

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-278/85-39

Docket No. 50-278

License No. DPR-56 Priority - Category C

Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Facility Name: Peach Bottom Atomic Power Station (PBAPS), Unit 3

Inspection At: Delta, Pennsylvania

Inspection Conducted: October 28 - November 1, 1985

Inspectors: c/a for S. V. Pullani 11/18/85
S. V. Pullani, Fire Protection
Engineer, PSS, EB date

c/a for M. Dev 11/18/85
M. Dev, Reactor Engineer, QAS, OB date

Approved by: C. J. Anderson 11/18/85
C. J. Anderson, Chief date
Plant Systems Section

Inspection Summary:

Inspection on October 28 - November 1, 1985 (Report No. 50-278/85-39)

Areas Inspected: Routine, unannounced inspection of: (1) followup of previous inspection findings in the area of plant modifications, and (2) the plant modifications for the alternate shutdown capability, as required by 10 CFR 50, Appendix R, Sections III.G.3 and III.L. The inspection involved 72 inspector hours onsite and 19 inspector hours in-office by two inspectors.

Results: No violations, deviations, or other unacceptable conditions were identified.

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DETAILS

1.0 Persons Contacted

1.1 Philadelphia Electric Company (PECO)

- B. Edwards, Q.C. Inspector, Philadelphia Office (by telephone)
- *R. Fleischmann, Manager, PBAPS
- M. Hammond, Construction Engineer
- *F. Mascitelli, Modification Engineer
- W. Mindick, Electrical Project Engineer, Philadelphia Office (by telephone)
- D. Spamer, Alternate Shutdown Modification Responsible Engineer, Philadelphia Office (by telephone)
- *S. Spitko, Administrative Engineer
- *C. Swenson, Technical Assistant
- D. Torone, Field Engineer
- *J. Wilson, Quality Assurance Site Supervisor

1.2 U.S. Nuclear Regulatory Commission (NRC)

- *T. Johnson, Senior Resident Inspector
- *J. Williams, Resident Inspector

*Denotes those present at the exit interview

2.0 Followup of Previous Inspection Findings

(Closed) Violations (50-277/84-02-1A and 50-278/84-02-1A): Failure to Issue Plant Modification Control Sheet (PMCS) for Modification 510, in Time.

The licensee has completed a Plant Modification Control Sheet for Modification 510. Initially, design review, pertaining to design of Modification 510, performed by off-site Engineering and Research Department, was not required and as such, the Plant Modification Control Sheet design review attribute was not incorporated. Subsequently, Administrative Procedure A-14, Plant Modifications, was revised (Revision 10). Appendix A to Procedure A-14 presently delineates requirements for review of all PBAPS Modifications.

Based on the above, these items are closed.

(Closed) Violations (50-277/84-02-1B, 1C and 50-278/84-02-1B, 1C): Failure to Establish and Provide Training to Assistant Modification Coordinator.

As a result of subsequent reorganization, the licensee eliminated the position of Assistant Modification Coordinator at PBAPS. Instead, a full-time Modification Coordinator has been assigned to PBAPS Electric

Production Department. Administrative Procedure A-14 has, accordingly, been revised to delineate the responsibilities of the Modification Coordinator. The assigned individual is a degreed and licensed Professional Electrical Engineer and a qualified Shift Technical Advisor. By virtue of his qualification, training and experience, he meets the intent of ANSI N45-2.11 - 1973.

Based on the above, these items are closed.

(Closed) Unresolved Items (50-277/84-02-1D and 50-278/84-02-1D): No Full-time Modification Coordinator Available at Peach Bottom.

The licensee has assigned a full-time Modification Coordinator in Electric Production Department at Peach Bottom. The present Modification Coordinator is a degreed engineer and a qualified Shift Technical Advisor and possesses several years of plant design experience in electrical engineering.

Based on the above, these items are closed.

(Open) Violations (50-277/84-02-1E and 50-278/84-02-1E): Failure to Complete Maintenance Request Forms (MRFs) Pertaining to Previous Modifications.

In the letter dated September 27, 1985, the licensee indicated that 232 modification packages out of 425 have been closed out including completion of related MRFs. The licensee expressed that unavailability of adequate previous maintenance information for some of the older modification packages somewhat impeded the MRFs closeout process. The modification packages and MRFs are, presently, being completed and closed out based on equipment maintenance survey, inspection and other related information. The licensee intends to complete this action by June 30, 1986.

These items remain open, pending completion of the licensee action and its review by NRC.

(Closed) Violations (50-277/84-02-1F and 50-278/84-02-1F): Failure to Revise Procedure A-14 in Time to Address the NRC Concerns.

The licensee subsequently revised (Revision 10) Procedure A-14, Plant Modifications, to address the NRC concerns raised in the Inspection Reports 50-277/81-12, 50-278/81-13, 50-277/81-23 and 50-278/81-23. The inspector reviewed the Procedure A-14, Revision 10, and determined that it satisfactorily addressed the concerns.

Based on the above, these items are closed.

(Closed) Violations (50-277/84-02-1G and 50-278/84-02-1G): Failure to Incorporate Correct Carbon Content Information on the Construction Drawings.

The licensee subsequently updated the construction drawings 11187-022-M-415 series, identifying changes relative to carbon content in the piping for Modification 389. The inspector verified the proper recording of carbon content on the drawings:

M415-122, Revision 4
 M415-123, Revision 3
 M415-124, Revision 4
 M415-126, Revision 3
 M415-127, Revision 4
 M415-128, Revision 3
 M415-129, Revision 3
 M415-130, Revision 4
 M415-131, Revision 3
 M415-132, Revision 3
 M415-133, Revision 5
 M415-135, Revision 3

Based on the above, these items are closed.

(Closed) Violations (50-277/84-02-1H and 50-278/84-02-1H) Failure to Measure Response Time of Containment Pressure Channel.

In the letter dated April 4, 1984, the licensee indicated that the NRC had previously computed an overall channel response time for the PBAPS containment and had found it satisfactory. This is documented in the NRC Safety Evaluation Report (SER) dated September 7, 1983. The inspector reviewed the SER and the licensee commitments in PBAPS FSAR, Section 7.3, item 6, and Engineering and Research Department Modification 584 and verified that the NRC requirements on the containment pressure instrumentation were met. The FSAR mentioned the response time acceptance criteria and, accordingly, the modification design input was found complete.

Based on the above, these items are closed.

3.0 Alternate Shutdown Modifications

3.1 Purpose

The purpose of the inspection was to ascertain that the plant modifications for the alternate shutdown capability, as required by 10 CFR 50, Appendix R, Sections III.G.3 and III.L and as approved by the Office of Nuclear Reactor Regulation (NRR), are being implemented properly.

3.2 Background

10 CFR 50.48 and 10 CFR 50, Appendix R, became effective on February 17, 1981. Section III.G of Appendix R requires that fire protection be provided to ensure that one train of equipment necessary to achieve and maintain safe shutdown remains available in the event of a fire at any location within a licensed operating facility. For hot shutdown conditions, one train of the systems necessary must be free of fire damage (III.G.1.a). For cold shutdown conditions, repair is allowed using in place procedures and materials available onsite with the provision that cold shutdown be achievable within 72 hours of the initiating event (III.G.1.b). Section III.G.2 lists specific options as follows to provide adequate protection for redundant trains of equipment located outside of the primary containment:

- Separation by a fire barrier having a three hour rating (III.G.2.a).
- Separation by a horizontal distance of at least 20 feet with no intervening combustibles and with fire detection and automatic fire suppression installed in the fire area (III.G.2.b).
- Enclosure of one train in a fire barrier having a one hour rating in addition to having fire detection and automatic suppression installed in the fire area (III.G.2.c).

If the protection required by Section III.G.2 is not provided or the systems of concern are subject to damage from fire suppression activities, Section III.G.3 of the rule requires that an alternate or dedicated shutdown capability be provided which is independent of the area of concern. Any alternate or dedicated system requires NRC review and approval prior to implementation.

The licensee's alternate shutdown capability is reviewed and approved by NRR as documented in the Safety Evaluation Report (SER) dated May 4, 1984. The licensee commitments as documented in the SER and the related submittals, and the requirements of Appendix R were used as the bases for this inspection. The licensee commitments and the requirements are listed in Attachment 1.

3.3 Alternate Shutdown Capability

The alternate shutdown capability for the plant is described in the licensee's submittal dated September 16, 1983. The alternate safe shutdown capability consists of control stations for the required equipment and systems independent of the main control room, cable spreading room, and the emergency shutdown panel area. In the event of an unmitigated fire in the main control room, cable spreading room, or emergency shutdown panel area which has the potential to interfere with the normal safe shutdown means from the main control room, the operators will proceed to the alternative shutdown

stations. Communications will be established between the operators who are at the alternative shutdown stations and the coordinating operator. The alternative control stations are in the following locations:

HPCI Alternative Control Station: This panel is located in each unit in the Reactor Building at elevation 135'0" in the vicinity of the existing HPCI motor control centers. The HPCI alternative control station is equipped with transfer switches and alternative power supplies for: a) the alternative High Pressure Coolant Injection (HPCI) turbine and pump diagnostic instrumentation which indicates pressures, flow and speed and b) the alternative process monitoring instrumentation which indicates reactor vessel pressure and level, suppression pool temperature, and condensate storage tank level.

DC Power Distribution Alternative Control Station: This panel is located in each unit in battery rooms B/D in the Turbine Building at elevation 135'0". This panel is equipped with a) fuse-disconnect switches to isolate the existing feed to the cable spreading room 125V dc distribution panel, b) fuse-disconnect switches for power feeds to the Safety Relief Valves (SRVs) at the emergency shutdown panel, and c) fuse-disconnect switches for alternative 125V dc control power to the alternative shutdown switchgear breakers and diesel generators.

Diesel Generators Alternative Control Station: This panel is located in battery room B/D in Unit 2 and is common to both Units 2 and 3. This panel is equipped with a) transfer switches to isolate all main control room control circuits, b) diesel generator diagnostic instrumentation, and c) the control power transfer switch to the alternative 125V dc power source.

4kV Emergency Switchgear Alternative Station: This panel is located in the 4kV emergency switchgear rooms in each unit. The panel is equipped with transfer switches for alternative local control and status indication for the motor control centers and for the Emergency Service Water (ESW), Residual Heat Removal (RH), and High Pressure Service Water (HPSW) pumps.

Emergency Shutdown Panels: The emergency (remote) shutdown panels are located in the Radwaste Building at elevation 165'0" for both units. The licensee has proposed modifications by rerouting cables at existing remote shutdown panels which will enable it to serve as an alternative shutdown station. The emergency shutdown panels are equipped with a) transfer switches to isolate the main control room circuitry, b) control for three of the main steam relief valves and c) alternative 125V dc control power independent of the cable spreading room.

The licensee is committed to provide circuit isolation by using manual control switches, relays, breakers or fuse-disconnect switches at the alternative shutdown stations for control, power and instrumentation

cables, as required, to ensure that no electrical connection will exist between the alternative shutdown circuits that could be affected by a fire in one of the above-mentioned three areas of concern. The existing plant design and the alternate shutdown modifications described above should assure availability of equipment essential for achieving safe shutdown assuming loss of offsite power in the event of a fire in the control room, cable spreading room, or emergency shutdown panel area.

3.4 Inspection of the Alternate Shutdown Modifications

The plant modifications for the alternate shutdown capability is being implemented through approximately 24 modification packages, 10 of these being associated with each unit and the remaining 4 being associated with the systems common to both units. The modification packages associated with Unit 3 and common systems are listed in Attachment 2. At the time of this inspection, these modifications were under various stages of completion. All of the alternate shutdown modifications for both units are required to be completed before the startup following the 1986-87 Unit 2 refueling outage.

The inspector reviewed selected samples of the modification packages associated with Unit 3 and the common systems. The scope of inspection included the following areas:

- Review of the modification packages to verify that it complied with the related licensee commitments and requirements.
- Implementation of the modifications, including work observations to ascertain that they were conducted in accordance with appropriate specifications, drawings, and other commitments.
- Post-modification testing was conducted in accordance with technically adequate and approved procedures.
- Adequate quality assurance, including proper administrative controls, were in effect for the above activities.

The details of the above areas of inspection are discussed below.

3.4.1 Review of Modification Packages

The inspector reviewed selected portions of the following modification packages:

- 1351A, Diesel Generator OBG12, ODG12, Alternate Control Stations
- 1353A, HPCI Alternate Control Station
- 1353C, RHR Alternate Control Station

The inspector also reviewed selected drawings (see Attachment 3) associated with the above modifications. The scope of review was to ascertain that the modification packages were technically adequate and complied with the related licensee commitments and NRC requirements.

The inspector also reviewed the following administrative procedures which control the modification process:

- Administrative Procedure, A-14, Plant Modification, Revision 10
- Engineering and Research Department Procedure (ERDP)-3.1, Procedure for Handling Q-Listed Modification, Revision 6
- ERDP-3.6, Procedure for Preparation and Review of Engineering Drawings for Nuclear Plant Modifications, Revision 9
- ERDP-3.8, Procedure for Processing Engineering Review Request, Revision 9
- ERDP-3.10, Procedure for Preparation and Control of Engineering Instructions to Field, Revision 1
- ERDP-4.4, Procedure for Procurement of Specially Engineered Equipment, Materials, Services or Combination Thereof with a Specification, Revision 5

The scope of review was to verify that sufficient administrative procedures existed for the control of the activities associated with the modifications and that these controls were in effect. Specifically, the review was to ascertain that the following controls exist:

- Procedures for control of Alternate Shutdown Modification, including methods for initiating design changes; request for design changes and associated forms; and methods to assure that the modification does not involve an unreviewed safety concern
- Procedures and responsibilities for design control, including organizational responsibilities; review of design and modification program; methods for conducting safety evaluation, reviewing and approving design input requirements and performing independent verification; training of personnel performing modification activities; and auditing design activities

- Administrative control for design and document control, including interdepartmental interface; record storage; implementation of approved design changes in accordance with approved procedures; post-modification acceptance testing; and post-modification acceptance criteria

No unacceptable conditions were identified.

3.4.2 Implementation of the Modifications

The inspector checked several randomly selected documents in Modification packages 1351A, 1353A, and 1353C to ascertain that the modifications were implemented in accordance with the appropriate specifications, drawings, and other commitments. Specifically, the checking was to verify that:

- The Plant Maintenance Control Sheets (PMCS) for the Modification packages were complete indicating compliance with administrative control procedures
- The safety evaluation had addressed unreviewed safety concerns in accordance with 10 CFR 50.59; and changes to the Technical Specification and Final Safety Analysis Report had been identified
- Responsibilities to conduct and implement Alternate Shutdown Modification activities including design control, organizational interface, review and approval of design and Safety evaluation, and independent review were adequate
- Procurement of Alternate Shutdown Modification related materials, including safety classification, provision for 10 CFR 21 reportability, receiving inspection and certificate of conformance were adequate
- Construction generated Engineering Review Requests, Nonconformance Reports, Construction Job Memoranda, Modification Status Report, and Job Checklist - QC Verification were in compliance with the approved procedures.

The inspector also toured and visually inspected the completed Alternate Shutdown Modification equipment in the remote shutdown panel area, M-G set room, and 4 kV Switchgear rooms. The panels and cabinets were provided with locks under administrative control. The licensee plans to develop the necessary operating procedures for the Alternate Shutdown equipment before the equipment is required to be operational, i.e., by the end of 1986-87 Unit 2 refueling outage. It appeared that the modification has incorporated

human factor considerations in arranging the devices and switches on the Alternate Shutdown panels, bearing similarity to the Main Control Room configuration. The licensee plans to provide emergency lighting to illuminate the Alternate Shutdown panels and access and egress to the areas containing Alternate Shutdown equipment and devices.

No unacceptable conditions were identified.

3.4.3 Post-Modification Testing

The inspector reviewed the following randomly selected completed post-modification acceptance testing packages:

- MAT 1351A PB3-52.1A, System #52 4.16 kV Diesel Generator Circuit Breaker 3-152-1606, Revision 0
- MAT 1351A PB2-2-3-52.2A, System #52 4.16 kV Diesel Generator System E2 Differential O.C. and Directional Power Relaying, Revision 0
- MAT 1351A PB2-3-52.4A, System #52 4.16 kV Diesel Generator System B Diesel Instrumentation, Revision 0
- MAT 1351A PB3-54.1, System #54.1 4 kV Switchgear Bus System Cooling Tower L.C. Breaker Position Indication, Revision 0
- MAT 1351A PB3-54.2, System #54.2 4 kV Switchgear Bus System "B" HPSW Pump Breaker Position Indication, Revision 0
- MAT 1351A PB3-54.3, "B" Core Spray Pump Breaker Position Indication, Revision 0
- MAT 1351A PB3-54.4, "A" Control Rod Drive Pump Breaker Position Indication, Revision 0
- MAT 1351A PB3-54.6, E-323 Emergency Auxiliary Switchgear Breaker Position Indication, Revision 0
- MAT 1351A PB3-54.7, E-223 Emergency Auxiliary Switchgear Breaker Position Indication, Revision 0
- MAT 1351A PB3-54.13A, 30x31 Emergency Auxiliary L.C. Circuit Breaker 3-152-1605, Revision 0
- MAT 1351A PB2-3-56.1A, Cable Reroute from Load Center 30B11 to MCC 00B54, Revision 0

- MAT 1353A PB3-14.1, Torus Water Pump Suction Valve MO-3-14-71, Revision 0
- MAT 1353A PB3-14.2, Torus Water Cleanup Pump 30P142, Revision 0
- MAT 1353A PB3-23.1, HPCI System MO-23-19, Revision 0
- MAT 1353A PB3-23.2, HPCI System MO-23-20, Revision 0
- MAT 1353A PB3-23.3, HPCI System MO-23-21, Revision 0
- MAT 1353A PB3-ASC.2, 30A16 Switchgear Alternative Control Annunciators, Revision 0
- MAT 1353A PB3-57.2, Battery Charger 3DD03, Revision 0

The inspector reviewed the above modification acceptance test (MAT) procedures and the test results. The scope of review was to ascertain that:

- Appropriate administrative controls were in effect for the preparation and performance of the test procedures.
- The test procedures were technically adequate to functionally verify the operability of the modified systems.
- The independent reviews were performed to determine the adequacy of the procedures.
- The procedures were approved by the Plant Operations Review Committee (PORC).
- The test was performed in accordance with the approved procedures.
- The test results met the specified acceptance criteria.

No unacceptable conditions were identified.

3.4.4 Quality Assurance

During the course of the inspection, the inspector reviewed selected samples of the modification packages including their implementation and post-modification testing. The scope of review included a verification that the modifications were implemented in accordance with the quality assurance requirements of the following documents:

- 10 CFR 50, Appendix B
- PBAPS Quality Assurance Plan, Volume I, Engineering and Research Department
- PBAPS Quality Assurance Plan, Volume III, Operations Phase, Modification Section
- Engineering and Research Department Procedure ERDP 3.1, Procedure for Handling Q-Listed Modifications, Revision 6
- Administrative Procedure A-14, Plant Modification, Revision 10
- Other requirements and licensee commitments (see Attachment 1)

The scope of review also included a verification that appropriate administrative controls were in effect for the control of the activities associated with the modifications.

The inspector also reviewed receiving inspection conducted by Engineering and Research Department Quality Control (Construction) inspectors, for this modification. All applicable receiving inspection attributes were verified and discrepancies resolved prior to acceptance.

The inspector also verified that Electric Production Quality Assurance has conducted a surveillance of PBAPS Unit 3 Alternate Shutdown Modifications 1351 and 1353. The Surveillance Check Report (SCR) SP85-11 MOD, dated September 16, 1985, reviewed the adequacy and implementation of PBAPS Special Procedure SP-837, Alternate Shutdown Modification Phase I Project Standards, Revision 1. As a result of this surveillance, no apparent deficiencies were identified.

No unacceptable conditions were identified.

4.0 Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable items, violations or deviations.

5.0 Exit Interview

The inspector met with licensee management representatives (see Section 1.0 for attendees) at the conclusion of the inspection on November 1, 1985. The inspector summarized the scope and findings of the inspection at that time.

The inspector and the licensee discussed the contents of this inspection report to ascertain that it did not contain any proprietary information. The licensee agreed that the inspection report may be placed in the Public Document Room without prior licensee review for proprietary information (10 CFR 2.790).

At no time during this inspection was written material provided to the licensee by the inspector.

ATTACHMENT 1

REFERENCES

1. 10 CFR 50.48, Fire Protection
2. 10 CFR 50, Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979
3. NRR Safety Evaluation Report (SER), dated May 4, 1984
4. 10 CFR 50.59, Changes, Test and Experiments
5. ANSI N18.7 - 1976, Administrative Controls and Quality Assurance for Operational Phase of Nuclear Power Plants
6. ANSI N45.2 - 1971, QA Program Requirements for Nuclear Power Plants; and its Daughter Standards
7. Updated Final Safety Analysis Report (FSAR), Revision 3, Appendix D, Quality Assurance Program
8. PBAPS Quality Assurance Plan, Volume I, Engineering and Research Department
9. PBAPS QUALITY Assurance Plan, Volume III, Operations Phase, Modification Section
10. Administrative Procedure A-1, Preparation and Approval of Administrative Procedures, Revision 5
11. Administrative Procedure A-3, Procedure for Temporary Changes to Approved Procedure, Revision 7
12. Administrative Procedure A-6, Procedure for Control of Drawings and Drawing Logs, Revision 10
13. Administrative Procedure A-13, Procedure for Reporting Defects and Noncompliances, Revision 3
14. Administrative Procedure A-14, Plant Modification, Revision 10
15. Administrative Procedure A-27, Procedure for Material Control System, Revision 13
16. Administrative Procedure A-42, Jumper Log Procedure, Revision 9
17. Administrative Procedure A-89, Modification Acceptance Test, Revision 0

18. Special Procedure 837, Alternate Shutdown Modification Phase I Standards, Revision 1
19. Engineering and Research Department Procedure (ERDP) 3.1, Procedure for Handling Q-Listed Modifications, Revision 6
20. ERDP 3.6, Procedure for Preparation and Review of Engineering Drawings for Nuclear Plant Modifications, Revision 9
21. ERDP 3.8, Procedure for Processing Engineering Review Requests, Revision 9
22. ERDP 3.10, Procedure for Preparation and Control of Engineering Instructions to Field, Revision 1
23. ERDP 4.4, Procedure for the Procurement of Specially Engineered Equipment Materials, Services, or Combination Thereof with a Specification, Revision 5

ATTACHMENT 2

LIST OF ALTERNATE SHUTDOWN MODIFICATIONS ASSOCIATED WITH UNIT 3 AND COMMON SYSTEMS

Common Systems

- 1351A Diesel Generator OBG12, ODG12, Alternate Control Stations
- 1351B Cable Tray Linear Heat Detection Cable
- 1351C Encapsulation and Reroutes for Alternate Shutdown Circuits
- 1351D ESW Alternate Control Station

Unit 3 Systems

- 1353A HPCI Alternate Control Station
- 1353B HPCI Instrumentation for HPCI ACS
- 1353C RHR Alternate Control Station
- 1353D HPSW Alternate Control Station
- 1353E Emergency Power System Alternate Control Station
- 1353F DC Emergency Power System - Alternate Control Station
- 1353G Emergency Shutdown Panel - Alternate Control
- 1353H Process Monitoring Instrumentation HPCI ACS
- 1353I Emergency Lighting
- 1353J Barrier Enhancements

ATTACHMENT 3

LIST OF DRAWINGS REVIEWED

<u>Drawing No.</u>	<u>Title and Revision No.</u>
E5-7	Electrical Schematic - Engine Control Standby Diesel Generators, Revision B
E-193	Electrical Schematic-Emergency Auxiliary Switchgear, Diesel Generator, 4160V Circuit Breaker, Revision C
E-325	Cable Diagram, Diesel Generator Control, Revision 20
E7-493	S&C Connections, E23 Emergency Auxiliary Switchgear, 4.16 kV 30A1603, Unit 3, Revision 8
E7-523	S&C Connections, E43 Emergency Auxiliary Switchgear, 4.16 kV 30A1809, Unit 3, Revision g
E-621	S&C Connections E2 D-G and Engine Cont. OBC97, 97A, 142, OBG12, 13, G115, J264, Revision 20
E7-356	Panel Layout - 4.1C kV, Emergency Auxiliary Switchgear 30A18, Revision 11
E7-466	Electrical Interconnection Diagram Switchgears, 30A1601, 30A1602 and 30A1603, Revision 13
E11-172	Wiring Diagram, Local Starters (20) 30D41 and (20) 30D42, Units 2 and 3, Revision 8
E-778	Electrical S&C Connections, Reactor and HPSI MCC 30D11, Sheet 1-3, Unit 3, Revision 11
E-488	Electrical S&C Connections, HPSI Relays Control Board 30C39, Unit 3, Revision 15