal in the clearance center and will review the WRs for approval and configuration control. During a tour of the emergency service water (ESW) building and the emergency diesel generators (EDG), deficiency tags were observed on equipment and the inspectors gathered information from the tags. The inspectors then proceeded to the clearance center where the AMMS was used to tie the deficiency tags to a WR. In all but one case the deficiency tag was tied to a current WR. Deficiency tag 01731, on the 1A EDG local control board, was tied to a WR; however, the WR stated work was in progress. The inspectors requested more information on the WR from the licensee and as a result of the licensee's investigation it was discovered that the work on the deficiency had been completed but the tag had not been removed. The licensee corrected the problem by clearing the tag and closing the WR. The inspectors consider that with exception of the deficiency noted as Violation 400/87-04-09, the current system of identifying deficiencies appears to be adequate.

- b. The inspector reviewed Operations Management Manual (OMM) 002, Revision 2, Shift Turnover Package. The on-coming shift foreman has the responsibility to ensure the shift turnover package is properly completed by the on-coming shift personnel prior to completion of turnover. The shift turnover package contains several attachments to be completed by various control room personnel. In the course of completing OMM-002, the control boards are walked down by the control operator (CO), the senior control operator (SCO), and the shift foreman. OMM-002 also requires a review of the following to be completed by the shift foreman:

- Clearance Book
- Hot Work Permits
- Key Log Book
- Shift Foreman's Log
- Surveillance Test Schedule
- Equipment Inoperability Record
- Minimum Equipment List
- Temporary Bypass, Jumper, and Wire Removal Log
- Night Order Book

During the course of the inspection the inspectors observed several shift turnovers paying particular attention to the completion of OMM-002. In all cases the shift turnovers appeared to be conducted in a thorough and professional manner and appeared to adequately comply with OMM-002.

- c. The inspectors reviewed the equipment inoperability record (EIR) to determine if there was adequate control of inoperable equipment. The EIR is maintained in the Clearance Center and is utilized by the shift foreman or designee to track inoperable equipment that is Technical Specification dependent. The shift foreman designee in the Clearance Center reviews and approves all work requests (WR) and clearance tagouts. When a WR or a tagout effects a Technical Specification related piece of equipment, an EIR is completed and the shift foreman is notified. If a Limiting Condition for Operation (LCO) has been entered, the EIR is used as a tracking mechanism, timing the LCO deadlines. The EIRs in effect are reviewed each shift change and the running clock on any LCOs is updated. New EIRs are attached to OMM-002 and are reviewed by the on-coming shift foreman. The method appears to be an adequate means of tracking inoperable equipment and ensuring that LCOs are not violated and that all personnel are aware of any active LCO. The use of the running time update on the EIR appears to be a good tool for preventing the violation of a known LCO time requirement.



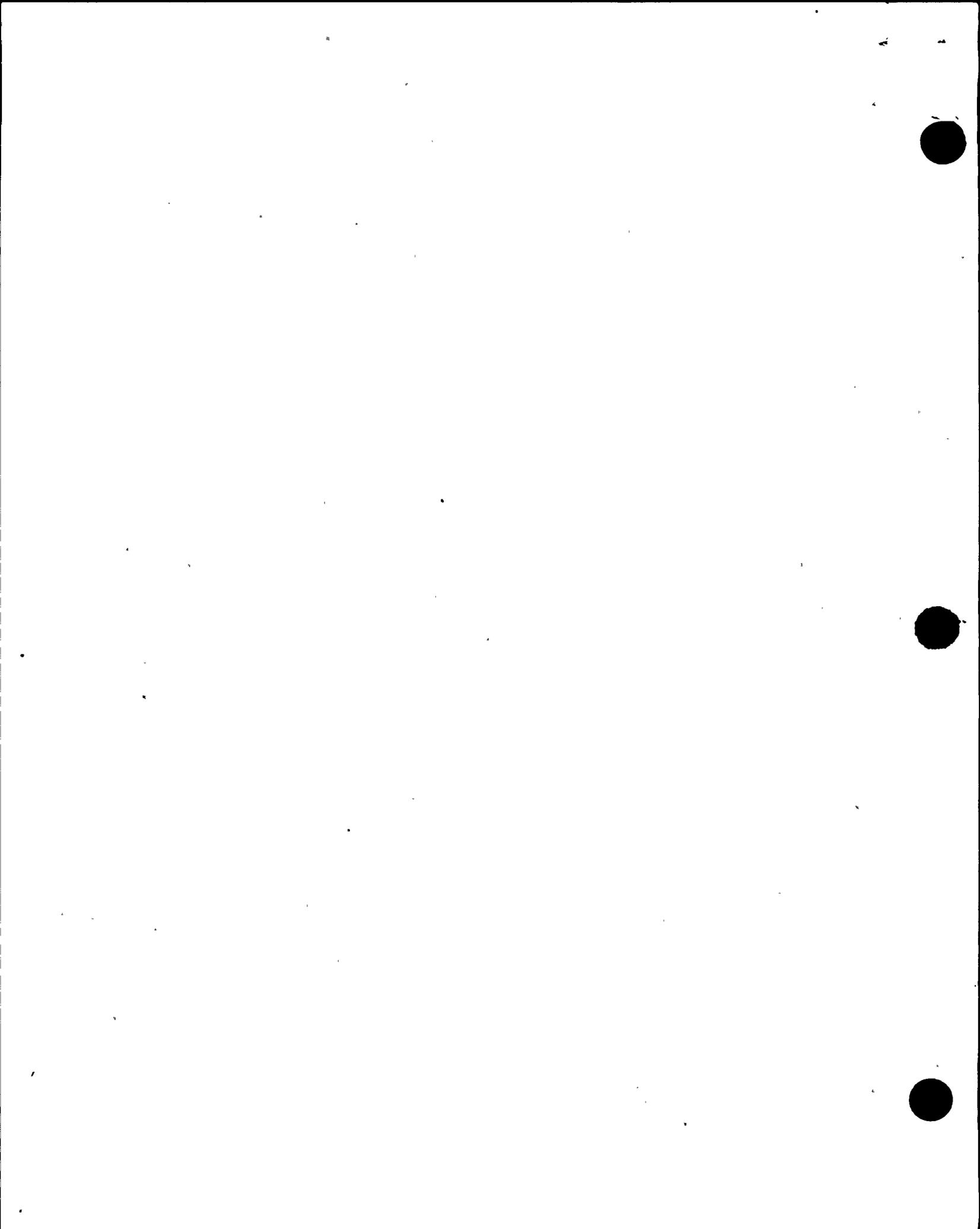
- d. Due to the current work load of the shift foreman, the licensee has allowed a senior control operator (SCO) to function as the shift foreman's designee. The designee is stationed in the clearance center and is tasked with maintaining configuration control of the facility. The utilization of the SCO as the designee does appear to streamline the operation of the control room, and at present appears to reduce the amount of paperwork requiring the attention of the Shift Foreman. Some concerns were raised, however, as to the extent that the designee can perform the duties and responsibilities of the shift foreman. Instead of issuing changes to the specific procedures to specify conditions under which the shift foreman designee can be used, the licensee issued a memorandum effectively changing all references to approval signatures of the shift foreman to mean shift foreman or designee. The memorandum also stated the designee was to be identified for each shift. The inspectors questioned the generic application by memorandum regarding the designee and was informed by the licensee that the procedures specifically intended for designee authority will, in fact, receive a change request and that the memorandum will be then cancelled. The inspectors also noted several instances where no designee was listed in the shift foreman's log. The licensee acknowledged these missing entries and initiated corrective action to rectify the problem.
- e. During the control room observation, the inspectors reviewed the licensed operator required reading binder. It was noted that one individual had not reviewed the binder for approximately two months. The licensee informed the inspector that the apparent cause of this non-review was caused by the existence of two different required reading binders of which only one was known to exist by the individual involved. The licensee stated that the individual involved would be brought up to date, that the two binders would be consolidated, and that the required reading program would be enhanced. Further NRC review of additional administrative controls associated with required reading program is identified as an inspector followup item (400/87-04-06).
- f. During a walkthrough of the emergency operating procedures flowpaths and supporting flowpath guides, one licensed operator referred to an outdated and erroneous flowpath guide and end path procedure EPP-16. A cancellation process had been implemented early in December 1986, for the flowpath guides and for EPP-16. Revised flowpath guides were incorporated into the User's Guide which was available to the operators in the control room, and training had been provided on the user's guide. The licensee had failed, however, to remove the cancelled flowpath guides and EPP-16 from the control room or to provide attached notification that they were not to be utilized during the cancellation process. In response to NRC concerns, the licensee removed these procedures, which contained erroneous information and setpoints, from the control room on January 8, 1987. The

licensee's procedure cancellation process needs to be revised to ensure that operators are not provided with two sets of conflicting information, particularly where related to emergency plant operations. Resolution of this deficiency will be an inspector followup item (400/87-04-07).

- g. During control room observation, the inspectors noted that several controllers for plant equipment had no control power indication lights, i.e., both the red and green lights were extinguished. The licensee indicated that this equipment was intentionally de-energized during normal plant operations, and indications were that the operators were aware of the equipment status. The concern was, however, that there was no control board indication such as a note, tag, or dot to emphasize that no control power indication is a normal status for these controllers. Even though the operators appeared to be familiar with the status of this particular equipment, having no lights and no notation could potentially mask a loss of control power for other safety-related controls. Similar circumstances at other facilities have allowed the loss of control over a valve or pump to go unnoticed for an extended period, and through multiple shift changes and control board walk-downs. Resolution of this concern will be an inspector followup item (400/87-04-08).
- h. The inspector witnessed a shift turnover briefing on the morning of January 8, 1987. During this briefing, the night Shift Supervisor informed the day Shift Supervisor that the steam dump valves had failed to operate on demand by the control room operators. An on-shift investigation by operators had discovered a clearance tag hanging on breaker PP-1A circuit. With this breaker tagged in the de-energized position, there was no control power supply to the steam dump valves. In response to NRC concerns, the licensee conducted an investigation to locate supporting documentation for the clearance tag. The tag appeared to be written for clearance OP-86-4575, but no record of work or processing of the clearance could be located. The clearance had not been completed and could not be located in the Active Clearance Book, the Hold for Test Binder, or the clearance files. The licensee also interviewed various Maintenance and Operations personnel and reviewed operating logs but could not find any physical evidence that the clearance was ever worked or processed. Procedure AP-020, Clearance Procedure, Revision I, contains specific requirements to ensure the proper processing of clearances and associated tags including:
- Active clearances will be maintained in the Active Clearance Binder.
  - Cancelled clearances that are held for testing will be maintained in Hold for Test Binder.
  - A running log of all active clearances will be maintained at the front of each clearance binder.

- If a clearance is transferred, the old clearance will be attached to the new clearance and placed in the clearance log.
- If a clearance is cancelled, the tags shall be removed and destroyed.
- If a clearance is cancelled, the system shall be re-aligned in accordance with AP-020-1-1.
- Weekly, the operating supervisor shall initiate an audit of the Clearance Log Binder. A physical verification of installed tags against the binder shall be conducted.
- After placing clearance tags, the tag preparer shall notify the operator "at the controls" and document the tag and equipment position on the clearance.
- The clearance holder physically verifies component position and tags and signs the clearance.
- Following completion of work, the tags are removed and the components restored to normal line-up.
- The control operator or senior control operator shall sign that the clearance tags have been removed and the component line-up restored.
- The Shift Foreman shall review the completed clearance and sign it.

Technical Specification 6.8.1 requires that procedures be implemented in accordance with Regulatory Guide 1.33, Revision 2, 1978, Appendix "A". Appendix "A", Item 1.c, recommends procedures for equipment control, i.e., locking and tagging, and Section 9.e recommends procedures for control of work and clearances. Contrary to all of the above, the licensee left the steam dump valves tagged in the inoperable position from November 1986 to January 1987, without Operations' awareness or supporting documentation. The licensee believes that the clearance was probably cancelled, but failed to follow procedures in documenting the disposition, removing the tag, and restoring the proper system alignment. This failure to implement a procedure per Technical Specification 6.8.1 was carried as unresolved at the exit interview and later changed to a violation (400/87-04-09), via a telephone conversation with the licensee. It should be noted that the failure to adequately control tagging and system alignment could have serious implications if applied to safety-related system. Although the licensee indicated that they have one additional level of control over safety system alignment, a Configuration Control Log, in this specific instance, several levels of control evidently broke down.



## 7. Review Of Significant Operational Occurrence Reports (SOOR)

The inspectors reviewed all SOORs that have occurred since December 15, 1986, for operator errors. SOOR events occurring during this time frame included SOORs 86-016 through 86-021. In the review of the SOORs the inspectors noted that only three involved operator errors and that these were all associated with heat up/cool-down rate problems resulting from difficulty in controlling these evolutions within the parameters established for cold temperature operation. None of these events appeared to be of significant concern.

The inspectors also reviewed the safety injection actuation event that occurred on December 11, 1986. The event was the result of running operational surveillance test (OST) 1813 which required a transfer of control from the main control board (MCB) to the auxiliary control panel (ACP). When the operators returned control to the MCB from the ACP, there was an SI signal actuating all B train components. After verifying the reason for the SI to be due to the functioning of electrical relays removing in-place SI blocks during switch actuation, the operators decided to reset SI and terminate flow to the vessel. In the process of resetting the SI, the operator turned the SI actuate switch instead of the reset switch thereby reinitiating SI on both trains. The licensee initiated OMM-004, Post Trip/Safeguards Review, to determine proper operation of all safety equipment. Review of the Post Trip Review reflected that after review of the problem, the licensee determined that the arrangement of the SI actuate and reset switches on the MCB needed to be modified to prevent the inadvertent SI actuation from occurring again. The inspectors reviewed PCR-000174 which addressed the relocation of the switches. The inspectors consider that the SI actuate switch should have been addressed to prevent the operator from repeating the event in SOOR-015. The inspectors interviewed several operations personnel and were told that this type of an incident is commonly done on the simulator indicating to the inspectors that the SI actuation switches needed to be modified to prevent recurrences of this event. The licensee stated that something was in the process of being written that will address the relocating of the SI actuation switches, however, it was not available for review at this time. The final determination of corrective actions for this event will need further review by the NRC staff and will be an inspector followup item (400/87-04-010).