

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-354/86-02

Docket No. 50-354

License No. CPPR-120

Licensee: Public Service Electric and Gas Company

80 Park Plaza - 27C

Newark, New Jersey 07101

Facility Name: Hope Creek Generating Station, Unit 1

Inspection At: Hancocks Bridge, New Jersey

Inspection Conducted: January 27-31, February 3-7, and February 14, 1986

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| Inspectors: <u>S. Chaudhary</u> | <u>2/25/86</u> |
| for C. Petrone, Lead Reactor Engineer | date |
| for <u>S. Chaudhary</u> | <u>2/25/86</u> |
| N. Blumberg, Lead Reactor Engineer | date |
| <u>S. Chaudhary</u> | <u>2/25/86</u> |
| S. Chaudhary, Lead Reactor Engineer | date |
| Approved by: <u>J. Johnson</u> | <u>3/10/86</u> |
| J. Johnson, Chief, Operational Program Section | date |

Inspection Summary: Inspection on January 27-31, February 3-7, and February 14, 1986 (Report No. 50-354/86-02)

Areas Inspected: Routine announced inspection by region-based inspectors of plant administrative, operations, and maintenance procedures; and follow-up review of bulletins, circulars, and previously identified inspection findings. The inspection involved 146 hours onsite by three region-based inspectors.

Results: No violations were identified. Five Bulletins, three Circulars, one TMI item, one construction deficiency report, and two open inspection items were reviewed and closed. Three additional open items were identified.

DETAILS

1.0 Persons Contacted

- *+R. Salvesen, General Manager, Hope Creek Operations (HCO)
- *+A. Giardino, Manager, Station QA, HCO
- *A. Barnabei, Principal, QA Engineer
- R. Griffith, Principal, QA Engineer
- *+R. Donges, Lead QA Engineer
- *+M. Farschon, Manager, Power Ascension
- *J. Nichols, Technical Manager
- *C. Jaffee, PSSUG, Bechtel
- *W. Goebel, Quality Assurance Engineer, Bechtel
- R. Schmidt, Reactor Engineer
- G. Conner, Operations Manager
- G. Daves, Senior Technical Supervisor
- +M. Metcalf, Principal QA Engineer
- +P. Kudless, Maintenance Manager
- S. LaBruna, Assistant General Manager, HCO
- R. Cephas, Planning Support Supervisor
- M. Rogers, Operations Department, Procedure Coordinator
- W. Ryder, Operations Staff Engineer
- V. Iandoli, Lead Engineer, Maintenance Department
- P. Kordziel, Planning and Scheduling Engineer

NRC

- *R. Mc Brearty, Lead Reactor Engineer
- *D. Florek, Lead Reactor Engineer
- *+R. Borchardt, Senior Resident Inspector-Hope Creek
- *+D. Allsopp, Resident Inspector-Hope Creek
- +M. Evans, Reactor Engineer
- J. Lyash, Resident Inspector
- +L. Briggs, Lead Reactor Engineer
- +J. Strosnider, DRP Section Chief

*Denotes those present at exit meeting on January 31, 1986

+Denotes those present at exit meeting on February 7, 1986

The inspectors also met with other licensee personnel during the inspection.

2.0 Previously Identified Inspection Findings

2.1 (Closed) Open Item 85-21-02A Category B Instrument List

During a previous inspection it was identified that a list of process instruments used to satisfy Technical Specification surveillance criteria had not been established as required by procedure SA-012.

Subsequently, the licensee added these instruments, which are classified as Category B, to the Technical Specification/Surveillance Procedure Computer System. The inspector confirmed the Category B instruments had been added to the system. The inspector had no further questions.

2.2 (Closed) Open Item 85-21-02B Procedure for Category B Instruments

During a previous inspection, the inspector noted that licensee planned to handle Category B instruments in the same way as non-safety related balance of plant instruments. The inspector informed the licensee that because of their safety significance Category B instruments require a higher degree of control. I&C representatives committed to develop a procedure which defines calibration frequencies, setpoints, and tolerances.

The inspector reviewed procedure IC-AP.ZZ-010(Q), I&C Preventive Maintenance Program, and IC-AP.ZZ-100(Q) use of I&C Procedures, and noted they contained appropriate controls for the calibration of Category B instruments. The inspector had no further questions.

2.3 (Closed) Open Item 85-21-02C Preparation of I&C Procedures

During a previous inspection it was noted that Attachments 5, 6, 7 and 8 to IC-AP.ZZ-001(Q), Preparation and Approval of I&C Procedures had not been written. During the present inspection, the inspector reviewed IC-AP.ZZ-001(Q) and noted that the licensee had deleted Attachments 5, 6, 7, and 8 and incorporated these subjects in the body of the procedure. These subjects include guidelines for preparation of Time Response, Corrective Maintenance, Preventive Maintenance, and Loop Calibration Procedures. The inspector did not identify any additional concerns.

2.4 (Closed) 85-21-03 Acceptance Criteria for Inservice Testing of Pumps

During the previous inspection the inspector noted that the acceptance criteria for inservice testing (IST) of pumps to ASME Code (IWP-3000) criteria would be developed by the applicants inservice inspection (ISI) engineering group. The acceptance criteria would be supplied to the control room as a separate document. The operator will use this acceptance criteria to evaluate the pump operability following a test. The inspector questioned the procedural controls which would be in effect to ensure the update and distribution of these acceptance criteria in a controlled manner.

During this inspection, the inspector reviewed licensee's procedures and discussed these with cognizant licensee personnel. The acceptance criteria are presently being kept in a separate binder in the

control room. The acceptance criteria are developed from base line data obtained during the initial performance of each pump's operability test. These results are then reviewed and evaluated by the ISI engineer who establishes the acceptance criteria. These acceptance criteria are then transmitted to the operations department through the Site Service Manager and the Operations Manager. The acceptance criteria are then added to the acceptance criteria binder. However, because the information in this binder is not added to the approved procedure, it does not get the same level of review as a SORC approved procedure.

In one case the acceptance criteria specified by the ISI Engineer did not meet technical specification surveillance requirements. The acceptance range for the RHR Pump P202 flow was specified as greater than 9,494 gpm and less than 10,302 gpm while technical specifications required a minimum of 10,000 gpm.

As a result, the licensee's senior technical supervisor agreed to incorporate these acceptance criteria in the next revision of each operating procedure. As such, each acceptance criteria will undergo the SORC approval process and will be controlled by the licensee's controlled distribution system. These acceptance criteria will be incorporated by the next revision which will be issued prior to the next quarterly IST test cycle. The inspector agreed that incorporation of the acceptance criteria as part of the controlled procedure would satisfy the concerns addressed in this open item, which is closed. The inspectors will review the incorporation of these acceptance criteria into the procedure during future inspections. Completion of the incorporation of the acceptance criteria into these procedures and additional administrative controls to ensure these actions are completed, will be tracked as open item 50-354/86-02-01.

3.0 Bulletins and Circulars

3.1 (Closed) IE Bulletin No. 76-06:

This bulletin pertains to diaphragm failures in air operated auxiliary actuators for safety-related valves. The actuator diaphragms, composed of silicone rubber reinforced by dacron fabric, had been degraded by excessive heat which was attributed to the thermal insulation applied to the pneumatic actuators. The licensee instituted controls to prevent installation of insulation on these pneumatic actuators. The specification 10855-M-164(Q) was updated to provide the new information, and the Appendix C to this specification was updated with a sketch indicating the boundaries of insulation. The station maintenance procedure MD-CM.AB-001(Q) also provide administrative controls against insulating above the valve bonnet lower flange to preclude any such installation during preventive/corrective maintenance. This bulletin is closed.

3.2 (Closed) IEB 78-09, BWR Drywell Leakage Paths Associated With Inadequate Drywell Closures

This bulletin addressed incidents at two BWR power plants where leaks were discovered during the Containment Integrated Leak Rate Tests (CILRT) following reinstallation and local leak rate testing of the drywell heads and other drywell closures. As a result the licensee was directed to determine if procedural controls utilized at the facility were adequate to assure that drywell head reinstallation achieved a degree of leak tightness equivalent to that attained during the installation immediately preceding the last successful CILRT. This was to include a review of bolt torquing procedures, inspection of gaskets, and comparison of head-flange clearances. They were also to identify other bolted drywell closures (manways, etc.) that would tend to unseat on positive internal pressure and describe what actions are taken to ensure that adequate leak tightness would exist at an internal pressure of "Pa".

The inspector discussed the drywell closure procedures with the maintenance manager and reviewed MD-GP.ZZ-011(Q), General Bolt Torquing; MO-CM.XX-002(Q), Personnel Airlock/Equipment Hatch Removal and Replacement of Drywell Head. These procedures appear to provide adequate control over the reinstallation of drywell closures.

3.3 (Closed) IE Bulletin 79-12, Short Period Scrams at BWR Facilities

This Bulletin addressed the occurrence of reactor scrams, resulting from periods of less than five seconds, which have occurred at several BWR's. In each case a control rod was being continuously withdrawn in "notch override" when criticality was achieved. The operators had failed to accurately estimate the expected critical position and had not reverted to notch withdrawal when approaching criticality. The bulletin also identified that the "emergency rod in switch" had failed.

Reviews by the licensee and the switch supplier (GE) confirmed that the type of "emergency rod" switch which failed at the other BWR's, was not used at Hope Creek. The switch that failed is a GE type SBM switch which combines the "Notch Override" and the "Emergency Rod In" functions in one switch. The manual control system at Hope Creek utilizes a separate push button type switch for the "Emergency Rod In" function.

The inspector reviewed RE-FM.ZZ-001(Q), Guidelines for Control Rod Movement-Power Operation and OP-IO.ZZ-003(Q), Startup From Cold Shutdown to Rated Power, and noted that appropriate precautions and procedure steps had been added. The procedure also incorporates the Reduced Notch Worth Procedure (RNWP) recommended in GE Service Information Letter #316. The inspector also reviewed the core load predictions for the initial startup and verified that an estimated critical rod position had been established.

Based on this review, the inspector concluded that the licensee had adequately addressed the concerns identified in this bulletin.

3.4 (Closed) IE Bulletin 79-26, Boron Loss From BWR Control Blades

The General Electric Company (GE) identified a failure mode for control blades which can cause a loss of boron poison material. Examination revealed cracks near the upper end of the stainless steel tubing which were one quarter to one half inch in length and from one to two mils in width. The cracks and boron loss were confined to locations in the poison tubes with more than 50 percent Boron-10 local depletion. The cracks are due to stress corrosion induced by solidification of boron carbide (B_4C) particles and swelling of the compacted B_4C as the helium concentration increases. Once primary coolant penetrates the cladding cracks, Boron is leached out of the tube at locations with more than 50 percent Boron-10 local depletion.

The inspector reviewed the licensee actions taken in response to IEB #79-26 and noted that the only additional action required by the licensee was the addition of a precaution to their procedure RE-FM. ZZ-005(Q), Control Blade Management. This precaution limits to 26% the number of blades allowed in the core with boron-10 depletion in excess of 34%. The inspector did not identify any actions specified in the bulletin which had not been addressed by the licensee. This bulletin is closed.

3.5 (Closed) IE Bulletin 80-01, Operability of ADS Valve Pneumatic Supply

This bulletin identified that the ADS valve pneumatic supply may be rendered inoperable due to an incorrect type of valve seat (hard rather than soft), a lack of leak testing of the ADS valve operator accumulator, and ADS pneumatic supply system supports which are not seismically qualified.

The inspector discussed the purchase of these valves with the assigned system engineer; reviewed the system P&ID M41-Sh1, the Design and Technical Specifications P366Q, Item 1.1, and verified that the valves specified were the resilient seat type and were seismically qualified. The inspector examined two of the five installed check valves and verified that the valves were the resilient seat type described in the Design and Technical Specification. The inspector verified that periodic functional and reverse flow test requirements were contained in procedure OP-IS.AB-102(Q). The licensee's Engineering and Construction department performed a review and certified that the entire ADS pneumatic supply system had been designed

to ASME B&PV Code, Section III, Class 3 piping which is seismically qualified.

Based on the above review the inspector determined that the licensee had adequately addressed the actions specified in this bulletin.

3.6 (Closed) IE Circular 76-07 Inadequate Performance by Reactor Operating and Support Staff Members

This Circular identified that increases in numbers of errors by members of the reactor operating and support staff at various licensed power reactor facilities had resulted in a number of incidents. One incident involved an accidental criticality due to an operator error during a shutdown margin test.

The circular instructed the licensee to conduct a review of plans or programs which are to provide positive assurance that members of the operating and support staff are complying with the safety procedures that are in effect and that they are aware of safety related incidents that have occurred at their own, and similar facilities. The licensee's reviews concluded that their program was adequate.

The inspector reviewed the following procedures:

- OP-AP.ZZ-103(Q) Tagging Request and Inquiry System Use, Management and Audits, Rev. 1.
- OP-AP.ZZ-105(Z), Operations Department Information System, Rev. 1
- OP-AP.ZZ-107(Q), Shift Relief and Turnover, Rev. 2.
- OP-AP.ZZ-017(Q), Management Audits, Rev. 0.

Based on this review the inspector determined that the concerns addressed in the Circular had been adequately addressed.

3.7 (Closed) IE Circular No. 79-18

This circular refers to the proper installation of Target Rock Safety-Relief Valves. The circular identified two problems with the valves: 1) performance of the valves was impaired by either excessive or insufficient heat; 2) the improper assembly of the modified valve could result in inoperability of the remote air actuator. In response to this circular the licensee took the following preventive and corrective steps:

1. HCGS Target Rock SRVs were equipped with "Silicone-Nomix" diaphragm. This material was developed by vendor in response to IEB:76-06 to provide a longer life in high temperature environments, and was mentioned in the circular as such.
2. The thermal insulation criteria established and implemented for IEB:76-06 was deemed to be applicable and sufficient to cover the concerns of this circular.
3. The plant procedure MD-CM.AB-001(Q) was updated to provide administrative controls for proper re-installation of insulation, assembly/reassembly of air actuators, pilot and main disc per the manufacturers latest instructions.

The above actions appear sufficient to preclude problems similar to those mentioned in the circular. This circular is closed.

3.8 (Closed) IE Circular 81-11, Inadequate Decay Heat Removal During Reactor Shutdown

This circular advised the licensee of events involving inadequate decay heat removal at operating BWR's which indicated the need for BWR licensees to review, and if necessary, provide additional administrative controls related to decay heat removal.

Following the recommended actions contained in the circular, the licensee concluded that the existing procedures and administrative controls that relate to decay heat removal during reactor shutdown were adequate. One procedure OP-SO.BC-001(Q), Residual Heat Removal System Operation, was revised to add appropriate additional instructions.

The inspector reviewed the circular, the licensee's response, Technical Specification section 3/4.4.9 and 3/4.9.11, and procedure OP-SO.BC-001(Q). Based on this review the inspector concluded that the licensee had adequately addressed the Circular.

4.0 TMI Action Plan Items

(Closed) TMI Action Plan Item I.C.1, Short Term Accident/Procedure Review

The licensee committed to prepare its Emergency Operating Procedures (EOP's) in accordance with the BWR owners Group-Emergency Procedures Committee and NUREG 0737, Supplement 1, Section 7.0. Based on a review of these EOPs performed during previous inspection 50-354/85-58 this item is closed.

5.0 Construction Deficiency Reports

(Closed) Construction Deficiency Report 84-00-18:

This CDR pertains to addition of incompatible grease in Limatorque operators. The licensee identified 173 safety-related operators in which incompatible lubricants had been added during routine maintenance. Out of the 173 operators, 168 have been reworked, and the remaining 5 have open SDR against them to track the completion of rework. The licensee has also instituted controls through the plant maintenance procedure to preclude any inadvertent addition of incompatible lubricants in the Limatorque operators during preventive/corrective maintenance operations in the plant. Details of the inspection are in paragraph 10 of this report. This CDR is closed.

6.0 Plant Procedures

6.1 References

- 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear for Nuclear Power Plants, Criteria V, VI, XIV, XVII, and XVIII;
- ANSI N18.7 (Regulatory Guide 1.33 - 1978), Administrative Control and Quality Assurance Program Requirements (Operations)
- GM9-1 PSE&G Nuclear Quality Assurance Department Manual
- Technical Specifications, Section 6 (Proof and Review)
- ANSI/ANS 3.2-1982
- Hope Creek FSAR, Chapter 13.

6.2 Program Review

The following administrative control procedures were reviewed to verify the adequacy and scope of plant procedures and the management controls established to implement and maintain the procedure system:

- SA-AP.ZZ-001(Q) Preparation and Approval of Station Procedures
- SA-AP.ZZ-002(Q) Station Organization and Operating Practices
- SA-AP.ZZ-003(Q) Document Control and Periodic Review Program
- SA-AP.ZZ-004(Q) Station Operations Review Committee
- SA-AP.ZZ-032(Q) Revisions and Changes to Station Procedures
- SA-AP.ZZ-008(Q) Station Design Changes, Tests, Experiments

- SA-AP.ZZ-009(Q) Control of Station Maintenance
- SA-AP.ZZ-010(Q) Station Preventive Maintenance Program
- OP-AP.ZZ-107(Q) Shift Relief and Turnover
- OP-AP.ZZ-103(Q) Tagging Request and Inquiry System Use, Management and Audits
- OP-AP.ZZ-017(Q) Management Audits
- SA-AP.ZZ-011(Q) Station Records Management and Retention Program
- SA-AP.ZZ-012(Q) Technical Specification Surveillance Responsibilities
- SA-AP.ZZ-015(Q) Station Safety Tagging Program
- IC-AP.ZZ-001(Q) Preparations and Approval of I&C Procedures
- IC-AP.ZZ-003(Q) I&C Document Control and Procedure Review
- IC-AP.ZZ-011(Q) I&C Records Management and Retention Program
- MD-AP.ZZ-001(Q) Preparation of Maintenance Department Procedures
- MD-AP.ZZ-009(Q) Control of Station Maintenance
- CH-AP.ZZ-001(Q) Preparation and Approval of Chemistry Procedures
- CH-AP.ZZ-017(Q) Chemistry Quality Control Program
- CH-AP.ZZ-101(Q) Instrument Data Card Calibration Use
- TE-SU.BB-191(Q) Core Performance Calculations
- TE-SU.BF-053(Q) CRD Friction and Scram Testing
- TE-SU.KE-032(Q) Fuel Loading
- OP-AB.ZZ-126(Q) Abnormal Release of Gaseous Radioactivity
- OP-FT.LE-001(Q) Refuel Platform and Fuel Grapple OP Test-Refuel
- RE-FM.ZZ-001(Q) Guidelines for Control Rod Movement - Power Operation

6.3 Program Implementation

The inspector reviewed the licensee's procedures and departmental instructions listed in paragraph 3.2 and determined that:

- The licensee has established administrative controls for review, approval and periodic updating of administrative, general plant operations, startup, operation and shutdown of safety-related systems, and night order or standing order procedures in accordance with SA-AP.ZZ-001(Q).
- Responsibilities for review, update and approval of plant procedures, including incorporation of changes per 10 CFR 50.59 and temporary changes have been established in accordance with SA-AP.ZZ-003(Q), and SA-AP.ZZ-004(Q).
- Preparation of station procedures including format and contents are controlled in accordance with SA-AP.ZZ-001(Q).
- Issuance of new and revised procedures and disposition of outdated procedures are controlled.
- Plant procedures, including night orders, are periodically reviewed by cognizant individuals.
- Shift turnover activities and review of the operating logs are conducted in accordance with OP-AP.ZZ-107(Q).
- The procedures in use in the control room were the latest revision.
- The operating staff turnover checklists had been completed as required.

The inspector verified that all forty-eight of the administrative control procedures specified in section 13.5.1 of the FSAR had been issued. These procedures are essentially the same procedures used at Salem Units I and II.

FSAR section 13.5.2 specified the operating and maintenance procedures required for operation. These include system operating procedures (SOP's) which were developed to cover the operating activities listed in Regulatory Guide 1.33, Appendix A, Item 4. The inspector verified that all 57 required procedures had been identified for issue and all but four had been written and approved.

The inspector also reviewed the approval status of the following procedures:

| <u>Procedure Type</u> | <u>Total #</u> | <u># Approved</u> | <u>% Approved</u> |
|------------------------|----------------|-------------------|-------------------|
| Chemistry | 220 | 220 | 100% |
| I&C | 1183 | 1113 | 94% |
| Maintenance | 369 | 359 | 97% |
| Operations | 571 | 541 | 95% |
| Phase 3(Startup) | 124 | 124 | 100% |
| Radiation Protection | 91 | 79 | 87% |
| Reactor Engineering | 53 | 53 | 100% |
| Station Administrative | 48 | 44 | 92% |
| Technical Engineering | 50 | 41 | 82% |
| Total | 2709 | 2574 | 95% |

6.4 QA Interface

The inspector reviewed Station QA Surveillance Reports 85-32, dated June 17 - June 21, and 85-63 dated August 14, 1985, which covered control room shift turnover. Station QA Surveillance Report 85-216, performed during the week of December 16, 1985, was a non-scheduled surveillance of the conduct of operations including the preparation and approval of procedures. The inspector also noted that the administrative control procedures had been reviewed and approved by QA.

6.5 Findings

The procedures reviewed indicated that the scope, references, prerequisites, precautions, limitations, actions, and sequence of operations had been incorporated. The licensee had clearly identified the responsibilities of the plant staff. Discussions with staff members confirm that they are aware of their responsibilities. Control room logs are being maintained as required.

Plant procedures have been written and approved by appropriate plant staff. The procedures are well written, technically correct, and will be ready to support plant operation when the remaining procedures are approved and all data marked "LATER" is incorporated.

No violations were identified.

7.0 Emergency Procedures

During a previous inspection (50-334/85-58) a sample of eighteen emergency operating procedures (EOP's) were reviewed. The systems described in these procedures were found to be constructed in accordance with the descriptions contained in the FSAR, system specifications, and drawings. The portions of the systems inspected were found to be capable of performing their intended functions as described in the FSAR and as required by EOP's. This review also confirmed the adequacy of these EOP's.

During this inspection (86-02), the inspector determined that licensee has issued emergency or abnormal operating procedures for the emergency and abnormal events listed in Regulatory Guide (R.G.) 1.33-1978. In some cases, emergency events as defined in R.G. 1.33 are not covered specifically by a procedure for that event. For each of these instances, the inspector determined that the event was ultimately covered by a symptom oriented procedure which would give procedures for diagnosing symptoms caused by that event e.g. symptoms of a loss of coolant accident.

The inspector confirmed that nearly all the abnormal Operating Procedures and Alarm Response Procedures had been issued.

Based on the review conducted during this, and the previous inspection, it appears the licensee has prepared emergency procedures which are adequate to support licensing.

8. Maintenance Procedures

8.1 References/Requirements

- Hope Creek Technical Specifications
(Draft, September 30, 1985)
- Regulatory Guide 1.33 - 1978, Quality Assurance Program
Requirements (Operation)
- ANSI N18.7 - 1976 - Administrative Controls and Quality
Assurance For The Operation Phase of Nuclear Power Plants

8.2 Scope

A sampling of maintenance procedures were reviewed for conformance to the regulatory requirements listed in paragraph 8.1 above and administrative controls of procedures listed in paragraph 8.3 below. Procedures reviewed included corrective maintenance, preventive maintenance, and technical specification surveillance test procedures. Procedures were reviewed for the following attributes:

- Procedures have been properly reviewed and approved.
- Procedures conform to licensee administrative requirements.
- Procedure format is in accordance with ANSI N18.7.
- Procedures contain appropriate supervisory and quality assurance hold points and witness points.

- Procedures are technically adequate and, where applicable, conform to technical specification requirements.
- Test data is properly recorded and reviewed, as found and as left conditions are documented.

8.3.1 Maintenance Administrative Procedures

- MD-AP.ZZ-001, Preparation of Maintenance Department Procedures, Revision 2, December 30, 1985
- MD-AP.ZZ-010, Maintenance Department Preventive Maintenance Program, Revision 1, August 27, 1985
- MD-AP.ZZ-012, Department Responsibilities for Technical Specification Surveillance, Revision 0, August 21, 1985
- MD-AP.ZZ-040, Department Interface with Master Equipment List MEL, Revision 0, October 17, 1985

8.3.2 Maintenance Implementing Procedures

- MD-GP.ZZ-002, General Instructions for Disassembly, Inspection and Reassembly of Valves, Revision 1, February 1, 1986
- MD-GP.ZZ-004, General Instructions for Pump, Disassembly, Inspection, Reassembly, Revision 1, February 1, 1986
- MD-GP.ZZ-023, System and Component Cleaning and Flushing, Revision 0, October 4, 1985
- MD-GP.ZZ-028, Disassembly and Reassembly of SMB-000 and SMB-00 Limatorque Valve Operators, Revision 1, November 18, 1985
- MD-PM.ZZ-002, General Battery Maintenance and Cleaning, Revision 0, May 18, 1985
- MD-CM.AB-001, M.S. Safety/Relief Valve Overhaul and Repair, Revision 0, October 28, 1985
- MD-PM.AB-003, MSIV Preventive, Revision 0, June 12, 1985
- MD-CM.BB-001, R.R. Pump & Motor Removal and Replacement, Revision 0, October 17, 1985
- MD-CM.BC-002, RHR Pump Overhaul & Repair, Revision 0, September 16, 1985

- MD-CM.BJ-001, HPCI Pump Overhaul & Repair, Revision 0, October 22, 1985
- MD-ST.GS-001, Drywell & Torus Vacuum Relief Valve Testing, Revision 0, October 28, 1985
- MD-CM.KJ-001, Diesel Engine Overhaul & Repair, Revision 0, November 14, 1985
- MD-ST.PJ-003, 18 Month Surveillance & Service, Revision 0, October 9, 1985
- MD-ST.PJ-005, Battery Charger Service Test, Revision 1, September 24, 1985
- MD-ST.PK-003, 18 Month Surveillance & Service Test, October 9, 1985
- MD-ST.PK-005, Battery Charger Service Test, Revision 1, September 24, 1985
- MD-PM.XX-001, Containment Airlock P.M., Airlock Accessing & Seal Protection After Processing, Revision 0, October 2, 1985

8.4 Findings

- 8.4.1 During review of maintenance surveillance test procedures MD-ST.PJ-003, MD-ST.PJ-005, MD-ST.PK-003, MD-ST.PK-005, and MD-ST.GS-001, the inspector observed numerous discrepancies among the procedures, the master surveillance test index, and the September 30, 1985 draft of the Technical Specification. For example, procedures PK-003 and PJ-003 state that they cover T.S. item 4.8.2.1.d.2 while the master list states that they cover T.S. 4.8.2.1.d.2 and T.S. 4.8.2.1.c.1, c.2, and c.3. While the procedures do check d.2, c.1, and c.2, they do not check battery cell to cell resistances as called for in c.3. Other discrepancies noted for battery and battery charger tests were as follows:
- The capacity load profiles in PK-003 and PJ-003 were inconsistent with those given in the T.S.
 - Procedures PK-005 and PJ-005 call for a 1 hour duration battery charger test while the T.S. calls for a 4 hour duration test.
 - The acceptance criteria given in the main body of procedures PK-005 and PJ-005 is inconsistent with acceptance criteria given in procedure appendices and with that given in the T.S.

- Procedure GS-100 does not appear to test the T.S. for which it is written.

The procedure does not clearly state which vacuum breakers (Drywell to Torus and/or reactor building to Torus) are being tested. The T.S. calls for a channel calibration test; no such test is in the procedure. No acceptance criteria is given in the procedure; nor are as found and as left conditions recorded.

The inspector reviewed five surveillance tests and noted significant discrepancies in all five. Based on this review the licensee was informed on February 6, 1985 of the deficiencies and that they were of sufficient magnitude to warrant a licensee review of all maintenance surveillance procedures currently issued. On February 14, 1985, the inspector held further discussions with the licensee concerning the above findings. At that time, the licensee informed the inspector that the deficiencies in procedure GS-100 had been corrected and that action was being taken to ensure that all maintenance surveillance tests were correct and adequately reflected T.S. requirements. The licensee stated that this corrective action would be completed prior to initial criticality. This is open item 50-354/86-02-02.

- 8.4.2 The licensee has recently started a Planning and Scheduling Department. This department will be extensively involved in maintenance activities particularly in the planning of maintenance and the preparation maintenance work packages. Except for an administrative procedure on the control of work packages, this new department has not yet developed administrative procedures for control of its work. Because of the Planning Departments interface with safety related maintenance activities such procedures are required by ANSI N18.7. The licensee stated all administrative procedure for this department would be issued by initial criticality. This is an open item - 50-354/86-02-03.

9.0 Operating Procedures

On a sampling basis on extensive review of operating procedures and surveillance tests performed by the Operations Department were performed during NRC inspection 50-354/85-64.

During this review (86-02), the inspector determined that the licensee has approved and issued operating procedures regarding the subject areas listed in R.G. 1.33 - 1978. No deficiencies were observed.

10.0 Incompatible Lubricants in Limitorque Valve Operators

On December 19, 1984 the licensee reported to NRC of a condition concerning the addition of grease to Limitorque operators that was incompatible with the grease supplied by the manufacturer. The final report regarding

the deficiency detecting the extent of the problem and the safety significance thereof; the corrective/remedial measures; and the preventive measures to preclude such occurrences in future.

The inspector reviewed documentation, held discussions with cognizant engineering personnel, and visually examined an operator after the rework to assess the effectiveness of the corrective measures; technical validity of the remedial actions; and adequacy of administrative controls to prevent such errors in future during operation and maintenance. The inspector reviewed the following documents:

- PSE&G letter to NRC, dated July 10, 1985 (T. Martin to T.E. Murley)
- Bechtel NCR No. 5047; "Limitorque Motor Actuators"
- PSE&G Station Lubrication Manual, Rev. 2
- PSE&G Station Procedure No. MD-AP.ZZ-009(Q); "Control of Station Maintenance"
- PSE&G Station Procedure, SA-AP.ZZ-009(Q); "Control of Station Maintenance"
- PSE&G Station Procedure No. MD-PM.ZZ-004(Q); "General Preventive Maintenance for Motor Operated Valves".
- PSE&G Deficiency Report No. MC-86-0049
- PSE&G Memorandum from Manager-Site Engineering to Project Manager, dated November 13, 1985.
- PSE&G Personnel training records for training provided by Power Safety International.
- PSE&G Memorandum - Fisher to Devine, dated November 22, 1985.
- PSE&G Startup Deviation Report Nos. BJ-0417, BD-0489, and BG-0392.

Based on the above review, discussions and observation made by the inspector in maintenance shop and plant, the inspector determined that the corrective actions initiated by the licensee conforms to the manufacturers recommendation, and is technically valid. The administrative controls established by the licensee through the "Station Lubrication Manual" and other station procedures appear to be adequate to prevent any further problems in this area. Adequate training has been provided to plant maintenance personnel to familiarize them with procedures and requirements, and the administrative controls. The inspector had no further questions in this area at this time.

No violation was identified.

11.0 Management Meetings

The licensee management was informed of the scope and purpose of the inspection on January 27 and February 3, 1986. The findings of the inspection were discussed with licensee representatives during the course of the inspection. Exit meetings were held on January 31 and February 7, 1986. Additional inspection findings were discussed with your staff on February 14, 1986.

At no time during this inspection was written material provided to the licensee. Based on the NRC Region I review of this report and discussions held with the licensee representatives at the exit, it was determined that this report does not contain information subject to 10 CFR 2.790 restrictions.