

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-528/89-01, 50-529/89-01, 50-530/89-01

Docket Nos. 50-528, 50-529, 50-530

License Nos. NPF-41, NPF-51, NPF-74

Licensee: Arizona Nuclear Power Project
P. O. Box 52034
Phoenix, Arizona 85072-2034

Facility Name: Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2 and 3

Inspection Conducted: January 9, 1989 through January 13, 1989

Inspector: SJH for J. F. Burdoin, Reactor Inspector 2-9-89
Date Signed

Approved by: SAR S. A. Richards, Chief, Engineering Section 2-9-89
Date Signed

Summary:

Inspection on January 9, 1989 - January 13, 1989 (Report Nos. 50-528/89-01,
50-529/89-01, 50-530/89-01)

Areas Inspected: An unannounced routine inspection by one regional inspector of various vital areas and equipment in the plant, and assessment of followup items and of the Licensee's Electrical Maintenance Program. Inspection Procedure Nos. 30703, 62705, 71707, 92701 and 93702 were used as guidance for the inspection.

Results:

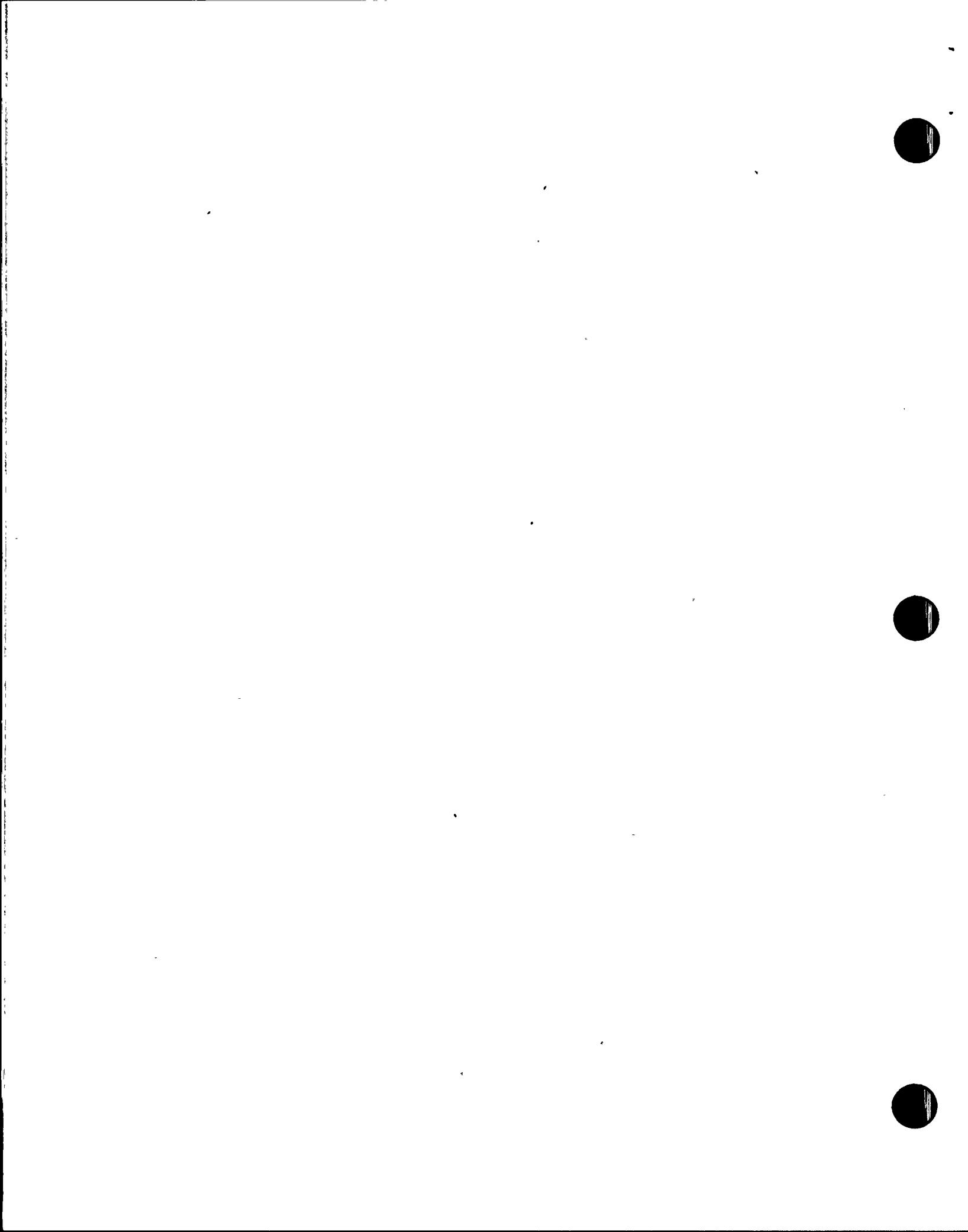
General Conclusions

The licensee's actions taken to clarify and to correct deficiencies resulting from followup items were thorough, timely, properly documented, and adequate.

Significant Safety Matters: None

Summary of Violations or Deviations: None

Open Items Summary: Three SSFI inspection open items were closed, two items left open, and one new item opened (Electrical Maintenance Program Review).



DETAILS

1. Persons Contacted

The below listed technical and supervisory personnel were among those contacted:

Arizona Nuclear Power Project (ANPP)

*R. Adney, Manager, Plant Standards and Control
*J. Allen, Plant Manager, Unit 2
 R. Bernier, Nuclear Licensing
*C. Churchman, Work Control Manager, Unit 3
 C. Day, Electrical Maintenance Standards, Supervisor
*J. Haynes, Vice President, Nuclear Production
 M. Hypse, Electrical Engineer
*S. Karimi, Compliance Engineer
*J. Kirby, Director Nuclear Support Services
*W. Marsh, Plant Director, Nuclear Production
*K. McCandless-Clark, Lead Compliance Engineer
*J. Minnicks, Maintenance Manager, Unit 3
*R. Pontes, Work Control Group, Unit 3
 A. Rogers, Manager, Licensing
 T. Shriver, Compliance Manager
 W. Simko, Civil/Mechanical Engineering, Supervisor
*L. Souza, Quality Audits & Monitoring Manager
 C. Stevens, Lead Reliability and Risk Analyst
*J. Tench, Acting Director, Site Services
*H. Thompson, Senior Engineer Nuclear Engineering
*P. Wiley, Work Control Manager, Unit 2
*O. Zeringue, Plant Manager, Unit 3

The inspector also talked with other licensee personnel during the course of the inspection.

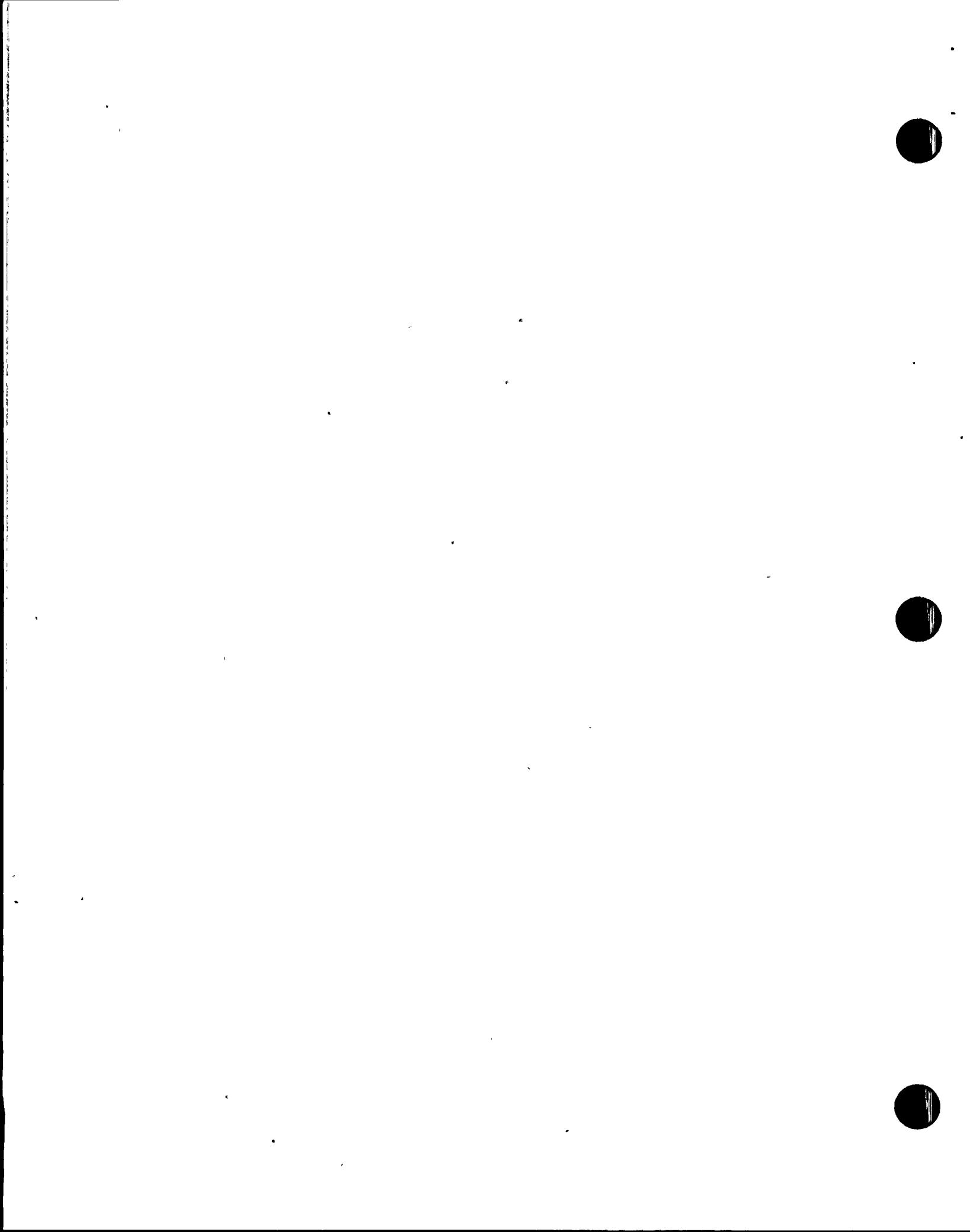
*Attended the Exit Meeting on January 13, 1989.

2. Area Inspection (71707)

An independent inspection was conducted in the Unit 1, 2 & 3 Control Buildings and Auxiliary Buildings. The inspectors examined areas and equipment for debris, potential hazards, oil and water leakage, and equipment condition, e.g., oil level, valve position, and electrical connection configuration and cleanliness. The equipment and areas inspected included:

Unit 1

- A. Two 4160/480V switchgear rooms (train A and B).
- B. Four 125V battery rooms.
- C. Four battery equipment rooms.



- D. Two remote shutdown panel rooms.
- E. Two diesel generator machine rooms.
- F. Two diesel generator control rooms.

Unit 2

- A. Two 4160/480V switchgear rooms (train A and B).
- B. Four 125V battery rooms.
- C. Four battery equipment rooms.
- D. Two remote shutdown panel rooms.
- E. Two diesel generator machine rooms.

Unit 3

- A. 4160/480 volt switchgear room, Train B.
- B. Diesel generator 3A control room.
- C. Diesel generator 3A machine room.

Housekeeping and equipment status appeared to be acceptable.

No violations or deviations were identified.

3. Followup of Previous Inspector Identified Items (92701)

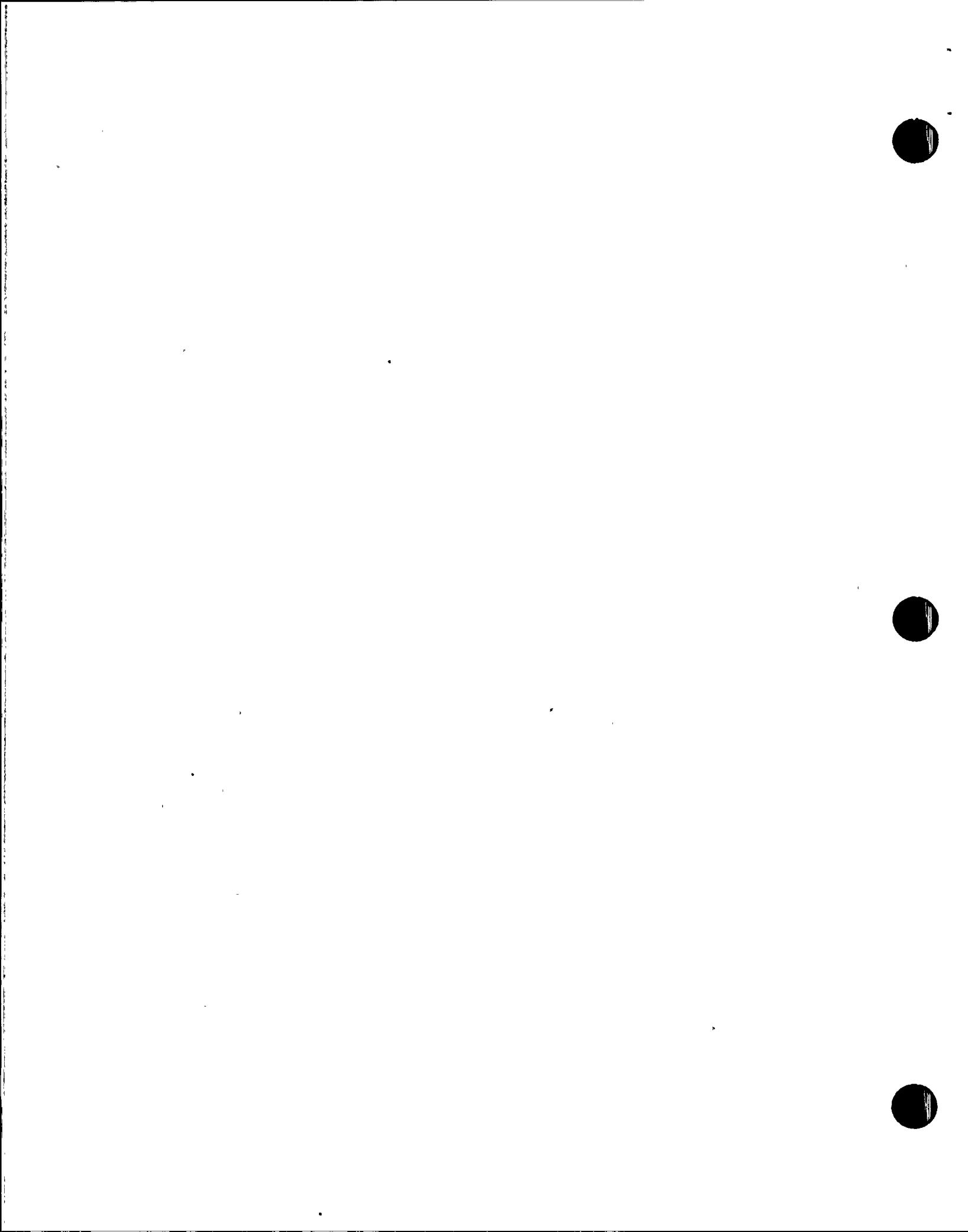
a. (Closed) Item 50-528/88-01-15, Nuisance Annunciator Alarms

The SSFI Team reiterated the nuisance annunciator alarms issue. This issue has been a topic of discussion in two management meetings; 50-528/87-34 held September 24, 1987 and 50-528/87-36 held October 14, 1987 with the licensee. The licensee developed and implemented the "bogus" annunciator reduction program to reduce the number of control room annunciator windows which are inappropriately lighted. The licensee terms inappropriately lighted annunciators as "bogus" annunciators.

During the SSFI inspection, the licensee committed to examine other methods of dealing with nuisance alarms, which will preserve audible annunciation of other inputs, and to examine proceduralizing the expected operator actions in dealing with nuisance alarms.

The inspector reviewed the licensee's program to reduce the number of bogus annunciators. Monthly annunciator status reports, which reflect the progress of the bogus annunciator reduction program, were examined. There has been a steady decline in the number of bogus illuminated annunciator windows at any one time. To illustrate the point, in Unit 1 in early 1987, 100 illuminated windows were identified as compared to 25 illuminated windows in March 1988. Units 2 and 3 have demonstrated comparable success during the past year in reducing the numbers of bogus annunciators.

The actions implemented under this program to reduce bogus annunciators include repairing as quickly as possible the hardware/equipment which initiated the annunciator, and in the case of instrumentation initiations of annunciators, to recalibrate or reset



limit switches/set points, when applicable. In those cases of annunciator initiations which require engineering evaluations, a priority is assigned to ensure these evaluations get early attention and resolution.

The inspector also examined instructions to operating shifts prescribing prompt acknowledgement and proper responses by appropriate procedures to control room alarms. Operators receive refresher training every six weeks and appropriate annunciator responses are included in this training.

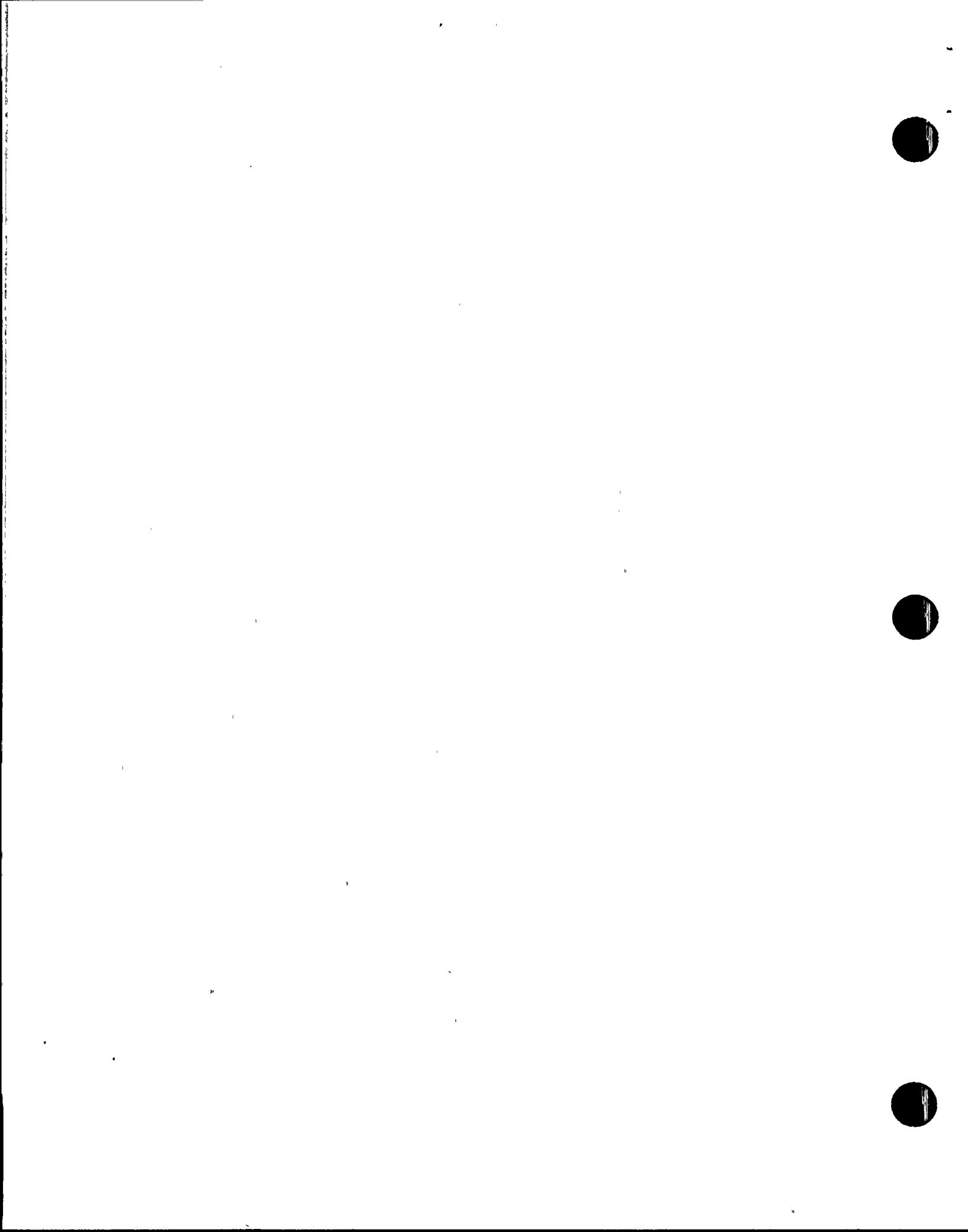
The inspector concluded that the licensee's bogus annunciator reduction program is properly implemented and demonstrating good progress. During management meetings on this subject, the licensee has indicated that their long term goal is to achieve a clear annunciator board. Their progress towards this goal will continue to be monitored as part of the routine inspection program. This item is closed.

b. (Closed) Item 50-528/88-01-16, Discrepancies Between Design Documents and Procedures

The SSFI team's concern was the need for the licensee to have a clearly understood and implemented design document hierarchy, and that changes to implementing procedures have documented engineering approval. The team identified several instances where design document requirements (valve positions on drawings) were not properly implemented in procedures and was informed by operations standards personnel of an improper latitude taken by the group to change procedures in advance of having design documents changed.

The inspector examined documentation which described the actions the licensee initiated to respond to this concern. The licensee reviewed a ten percent sample of Unit 1 operating procedures to identify the discrepancies that existed between design drawings and operating procedures. This review, completed on March 28, 1988, indicated the design drawings and procedures did not match in all cases.

The licensee maintains that although these differences may indicate a problem, there is no significant safety concern. The design drawing assumes a given plant condition (operating mode) when it is printed. Depending on the operating mode of the plant, the procedures direct that the plant configuration be modified to reflect the operating mode. To illustrate, the design drawing is printed displaying that LPSI be aligned for Safety Injection, while the procedure provides for several configurations, all within the design and purpose of the system. Operations performs their function by using procedures not prints. The prints support the procedures in performing operations. In some cases, the prints have been found to display clearly incorrect information, i.e. a drain valve shown open should be closed. In these cases, department personnel have been directed to submit a change to the drawing correcting the problem.



The licensee is continuing their procedure review/upgrade program and expanding it to include all three units. The procedures will be compared with the design drawings and where appropriate, changes will be submitted for corrections.

The inspector concluded that the corrective actions taken by the licensee in response to this item of concern appear adequate. This item is closed.

C. (Closed) Item 50-528/88-01-18, Operator Training on Design Changes

The SSFI team's concern was the adequacy and timeliness of training given to operations personnel in regards to design changes made to systems.

The inspector discussed with the licensee the program that alerted operations personnel of changes to systems. Design changes, drawing changes and procedure changes are included in the requalification training which the operations personnel receive at six weeks intervals. In the interim period, the plant changes are communicated to operations personnel in night orders (prepared daily) as instructions to operating personnel, and in notifications of procedure changes, which are released to operations personnel at the time the plant change is implemented. Drawing changes resulting from plant changes are released at the time the plant change is implemented. A drawing control station located in the control room area ensures that up-to-date drawings are available to operations personnel. Since plant operations are performed from procedures with drawings as supporting information, the notification of procedure changes is given priority in notifying operations personnel of plant changes. A summary of unit changes made during the refueling outages has been implemented since the SSFI inspection (Jan/Feb 88). This summary is prepared prior to resuming plant operation following refueling and is distributed to operations personnel. This summary lists significant procedure changes, plant changes, and site modifications made during the outage. In this way, all operations personnel are made aware before startup of all plant changes made during the refueling shutdown.

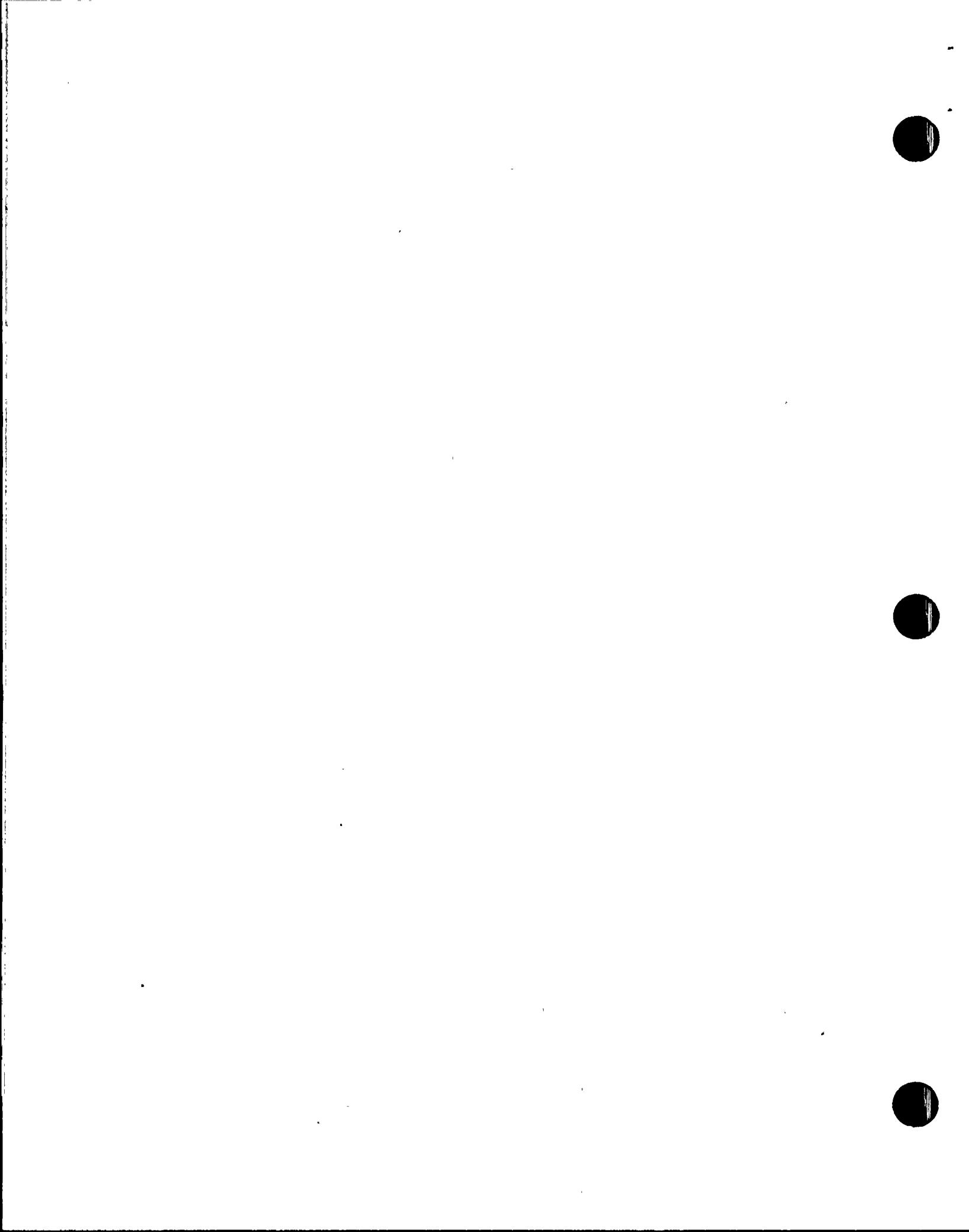
The inspector concluded that the licensee's program of informing/notifying operations personnel of plant changes is adequate. This item is closed.

No violations or deviations were identified.

4. Electrical Maintenance of Components and Systems (62705)

The inspector examined the licensee's program for electrical maintenance of components and systems to ascertain that corrective maintenance and preventive maintenance activities are/were conducted in accordance with licensee-approved procedures and instructions.

The following nuclear administrative procedures were reviewed:



30AC-9ZZ01, Work Control
30AC-9MP02, Preventive Maintenance
30DP-9MP01, Conduct of Maintenance

The inspection in this area was not completed during this inspection period and will be continued during a future inspection.

No violations or deviations were identified.

5. Other Activities (93702)

The inspector met with the licensee's engineering staff on the subject of "Station Blackout", Regulatory Guide 1.155.

The inspector supported the resident inspectors in a followup of two plant activities; 1) a lightning strike on the 13.8KV side of Unit 2 ESF service transformer 2E-NBN-X03 and 2) a broken rocker arm in Unit 3 diesel generator "A". These two items will be reported in the resident inspection report Nos. 528/88-44, 529/88-42 and 530/88-41.

No violations or deviations were identified.

6. Exit Meeting (30703)

The inspector conducted an exit meeting on January 13, 1989, with members of the licensee staff as indicated in paragraph 1. During this meeting, the inspector summarized the scope of the inspection activities and reviewed the inspection findings as described in this report. The licensee acknowledged the concerns identified in the report.

