APPL EX 72

REF: 24

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

January 28, 1977

Docket No. 50-353

Philadelphia Electric Company
ATTN: Mr. V. S. Boyer
Vice President
Engineering and Research
2301 Market Street
Philadelphia, Pennsylvania 19101

Gentlemen:

Subject: IE Inspection Report No. 50-353/77-01

This refers to the inspection conducted by Mr. A. Toth of this office on January 5, 6 and 11, 1977, at the Limerick Generating Station, of activities authorized by NRC License No. CPPR-107 and to the discussions of our findings held by Mr. Toth with Mr. Corcoran of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were observed.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must be accompanied by an affidavit executed by the owner of the information, which identifies the document or part sought to be withheld, and which contains a statement of reasons which addresses with specificity the items which will be considered by the Commission as listed in subparagraph (b)(4) of Section 2.790. The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

No reply to this letter is required; however, should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Robert T. Carlson, Chief
Reactor Construction and Engineering
Support Branch

Enclosure: IE Inspection Report No. 50-353/77-01

I Form 12
(Jan 75) (Rev)

NOTICE
AS OF ______ JAN 2 7 1977
[illegible] HAS NOT OBTAINED PROPRIETARY
CLEARANCE IN ACCORDANCE WITH 10 CFR 2.790

U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-353/77-01 Docket No: 50-353

Licensee: Philadelphia Electric Company License No: CPPR-107

2301 Market Street Priority: --

Philadelphia, Pennsylvania 19101 Category: A

Safeguards Group: --

Location: Limerick Unit 2, Limerick, Pennsylvania

Type of Licensee: BWR - 3293 MWt (GE)

Type of Inspection: Routine, Unannounced

Dates of Inspection: January 5, 6 and 11, 1977

Dates of Previous Inspection: October 16, 19-22, 1976

Reporting Inspector: A. D. Toth 1-25-77 DATE

A. D. Toth, Reactor Inspector

Accompanying Inspectors: NONE ______ DATE

______ DATE

______ DATE

Other Accompanying Personnel: NONE ______ DATE

Reviewed By: [signature] 1/27/77 DATE

R. R. Keimig, Acting Chief, Projects Section
Reactor Construction and Engineering Support Branch

SUMMARY OF FINDINGS

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Items

A. Incomplete Corrective Actions

76-06-01 - Failure to Weld Structural Steel Per AWS Code has been Partially Corrected with Evaluation of and Action on Existing Inaccessible Welds Remaining to be Performed. (Details, Paragraph 3)

B. Completed Corrective Actions

76-06-02 - Inspection of the Containment Dome Flange Face has been Incorporated into the Inspection Scope of the Site Maintenance Program. (Details, Paragraph 4.a)

76-06-03 - Measures have been Improved to Implement Job Rule G-5 Requirements for Control of Design Changes. (Details, Paragraph 4.b)

76-04-03 - The Licensee has Verified that the Loss of Lot Number of Cadweld Sleeves #8580 and #8581 was an Isolated Case and these Sleeves were Unlikely to be Nonconforming Material. (Details, Paragraph 4.c)

Design Changes

None identified or reported.

Unusual Occurrences

None reported or identified.

Other Significant Findings

A. Current Findings

1. Acceptable Items

The following items were examined by the inspector to ascertain implementation of the quality assurance program with respect to these items. The inspectors did not identify any

departures from regulatory requirements or PSAR commitments, except as may be specifically described in other paragraphs of this report and referenced in subparagraphs below.

a. Containment Drywell Wall Reinforcing Steel Cadwelding Work in Progress. (Details, Paragraph 6.a)

b. Reinforcing Steel Receiving, Storage and Handling Control. (Details, Paragraph 6.b)

c. Site General Welding Rod Issue Storeroom. (Details, Paragraph 6.c)

d. 76-12-01 - Activities are Continuing, to Identify Defects in Structural Steel Beams and Effect Repairs Where Necessary. (Details, Paragraph 6.d)

2. Unresolved Items

None identified.

B. Status of Previously Identified Unresolved Items

Resolved Items

76-04-4.a - Procedures have been Revised to Include Acceptance/Rejection Criteria for Evaluating Cadweld Sleeve Surface Defects. (Details, Paragraph 5.a)

76-04-4.b - Initial Measurement of Concrete Placing Temperature has been Established to Prevent Inadvertent Placing of Nonconforming Material. (Details, Paragraph 5.b)

76-05-3.a - The RPV Machining Oil has been Chemically Analyzed by the Supplier and Evaluated by General Electric as an Acceptable Miscellaneous Process Material. (Details, Paragraph 5.c)

76-05-3.b - Procedures have been Established to Prevent Voids in Concrete at CRD Penetrations of the Containment Drywell Wall. (Details, Paragraph 5.d)

76-06-04 - Implementation of the Nonconformance Control System for Concrete Aggregate Material Receiving has been Formalized by Incorporation of User Tests into a Quality Control Instruction. (Details, Paragraph 5.e)

C. Deviations

None identified.

Management Interview

At the conclusion of the inspection, a meeting was held at the site with the licensee senior site representative and representatives of the licensee and contractor organizations. Attendees at this meeting consisted of personnel whose names are highlighted (i.e., *) in Paragraph 1 of the Details Section of this report. The inspector summarized the purpose and scope of the inspection (Details, Paragraph 2), and the results of the inspection (as listed in the "Summary of Findings").

DETAILS

1. Persons Contacted

Philadelphia Electric Company

* J. M. Corcoran, Site Quality Assurance Engineer
* J. T. Robb, Quality Assurance Engineer
* R. E. Sheibley, Construction Engineer
J. J. Clarey, Resident Engineer
W. T. Baxter, Quality Assurance Engineer

Bechtel Corporation

* J. R. Reiney, Jr., Project Construction Manager
* E. R. Klossin, Lead Site Quality Assurance Engineer
* M. H. Brown, Project Field Quality Control Engineer
* R. L. Halk, Lead Civil Engineer
* R. E. Sevo, Quality Assurance Engineer
C. Vogeler, Area #1 Quality Control Engineer
C. Roshen, Quality Control Engineer, Cadwelding
K. Quinter, Lead Receiving Inspector, Quality Control Engineer
S. Bowie, Quality Control Engineer, Receiving
S. Sommers, QC Engineer, Cadwelding
M. Allushuski, Cadwelding Foreman
M. Bronick, Cadwelding Apprentice
S. Callahan, Ironworker Superintendent
J. Young, Warehouse/Toolroom Supervisor
R. Kutzner, Assistant Warehouse Supervisor
E. Strelecki, Material Storage/Maintenance Supervisor
R. Dewitt, Welding Material Clerk
F. Weisheimer, Rebar Engineer Area #1
R. Phillips, Rebar Engineer Area #1
R. Merdell, Rebar Engineer Area #1
T. Wojton, Assistant Material Supervisor
P. Healey, Welding Foreman
E. Inmon, Welding Material Controller

Chicago Bridge and Iron Company

G. Czapnik, Welding and Quality Assurance Supervisor

2. General

A preinspection meeting wa held onsite on January 5, 1977, with the senior licensee representative, to discuss the scope of the inspection, and work progress or occurrences which may bear upon the inspection. The status of previously identified unresolved items, corrective actions or outstanding items was discussed.

The inspector stated that the scope of the inspection would include review of the details of status of unresolved items and observation of work activities in progress, including reinforcing steel activities at the containment building.

3. Previously Identified Enforcement Items - Incomplete Corrective Actions

The following items was reviewed by the inspector and the corrective actions affected by the licensee were found to be incomplete:

a. 76-06-01 - Failure to Weld Structural Steel Per AWS Code has been Partially Corrected with Evaluation of and Action on Existing Inaccessible Welds Remaining to be Performed

The inspector examined the evidence of actions taken as described in Attachment I to the licensee's December 15, 1976 letter to NRC. The records examined show that four defective welds have been identified of a total of 350 accessible welds which have been reinspected. The inspector inquired about those welds which were inacessible and which were not reinspected, and was advised by the licensee that about 10% (~ 40) were involved.

The licensee stated that these have not yet been individually evaluated with respect to possible existence of inadequate welds; this was due to a diversion of QC personnel to the inspection of recently found defects in structural steel beams. (IE Inspection Report 50-352/76-13). The licensee stated that the individual evaluations would be accomplished by March 1, 1977. A schedule for completion of repairs would be available thereafter.

Field inspection reports delineated the various inspection plans which covered welding which was inspected by the Quality Control Inspector whose work was in question. All welds were reinspected to inspection plans numbered: C192-W1-8, C194-W1-16 thru 18, C195-W1-11 and 17, C197-W1-8A and 11, C198-W1-4 and 12 thru 14, C201-W1-7, 9 and 10. Only accessible welds were reinspected to inspection plans numbered: C41A-116-W1-1, C193-W1-10, C194-W1-5, C195-W1-6, C197 W1-4 and 6, C201 W1-5, C204-W1-2, C543-W1-5, C465-W1-3 and C200-W1-1. The field inspection reports state that only two discrepancies were found for the welds inspected and these were then tagged with QC hold tags and nonconformance reports were issued. These two were in addition to the two identified during the previous NRC inspection. The four specific defective welds were at the following locations:

(1) Beam #1C16 at elevation 201 column 17-E.

(2) Beam #184R at evevation 217 column 26-E.

(3) Beam #2323?7 at elevation 253 column 23-E.

(4) Beam #2323?7 at elevation 253 column 23-F.

The inspector observed that the weld repair of beam No. 2323?7 at column 23-H was as specified in NCR-1980 and was accomplished by cutting the top and bottom flange of the beam about 16" on the side where access was limited, to permit access for removal of the connecting angle clip and rewelding. The inspector observed that completed welding of the replaced angle clip was in accordance with AWS visual inspection criteria. The rework inspection plan indicated that qualified welding procedure was used by qualified welders to accomplish the rework. Reinspection of the repaired welds at 17-E, 26-E and 23-H was documented on quality control inspection reports specific to the weld repair.

The inspector observed that, contrary to the information provided in the licensee's letter, the weld at elevation 253 column 23-G (actually beam #2323?7 at 23-F) has not yet been repaired. However, this weld and the three others identified as requiring repair, are appropriately documented on nonconformance reports. Rework of three of the four welds has been completed, with the one at column 23-F as the only one outstanding. The licensee stated that immediate completion of this

rework was anticipated when the letter to NRC was issued, but the work was unavoidably delayed after the letter was issued. This rework is now in progress and is expected to be completed by March 1, 1977, including replacement of the beam flanges which were cut for welding access reasons.

The inspector examined the following documentation relative to the above:

(1) Field Inspection Reports C-63-7 through C-63-19.

(2) Nonconformance Reports 1980, 1998 and 2000.

(3) QC Inspection Records C-201-W-1-7A, C-195-W-1-11A and C-198-W-1-12A.

(4) Project Memo PCM-239 and PCM-246.

4. Previously Identified Enforcement Items - Completed Corrective Actions

The following items were reviewed by the inspector and the corrective actions effected by the licensee resolve the previously identified noncompliance.

a. 76-06-02 - Inspection of the Containment Dome Flange Face has been Incorporated into the Inspection Scope of the Site Maintenance Program

The inspector examined the evidence of actions taken as described in Attachment II to the Licensee's December 15, 1976 letter to NRC. The computerized maintenance scheduling program data cards showed that inspection of the containment dome flanges is now scheduled for three month intervals, with application of protective coatings as necessary. A maintenance action item sheet calls for application of repair coating consistant with the liner specification (C-2) requirements. The schedule completion date for the coating is January 7, 1977. However, the licensee stated that there are temperature limitations which prevent application of the specified coating until ambient temperature reaches 50°F.

An "open" nonconformance report calls for removal of overspray paint from the flange face prior to installation of the dome, and requires an approved procedure coordinated with the paint manufacturer. A maintenance planning staff was available on-site. This item is resolved.

The inspector examined the following documentation relative to the above.

(1) Bechtel NCR-1981, October 22, 1976.

(2) Field Inspection Report, C-2-32.

(3) Instorage Maintenance Card, Issued December 1, 1976.

(4) Action Card 43378 and 43379.

b. 76-06-03 - Measures have been Improved to Implement Job Rule G-5 Requirements for Control of Design Changes

The inspector examined evidence of actions taken as described in Attachment III to the licensee's December 15, 1976 letter to NRC. The inspector observed that Engineering Instruction EII-31 establishes a site position of Resident Engineer, who will act on behalf of the home office Project Engineering, in the preparation and approval cycle of Field Change Requests. His approval actions are to be documented and are subject to subsequent confirmation by the engineering Discipline Group Supervisor and Project Engineer. This confirmatory review permits identification of items requiring design changes and provides interim documentation.

The drawing change notice C-193 permits the field to drill holes in the top flanges of beams and girders to install bolts which will support temporary beams. A maximum hole diameter and maximum number per cross section are established as engineering acceptance criteria. Verification of removal of temporary steel, and checks for damage are provided in the revised quality control instruction. This item is resolved.

The following documents were examined.

(1) DCN No. 2 to Revision 10 of Drawing 8031-C-200.

(2) DCN No. 2 to Revision 13 of Drawing 8031-C-193.

(3) QCI No. 8031/C-2.10.

(4) Engineering Internal Instruction EII-31 Revision 0.

c. 76-04-03 - The Licensee has Verified that the Loss of Lot Number of Cadweld Sleeves #8580 and #8581 was an Isolated Case and These Sleeves were Unlikely to be Nonconforming Material

The inspector examined the evidence of actions taken as described in Attachment I to the licensee's August 10, 1976 letter to NRC. The records examined showed that the constructor performed a review of cadweld inspection plans and verified that cadwelds #8580 and #8581 were isolated cases of where the sleeve lot number was not recorded.

The inspector interviewed personnel and examined facilities and documentation at the cadweld material disbursing shed and at the general material receiving, storage, issue warehouse. Cadweld sleeves and associated materials are identified by serial numbers and are matched and issued in accordance with manufacturers charts. Material is received at the warehouse and is segregated in a separate receiving area until certifications have been received. Lot numbers are recorded and are maintained on quality documentation. Although sleeves numbered 8580 and 8581 are not traceable to lot number, there appears to be no basis for assuming that the sleeves may have bypassed the established receiving inspection system and not had acceptable material certifications at the time of receipt. The inspector stated that he had no further questions on this item.

The inspector examined the following documentation relative to the above.

(1) PECo Finding Report N-079.

(2) Bechtel Form QCC-1/IR-C-250-CW-EF-2.

(3) Field Inspection Report, June 25, 1976 (Civil).

3. Resolved Items

The following items were reviewed by the inspector and the corrective actions effected by the licensee are considered adequate to resolve the previously identified questions regarding these items:

a. 76-04-4.a - Procedures have been Revised to Include Acceptance/Rejection Criteria for Evaluating Cadweld Sleeve Surface Defects

The inspector had examined revised procedures during an inspection of Unit #1, and had identified the resolution of this item at that time (IE Inspection Report No. 50-352/76-09). Subsequently, the inspector has also examined reports and specification changes which require inspection of cadweld sleeves after completion and which specify that sleeve surface defects of volume greater than 1/4 X 1/4 X 1/8 inch depth or equivalent shall be evaluated and accepted or rejected by the field engineer. A test report documents tensile test results on one cadweld sleeve which contained a defect of 2 inch length, 1 inch width, 1/4 inch depth from molten fillar material drip. The tensile test of the sleeve (#4687) resulted in a sleeve failure type break at 103.2 ksi, which was above average and above the minimum 75 ksi specified. A Finding Report states that damaged cadweld sleeve previously identified by the NRC inspector (#19593) was cut out and replaced and this action is documented on a Field Inspection Report dated August 3, 1976.

The inspector examined the following documents relative to the above:

(1) Finding Report (FICo) N-081.

(2) QC Test Report (QCG-1) IPC-1-34-26.

(3) Specification Addendum #1 to Revision 8 of C-36.

(4) Specification Addition #1 to Revision 11 of C-34.

b. 76-04-4.b - Initial Measurement of Concrete Placing Temperature has been Established to Prevent Inadvertent Placing of Nonconforming Material

The inspector examined Addendum 1 and 2 to Revision 5 of Specification C-61. These documents require that concrete temperature be taken at the batch plant and at the truck discharge for the first truckload for each placement and for every 100 cubic yards of each class of concrete. Temperature measurement at these locations eliminates the turnaround time of temperature evaluation previously associated with sending samples to the laboratory and awaiting feedback to the point of placement. Addendum #1 requires that strength test cylinders be cast for a concrete load which was partly rejected due to slump, air content or temperature considerations, to permit evaluation of the part load placed.

c. 76-05-3.a - The RPV Machining Oil has been Chemically Analyzed by the Supplier and Evaluated by General Electric as an Acceptable Miscellaneous Process Material

The inspector examined PECo Finding Report N-082 and Cimperial #6 Material Analysis (dated 2/18/71). The material analysis indicates that the chloride and sulfur content of Cimperial #6 machine oil is 10 ppm or less. The GE site quality control representative signed the PECo Finding Report, indicating that this was acceptable and met the GE Specification No. 21A9340 requirement. GE has provided no further guidance on the control of miscellaneous process materials, beyond the specification 21A9340 revision requirement for this project. The licensee has accepted this on the basis that the machining of the reactor vessels is complete. The inspector noted that most RPV fabrication process materials are controlled by C&I procedure (such as liquid penetrant and solvents and UT couplant). The inspector stated that he had no further questions on this item.

d. 76-05-3.b - Procedures have been Established to Prevent Voids in Concrete at CRD Penetrations of the Containment Drywell Wall

The inspector examined PECo Finding Report N-083 and Bechtel Field Change FCR-C-2276. These establish that the licensee has had an evaluation performed regarding means to prevent concrete voids similar to those which occurred at a Unit #1

concrete placement. Preventative measures include restricting the depth of the concrete placement. Also, the CRD penetration array will be partly boxed with expandable metal and grout used to assure filling of spaces between the penetration tubes. Particular attention to surveillance of work operation and briefing of workmen is planned.

e. 76-06-04 - Implementation of the Nonconformance Control System for Concrete Aggregate Material Receiving has been Formalized by Incorporation of User Tests into a Quality Control Instruction

The inspector examined Quality Control Instruction QCI-C-4.10, Revision 1 and associated checklist QCIR-C-4.10 Revision 1. These included Section 2.4 which lists the periodic materials user's tests which have been and will be routinely performed in accordance with job specification C-61 requirements. Acceptance criteria are defined (i.e., reference to C-61 paragraphs) and exceptions are required to be identified and nonconformance reports issued as appropriate, in accordance with the general requirements governing the QCI and QCIR system.

6. Acceptable Items

The following items were examined by the inspector to ascertain implementation of the quality assurance program with respect to these items. The inspector did not identify any departures from regulatory requirements or PSAR commitments.

a. Containment Drywell Wall Reinforcing Steel Cadwelding Work In Progress

The inspector observed cadwelding work in progress on number 18 reinforcing steel horizontal rings, between elevation 255'-4" and 272'-7" of the containment drywell wall. This was in the zone of planned concrete placement number FW-LN-2. (The inspector also examined handling of cadweld materials and reinforcing steel material as discussed in paragraphs 4.c)

The inspector observed cleaning, marking, preheating and spacing of rebar ends prior to making splices. He observed removal of packing, fill and lack of void/porosity in top holes and lack of end voids in typical sleeves. He verified that the sleeve catalog numbers were as specified in specifications and manufacturer's recommendations and reviewed in detail the

controls to assure that the sleeve with the proper catalog number is placed on the appropriate rebar. (All rebar at this site is Grade 60, thereby reducing the number of different catalog numbers applicable to work at this site). He inspected storage of materials at the ironworkers' cadweld shed, and observed warmed bins for material storage. A good supply of replacement fixtures was available at the shed for use by the cadwelders when equipment began to wear and degrade.

The inspector examined qualification records of the four crews observed working January 6, 1977 and verified that acceptable sister splice and production splice tests had been made at the proper frequency and requalification action taken as required by specifications. (No requalifications were required in this case).

The inspector interviewed the two cadweld quality control inspectors performing surveillance/inspection and examined their field folder of applicable specifications and in process records. Latest specification changes were on hand and in process records were current and complete. The QC inspectors were conversant with cadwelding requirements in terms of surveillance/inspection requirements and acceptance criteria.

The inspector examined the following documentation relative to the above matters:

(1) Quality Control Instruction QCI-C-6 Revision 1 (Cadwelding).

(2) Quality Control Inspection Report (In Process Cadwelding).

(3) Specification C-34 Revision 11 (Cadwelding).

(4) Cadweld Crew Qualification Records for the following crews - 642/673, 358/643, 107/401 and 570/651.

(5) Miscellaneous Cadweld Splice Manufacturer Data Sheets and Cadweld Supply Shed Inventory Control Indices.

b. Reinforcing Steel Receiving, Storage and Handling Control

The inspector interviewed field engineers and procurement control staff regarding control of reinforcing steel and assurance that certified, specific pieces are received, stored and installed in accordance with design and specifications. He examined associated documents.

Reinforcing steel is identified with a "Mark Number" and "Type" on the vendor's reinforcing steel "Release." The "Mark Number" appears on a vendor drawing which relates the "Mark Number" to a "Label Number," in a "Label List." The "Label Number" is used on other vendor drawings to show the location of various pieces of reinforcing steel to satisfy the patterns called for on design drawings. The "Mark Number" and "Type" are used in fabrication and field control.

Reinforcing steel received at the site is placed in a roped off and posted area and a QC hold tag is affixed. (The inspector has observed this, in passing, during previous inspections). Quality control personnel are required to inspect the material and verify identification tags and "Mark Numbers" consistent with the vendors "Release." Other quality control inspectors are required to review material certification type documentation associated with the "Release" and "Mark Numbers" thereon. When documentation is confirmed, the quality control inspectors are required to remove the hold tags and mark the "Release" as acceptable on a rebar release list. When specific rebar ("Label Number" per drawings) is required, a "Rebar Request" is issued by the field engineers, this is concurred in by the quality control engineer prior to issuance to the crafts for removal/movement of the rebar from the laydown area. The quality control engineer is required to verify that the "Release" number appears on the rebar list and no outstanding nonconformance reports exist relative to the "Release."

The inspector examined documentation relating to Label #178, a #18 curved, horizontal piece of reinforcing steel (Mark #18X478) in the containment drywell wall, to be embedded in planned concrete placement numbers FW-LN-2 (Elevation 255'-4" to [illegible]72'-7"). The documentation showed that the material had been received and released as described above, including evidence of quality control involvement.

The inspector also examined the records for July 8, 1974 receipt inspection of 106,904 pounds of rebar for the containment base mat (concrete placement CS-E-2). Material control at that time was similiar to current practices. These records showed that rebar vendor shop inspection had been performed and the required teletype shop release issued. The receiving inspection report attested to receipt and review of the vendor material certifications and statements of conformance and included copies of them. The rebar test report was also filed showing results of user tests on the steel, and review and acceptance thereof. These records showed acceptability of the material without exception. Rebar test data was also examined by IE at a previous inspection (IE Inspection Report 50-353/75-02) with no exceptions noted.

The inspector also examined a rebar request and associated release for rebar for layer 3A of the containment base mat. The documents contained the appropriate quality control signature/date attesting to absence of any outstanding nonconformance report or "hold" status associated with receiving inspection.

The inspector examined the following documentation relative to the above matters:

(1) Quality Control Instruction R-1.00 Revision 4, Receiving Inspection.

(2) Quality Control Inspection Record R-100 Revision 4.

(3) Rebar Requests #5915 and #998.

(4) Rebar Releases #1603 and #200.

(5) Field Engineer's Cross Reference Log, re: Release #1603/ Request 5915.

(6) Field Change Request FCR-C-1882F.

(7) Rebar Release List from Quality Control dated 1/7/77.

(8) Drawings: C-994 Revision 0, 8031-C-39-260, 8031-C-39-471-2, 8031-C39-471A-2 and 8031-C-1226-1.

(9) Quality Control Inspection Plan QCIP-C-39-200.

(10) Rebar Test Report C-62-7/19/74.

(11) Rebar Shop Release Teletype IF-14729.

c. Site General Welding Rod Issue Storeroom

The inspector observed that cleanliness and segregation of materials was maintained at the rod issue trailer. A rack has been installed for storing newly issued, individually assigned weld rod stub brackets for the welders. Ovens and portable rod ovens were heated and weld electrodes were segregated by type, were color coded and were in individual ovens. The inspector noted that an alarm was installed to indicate if total power was lost at the trailer. The inspector observed that one rod oven was only warm to the touch (250°F required) and was off due to a circuit breaker which had tripped due to circuit overload. The licensee confirmed that no rod had been issued from that oven that day and took corrective steps to put permanent rod ovens on separate circuits to prevent circuit overload when portable ovens were plugged in. Consideration was given to installing individual circuit indicating lights, (as installed on certain other rod oven circuits at this location), but this action was not taken in view of a pending relocation of the rod issue storeroom to inside the reactor building. The inspector stated that the interim corrective action was acceptable.

d. 76-12-01 - Activities are Continuing to Identify Defects in Structural Steel Beams and Effect Repairs Where Necessary

The inspector examined documentation which defines the scope of investigations regarding potential defects in structural steel beams for this project. (Reference IE Inspection Reports 50-352/76-12 and 76-13). Bechtel is performing acid etch, liquid penetrant, and ultrasonic testing of eighty built-up girders which have a design feature which involves cut-off of the beam flange at a point several inches from the end of the beam.

The inspector observed welding repair in progress for the 15" crack in the beam where the defect problem was first identified. The repair area was ground and arc-gouged as weld-joint preparation and each layer of weld was peened. Joint preheat and interpass temperature control was maintained by a backside heater and temperature indicating crayons were used by the welder to ascertain proper temperature. The welder and welding foreman described how a prototype weld repair was performed at the welder qualification pad, prior to commencing work on the actual repair. (A special repair Procedure #8031-C-41a-1057-1 was used). Quality Control Inspection was planned to be conducted using the existing weld inspection checklist (W-1-8031 Revision 0) plus a "Supplementary Record to W-1-8031 Revision 0 for General Repair of Built-up Girders, Revision 0 dated January 5, 1977." The supplementary record calls for nital-etch verification that joint preparation (by gouging, grinding, etc) has removed all of the suspect shop weld metal from the joint area.

The inspector also briefly reviewed five reports of audit of the vendor shop which furnished the suspect structural steel. The licensee stated that two other reports were also available, but these were conducted by the Bechtel home office audit staff and the audit reports were not presently onsite. The inspector deferred in-depth review of the five available reports, pending onsite availability of the two additional reports. The following reports were those available onsite, which showed that required audits were performed between March 1974 and December 1976.

(1) PECo Audit Report #59, dated March 12-15, 1974.

(2) Bechtel Audit Report #PSA-AB, A-1 dated May 21-22, 1975.

(3) Bechtel Audit Report #PSA-AB-2 dated September 30 to October 2, 1975.

(4) Bechtel Audit Report #PSA-AB-3 dated February 25-26, 1976.

(5) Bechtel QA Management Audit Report, American Bridge Division of U.S. Steel dated December 20-22, 1976 (File 101-0E).