

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 84-24
84-08
50-352
Docket No. 50-353
CPPR-106
License No. CPPR-107 Priority - Category B
A

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

Facility Name: Limerick Generating Station

Inspection At: Limerick, Pa.

Inspection Conducted: May 1 - 31, 1984

Inspectors: J. Wiggins for
S. K. Chaudhary, Senior Resident Inspector

6/4/84
date

J. Wiggins
J. T. Wiggins, Senior Resident Inspector

6/4/84
date

J. Raval for
J. Raval, Reactor Engineer

6/15/84
date

Approved by: E. L. Conner
E. L. Conner, Chief, Reactor Projects
Section 3B

6/15/84
date

Inspection Summary: Combined Inspection Report for Inspection Conducted May 1 - 31, 1984. (Report Nos. 50-352/84-24; 50-353/84-08)

Areas Inspected: Routine inspections by the resident inspectors and a region-based inspector of: followup of previous inspection items (Units 1 and 2); preoperational test program implementation verification; preoperational test procedure review; preoperational test witnessing; current standby gas treatment system design; field-implemented electrical separation criteria; review of the main steam isolation valve leakage control system design, installation and system turnover; review of system startup engineers' requalification examination results; review of vane-axial fan grounding; long-term equipment storage maintenance (Unit 2); and followup on Construction Deficiency Reports. The inspection involved 85 manhours for Unit 1 and 35 manhours for Unit 2.
Results: Two violations were identified: failure to adequately convey the design basis of a system from top-tier to lower-tier drawings (Paragraph 8, Unit 1); and, failure to adequately follow the long-term storage maintenance procedures for Unit 2 equipment (Paragraph 11). In addition, three significant unresolved items were identified. They are: (1) the acceptability of the licensee's current plan not to complete connection of the standby gas treatment system to the refueling zone until prior to the first refueling outage (Paragraph 6); (2) the acceptability of the revised field criteria for electrical separation (Paragraph 7); and, (3) the acceptability of the current main steam isolation valve leakage control system design (Paragraph 8).

DETAILS

1. Persons Contacted

Philadelphia Electric Company

J. M. Corcoran, Field QA Branch Head
R. Scott, Construction Engineer
G. Leitch, Station Superintendent
J. Spencer, Director, Start-up
J. Molito, Field Engineer

Bechtel Power Corporation

W. McCullough, Project Start-up Engineer
R. Bulchis, Resident Project Engineer

General Electric Company

R. Ballou, Start-up Operations

2. Followup on Previously Identified Items

(Closed) Violation 50-352/83-19-01: Failure to provide suitable cleanliness controls for a feedwater check valve. The inspector verified that appropriate construction, engineering and quality personnel received training in Job Rule M-21 and verified that Job Rule controls were now being applied to work authorized by Startup Work Orders. No further cleanliness concerns have been identified by NRC since this finding, apparently indicating the QA program in this area has been made effective.

(Closed) Unresolved Item 50-352/83-20-01: Return of equipment by PECO Field Engineering to as-built conditions following testing. The inspector reviewed Engineering Department Procedure 11.34 which directed those actions necessary to assure that equipment would be returned to as-built conditions following test activities conducted by PECO Field Engineering.

(Closed) Follow Item 50-352/84-10-01: Licensee to develop system to assure design change information is incorporated into appropriate plant procedures and into operator training programs. Startup Administrative Procedure AD 9.2 has been implemented. AD 9.2 contains provisions for procedure changes, notifications of design changes to plant staff and to the training staff, and, interim updating of critical drawings via red-lining. The licensee has retained a consultant staff to complete work on those design changes implemented prior to the establishment of AD 9.2 controls.

(Closed) Follow Item 50-352/84-10-02: Revision of FSAR to show status of the Unit 2 Residual Heat Removal Service Water (RHRSW) pumps. The inspector reviewed the disposition to Startup Field Report (SFR) 16A-7 which indicated that Licensing Document Change Notice #FS-484 had been issued to revise the FSAR to show the Unit 2 RHRSW pumps will receive power from Unit 2-related offsite power supplies.

(Closed) Follow Item 50-352/84-19-01: Resolution of NRC comments on preoperational test procedure, P59.3. The inspector reviewed Test Change Notice (TCN) 1 to P59.3 which incorporated into Appendix B of the procedure requirements to log the calibration dates for the drywell-to-Suppression Pool vacuum breaker position indicating switches. Test records indicate these calibrations were performed on 4/24/84.

(Closed) Unresolved Item 50-352/80-17-02: No criteria specified for cutting of rebar in block walls. Bechtel Engineering issued PFEM-1697 directing the field not to apply the criteria for cutting rebar in concrete walls to rebar cutting in block walls. Cut Reinforcing Steel Reports, as defined in Job Rule G-28, were reviewed for any cut rebar in Q-listed block walls. The bars that were cut without prior engineering approval were reported on NCR 4332. Civil Quality Control Engineers received training in this matter. Further, criteria for cutting rebar in block walls were issued in DCN 8 to drawing C-608, Revision 10.

In addition, the following items were administratively closed as a result and no further problems identified in the applicable program areas:

Follow Item 50-352/80-09-03
Follow Item 50-352/80-09-05

(Closed) Unresolved Item 50-353/79-06-01: Structural steel radial box beam end connections. This item was resolved for Unit 1 (79-06-02) in inspection report 50-352/81-16. The resolution equally applies to Unit 2 activities.

(Closed) Unresolved Item 50-353/78-06-01: ASME Code Nameplates may interfere with preservice and inservice inspection. This item was resolved for Unit 1 (78-10-01) in inspection report 50-352/81-10. The resolution equally applies to Unit 2.

3. Plant Tour

Periodically during this inspection period, the inspectors toured the Unit 1 containment, reactor enclosure, control room, diesel generator enclosures, the Unit 2 reactor enclosure and containment and the Spray Pond Pumphouse. The inspectors examined completed work and work in progress for indications of defective workmanship or nonconformance to project specifications. Special emphasis was placed on the involvement

of site quality control personnel. The inspectors reviewed applicable drawings, procedures and reports to assess the state of completion of the facility and the preoperational test program.

Specifically, the inspectors witnessed a portion of the installation of 5 drywell temperature elements and relocation of 2 others under the controls of Startup Work Order 60A-64. Additionally, the vendor data package, QC inspection records and vendor radiographs for the recirculation system suction valves were reviewed.

No violations were identified.

4. Preoperational Test Procedure Review and Verification

The inspector reviewed the below-listed preoperational test procedures to assure they were in conformance with the licensee's administrative instructions and to assure that the test procedures adequately fulfilled the test commitments provided in the FSAR and the SER. No comments resulted from this review.

Procedures reviewed:

- P32.2 Control Room Isolation and Purge System
- P3.1 E/F/G/H 13.2 KV Power

No violations were identified.

5. Preoperational Test Witnessing

The inspector witnessed portions of the following preoperational tests:

- P4.1 4.16 KV Power
- P24.1 Standby Diesel Generators

In each case, the inspector verified a copy of the approved test procedure was in use, test personnel were familiar with the test methods and procedures, results were adequately recorded and the system startup engineer was familiar with the requirements regarding test change notices and test exceptions.

For P24.1, the inspector witnessed one of the five required successive starts of the D diesel generator, conducted on 5/30, using starting air from only one air receiver. The diesel started successfully, however, it failed to stabilize within the required frequency band. The generator frequency overshoot upon startup and did not stabilize to less than 61.5 Hz in the required 10 seconds. The startup engineer indicated that this matter was under review by Bechtel Engineering and by the vendor. The tentative prescribed corrective action involves readjustment of the diesel governor. This action will be performed on all four diesels.

Bechtel Engineering is also reviewing the frequency band requirements to determine if the five completed starts of the D diesel generator should be declared unsuccessful and not counted toward the 23 sequential successful starts required by Regulatory Guide 1.108. The inspector will follow this matter.

6. Standby Gas Treatment System Design

The inspector reviewed the design of the Standby Gas Treatment System (SGTS) as described in Sections 6 and 9 of the FSAR and performed a walkdown of the system from the filter plenums to the system fans. The design review was initiated after the inspector was informed by the licensee of its intent to defer completion of the system's preoperational test results review until after fuel load. The walkdown was to determine that the installation conformed to aspects to the applicable project specification, M-56, Revision 7.

The inspector determined that, although Section 6 of the FSAR stated that SGTS was required to maintain a 0.25 in wg vacuum in the refueling zone during secondary containment isolation conditions, Section 9.4 indicated that connection of this system to the refueling zone would be deferred until prior to the first refueling outage. The inspector questioned the rationale behind the decision to defer completion of this connection.

The licensee's engineering organization responded and stated the basis for deferral was that the 0.25 in wg vacuum is only necessary to mitigate the results of a fuel handling accident wherein irradiated fuel is involved. Because there would be no irradiated fuel outside of the reactor vessel until the first refueling outage, there was no need to complete the SGTS connection.

The inspector further reviewed the NRC SER for Limerick to determine if the deferral on the SGTS connection to the refueling zone had been reviewed and accepted by NRC. The SER did not discuss this matter. Because deferring this connection appears to be a site-specific matter which should be specifically reviewed by NRR, the inspector notified the NRR Project Manager and requested a specific, detailed review.

The acceptability of the licensee's plan to defer the completion of the SGTS installation is therefore considered unresolved pending the results of a review of this matter by NRR. (50-352/84-24-01)

7. Modified Electrical Separation Criteria at Limerick

The criteria for electrical separation in use at Limerick in both the cable spreading room/control complex and general plant areas are discussed in FSAR Section 8.1. The current revision for this FSAR section is Rev. 22, dated 7/83. This revision superceded that which was reviewed and accepted by NRC in Section 8.4.1 of the SER, and incorporated provisions for relaxation of the standard Regulatory Guide 1.75 criteria based on tests and analyses.

The Applicant conducted a test program to ascertain the minimum separation distances required for certain cable/conduit configurations. Testing was performed by Wyle Labs and test report #46960-3 was prepared. This report was submitted for NRC review on May 18, 1984.

However, effective April 18, 1984, the Applicant implemented the results of this test program in the field by revising the governing project specification, E 1406.

Below is a synopsis of those criteria which have been incorporated in E 1406 (Rev. 44):

Electrical Separation

- 1) The desirable separation distances in the cable spreading room/control complex are 1' horizontal, 3' vertical. In general plant areas, distances are 3' horizontal, 5' vertical. (These are the standard Regulatory Guide 1.75 criteria.)
- 2) If the above separation distances cannot be met, the following minimums apply:

<u>Configuration</u>	<u>Cable Size</u>	<u>Separation</u>
Redundant Class 1E trays	$\leq 4/0$ (in both)	0" horizontal, 3" vertical
	$> 4/0$ (in either or both)	3' horizontal, 5' vertical
Class 1E to non-class 1E trays	Any size (Class 1E) & $\leq 4/0$ (non-Class 1E)	0" horizontal, 3" vertical
	Any size (Class 1E) & $> 4/0$ non-Class 1E	3' horizontal, 5' vertical
Redundant Class 1E enclosed raceways	$\leq 4/0$	None
	$> 4/0$ in either	1"
Class 1E enclosed and Class 1E tray	Raceway $\leq 4/0$ Tray $\leq 4/0$	None
	Raceway ($> 4/0$) Tray ($\leq 4/0$)	1"
	Raceway (any size) Tray ($> 4/0$)	3' horizontal, 5' vertical

<u>Configuration</u>	<u>Cable Size</u>	<u>Separation</u>
Class 1E enclosed and non-Class 1E tray	Raceway (any size) Tray ($\leq 4/0$)	None
	Raceway (any size) Tray ($> 4/0$)	3' horizontal, 5' vertical
Non-Class 1E enclosed raceway and Class 1E tray	Raceway (any size) Tray ($> 4/0$)	3' horizontal, 5' vertical
	Raceway ($\leq 4/0$) Tray (any size)	None
	Raceway ($> 4/0$) Tray (any size)	1"

As indicated above, some of the differences between field-acceptable separation distances and those recommended in NRC Regulatory Guide 1.75 are significant. Accordingly, the inspector discussed this matter with a representative of the licensee's engineering organization. The inspector was informed that, although NRC:NRR was aware of the testing program, it was not aware of the criteria which had been implemented in the field as a result of the test program.

The change in criteria significantly affects the extent of extra fire-proofing of raceways which is required in cases where adequate separation is not provided. For this reason, the inspector determined that NRR should be made aware of the field-implemented criteria. Accordingly, the inspector informed the NRR Project Manager.

The acceptability of the licensee's criteria for electrical separation is considered unresolved pending NRR review of the Wyle Test Report and the resultant field-implemented criteria. (50-352/84-24-02)

8. Turnover of Subsystem 83C-Main Steam Isolation Valve Leakage Control System

In order to assess the quality of the system turnover process, the inspector selected, for detailed review, the turnover package for one Startup subsystem which had just been recommended for acceptance to the Station Superintendent by the Startup Director. The subsystem chosen was No. 83C-Main Steam Isolation Valve Leakage Control System (MSIV-LCS). The inspector, in the company of the system startup engineers, reviewed the scoped drawings for the system, reviewed the current construction punchlists and turnover exception list. In addition, he questioned the system startup engineers (SSE's) to assess the extent of their knowledge of the system and the turnover package contents, visually examined selected components and piping in the field and verified the power supplies

for major system components by reviewing appropriate drawings with the responsible PECO Field Engineer.

Overall, the inspector determined the knowledge of the system startup engineers was acceptable. However, two areas of minor weakness were identified.

First, there were nine Quality Assurance (QA) turnover exceptions documented within the package. These nine items appeared to discuss generic project concerns. The SSE's were unsure regarding the organization which called-cut these exceptions and regarding the extent of applicability of these concerns to their system. Subsequent to the inspector's discussions, the SSE's determined Bechtel QA identified the exceptions and discussed each with a Bechtel QA representative.

Secondly, the SSE's were unsure regarding the power supplies associated with the system. More careful review of the scoped drawings provided with the package indicated power for the inboard MSIV-LCS was derived from Division II safeguard power and the outboard system was powered by Division I. This weakness is minor because the PECO Field Engineer assigned to subsystem 83C possessed adequate knowledge in the electrical and instrumentation areas.

During the course of the above discussions and field walkdown of the system, several discrepancies were identified. The system includes two dilution air suction, two blowdown outlets and two outlets for the MSIV-LCS blowers. The dilution air suction is in the reactor enclosure just above elevation 253, the blowdown and blower outlets are in the pipe chase room just below elevation 283. The suction and outlets are open-ended pipes, not all of which were covered for cleanliness protection. This matter was discussed with a representative of PECO Engineering and Research QA who initiated corrective action. This problem is deemed minor because the system air-blows have yet to be performed. However, the other discrepancy identified appeared more significant. According to Note 9 on the system piping and Instrumentation drawing, P & ID M40, the dilution air suction was required to be fitted with a screen. No screens were noted during the walkdown and no outstanding punchlist item identified installation of the screens as being outstanding.

The problem regarding screens was also discussed with a PECO Engineering and Research QA Engineer. The QA Engineer provided piping isometric drawings HBB-157-1, Rev. 8 and HBB-158-1, Rev. 8. Isometric HBB-157-1 dealt with the inboard system, HBB-158-1 the outboard. The inspector noted that neither isometric indicated the need for the screens. The inspector also noted that the isometric for the inboard system indicated that the system was classified as Seismic IIA. The Seismic IIA classification contradicted the Seismic I classification shown for this line in the P and ID. Further, upon subsequent review, the inspector determined that the following additional drawings applicable to either the inboard or outboard system has similar discrepancies regarding the seismic classification for the lines depicted:

FSK-HBB-154-1	Revision 5
FSK-HBB-157-1	Revision 11
FSK-HBB-167-1	Revision 8
FSK-HBB-168-1	Revision 3
HBB-154-1	Revision 6
HBB-167-1	Revision 8
HBB-168-1	Revision 6

The SSE entered a work requirement to install the air dilution supply screens onto the system Startup Work List.

The inspectors discussed the potential impact with the seismic classifications indicated on the drawings with representatives of the licensee and with Bechtel Project Engineering. Further, the inspectors reviewed the applicable project specifications for the piping depicted in the incorrectly classified isometrics and reviewed Bechtel Calculations P1-01-52/2 (10/30/83) for HBB 154-1, P1-01-54/3 (4/3/84) for HBB-157-1, P1-01-55/3 (2/21/84) for HBB 167-1 and P1-01-56/4 (4/19/84) for HBB 168-1. Based on this review, the inspector verified that each line had been analyzed as Seismic Category I. Nevertheless, the inspector informed the licensee that failure to adequately incorporate design requirements such as the screens and the seismic classification described in the system P and ID into sub-tier isometric drawings constituted a violation of 10 CFR 50 Appendix B, Criterion III. (50-352/84-24-03)

Additionally, based on a comparison of the FSAR to as-built conditions, the inspector determined that FSAR Table 7.1-6 did not agree with the as-built system. The FSAR indicated that the inboard system received power from a Division I power supply and the outboard system received power from Division II. The as-built condition was verified to be inboard-Division II; outboard-Division I. The inspector will follow licensee activities to correct the FSAR. (50-352/84-24-04)

Finally, the inspector noted that the system design would exhaust the leakage between the MSIV's and between the outboard MSIV's and the turbine stop valves into the pipe chase. From there, during accident conditions, the Reactor Enclosure Recirculation System would distribute this leakage throughout the reactor enclosure. The reactor enclosure acts then as a holdup volume for the system. A portion of the recirculated air flow would be exhausted via the Standby Gas Treatment System. This design, therefore, would complicate any activities such as emergency maintenance in the reactor enclosure during an accident because of the potential for elevated radioactive airborne and contamination concentrations in the reactor enclosure. The inspector discussed this matter with the Startup Director who then issued a Startup Field Report, SFR 83A-27 to request Bechtel Engineering to review the possibility of directing the system exhaust directly to the standby gas system.

The inspector informed the licensee that the acceptability of this design would remain unresolved pending the inspector's review of the disposition of the SFR. If the system design remains as is, it would then require a more detailed review of this matter by NRR. A similar review by NRR is occurring in connection with the Shoreham docket (50-352/84-24-05).

9. Review of the System Startup Engineer (SSE) Requalification Examination

As discussed in NRC Inspection Report 50-352/84-12, in response to findings and concerns of both the licensee and the NRC regarding the extent of knowledge by the SSE's of Startup Administrative policies and procedures, the licensee conducted a retraining program for all SSE's qualified at Level II in accordance with ANSI N 45.2.6. This program consisted of a classroom lecture and an open-book examination.

The inspector reviewed the examination, the answer key and the examination results. One hundred thirteen SSE's submitted completed examinations. The passing grade was established at 75%. The average grade was 92%; the median 94%; no SSE failed the examination, although in at least one case a re-examination was required following an initial failure. Three SSE's did not complete an examination; one was not performing Startup activities and was thus decertified, the second was transferred and the third no longer is employed onsite.

Because no SSE received a final grade below 75%, the licensee plans no further action as a result of the examination. The inspector informed the Station Superintendent that the examination and its results will be considered by NRC during its review of the licensee's corrective action for the violation issued as a result of inspection 84-12.

The inspector had no further comments.

10. Vane-Axial Fan Grounding

As reported in NRC Inspection Report 50-352/84-19, the licensee had directed Bechtel to perform a walkdown review of all fan motors in Unit 1 and those common to both units to determine if they were grounded per project specification E 1404, Revision 39, DCN 40. On May 15, 1984, the inspector reviewed the results of this inspection.

Bechtel inspected approximately 540 motors, 140 of which were vane-axial fans. Of the 140 fans, 99 required rework to bring them into conformance with the specification. Two of the 99 had no grounds installed at all, 97 had grounds installed, but the number of grounds per installation was less than that described in the specification.

The licensee and Bechtel Engineering re-examined grounding requirements for vane-axial fan motors and determined that DCN 40 to Revision 39 to E 1404 was overly conservative. A field change request, FCR E9943F, submitted to relax grounding requirements, has been approved. The licensee indicated appropriate rework would be performed to bring the vane-axial fans into conformance with this FCR.

Because equipment grounding is not a safety-related activity and does not affect the functional performance of the fans, no violations were identified.

11. Storage and Maintenance Program for Unit 2 Equipment

The inspector examined the following "Q" listed/ASME permanent plant equipment and reviewed the associated documentation to verify the licensee's conformance to the storage and maintenance program established by project Job Rules:

- 1) 2AD104 - 2A Battery Ground Detection Cabinet
 - Documents - P.O. E16
 - MRR No. 73092
 - QC Maintenance Log & Maintenance Action Cards (ML&MAC)
 - B-K Electrical Product Divisions Storage Document No. 8031-E-16
- 2) MPL No. B32-F023 (HV-MO-2F023A) - Recirculation Gate Valve
 - Documents - P.O. LX366046
 - MRR No. PE-881
 - QC ML & MACs
 - Lunkenheimer storage Document No. 22A2724-GE
- 3) MPL No. G31-C001 (2AP221) - Reactor Water Cleanup Pump
 - Documents - P.O. LX366046
 - MRR No. 84316
 - QC ML&MACs
 - Union Pumps storage Document No. 22A2724-GE
- 4) 2AS575 - Exhaust Silencer for Diesel Generator
 - Documents - P.O. 239585
 - MRR No. 71257
 - QC ML&MACs
 - Burgess Manning Storage Document No. 4031-M71-339-1

- 5) MPL No. C11F09&F182 (SV-47-2-F009 & F182) - Solenoid Valves
 - Documents - P.O. LX366046
 - MRR No. 108190
 - QC ML & MACs
 - Valcor Storage Document No. S902 & GE-22A2724
- 6) 2AP514 - Diesel Oil Transfer Pump
 - Documents - P.O. M79
 - MRR No. SF3643
 - QC ML & MACs
 - Crane Deming Storage Document No. 8031-M-79-32-2BC
- 7) 2AT528 - 850 Gallon F.O. Storage Tank for Deisel Generator
 - Documents - P.O. LX239585
 - MRR No. 71854
 - QC ML & MACs
 - Storage Requirements per Specification M-71
- 8) 2AV212 - Drywell Fan
 - Documents - P.O. 123
 - MRR No. SF2948
 - QC ML & MACs
 - American Air Filter Storage Document no. 8031-M123-60-2EC
- 9) Safety Related Piping Spools
 - EBB-202-1-8
 - EBB-203-1-9
 - EBB-201-1-7
 - EBB-202-1-4
 - EBB-201-1-9
- 10) Downcomer Inside Drywell at Elevation 238'

After the document review and field inspection for the above-mentioned items, the inspector identified the following violations:

a) 2AV212-Drywell Fan

Job Rule JR-G-7, Appendix B, Paragraph 2.0 states, "Adequately cover equipment so that dirt or other foreign materials cannot enter therein..."

Contrary to the above, the drywell fan was wrapped with a torn and inadequate cover.

- b) EBB-201-1-9, EBB-201-1-7, EBB-202-1-4, EBB-202-1-8, EBB-203-1-9 - Safety related pipe spools and downcomer at Elevation 238'

Job Rule JR-G-8, Paragraph 9.4.1.2 requires that, "Closed end caps are installed..."

Contrary to the above, the pipe spools EBB-201-1-9, EBB-201-1-7, and EBB-202-1-4 had no closed end caps installed. The pipe spools EBB-202-1-8 and EBB-203-1-9 were inadequately protected at the ends. One downcomer at drywell elevation 238' was in-place without an end cover.

- c) 2AP514 - Diesel Oil Transfer Pump

Job Rule JR-G-11, paragraph 4.0 requires that "The basic rule of good housekeeping listed below shall be implemented to provide safe and efficient working and storage conditions and eliminate potential hazards..."

Contrary to the above, the diesel oil transfer pump was surrounded by debris and dirt had infiltrated around the motor shaft area.

10 CFR 50, Appendix B, Criterion V and the Limerick Generating Station FSAR, Section 17.2A.5, states in part that, "Activities affecting quality shall be...accomplished in accordance with appropriate instructions, procedures, or drawings."

Items a, b, and c above are in violation of project procedures and, therefore, in violation of 10 CFR 50, Appendix B, Criterion V requirements (50-353/84-08-01).

During the course of the inspection, the inspector reviewed Bechtel's procedures, addressing the long term storage and maintenance program for the "Q" and ASME equipment, QC records on maintenance action cards for the safety related systems, QC inspector's qualifications and QC maintenance logs. The inspector did not identify any unacceptable conditions on these documents. After the inspector identified the noncompliance for the stored equipment, as described above, the licensee's QA organization issued a finding report on the established Job Rule procedures.

12. Followup on IE Bulletin 80-23

The inspector reviewed the licensee's responses for the IE Bulletin No. 80-23 concerning failure of solenoid valves manufactured by Valcor Engineering Corporation. In this bulletin, Valcor solenoid valves, having part numbers V70900-21-1 and V70900-21-3, had failures attributed to a latent defect in the magnet wire. The licensee's responses, dated December 26, 1980 and February 27, 1981, indicated that the above valve models were not used in any safety-related function in balance-of-plant systems or in GE's Nuclear Steam Supply System.

The inspector audited the records on the C11F09 and C11F182 solenoid valves for Unit 1 and Unit 2.

Per Licensee's records, these solenoid valves were originally procured from the Automatic Switch Company. However, only two solenoid valves, M047-1P-SV-1F009 (Unit 1) and SV-47-2F009 (Unit 2), were delivered. At present, these valves are stored onsite in the Bechtel warehouse.

The inspector pursued this matter further to ensure that Unit 1 and Unit 2 had correct valves for the intended safety related systems (the control rod drive hydraulics system). It was revealed, per Material Requisition Request No. 108190 and Purchase Order M-1, that the licensee procured SV-47-1F182 and SV-47-1F009 (MPL No. C11F182 & F009) for Unit 1 and SV-47-2F182 & SV-47-2F009 (MPL No. C11F182 & F009) from the Valcor Engineering Corporation. These Valcor valves were type V70900-45 and, thus, the IE Bulletin 80-23 concern was resolved.

No violation was identified.

13. Followup on Construction Deficiency Reports(CDR)

The following CDR's were reviewed for the appropriateness of corrective actions and to verify the completion of these actions.

(Closed) CDR 81-00-01: Grounding of Flexible Conduit in the Power Generation Control Complex (PGCC). The inspector reviewed a letter from General Electric (GE) to NRC dated 12/8/80 which described a potential for PGCC flexible conduit to develop hot shorts if improperly grounded. This conduit is used in the reactor protection system, the nuclear steam supply shutoff system and the neutron monitoring system. The corrective action prescribed was to provide positive grounding of these cables. The licensee informed NRC of this problem in a letter to Region I dated 1/13/81.

The inspector reviewed GE Field Disposition Instruction FDI TNFV which implemented the GE corrective actions. This FDI was completed and closed on 11/23/83.

(Closed) CDR 81-00-03: Failure of pressure switches in MDA Scientific Chlorine Monitors. The licensee reported that 0-1 in.wg pressure switches manufactured by Dwyer Instrument, Inc. and used by MDA Scientific in the chlorine monitors were defective. The licensee received notification of this problem in a letter dated 7/23/80 from MDA Scientific, which also reported this item to NRC on 7/20/80 as a 10 CFR 21 report.

The inspector reviewed NCR 4575 which documented completion of rework of chlorine monitors OAC/OBC/OCC/ODC-198 by the vendor in which the defective pressure switches were replaced. The NCR was closed on 1/10/84.

(Closed) CDR 81-00-05: Nonconforming Wiring Conditions in 480 Volt Switchgear Air Circuit Breakers. In a 5/28/81 letter, the licensee informed NRC Region I of defective wiring conditions in 480 volt ITE Brown-Boveri K line circuit breakers. The internal wiring arrangement for the lead to the breaker trip coil made this lead susceptible to insulation damage due to its proximity to the racking gear mechanism. In its letter, the licensee committed to inspect and rework, as necessary, all K line circuit breakers.

The inspector reviewed NCR 4687 which documented completion of the inspection and rework of 40 K line breakers.

14. Unresolved Items

Unresolved items are matters about which more information is necessary to ascertain whether they are violations, deviations, or acceptable items. Unresolved items are discussed in paragraphs 6, 7, and 8 of this inspection report.

15. Exit Meeting

The NRC resident inspectors discussed the issues and findings in this report throughout the inspection period and at an exit meeting held with Mr. J. Corcoran on 5/18/84 for Unit 2 storage maintenance; and at an exit meeting held with Messrs. J. Corcoran and G. Leitch on 6/1/84 for the remainder of the inspection findings.