



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

Midland

February 2, 1982

MEMORANDUM FOR: C. C. Williams, Chief, Plant Systems Section

FROM: Charles E. Norelius, Director, Division of Engineering  
and Technical Inspection

SUBJECT: INSPECTION PLANS FOR UNDERPINNING ACTIVITIES FOR  
SOILS WORK AT THE MIDLAND SITE

This is to confirm our discussions that we plan to dedicate Ross Landsman as the Region III inspector responsible for conducting the inspection of underpinning activities at the Midland site. In connection with this assignment, I request that you do the following:

1. Prepare a special inspection plan outlining the types of inspections and frequency of inspections to be performed at the Midland site. This plan should be developed in conjunction with NRR to assure that it covers the unique technical issues they foresee in this project, and should be tied to the planned work schedule which has been received from Midland. This plan should include the types of specialized inspections we anticipate which may require other types of technical specialists.
2. Even at such times as specialists are involved, I would like for Ross to participate in such inspections to assure continuity throughout this entire project.
3. As part of the schedule you propose, I would like an estimate of the time you think that will be required to carry out this inspection effort.

*Charles E. Norelius*

Charles E. Norelius, Director  
Division of Engineering and  
Technical Inspection

cc: E. Jordan, IE  
G. Gallagher, IE ✓  
J. Gilray, NRR  
J. Knight, NRR  
R. Tedesco, NRR  
R. Spessard, RIII  
B. Davis, RIII  
W. Little, RIII

COPY



Consumers  
Power  
Company

James W Cook  
Vice President - Projects, Engineering  
and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

January 7, 1982

Harold R Denton, Director  
Office of Nuclear Reactor Regulation  
US Nuclear Regulatory Commission  
Washington, DC 20555

J G Keppler  
Administrator, Region III  
US Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

orig + 1

✓		
✓		
✓	has	
✓		

MIDLAND PROJECT

MIDLAND DOCKET NOS 50-329, 50-330

GENERAL QUALITY PLAN FOR THE UNDERPINNING ACTIVITIES, AND  
QUALITY PLANS AND Q-LIST ACTIVITIES FOR SERVICE WATER  
PUMP STRUCTURE AND AUXILIARY BUILDING UNDERPINNING ACTIVITIES  
FILE 0486.15, 0.4.9.20 SERIAL 15424

- ENCLOSURES:
- (1) GENERAL QUALITY PLAN FOR UNDERPINNING ACTIVITIES
  - (2) QUALITY PLAN AND Q-LISTED ACTIVITIES FOR SPECIFICATION C-194
  - (3) QUALITY PLAN AND Q-LISTED ACTIVITIES FOR SPECIFICATION C-195

The general Quality Plan and the quality plans for the activities associated with the underpinning of the service water pump structure and auxiliary building have been developed. The quality plans for the Service Water Pump Structure and the Auxiliary Building underpinning will be incorporated in Technical Specifications C-194(Q) and C-195(Q), respectively. These quality plans also include the Q-listed activities for the work covered in the specifications.

The quality plans for the specifications will be controlled as the specifications are controlled, while the general Quality Plan will be controlled as a separate document.

~~0201150473~~ 32pp

The NRC's timely consideration of the enclosed documents would be appreciated. A presentation of these quality plans is scheduled to be given to both Region III and NRR personnel at Glen Ellyn on January 12, 1982.

*James W. Cook*

JWC/RLT/dsb

CC Atomic Safety and Licensing Appeal Board, w/o  
CBechhoefer, ASLB, w/o  
AJCappucci, NRC, w/a  
MMCherry, Esq, w/o  
FPCowan, ASLB, w/o  
RJCook, Midland Resident Inspector, w/o  
RSDecker, ASLB, w/o  
WPHaass, NRC, w/a  
JHarbour, ASLB, w/o  
DSHood, NRC, w/a (2)  
DFJudd, B&W, w/o  
JDKane, NRC, w/a  
FJKelley, Esq, w/o  
RBLandsman, NRC Region III, w/a  
WHMarshall, Esq, w/o  
WDPaton, Esq, w/o  
FRinaldi, NRC, w/a  
BStamiris, w/o

QUALITY PLAN FOR UNDERPINNING ACTIVITIESGENERAL

All activities for the remedial soils work will be covered by the existing Consumers Power Company and Bechtel Power Corporation Topical Reports CPC-1-A and BQ-TOP-1, Revision 1A, respectively. This Quality Plan provides a more detailed written description of the accomplishment of activities specific to the soils remedial work.

The senior management consisting of J W Cook as Vice President of Projects, Engineering and Construction (Consumers Power Company) and J A Rutgers, Midland Project Manager for Bechtel Power Corporation (CPCo's contractor for the Midland Nuclear Plant), will review and approve major decisions and design concepts regarding remedial soils work. J A Mooney, CPCo Midland Project Office Executive Manager, and A J Boos, Bechtel Assistant Project Manager, will manage the remedial soils work. J F Fisher, Bechtel Construction Remedial Soils Group Supervisor, will coordinate the Bechtel and Subcontractor field activities.

W R Bird (Manager of MPQAD) and D E Horn (Civil Section Head) will manage the remedial work with the overview of B W Marguglio (Director of Environmental and Quality Assurance).

The specific Quality Plan and Q-list activities are defined in attachments to the Technical Specifications for Underpinning (7220-C-194 and 7220-C-195).

Organizations involved with the underpinning are defined in the Functional Matrix, Attachment 1 and as follows:

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

CPCo Project Management - Sets policy, coordinates licensing review, and submittals to the NRC.

CPCo Design Production - Provides client design input and performs reviews of and comments on Bechtel Design Documents.

CPCo Site Management - Monitors remedial activities with respect to commercial type items, construction activities such as equipment care, labor and production.

Bechtel Project Management - Coordinates with client and sets policy for Bechtel organizations.

Bechtel Project Engineering - Establishes design criteria and reviews input from non-Bechtel sources. Originates and controls design documents for construction.

Bechtel Project Geotechnical Engineer - Functions as Project Engineering's Geotechnical representative on project. Performs geotechnical reviews related to design criteria and procedures. Interfaces with Geotech Services and Resident Geotechnical Engineer.

Bechtel Construction Remedial Soils Group - Performs the overall on-site management of all Remedial Soils Group remedial underpinning activities including construction

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

coordination between Bechtel, NRC, CPCo and Subcontractor. Provides direction over Subcontractor activities, and shall be the single point of contact between Subcontractor and Bechtel, NRC CPCo and other agencies.

Geotech Services - Provides design and field geotechnical services as requested by Project Engineering.

Resident Geotechnical Engineer - Performs foundation inspection and geotechnical on-site monitoring of related construction activities. Interfaces with the Project Geotechnical Engineer.

Bechtel Quality Control (QC) - Performs first-line inspection verification of site Q-list activities. Reviews safety-related construction procedures.

Midland Project Quality Assurance (MPQAD) - Provides the quality assurance for all remedial work including work done by Bechtel and Bechtel Subcontractors. Develops quality plans, reviews safety-related design documents and construction procedures. Performs over-inspections and pre-planned audits

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

of Q-list activities as defined in the quality plans.

Subcontractor - Perform construction activities as contracted for, within the framework of the Midland Project Quality Program.

Consultant - Provides advice to Bechtel Project Engineering or Bechtel Construction (Remedial Soils Group) on construction methods, design, instrumentation or geotech.

DESIGN CONTROL

Design Control for the remedial underpinning of the Auxiliary Building (Electrical Penetrations and Control Structure) and Feedwater Isolation Valve Pit fill material replacement and Service Water Pump Structure will be provided by Project Engineering. Engineering Department Procedures (EDPs) and Engineering Department Project Instructions (EDPIs) will provide the controls for Engineering activities which are responsive to the Quality Program requirements.

Design criteria will be developed from design input from consultants, the Midland Plant Safety Analysis Report, 50.54(f) responses submitted to the NRC staff, meetings with and submittals to the NRC staff, and testimony during the ASLB Soils hearing.

Design documents, including specifications and drawings (as well as changes and revisions to these documents), will be reviewed and checked for compliance to design requirements by Bechtel Project Engineering. Design documents will be reviewed by Quality Control, MPQAD, Project Geotech and Construction.

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

MPQAD will act as the focal point for the assurance of the resolution of quality related comments.

Technical specifications and revisions thereof will be generated, reviewed, approved, and controlled by Bechtel Project Engineering in accordance with EDP 4.49. Initial specifications will also be reviewed by CPCo Design Production and comments submitted to Bechtel Project Engineering.

Specification Change Notices (SCNs), used as interim change documents between revisions of the specification, will receive the same level of review and approval by Bechtel Project Engineering as the basic specifications.

Specification Change Notices shall be administered and controlled in accordance with EDPI 4.49.1.

Project Engineering will prepare, review, approve, issue and control design drawings in accordance with EDP 4.46. Changes to engineering drawings will receive the same level of review and approval as the basic drawing and are administered in accordance with EDP 4.47 and EDPI 4.47.1.

Bechtel design calculations shall be originated, checked, approved, controlled and documented by Project Engineering in accordance with EDP 4.37. All design calculations submitted by the consultant will be checked, reviewed and approved by Bechtel Project Engineering.

Bechtel Construction Remedial Soils Group will request from or notify Project Engineering of changes to design documents by Field Change Requests (FCRs) and Field Change Notices (FCNs), respectively. The FCRs will be reviewed, evaluated, dispositioned, controlled and administered in accordance with EDP 4.62. FCNs will allow Field Construction to initiate field changes in design



QUALITY PLAN FOR UNDERPINNING ACTIVITIES

documents within the allowable guidelines of Field Procedure FPD-2.000 as provided by Project Engineering. FCNs will be reviewed, evaluated, dispositioned, controlled and administered according to EDPI 4.62.1.

The design interface for the underpinning activities between Project Engineering, project groups, technical support groups and consultants will be administered as illustrated in Attachment 2, Design Document Interface Flowchart. Geotech design and calculation reviews will be accomplished per EDPI 4.25.1. The Subcontractor will receive design documents from Field Document Control to be utilized for construction.

Inspections will be performed by Bechtel QC to verify that construction is being performed to the latest revisions of the design documents; audits and/or overinspections will be conducted by MPQAD. Field geotechnical activities, including subgrade acceptance, will be accomplished in accordance with EDPI 2.14.8.

PROCUREMENT AND RECEIVING

All procurement of Q-list items and services for the remedial underpinning work will be done by Bechtel employing the technical and quality requirements established in the specifications and drawings. Q-material requisitions will be originated by Bechtel Construction Remedial Soils Group in accordance with FPG-8.000. Bechtel Construction Remedial Soils Group will be responsible for assuring that applicable regulatory requirements, design bases, specifications, procedures and drawings are included and referenced in the procurement documents. The Field Procurement Department will initiate formal purchase orders and will be responsible for ensuring that the procurement

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

package is complete and includes all of the information required by the supplier. MPQAD will review and approve procurement documents in accordance with MPQAD Procedure M-5 to assure that necessary quality program requirements are included.

Upon receipt of Q-material, inspections will be performed by Quality Control in accordance with PSP G-5.1 to verify items comply with the procurement package requirements and quality verifications packages are complete. Quality verification packages will be reviewed for availability, traceability and legibility by Bechtel QC and audited by MPQAD (MPQAD Procedure F-1M). In addition, a technical review will be performed by Bechtel QC for non-shop inspected items.

PREPARATION AND IMPLEMENTATION OF PROCEDURES/INSTRUCTIONS

All Q-list activities performed by Bechtel or the Subcontractor to support construction will be controlled by approved procedures and/or instructions. Written instructions to the Subcontractor will be in the form of engineering specifications, drawings, and approved changes thereto.

The G-321D form (controlled by EDP 4.50) attached to the specifications identify the procedures to be submitted by the Subcontractor prior to the start of fabrication and construction. These procedures will be logged, controlled, and distributed by the Field Document Control Center and will be reviewed by Project Engineering, Bechtel QC, Bechtel Construction Remedial Soils Group, MPQAD and Consultants as defined in Appendix A of the Quality Plan and Q-listed activities for each technical specification. Project Engineering will define the quality attributes of each procedure utilizing the

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

Q-listed activities called out in Section 4.3 of the Quality Plans. These procedures, when approved by Bechtel Project Engineering, Bechtel QC and MPQAD, will provide authorization for fabrication/construction to proceed.

INSPECTION, EXAMINATION, TEST AND CALIBRATION

Quality verification, inspection and testing of all Bechtel and Subcontractor Q-list activities will be performed by Bechtel Quality Control, independent of the Subcontractor and the Bechtel Construction Remedial Soils Group. Bechtel QC will prepare inspection plans (in accordance with PSP G-6.1 and G-1.1) utilizing inputs from technical specifications, design drawings and Subcontractor procedures. Project Quality Control Instruction (PQCI) will be prepared to cover all Bechtel and Subcontractor Q-list activities. Existing PQCI will be adapted for standard construction activities such as concrete batching, placement and testing, and reinforcing steel installation. Additional PQCI will be developed as necessary to verify new underpinning activities such as temporary support installation, load transfer and threaded reinforcing connectors. All PQCI will be subject to MPQAD review according to MPQAD Procedure E-2M. In addition, inspection and test activities will be monitored by MPQAD through the use of overinspection plans based on an independent evaluation of design and procurement documents (MPQAD Procedure E-1M). The Subcontractor will be indoctrinated to Bechtel QC and MPQAD procedures and inspection planning to assure that hold and witness inspection points included as an integral part of the Subcontractor's procedures, will be adhered to.

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

Test will be performed to qualify, demonstrate or assure that the quality of procured items or completed construction is as defined in applicable engineering drawings and procurement documents.

Calibration, maintenance and control of measuring and test equipment will be provided by an approved agency which will be pre-qualified by MPQAD. This agency will provide for traceability to National Standards, the unique identification of each instrument or equipment requiring calibration, the establishment of calibration frequencies, and the identification of calibration status. Calibration records will be maintained by the agency and transmitted to Bechtel Construction Remedial Soils Group for review. At the completion of the subcontract, these records will be turned over to Bechtel Quality Control. Performance and effectiveness of the agency will be verified by MPQAD audits and/or overinspections in accordance with MPQAD Procedures F-1M and E-1M.

HANDLING AND STORAGE

All Q-list materials will be stored and handled in accordance with general Field Procedures FPG 4.000 and 5.000 and supplemented by the Subcontractor's procedure. Storage and handling of material and equipment will be subject to Bechtel QC inspection and verification according to PSP G-5.1 and MPQAD overinspections and/or audits. (MPQAD Procedures E-1M and F-1M).

DOCUMENT CONTROL AND QUALITY RECORDS

Subcontractor documents which are to be submitted for review and comment by Bechtel Project Engineering, Bechtel QC and MPQAD will be controlled by the Field Document Control Center (FDCC) in accordance with FPD 1.000. Prior to

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

the start of work, the Subcontractor will submit construction procedures as required by the specifications, purchase orders and/or drawings to Bechtel Construction Remedial Soils Group. Bechtel Construction Remedial Soils Group and the FDCC will distribute the procedures for review and approval as defined in the Quality Plans for the underpinning activities. Bechtel Project Engineering will be responsible for resolving review comments.

All quality records will be controlled by EDPs 5.16 and 5.24, Bechtel QC Procedure PSP G-7.1 and MPQAD Procedures F-11M and F-12M. These procedures will prescribe the requirement for preparation, control, distribution and transmittal of all Q-related procedures, specifications, drawings and inspection records.

NONCONFORMING ITEMS AND CORRECTIVE ACTION

Nonconformances discovered during construction inspection activities will be documented and controlled by Bechtel QC in accordance with PSP G-3.2 and MPQAD in accordance with MPQAD Procedure F-2M. These procedures provide for the identification and documentation of the nonconforming item, identify the authority for and disposition of the nonconforming condition, and provide for documenting the reinspection and closeout of the nonconformance.

Within the Midland Project Quality Program, the identification of significant and reportable items will be accomplished by Bechtel QC and MPQAD through the review of nonconformance reports, supplier surveillances and quality assurance audits. Corrective action for significant quality problems will be controlled by Bechtel PSP G-3.2 and MPQAD Procedure F-3M.

QUALITY PLAN FOR UNDERPINNING ACTIVITIES

In the design phase, investigation of cause and action taken to preclude recurrence of design deficiencies will be accomplished through EDP 4.65. Design deficiencies include those items which are not identified in the course of design development and which ultimately require changes.

AUDITS

Audits will be performed by MPQAD to verify conformance of Q-list activities. MPQAD Procedure F-1M includes provisions for the identification of deficiencies, the determination of corrective action, and the necessary follow up to verify that timely and effective action is taken.

TRAINING AND CERTIFICATION

All inspectors and quality auditors will be trained and certified in accordance with PSP G-8.1 or MPQAD Procedures B-2M and/or B-3M. Subcontractor field supervisory and engineering personnel will be indoctrinated to the Midland Project Quality Program. This will include an introduction to the quality system, inspection techniques, nonconformance control, NRC activities, field and engineering design changes and site organizations and interfaces. The indoctrination will be completed prior to any work proceeding. The Subcontractor will be required to implement training for the procedures covering the Subcontractors Q-listed activities.

ENCLOSURE 1  
List of  
Applicable  
Procedures  
Page 1

LIST OF  
APPLICABLE  
PROCEDURES

MIDLAND PROJECT QUALITY ASSURANCE DEPARTMENT PROCEDURES

B-2M	Personnel Training
B-3M	Qualification and Certification of Inspection and Test Personnel
E-1M	Site Inspection Planning and Site Inspection
E-2M	Review of Site Inspection Planning Prepared by others than MPQA
F-1M	Audit
F-2M	Nonconformance Reporting, Corrective Action and Stating
F-3M	Resolution of Significant Quality Problems
F-11M	Documentation Control
F-12M	Quality Records
M-3	Review and Processing of Corrective Action Reports and Contractor Work Requests
M-5	QA Review of Bechtel Field-Originated Procurement Documents

ENGINEERING DEPARTMENT PROCEDURES

EDP - 4.37	Design Calculations
EDP - 4.46	Project Drawings
EDP - 4.47	Drawing Change Notice
EDP - 4.49	Project Specifications
EDP - 4.62	FCR/FCN
EDP - 4.65	Design Deficiency
EDP - 5.16	Supplier Document Control
EDP - 5.24	Document Distribution Control Center



FIELD PROCEDURES

FPG-8.000	FMRs
FPD-2.000	Field Change Request/Field Change Notice
FPG-4.000	Storage Maintenance/Inspection of Equipment and Materials
FPG-5.000	Maintenance/Inspection of Material and Equipment Released for Construction
FPD-1.000	Field Documentation of Correspondence Control

PROJECT SPECIAL PROVISIONS

PSP G-1.1	Assignment of Responsibilities, Manual Application and Control
PSP G-3.2	Control of Nonconforming Items
PSP G-5.1	Material Receiving and Storage Control
PSP G-6.1	Inspection Planning
PSP G-7.1	Document, Records and Correspondence Control
PSP G-8.1	Qualification, Evaluation, Examination Training and Certification of Construction Quality Control Personnel

ENGINEERING DEPARTMENT PROJECT INSTRUCTIONS

EDPI - 4.25.1	Design Interface Control (Internal)
EDPI - 4.47.1	Interim Drawing Change Notice for the Midland Project 7220
EDPI - 4.49.1	Specification Change Notification
EDPI - 4.62.1	Project Engineering Review of Field Change Notice Midland Project Job 7220

# PROJECT FUNCTIONAL MATRIX FOR UNDERPINNING ACTIVITIES

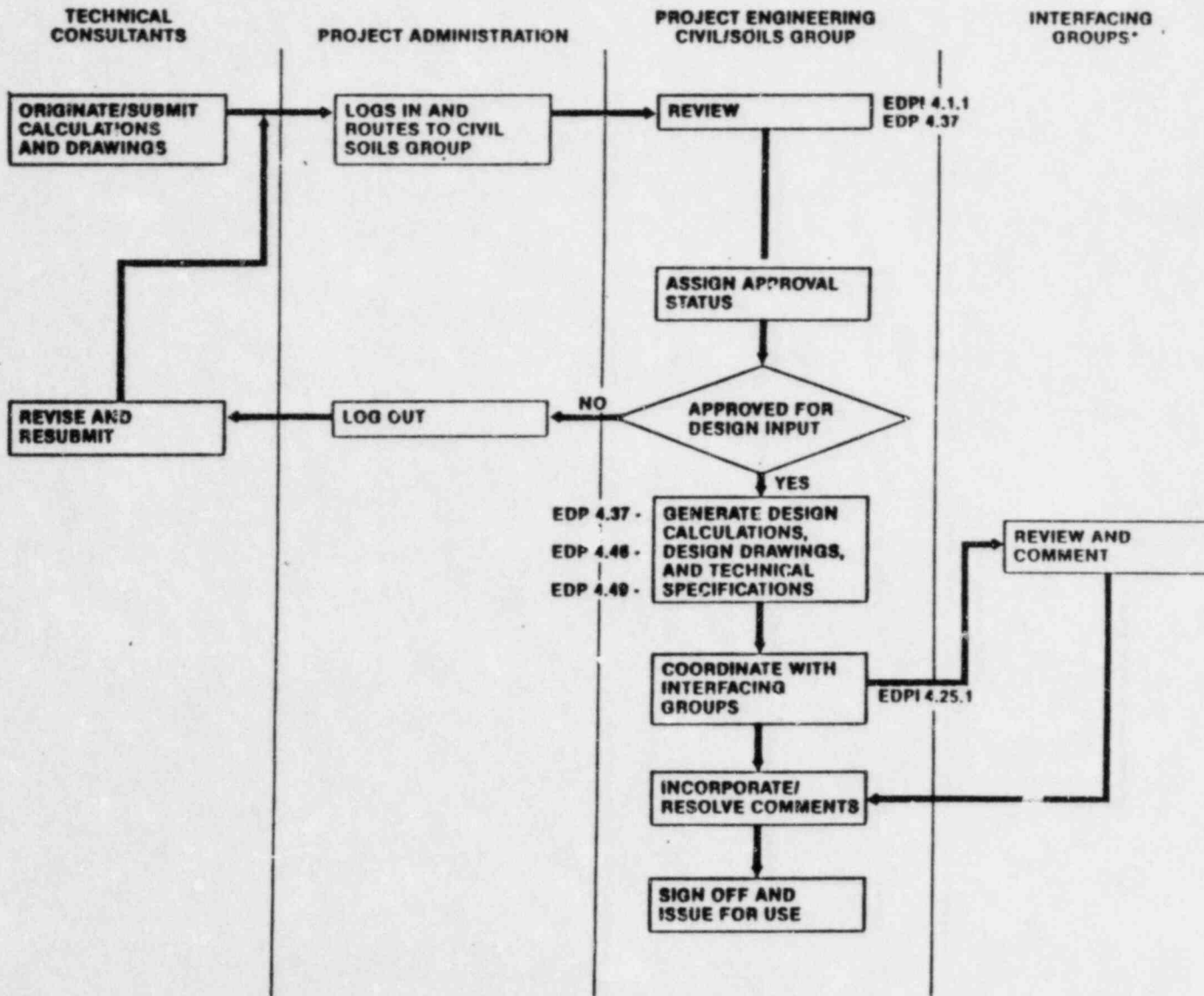
Activity	ENGRG POLICY ESTABLISHMENT	ESTABLISHMENT AND IMPLEMENTATION OF DESIGN CRITERIA (REMANENT STRUCTURE)	ESTABLISHMENT AND IMPLEMENTATION OF DESIGN CRITERIA (TEMPORARY STRUCTURE)	DESIGN CONTROL INTERFACE ESTABLISHMENT	DESIGN CONTROL (REMANENT STRUCTURE)	DESIGN CONTROL (TEMPORARY STRUCTURE)	DESIGN AND VERIFICATION AND VOUCHING	PREPARATION OF ENGINEERING DOCUMENTS	DESIGN REVIEW	PREPARATION AND CONTROL OF DESIGN CHANGES INCLUDING FIELD	SUPPLIER EVALUATION AND SELECTION	PROCUREMENT (PURCHASE ORDERS)	INSPECTION AND AUDIT OF OFFSITE ORGANIZATIONS	RECEIVING INSPECTION	PREPARATION AND INSTRUCTIONS OF DRAWINGS, PROJECTS	QUALITY VERIFIERS INSPECTION AND TESTING STATUS INDICATORS	NONCONFORMANCE CONTROL	CORRECTIVE ACTION	QUALITY RECORDS	AUDITS
CPCe PROJ MGMT	●																			
BECHTEL PROJ MGMT																				
CPCe PRODUCTION ENGRG																				
BECHTEL MGMT ENGRG																				
BECHTEL PROJ ENGRG																				
BECHTEL QUALITY ENGRG																				
MRJDMERGENTINE (TSA)																				
WISS JANEY (TRA)																				
GEOTECH SERVICES																				
J/P SUBCONTRACTORS																				
BECHTEL CONSTRUCTION																				
REMEDIAL SOILS GROUP																				
BECHTEL QUALITY CONTROL																				
MIDLAND PROJECT QUALITY ASSURANCE																				

NOTE: This functional matrix represents the activities of both organizations described in the matrix and those included in the quality plans of the technical specifications for underpinning

● DIRECT INVOLVEMENT  
○ INPUT ONLY

DESIGN DOCUMENT INTERFACE FLOWCHART

ENCLOSURE 1  
ATTACHMENT 2



\*INTERFACING GROUPS (as defined by EDP 4.25.1 or approved alternate)

- DISCIPLINE ENGINEERING GROUPS
- CHIEF ENGINEER (per EDP 4.34)
- GEOTECHNICAL SERVICES
- CONSULTANTS
- QUALITY ENGINEERING (drawings and specifications)
- MPQA (drawings and specifications)

QUALITY PLAN AND Q-LISTED ACTIVITIES

1.0 PURPOSE AND SCOPE

The purpose of this QA Plan is to provide the means by which to gain adequate confidence that the Service Water Pump Structure underpinning system is constructed according to design documents. This Plan describes the minimum procedural interfacing between the sub-contractor, contractor, consultant(s) and the Midland Project Quality Assurance Department. (MPQAD)

2.0 SUBMITTAL, REVIEW AND APPROVAL FOR Q-LISTED PROCEDURES

- 2.1 The procedures listed in Exhibit A will be submitted as a minimum by the subcontractor as specified in the contract documents.
- 2.2 The procedures will be routed for review, comment and approval according to the flow diagram in Exhibit B.
- 2.3 The groups responsible for review, comment and approval of procedures will be as specified in Exhibit A.

3.0 CALIBRATION OF SUBCONTRACTOR FURNISHED EQUIPMENT

- 3.1 All subcontractor-furnished jacks, gages, and construction equipment requiring calibration will be calibrated by an agency approved and audited by MPQAD.

4.0 QUALITY ACTIVITIES

- 4.1 Section 4.3 provides the Q-List. All Q-Listed hardware and installation will be performed in accordance with the Midland

Project Quality Assurance Program, and will be inspected by the Contractor's Quality Control organization and overinspected by the MPQAD. All other Q-Listed activities will also be performed in accordance with the Program and will be controlled by the Contractor's QC organization and the MPQAD.

4.2 Within thirty days prior to the scheduled start of but not limited to the following activities, meetings will be held between responsible personnel of Bechtel Construction Remedial Soils Group, MPQAD, Contractor QC and the Subcontractor. The adequacy and availability of technical criteria; Quality Control inspection plans; Subcontractor's procedures; schedule of Construction activities; the sequence and clarity of Q-List activities will be discussed.

1. Start excavation below 620'.
2. Start of final load transfer and lockoff.

4.3 For any work relating to the service water pump structure underpinning, the following activities will be Q-Listed. This is intended to be a complete Q-List for all activities unique to underpinning other than design activities. Not all of these activities, however, will be within the Subcontractor's scope of work.

1. Document submittal, interface and control.
2. Procuring Q-Listed items and materials.
3. Storage, handling and control of Q-Listed materials.

ENCLOSURE 2  
QUALITY PLAN AND  
Q-LISTED ACTIVITIES FOR  
SPECIFICATION C-194

4. Furnishing and installation of lagging and bracing under "Q" structures.
5. Excavation limits, control and sequence under "Q" structures.
6. Crack mapping and evaluation.
7. Calibration, maintenance, control and installation of gages and settlement monitoring instrumentation.
8. Monitoring of building movement instrumentation and pier pressure gages.
9. Fines monitoring of dewatering wells in "Q" areas.
10. Location and protection "Q" utilities.
11. Geotechnical acceptance of subgrade.
12. Fabrication and installation of reinforcing steel.
13. Certification of personnel performing splices.
14. Threading of reinforcing steel and installation of mechanical splices.
15. Drilling in "Q" structures for the installation of anchor bolts, rock anchors and dewatering wells.
16. Installation and inspection of anchor bolts and rock anchors.
17. Compressible material configuration and installation.
18. Testing of reinforcing steel and mechanical splices.

**Procedures To Be Submitted By The Subcontractor**

**Organization Responsible For Procedure Review & Approval**

	Proj Eng	Resident Geotech	Bechtel Construction RSG	Bechtel Quality Control	MPQAD	Technical Consultant
Procedure for general underpinning - This procedure shall include the overall concept of the work involved, including the interface of all the operations listed below.	X	0	0	X	X	0
Procedure for load transfer.	X	0	0	X	X	0
Procedure for placement of lean concrete backfill in shafts and tunnel.	X		0	X	X	
Procedure for installation of (including mixing) and pressure grouting.	X		0	X	X	
Procedure for placement of pier concrete.	X		0	X	X	
Procedure for acquiring and maintaining calibration of jacks and gages.	X		0	X	X	
Procedure for mechanical splicing of reinforcement.	X		0	X	X	
Procedure for threading of reinforcing steel.	X		0	X	X	
Procedure for installation of anchor bolts and rock anchors.	X		0	X	X	
Procedure for installation of compressible material.	X		0	X	X	REVIEW & APPROVAL - X
Procedure for placing reinforcement including bending steel reinforcement (hot and cold).	X		0	X	X	REVIEW & COMMENT - 0 as applicable
Procedure for core drilling.	X		0	X	X	

LEGEND

REVIEW & APPROVAL - X  
 REVIEW & COMMENT - 0  
 as applicable

ENCLOSURE 2  
QUALITY PLAN AND  
Q-LISTED ACTIVITIES FOR  
SPECIFICATION C-194

19. Installation, inspection and testing of structural concrete, lean concrete, grout and drypack.
20. Repair of concrete in "Q" structures.
21. Calibrating, maintaining, installing and controlling of hydraulic jacks and pressure gages.
22. Load transfer activities.
23. Backfilling and acceptance testing for access shafts and tunnels in "Q" areas.



**Procedures To Be Submitted By The Subcontractor**

**Organization Responsible For Procedure Review & Approval**

	X	Prof Eng	Resident Geotech	Bechtel Construction RSG	Bechtel Quality Control	X	MPQAD	Technical Consultant
Procedure for concrete repairs.	X			0	X		X	
Procedure for excavation "Q" structures and the installation of lagging.	X		0	0	X		X	
Procedure for protection of underground utilities	X			0	X		X	
Procedure for preparing, submitting, and revising Q procedures.	X			0	X		X	
Procedure for handling, storing, and controlling Contractor-furnished materials.	X			0	X		X	
Procedure for design document control.	X			0	0		X	
Procedures for interface and coordination between the Subcontractor and the Contractor for activities covered by the QA Program.	X		0	0	0		X	
Procedure for certifying Subcontractor Personnel specifically for AWS welding and mechanical splices.	X			0	X		X	
Procedure for Training Program of Subcontractor Personnel for the Q-Procedures covering the Subcontractors scope of work	X			0	X		X	

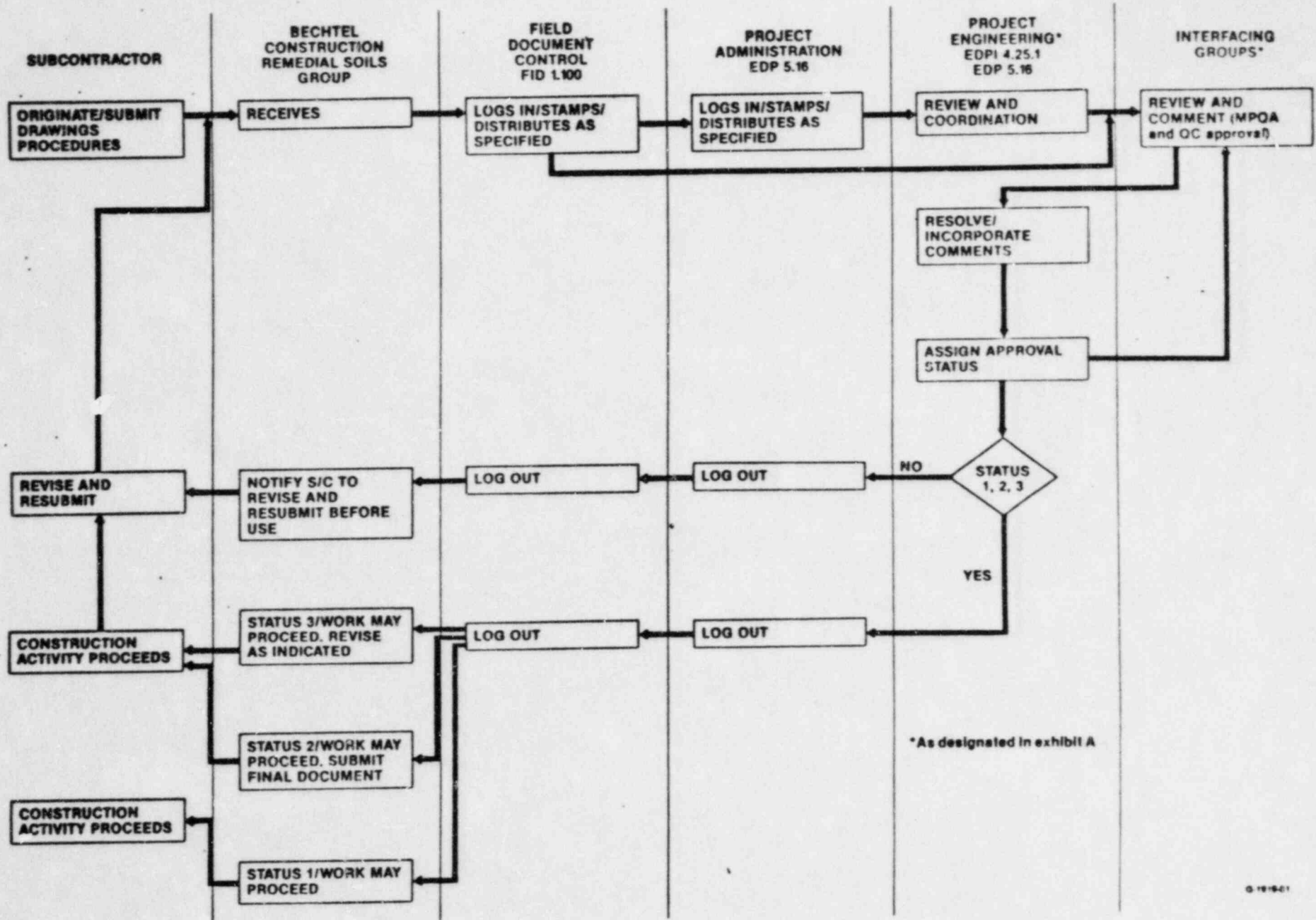
LEGEND

REVIEW & APPROVAL - X

REVIEW & COMMENT - 0  
as applicalbe

PROCEDURE REVIEW/APPROVAL FLOWCHART

ENCLOSURE 2  
EXHIBIT B



QUALITY PLAN AND Q-LISTED ACTIVITIES

1.0 PURPOSE AND SCOPE

The purpose of this QA Plan is to provide the means by which to gain adequate confident that the Auxiliary Building (Electrical Penetration and control structure) underpinning system and Feedwater Isolation Valve Pit fill material replacement is constructed according to design documents. This Plan describes the minimum procedural interfacing between the sub-contractor, contractor, consultant(s) and the Midland Project Quality Assurance Department. (MPQAD)

2.0 SUBMITTAL, REVIEW AND APPROVAL FOR Q-LISTED PROCEDURES

- 2.1 The procedures listed in Exhibit A will be submitted as a minimum, by the subcontractor as specified in the contract documents.
- 2.2 The procedures will be routed for review, comment and approval according to the flow diagram in Exhibit B.
- 2.3 The groups responsible for review, comment and approval of procedures will be as specified in Exhibit A.

3.0 CALIBRATION OF SUBCONTRACTOR FURNISHED EQUIPMENT

- 3.1 All subcontractor-furnished jacks, gages, and construction equipment requiring calibration will be calibrated by an agency approved and audited by MPQAD.

4.0 QUALITY ACTIVITIES

- 4.1 Section 4.3 provides the Q-List. All Q-Listed hardware and installation will be performed in accordance with the Midland Project Quality Assurance Program, and will be inspected by the Contractor's Quality Control organization and overinspected by the MPQAD. All other Q-Listed activities will also be performed in accordance with the Program and will be controlled by the Contractor's QC organization and the MPQAD.
- 4.2 Within thirty days prior to the scheduled start of but not limited to the following activities, meetings will be held between responsible personnel of Bechtel Construction Remedial Soils Group, MPQAD, Contractor QC and the Subcontractor. The adequacy and availability of technical criteria; Quality Control inspection plans; Subcontractor's procedures; schedule of construction activities; the sequence and clarity of Q-List activities will be discussed.
1. Start construction of temporary underpinning.
  2. Start construction of permanent underpinning wall.
  3. Start of final load transfer and lockoff.
- 4.3 For any work relating to the auxiliary building underpinning, the following activities will be Q-Listed. This is intended to be a complete Q-List for all activities unique to underpinning other than design activities. Not all of these activities, however, will be within the Subcontractor's scope of work.

ENCLOSURE 3  
QUALITY PLAN AND  
Q-LISTED ACTIVITIES FOR  
SPECIFICATION C-195

1. Document submittal, interface and control.
2. Procuring Q-Listed items and materials.
3. Storage, handling and control of Q-Listed materials.
4. Furnishing and installation of lagging and bracing under "Q" structures.
5. Excavation limits, control and sequence under "Q" structures.
6. Crack mapping and evaluation.
7. Calibration, maintenance, control and installation of gages and settlement monitoring instrumentation.
8. Monitoring of building movement instrumentation and pier pressure gages.
9. Fines monitoring of dewatering wells in "Q" areas.
10. Location and protection "Q" utilities.
11. Geotechnical acceptance of subgrade.
12. Fabrication of steel grillage for temporary supports for "Q" structures.
13. Fabrications and installation of temporary supports for "Q" structures.
14. Welding of temporary and permanent supports for "Q" structures.
15. Fabrication and installation of reinforcing steel.

16. Certification of personnel performing splices.
17. Threading of reinforcing steel and installation of mechanical splices.
18. Drilling in "Q" structures for the installation of anchor bolts, rock anchors and dewatering wells.
19. Installation and inspection of anchor bolts and rock anchors.
20. Compressible material configuration and installation.
21. Testing of reinforcing steel and mechanical splices.
22. Installation, inspection and testing of structural concrete, lean concrete, grout and drypack.
23. Repair of concrete in "Q" structures.
24. Calibrating, maintaining, installing and controlling of hydraulic jacks and pressure gages.
25. Load transfer activities.
26. Backfilling and acceptance testing for access shafts and tunnels in "Q" areas.

**Procedures To Be Submitted By The Subcontractor**

**Organization Responsible For Procedure Review & Approval**

	Proj Eng	Resident Geotech	Bechtel Construction RSG	Bechtel Quality Control	MPQAD	Technical Consultant
Procedure for general underpinning - This procedure shall include the overall concept of the work involved, including the interface of all the operations listed below.	X	0	0	X	X	0
Procedure for load transfer.	X	0	0	X	X	0
Procedure for placement of lean concrete backfill in shafts and tunnel.	X		0	X	X	
Procedure for installation of (including mixing) and pressure grouting.	X		0	X	X	
Procedure for placement of pier concrete.	X		0	X	X	
Procedure for acquiring and maintaining calibration of jacks and gages.	X		0	X	X	
Procedure for mechanical splicing of reinforcement-	X		0	X	X	
Procedure for threading of reinforcing steel).	X		0	X	X	
Procedure for installation of anchor bolts and rock anchors.	X		0	X	X	
Procedure for installation of compressible material.	X		0	X	X	REVIEW & APPROVAL - X
Procedure for placing reinforcement including bending steel reinforcement (hot and cold).	X		0	X	X	REVIEW & COMMENT - 0 as applicable
Procedure for core drilling.	X		0	X	X	

LEGEND

REVIEW & APPROVAL - X  
 REVIEW & COMMENT - 0  
 as applicable

Procedures To Be Submitted By The Subcontractor

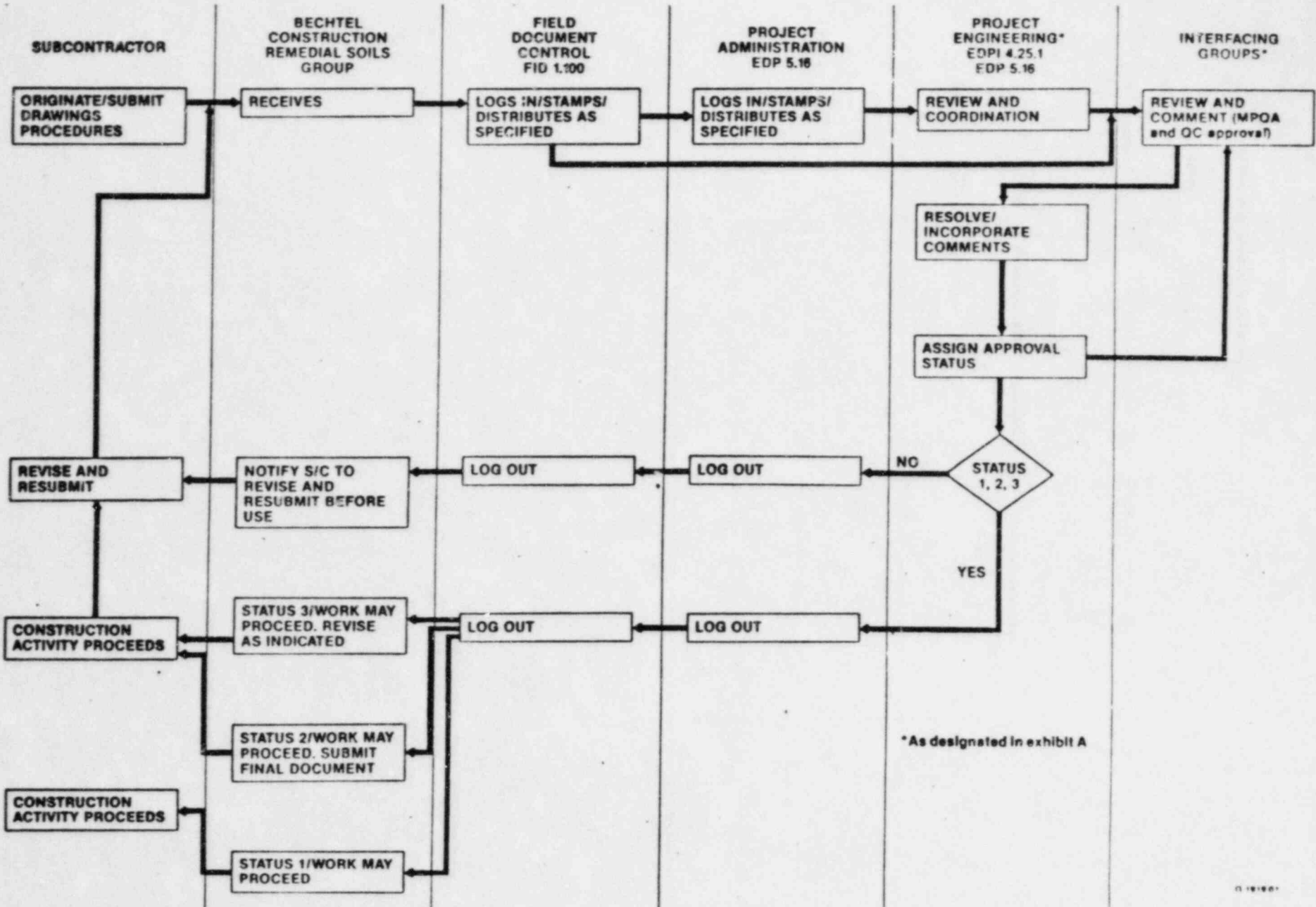
Organization Responsible For Procedure Review & Approval

	X	0	0	X	X	0	
	Proj	Resident	Bechtel	Bechtel	MPQAD	Technical	
	Eng	Geotech	Construction	Quality		Consultant	
			RSG	Control			
Procedure for concrete repairs.	X		0	X	X		
Procedure for excavation "Q" structures and the installation of lagging.	X	0	0	X	X		
Procedure for protection of underground utilities	X		0	X	X		
Procedure for preparing, submitting, and revising Q procedures.	X		0	X	X		
Procedure for handling, storing, and controlling Contractor-furnished materials.	X		0	X	X		
Procedure for design document control.	X		0	0	X		
Procedures for interface and coordination between the Subcontractor and the Contractor for activities covered by the QA Program.	X	0	0	0	X		
Procedure for construction of temporary supports including grillage.	X		0	X	X	0	
Procedure for welding.	X		0	X	X		
Procedure for certifying subcontractor personnel specifically for AWS welding and mechanical splices.	X		0	X	X		LEGEND REVIEW & APPROVAL - X
Procedure for Training Program of subcontractor personnel for the Q-Procedures covering the subcontractor scope of work.	X		0	X	X		REVIEW & COMMENT - 0 as applicable



PROCEDURE REVIEW/APPROVAL FLOWCHART

ENCLOSURE 3  
EXHIBIT B



# ATTENDANCE

Sheet

1/12/82

CPCO - NRC

Meeting

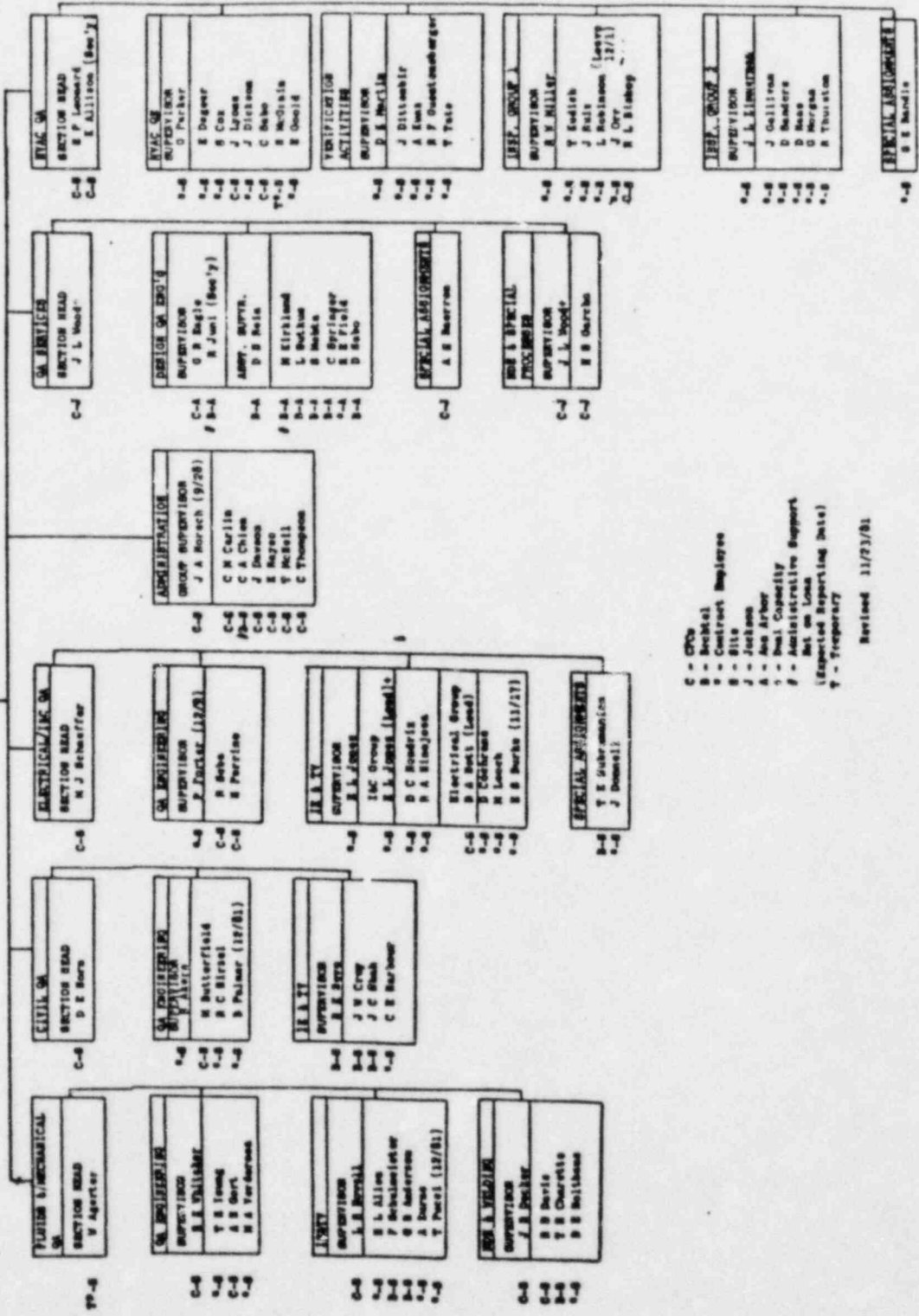
- 1) WR Bud CPCO Mgr MPOAD
- 2) BWMARGUGLIO CPCO { MPO  
Dir-EP&A  
Isam Lincoln & Dale
- 3) Jeanne G. Bloom
- 4) Jim Cook CPG
- 5) D.C. BOYD USNRC SECTION CHIEF - 1A
- 6) R.J. COOK USWRC SENIOR RESIDENT INSPECTOR
7. W D. PATON NRC ATTORNEY
8. Darl Hood LBA4/NRR/NRC
- 9 Michael Wilcox NRC Attorney
- 10 Gene Gallagher NRC JENKINS
- 11 Ross Landman NRC
- 12 C. Novina NRC
- 13 J. Spence NRC
- 14 J. Kappeler NRC
15. DE HORN ~~CPCO~~ MPOAD CIVIL SECTION HEAD
16. RE SEVO ~~CPCO~~ RECHTEL MPOAD CIVIL SECTION HEAD

J. Cook  
V.P.

B. Margughio  
(1)

HIGHLAND PROJECT  
QUALITY ASSURANCE  
DEPARTMENT  
MANAGER  
V B Sire  
L Richards (See 'y)  
PQA  
M A Bietrich  
L Peterson (See 'y)  
ASST. MGR. - QUALIS &  
SPECIAL PROJECTS  
D H Turnbull

C-1  
C-2  
C-3  
C-4  
C-5  
C-6



- C - CTO
- B - Section
- A - Contract Employee
- S - Site
- J - Jackson
- A - Ann Arbor
- C - Cost Capacity
- F - Administrative Support
- Not on Line
- (Expected Reporting Date)
- T - Temporary

Revised 11/23/81

MPQAD REPORTING RELATIONSHIPS

On a day-to-day basis, the HVAC section and the Quality Engineering Services section will report to Walt Bird. (Tuckson)

On a day-to-day basis, the other section heads and the Assistant Manager-Administration and Special Projects will report to Ben Marguglio.

On a day-to-day basis, the PQAE will communicate and interface with either Walt or Ben, depending upon the above-noted division of responsibilities.

In addition, on a day-to-day basis, Walt will continue to be responsible for all activities associated with 50.55(e) and Part 21 reports (ie, determining reportability, preparing reports and following-up for problem resolution).

In addition, on a day-to-day basis, Walt will be responsible for the primary management role for the remedial soils work.

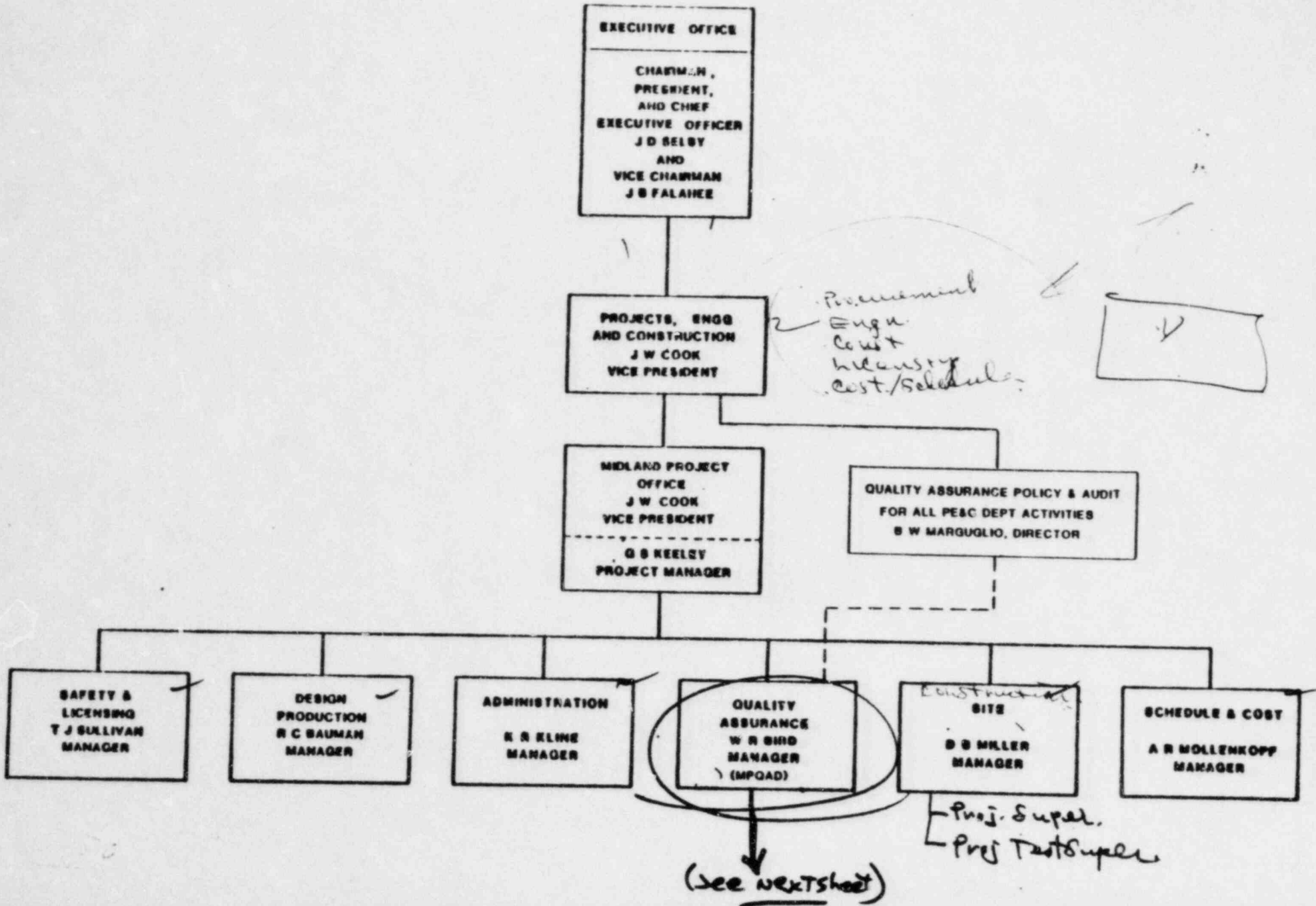
It is incumbent upon each section head, the PQAE and the assistant manager to notify either Walt or Ben of any significant items in accordance with the above-noted division of responsibility.

In Walt's absence, Ben shall be notified of Walt's items, and conversely, Walt shall be notified of Ben's items.

BWM/da  
11/30/81

EXHIBIT

MIDLAND PROJECT ORGANIZATION





Consumers  
Power  
Company

CPCO  
Exhibit 19  
Midland hearing 12/16/81

General Offices: 212 West Michigan Avenue, Jackson, MI 49201 • (517) 786-0550

December 3, 1981

Charles Bechhoefer, Chairman  
Atomic Safety and Licensing Board  
United States Nuclear Regulatory Comm.  
Washington, DC 20555

RE: DOCKET NO. 50-329, 50-330, OM & OL

Dear Chairman Bechhoefer:

On November 20, 1981, James W. Cook announced the appointment of B. W. Marguglio as a member of the Midland Project Office, where he will report to Mr. Cook, the Vice President of Projects, Engineering and Construction. In his new role, Mr. Marguglio will assume direct-line responsibility for all Midland quality assurance activities. Mr. Marguglio's new appointment establishes the presence of senior quality assurance management at the Midland site, as Marguglio will spend the majority of his time in residence at Midland through the completion of the job. Walter R. Bird, the current manager of MPQAD, will continue in that capacity but will report directly to Mr. Marguglio, and will be based in Jackson.

Marguglio and Bird, who testified and presented their credentials in this hearing, are in the process of revising administrative responsibilities to reflect Marguglio's new role. Mr. Donald Turnbull, who also previously testified, will also take on new responsibilities, primarily in the administration section of MPQAD.

Apart from the aforementioned changes, the organization and reporting relationships of MPQAD and the project office were not altered. Marguglio will also continue in his function of administering the environmental department and the quality assurance program for plant modifications.

Very truly yours,

James E. Brunner

~~8112094377~~  
IP

effective date of new organization  
Nov 20, 1980:

- LEGAL  
DEPARTMENT
- Lawrence B Livheimer  
Vice President  
and General Counsel
  - Judd L Bacon  
Allen B Bass  
O K Petersen  
William E Warner  
Managing Attorneys
  - Robert J Byers  
Howard E Clark  
Baronby E Hagen  
Senior Attorneys
  - Francis X Berkemeier  
J E Brunner  
Lesley Daoud  
Charles D Dawson  
James W Dempsey  
John P Dickey  
Kevin F Duffy  
R F Godbout  
Richard L Haines  
George F Hill  
Laurene H Horvitzny  
Wayne A Kirkby  
Albert D McCallum  
David A Mikelonis  
Paula H Mills  
Vincent P Provenzano  
Jon R Robinson  
David R Rood  
Gregory A Sando  
Jack D Shumate  
Walter Scott Spara  
A T Udrys  
Dennis L Viglione  
Theodore J Vogel  
Attorneys

CPCO Ex 19

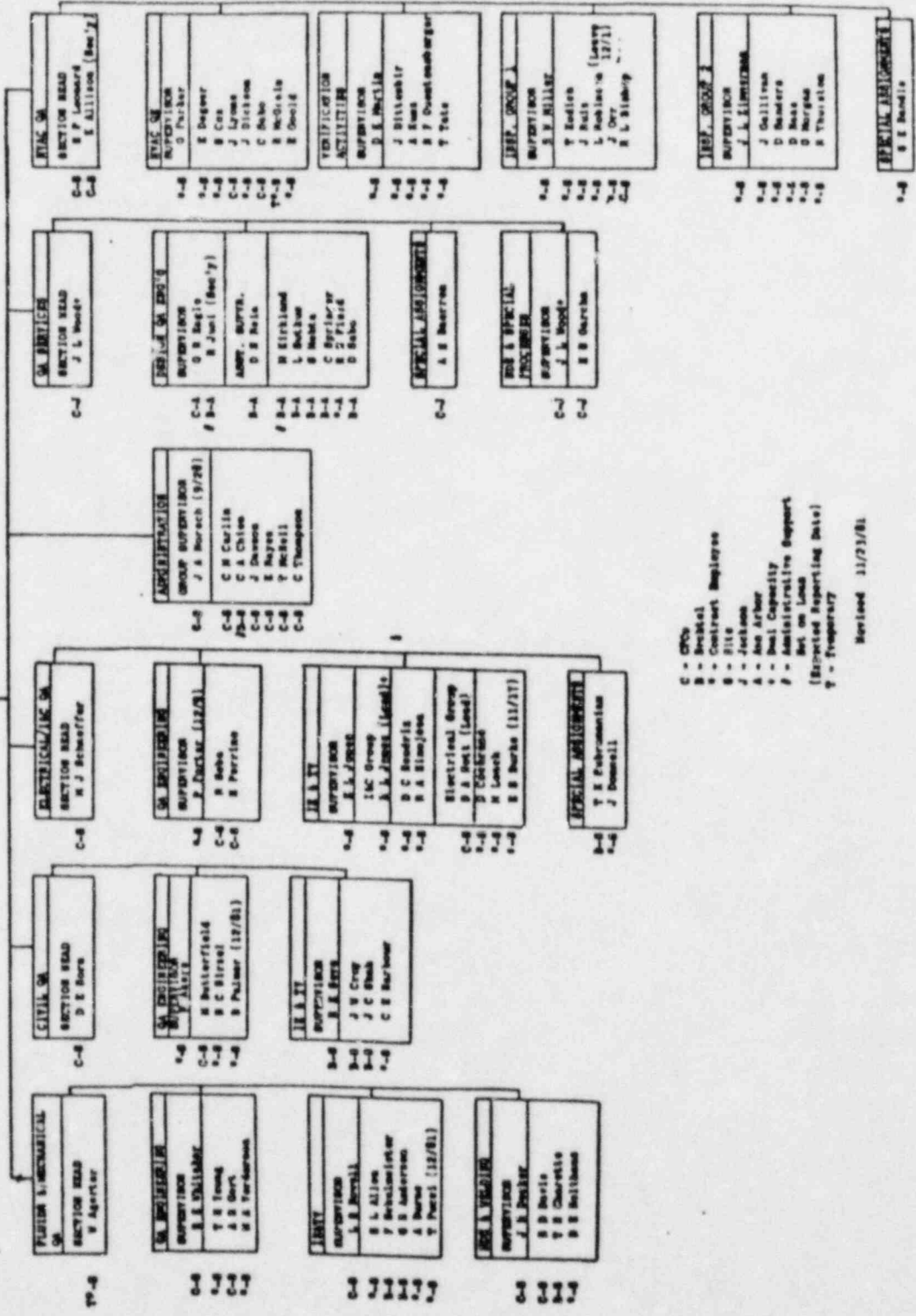
WINDLASS PROJECT  
QUALITY ASSURANCE  
DEPARTMENT

MANAGERS  
W. B. Bire  
L. Richards (See 'y')  
P. J. Aronoff (See 'y')

W. A. Bickler  
L. Peterson (See 'y')

ASST. MGR. - ADMIN. &  
SPECIAL PROJECTS  
D. M. Turnbull

C-7  
C-7  
C-8  
N-8  
P-8  
C-8



C - CTO  
S - Section  
M - Contract Employee  
B - Bill  
J - Jackson  
A - Joe Arthur  
\* - Small Capacity  
P - Administrative Support  
[Reported Reporting Date]  
Y - Temporary

Revised 11/23/81

MPQAD REPORTING RELATIONSHIPS

On a day-to-day basis, the HVAC section and the Quality Engineering Services section will report to Walt Bird.

On a day-to-day basis, the other section heads and the Assistant Manager-Administration and Special Projects will report to Ben Marguglio.

On a day-to-day basis, the PQAE will communicate and interface with either Walt or Ben, depending upon the above-noted division of responsibilities.

In addition, on a day-to-day basis, Walt will continue to be responsible for all activities associated with 50.55(e) and Part 21 reports (ie, determining reportability, preparing reports and following-up for problem resolution).

In addition, on a day-to-day basis, Walt will be responsible for the primary management role for the remedial soils work.

It is incumbent upon each section head, the PQAE and the assistant manager to notify either Walt or Ben of any significant items in accordance with the above-noted division of responsibility.

In Walt's absence, Ben shall be notified of Walt's items, and conversely, Walt shall be notified of Ben's items.

BWM/da  
11/30/81



Old organization until Nov. 20, 1981

**MIDLAND PROJECT  
QUALITY ASSURANCE  
DEPARTMENT**

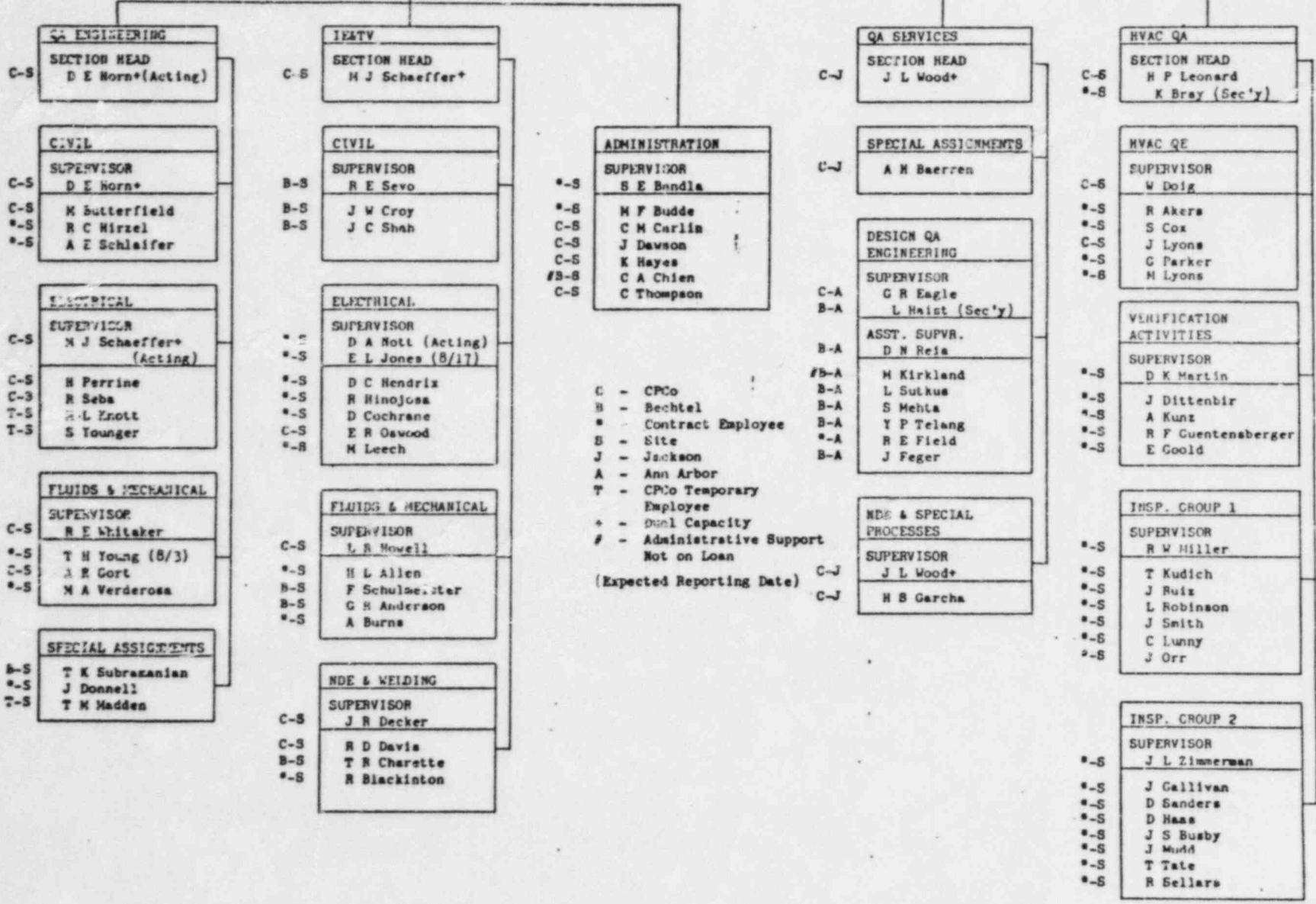
**MANAGER**  
W R Bird  
L Richards (Sec'y)

**PQAE**  
M A Dietrich  
L Peterson (Sec'y)

**SITE PROJECT QA**  
SUPERINTENDENT  
D M Turnbull  
D Arnouts (Sec'y)

C-S  
C-S

C-J  
C-J  
B-S  
#B-S



# Midland Daily News

Vol. 124, No. 64

32 Pages

Thursday, July 16, 1981, Midland, Michigan

25¢ Per Copy

## Witness: Put Selby in charge

By PAUL RAU  
and LORIE SHANE  
Daily News staff writers

John D. Selby, who is president, chairman and chief executive officer of Consumers Power Co., should take personal responsibility for correcting soil problems at the Midland nuclear plant, a Nuclear Regulatory Commission civil engineer testified Wednesday.

Eugene Gallagher said the "buck has to stop someplace," and suggested it stop with Selby by making him the direct reporting link to the NRC for Consumers' program to correct soil problems at the Midland plant.

Gallagher said the extent of soil problems at Midland is "unprecedented at any other" nuclear plant, and added that holding the utility's chief executive officer accountable for the corrective actions would alert all Consumers employees to the seriousness of the situation.

**SOIL PROBLEMS** at the Midland nuclear plant originated in 1975-77, when, improper and poorly compacted soils were placed in many portions of the site. As a result, about five structures — some vital to the plant's safety — have settled excessively or exhibited cracked walls.

Consumers has roughly estimated that it will cost \$27 million to correct the soil problems now.

---

*The extent of soil problems at the Midland nuclear power plant is "unprecedented at any other" nuclear plant. — NRC civil engineer Eugene Gallagher.*

---

**GALLAGHER ALSO** testified Wednesday that "each and every one" of the soil problems would have been prevented had a single geo-technical engineer drawing a \$30,000 salary been on hand when the soils were placed in the mid-1970s.

Gallagher, who has participated in several NRC inspections of the Midland plant in recent years, made his comments to an Atomic Safety and Licensing Board panel during a quasi-judicial hearing on the soil problems.

Selby was vacationing today and was unavailable for comment.

Michael Koschik, Consumer's chief spokesman, said Selby's involvement with the Midland project and the NRC

already is "substantial," and noted the utility has placed a vice president, James Cook, in direct charge of the project.

"I hasten to add that Mr. Selby has a \$2 billion corporation to run; and Mr. Cook has exhibited excellent management skills in revamping the project office and moving the project forward," Koschik said.

He said Selby makes bi-weekly visits to the Midland plant and that Selby has talked with NRC officials about the soils problems.

**COOK**, the utility's vice president for projects, engineering and construction, was asked about Gallagher's comments this morning during the soil hearing.

He said that Selby already is directly involved to the extent he is "aware of every major decision we are making on this job." Cook also said requiring Selby to report to the NRC would be a "gesture" to satisfy the ASLB and the NRC.

Gallagher had been asked Wednesday by ASLB chairman Charles Bechhoefer, an administrative judge, what management actions he would like Consumers to take in the soils area. Bechhoefer has asked the same question of several other witnesses, and Gallagher said he anticipated the question and had given it a great deal of thought.

**WHILE** admitting his proposal "might sound unorthodox," Gallagher said, "Part of the past problems has been a lack of holding management accountable for their performance.

"What I would propose is to have Mr. Selby himself report to the NRC on a fairly routine ... frequency" as to the success or failure of the soil correction program, Gallagher said.

"In my estimation, this would hold the CEO (chief executive officer) of Consumers responsible for the success or failure of the Midland project from this point on. We're at the point of no tomorrows as far as the soils fixes.

"By having Mr. Selby directly involved in the remedial work, all the staff beneath him ... would understand the significance of this to the company, and it would provide that much more incentive to get (soil corrections) done without any more problems," he added.

Gallagher also recommended that the NRC place one of its own geo-technical engineers at the Midland site full-time while work is under way to correct the soil problems. He said such an engineer would provide a needed independent view of the corrective program, which the NRC so far has refused to accept.

Gallagher stressed that these ideas are his own, and are not the official po-

Continued on page 3.

# Direct role for Selby urged

Continued from page 1

sition of NRC management.

Under cross-examination by an attorney representing Consumers, Ronald Zamarin, Gallagher admitted he has made mistakes while performing his job. Zamarin then asked if Harold Denton, the NRC director of nuclear reactor regulation, should be held accountable for Gallagher's mistakes.

Gallagher replied heatedly, "You're comparing apples to oranges. You're talking about my withdrawing items of non-compliance compared to a \$27 million-plus fiasco. You're talking about a plant 70 percent complete that is crippled."

Zamarin also pursued, over objections by NRC attorneys, a line of questioning which determined that Gallagher has not held management positions in large companies.

Gallagher said he agrees with a recent finding by his boss, James Keppler, head of NRC's Region 3 Office of Inspection and Enforcement, that quality assurance programs at the Midland plant will be adequately implemented in the future.

But Gallagher said he still has "reservations . . . and some uneasiness"

## Soil hearings

about whether Consumers' corrective soil program will be successful. He said this is because Consumers was "not able to take soil material from one part of the site and place it properly to support structures on another part of the site."

He said some of the corrective actions Consumers is proposing are "unprecedented" in his experience.

But he testified he would "have more confidence that the task will be successful" if Selby would take direct control of soil activities, if the NRC placed its own engineer on site and if Consumers hired persons with enough experience to "know what it all means."

ON THE LATTER issue, Gallagher said the practice by Consumers of waiving experience in favor of education when hiring persons is an "abuse" of qualification standards, although it is permitted by federal codes.

"Instead of getting a 'whole' person . . . Consumers and other companies go out and get someone with no experience, and then train them in a very narrow area."

"As far as I'm concerned, this is the single biggest problem in our industry today," Gallagher told the ASLB.

When ASLB judge Ralph Decker noted utility witnesses have testified that experienced personnel are hard to find, Gallagher said: "On a project like Midland, with a long history of problems, it's got to be done at this stage of the game."

IN TESTIMONY Wednesday morning, Gallagher said he personally felt it would have been "more prudent and responsible" for Consumers not to attempt to remedy the soil problems at the diesel generator building "until the issues had been satisfactorily resolved with the (NRC) technical staff."

Consumers, faced with excess settlement of that building placed a "surcharge" of tons of sand around the structure in order to speed the settlement. When maximum settlement was believed to have occurred, the sand was removed.

The diesel generator building is a safety-related structure because those generators would supply power to the plant if other power supplies were cut off.

Gallagher said "all of the plans and methods" used in that surcharge "ought to have been worked out between the appropriate technical staff in the NRC . . . That's my opinion."

"It's extremely prudent to know where you're going and how you're going to get there before you start," he said.

Gallagher also said he believes the NRC staff should have been informed earlier about settlement problems at the administration building.

While he admitted that there was no requirement to report construction problems with that building, because it is non-safety-related, Gallagher said "we perhaps should have been informed of a previous incident which would have given us better insight (into diesel generator building problems)."

He said he first was informed of the administration building problem during a "casual conversation" with Bechtel Power Corp. officials during a

meeting in December 1978 in Ann Arbor.

Gallagher noted he had been on-site to inspect the diesel generator building since October 1978.

GALLAGHER SAID the reason he now can say that management attitude is consistent with implementation of quality assurance regulations regarding soil settlement problems is that there has been a corporate officer appointed to the Midland program.

He cited more "involvement in he day to day decisions" by Consumers, as well as a belief that the newly-established Midland Project Quality Assurance Department is "well-established and "working relatively well at this point in time."

# QA staff arrangement is 'unacceptable': engineer

By LORIE SHANE  
Daily News staff writer

A new personnel arrangement among Consumers Power Co. officials at the Midland nuclear plant is "unacceptable," and the utility's president still should have more direct involvement with the plant, a Nuclear Regulatory Commission civil engineer said Thursday.

However, that is Eugene J. Gallagher's personal opinion, and not necessarily the viewpoint of the NRC as a whole, Gallagher and an NRC attorney said.

Gallagher made the statements while testifying during soils hearings on the plant. The hearings are about past problems with soils and related areas and what Consumers proposes as remedies. Presiding at the hearings is a four-man panel of administrative judges from the Atomic Safety and Licensing Board.

One of the areas under discussion is quality assurance, which are those programs that insure the plant will be built and operated safely and correctly. It is in that area where the personnel change has occurred.

More specifically, the change moved Benjamin W. Marguglio from Jackson — Consumers' Michigan headquarters — to Midland as the senior QA manager at the site. The current QA manager, Walter Bird, will remain in Jackson but will now report to Marguglio. Testimony Thursday indicated Marguglio will spend 60 percent of his time at the site and Bird will spend 40 percent of his time there. The new organization was effective Nov. 20.

Gallagher, who currently is a senior civil engineer in the Inspection and Enforcement area of the NRC, said the new set-up is "fragmented in the assignment of responsibilities and, therefore, appears to be unworkable."

"More important, it leaves the Midland project without a full-time, on-site, top-level quality assurance manager," he said. He called the new set up "transient management or remote control from an office 120 miles away."

Gallagher also complained that the utility did not formally provide the NRC detailed information before it made the change.

"I urge this board to act deliberately and quickly and not permit this proposed organization to be implemented," Gallagher said. He said later he did not realize when he wrote his statement that

## Soil hearings

the organization already is in effect.

That recommendation prompted several phone calls during the day to see how much other NRC officials actually know about the change and if they agreed with Gallagher. Following an afternoon break, NRC attorney William Paton told the board that it would not be appropriate to take action on such a suggestion, but that the NRC would report on the status of its review within two weeks.

Two NRC QA officials told him during the calls that "a full-time, on-site, top-level, QA manager (should) be available," Gallagher said.

Gallagher created a stir during hearings this summer by suggesting that John D. Selby, who is president, chairman and chief executive officer of Consumers, take personal responsibility for the Midland plant. He told the hearing board Thursday he hasn't changed his mind in that respect.

"In fact, I think it makes it more important for the board to further consider that recommendation, specifically in light of the NRC's emphasis on ... active involvement of senior level management," he said.

He recommended that Selby report periodically to the NRC on the Midland plant. "My personal philosophy is that the buck has got to stop at the top," he said, at one point striking the desk for emphasis.

Gallagher's opinion on Selby apparently is not the opinion of the NRC as a whole. "I understand the recommendation has not been included as one of the (NRC) staff's proposed findings, to my dissatisfaction, perhaps, but that is the system we work within," he said.

Normally, Gallagher would not have been the person to address the personnel change. That person would have been John W. Gilray, a quality assurance engineer with the Office of Nuclear Reactor Regulation, a division of the NRC. Gilray could not attend the hearings because of a foot injury.

Gallagher said, however, that he talked to Gilray and other NRC staff members before writing his testimony.

During cross-examination, Consumers' attorney Michael Miller questioned Gallagher about the following

areas.

- How much the NRC knew about the change before it occurred. Gallagher admitted several NRC quality assurance officials knew about the change "technically" or "informally," but that there was no formal documentation or discussion of the effects on the plant. He also admitted he had no reason to believe such formal submittals would not be made.

- Whether the new organization meets NRC requirements. Gallagher said he has not had the opportunity to review all the regulations, but that the implication is that it would satisfy requirements. Paton countered that during later examination by asking Gallagher if one requirement is that QA programs be "effective." Gallagher said it was, and added that in his opinion the new organization will not be effective and therefore, in that sense, would not meet requirements.

- Miller tried to go one step further, asking Gallagher to find the word "effective" in a book of regulations, but that line was dropped after objections from the NRC.

- Whether Marguglio and his boss, James W. Cook, vice president and head of the Midland project, can do their jobs effectively. Gallagher said he believed Marguglio will have sufficient authority to implement QA matters, that it appears he will have sufficient freedom from other responsibilities to carry out his role and that he has no information that Cook is not doing a conscientious job.

- How much time Marguglio should spend at the site. "Obviously, QA is designed to be mobile. I didn't intend to have him cast in concrete as a monument at the Midland site," Gallagher said. He said, however, that the QA manager must have "active, day-to-day involvement from the craftsworker up to his front line."

In other areas, Gallagher told the board that Marguglio's 60 percent and Bird's 40 percent don't necessarily add up to 100 percent of time spent at the plant.

"I don't know when, where or how they will conduct business," Gallagher said.

Thursday's testimony wrapped up this week's session of soil hearings, which have been ongoing for various parts of the past six months. The group was to reconvene in early January, but decided earlier this week to postpone that. New dates have not been set.

MIDLAND 1 & 2

Licensor: Consumers Power Co.  
A/E: BECHTEL (ANN ARBUR OFFICE)  
CONSTRUCTOR: BECHTEL Power Co.

PROJECT STATUS ≈ 70% complete

History of Problems:

1970 Construction starts under exemption  
1971-1972 PLANT IN MOTH BALLS pending CP  
12/72 CP issued  
11/73 "CADWELDING" Problem SHOW CAUSE ORDER  
12/74 REINFORCING STEEL IN CONTAINMENT & AUX BLDG  
(63 REINF BARS MISSING; QC?)  
8/75 42 REINF BARS MISSING AUX BLDG  
3/76 32 " " " " "  
(STOP WORK ORDER ISSUED) "IAL ISSUED"  
2/78 Unit 2 bulge in containment line  
8/78 Excessive settlement of SAFETY-RELATED  
STRUCTURES  
1979 RPV SUPPORT BOLTS FAILURE -  
Material Procurement Problems  
12/79 Dec 6, 1979 ORDER ISSUED AFTER INVESTIGATION  
effective pending a Hearing Request  
1980 HVAC (ZACK) PROBLEM - CIVIL PENALTY  
ISSUED FOR \$38,000  
7/81 \* Hearings finally begin on soils  
QA issues \*

\* Hearings still in progress - no issues decided or  
resolved as yet!

### Soils Investigation Findings:

- (1) Inadequate compaction of soil materials
- (2) Insufficient technical direction
- (3) Inadequate Quality control inspection & testing
- (4) Inadequate corrective action
- (5) Inadequate QA monitoring
- (6) Inadequate design coordination & interface

### Results:

#### Inadequate Foundations For:

- (1) Diesel Generator Bldg
- (2) Service water Intake Structure
- (3) Feedwater Valve Pits
- (4) Auxiliary Bldg
- (5) Bored water Storage Tanks
- (6) SAFETY-related Piping in Fill material

### Problem @ midland

\* Poor Quality Management - lack of control  
lack of attention

Poor Project management - control of contractor  
& over-reliance on contractor

## Recommendations To Hearing Board by Gallagher

- (July) '81 (1) Require Selby (CCO) to report to the NRC periodically to improve communication & keep NRC informed as to progress of soil fixes, problems, corrections, changes, etc  
(GILRAY testified SAME)
- (July) '81 (2) Restrict CPOs from using waiver of education + experience requirements for Quality Control inspection & testing personnel (per ANSIN 45.2.6)  
Historical Problem @ midland - Lack of qualified QC personnel & Abuse of waiver of ed + experience requirement  
→ (root cause of Problems)  
(GILRAY thought waivers were necessary with better documentation on proficiency)
- (Dec) '81 (3) Provide Full-Time on-site senior level Quality assurance manager (CPCO)  
(not 60% by Morgaglio on-site & Bird whenever)
- (July) '81 (4) NRC to provide Full-time Geotechnical Engg/Consultant/NRR representative/Insp to monitor foundation remedial actions  
→ (NRR Joe Kore (Geotech reviewer) agrees  
Letter being written from Ken to redesco this week)
- (July) '81 Both Keppler & Williams testify's that the BOARD does NOT need to put any conditions on CPCO or the staff - "let the Regulatory process perform its intended function"

(1) What has the Region done or plan to do  
to verify the organization is working effectively



# Midland Inspections (1981)

01	Sutphin - Landsman - Gallagher	<sup>3020</sup> = 60 hrs	Jan 7-9
02	WARD	12 hrs	Jan 9-21
03	Sutphin	34 hrs	Jan 27 - April 10
04	Resident - R. COOK	61 hrs	Jan 1 - Feb 14
05	Jones Region 3 MTG	—	March 13
06	WARD (2 days)	15 hrs	March 18 - May 21
07	Resident	70 hrs	Feb 15 - March 31
08	"	68 hrs	June 1-30
09	Landsman	50 hrs	March 25-27 + April 7-9
10	Resident	94 hrs	April 1-30
11	Gardner - Love	66 hrs	April 28 - May 1
12	Williams, et al QA	480 hrs	May 18-22
13	Resident	37 hrs	May 1-31
14	Yin	28 hrs	July 16-24
15	Landsman	20 hrs	Aug 3-5
16	Ward - ERB	37 hrs	Aug 12-14
17	Resident	63 hrs	July 1-31
18	"	21 hrs	Aug 1-31
19	Landsman	88	Sept 9-10 + 17
20	Love - Lee	36 hrs	Oct 6-10
21	Ward	N/A (8)	Nov 24
22	Resident	N/A	Sept 1 - Nov 30

Soils inspections : 4 insp.      on-site inspection :  
(138 hrs)  $\approx$  21 days  
Electrical : 2 insp (102 hrs)  $\approx$  13 days  
Welding : 4 inspections (72 hrs)  $\approx$  9 days  
Piping : 1 insp (28 hrs)  $\approx$  4 day

### Other Inspections :

Resident : 8 inspection reports (414 hrs) 52 day

Sulphur - 2 inspections (54 hrs)  $\approx$  6 1/2 days.

Jones - Meeting @ Region 3 (N/A)

Williams, et al special inspection for Hearing

480 hrs  $\approx$  60 man-day effort  
performed in 1 week