

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 84-43
84-11
Docket No. 50-352
50-353
License No. CPPR-106 Priority - Category B
CPPR-107 A

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

Facility Name: Limerick Generating Station, Unit 1

Inspection at: Limerick, Pa.

Inspection Conducted: August 1 - 31, 1984

Inspectors: *J. Wiggins for* 9/7/84
S. K. Chaudhary, Senior Resident Inspector Date

J. Wiggins 9/7/84
J. T. Wiggins, Senior Resident Inspector Date

R. W. Borchardt 9/7/84
R. W. Borchardt, Reactor Engineer Date

A. E. Finkel 9/10/84
A. E. Finkel, Lead Reactor Engineer Date

_____ Date

Approved by: *R. M. Gallo* 9/17/84
R. M. Gallo, Chief, Reactor Projects Date
Section 2A

Inspection Summary: Combined Inspection Report for Inspection Conducted
August 1 - 31, 1984 (Report Nos. 50-352/84-43; 50-353/84-11)

Areas Inspected: Routine inspections by resident inspectors and region based reactor
engineer of: followup on outstanding inspection items; followup on IE bulletins
and circulars; followup on construction deficiency and 10 CFR 21 reports; witnessing
of new fuel inspection activities on the refueling floor; general walkthrough
inspections; witnessing of portion of work under startup work orders; preoperational

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test procedure review, test witnessing and test results review; and review of technical specifications. Further, on 8/23/84, Region I management met, onsite, with senior licensee management to discuss the status of completion of Limerick Unit 1 and the licensee's readiness for low power licensing. This inspection involved 183 hours for Unit 1, 4 hours for Unit 2 by resident inspectors, and 110 hours for Unit 1 by the region-based reactor engineers.
Results: No violations were identified.

During this inspection period, the licensee adequately addressed and resolved the question of diesel generator reliability discussed in Inspection Report 50-352/84-36.

DETAILS

1. Persons Contacted

Philadelphia Electric Company

J. M. Corcoran, Field QA Branch Head
J. Clarey, Project Construction Manager
G. Leitch, Station Superintendent
J. Spencer, Director, Start-up
J. Milito, Field Engineer

Bechtel Power Corporation

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

General Electric Company

R. Ballou, Start-up Operations
A. Jenkins, Operations Manager

2. Followup on Outstanding Inspection Items

1) Bulletins

- a. (Closed) IEB 78-09: BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures

This bulletin referred to problems at operating reactor facilities in which excessive containment leak rates were obtained during local or integrated leak rate tests as a result of improperly controlled installation of the drywell head. Operating licensees were requested to verify that maintenance procedures for the drywell head and other similar drywell closures contained provisions necessary to assure a leak-tight seal.

Although the Limerick licensee was not required to respond to the IEB in writing, it was expected to take the appropriate actions based on the information provided. The inspector reviewed those procedures which were available which discussed reinstallation of the drywell head, the equipment door, the personnel airlock, the control rod drive removal hatch and the suppression pool access hatches.

Initially, the inspector reviewed procedure M-060-002, Revision D, which detailed the installation procedure for the drywell head. The inspector noted that the technique for installation was in accordance with the appropriate vendor manual, the CBI Instruction Manual For Airlocks and Closures, except for the torque to be applied to the holddown bolts. The CBI manual required a bolt pre-load

of 157 KIPS; M-060-002 required a bolt torque of 7200 ft-lbs. To convert pre-load to torque, the inspector used the following correlation:

$$T = \frac{CDF}{12}$$

T = Torque in ft-lbs.

C = friction factor (typical range 0.11-0.2)

D = bolt diameter in inches

F = pre-load force

Based on this correlation, and using a C factor provided by Bechtel civil engineering of 0.16 and a bolt diameter of 2.75 inches, the inspector determined the torque required to be about 5800 ft-lbs.

To resolve the disagreement between M-060-002 and the inspector's calculation, the inspector discussed this matter with a representative of the licensee's QA organization. This QA engineer provided the inspector with a recently issued Field Change Request (FCR), C 11670F, which indicated that the appropriate torque for the drywell head bolts was 6100 ft-lbs., as determined by testing.

Revision 1 to M-060-002 incorporated the 6100 ft-lbs. bolt torque requirement.

For the remaining drywell closures, the inspector verified that appropriate torque values were prescribed in the installation procedures for the equipment hatch and the personnel airlock and that appropriate clearance criteria were prescribed for the CRD and suppression pool hatches.

b.(Closed) IEB 79-26 Boron Loss From BWR Control Blades

This bulletin provided information on boron loss from control blades which shorten the design life of the control blade, and impact the shutdown capability and scram reactivity. The licensee was not required to respond to this bulletin. The inspector reviewed the licensee's bulletin package which included GE documents NEDO-24232-Control Blade Lifetime Evaluations Accounting for Potential Loss of B₄C, NEDE-24325-P Control Blade Examination Results and Response to Item 4 of IE Bulletin 79-26, and SIL No. 157 Control Blade Lifetime as well as PECO procedure FM-I-10 NSROD Computer Program Data Preparations. The licensee has adequately reviewed the information provided in this bulletin and their actions are complete.

c. (Closed) IE Bulletin 80-07: BWR Jet Pump Assembly Failures

This IEB described an event which occurred at Dresden Unit 3 which involved failure of a jet pump holddown beam assembly. Although the licensee was not required to submit a written response to this IEB, it was expected to review the information contained and determine an appropriate course of action to preclude such an occurrence at Limerick.

The licensee requested General Electric Co. (GE) to evaluate the IEB and to recommend appropriate corrective actions. In a letter dated 10/2/80, GE responded to the licensee's request. GE's evaluation indicated that jet pump beam failure at Dresden and crack indications at other facilities had resulted from intergranular stress corrosion cracking (IGSCC) of the beam material. Therefore, because crack initiation and growth are related to applied stresses and because the peak stresses at Limerick are less than that for BWR/3s such as Dresden, the Limerick beams were predicted to have a longer service life. To further extend service life, GE recommended reduction in the preload applied to the beams. Finally, GE recommended that beam inspections be included in the Limerick Inservice Inspection (ISI) program.

The inspector noted that GE Field Disposition Instruction (FDI) 83/73030 had been implemented onsite. This FDI provided a revision to the procedure for reactor internals assembly, 22A4111, to incorporate the reduction in beam preloading. Additionally, the inspector verified that the Proposed Technical Specifications incorporated surveillance requirements in TS 4.4.1.2 which would detect jet pump failures during plant operations. However, because the Limerick ISI program is not required to be implemented until six months after commercial operations, it has yet to be completely developed. The inspector, therefore, could not verify inclusion of the GE-recommended inspections.

The inspector determined that this IEB should be closed based on the extent of actions which have been completed. The inspector will follow the ISI aspect to assure the jet pump inspections are included in the program when the program has been developed. (50-352/84-43-01)

d. (Closed) IE Bulletin 80-13: Cracking in BWR Core Spray Spargers

This IEB was sent to the licensee for information only. It discussed instances of IGSCC of core spray spargers at Oyster Creek and Pilgrim and required operating plants to perform periodic visual examinations of the spargers and in-vessel piping and volumetric examinations of any identified cracks.

The licensee requested GE to determine if the Limerick spargers were susceptible to the IGSCC problem and to determine if the spargers should be installed. GE responded, indicating that the previously-identified cracking occurred on 304 stainless steel spargers. GE found that Limerick's spargers were low carbon 304L, with some parts being 304 ELC. Therefore, they were acceptable for use because these materials are somewhat less susceptible to IGSCC than Type 304 material.

The inspector noted several mill certifications which supported GE's statements regarding the use of 304L material. However, the inspector also noted that the licensee intends to include core spray sparger inspections in the ISI program. Because this program is not required to be implemented until 6 months after commercial operations, the inspector could not verify that these inspection requirements were included. The inspector will verify the inclusion of the core spray sparger inspection requirements into the ISI program when the program is developed. This follow item will be tracked along with the item identified above under IEB 80-07 regarding jet pump holddown beam assemblies. (50-352/84-43-01)

e.(Closed) IEB 83-05: Hayward Tyler Pumps and Parts

This bulletin informed licensees of potentially defective components provided by Hayward Tyler Company. The licensee was requested to perform a review to determine if Hayward Tyler equipment was being used at the facility. If so, the equipment would then have to be subject to an extended preservice testing program.

As indicated in Inspection Report 50-352/84-01, four pumps and some spare gaskets were supplied for use at Limerick by Hayward Tyler. The pumps are the safeguard fill pumps; two per unit. The gaskets supplied were discarded.

For Unit 1, the licensee performed Technical Test TT 1.11 on the two Hayward Pumps on 7/18-20/84. This procedure included those extended break-in tests discussed in the IEB.

The inspector reviewed the results of TT 1.11 which indicated acceptable pump performance. Further, because Hayward-Tyler is not currently on the licensee's qualified supplier's list, spare parts cannot be purchased from this company for safety-related uses. The inspector discussed the need for special tests if Hayward-Tyler is placed on the qualified supplier's list in the future. The licensee's actions will be monitored during future inspections of the Quality Assurance Program.

The inspector therefore considers this IEB closed for Unit 1.

2) Circulars

a. (Closed) IEC 80-04: Securing of Threaded Locking Devices on Safety-Related Equipment

This circular described a series of events at operating nuclear power plants involving the inoperability of safety-related equipment caused by loosened threaded locking devices. The licensee was required to review this IEC for applicability to assure that installation and maintenance procedures be reviewed to verify that they adequately addressed this matter.

The licensee addressed this matter in Administrative Procedure A-19 and the Writer's Guide for Maintenance Procedures. In the Writer's Guide, specific reference is made to IEC 80-04 in that section of the guide where locking devices are discussed. In addition, the inspector reviewed maintenance procedure M-041-001 on the main steam isolation valves and verified the provisions of the IEC and Writer's Guide had been implemented in the field.

b. (Closed) IEC 80-09: Problems with Plant Internal Communications System

This circular provided information on a loss of offsite power that significantly affected a nuclear power plant's communication system. The licensee has three independent communication systems which are telephone (PABX), public address system, and the distributed antenna system (radio). Each of these systems is powered from a different power supply and upon loss of offsite power, each is powered from a different diesel generator. The use of a distributed antenna system allows the use of lower powered (2-watt) radios than typically used and thereby minimizes the potential of radio transmissions causing electronic system malfunctions. The reliability of the ENS system will be covered by followup of IEB 80-15. The licensee has been responsive to this circular and it is considered closed.

c. (Closed) IEC 80-12 Valve-Shaft-To-Actuator Key May Fall Out of Place When Mounted Below Horizontal Axis

This circular provided information on a nonconformance reported by Tennessee Valley Authority concerning Bettis Robot-Arm actuators installed on Pratt butterfly valves. The circular recommended performing an inspection of similar connections whether or not supplied by those particular manufacturers. The licensee conducted the inspection and documented its results in surveillance check reports dated July 30 and 31, 1984 and August 2 and 3, 1984. The licensee determined that there were no actuators mounted below the horizontal axis and therefore, the field modifications listed in the circular were not required.

d. (Closed) IE Circular 81-03: Inoperable Seismic Monitoring Instrumentation

This circular described a series of problems which involved seismic instrumentation at several reactor facilities which failed to adequately respond to valid earthquake inputs as a result of poor maintenance or equipment inoperability during testing. The licensee was requested to review the information in the circular and to improve the seismic monitoring instrumentation surveillance program as appropriate. Particular attention was directed toward not disabling large portions of the monitoring system for long periods of time during testing, the adequacy of the surveillance interval and the necessity to detect those areas where accidental impact or high background vibrations may mask actual seismic responses.

The licensee evaluated this circular, as documented in two internal memoranda dated 6/5/84 and 6/26/84. The first memorandum showed the results of the review of testing and test frequencies, referring to Technical Specifications as the governing document. Regarding the potential for accidental impact or background vibrations masking valid seismic responses, the second memorandum indicated this potential had been considered in the design and placement of the sensors.

The inspector reviewed Proposed Technical Specification (PTS) 4.3.7.2.1 and 4.3.7.2.2, and their associated surveillance procedures. The inspector noted that there were operability requirements specified in the PTSs with allowed outage times for individual sensors, recorders and switches. Further, the inspector noted that separate procedures were written for the functional test requirements and the channel calibration requirements for: the Triaxial Time-History Accelerographs, the Triaxial Peak Recording Accelerographs and the Triaxial Seismic Switch. Therefore, provided only one of the above test procedures is in progress at any time, there would be redundant operable equipment that would record a seismic event during performance of the test procedure.

e. (Closed) IE Circular 81-05: Self Aligning Rod End Bushings for Pipe Supports

This circular described a potentially generic problem of loose bushings in snubber and sway strut assemblies. This situation could result in an invalidation of the original analytical assumptions used in the piping analysis. The licensee determined that if the pipe supports used at LGS were improperly installed, loose bushing problems could develop. Bechtel has inspected all bolted connections in accordance with Quality Control Inspection Record procedure (8031/P-2.10) and identified any improper installations. The licensee's program is adequate to ensure proper installation of snubbers and sway strut assemblies to prevent the subject bushing problem. This problem is prevented in the LGS design by use of spacer washers in the rod end assembly. This item is closed.

3) Violations

- a. (Closed) Violation 83-19-03: Failure to identify inadequate recirculation support design and installation

The licensee implemented the corrective action specified on GE-FDDR and Bechtel NCR # 8641. The rotation of hanger clevis alleviated the binding between clevis and the spring can, and the spring can and the hanger rod. Furthermore, the licensee revised the Job Rule, # M-17, to provide a controlled method by which large pipe hangers were tracked. The inspector verified the above corrective and preventive actions, and found them to be satisfactory.

- b. (Closed) Violation 50-352/84-06-02: Inadequate corrective actions for a nonconformance report

The licensee replaced the DC-coil solenoid valve with AC-coil solenoid valves. The cause of the violation was an isolated case of inadequate receipt inspection, however, the other program controls did identify and correct the problem. Furthermore, the licensee's field engineering reviewed systems 50 A & 52A to determine if a similar condition exists in these systems. Similar deficiencies were not identified.

- c. (Closed) Violation 50-352/84-19-02: Failure to correct the nuclear instrumentation P & ID M 42 to show changes made by Design Change Package (DCP) 232.

This item was previously inspected in inspection report 50-352/84-26. At that time, it was determined that Interim Drawing Change Notice (IDCN) 002 to M 42 dated 5/11/84 only partially corrected the P & ID, showing two new level-indicating switches for the level 8 HPCI trip LISIN 693 D & H, but not the LISIN 602 D & H for the level 2 actuation. During this inspection period the inspector reviewed the current revision of P & ID M 42 (Rev. 18) and a draft of M 42 (Rev. 19) and verified that LISIN 692 D & H for the level 2 actuation had been incorporated. P & ID M 42 correctly incorporates all changes made by DCP 232.

4) Unresolved Items and Followup Items

- a. (Closed) Unresolved Item 80-08-04: Use of Heavier Walled Pipe and Fittings in Large bore piping fabrication.

This item was forwarded to NRR for review. The staff review and evaluation indicated that the effects of oversized pipe fittings on seismic stresses was not a safety concern; for straight pipe the effect was minimal, and for piping and restraints under thermal stresses, the effect of secondary stresses was acceptable due to local yielding.

- b. (Closed) Unresolved Item 80-08-05: ASME Class I & II Small bore Pipe design does not consider the effects of heavier wall

Based on the resolution of item 80-08-04, the effect of heavier wall on seismic and thermal stresses in small pipe design is not a safety concern, and therefore, is closed.

- c. (Closed) Unresolved Item 50-352/81-14-01; 50-353/81-12-01: Revision of formal design documents to incorporate Field Disposition Instruction (FDI)

The FDI's "TNED and TRDD" were revised to show the affected design documents. Also, an Engineering Change Notice (ECN #NH15444) was issued to change the affected design specification.

- d. (Closed) Unresolved Item 82-03-03: Lack of Systematic Method for Assuring Commitments to Bulletins are kept.

The inspector reviewed the licensee's program for tracking the status of bulletins, commitments to bulletins and for preventing identified defective equipment from being purchased. Appendix X of the Limerick Generating Station Quality Assurance Plan provides a program for processing bulletins, circulars, and notices. The inspector verified that the program now in place is in compliance with Appendix X and is adequate. A L.G.S. Status Summary Report is updated quarterly which details the status of each bulletin, circular and information notice. Management review of this summary report ensures commitments to bulletins are kept.

The licensee has also developed an alert list which is updated monthly to keep track of all identified defective equipment. This list is consulted prior to any equipment purchase to preclude the purchase of defective equipment. The licensee's program in this area appears to be adequate.

- e. (Closed) Unresolved Item 82-03-05: General Electric Documents did not provide objective evidence that environmental conditions were considered in equipment design.

The licensee in complying with the requirements of 10 CFR 50.49 "Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants", has established a qualification program which has been submitted to the NRC. The results of the licensee's qualification program has been documented in the Safety Evaluation Report (SER) for this site. (NUREG 0991 August 1983 and Supplement No. 1, December 1983).

- f.(Closed) Unresolved Item 50-352/82-05-03: Justification of the mechanical separation of the main turbine first stage pressure sensing lines and the apparent deviation of the reactor protection system (RPS) from GDC 23.

The inspector reviewed Engineering Memorandum to Field 6306, FSAR Section 7.2, Section 15.2 and FSAR Questions 440.31 and 440.32. The FSAR in sections 7.2 and in the responses to the two questions demonstrated that the simultaneous seismic failure or missile failure of turbine first stage pressure sensing lines was not significantly adverse to the protection of the reactor. Reactor vessel high pressure or high power trips would provide diverse protection for the core during turbine trips or generator load rejection transients, thereby minimizing the impact of failure of the first stage pressure sensing lines.

The inspector reviewed the licensee's evaluation and verified that it adequately dealt with RPS reliability and with the maintenance of a sufficient margin to the minimum critical power ratio (MCPR) core thermal limit. Further the inspector verified that the licensee adequately considered the effects of sensing line failures on the End-of-Cycle recirculation Pump Trip analyses.

- g.(Closed) Inspector Follow-up Item, 50-352/82-16-04: Licensee's QA finding report (FR) follow-up.

Licensee revised the procedure in the design and construction QA manual to establish a formalized system for follow-up. The procedure was also clarified to indicate the procedure for escalating the follow-up on overdue finding reports.

- h.(Closed) Unresolved Item 83-02-05: Seismic installation of instrument rack panels.

The General Electric specification 22A4220 titled, "Local Panels" and drawing M-830-G049 Revision 0, defines the method and procedure to be used when mounting the referenced panels.

The above installation was qualified to General Electric Specification 21A8690 titled "Seismic Requirements for Essential Instruments".

The quality control inspection records verify that the installation was per the requirements of drawing M-830-G049.

- i.(Closed) Unresolved Item 83-04-02: The licensee did not have a program to assure that the installation of fire-rated barriers were installed, inspected and tested in accordance with manufacturer's instructions.

The licensee issued a stop work order until installation inspection and test procedures were prepared for the installation of the fireproofing materials in electrical raceway, conduit seals, etc. Job Rule JR-E-13 titled, "The Installation of Raceway Internal Seal and Safe Shutdown Electrical Raceway Fireproofing", dated June 24, 1983 has been issued. To support JR-E-13, the quality control organization issued E-3.0 Raceway Barriers and Seals to support the inspection of fire-rated barrier material.

The Certificate of Analysis on the fire sealing material (Dow Corning 3-6548 RTV Foam A) was within the specification range issued by Dow Corning. Dow Corning application Guide Specifications (Form No. 61-482 C-83) listed the minimum penetration thickness for designated fire ratings based on test results from fire tests for the DC 3-6548 Silicone RTV being used at this site. The licensee's instruction JR-E-13 and drawing E-1406 are in agreement with the technical data issued by the Dow Corning Corporation.

- j. (Closed) Unresolved Item 50-352/83-08-02: Weldment to Reactor Pressure Vessel (RPV).

One small pipe support SP-DCA-192-J2-H2, which was to be attached to the biological shield wall, was inadvertently welded to the RPV. The item was identified by the licensee's QC organization, and disposition was provided and implemented through the project nonconformance and corrective action system. The licensee implemented the disposition provided by NSSS supplier (GE-NEBO), and the corrective action was inspected and found satisfactory by QC inspection.

- k. (Closed) Unresolved Item 50-352/83-11-01: The apparent discrepancy between the GE-NEBO and GE-A&ES specifications.

GE-NEBO specification 22A4202 required protective gas back purging for all welding of stainless steel for materials less than 3/16 inch thick. GE-A&ES welding procedures LMI-GWP-1 and LMI-WPS-8.8-1 did not clearly indicate the use of back purge. GE-A&ES revised the general procedure LMI-GWP-1 to reflect the requirement of back purge for all stainless steel welding - except tackwelds - to materials less than 3/16 inch thick, also appropriate personnel were instructed to follow the new requirement.

- l. (Closed) Follow Item 50-352/83-13-03: Startup Director to verify readiness of plant staff to receive systems released by Startup.

The inspector reviewed Administrative Procedures A-220 and A-221 which described the turnover procedure for systems from Startup to the Station Staff. Additionally, the inspector discussed the turnover process in a meeting with the Station Superintendent and Assistant Superintendent and the Startup Director. Based

on the information provided in AD 220 and 221 and that provided at the meeting, the inspector had no further questions regarding the Station Staff's readiness to receive system control from the Startup organization.

- m. (Closed) Follow Item 50-352/83-13-08: Licensee to inspect the electrical cable penetrations into the hydrogen recombiner heater boxes.

The inspector reviewed the results of Surveillance Check Report (SCR) E-157. This SCR verified that the heater power supply cables were adequately protected from abrasion on entry into the cabinets by bushings installed inside the conduits and there were no indications of cable damage.

- n. (Closed) Follow Item 83-19-06: Licensee to implement procedures to assure the Diesel Fuel Oil (DFO) tanks can be properly vented.

Section 9.5.4 of the Safety Evaluation Report (SER) discussed the venting provisions for the diesel fuel oil tanks. Aside from the installed vents, each tank has an associated valve pit within which is installed a tank vacuum relief line which acts as an alternate vent. The SER indicated NRR found this approach acceptable provided the licensee implement procedures to ensure the vent holes in the tank pit covers would not be obstructed.

In a letter dated 8/21/84, the licensee provided NRR with an analysis which concluded that the 1880 ft³ valve pit air volume was sufficient to assure adequate tank venting through the vacuum relief lines for 18 hours. The acceptability of this analysis could render the procedural controls discussed in the SER unnecessary. However, the inspector did note that the licensee had developed procedure SE-9 as a special procedure to react to high wind conditions at the site. Included in this procedure are checks that the DFO tank vents are clear.

The inspector considered this item closed at this time. The final acceptability of the tank venting provisions will be determined by NRR.

- o. (Closed) Follow Item 50-352/84-01-02: Incorporate turbine first stage pressure setpoint adjustment into the Startup Test Program.

The inspector reviewed a memorandum from General Electric Startup Operations to PECO Startup which stated that the setpoint for the bypass of the turbine stop valve and control valve closure reactor trips on turbine first stage pressure will be determined during Hot Functional Test 1HF-014.

- p. (Closed) Follow Items 50-352/84-03-02; 50-353/84-01-02:
Calibration procedures for meteorological monitoring equipment.

The licensee indicated that Research and Testing Division procedures RT-11-00805 through RT-11-00828 had been implemented to provide for calibration of meteorological equipment. The inspector verified, on a sample basis, that these procedures had been approved and issued.

- q. (Closed) Follow Item 50-352/84-18-16: Removal of the wooden bridge which is installed across the protected area fence outside the Technical Support Center.

The inspectors verified that the licensee had removed this bridge as of 8/18/84.

- r. (Closed) Follow Item 50-352/84-21-06: Licensee to revise procedure A-6 to agree with procedure A-14 regarding controlling and updating drawings.

The inspector verified that A-6, Rev. 1 was consistent with A-14 regarding drawing controls to assure as-built information is provided to plant operators following installation of plant modifications.

- s. (Closed) Follow Item 50-352/84-24-04: Licensee to correct Table 7.1-6 of the FSAR to show the as-built condition of the MSIV-Leakage Control System (MSIV-LCS).

The inspector reviewed an approved Licensing Document Change Notice, FS-630, which revised Table 7.1-6 to show the outboard MSIV-LCS to be powered from Division I and the inboard system to be powered from Division II. The FSAR change was made in Amendment 34, dated 7/84.

- t. (Closed) Unresolved Item 50-352/84-25-02: Acceptability of the licensee's plans for snubber preoperational inspection and testing.

At the time of inspection report 84-25, snubber onsite preoperational inspection and testing consisted of visual inspections and functional tests covered by preoperational test procedures 1P100.3 A-E. Based on a review of the acceptance criteria for the preoperational tests, the inspector determined that the functional tests conducted during the preoperational tests would not verify snubber operability as defined by the snubber technical specifications. Consequently, the inspector requested that the licensee describe its program for assuring operability. Subsequent to 84-25, the licensee, with the concurrence of NRR changed the snubber tests from preoperational tests to post-construction tests.

Based on information provided by the licensee and on information provided by the snubber vendor representatives on 7/24/84, the inspector understood that no further functional testing beyond that provided by the post-construction tests (TT1.30-1) would be performed. Testing for proper snubber restraining action was performed at the vendor's facility prior to shipment of each snubber. Credit for this testing would be taken by the licensee to establish snubber operability.

The inspector reviewed four vendor test procedures which provided a representative sample of those procedures used for each snubber supplied to Limerick. These procedures covered the approximately four year time period during which all Limerick snubbers were shop-tested. These procedures were:

Pacific Scientific Procedure	IT519	Revision V,	8/1/80
	IT519	Revision W,	10/30/81
	IT534	Revision J,	5/10/77
	IT534	Revision K,	10/28/81

Each test procedure tested the associated snubbers for proper restraining action ($\leq .02$ gs maximum acceleration), lost motion and drag force and were found acceptable.

Additionally, based on information provided to the inspector by the vendor representatives, no failure mechanisms have been identified associated with preservice snubbers that would not be otherwise detected using the simple stroke test performed in TT1.30-1.

The inspector had no further questions regarding snubber functional testing and considered the item resolved.

- u. (Closed) Follow Item 50-352/84-36-01: Revision to snubber functional acceptance test criteria in Technical Specifications (TSs)

The inspector discussed his concern regarding the snubber functional test acceptance criteria with the licensee. He was informed that criterion 4.7.4f(2), which discussed bleed rates, had been included in TSs to allow future use of hydraulic snubbers without a prior approved revision to TSs.

The inspector's views regarding inclusion of this criterion into Limerick's TSs were also communicated to NRR via the Region I memorandum documenting the results of the Region's review of the Limerick TSs.

- v. (Closed) Unresolved Item 50-352/84-36-02: Acceptability of the diesel generator RG 1.108 reliability demonstration regarding the 69 consecutive starts requirement.

The licensee approved and issued Field Engineering procedure FE-23, Procedure To Perform Diesel Generator Breaker Operations To Meet Diesel Generator Successful Start Requirements, to perform 23 consecutive tests on each of the 4 diesel generator output breakers. The inspectors reviewed the procedure, provided comments to the licensee, witnessed testing and reviewed the test results. Each breaker underwent 23 consecutive close/trip cycles while it was racked-out in the Test mode. Following the completion of the breaker functional tests, each breaker's charging motor bolts were verified tight and the charging motor assemblies were verified to be secured.

The inspector had no further questions regarding diesel generator reliability.

5) Construction Deficiency Reports

(Closed)

- a. Construction Deficiency Report 80-00-10: Separation criteria in the General Electric Power Generation Control Complex (PGCC)

The licensee performed a series of tests during 1981 and 1984 to determine the separation criteria to be applied for internal panel control wiring at its Limerick site. The listed test reports were the bases for the requirements that were used at the site and in vendor procured items.

- Design Verification Test Report - "Internal Panel Control Wiring Separation Criteria" - PECO Test Report No. 48503, dated 9/1/82, and
- Electrical Separation Verification Testing on Terminal Blocks and Panel Meters. Wyle Test Report No. 469604, dated May 14, 1984.

Based on the above reports, the General Electric Specification No. 22A4027 and the Limerick Job Rule E-4 titled "Electrical Panel Modifications" were revised to reflect the licensee's separation criteria based on the above test reports.

The licensee, using the criteria of Job Rule E-4 Appendix III, inspected and tagged the internal cabinet wiring of the PGCC equipment. The results of the inspection were reviewed by engineering and changes were made as required. Quality Control verified the changes made in Field Inspection Reports which have been reviewed and signed by the licensee. The inspector

reviewed six FIRs and verified that the changes documented were made on the equipment. (Field Inspection Reports Control No. 1, 2, 3, 5, 8 and 9) The inspector also verified that the criteria of the test reports listed above were incorporated into the General Electric Specification 22A4027 and the Limerick Job Rule E-4, Appendix III.

NRC has accepted the PECO Test Report No. 48503 in Safety Evaluation Report dated August 1983 NUREG-0991.

- b. (Closed) Construction Deficiency Report 50-352/81-00-07:
Noncompliance with concrete expansion anchor spacing requirements.

The licensee reported a potential significant deficiency under 10 CFR 50.55(e) to the NRC regarding spacing of expansion anchors. However, after evaluation of the deficiency, the licensee determined it to be not reportable; because, even if the condition had gone undetected, it would not have impaired the safety of the plant. The inspector had no further questions.

- c. (Closed) Construction Deficiency Report 82-00-03: Qualification testing of the Hydrogen Recombiners designed by Rockwell International for the Limerick site.

During the qualification testing of the Hydrogen Recombiner, per the requirements of IEEE 323, the following parts failed. The failures appeared to be associated with the radiation environment.

- Square-D disconnect switch failed after exposure of 1.1×10^7 rads TID,
- Timetrol SCR power controller failed after exposure of 1.62×10^6 rads TID, and
- ITT Barton pressure transducer, 4-20 ma, ΔP or absolute pressure, failed radiation of 1×10^7 rads.

The licensee has replaced the above parts or modified their design as follows:

- The Square D disconnect switch has been wired out of the circuit,
- The Timetrol SCR power controller have been replaced with a Halmar series AI2 power controller, and
- The ITT Barton Pressure Transducers have been replaced with Rosemount Models 1153.

The inspector reviewed the installation and test records associated with the replacement parts and rewiring of the circuit per the vendor's recommendations. The installation and testing were verified by the licensee's quality assurance organization.

d. (Closed) Construction Deficiency Report 83-00-09: Defective DC Motor Control Center Auxiliary Contacts.

During preoperational testing of the 125/250 volt DC MCC contactors, auxiliary contacts were found to be misaligned and/or had insufficient spring tension to close adequately. An inspection of 20 MCC cubicles identified 55 of 58 button type contacts with unacceptable alignment and 31 of 58 contacts with unacceptable contact pressure in the normally closed condition.

The auxiliary contacts in the Westinghouse 125/250 volt DC Motor Control Centers (MCCs) were adjusted and retested per the criteria defined in Startup Work Order (SWO) 52A-246 and 50A-141. The rework was inspected and documented on Quality Control Inspection Record (QCIR) No. E-14 RW-10D201-9. The adjustments were performed in accordance with Westinghouse documents for the type M DC Magnetic Contactors Frames 020, 120 and 220 No. F225063. Testing was completed on June 18, 1984 with items meeting the criteria of the Westinghouse documents.

e. (Closed) Construction Deficiency Report 83-00-11: Defective Agastat Relays.

The manufacturer of the Agastat Relays, the Amerace Corporation, stated that the relays produced between 1975 and August 1977 had plastic bases with insufficient cure time. During post-shipment curing, the relay base was drawn towards the magnetic core assembly. This shortened the gap between the movable contact arm retainer and the contact divider, thereby preventing closure of the contacts.

The licensee replaced the defective Agastat GP relays with Agastat EGP relays, 169C9489. General Electric has qualified the EGP in accordance with IEEE standards, 323, 1974 and 344, 1975.

Start-up Work Authorization (SWA) 49A-21 completed the replacement of the Agastat AR Relays with the Qualified Type EGP on November 28, 1984. The replacement parts were installed and inspected per the requirements of procedure FE20, Revision 2, entitled "Procedure to Control Replacement of Agastat Relays."

The installation was inspected by quality control and documented in SWA 49A-21. Procedure E-1415 entitled, "Field Procurement of Off-The-Shelf Q-Listed Components for Field Modifications" was revised to reflect the modification kit needed for the Agastat Relays. The qualification data sheets have been updated to reflect the part changes.

- f. (Closed) Construction Deficiency Report 84-00-01: Potentially defective Limitorque operators on motor-operated valves.

On 2/9/84, the licensee reported a potential CDR regarding motor-operated valves (MOVs) stalling before their associated torque switches opened. On 3/9/84, the licensee notified NRC Region I of its determination that the condition was not reportable.

The inspector reviewed the documentation of the licensee's evaluation of this condition (SDR 106), along with two Startup Field Reports which described the original condition. The inspector noted that the affected valves would travel to the full open/closed positions, but that the motors would cut out on thermal overload, not high torque. The licensee's evaluation indicated that, as of the end of 1983, about 14% of the MOVs tested exhibited the problem which was determined to have been caused by improper torque switch and spring pack adjustments. In response to the Startup Field Reports and SDR 106, a generic corrective action program involving the MOVATS test apparatus was implemented.

- g. (Closed) Construction Deficiency Report 84-00-06: Defective Capstan Springs on PSA Snubbers.

Pacific Scientific Company PSA-1 and PSA-3 snubbers with certain serial numbers have been identified to experience a high rate of capstan spring tang failure. The licensee has removed the subject snubbers and returned them to the manufacturer for inspection, repair or replacement. Restoration of all hanger and restraint assemblies has been completed. In addition, all safety-related mechanical snubbers are being tested for proper operation as part of technical test TT 1.30.

- h. (Closed) Construction Deficiency Report 84-00-08: Potentially Defective Type HMA Auxiliary Relays.

The licensee reported an apparent defect in GE type HMA relays which had been previously reported by GE per 10 CFR 21. The defective condition involved inadequate clearances between the relay's armature tailpiece and molded posts in the relay casing. As reported by GE, this defective condition was limited to those relays manufactured during 1974.

The inspector reviewed GE FDI TNRH Revision 0, and GE Test and Inspection Plan (TIP) 469 Revision 0. The FDI required inspection of HMA relays and modification of those which were found to have inadequate clearances. The TIP documented the results of the inspection. A total of 13 relays in 5 GE-supplied panels were inspected. Of the 13, 3 passed the inspection and 10 required modifications; these modifications were completed by 9/1/83.

- i. (Closed) Construction Deficiency Report 84-00-09: Restricted swing angle on PSA snubbers.

On 7/26/84, the licensee reported a potential deficiency related to the adequacy of the gap between the body of PSA snubbers and their associated rear bracket. The lack of an adequate gap resulted in an unacceptably restrained swing angle for the snubber. The snubbers and the brackets had both been supplied as compatible sets from the vendor.

Swing angle is defined as the angle between the cone generated by the angular movement of the snubber and the longitudinal axis of the snubber. The potentially defective condition was identified on 16 snubbers in Unit 1 and 2 in Unit 2; all were 50 KIP, PSA-35 snubbers.

The inspector reviewed NCR 10031 which found all but 4 of the affected snubbers usable as is. The remaining four were reworked to provide an adequate gap.

In addition, the inspector noted that Startup Technical Test 1.30-2, which was being used to test and accept snubbers, required gap clearance checks for PSA-35 snubbers.

- j. (Closed) Construction Deficiency Report 84-00-11:

The closure of this item is documented in paragraph 6 below under Part 21 Report 84-88-03.

- k. (Closed) Construction Deficiency Report 84-00-12: Damaged Sluice Gates at the Spray Pond Pumphouse.

On 8/20/84, the licensee reported damage to two sluice gate operators, HV12-003B and HV12-003D, which consisted of bent gate stems. These gates are 2 of the five gates which are used to isolate the ESW/RHRSW wet pits from one another and from the spray pond. The licensee determined that the functional integrity of these gates was necessary to assure operability of the ESW and RHRSW systems.

Based on the results of the licensee's evaluation, the gate stems bent due to their being designed with an inadequate stem diameter and due to inadequate installation of the stem guide collars and brackets. The torque applied by the motor operators or by the hand operators exceeded the capability of the stems to resist deflection.

For corrective actions, the licensee committed to replace the two bent stems, to modify the motor operators for all 5 gates to place limit switches in series with the torque switches, to modify the stem guide design by adding washers, to specify torque

requirements for the stem guide-to-bracket connection and to add a pipe locknut to the upper end of the stem to limit downward travel.

The inspector reviewed NCR 9963 which documented replacement of the bent stems. In addition, the inspector reviewed Design Change Package (DCP) 451 which provided for the installation of washers onto the stems and for the locknut installations. This DCP will be completed prior to fuel load. Further, the inspector reviewed Startup Field Report 16A-17 and the associated Document Change Notices which affected the control circuits for motor operators.

1. (Closed) Construction Deficiency Report 84-00-13: Loose bolts holding charging motor to 4160 volt breakers.

The charging motor of breaker 47651L-1-01738 was found to have loose bolts that hold the motor onto the breaker frame and one of the DC wires to the motor came out of the lug at the terminal.

Startup nonconformance report NCR No. S-662-E dated June 12, 1984 identified the breaker and charging motor that was found to be loose. Startup Work Authorization (SWA) 49A-96 defined the action to be taken to repair the loose bolts on breaker 476512-1-09738. This breaker was tested and passed. Data was recorded on Retest Record No. 10A116, dated June 20, 1984. Inspection of the Puffer Piston Rods on Brown Boveri circuit breakers was per PECO procedure FE-13.

Startup Work Authorization (SWA) 4A-51 dated June 15, 1984 required all safety related 5HK1200 ITE circuit breakers to be inspected for loose charging motor bolts. The rework program of 4A-51 required the three bolts to be removed, bolt and tapped hole cleaned and Loctite 271 applied. The bolts were then reinstalled and torqued to 12 ft-lbs. All rework was verified by quality control inspection and documented in SWA 4A-51 sheets 3-37.

On August 23, 1984 the licensee issued Finding Report E-311 which required the retorquing of charging motor mounting bolts associated with all 4 kv and 13.2 kv breakers. The Unit 1 work is completed and Unit 2 will be tracked in the licensee's standard tracking system.

- m. (Closed) Construction Deficiency Report 84-00-15: Material supplied to the site by Guyon Alloys without the required chemical checks having been performed.

On 8/23/84, the licensee informed Region I of a problem regarding weldolets provided by Guyon Alloys. These weldolets, supplied to Guyon Alloys by Bonney Forge-Gulf and Western Manufacturing Company's Carlinville, Illinois plant, apparently lacked proper quality documentation and lacked the chemical checks required by the ASME code.

In a 5/24/84 letter from Guyon to Bechtel Power Corporation, Guyon Alloys representatives identified 6 weldolets subject to the potential defective conditions: three 6" schedule 80 x 3/4" schedule 40 weldolets with heat code 482B; and three 4" x 2" schedule 80 weldolets with heat code 653B.

The inspector reviewed Bechtel NCR 10089 which identified the potential nonconforming condition and tracked the completion of corrective actions. According to the NCR, the three 6" x 3/4" weldolets and 1 of the 4" x 2" weldolets were located in the site warehouse and were immediately segregated by placing them in the NCR Hold cage. These 4 items were rejected by QC and Field Material Requisition 108408 was written to return the items to Guyon Alloys.

Regarding the two remaining 4" x 2" weldolets, NCR 10089 stated that these items were originally issued to the field for fabrication into reactor water cleanup system pipe spool DCA-101-5-24. However, a number of modifications were made by the pipe fabrication shop to other sections of DCA-101-5 and, as a result, the two weldolets were not used. They were replaced with two with heat code 723AN. Further, the NCR stated that searches of all 4", Q-listed, stainless steel lines and of the laydown areas failed to locate the two defective weldolets. Therefore, it was assumed that these two were scrapped.

The inspector verified that the two weldolets in DCA-101-5-24 were of heat code 723AN. In addition, the inspector reviewed several other field sketches (FSKs) to assure the defective material was not listed in the FSK Bill of Materials. The inspector also discussed Bechtel's actions regarding the NCR with a representative of the licensee's E and R QA organization. Based on his reviews and discussions, the inspector had no further questions regarding this CDR.

- n. (Closed) Construction Deficiency Report 84-00-17: Loose shaft keys in ventilation fans manufactured by Buffalo Forge.

The licensee reported a condition regarding the improper installation of keys which connect the fan impellers to the shafts for Buffalo Forge fans. This condition was discovered during preoperational testing of two of the four fans onsite. The fans are OAV 109/OBV 109 in the Standby Gas Treatment System (SGTS) and OAV 127/OBV 127 in the Control Room Emergency Fresh Air system; OAV 127/OBV 127 exhibited the reportable condition.

The licensee issued Startup NCR (SNCR) S-727-M to identify the condition and Startup Work Order (SWO) 32E-15 to correct the condition. The inspector reviewed the closeout copies of the SNCR and SWO. Further, because the licensee determined the defective condition resulted from improper assembly of the fans during a

field modification onsite, and because the OAV 109/OBV 109 fan have not exhibited similar conditions during testing, the licensee concluded there was no corrective action necessary for the SGTS fans. The inspector had no further questions on this matter.

6) Part 21 Reports

- a. (Closed) Part 21 Item 50-352/79-88-01: General Electric Topaz Inverters.

In letters dated 9/5/79 and 4/14/81, GE informed the NRC of a reportable defect in dc-to-ac inverters supplied by Topaz Electronics. These inverters, used to supply ac power to NSSS control circuits from the station batteries, had experienced failures resulting from transient disturbances on the 125 Vdc buses. GE informed the licensee that inverters in panels H12-P617, P618, P640, P641, P647 and P648 required modifications.

The inspector reviewed the completed work records for GE Field Disposition Instruction (FDI) TNFI, Rev. 0 and Rev. 1, which implemented the modifications on the above mentioned inverters. Further, the inspector reviewed the results of E & R QA Surveillance Check Report E-160, which verified the installation of the modifications on the GE-identified panels and which verified a similarly-modified inverter was installed in panel 10C201, the Remote Shutdown Panel.

- b. (Closed) Part 21 84-88-03 and CDR 84-00-11: Insulation damage in Rockbestos class 1E multi-conductor cable shipped to the Limerick site.

The damage was in the form of small nicks or cuts in the insulation caused during the process of reworking outer jackets to eliminate spot imperfections. Rockbestos has postulated a possible failure under accident conditions (LOCA). The licensee has interpreted this to mean failure due to exposure of the cable to high temperature and high humidity environmental conditions.

The licensee has verified that no cables from the defective cable reels identified by Rockbestos have been installed within the containment. Outside of containment, 19 cables have been installed.

Of the 19 Rockbestos cables identified as potentially defective, 5 cables were found routed in areas subjected to high temperature and humidity resulting from a high energy line break. (HELB)

The licensee analyzed the 5 cables and determined that there would be no possible failure of Rockbestos cables in their present application on the Limerick site. A review of the analysis performed by the licensee on the system application indicates that the 5 cables would not prevent the safe shutdown of this plant.

c. (Closed) Part 21 84-88-02: Improper installation of SCRs in Nuclear Exciters supplied by Basler Electric Company

On 4/19/84, Basler Electric informed NRC Region IV of a potential installation defect in the diesel generator exciters at Limerick. SCRs in these exciters may have been mounted on their heat sinks using excessive pressure. According to Basler Electric's letter, an inspection of the installation at the affected facilities was recommended.

The inspector reviewed an 8/27/84 letter from Basler Electric to the Fairbanks Morse Engine Division of Colt Industries which indicated the four exciter cabinets installed at Unit 1 and the four in storage for Unit 2 had been inspected by the vendor's representative and found to be acceptably installed.

3. Plant Tour

Periodically during the inspection period, the inspectors toured the Unit 1 containment, reactor enclosure, control room, diesel generator enclosures, spray pond pump house, and Unit 2 reactor enclosure. The inspectors examined completed work, and work in progress for: indications of defective material and/or workmanship, equipment protection, nonconformances to technical requirements, housekeeping, and general adherence to project procedures. The inspectors also reviewed drawings, specifications, procedures, and reports to evaluate their adequacy, and to assess the state of completion of the facility. Special emphasis was placed on examination of turned-over systems for as-installed condition, repair/modification work under the startup work orders (SWOs) and tagging of equipment.

Control Room Panel Human Factors Modifications

On 8/22/84, the inspector observed activities in the Control Room associated with modifications of the control room equipment operating panels. These modifications involved repainting the panels to color code specific systems.

Because of the painting operations, the permanent equipment identification tags were removed and temporarily reattached to the panels by means of tape. However, on panel 000&81 (standby gas treatment system and control room ventilation) the inspector noted that the temporarily affixed tags were not always associated with the correct piece of control equipment or indicating instruments. Discussions with the operators on shift and their supervision indicated that some problems had been previously experienced associated with tags falling off various panels.

The inspector discussed the controls being provided by the licensee to implement this modification with representatives of the licensee's construction QA organization. The inspector was informed of open QA finding G-398, issued 8/9/84, associated with this activity which identified that it was being performed without the necessary work authorization documents (e.g. Startup Work Order) and without the normal controls regarding modifications (e.g. FCR, DCP, Plant Modification.)

After this discussion, the licensee took the following corrective actions:

- A. A generic Startup Work Order (SWO 00-2) was issued to authorize the activities and to require QC inspection of the labeling activities.
- B. A 100% reverification of labeling was begun.
- C. Periodic QC surveillance of tag placements was begun.

The inspector was satisfied with those corrective actions implemented by the licensee. However, on 8/23, he discussed the matter with both the licensee's Project Construction Manager and Vice President-Engineering and Research. He specifically expressed concerns about the apparently weak controls originally implemented and about the apparent circumventing of normal project work and modification controls. The licensee's representatives acknowledged the inspector's concerns.

The inspector had no further questions at this time, but will continue to monitor this activity.

No violations were identified because the inspector considered the problems he found in this area to have been previously identified by the licensee.

4. Preoperational Test Procedure Review, Test Witnessing and Test Evaluation

The inspector reviewed the following preoperational test procedures to verify their technical adequacy, conformance to administrative requirements, and to assure their implementation of the testing commitments documented in section 14.2 of the FSAR:

- P 58.2 Redundant Reactivity Control System
- P 100.1 Loss of Offsite Power
- FE 23 Diesel Generator Breaker Test

The inspector witnessed the performance of portions of preoperational tests to verify that the Test Director was knowledgeable of the methods and purposes of each test and of the administrative requirements associated with preoperational testing (e.g., Test Exception control and Test Change control).

The conduct of the following tests were also witnessed to verify compliance with the applicable test procedure:

- P 59.1 Integrated Leak Rate Test
- P 79.2C Main Steam Line Radiation Monitor
- P 100.1 Loss of Offsite Power
- FE 23 Diesel Generator Breaker
- TT 1.30-0 Mechanical Snubber Testing

Additionally, the inspector reviewed the following preoperational test reports to evaluate test result acceptability. Further, he verified the adequacy of the licensee's evaluation of test results, the adequacy of test exception and test change notice resolution and the licensee's compliance with established review and evaluation procedures:

1P	53.1	Standby Liquid Control System
1P	83.2	Automatic Depressurization System

No violations were identified.

5. Electrical Components/Systems - Work Observations

The inspector examined work performance, partially completed work and completed work pertaining to the installation of the following items listed below.

- 125 volt Battery Charger D113
- Diesel Generator Bus D14
- 250 volt Battery Charger D123
- Diesel Generator Bus D12
- Panels 1BD102 and 1BD162
- Bus D114, 440 volts
- RHR Pump P202, Bus D11
- RHR Service Water Pump P506, Bus D11
- Emergency Service Water Pump P548, Bus D11
- RCIC Pump Discharge MOV, HV49-1F013
- HPCI Pump Suction from Suppression Pool, HV55-1F041
- HPCI Cooling Water Supply Header Valve, HV56-1F059
- HPCI Pump Discharge Valve, HV55-1F105
- and Breakers associated with the above Switchgear

The inspector verified that the equipment was in place, maintained in a clean condition and that the quality assurance records for the listed items were updated and closed as required by the quality assurance program for this site.

The records reviewed by the inspector included:

- Drawings which defined location and mounting instructions,
- Calibration and trip setting data (where applicable)
- Protection and cleanliness criteria
- Quality Control inspection installation records, and
- Turnover package status

No violations were identified.

6. New Fuel Inspection and Storage

The inspector periodically inspected the licensee's activities associated with new fuel movement, inspection, channeling, and placement into the spent fuel pool. These activities were inspected for compliance with: LGS fuel handling procedures, radiological control practices, NRC regulations and license conditions.

Fuel movement and inspection activities are being conducted on a 24 hour a day basis with fuel inspection and channeling being performed during 2 shifts and the transfer of fuel from the fuel storage area to the refueling floor during the third shift. Approximately 30 fuel bundles are being inspected, channeled, and placed in the spent fuel pool a day.

On August 22, 1984 fuel bundle LY 8226 hit the spent fuel pool (SFP) wall while it was being positioned for placement into the SFP. The bundle was taken out of the SFP and placed into the fuel inspection stand. The channel was removed while the licensee and a General Electric representative conducted an inspection. The inspection showed no visual damage and the bundle was rechanneled and placed into the SFP for stowage prior to final disposition.

An inspection was conducted of fuel inspector certification to verify compliance with fuel handling procedure 603 "Certification of Fuel Inspectors". The certification records of randomly selected inspectors were reviewed and found to be in compliance with FH 603. Each inspector has a certification folder which contains 1) Certificate of Qualification for QC personnel, 2) training program outline, 3) G.E. Certificate for Fuel Bundle Receipt Inspection, 4) a completed inspection sheet and 5) personal record with resume.

No violations were identified.

7. Review of Technical Specifications

The inspectors reviewed a "Proof and Review" version of the proposed technical specifications (TSs) for Limerick, Unit 1. This review was performed to assess the adequacy of system coverage by the TSs, the conformance of selected TSs to as-built conditions and to assess the clarity of those TSs selected for review. The inspectors' results were provided to Region I management for inclusion into a memorandum to NRR documenting the results of the Region's review.

No violations were identified.

8. Meeting to Discuss the Status of Completion of Limerick Unit 1 and the Licensee's Readiness for Low Power Licensing

On August 23, 1984, a meeting between senior licensee management and Region I management was held onsite. In attendance at this meeting were the following:

PECo

V. Boyer, Senior Vice President - Nuclear
 S. Daltroff, Vice President - Electric Production
 J. Kemper, Vice President - Engineering and Research
 W. Ullrich, Nuclear Generation Division
 G. Leitch, Station Superintendent
 J. Corcoran, Field QA Branch Head

NRC

R. Starostecki, Director, Division of Project & Resident Programs
 H. Kister, Chief, Projects Branch 2
 R. Gallo, Chief, Reactor Projects Section 2A
 S. Chaudhary, Senior Resident Inspector, Construction
 J. Wiggins, Senior Resident Inspector, Operations

At this meeting the licensee's representatives provided their assessment of the state of construction completion and the extent of completion of preoperational testing. Further, they provided their views regarding the readiness of various program areas including radiation protection, fire protection and security. They summarized their discussion by stating they felt the plant will be ready for fuel loading in September 1984.

Region I management representatives clarified their position regarding what areas must be complete prior to the Region agreeing that issuance of a low power license would be warranted. Further, they emphasized their position that a low power license should not be issued unless the licensee is essentially ready in all respects for operations up to 5% of rated thermal power.

Region I management requested that the licensee again meet with them to update the information provided at this meeting and to provide the basis upon which the licensee has concluded the facility is ready for licensing. This meeting is currently anticipated to occur in mid-September.

9. 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 Messrs. J. Corcoran and G. Leitch on September 7, 1984.