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U. S. ATOMIC ENERGY COMMISSION
REGION I
DIVISION OF COMPLIANCE

Report of Inspection

CO Report No. 286/70-2

Licensee: CONSOLIDATED EDISON COMPANY
INDIAN POINT NO. 3 (IP-3)
Construction Permit No. CPPR-62
Category A

Dates of Inspection: January 27 and 28, 1970

Date of Previous Inspection: January 16, 1970

Inspected By: R F Heishman 3/4/70
R. F. Heishman, Reactor Inspector (Responsible Inspector) Date

R. T. Carlson for 3/4/70
J. H. Tillou, Reactor Inspector (Construction) Date

D.E. Whitesell 3/4/70
D. E. Whitesell, Reactor Inspector (Construction) Date

Reviewed By : R. T. Carlson 3/4/70
R. T. Carlson, Senior Reactor Inspector Date

Proprietary Information: None

SUMMARY

The status of construction was reported by the licensee to be 23% complete. (Section II.A.)

The UE&C site QC personnel did not display the enthusiasm previously observed. (Section II.B.2.)

The site QA organization is being enlarged by the Wedco QC organization which is currently functioning as an additional level of QC at the site. Wedco has developed a "rough draft" of their QA manual. This manual was not reviewed by the inspectors because it had not been reviewed and approved by Westinghouse and Con Ed. (Section II. B.3.)

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The QC surveillance efforts of U. S. Testing Company (USTC) were audited and found to be in accordance with the QA plan. Con Ed's review of these reports indicates more attention is being given to the surveillance efforts of USTC. (Section II.C.1 and 2)

Review of records indicated an identified problem in the containment vessel liner regarding out-of-round and tilting of penetration sleeves. Detailed surveys are being conducted and the subcontractor (CB&I) has been directed to develop a procedure for correction of the problem. (Section II.C.1.)

The CO audit of the substitute batch plant indicated one-half the plant to be semi-automated with properly calibrated weighing equipment. The second half of the batch plant was manually controlled and no evidence of calibration of weighing equipment was found. Instruction had been given to use only concrete from the automated side of the plant. Concrete placement records indicate high rejection rates ($\simeq$20%) since the start of supplying concrete from the substitute plant. Compression test results representing concrete from the new batch plant range from 3180 to 3850 psi for the seven-day test on 3000 psi design mix. Batch plant and truck tickets audited by the inspectors showed numerous errors, changes and omissions. (Addendum I, Paragraph I.A.)

Additional QC efforts have been implemented at the concrete placement site and appear to be adequate. (Addendum I, Paragraph I.B.)

No evidence was found that Westinghouse, Wedco or UE&C have written procedures to control the shop drawings and fabricators spool and isometric drawings. No evidence was found that written procedures have been prepared to define the routing of field changes. (Addendum II, Criterion V)

Written procedures for Document Control were not found on site for Westinghouse, Wedco and UE&C; however, a system is in effect that meets the inspectors understanding of both Appendix B to 10 CFR 50 and the application. (Addendum II, Criterion VI)

Written procedures for frequencies of calibration were not found on site for Westinghouse, Wedco and UE&C. A laboratory for calibration of test equipment is maintained on site by Wedco and calibration data is available but no frequency of calibration is specified. (Addendum II, Criteria XI and XII)

No evidence was found on site of written procedures to establish responsibilities for receiving, inspection, handling and storage other than that stipulated in certain purchase orders. Objective evidence was found to show that receiving inspections are made, by whom and the date. Records indicate that equipment is being inspected, serviced and maintained in accordance with manufacturer's recommendations. (Addendum II, Criterion XIII)

No evidence was found on site that Westinghouse or Wedco have developed written procedures for planned and systematic auditing of the QC efforts in accordance with the application. UE&C has procedures (QA-5 & 8) for auditing of site activities but no evidence that these audits are being performed was found. (Addendum II, Criterion XVIII)

DETAILS

I. Scope of Visit

A routine announced inspection was made of the 3025 Mwt pressurized water power reactor (Indian Point No. 3) under construction at Buchanan, N. Y. The purpose of the inspection was to implement appropriate sections of PI 3800/2 and follow up on items previously identified* in the initial quality assurance inspection.

Addenda I and II to this report were contributed by Messrs. Tillou and Whitesell, respectively.

The following persons were contacted during the inspection:

Consolidated Edison Company (Con Ed)

Mr. J. A. Corcoran, Site Superintendent
Mr. E. J. Dadson, QA Engineer
Mr. F. M. Matra, IP-3 Project Superintendent
Mr. R. M. Schuster, QC Engineer (Welding)
Mr. E. Grikson, QC Engineer (Mechanical)

Wedco Corporation (Wedco)

Mr. M. L. Snow, Manager, QA and Reliability
Mr. T. A. Lawson, QA Engineer
Mr. J. P. Knight, QA Engineer (Planning)
Mr. S. M. Roberts, Reliability Engineer

*CO Report Nos. 286/69-9 and 286/70-1.

Mr. T. Nader, QC Engineer (Welding)
Mr. B. Sink, Millwright Supervisor
Mr. P. Wolf, Systems Reliability Engineer

United Engineers and Constructors (UE&C)

Mr. J. Fant, Site QC Engineer
Mr. J. Gasparich, QC Inspector (Civil-Structural)
Mr. D. Smith, QC Engineer (Welding)
Mr. R. Phillips, QC Engineer
Mr. J. Schmidt, Record Clerk

U. S. Testing Company (USTC)

Mr. L. Lovett, Structural Engineer

Pittsburgh Testing Laboratory (PTL)

Mr. R. Sutherland, IP-3 Supervisor
Mr. J. Tedesco, Batch Plant QC Technician
Mr. J. McQue, Concrete Placement Technician

Wescon Concrete Corporation (Wescon)

Mr. J. O'Brien, QC Coordinator
Mr. J. Farley, Facility Superintendent

II. Results of Visit

A. Status of Construction

The status of construction is reported by the licensee to be 23% complete. The containment building liner plate has been erected to elevation 86 feet and the subcontractor (CB&I) has left the site pending completion of internal construction and outside wall concreting. The polar crane wall has been completed to elevation 64 feet. Rebar and forming for the polar crane wall is continuing on two opposite quarter sections to the final elevation (95 feet). Rebar has been placed for the reactor pit wall.

The primary auxiliary building walls and decks have been poured to the second level with forming and rebar being placed for continuing the structure.

The turbine hall structural steel is 99% complete and all but the SE corner of the roof is completed. Work is progressing on the condenser supports.

The intake structure and discharge canal is essentially complete including the deicing piping. Final concreting operations on the coverings for the piping was in progress.

B. Administration and Organization

1. Con Ed

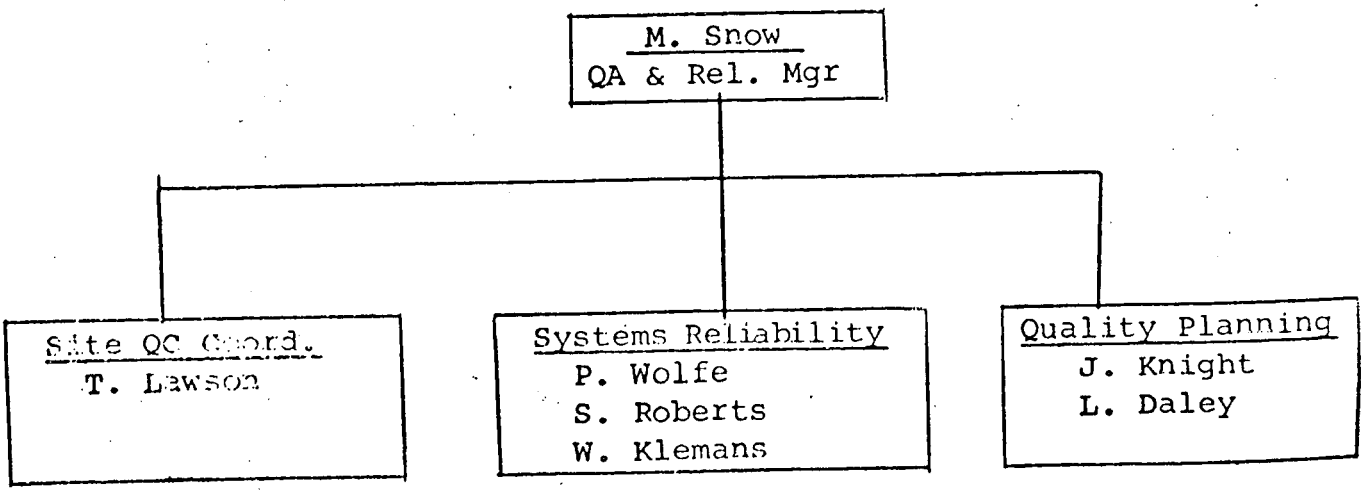
Con Ed has added another mechanical inspector to the QC inspection force and is in the process of hiring an administrative clerk.

2. UE&C

The organization of UE&C has not changed on site. The enthusiasm which was previously shown by the UE&C organization was not evident during this inspection. No specific causes were identified and the requirements of the QA plan are being generally accomplished. CO:I will follow this closely.

3. Wedco

The on-site Wedco organization at present consists of QA and Reliability Manager, Mr. Mel Snow, and six QC personnel. The organization is as outlined below:



Efforts continue to hire additional qualified personnel. Wedco is becoming more involved with QC activities on site and is the contact for quality matters for Con Ed. Wedco essentially directs the QC efforts of the UE&C QC organization and appears to strengthen the QC efforts on site.

Wedco has developed the rough draft of their QA manual which will be submitted to Westinghouse and Con Ed for review and comment. The manual is a generalized outline of their proposed program and will be supplemented by specific procedures, where, and as required. No target date was established as to when this manual would be ready for implementation. The QA manual was not reviewed in depth because review by Westinghouse and Con Ed had not been completed.

There was no evidence found that Westinghouse has reviewed UE&C's QA-QC procedures, as stipulated in the PSAR. Everyone in Westinghouse's site organization is aware that the procedures have been submitted for review and comment, but no evidence of formal or official action could be found at the site. Mr. Snow stated that these documents were located at UE&C in Philadelphia and Westinghouse in Pittsburgh. CO:I will followup on this item during subsequent inspections.

C. Records Audit

1. Con Ed

The Con Ed field QA records were audited for compliance to the application and procedures QAP-5 and QAP-7. This included field surveillance reports, storage area review records, field nonconformance reports and the IP-3 monitoring plan. The results of this review revealed 10 nonconformance reports outstanding. These items were minor irregularities which required corrective action. Adequate corrective actions were indicated and were well documented. QA procedures were being followed and the system appears to be functioning as outlined in the procedures.

Nonconformance No. 10 deals with the containment liner out-of-round and containment penetrations deviating from tolerances of tilt in the horizontal and vertical planes. This item was discovered by the QC group and documented on the field nonconformance report. The out-of-round tolerance is ± 2 inches and actual measured dimensions are greater than ± 4 inches in one area. Several penetration sleeves were found to be tilted in the horizontal and vertical planes from 3/8 of an inch to 2 inches which is above tolerances. The exact number of sleeves out of tolerance has not been identified. Detailed surveys are being conducted to determine the magnitude of the problem. The subcontractor (CB&I) has been instructed to develop a repair procedure and submit it to UE&C, Westinghouse and Con Ed for approval. Continued follow-up action will be accomplished by CO:I on this item.

2. USTC QC Surveillance Reports

Review of USTC surveillance reports for the period November 1968 - January 1970 was conducted. These reports covered surveillance of concreting, vendor supplied items (crane parts), rebar and Cadwelding. Reports indicated USTC audits are being performed in accordance with the plan and are comprehensive in nature. Three reports were in the "hold" file due to errors in the reports. Two errors were typographic and one was erroneously assigned an IP-3 number when it concerned IP-2. Improvement is indicated in review of USTC reports by Con Ed and each report is initialed by at least three members of the Con Ed QC organization on site showing correction of a previously identified* problem area.

D. Exit Interview

An exit interview was held with Messrs. Corcoran, Matra, and Dadson of Con Ed and Messrs. Snow, Lawson and Knight of Wedco on January 28, 1970. The following significant items were discussed:

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*CO Report No. 286/69-7.

1. The inspectors stated the enthusiasm which was previously in evidence in the UE&C QC organization was not now evident. Messrs. Corcoran and Snow stated they were aware of this and actions were planned to correct this loss of extra effort.

2. The inspectors stated that no formal report of audit of the substitute concrete batch plant was available for inspection. Mr. Corcoran stated he had requested Wedco to provide this report. Mr. Snow stated that UE&C and their subcontractor, PTL, had made the survey but could not provide the formal report. Followup action will be accomplished by CO:I.

3. The inspectors pointed out the truck tickets for concrete delivered to the site contained many errors, changes and omissions which indicate a lack of audit of these records. Mr. Corcoran stated he would investigate this matter and correct as necessary. Mr. Corcoran stated Con Ed was convinced the concrete being placed was of excellent quality and Con Ed would continue to insure only concrete meeting the specifications would be placed.

4. The inspectors stated that no formal procedure was found for control of field changes or deviations to specifications or drawings. Mr. Snow stated this would be covered in the Wedco QA Manual when completed.

5. The inspectors stated that the frequency of calibration of test instruments was not specified. Mr. Snow stated this would be covered in the Wedco QA Manual.

6. The inspectors informed Con Ed that Westinghouse, Wedco and UE&C had not implemented a formal audit program of the site activities to date. Messrs. Corcoran and Snow stated this would be corrected in the near future.

Mr. Heishman discussed items 4, 5 and 6 with Mr. J. Grob, Chief Mechanical Engineer, Con Ed by telephone on January 29, 1970. Mr. Grob stated he was writing a letter to Westinghouse on these items and would inform Region I of the results.

The responsible inspector discussed the following items with Mr. Corcoran by telephone on February 20, 1970:

1. The inspector asked if any concrete from the manual side of the batch plant had been placed. Mr. Corcoran stated that instructions had been given to the batch plant inspector to identify on the truck slips any concrete from the manual side of the plant. No record of any concrete from the manual plant has been identified by Con Ed. Mr. Corcoran stated the primary batch plant at Verplanck, New York was scheduled to be operational on February 24, 1970.

2. The inspector stated a followup inspection on the items discussed in the exit interview on January 28, 1970, would be scheduled in the near future. Mr. Corcoran stated he would inform Westinghouse to be prepared for the inspection.

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ADDENDUM I

Attachment C - Containment
PI 3800/2

I. Concrete (4600)

A. Implementation of QA Program (4605.03)

Due to the extreme weather conditions during the early portion of January, the batch plant located at Verplanck, New York failed and an alternate source was required. WesCon Corporation representatives requested approval on January 7, 1970, to utilize their home batch plant in Tarrytown, New York, which required a transportation of the mixing concrete over a 21 mile run. U. S. Testing Laboratories, Wedco Corporation representative, Pittsburgh Testing Laboratory (PTL) and UE&C representatives all agreed they would survey the Tarrytown batch plant to verify its qualifications to produce controlled concrete to ASTM C-94. Since the licensee recognized the possibility existed that there could be lack of control over the mixes, a PTL representative was placed on a full-time basis at the Tarrytown batch plant. UE&C was instructed by Con Ed to assign additional personnel to the actual placement location of concrete on site and to exert special quality control measures in evaluating the concrete prior to its placement within the forms. A survey was made by PTL of the new batch plant but the written documentation was not completed at the time of the inspection. During the CO inspector's visit to the new batch plant, it was noted that one-half of the plant was a semi-automated tape controlled operation with properly calibrated measuring equipment. The second side of this batch plant is a manually controlled operation and of indeterminate age with very primitive manual controls. There was no evidence that the measuring devices on the manual plant had been calibrated.

Subsequent telephone conversations by the inspector with Mr. Corcoran at the site revealed that no concrete from the manual plant has been placed. Mr. Corcoran stated the primary batch plant at Verplanck, New York was scheduled to reopen on February 24, 1970.

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ADDENDUM I

During the first day's pour, the PTL representative on site rejected several loads of concrete from the new source for low temperature, the length of time enroute, or excessive slump tests.

Concrete placement at the site is governed by the UE&C specifications No. 9321-05-13-1, No. 9321-05-69-1 and QA-5 (field quality control). These two specifications and the QC procedure provide detailed inspection requirements for the preparation and records of acceptability of the concrete location, the use and receipt of the proper mix from the batch plant and the minimum requirements for the labor necessary prior to the pouring of concrete in any particular location.

The compression test results from concrete cylinders representing these first pours of concrete from the new batch plant, showed a range of breaks from 3180 to 3850 psi. Since these were preliminary breaks on 3000 psi concrete, it is considered that the concrete placed from the new batch plant will cure out to an adequate figure.

Batch plant and truck tickets covering all loads delivered on January 8, 1970, which described the materials, the mix, the temperature, the specifications, the class, the slump tests and mixing time for each load, were reviewed. These are prepared by a PTL representative at the batch plant and completed by the PTL and UE&C representatives at the placement site. Many errors, changes and omissions were found in these records.

The UE&C procedures require that 3000 psi concrete be placed at temperatures not below 60° F. However, three loads of concrete were placed on January 9, 1970, at a temperature of 54° F. This placement was made after approval by the Wedco structural engineer based on American Concrete Institute recommendations that it is acceptable to place concrete down to 50° F minimum temperature. The Wedco quality organization prepared a report justifying the placement of these three loads of concrete.

During the period January 8 thru 15, 1970, a total of 18 loads of concrete was rejected for being at a temperature below 50° F. These loads were returned to the batch plant for "dumping". The

ADDENDUM I

PSAR called for concrete slump tests to be made from each truck load of material delivered to the site. This was later amended and the UE&C specification calls presently for three slump test samples to be made for each 100 yards of concrete placed. However, due to the problems encountered in the change of source to the substitute batch plant in Tarrytown, the UE&C quality representative at site has required that his representatives conduct a slump test sample from each truck load of material supplied.

Concrete placement at the site is constantly monitored by Mr. J. Gasparich, of UE&C, who is the Civil and Structural Quality Control Engineer for UE&C at site. Assisting him is a concrete technician, Mr. J. Ford, who was trained by UE&C and Mr. Gasparich on Indian Point 2. In addition, PTL has a representative, Mr. J. McQue, who has seven to eight years experience with PTL in concrete inspection and testing.

B. Review of QC System (4605.04,h2,3 and 4)

Although there are limited detailed procedures for placement control, the practices of UE&C, Con Ed and PTL representatives adequately cover the preparation and sign-off of the location for each pour and are considered acceptable. Specification mixes are controlled by a card file used for reference by the PTL representative at the batch plant. These cover all combinations of approved source material in the preparation of 3000 psi concrete. Verification of the mix as delivered to the placement site, is checked by the truck batch slips, the slump tests and finally verified by the cylinder breaks. There is no detailed procedure for the size or the makeup of the concrete placement crew. However, QA-5 and the experience and know-how used by UE&C and PTL representatives, under the surveillance of the Con Ed structural engineer, provides a very close check on this item. In addition to the presence of UE&C, Con Ed and PTL representatives at each site, the Wedco structural QC engineer also audits this activity daily. This practice is considered acceptable.

C. Followup Record Review (4605.05b.7)

The implementation of the placement control practices described above was verified by the inspector's review of sign-off records for the placement site approved by the quality control engineer, the electrical supervisor and the structural supervisors for UE&C. The PTL batch plant and mixing truck slips were also reviewed, as were the seven-day cylinder break records, to verify the acceptability of the concrete after placement.

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ADDENDUM II

This portion of the inspection report is a followup to the in-depth quality assurance inspection made November 17-21, 1969.* For continuity of reporting, the results of this part of the inspection are tabulated under the appropriate criteria utilizing only those criteria requiring followup action.

Criterion V - Instructions, Procedures and Drawings

A. Discussion

1. Westinghouse, Wedco and UE&C

There was no evidence that Westinghouse, Wedco or UE&C have written procedures to control the shop drawings and fabricators spool and isometric drawings. The isometric drawings are usually used to denote the inspection and test status of a particular system as well as the index for the NDT documentation.

There was no evidence that written procedures have been prepared to define the routing of all field changes or deviations to ensure that the responsible design discipline has reviewed such changes and documented their evaluation and instructions relative thereto.

The pipe fabricator's spool and isometric drawings are transmitted to Courter, the piping contractor, and UE&C's QC welding engineer. There was no indication that these drawings, or revisions, were controlled in any manner. Wedco identified this omission in one of their site audits. The inspector was advised by Mr. T. A. Lawson, QC Engineer, Wedco, that all field changes or deviations were routed to the cognizant design engineer for evaluation and instructions, but no evidence could be found to support this claim.

*CO Report No. 286/69-9.

B. Findings

1. Westinghouse, Wedco and UE&C

A system of instructions, procedures and drawings regarding control of shop drawings and field changes or deviations was not in accordance with the inspector's understanding of Appendix B or the application.

Criterion VI - Document Control

A. Discussion

1. Con Ed

Con Ed has a card file for each document issued for use at the site. As drawings, specifications, etc., are revised, the cards are updated to show revision number, date of approval, date received at site, and the initial of the individual responsible for maintaining the files current and retrieval of the voided documents. This system is part of Con Ed's surveillance and auditing program to ensure that the latest revision of documents are being used in the work.

2. Westinghouse, Wedco and UE&C

There was no evidence that Westinghouse, Wedco, or UE&C have developed written procedures to control the receipt, distribution and retrieval of revised documents.

Objective evidence was found that a system for close control of documents is being used. The system includes logs of documents received, the distribution list of the documents and requires each organization and craft supervisor, date and sign for each issue of documents received.

A card file is maintained for each document issued, showing the revision number, revision date, date received at the site, and the initial of the individual responsible for maintaining the files current, and retrieving the voided documents.

B. Findings

1. Con Ed

Con Ed has implemented part 4.3.2.g of their procedure No. QAP-5, relative to the surveillance inspection of drawings and specifications.

2. Westinghouse, Wedco and UE&C

Although written procedures do not exist, a system has been implemented that meets the inspector's interpretation of the intent of both Appendix B to 10 CFR 50 and the PSAR commitments.

Criterion IX - Control of Special Processes

A. Discussion

1. Con Ed

Audit reports relative to welding procedures, qualifications, welder's qualifications, heat treat records in accordance with QAP-5, were inspected. Records were complete and detailed.

2. Westinghouse and Wedco

Review of purchase specifications provided objective evidence that applicable codes, inspections, heat treating tests, cleaning, NDT requirements and acceptance standards, are being provided for. These specifications also stipulate the documentation the fabricator is obligated to submit relative to these activities.

3. UE&C

UE&C have developed and qualified all welding procedures being used at the site. These procedures stipulate any stress relief or heat treating that is required and also has detailed instructions relative thereto. Procedures for cleaning pumps, and piping are also available. The

qualification documents for both the several procedures and welder performance were checked and found to be in accordance with Section IX of the ASME code.

B. Findings

1. Con Ed

Records indicate compliance with the application and the inspector's understanding of Appendix B, 10 CFR 50.

2. Westinghouse, Wedco and UE&C

Review of specifications, procedures and relative documentation, provided objective evidence that the intent of Appendix B and the PSAR, are being met within the inspector's interpretation.

Criterion X - Inspection

A. Discussion

1. Con Ed

Con Ed, due to the "turnkey" contract, are only committed to surveillance, monitoring and auditing the various inspection responsibilities of the principal and sub-tier contractors on site. Review of Con Ed's surveillance and auditing reports indicate that they are doing this.

2. Westinghouse and Wedco

Inspection requirements together with acceptance standards are stipulated in the engineering and purchase specifications. The documentation relative to the inspection activities are also stipulated in these documents.

3. UE&C

Inspection requirements together with the required documentation and acceptance standards are stipulated in both specifications, and special procedures such as welding, cleaning, etc. Audits of the inspection reports provided

objective evidence that the inspections are being performed in accordance with these stipulated requirements.

B. Findings

1. Con Ed, Westinghouse, Wedco and UE&C

Objective evidence was found that the inspection program and activities are being performed and documented within the intent of the inspector's interpretation of Appendix B and the PSAR.

Criterion XI - Test Control

A. Discussion

1. Con Ed

Con Ed's surveillance and audit reports provide objective evidence of their involvement relative to the test programs implemented by the principal and sub-tier contractors.

2. Westinghouse and Wedco

Tests, like inspections, are stipulated in the engineering and purchase specifications which stipulate specific tests and test requirements of the applicable codes. The required documentation of the test results are also provided.

3. UE&C

Required tests, together with the test methods, are stipulated in the engineering specifications, e.g., earthwork and concrete specifications. The required documentation is also provided. The methods of testing stipulated, e.g., ASTM-C33 etc., provide detailed written instructions as to equipment required, test performance, calculations and reporting.

In reviewing these specifications, it was noted that the frequency that such stipulated tests were to be made, had not been established.

B. Findings

1. Con Ed, Westinghouse, Wedco and UE&C

Review of laboratory reports and other test result documentation provided objective evidence that, except for the lack of stipulated frequencies, tests are being made and their results reported in accordance with the inspector's interpretation of the intent of Appendix B and the application.

Criterion XII - Calibration and Test Equipment

A. Discussion

1. Westinghouse and Wedco

There was no evidence of specific requirements for the calibration of testing equipment and tools used in tests performed at the site. Wedco does have an instrumentation lab for calibrating the electrical instrumentation that will be installed for operation requirements.

2. UE&C

Except as might be established by the stipulated ASTM testing standards, there was no evidence that a written procedure or requirement existed for the frequency for calibration of the various measuring and test equipment. UE&C requires that a certificate of calibration be posted for the field lab equipment.

The posted certificates show only the date the equipment was calibrated, but without a stipulated frequency, there is no evidence that the equipment is within its calibration period.

B. Findings

1. Westinghouse, Wedco and UE&C

The omission of stipulated frequencies for calibrating test and measuring equipment fails to meet the inspector's interpretation of the intent of either Appendix B or the application.

Criterion XIII - Handling, Storage, etc.

A. Discussion

1. Con Ed

Con Ed is conducting audits of handling and storage in accordance with QAP-5. Records are complete and detailed and indicate the required attention is being given to this area.

2. Westinghouse and Wedco

There was no evidence of a written procedure to establish responsibilities and duties relative to receiving, inspection, handling, and storage of the various materials, components and equipment, other than those stipulated in certain purchase orders.

Review of the receiving documents and inspection reports provide objective evidence that receiving inspections are made, by whom and the date. A tour of the warehouse and storage areas provided evidence that followup maintenance inspections are made for the purpose of stroking shafts on rotating equipment, verifying that oil is maintained on bearings, that heaters are provided for electric motors, inert gas blanket or dessicant is maintained on equipment requiring environmental control. A log is maintained by the Millwright Superintendent showing the date each piece of equipment is serviced and the initials of the individual who performed the work. The inspector was informed that the overall storage responsibility has been assigned to Courter, Mechanical Contractor, who maintains a full-time force of three Millwrights in the storage area and warehouses, to ensure, and maintain, stipulated storage requirements relative to protection, environmental requirements, etc. Wedco maintains close control of the storage areas, by assigning a full-time Millwright Supervisor, to monitor the storage activities.

3. UE&C

UE&C's field quality control procedure No. QA-5, stipulates certain inspection requirements and documents review, relative to the receipt of materials, components and equipment. Review of the receiving reports and deficiency reports provided evidence that this procedure is generally being followed.

The receipt, storage and distribution of coated electrodes was followed and found to be both functional and effective, and in accordance with Section III-A-6 of procedure No. QA-5.

B. Findings

1. Con Ed and UE&C

Con Ed and UE&C are complying with their procedures which indicate compliance with the inspector's understanding of Appendix B and the application.

2. Westinghouse and Wedco

Although specific procedures for storage and handling are almost non-existent except for manufacturer's recommendations, a system has been implemented that appears to be effective and meet the inspector's interpretation of the intent of Appendix B to the PSAR.

Criterion XVIII - Audits

A. Discussion

1. Westinghouse and Wedco

The PSAR stipulates that Westinghouse has a responsibility to audit the field quality control activities. There was no evidence that Westinghouse or Wedco has developed a written procedure for a planned and systematic auditing program on a periodic basis.

Review of the audit reports indicates the results of a walk-through inspection, rather than following a check list or

a preplanned audit of a specific fabrication or erection activity.

2. UE&C

Under Section III-B-11 of the field quality control procedure QA-5, UE&C stipulates that welding and nondestructive testing relative to the fabrication of the liner will be audited by UE&C. There is no objective evidence that such audits have been made. Mr. J. Gasparich, Civil-Structural QC inspector responsible for the surveillance and auditing of this work maintains a hand-written log of his daily activities, and does not submit any formal documentation of his surveillance and audits. His daily log did not indicate that CB&I had ever been audited by UE&C relative to adherence to codes, procedures and NDT examinations.

While UE&C has an internal audit procedure No. QA-8, there was no evidence that written procedures, for a preplanned, systematic audit program, exists, for guidance of the field QC organization's audits of the site activities of the principal and sub-tier contractors.

B. Findings

1. Westinghouse, Wedco and UE&C

Neither Westinghouse, Wedco nor UE&C have implemented an audit program of the site activities that meets the inspector's interpretation of the intent of Appendix B.