

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS

REGION III

Report of Construction Inspection

RO Inspection Report No. 050-329/73-11
RC Inspection Report No. 050-330/73-11

Licensee: Consumers Power Company
1945 Parnall Road
Jackson, Michigan 49201

Midland Plant, Units 1 and 2
Midland, Michigan

Licenses No. CTPR-81
and No. CPPR-82
Category: A

Type of Licensee: PWR (B&W) - Unit 1, 650 Mwe
Unit 2, 818 Mwe

Type of Inspection: Special, Announced

Dates of Inspection: December 6 - 7, 1973

Dates of Previous Inspection: November 6 - 8, 15, and 20 - 21, 1973

Principal Inspector: R. A. Rohrbacher

R. A. Rohrbacher
12-11-73
(Date)

Accompanying Inspectors: C. C. Williams

C. C. Williams
12-11-73
(Date)

D. E. Whitesell
D. E. Whitesell

12-12-73

Other Accompanying Personnel: W. E. Vetter

Reviewed By: W. E. Vetter, Chief
Reactor Construction Branch

W. E. Vetter
12-11-73
(Date)

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SUMMARY OF FINDINGS

Enforcement Action

A. Violations

No violations of AEC requirements were identified during the inspection.

B. Safety Matters

No safety matters were identified during the inspection.

Licensee Action on Previously Identified Enforcement Matters

This inspection report covers a special inspection to determine the status of the licensee's corrective action relative to QA/QC program deficiencies and specific, apparent violations identified in conjunction with site Cadwelding activities. These matters are identified in RO Inspection Report No. 050-329/73-10 and No. 050-330/73-10 and are discussed in Paragraph 2 of this report.

Design Changes

No design changes were identified during the inspection.

Unusual Occurrences

No unusual occurrences were identified during the inspection.

A. Current Findings

1. Facility Status

The engineering and construction status remains essentially unchanged since the previous inspection on November 20 - 21, 1973. Cadwelding activities remain suspended pending a further order and determination by the Director of Regulation.

2. Current Construction Activities

a. Class I Construction

The following Class I construction activities were in progress during the inspection.

- (1) Activities associated with the field welding of containment liner plate assemblies.
- (2) Installation of rebar support brackets for base slab upper rebar layers.
- (3) Forming for the Unit No. 2 base slab concrete pour.
- (4) Upgrading and expansion of Cadweld material storage area.

b. Other Construction Activities

Except for a small amount of site earthwork, construction activities (other than discussed in 2.a., above) were observed to be minimal. According to the licensee, the construction force at the site is approximately 200 workers in all categories.

3. Personnel Changes

Significant personnel changes have been made and are discussed in the Management Interview Section of this report.

B. Unresolved Matters

During routine site construction activity surveillance by Consumers Power Company (CP) a procedural discrepancy, relative to approval of work procedures, was identified. The licensee was in the process of investigating this matter at the time of the inspection. (Details, Paragraph 3.a(4))

C. Status of Previously Identified Unresolved Matters

1. Cadweld Personnel Qualifications (RO Inspection Report No. 050-329/73-10 and No. 050-330/73-10, Section B.1)

As previously reported, personnel qualification measures for Cadwelders were incomplete in that these measures did not specify conditions and requirements for Cadwelder requalification in the event that unacceptable work was demonstrated. During this inspection, the licensee's representatives provided evidence of adequate, corrective action in that Bechtel Corporation (Bechtel) Specification No. C-231 had been revised to reflect requalification requirements. The specification

revisions were determined to be in general accord with AEC Regulatory Guide 1.10 and are contained within Bechtel Specification C-231, Paragraphs 10.8.1 and 10.8.2, Revision 4. This matter is considered to have been resolved.

2. Inconsistencies Between Design Documents and the PSAR (RO Inspection Report No. 050-320/73-10 and No. 050-330/73-10, Section B.2)

A portion of the problem, associated with site Cadwelding activities, involved certain circumstances wherein the Cadwelding procedures were inconsistent with the PSAR and/or the Cadweld manufacturer's recommendations.

During the current inspection, it was determined that the licensee had taken steps to assure that recurrent like situations do not occur. Specifically: (1) the licensee had requested that Bechtel develop instructions requiring that work specifications be reviewed for this possibility prior to the conduct of Class I work, (2) the licensee had established provisions for CP QA review of work procedures which is to include attention to this matter, and (3) the licensee had established procedures for attention to this matter in the form of audit of Class I work on an intensified scale.

3. Aggregate Storage (RO Inspection Report No. 050-329/73-10 and No. 050-330-73-10)

As previously reported, the concrete aggregate pile (3/4 inch) was observed to be questionably consistent with ACI-304 requirements. This condition was reported to be controlled and temporary, due to rework of the aggregate storage facility. This matter is now documented in accordance with the site QA program and proper steps have been taken to preclude use of nonstandard aggregate. We will review this matter during the next RO inspection.

Other previously unresolved matters, not applicable to this special inspection, will be examined during the next routine inspection.

Management Interview

Two management interviews were held at the conclusion of the inspection and are discussed under A and B, below.

A. The first management interview was conducted just prior to the conclusion of the inspection to discuss the status of corrective

action on the part of CP corporate management to identify and deal with generic quality assurance program deficiencies, which appeared to be instrumentally related to the violations associated with Cadwelding. CP personnel in attendance were as follows:

Mr. S. H. Howell, Vice President
Mr. W. E. Kessler, Project Manager
Mr. G. S. Keeley, Director of Quality Assurance Services
Mr. T. C. Cooke, Project Superintendent

The meeting members were informed that a review of CP's internal correspondence had led to a conclusion, on the part of the inspectors, that CP management personnel had adequately analyzed the circumstances associated with the violations and discrepancies identified during the RO:III review of site Cadwelding activities, and had prescribed corrective action measures which, if properly implemented, provide adequate assurance that future problems of a similar nature should not occur.

Mr. Howell commented that the program of corrective action, reviewed during the inspection by the inspectors, reflected a "long, hard, look" at the events and circumstances associated with site Cadwelding and that this kind of management involvement was to continue and, if necessary, be expanded.

Mr. Howell added that, in addition to the corrective action measures just discussed, further steps had been taken to assure that implementation of the Midland site quality assurance/quality control program was consistent with AEC requirements and good practice. He explained that:

1. Management, at his level and above, had concluded that nothing short of full dedication to quality assurance/quality control programs, on their part, was acceptable in the interest of proper construction of the Midland Plant.
2. Two additional personnel, considered to be very highly qualified, have been assigned from current duties in the corporate offices to full time QA duties at the Midland site.
3. Immediate steps are to be taken to procure outside services, from organizations providing QA/QC services, to provide help, as needed, to assure that a proper QA/QC program was maintained at the Midland site.
4. Certain steps have been taken in the way of personnel action,

relative to existing personnel, to assure that a strong QA/QC program is maintained at the Midland construction site.

5. A meeting was scheduled to occur during the afternoon of December 7, 1973 (the last day of the current inspection) with the Architect-Engineer (A-E) for the purpose of establishing a "clear, unmistakable" position that construction activities at the Midland site are not to be conducted without full attention to all quality assurance/quality control program requirements, and that immediate steps must be taken by the A-E to assure that this issue is properly accommodated.

Mr. Howell added that four, top-ranking members of the A-E corporate structure had traveled from the west coast for the specific purpose of participating in the subject meeting.

As a final item of discussion during the first management meeting, Messrs. Kessler and Keeley identified a need for further involvement, on their part, in the area of fully understanding the AEC inspection program and suggested that, perhaps, a more "forceful" approach on the part of RO:III was needed, i.e., greater emphasis on the part of inspectors in the area of "must performance." The inspectors stated that they were in general agreement with comments by Messrs. Kessler and Keeley and said that every effort would be made to be as clear and precise as possible and suggested that increased communication between CP personnel and the inspectors, initiated by CP whenever questionable situations arise, might be helpful.

B. Second Management Interview

A second management interview was held at the conclusion of the inspection. Personnel in attendance were as follows:

Consumers Power Company (CP)

S. H. Howell, Vice President
W. E. Kessler, Project Manager - Midland
G. S. Keeley, Director of Quality Assurance Services
T. C. Cooke, Construction Superintendent - Midland
H. W. Slager, Quality Assurance Supervisor - Midland

Bechtel Corporation (Bechtel)

M. M. Krout, Project Manager - Midland
D. R. Johnson, Chief - Field Quality Control Engineer
(San Francisco)
E. E. Felton, Project Superintendent - Midland

P. A. Martinez, Project Engineer - Ann Arbor
T. C. Valenzano, Project Field Engineer

During this management interview, the inspectors identified areas of inspection coverage and commented, in detail, with respect to the scope of inspection coverage. In response to questions on the part of both CP and Bechtel personnel, with respect to the "success or failure" of the current inspection effort, the inspectors explained that the inspection had involved a team effort and that the results of the inspection would require further review in order to provide meaningful answers.

As a final item of discussion, the inspectors pointed out that the circumstances related to what appears to be a procedural discrepancy associated with containment liner plate weld repair activities, called to the inspectors' attention by CP personnel during the inspection, had been reviewed and that a violation of Part 50, Appendix B, may be involved. However, the inspectors added, in view of the fact that CP personnel were in the process of completing an investigation at the time of the inspection, this matter would be classified as "unresolved" and would be fully reviewed during the next routine site inspection.

At the conclusion of the meeting, Mr. Howell questioned the results of the current inspection in terms of whether or not the results were such as to allow continuation of site Cadwelding activities. By way of response, Mr. Howell was informed that the results of the inspection would be thoroughly reviewed and made available to the Director of Regulatory Operations on an expedited schedule, and that an authorization to continue Cadwelding activities can only be initiated by the Director of Regulation in keeping with the provisions of the "Order to Show Cause" dated December 3, 1973, signed by the Director of Regulation.

REPORT DETAILS

Persons Contacted

The following persons, in addition to individuals listed under the Management Interview Section of this report, were contacted during the inspection.

Consumers Power Company (CP)

R. E. Whitaker, Quality Assurance Engineer
J. L. Corley, Field Supervisor
B. H. Peck, Field Supervisor

Bechtel Power Corporation (Bechtel)

C. E. Kinney, Project Field Quality Control Engineer
J. I. Dotson, Project Quality Assurance Engineer
C. F. Clark, Field Engineer - Welding
J. T. Stocks, Welding Engineer
R. A. Grote, Civil Engineer
P. (NMI) Hendrick, Quality Control Engineer
K. Puleto, Mechanical Engineer
J. P. Connolly, Project Field Quality Assurance Engineer
L. R. Albert, Quality Control Engineer

Results of Inspection

This inspection was a special inspection to determine the adequacy of the licensee's overall effort to correct quality assurance/quality control program shortcomings identified during inspections conducted on November 6 - 8, and 20 - 21, 1973. The results of the inspection are as follows:

1. Management Analysis of QA/QC Program Deficiencies and Corrective Action

At the conclusion of the inspection on November 20 - 21, 1973, the licensee was informed that, in addition to certain, specific, corrective action shortcomings, discussed later in this report, (relative to the issue of Cadwelding violations and deficiencies) adequate, corrective action could not be demonstrated in the areas of: (1) management analysis of QA/QC program shortcomings which appear to have led to the Cadwelding activity problems, and (2) management response to such an analysis to assure that future, similar problems in other areas of Class I construction would not occur.

During the current inspection, the licensee provided documented results of an overall QA/QC program analysis, based on violations and discrepancies encountered relative to Cadwelding, and identified a program of corrective action. A review of the subject documents and discussion with management personnel provided the following information.

a. The licensee has concluded that the Cadweld problem materialized as a result of:

- (1) Unclear inspection procedures leading to confusion on the part of personnel responsible for determining the quality of Cadwelding.
- (2) Inconsistent work requirements for Cadwelding with respect to the PSAR, Bechtel specifications, and the Cadweld manufacturer's specifications.
- (3) A lack of review of Bechtel Master Inspection Plans prior to the initiation of Class I work.
- (4) A lack of audit depth on the part of CP QA personnel and the lack of an in-depth, formal site QA audit plan.
- (5) Inadequate training of QA audit personnel.

b. Corrective action relative to Items a(1) through a(5) above, was determined to be as follows:

- (1) Bechtel had been requested to review all procedures prior to the start of each specific Class I work activity, to assure that the procedures are written in a manner such as to avoid confusion.
- (2) Bechtel had been requested to devise a system to assure that work procedures are reviewed to detect situations wherein other documents (such as the PSAR and manufacturer's specifications) contain quality information inconsistent with procedures being used to perform work.
- (3) CP procedures now include a requirement that CP QA personnel review Bechtel Master Inspection Plans covering Class I work and discuss the results of this review, with Bechtel, prior to the initiation of work.
- (4) Three additional CP persons had been assigned to the construction site to provide for in-depth audit of Class I work activities. According to the licensee, all future audits of this nature are

to be conducted in a formal manner and are to be based on 10 CFR Part 50, Appendix B. In addition to the foregoing, the CP quality assurance services director now requires that the corporate office quality assurance services supervisor spend a minimum of one day every two weeks at the construction site.

- (5) The CP quality assurance services director had advised corporate management, in writing, that a need for training QA personnel exists and has stated that training programs will be initiated in the near future.
- c. The information contained in Items a and b, above, reflect internal CP correspondence from the Quality Assurance Services Director, G. Keeley, to Mr. S. H. Howell, Vice President, CP. In response to Mr. Keeley's correspondence, Mr. Howell stated, in a letter to Mr. Keeley, that he concurred with Mr. Keeley's analysis and recommendations and requested that any action not already taken should be taken immediately. Mr. Howell also stated that: "Although, in this case, the specific problem has appeared in the performance of Cadwelds, as we have discussed and as is indicated by your analysis and recommendations, the problem has broader symptomatic aspects to our total quality assurance program and the remainder of the project. I wish to stress this fact, to ensure that everyone has full recognition of it, and that our whole program is critically studied for problems or weaknesses."
- d. In a letter to Bechtel, dated December 4, 1973, Mr. Keeley made a number of "suggestions" designed to require action of a nature such as to assure that QA/QC program weaknesses, identified as a result of the Cadwelding problem, will be corrected. These suggestions are discussed below.
- (1) Bechtel should provide a method for critically relating inspection procedures to acceptance criteria.
 - (2) Master Inspection Plans, generated by Bechtel, are to be sent to CP's quality assurance services personnel for review and comment prior to the start of Class I work activities.
 - (3) Whenever inspection plans require inspection of individual items, records must be maintained to the extent necessary to provide "visibility" that such individual inspection items have been accommodated.
 - (4) CP feels that Bechtel relies too heavily on one or two general documents to cover specific work procedures and believes, in most cases, implementing procedures should stand on their own with a minimum of cross reference.

According to Mr. Keeley, all of the applicable Bechtel personnel (at both Ann Arbor and San Francisco) had reviewed the subject letter, agreed with Mr. Keeley's suggestions, and Bechtel was preparing a reply to this effect. The Bechtel project manager for the Midland Plant confirmed the substance of Mr. Keeley's statement.

2. Corrective Action Relative to Specific Violations and Deficiencies

a. Violations (RO Inspection Report No. 050-239/73-10 and No. 050-330/73-10)

- (1) As previously reported: (1) procedures for Cadwelding and Cadweld inspection were unavailable or inadequate, (2) instructions and procedures for preheating were not properly implemented, and (3) inspection personnel did not demonstrate knowledge and proper implementation of Cadweld acceptance criteria, leading to the acceptance of twelve splices which were either questioned or rejected upon subsequent reexamination.

With respect to the above, the following corrective action had been taken.

- (a) The licensee has now produced approved procedures for Cadwelding and Cadweld inspection activities, which comprehensively relate to all requirements of the specifications, the site QA program, and the manufacturer's instructions and recommendations. The procedures are titled as follows: (1) "Quality Control Procedure No. C-231-1, Inspection of Cadweld Mechanical Splicing of Concrete Reinforcing Steel," dated December 5, 1973, and (2) "Rebar Splicing Instructions for the Operator - Vertical Position and Horizontal Position," dated December 4, 1973.
- (b) Included in the above procedures are specific instructions regarding all Cadwelding preheat requirements and the means for verifying that these requirements have been met.
- (c) All Cadweld inspection personnel have been appropriately retrained. The method of implementing the Cadweld void evaluation criteria has been refined to more accurately relate to actual void dimensions. The licensee had previously committed to a continuous training and evaluation program for all Cadweld inspection personnel. This program is identified as Project Special Provisions (SF/PSP) No. 2, Revision 0, Project No. 7220. A training session for Cadwelding, dated November 14, 1973, covering all areas, was documented. A training session, titled, "Training on How to Measure Voids," dated November 9, 1973, was also documented. The results of this training for

each participant is documented on the "Reinspection Proficiency Exam - Cadwelding of Reinforcement Steel," taken by each participant in the retraining program. This proficiency examination was determined to be comprehensive and representative of work requirements.

In addition to the above, a "Cadweld Reinspection Checklist," providing specific and appropriate instructions to inspectors relative to the Cadweld reinspection activity, was reviewed and determined to be adequately comprehensive.

The status of the twelve Cadwelds, either rejected or identified as questionable through the site Cadweld reinspection effort, is currently documented in Bechtel Nonconforming Reports (NCR's). The disposition of these Cadwelds, which were rejected and/or questioned by the Bechtel site QC personnel, has been reevaluated by the Bechtel Engineering Department. The Engineering Department ordered additional inspection of these Cadwelds, using a "more accurate" method of void determination. The results of this further examination are documented on Bechtel NCR No. C-13. The "more accurate" examination involved the use of a "planimeter." The results of this examination established that nine Cadwelds, previously rejected for excessive metal void areas, i.e., greater than three square inches, actually contain void areas less than three square inches, and these nine Cadwelds have now been accepted.

With respect to one Cadweld previously identified as having excessive porosity, and two Cadwelds previously identified as having no evidence of position reference lines, the Cadweld having porosity has been rejected and is to be replaced while the two Cadwelds with no evidence of reference lines have been accepted through engineering evaluation.

- (2) As previously reported, documented procedures to demonstrate specifically that measures had been established to control handling and issuance of Cadweld splicing material, including the return of unused material, were inadequate or unavailable for review.
- (3) Procedures were not made available for review, relative to control of nonconforming Cadweld material, nor were records available to establish that nonconforming material was properly controlled.

The following corrective action has been taken relative to Items (2) and (3) above:

The licensee has included instructions and procedures for the "storage and handling" of Cadweld materials in the Cadwelding

production and inspection procedures, identified in a(1)(a), above. These instructions include specific reference to Bechtel Procedure No. G-3. This procedure adequately provides instructions and procedures for the identification, handling, controlling, and segregation of nonconforming materials. Further, the Cadweld production and Cadweld inspection procedures, identified in a(1)(a), above, provide specific instructions and procedures and provide for delegation of authority and responsibility regarding the return of unused Cadweld material to storage.

- (4) As previously reported, records were not maintained to furnish evidence of conformance to quality requirements, identified in the Cadwelding specification, No. C-231 (Inspection Plan Form No. QAG6-2A and Material Issuance Control).

The licensee has taken the following corrective action:

- (a) As stated elsewhere in this report, all Cadwelds at the site have been reinspected at least twice, once by Bechtel field engineers and, finally, by the Bechtel QC engineers, for conformance to quality requirements. Corrective action, as appropriate, relative to the results of these reinspections, has been taken as discussed earlier in this section of this report.

During the current inspection, RO:III inspectors personally evaluated a total of 47 Cadwelds in Units 1 and 2 reactor base slabs and found them to be conforming, in all respects, to the requirements. In addition, the inspectors witnessed, during the above activity, a demonstration of the current methods of Cadweld inspection by Bechtel QC inspectors. This demonstration was conducted on Cadwelds randomly selected by the RO inspectors and provided evidence that the QC inspectors were properly qualified.

- (b) The licensee has generated a comprehensive procedure for Cadweld inspection (identified in a(1)(a) above). Further Cadweld inspection report form, QA-G6-2A, is now supported by "Form QC Cadwelds," Revision 1, dated November 29, 1973. Collectively, these forms include all quality requirements identified in the governing specification and inspection plan, plus instructions specifying that conformance to these quality elements must be verified and documented at a time appropriate to the fabrication status of a Cadweld joint. The instructions for the use of the QC Cadweld form are on the back of the form. The records of the reinspection efforts,

implementation of the new record form (QC-Cadwelds) and proper implementation of the new Cadweld production and inspection procedures have adequately resolved RO:III concerns relative to this matter.

b. Deficiencies (RO Inspection Report No. 050-329/73-10 and No. 050-330/73-10)

The Cadwelding deficiencies identified in the above inspection report involved:

- (1) Inadequate provisions for maintaining continued acceptable Cadwelder performance qualifications.
- (2) Inconsistencies between design documents (Bechtel specifications, Manufacturer's instructions, and the PSAR) relative to Cadwelding activities.

Item b(1), above, is discussed in Section C.1 of this inspection report and item b(2), above, is discussed in Section C.2 of this inspection report (both of these deficiencies have been resolved).

3. Identification and Examination of Other Class I Construction Activities at the Site

A tour of the construction site was made by the inspectors to observe Class I construction activities in progress and, subsequently, to review applicable work procedures. The results of this effort are discussed as follows:

a. Field Welding of Containment Building Liner Plate

Activities associated with the field welding of containment liner plate, including welding activities in progress, were observed. A pair of liner plate assemblies, each approximately 80 x 10 feet, were observed on a jig to have been partially welded together (Two of these assemblies are welded together to form an 80 x 20 feet liner sheet). The licensee stated that five pairs of assemblies have been joined by welding, and that two assemblies are partially welded. (Each completed containment building liner is to consist of approximately 75 liner sheets.) Two temporary construction buildings are being used for fit-up, welding, welding inspection, and leak checking. Another construction building is to be used for sand blasting, painting, and additional inspection.

In conjunction with inspection of the containment building liner plate activities, the control and issuance of weld rod was examined. Observation of weld work in progress and inspection of facilities for storage and issuance of weld rod established that applicable quality criteria were being accommodated. Weld rod was properly protected in the field through the use of portable ovens, and a thorough system for storage, identification, and issue of weld rod was being implemented in a central area.

A review of weld rod control records established that weld rod issuance was properly accounted for and that the records were sufficient to "trace" welds, weld rod, and welders to specific areas of liner plate welding.

Work and QC procedures, relative to field welding of containment building liner plate, were reviewed. Except as noted under the Unresolved Matters Section of this report, and discussed in Paragraph (4) below, in regard to a procedural discrepancy, no inadequacies or discrepancies were identified during the review of records. The review included the following:

- (1) Bechtel Specification No. C-111, Revision 1, and as amended. This specification includes welding standards and procedures, NDE standards, and welder qualifications for field welding of containment building liner plate.
- (2) Bechtel Master Plan No. C-L-1 (a to h) and Bechtel Inspection Plan No. C-111. The detailed inspection plan for each containment building liner plate consists of a package of eight pages, along with pertinent data sheets. This inspection plan references applicable codes, standards and specifications, and includes inspection criteria for each activity listed. Separate NDE reports and weld status forms are used for each liner plate.
- (3) Bechtel Welding Filler Metal Control (WFMC-1, Revision 0, May 1973). This procedure specification includes adequate receiving, storage, and dispersal of weld rod relative to liner plate welding.
- (4) At the beginning of the inspection, the CP Director of QA Services provided the inspectors a copy of a letter to him from the CP project superintendent dealing with an apparent procedural discrepancy concerning the issue of a procedure to cover containment building liner plate work activities. A review of this letter, and discussion with the CP field supervisor involved, established that, during work surveillance by the field supervisor on November 13, 1973, a Bechtel workman was observed to be in the process of

repairing liner plate surface defects resulting from the removal of fit-up and plate lifting attachments. According to the CP field supervisor, in response to questioning, the Bechtel workman stated that he was performing the subject work in accordance with Appendix B of Bechtel Procedure No. C-111. Further investigation by the CP field supervisor disclosed that Appendix E of Procedure No. C-111 had not been approved.

Appendix B to Procedure No. C-111 was approved on November 29, 1973, and a review by the inspectors disclosed that the approved procedure was an exact duplicate, in terms of work procedure requirements, of the unapproved procedure in use on November 13, 1973.

Discussions with CP and Bechtel personnel at the conclusion of the inspection indicated that some confusion existed with respect to whether or not the work involved required the use of Appendix B, since the parent procedure included instructions with respect to the specific work in progress observed by the CP field supervisor on November 13. In any event, the licensee was in the process of completing a full investigation and fact finding effort at the conclusion of the inspection and is to provide the results of this effort to facilitate further review of this matter by RO:III during the next routine inspection.

b. Reactor Base Slab Concrete Forms

About 15% of the existing concrete forms for the Unit 1 base slab, installed during 1970, have been replaced with new concrete forms.

Forms for the Unit 2 base slab are about 75% in place. No forms were being placed during the tour of the site. Overall forming work for the base slabs is estimated to be about 50% complete.

Bechtel Specification No. C-321(Q), Revision 0, was reviewed for requirements of erecting forms, placing, finishing, and curing concrete. The specified work is to be verified and documented on Bechtel Form QC-C5. The specification was determined to be adequate for concrete form placement for Class I concrete structures. No Class I concrete activity was observed by the inspector to be in progress during a tour of the construction site.

c. Installation of Rebar Supports

Support brackets for the base slab upper rebar layers are being installed. Brackets were observed being welded into place in Unit 1. The licensee stated that this work was nearing completion for Unit 1 and that it is essentially completed for Unit 2.

d. Cadweld Material Storage

A large, enclosed trailer is being used to store Cadweld materials and accessories at the site. It was observed that all Cadweld materials and accessories were stored on shelves. The enclosed trailer provided for heated and dry storage. A second trailer, presently empty, was nearby. A representative of the licensee stated that this second trailer would provide additional storage space, when required. Gang boxes, with heaters, to contain Cadweld materials removed from the trailers, are to be used in the field. They are presently empty. No Cadweld materials, such as sleeves and powder, were observed at the site outside of the storage trailer.