



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

*Landsman*

May 12, 1981

MEMORANDUM FOR: C. C. Williams, Chief, Plant Systems Section  
FROM: R. B. Landsman, Reactor Inspector  
SUBJECT: MEETING WITH CONSUMERS POWER COMPANY ON MAY 2-4, 1981,  
REGARDING MIDLAND UNITS 1 AND 2 SOIL ISSUES

A meeting was held on May 2-4, 1981, with Consumers Power Company, Bechtel and their consultants in Headquarters regarding the Midland plant fill settlement issue. The main purpose was to discuss: (1) remedial actions and update of soils deficiencies; and (2) review status of amendment 85 of application. In particular the following were discussed:

1. Dewatering.
2. Underground Piping.
3. Additional Soil Borings.
4. Borated Water Storage Tank.
5. Amendment 85.
6. Remedial Fixes.

New points brought out during the meeting were:

1. The borated water tank fix will be to construct a new ring wall foundation outside of the existing and to tie them together with dowels.
2. The auxiliary building fix was changed from caissons to a concrete pier foundation.

*R.B. Landsman*

R. B. Landsman  
Reactor Inspector

cc: L. Spessard

NRC MEETING ON SOILS ISSUES

MAY 5, 6, 7, 1981

1. Dewatering (5/5/81)
  - (a) Field Activities since submittal of Amendment 85
  - (b) Dewatering Responses to 50.54(f)
  - (c) Items Regarding Installation of 20 IU Interceptor Wells
  
2. Underground Piping (5/5/81)
  - (a) Review of Calculations to Date
  - (b) Plans for Reprofiling
  - (c) Acceptance Criteria
  - (d) Long Term Settlement
  
3. Additional Borings (5/5/81)
  - (a) Location
  - (b) Types of Sampling
  - (c) Types of Testing
  - (d) Interpretation of Test Results
  
4. BWST (5/6/81)
  - (a) Description and Cause of Problem
  - (b) Current Status
  - (c) Proposed Remedial Work
  
5. Amendment 85 (Soils) (5/6/81)
  
6. Amendment 85 (Structural) (5/7/81)
  
7. Remedial Fixes (5/7/81)
  - (a) Service Water Structure
  - (b) Auxiliary Building

GSK  
5/1/81

May 1981

- 1) May 5-7 meeting passouts
- 2) NRC May 12 - Meeting Notes
- 3) CPG. May 15 submitte) - 50.55(e) on shear reinforcement at major containment penetrations

June 1981

- 1) CPG. Submittal June 8, 1981 - Spec. C-88, PGC I for gravel packed wells, and overinspection plans
- 2) NRC June 15, 1981 - plant dewatering
- 3) CPG June 17 - site response spectra
- 4) NRC June 18 - staff concurrence on 12 backup wells
- 5) CPG June 19 - preliminary results of soil borings for dikes

July 1981

- 1) CPG July 21 - 50.55(e) - borated water tanks
- 2) CPG July 31 - soil boring results for P.G. Building
- 3) CPG Teleron record, July 30 - BWST surcharge program

August 1981

- 1) CPG Aug. 20 - dewatering
- 2) NRC Aug 12 - treppler soils hearing memo
- 3) NRC Aug 20 - hearing schedules
- 4) CPG Aug 26 - SWPS remedial measures
- 5) NRC Aug 26 - SO.5570 reports on seismic matters

August 1981

- 1) CPG Aug. 20 - dewatering
- 2) NRC Aug 12 - treppier soils hearing memo
- 3) NRC Aug 20 - hearing schedules
- 4) CPG Aug 26 - SWPS remedial measures
- 5) NRC Aug 26 - SOSSCO reports on seismic matters

## September 1981

- 1) NRC Sept 2 - staff concurrence on 8 more dewatering wells
- 2) NRC Sept 11 - summary Aug 5 meeting on surcharging BWST
- 3) CPG Sept 11 - marker settlement plots
- 4) CPG Sept 16 - dewatering wells
- 5) ~~NRC~~ Sept 17 - summary June 25 meeting on analytical models
- 6) NRC Sept 23 - summary Jan 20 meeting on underground piping
- 7) NRC Sept 25 - staff concurrence on surcharging BWST
- 8) CPG Sept 30 - dynamic model of auxiliary building



October 1981

- 1) CPG Oct 2 - D.G. crack analysis
- 2) CPG Oct 21 - D.G. concerns
- 3) NRC Oct. 22 - staff concurrence on 45 more de watering wells
- 4) CPG Oct 28 - construction of access shaft
- 5) NRC Oct 30 - revised hearing schedule
- 6) NRC Oct 30 - telecon summary of aux. underpinning

November 1981

- 1) CPG Nov 6 - SWPS underpinning
- 2) CPG Nov 16 - Aux. underpinning  
MRC Nov 19 - Transfer of Barbara Stamiris letter to HQ's
- 3) MRC Nov 23 - summary of Nov 12 meeting on construction schedules
  
- 4) CPG Nov 24 - soil boring results for aux building
- 5) MRC Nov 24 - staff concurrence for access shafts and freeze wall
- 6) MRC Nov 24 - transfer of BWST to MRR (5055)e

## December 1981

- 1) CFCO Dec 3 - aux. building cals
- 2) CFCO Dec 15 - underground piping
- 3) NRC Dec 16 - corrections to licensing conditions for aux. building
- 4) NRC Dec 28 - staff concurrence on 5 more dewatering wells
- 5) NRC Dec 28 - announcement of Geotechnical Engineers as NRC consultants
- 6) NRC Dec 31 - summary of Nov 4 meeting on aux building

January 1982

- 1) NRC Jan 5 - telecon of Dec 21 on freezewall
- 2) CPG Jan 6 - freezewall effects
- 2a) CPG Jan 7 - QA plan for underpinning
- 3) NRC Jan 15 - BWST comments
- 4) CPG Jan 15 - midland audits to board
- 5) NRC Jan 25 - summary of Oct 2 meeting on seismic models
- 6) CPG Jan 25 - feedwater isolation valve pits
- 7) NRC Jan 28 - staff review of schedules for remedial work
- 8) NRC Jan 29 - summary of Jan 12 meeting of QA changes
- 9) NRC Jan 29 - QA plan acceptance by NRC

## February 1982

- 1) NRC Feb 3 - action items from hearing of Feb 2
- 2) NRC Feb 4 - summary of Dec 2 meeting on geology
- 3) CFCO Feb 4 - soldier piles
- 4) NRC Feb 5 - summary of Oct 6-7 meeting on underground piping
- 5) NRC Feb 5 - summary of Oct 7 meeting on D.G.
- 6) NRC Feb 5 - summary of Jan 26 telecon on surcharge of BWST
- 7) NRC Feb 5 - summary of Dec 10 meeting on cracks
- 8) NRC Feb 5 - summary of Oct 1 meeting on remedial measures
- 9) NRC Feb 12 - staff concurrence on activation of freeze
- 10) CFCO Feb 16 - cracks in D.G. building
- 10) Feb 23-26 - meeting notes from HQ's
- 11) NRC Feb 26 - staff concurrence on removal of surcharge from BWST

March 1982

- 1) CPG March 2 - 3-D computer model of SWPS
- 2) CPG March 2 - report on -WPS
- 3) NRC March 8 - telephone call of soil spring stiffness
- 4) NRC March 10 - summary of ~~March 10 meeting notes~~ Jan 18-19 audit
- 5) CPG March 10 - aux building access shaft
- 6) CPG March 10 - settlement of underground Diesel fuel tanks
- 7) CPG March 10 - evaluation bedrock
- 8) NRC March 11 - summary of March 8 telephone on soil spring stiffness
- 9) CPG March 12 - Midland audits to hearing board
- 10) NRC March 12 - Summary of March 10 meeting of QA
- 10) CPG March 12 - Summary of March 12 phone call
- 11) NRC March 16 - ~~Meeting notes~~ Supplemental summary of Jan 18-20 audit of aux. building
- 12) NRC March 16 - summary of March 3 meeting on dewatering
- 13) NRC March 16 - seismic safety margin
- 14) CPG March 16 - additional information on buried pipe
- 15) CPG March 18 - surge charge removal of BWS
- 15) NRC March 18 - IAP. Aux. Bldg. Instrumentation
- 15) NRC March 22 - information requested by staff for Phi
- 16) CPG March 23 - soil boring results on retaining wall

17) NRC March 24 - meeting notice of schedules - April 1

18) NRC March 26 - staff concurrence for grouting cracks in BWST

19) NRC March 26 - telephone summary on spring constants and underpinning of SWPS

19a) NRC March 30 - Meeting notes from March 30th

20) CPC March 31 - aux. instrumentation CAL

21) CPC March 31 - staff information for phase 2 & 3

CPC March 29 - Soil dynamic modulus study by D&H

## April 1982

- 1) NRC April 2 - staff conference for SWPS construction dewatering
- 2) CPG April 5 - Summary of March 30 meeting in RIII
- 3) NRC April 17 - ACRS meeting of April 29, 1982
- 4) NRC April 9 - Recommendation to ASLB about investigation
- 4a) CPG April 12 - ACRS soils information
- 4b) CPG April 15 - underground piping information
- 5) CPG April 15 - CPG list of documentation
- 5a) CPG April 22 - Staff information requested on BWS of SWPS
- 6) ASLB April 28 - Order to cancel hearings of May 11-14
- 7) CPG April 27 - GA plan for underpinning (MPGP-1)
- 7a) RBL April 29 - ACRS meeting notes
- 8) ASLB April 30 - Order to stop soils work
- 9) CPG April 30 - Effects of cracks

{ 5a) RBL April 19 - statement on investigation

{ 5b) CPG April 19 - Summary of soils issues for ACRS meeting on April



May 1982

- 1) <sup>CPCo</sup> May 3 - Midland Audits to Hearing Board
- 2) NRC May 3 - Letter to NRR staff telling of April 30th order
- 3) CPCo May 3 - Soil test results
- 4) NRC May 3 - Phone call with licensee-general staff
- 5) CPCo May 3 - Photographic Documentation of Soils samples
- 6) CPCo May 3 - Underground piping information  
NRC May 4 - Note to Denton
- 7) CPCo May 7 - SWPS - Edw wall evaluations
- 8) CPCo May 7 - Soil Modulus of EPA wings
- 9) NRC May 7 - ORDER use of C-45
- 10) CPCo May 10 - design calculations of BWST
- 11) CPCo May 10 - C45 drawing submittal
- 12) NRC May 11 - Phone call about phase 2
- 12) CPCo May 14 - scope of stopwork on site
- 13) CPCo May 14 - responses to staff's questions
- 14) NRC May 17 - Summary of May 7 telephone call on phase
- 15) CPCo May 17 - Response to SALP
- 16) CPCo May 18 - MPQP-1, rev 2
- 17) NRC May 18 - RIII meaning of order
- 18) CPCo May 19 - Weston Geophysical Report on earthquake

- 19) May 20 - Dr. Andersen's AGRS statement
- 20) CPG May 25 - Midland Audits to Hearing Board
- 21) NRC May 25 - Staff's view of CPG meaning of order and  
NRC May 26 - <sup>our meaning</sup> Amendment to Construction Permit
- 22) ~~NRC~~ May 28 - Mary Sinclair's statement to Senator Levin
- 23) May 29 - Barbara Stameris statement to AGRS

JUNE 1982

- 1) CPGO June 1 - Settlement-related Analyses for P.G. B.
- 2) CPGO June 1 - Schedule for responses
- 3) NRC June 4 - ACRS testimony of Little
- 4) CPGO June 7 - Additional Information of Soils Remedial Action
- 5) NRC June 8 - MP&P-1, Rev 2
- 6) NRC June 8 - Phone call "everything &"
- 7) CPGO June 11 - Response to 82-06 "Cable Pulling Noncompliance"
- 8) CPGO June 14 - Additional Information
- 9) CPGO June 14 - Concrete Crack Widths to stresses
- 10) NRC June 14 - Wendall Marshall's Telephone call
- 11) NRC June 15 - Phone call - Rock Bolts will be tested on FIVP
- 12) ~~CPGO June 16 - MP&P-1, Rev 3~~
- 12) CPGO June 18 - FIVP Load Verification
- 13) NRC June 18 - MP&P-1, Rev 3
- 13) NRC June 21 - Morelius & Spessard Midland letter to Huppeler
- 14) ~~CPGO~~ June 22 - Senator Levin's letter to Chairman Palladino
- 14) NRC June 24 - phone call "MP&P-2 will be written"
- 15) NRC June 30 - FIVP proof test concurrence
- 16) CPGO June 30 - New MP&P-1, Rev 3 and MP&P-2, Rev 0

July 1982

- 1) NRC July 6 - Conference call NRC & CPCo. (50 mins)
- 2) NRC July 16 - Walt Bird call about Jim M.
- 3) NRC July 19 - SSER Draft on suits  
NRC July 19 - SALP II STUFF & Responses
- 4) NRC July 19 - Summary of June 25 meeting
- 5) NRC July 20 - Wendall Marshalls concern
- 6) NRC July 23 - R. Cook concern memo
- 7) CPCo July 26 - NCR's to Board
- 8) CPCo July 26 - M&P-1 Rev 3, M&P-2, Rev 0
- 9) CPCo July 28 - M&P-1 & 2 Rev 3 & Rev C respectively

August 1982

- 1) NRC Aug 2 - Joe & Darl Phone call  
CPCo Aug 2 - Crack Repair Program
- 2) NRC Aug 3 - Notification of public meeting on SALP
- 3) NRC Aug 4 - Office of Special Cases
- 4) NRC Aug 5 - Public Meeting Notes on SALP
- 5) NRC Aug 6 - SALP III period
- 6) CPCo Aug 9 - MGP-1 & 2 transmittal
- 7) CPCo Aug 10 - Remedial Soils Construction Release
- 8) NRC Aug 10 - ITEMS to be addressed at hearing
- 9) NRC Aug 12 - Draft SSER on soils
- 9) NRC Aug 12 - CAL - violation Board Order
- 10) CPCo Aug 13 - MGP-1 & 2 submittal
- 11) NRC Aug 13 - Remedial Soil work authorization
- 12) NRC Aug 13 - work authorization procedure
- 13) NRC Aug 16 - Designation of responsibility for Midland Tex.
- 14) CPCo Aug 17 - NCR's to Board
- 15) NRC Aug 18 - Get well policy to Keppler
- 16) NRC Aug 20 - Request for violation of Board Order investigate
- 17) NRC Aug 30 - Hanger response - inspect all hangers
- 18) W.M. Aug 31 - Electromagnetic pulses
- CPCo Aug 25 - Soils Commitments
- CPCo Aug 26 - Soils Commitments

## September 1982

- 1) Sept 1 - Barb Stamos Phone Call
- 2) <sup>CPCo</sup> Sept 3 - Stress tables for SWP
- 3) <sup>EPA</sup> Sept 3 - EPA statement
- 4) <sup>CPCo</sup> Sept 7 - Monthly audits to Board
- 5) <sup>NRC</sup> Sept 7 - Aug 17 meeting notes
- 6) <sup>CPCo</sup> Sept 9 - MPGAD organization change
- 7) Sept 15 - Wendell Marshall's letter
- 8) <sup>NRC</sup> Sept 16 - MPGAP 1 of 2
- 9) <sup>NRC</sup> Sept 17 - Midland Communications
- 10) <sup>CPCo</sup> Sept 17 - Non G materials
- 11) <sup>NRC</sup> Sept 17 - Gap communications
- 12) <sup>CPCo</sup> Sept 17 - GA implementation
- 13) <sup>CPCo</sup> Sept 17 - GA implementation for remedial soils
- 14) <sup>NRC</sup> Sept 17 - Fire protection site survey.
- 15) <sup>CPCo</sup> Sept 17 - Revised Salp response
- 16) <sup>NRC</sup> Sept 20 - Review of CPCo commitments
- 17) <sup>CPCo</sup> Sept 20 - Independent assessment of soils work
- 18) <sup>NRC</sup> Sept 21 - Phone call - J Kane

- 19) CPG Sept 21 - Proof Load Jacking of FIVP
- 20) NRC Sept 22 - Implementation of Quality Programs
- 21) NRC Sept 22 - Midland false statement re lawyers
- 22) NRC Sept 22 - Summary of Sept 8 meeting on QA soils
- 23) NRC Sept 23 - Core Drilling
- 24) NRC Sept 24 - CPG commitments
- 25) NRC Sept 24 - CAL on QC certs
- 26) NRC Sept 25 - Notification of ASLB
- 27) Sept 29 - Public meeting passouts
- 28) CPG Sept 30 - 8207 response on hangers
- 29) CPG Sept 30 - ALAB quarterly report

October 1982

- 1) NRC Oct 1 Draft Zack Report
- 2) CPG Oct 5 Independent Review Program
- 3) NRC Oct 5 Qualification of Inspection Personnel
- 4) NRC Oct 6 Sinclair Interrogatories
- 5) CPG Oct 6 MPGP-1 Rev 3 and MPGP-2 Rev 0
- 6) NRC Oct 8 Proof Load of FIUP
- 7) NRC Oct 12 letter to GAP
- 8) CPG Oct 13 Audits to Board
- 9) NRC Oct 22 Authorization of MPGP1 and MPGP2
- 10) GAP Oct 22 Soils GA and 3RD Party  
NRC Oct 26 Boos false statement from Burns to Davis
- 11) CPG Oct 27 asking for authorization for Fire Line
- 12) CPG Oct 27 Non A materials for underpinning
- 13) CPG Oct 27 Audits to Board
- 14) CPG Oct 28 Agreements on pit depth excavation  
14a) Oct 28 Saunders Statement
- 15) NRC Oct 29 Ron's 44 pager
- 16) NRC Oct 29 Reg Guide 1.29 exceptions



November 1982

- 1) NRC Nov 1 Notification of Board on Wrong Cables
- 2) CPG Nov 9 Audits to Board
- 22) CPG Nov 10 MP&P-1 Rev 4 & MP&P-2 Rev 1
- 3) NRC Nov 12 Summary of July 27-30, 1982 Audit on Soils
- CPG Nov 15 MP&P-1 Rev 3, MP&P-2 Rev 0
- 4) CPG Nov 16 Natural Gas pipeline on site
- 5) NRC Nov 23 MP&P organizational changes
- 6) NRC Nov 29 Seismic analysis of SWPS & BWST
- 7) NRC Nov 29 Prefiled ASLB Testimony

December 1982

- 1) NRC Dec 1 Notification of Board of HVAC welders
- 2) CPCo Dec 1 Cable substitutions
- 3) NRC Dec 3 Notification of Board about D.G. Building
- 4) CPCo Dec 3 55.55(e) on shear lug design
- 5) CPCo Dec 3 Qualification of Inspection personnel
- 6) CPCo Dec 6 Pier 12 everything ready to go
- 7) NRC Dec 7 Board Notification of stop work HVAC
- 8) CPCo Dec 10 Drawing C-45
- 9) CPCo Dec 10 Audits to Board
- 10) CPCo Dec 12 Frazil ice
- 11) GAP Dec 12 Tour of site
- 12) NRC Dec 16 Gas pipeline @ site
- 13) NRC Dec 20 First 2 monthly status reports
- 14) NRC Dec 21 Dec 7 meeting notes on D.G. Building
- 15) NRC Dec 30 NCAL on stop work because of D
- 16) ~~CPCo~~  
16) Dec 31 Mary Sinclair's letter to Board on stop work

January 1983

- 1) CPO Jan 3 Request for authorization of MP&P-1 Rev 5  
CPO Jan 3 Keys to MP&P-1  
NRC Jan 3 Mike Wilcox's notes of meeting
- 2) CPO Jan 5 Audits to Board  
CPO Jan ORIGINAL CCP
- 3) NRC Jan 6 Meeting Notes of <sup>me being</sup> consultant
- 4) NRC Jan 11 3rd monthly status Report  
NRC Jan 11 Joe's telephone discussion of phase 1 or 1-11
- 5) NRC Jan 18 OI Report on Bee's Statement
- 6) NRC Jan 19 Phone call on Jan 11/12 on EPA rising
- 7) ME Jan 24 Phone call on FIVP jacking
- 8) NRC Jan 25 Denial of Fuel load license
- 9) CPO Jan 25 Authorization to install instrument conduit
- 10) CPO Jan 26 NO MOPE IPINS
- 11) CPO Jan 27 letter of commitment on FIVP
- 12) CPO Jan 28 II Bulletin 79-02 Response

February 1983

- 1) NRC Feb 8 Telecon on Load test pier
- 2) NRC Feb 8 Notes on Public meeting
- 3) NRC Feb 8 Board Notification on \$120,000 fine
- 4) CPO Feb 9 SWPS probing
- 5) NRC Feb 15 Licensee performance on pier RE #12W
- 6) NRC Feb 24 telecon on underpinning
- 7) NRC Feb 24 S&W approval
- 8) CPO Feb 24 S&W contract change

March 1983

- 1) CPCo March 1 CCP meeting on site
- 2) ~~CPo~~ March 2 dewatering request
- 3) CPCo March 4 Slope lay back
- 4) CPCo March 4 Man & materials
- 5) CPCo March 4 OBS-4 report
- 6) CPCo March 8 slope lay back
- 7) GAP March 7 Billie's letter
- 8) NRC March 8 Board violation
- 9) CPCo March 9 SSER #2 comments
- 10) GAP March 10 Billie's letter
- 11) NRC March 16 NRR assistance to RIII
- 12) CPCo March 18 cone penetrometer results  
NRC March 25 Prefiled ASLB Testimony
- 13) NRC March 28 NCAI on D.C.B.
- 14) NRC March 31 FOIA on D.C.B.
- 15)

April 1983

- 1) CPCo April 4 no excavation permit
- 2) NRC April 5 letter to Billie
- 3) CPCo April 6 CCP
- 4) GAP April 7 Barbara's Request for documents
- 5) CPCo April 7 pier 11 jacking data
- 6) CPCo April 13 underground missile protection
- 7) CPCo April 14 meeting notes (March 7-8, April 5-7)
- 8) NRC April 14 completion of NRC lead on soils
- 9) NRC April 20 Barbara's stuff
- 10) CPCo April 22 CCP
- ~~11) CPCo A.~~  
MAC April 25 Management problems General

May 1983

- 1) CPCo May 3 Dike surveillance
- 2) CPCo May 6 Yellow back  
CPCo May 10 telephone on dirt
- 3) NRC May 11 RII review of terra's plan
- 4) NRC May 11-12 meeting notes on load test  
CPCo May 13 Grouting Report
- 5) NRC May 13 letter to Lone Tree Council
- 6) GAP May 13 Reg Guide 1.29
- 7) NRC May 13 Notification of ASLB on soils stuff
- 8) CPCo May 13 3 additional probe holes
- 9) NRC May 24 ASLB notification on soils stuff  
NRC May 26 Request more information on Seismic Margin
- 10) NRC May 27 Joe's site visit notes of May 11-12
- 11) NRC May 31 telephone on March 7-8, April 5-7

## June 1983

- 1) CFCO June 2 Excavation Permit Revision
- 2) CFCO June 9 Load Test Aer II results
- 3) CFCO June 10 CCP revision
- 4) CFCO June 10 6 initial swps well data
- 5) GAP June 20 Letter to commissioners
- 6) NRC June 21 PN on grillaze
- 7) CFCO June 24 letter of understanding BWST
- 8) NRC June 27 CCP training approved  
CFCO June 28 NRC Questions
- 9) NRC June 30 Phone call on prerequisites
- 10) NRC June 30 OK downgrading to EL-570 at SWPS
- 11) NRC June 30 PN on welding engineer



## July 1983

- 1) NRC July 1 - original SALP - licensee bad stuff
- 2) CPCo July 8 - dewatering responses
- 3) SFW July 11 - phone call June 28
- 4) CPCo July 11 - MPAD-1 Rev 6
- 5) July 11 - (all stop work on drilling)
- 6) NRC July 12 - approval of revised tiebacks
- 7) NRC July 13 - meeting on site notes of drilling stop work
- 8) NRC July 14 - meeting on site stop work
- 9) July 14 - congress transcript
- 10) NRC July 15 - PN - Dow termination
- 11) CPCo July 15 - Dow law suit
- 12) CPCo July 15 - UAT approach + other items
- 13) CPCo July 15 - justification for continuing soils work
- 14) NRC July 20 - congress transcript editing comments
- 15) NRC July 21 - Notification Board drilling incident

July 1983

- 16) NRC July 21 - D.G. concerns to Eisenhut
- 17) NRC July 21 - D.G. concerns evaluation from Vollmer
- 18) NRC July 21 - SALP III draft
- 19) CPG July 25 - dewatering of settlement responses
- 20) CPG July 27 - concrete mixes with superplasticizer

## August 1983

- 1) CPCo Aug 2 - triaxial test results under piers
- 2) CPCo Aug 17 - phone call
- 3) NRC Aug 19 - CCP comments
- 4) CPCo Aug 26 - CCP final version
- 5) NRC Aug 29 - Civil Penalty D.G. Building
- 6) NRC Aug 29 - Civil Penalty D.G. Building
- 7) NRC Aug 30 - Preheat letter from Ray

## September 1983

- 1) NRC Sept 1 - Boo's additional stuff
- 2) CPCo Sept 6 - Response to SALP
- 3) RPCo Sept 7 - MPQP-1 Rev. 7
- 4) CPCo Sept 7 - Phone call
- 5) NRC Sept 9 - NRR soils assistance
- 53) ME Sept 14 & 15 - Audit in Ann Arbor Notes
- 6) NRC Sept 15 - S&W Protocol
- 7) CPCo Sept 16 - phone call
- 8) NRC Sept 16 - SALP III final
- 9) NRC Sept 16 - Summary of May 11 & 12 site visit
- 10) NRC Sept 16 - Summary of <sup>load test</sup> March 7 & 8 and April 15 & 17 <sub>conference calls</sub>
- 11) CPCo Sept 21 - Phone call
- 12) NRC Sept 22 - Re-review of P.G. Building
- 13) CPCo Sept 26 - \$116,500 check
- 14) CPCo Sept 28 - Phone call
- 15) NRC Sept 29 - Management Meeting in RIII on Aux. Drilling Incident
- 15) NRC Sept 30 - Hood's UAT approval

## October 1983

- 1) NRC Oct 5 Notice of Violation enforcement meeting
- 2) NRC Oct 5 Notification of Board - Drilling thru Aux Building
- 3) CPCo Oct 5 Phone conversation on logging
- 4) NRC Oct 6 Confirmatory Order on CCP
- 5) NRC Oct 6 Billie's 2.206 response
- 6) NRC Oct 11 Aux. Build Concerns from Ann Arbor Audit
- 7) ME Oct 11 Enforcement conference my notes
- 8) ME Oct 13 Safety public meeting notes
- 9) NRC Oct 17 Notification of Board - BdW hanger stop work
- 10) NRC Oct 19 Violation Board Order Civil Penalty Recommendation to AQ's
- 11) CPCo Oct 22 Stop Work Soils - FCR/FCN's
- 12) CPCo Oct 24 Sept 14-15 Ann Arbor Audit responses
- 13) NRC Oct 25 PN on stop work's on FCR/FCN's
- 14) NRC Oct 25 Notification of Board - Stop works

November 1983

- 1) SdW Nov 1 Evaluation of Document Report by Craig
- 2) CPG Nov 4 SWPS load transfer
- 3) ME Nov 11 SdW public meeting notes
- 4) NRC Nov 21 Board Notification on Aux Build Concerns
- 5) CPG Nov 22 Phone Conversation - grant under C.T.
- 6) NRC Nov 28 RBL Affidavit to Board
- 7) CPG Nov 29 Aux Building instrumentation readings (4 Binders)
- 8) NRC Nov 30 Board Notification requirements
- 9) ME Nov 30 phone call on crack issue worms

## December 1983

- 1) CPCo Dec 2 RCAL on crack mapping
- 2) NRC Dec 6 letter of understanding on jacking
- 3) CPCo Dec 6 letter of understanding on jacking
- 4) ME Dec 8 SDW public meeting notes
- 5) CPCo Dec 9 Aux Building crack mapping report
- 6) NRC Dec 14 Telephone call on Nov 15 - Aux Building
- 7) GEI Dec 20 Telephone call on Dec 16 - EPA movements
- 8) NRC Dec 21  $\Delta'$  value letter of understanding
- 9) CPCo Dec 22  $\Delta'$  value letter of understanding
- 10) NRC Dec 27 Reg Guide 1.29 June 14 meeting summary
- 11) NRC Dec 27 Reg Guide 1.29 Nov 29-30 meeting summary
- 12) NRC Dec 29 Release of NRC Holdpoint on Crack Mapping
- 13) NRC Dec 30 De Young's propose Confirmatory Order on Audit

January 1984

- 1) ME Jan 4-6 Meeting notes from Jan 4-6 Ave Building Meeting
- 2) NRC Jan 5 Boe's additional memo
- 3) ME Jan 13 S/W Public Meeting Notes
- 4) NRC Jan 18 FOIA documents on D.G. Building
- 5) NRC Jan 25 Board Notification cracks, D.G. pedestals
- 6) NRC Jan 26 Reg Guide 1.29 position
- 7) NRC Jan 27 2.206 Review



February 1984

- 1) ME Feb 9 stw Public Meeting Notes
- 2) GAP Feb 10 Additional 2.206 Request
- 3) CPCO Feb 15 Turbine Roll
- 4) NRC Feb 22 Feb 2-5, 1982 aux building meeting notes
- 5) NRC Feb 22 March 16-19 soils meeting notes
- 6) CPCO Feb 24 Turbine Roll / additional letter
- 7) ME Feb 29 Meeting notes GC recertification

Document Name:  
VIOLATION OF THE BOARD

Requestor's ID:  
SHERYL

Author's Name:  
Hassell/sab/05/24

Document Comments:  
continuation of Midland findings

### III. ALLEGED VIOLATION OF ASLB ORDER OF APRIL 30, 1982

#### A. Introduction

. On December 6, 1979, the Director of the Office of Inspection and Enforcement and the Director of the Office of Nuclear Reactor Regulation issued jointly an Order Modifying Construction permits for the Midland plant. (45 Fed. Reg. 35950 (May 28, 1980)). This order was based in part on a breakdown in quality assurance related to soil construction activities under and around safety-related structures and systems at the Midland site. (Id.; Joint Exhibit 1, Tr. 1175).

. The licensee petitioned for a hearing on that order, and the proceeding on that order was eventually consolidated with the proceeding on the licensee's application for operating licenses for the Midland plant. During the course of the consolidated proceeding, we issued a memorandum and order that authorized the Director of the Office of Nuclear Reactor Regulation to amend the Midland construction permits to incorporate certain conditions on the conduct of remedial soils work at the Midland site. (See Consumers Power Co. (Midland Plant, Units 1 and 2), LBP-82-35, 15 NRC 1060, 1072-73 (April 30, 1982)).

. In accordance with the Board's memorandum and order, the construction permits were amended on May 26, 1982 to include the conditions imposed by our order. (47 Fed. Reg. 23999 (June 2, 1982)).

. Among the restrictions imposed by our order of April 30, 1982 was a condition that the licensee shall obtain explicit prior approval from the NRC staff before proceeding with the following soils-related activities, with the exception of those already approved by the NRC staff and those the NRC staff agrees are not critical, (a) any placing,

compacting, excavating, or drilling soil materials around safety-related structures and systems, and (b) construction work in soil materials under or around safety-related structures and systems such as field installation, or rebedding, of conduits and piping. (LBP-82-35, supra, 15 NRC at 1072-73).

On May 7, 1982, we issued an order which clarified some aspects of our April 30, 1982 order. Consumers Power Co. (Midland Plant, Units 1 and 2), Memorandum and Order (Telephone Conference Call of May 5, 1982), slip op., (May 7, 1982). The May 7, 1982 order made clear that "verbal approval before proceeding with soils-related activities is acceptable for activities which are routine and/or relatively small in scope". (Id. at 5). That order also noted that such approvals should be documented by the NRC staff and that either the Office of Inspection (IE) or the Office of Nuclear Reactor Regulation (NRR) can give approvals as appropriate to the activity and practice of the respective office. (Id. at 6).

In late July 1982 Dr. Ross B. Landsman, NRC Region III Soils Inspector, was at the Midland Nuclear Power Plant site to conduct an inspection of the remedial soils work. (Staff Ex. 26, Office of Investigations (OI), Report of Investigation dated June 2, 1983 ("First OI Report") at 2, 3). On July 28, 1982, he was at the Midland site and inspected the electrical deep "Q" duct bank, and found that the licensee had excavated approximately twelve feet beneath the duct bank. (Id. at 3; Landsman, Tr. 21,549-50). He alleged that the licensee had conducted this excavation without prior NRC (NRR) approval as required by the Board's April 30, 1982 order. (Staff Ex. 26, First OI Report at 2 and Attachment 2).

During Dr. Landsman's next inspection, he discovered on August 4, 1982 that the licensee had conducted another excavation in "Q" soils by relocating a fire line along side the service water pump structure. (Id.; Landsman, Tr. 21,551, 21,556-57). He alleged that this excavation was also conducted by the licensee without receiving the required NRC approval. (Id.).

The Regional Administrator, Region III, U.S. N.R.C. requested the Commission's Office of Investigations (OI) to conduct an investigation to determine the circumstances in which the licensee allegedly violated our April 30, 1982 order by excavating below the deep "Q" duct bank and relocating the fire line. (Staff Ex. 26, First OI Report at 2). On June 2, 1983, OI issued a report of its investigation into the alleged violations of the Board's April 30, 1982 order. (Staff Ex. 26, First OI Report).

Subsequently, at the request of the Regional Administrator, Region III, OI reopened its investigation of the alleged violations of the April 30, 1982 Board order to conduct additional interviews in determining the circumstances surrounding the alleged violations. (Staff Ex. 27, Office of Investigations, Report of Investigation dated September 12, 1983 ("Second OI Report"), Summary).

We scheduled and held evidentiary hearings concerning these allegations on November 1, 2, 3, 4, 7, 8 and 9, 1983 in Midland, Michigan. We also held one evidentiary hearing session on December 3, 1983 in Bethesda, Maryland in order to permit a subpoenaed witness to testify. The NRC staff presented a panel of NRC witnesses consisting of the following persons: (1) Mr. Harold Walker, Investigator, Office of

Investigations, Region III; (2) Mr. Charles Weil, Complaint Specialist, Region III; (3) Mr. Darl Hood, Project Manager, Office of Nuclear Reactor Regulation (NRR); (4) Mr. Joseph Kane, Geotechnical Engineer, NRR; (5) Mr. Ronald Cook, Senior Resident Inspector, Midland site, Region III; and (6) Dr. Ross Landsman, Reactor Inspector, Region III.

(Tr. 21,330-31). These witnesses presented testimony concerning their involvement in matters associated with the licensee's alleged violation of our April 30, 1982 memorandum and order. The licensee presented a panel of witnesses consisting of Mr. James A. Mooney, Executive Manager, Consumers Power Company and Mr. Robert M. Wheeler, Soils Section Head, Consumers Power Company. (Tr. 21,953). At the request of the Board and parties, the licensee presented Mr. John Schaub, Assistant Project Manager for the Midland project. (Tr. 22,489, 22,491). Mr. John L. Donnell, who was a former Babcock & Wilcox soils inspector at the Midland site, testified in response to a subpoena. (Tr. 22,571).

B. May 20, 1982 Meeting/Landsman Prohibition

. The deep "Q" electrical duct bank is a safety-related electrical duct bank located quite deep in the ground. (Staff Ex. 27, Second OI Report at 13, Attachment 12 at 7; Hood, Tr. 21,693-94). In the licensee's January 6, 1982 submittal, the deep "Q" duct bank location is depicted as crossing number 3. (Kane, Tr. 21,706; Staff Ex. 26, First OI Report, Attachment 14).

. Mr. Mooney testified that initially the licensee intended to insert freeze elements in a manner that would have frozen the soil

directly beneath the deep "Q" duct bank. (Id.) The licensee proposed to protect the deep "Q" duct bank from any heaving which would have been caused by the freezewayall by excavating the soil directly below the duct bank. (Id.) However, the licensee abandoned this plan when it discovered that the duct bank was deeper than they previously expected. (Id.)

On May 20, 1982, Mr. Hood and Mr. Kane were at the Midland site participating in an ACRS subcommittee tour of the site. (Hood, Tr. 21,723; Kane, Tr. 21,725). During a lull in that site tour, Dr. Landsman approached Mr. Hood and Mr. Kane and requested that they attend a meeting with him along with the licensee because he had become aware that the licensee intended to excavate below the deep "Q" duct bank, which he did not want them to do. (Hood, Tr. 21,723-24; Kane, Tr. 21,725; Landsman, Tr. 21,549, 21,754; Staff Ex. 27, Second OI Report at 13).

At the May 20 meeting, the licensee informed the NRC staff that the deep "Q" duct bank was deeper than the licensee expected and proposed an alternative method, involving excavating the soils below the deep "Q" duct bank and installing a plug of either clay or concrete. (Staff Ex. 27, Second OI Report, Attachment 12 at 7, 8). At the time of the May 20, 1982 meeting, the excavation was not below the deep "Q" duct bank. (Kane, Tr. 21,720, 21,728).

Mr. Hood testified that at the May 20, 1982 meeting during the course of the licensee's presentation, Mr. Schaub indicated that a view should be taken that the excavation itself could proceed and that at a later point in time after the excavation a decision could be made on the technical issue of the backfill material and the technique of placing the

backfill. (Hood, Tr. 21,559). The NRC staff did not accept that view because it had certain technical concerns. (Hood, Tr. 21,559; Staff Ex. 26, First OI Report at 13; Kane, Tr. 21,563-64).

Mr. Kane explained the NRC staff's technical concern at the May 20, 1982 meeting. (Staff Ex. 26, First OI Report at 12, 13; Kane, Tr. 21,563-64; Hood, Tr. 21,559).

The extent of the gap below the deep "Q" duct bank that the licensee had originally proposed (January 6, 1982 submittal) to excavate was 12 inches. (Kane, Tr. 21,709; Staff Ex. 26, First OI Report at 13). The licensee's January 6, 1982 submittal depicting the location of the deep "Q" duct bank shows a vertical scale where 1 inch is equal to 10 feet. (Kane, Tr. 21,707; Staff Ex. 26, Attachment 14, Figure 7). The reasons for the gap was to assure that if soil beneath the duct bank froze and caused heaving it would not impinge the duct bank. (Kane, Tr. 21,710, 21,563).

Based on a series of meetings and licensee meetings, the licensee and the NRC staff reached an understanding that the licensee intended the excavation below the deep "Q" duct bank to be a 6-inch gap or space. (Kane, Tr. 21,563, 21,709-10, 21,845).

Mr. Kane testified that at the May 20, 1982 meeting the licensee proposed for the first time doing something significantly different; namely, removing all of the fill below the deep "Q" duct bank down to the natural clay material and replacing it with a concrete plug to create an impervious barrier, which involved an approximately 11 foot excavation. (Kane, Tr. 21,564, Staff Ex. 26, First OI Report at 13). Mr. Kane explained at the meeting that the NRC staff's concern was that



this proposal might create the problem of differential settlement because a hard spot would be created that could cause differences in settlement and the possibility of voids. (Kane, Tr. 21,564, 21,763). He testified that a good engineering approach would not be to separate this work into two phases since the excavation phase creates the problem and the backfill would add to the problem created by the excavation. (Id.)

. Mr. Kane told the licensee at the May 20, 1982 meeting that it should stop now and not get into this problem without thinking through what is to be done once the excavation is completed. (Kane, Tr. 21,564-65, 21,763; Staff Ex. 26, First OI Report at 13).

. Mr. Kane testified that it was his understanding of the May 20, 1982 meeting that the licensee was not to excavate below the deep "Q" duct bank until the problem was thought through, addressed, a solution developed, and NRC approval obtained. (Kane, Tr. 21,565, 21,763; Staff Ex. 26, First OI Report at 13). Mr. Kane's understanding of the May 20, 1982 meeting was confirmed by Mr. Hood. (Hood, Tr. 21,556; Staff Ex. 26, First OI Report at 12).

. Mr. Mooney's testimony about the nature of NRC staff's technical concerns as expressed at the May 20 meeting regarding the nature of the permanent backfill for the deep "Q" duct bank is consistent with Mr. Kane's testimony. (Staff Ex. 27, Second OI Report, Attachment 12 at 8). However, Mr. Mooney testified that none of the licensee's personnel understood that the NRC staff's concern at the May 20 meeting also related to excavation below the deep "Q" duct bank. (Id.) In his interview with OI investigators, Mr. Mooney also stated that he did not remember anything being said about excavation beneath the deep "Q" duct bank during the May 20, 1982 meeting. (Staff Ex. 27, Second OI Report

at 13). Mr. Mooney explained that this statement meant that he did not recall any prohibition against excavation below the deep "Q" duct bank. (Mooney, Tr. 22,355).

. During the May 20, 1982 meeting Dr. Landsman told Mr. Mooney and Mr. Schaub explicitly not to excavate beneath the deep "Q" duct bank without NRC approval. (Landsman, Tr. 21,610, 21,653, 21,764; Kane, Tr. 21,563-65; Hood, Tr. 21,761-62). Dr. Landsman testified that he looked them in the eye and that he believed that either Mr. Mooney or Mr. Schaub nodded his head in agreement with Dr. Landsman's prohibition against further excavation. (Landsman, Tr. 21,653, 21,763-64).

. Mr. Kane and Mr. Hood both corroborated Dr. Landsman's testimony that during the May 20, 1982 meeting, the licensee was told by the NRC not to dig beneath the deep "Q" duct bank without NRC approval. (Hood, Tr. 21,761-62; Kane, Tr. 21,762-63).

. Mr. John F. Fisher, a Bechtel Underpinning Contracts Manager, attended the May 20, 1982 meeting and prepared handwritten notes of that meeting. (Staff Ex. 27, Second OI Report at 6 and Attachment 12 at 8). His handwritten notes directly support and corroborate Dr. Landsman, Mr. Kane and Mr. Hood's understanding that the licensee was not to excavate below the deep "Q" duct bank without NRC approval. The notes state: "We will proceed w/exposing utility and not proceed with excavating the pit below deep "Q" until NRC approval." (Staff Ex. 26, First OI Report, Attachment 8). Mr. Mooney testified that after becoming aware of Mr. Fisher's notes he did not dispute that the statement was apparently made at the May 20, 1982 meeting although he did not remember such a commitment being made. (Staff Ex. 27, Second OI Report, Attachment 12 at 8).

Robert E. Sevo, a Bechtel Superintendent of Underpinning Verification, had a set of notes that reflected the NRC staff's prohibition against excavating beneath the deep "Q" duct bank. (Staff Ex. 27, Second OI Report at 22 and Attachment 17). Mr. Sevo's notes state: "No further deepening of the deep duct bank until NRR concurrence after [sic]". (Staff Ex. 27, Second OI Report, Attachment 17). We find that this entry corroborates Mr. Fisher's notes. Mr. Sevo's notes contains another entry that states: "Deep duct bank opened up to allow freeze to start-then finish excavation to till." (Id.) Contrary to the licensee's unexplained statement in its findings that this contradicts Mr. Fisher's earlier entry noted above, this entry can be read as Intervenor Stamiris' findings suggest, namely, that Mr. Sevo probably believed that the excavation as originally proposed by the license and approved by the NRC could proceed and that at some later time the additional excavation could be done, which is consistent with much of the evidence adduced in the record. More importantly, we observe that of the 11 entries made in his notes, Mr. Sevo was careful to record in several other instances whether a particular activity had to be reviewed or approved by the NRC. (Staff Ex. 27, Second OI Report, Attachment 17 at 1-4). Consequently, we find that the entry on its face does not necessarily contradict Mr. Fischer's notes.

At an exit meeting on May 21, 1982, Dr. Landsman warned the licensee again not to excavate the additional depth below the deep "Q" duct bank without getting prior NRC approval. (Staff Ex. 26, First OI Report, Attachment 2 and 9; Landsman, Tr. 21,610). The licensee prepared minutes of this exit meeting that corroborate Dr. Landsman's testimony that during that meeting he prohibited the licensee from conducting addi-

tional excavation below the deep "Q" duct bank. Those minutes state: "Dr. Landsman confirmed his understanding that this pit [deep "Q" duct bank pit] would terminate a relatively short distance below the duct, and not be extended lower, as originally intended." (Staff Ex. 27, Second OI Report, Attachment 8; Staff Ex. 26, First OI Report Attachment 9).

. During an exit meeting on May 28, 1982, the licensee was again told by Dr. Landsman not to excavate beneath the deep "Q" duct bank until they obtained NRC approval. (Landsman, Tr. 21,610). Dr. Landsman documented this NRC hold point in an inspection report. (Staff Ex. 26, Attachment 11; Landsman, Tr. 21,580, 21,768-69).

. Mr. Weil testified that Mr. Horn, who was head of the civil section for MPQAD, informed him during an interview that Mr. Horn's group recognized a commitment made to Dr. Landsman in May of 1982 that excavation would not take place below the deep "Q" duct bank without Dr. Landsman's approval. (Weil, Tr. 21,529-31).

. Mr. Schaub, who attended the May 20, 1982 meeting, testified that he was listening to a conversation during that meeting involving several other people and Mr. Kane, and that Mr. Kane said that the licensee could proceed at its own commercial risk to place a temporary backfill in the deep "Q" duct bank. (Schaub, Tr. 22,504-506). However, Mr. Schaub did not participate in that conversation. (Id., at 22,505). Mr. Kane testified that the discussions at the May 20, 1982 meeting were not limited to either the type of the backfill or the method of placing the backfill. (Kane, Tr. 21,845-47). He also testified that he not make a statement to either Mr. Schaub or anyone else at the May 20, 1982 meeting which would lead that person to believe that

Mr. Kane approved the use of concrete at the licensee's commercial risk. (Kane, Tr. 21,852).

Mr. Kane explained that it was his understanding of the May 20, 1982 meeting that the licensee's plans for the deep "Q" duct bank, which involved an 11 foot excavation, were to be submitted for review by NRC prior to the excavation being initiated. (Staff Ex. 26, First OI Report at 13). Mr. Kane's understanding was corroborated by Mr. Hood statements in his interview during the OI investigation. (Staff Ex. 26, First OI Report at 12). He also stated in his interview during the OI investigation that he neither personally stated nor implied any permission for the licensee to initiate any excavation work concerning either the deep "Q" duct bank or the relocation of the fire line without obtaining prior approval from the NRC. (Id.)

Mr. Hood also explained that he did not approve either the excavation beneath the deep "Q" duct bank or the excavation for relocation of the fire line. (Staff Ex. 26, First OI Report at 12).

Mr. Hood testified that the May 20, 1982 meeting was not an official NRC meeting because no official notice had been given of it and he requested that no minutes be published. Because this meeting was informal in nature, he explained that information the licensee provides is not of the type which the Staff should rely on as a basis for its safety conclusion. (Hood, Tr. 21,726). Such information is not proper in an informal meeting; consequently, Mr. Hood stated the NRC staff had granted no approvals during the May 20, 1982 meeting. (Hood, Tr. 21,726-27).

Mr. Hood and Mr. Kane testified that to date the licensee has not submitted its proposal for conducting the additional excavation below the deep "Q" duct bank. (Kane, Tr. 21,691, 21,695; Hood, Tr. 22,313).

Dr. Landsman testified that there was some disagreement at the May 20, 1982 meeting about what are either major or minor design changes. (Landsman, Tr. 21,558). The licensee thought the excavation below the deep "Q" duct bank was a minor design change; however, the NRC staff thought it was a major design change. (Id.) Thus, Dr. Landsman stated that a decision was made that from then on he would decide whether it was a major or minor design change, and he then would decide whether to have NRR approve the change. (Landsman, Tr. 21,558; Staff Ex. 27, Second OI Report, Attachment 5 at 2). Mr. Kane and Mr. Hood corroborated Dr. Landsman's testimony that at the May 20 meeting it was decided that the procedure for handling design modifications was to first have Dr. Landsman evaluate the significance of the design modification, and if he decided it was significant then he would involve NRR. (Kane, Tr. 21,770; Hood, Tr. 21,771). In response to the licensee's request for clarification at the meeting about whether approval would come from NRR or Region III, Mr. Hood stated that approval would come from Dr. Landsman in Region III. (Hood, Tr. 21,559, 21,771).

Mr. Fischer's notes directly corroborate the testimony of Dr. Landsman, Mr. Kane and Mr. Hood that the procedure for the licensee to obtain NRC staff approvals. The notes state:

- D. Question on what is significant change - They have to be or should be submitted for approval. Agreed procedure - all items will be discussed with Landsman (Region 3). If R. Landsman thinks it is significant, CPCo will submit.

(Staff Ex. 26, First OI Report Attachment 8 at 2).

After weighing the evidence, we find that the licensee was told at the May 20, 1982 meeting not to excavate below the deep "Q" duct without prior NRC staff approval. We also find that the licensee was required to

submit additional information to the NRC staff showing its proposal for the additional excavation below the deep "Q" duct bank.

We find that Mr. Mooney's testimony that he doesn't recall the excavation below the deep "Q" bank being discussed at the May 20, 1982 meeting is not credible in view of the other evidence. Moreover, we find that Mr. Schaub's testimony that Mr. Kane authorized the licensee to proceed with the excavation below the deep "Q" duct bank at its commercial risk during the May 20, 1982 meeting is unsubstantiated by the evidentiary record and thus is not credible.

C. May 25, 1982 Letter

Mr. Mooney testified that the NRC staff gave explicit approval for the additional excavation beneath the deep "Q" duct bank in an NRC staff letter dated May 25, 1982 (Staff Ex. 27, Attachment 12 at 9).

The NRC staff's May 25, 1982 letter was responding to the licensee's letter of May 10, 1982, which addressed certain soils construction work the licensee believed had staff approval prior to our April 30, 1982 order. (Staff Ex. 26, First OI Report, Attachment 4 at 1).

The NRC staff's response to which soils construction work had NRC staff approval prior to April 30, 1982 is contained in paragraphs I and II of Enclosure 4 of the May 25, 1982 letter. (Id.; Hood, Tr. 22,309). Paragraph numbered I.c. of Enclosure 4 of the NRC staff's May 25, 1982 letter is the NRC staff's response to paragraph I.c. of the licensee's May 10, 1982 letter. (Hood, Tr. 22,309-10; Staff Ex. 26, First OI Report, Attachment 3 at 1, 2 and Attachment 4, Enclosure 4 at 1). Paragraph I.c. of the licensee's May 10, 1982 letter defines the following scope work previously approved by the NRC: "freeze wall

installation, underground utility protection, soil removal cribbing and related work in support of the freezeway installation, freezeway monitoring and freezeway activation" (Staff Ex. 26, First OI Report, Attachment 3 at 1, 2; Hood, Tr. 22,309-10). NRC staff's response in paragraph I.c. of Enclosure 4 of the May 25, 1982 letter, states that "References 5 and 7 provide staff concurrences for freezeway installation and activation, respectively". (Staff Ex. 26, First OI Report, Attachment 4, Enclosure 4 at 1). This paragraph also identifies the licensee letter of January 6, 1982 as an NRC staff basis of approval. (Id.; Hood, Tr. 22,310). Reference 7 is the NRC staff letter of February 12, 1982 which Mr. Mooney testified provided the specific NRC approval of the additional excavation below the deep "Q" duct bank. (Staff Ex. 26, Attachment 4; Mooney, Tr. 22,350, 22,362). He also testified that the NRC staff's February 12, 1983 letter is documenting the NRC staff's approval for excavating below the deep "Q" duct bank as described in the licensee's January 6, 1982. The testimony of Mr. Hood and Mr. Mooney that the basis for the NRC staff's approval for excavating below the deep "Q" duct bank is set forth in the licensee's submittal of January 6, 1982. (Hood, Tr. 22,310-11; Mooney, Tr. 22,351).

However, Mr. Mooney testified that the design presented in the licensee's submittal of January 6, 1982 does not show any limit to the proposed excavation below the deep "Q" duct bank even though he acknowledged it was drawn to scale. (Mooney, Tr. 22,353). We do not find Mr. Mooney's testimony about the design concept credible. Mr. Hood testified, and the licensee's January 6, 1982 letter shows, that the deep "Q" duct bank is 22 feet deep and is the only safety-related utility line



in the freeze zone, and it will be excavated as shown in Figure 6 and 7. (Hood, Tr. 22,311; Staff Ex. 26, Attachment 14). After looking at the licensee's proposal for excavating below the deep "Q" duct bank, Mr. Wheeler, who was in the panel with Mr. Mooney, testified that the proposed excavation below the deep "Q" duct bank as described in the licensee's January 6, 1982 submittal was different by 12 or 13 feet than the excavation which took place below the deep "Q" duct bank. (Wheeler, Tr. 22,340-44). This is consistent with Mr. Kane's description of the vertical scale of the drawing contained in the licensee's January 6, 1982 submittal, which is that one inch equals 10 feet. (Kane, Tr. 21,707). Mr. Kane, a geotechnical engineer, testified that the licensee's proposal at the May 20, 1982 meeting, which involved an approximately 11 foot excavation, was significantly different than its original proposal of 12 inches. (Kane, Tr. 21,564-65, 21,709, Staff Ex. 26, First OI Report at 13).

Mr. Mooney testified that in the May 25 letter the NRC staff concerned that related work in support of freezeway activation had been previously approved. (Mooney, Tr. 22,361). However, we find that Mr. Mooney's testimony is not corroborated by the evidence.

The licensee's May 10, 1982 letter states, in relevant part, that:

Remedial soils work previously approved by the NRC is continuing. Concurrence as to the scope of this work was obtained from Mr. Darl Hood, and is as defined below:

\* \* \* \*

I.c. freezeway installation, underground utility, protection, soil removal cribbing and related work

in support of the freezwall installation, freezwall activation . (emphasis supplied)

(Staff Ex. 26, First OI Report, Attachment 3 at 1, 2).

. The NRC staff's May 25 letter, in response to the licensee's May 10 letter, quotes all of item I.c., and goes on to state:

. . . the staff agrees that prior explicit concurrence for the activities listed in paragraph I.c. of CPCo's letter, May 10, 1982 had been obtained by the staff prior to the April 30, 1982 Order, except for the ambiguous ph[r]ase you included "and related work in support of . . .". Therefore, the staff did not approve "related work" in its letter of concurrence or other records.

(Staff Ex. 26, First OI Report, Attachment 4, Enclosure 4 at 1).

Mr. Hood, who prepared the May 25th letter explicitly confirms that this is where the NRC staff addressed paragraph I.c. of the licensee's May 10th letter. (Hood, Tr. 21,699, 22,310).

. Enclosure 4 to the NRC staff's May 25, 1982 letter goes on to state:

In summary, ambiguity associated with CPCo's use of the terms "Phase I work" and "related [freezwall] work" preclude confirmation of specific prior approval of these activities . . . . Consequently, continuation of these activities in conformance with the foregoing staff comments will be in accordance with the Board Memorandum and Order of April 30, 1982. Any deviations must be reported and approved by the staff.

(Id., at 2). The last sentence was intended as a warning to the licensee not to excavate below the deep "Q" duct bank because its proposed modification at the May 20, 1982 meeting had not been approved. (Hood, Tr. 21,798-800).

Mr. Hood testified that the May 25th letter in no way approves a modification to the licensee's originally proposed design and excavation that was presented to him for the first time on May 20, 1982. (Hood, Tr. 22,312, 21,799-800). Mr. Kane corroborated this testimony. (Kane, Tr. 21,657-58). Furthermore, Mr. Kane testified that his input to the May 25th letter occurred long before the May 20th meeting and thus his input did not address approving the licensee's proposed excavation, which first offered at the May 20, 1982 meeting. (Kane, Tr. 21,657-58).

We find Mr. Mooney's testimony that the NRC staff's May 25, 1982 letter gave explicit NRC approval for the additional excavation below the deep "Q" duct bank conducted by the licensee is unconvincing based on the evidence presented.

After considering all the evidence, we find that the NRC staff's May 25, 1982 letter did not authorize either implicitly or explicitly the licensee to conduct the further excavation below the deep "Q" duct bank without prior NRC approval.

D. Design Audit Meeting

During a Midland site visit on July 28, 1982, Dr. Landsman inspected the deep "Q" duct bank and discovered that the licensee had excavated approximately 12 feet below the deep "Q" duct bank. (Staff Ex. 26, First OI Report, Attachment 2 at 2; Landsman, Tr. 21,550). Dr. Landsman voiced his concern to the licensee that the excavation below the deep "Q" duct bank was in violation of the Board's April 30, 1982 order. (Id.) However, the licensee did not stop excavating below the deep "Q" duct bank until the next day, July 29, 1982. (Id.; Wheeler, Tr. 22,088). The licensee did not issue the stop work order until it had completed excavating to the clay. (Staff Ex. 26, First OI Report, Attachment 2 at 2; Wheeler, Tr. 22,084-97).

During the time period from July 27 to July 28, 1982, the NRC staff and its consultants met in Ann Arbor, Michigan with the licensee, Bechtel and their consultants to audit analyses, designs and preparations for remedial measures to correct the foundations and utilities on inadequately compacted fill at the Midland site. (Hood, Tr. 21,812; Staff Ex. 26, Attachment 16 at 1). Mr. Hood and Mr. Kane attended that design audit meeting. (Id.)

While the design audit meeting in Ann Arbor, Michigan was in progress, Dr. Landsman attended an exit meeting with the licensee at the Midland site on July 30, 1982. (Staff Ex. 26, First OI Report at 3 and Attachment 2 at 2). At that meeting, Dr. Landsman informed the licensee that it was in direct violation of the April 30, 1982 order and its construction permit. (Id.) The licensee told Dr. Landsman that earlier that morning it had discussed and received approval from Mr. Hood and Mr. Kane in Ann Arbor for the technical adequacy of what they were doing. (Id.)

After receiving a call from the Midland site, Mr. Schaub stated in his interview during the OI investigation that he spoke with Mr. Kane at the design audit meeting on July 29, 1982 about using concrete as a backfill in the deep "Q" duct bank recognizing that this would be done at the licensee's commercial risk. (Staff Ex. 26, First OI Report, Attachment 15). Mr. Kane testified that that statement is incorrect, because he did not talk to Mr. Schaub at all during the design audit meeting about the deep "Q" duct bank. (Kane, Tr. 21,853). At the time of the July audit, the only conversation about the deep "Q" duct bank that Mr. Kane could recall was that the deep "Q" duct bank was an outstanding issue on which the NRC was waiting to receive further information from

the licensee. (Kane, Tr. 21,566-67, 21,853; Staff Ex. 26, First OI Report at 13). Mr. Hood also testified that the only discussion about the deep "Q" duct bank as an agenda item was the licensee's acknowledgment that it would \_\_\_\_\_ a report to the NRC staff; but, it was not discussed in terms of resolving an issue as a formal agenda item. (Hood, Tr. 21,567, 21,815-16; Staff Ex. 26, First OI Report at 12). In the latter stages of the audit, Mr. Hood recalled a brief discussion with either Mr. Mooney or Mr. Schaub about Dr. Landsman's dissatisfaction that excavation had occurred at the deep "Q" duct bank. (Hood, Tr. 21,568) Mr. Hood replied that he would have to resolve that matter with Region III. (Id.)

There was some discrepancy in the NRC staff's testimony about whether the deep "Q" duct bank was properly classified as either an open item or confirmatory item in the final version of the agency of the July audit meeting and the SSER. (Tr. 21,815-25). However, we note that the final version of the agency was issued on November 12, 1982. (Staff Ex. 26, First OI Report, Attachment 16; Kane, Tr. 21,820-21). The SSER in question was issued in October 1982. (Kane, Tr. 21,821). Secondly, the licensee prepared an agenda, which was based on a draft SSER, that had its designation of whether an item was confirmatory, and that agency was used as the main agenda during the design audit meeting. (Staff Ex. 26, First OI Report, Attachment 16 at 1; Hood, 21,816). The licensee was informed that the draft SSER designations can not be relied on as approval for any work. (Staff Ex. 30). Nevertheless, the NRC staff consistently testified, which the final agenda and SSER-2 show, that the licensee still had to provide the NRC staff information about

the additional excavation below the deep "Q" duct bank. (Staff Ex. 26, First OI Report, Attachment 16; Kane, Tr. 21,566-67, 21,570, 21,853; Hood, Tr. 21,567, 21,815-16, 21,874; Staff Ex. 26, First OI Report at 12, 13.

. Based on our consideration of the evidence presented, we find that Mr. Schaub's statement that Mr. Kane indicated that the license could proceed to backfill the excavation at its own commercial risk is not credible. Further, given the time frame in which Mr. Schaub alleges Mr. Kane made the statement, the alleged statement could not have formed the basis for a belief by the licensee that it had explicit prior NRC staff approval before conducting the additional excavation below the deep "Q" duct bank.

. We find that the agenda of the July audit meeting did not provide the licensee explicit prior NRC staff approval to further excavate beneath the deep "Q" duct bank.

#### C. Wheeler/Landsman Agreement

. On August 4, 1982 during a site visit, Dr. Landsman discovered that the licensee had conducted an excavation that involved the relocation of a fire line along side the service water pump structure, which was in "Q" soils. (Staff Ex. 26, First OI Report, Attachment 2 at 2; Landsman, Tr. 21,553-54, 22,220). Based on Dr. Landsman's measurements, this excavation was approximately 7 to 8 feet deep. (Landsman, Tr. 21,553-43). Dr. Landsman informed the licensee on August 4, 1982 that the NRC had not authorized the excavation for relocation of the fire line. (Landsman, Tr. 22,220). The fire line relocation took place between June 30, 1982 and August 4, 1982.

(Landsman, Tr. 21,551-52). This excavation was not stopped until either August 9 or 10, 1982. (Staff Ex. 26, First OI Report Attachment 17, Landsman Tr. 22,220-21). Dr. Landsman stated unequivocally that the NRC staff had not authorized licensee to continue the excavation the fire line relocation until that work was completed. (Landsman, Tr. 22,223; Staff Ex. 26, First OI Report, Attachment 2 at 2).

Mr. Wheeler testified that on June 11, 1982 he reached an agreement with Dr. Landsman that minor excavations did not need prior approval from Dr. Landsman before beginning the work. (Staff Ex. 27, Second OI Report, Attachment 12 at 3). For major excavations, such as the excavation for the service water underpinning, he testified that the understanding was that Dr. Landsman would review prior to starting the work. (Id.) Mr. Wheeler documented his understanding of the agreement in a personal handwritten note dated June 11, 1982, which states: "Excavation permit procedure is OK. will review signed off permits from site visit to site visit. He is only concerned with major excavations such as SWS underpinning." (Staff Ex. 26, First OI Report Attachment 10). Mr. Wheeler testified that both the additional excavation below the deep Q duct bank and the relocation of the fire line were minor excavations that were covered by this agreement. (Id.)

Dr. Landsman testified that his understanding of the June 11, 1982 agreement with Mr. Wheeler was that he did not need to review before work began those excavation permits for minor excavations that had prior NRC approval. (Landsman, Tr. 21,933-34). For major excavations involving prior approved work, Dr. Landsman wanted to review before the licensee began the work. (Id. at 21,934). Dr. Landsman testified

further that for work that was not previously approved, he had to review those permits to authorize the work. (Landsman, Tr. 21,911). Since the only work the licensee was doing onsite at this time was work that prior NRC approval, he saw no need to document the agreement. (Landsman, Tr. 21,929, 21,932).

We find that Mr. Wheeler's testimony that the June 11, 1982 agreement with Dr. Landsman was as Mr. Wheeler understood it to be unconvincing. Mr. Wheeler's explanations of what items of work required Dr. Landsman's prior approval were contradictory and inconsistent. (Wheeler, Tr. 22,359-76). He was uncertain about precisely what work activities fell within the scope of his alleged June 11, 1982 agreement with Dr. Landsman. (Id.)

Dr. Landsman documented the NRC staff's hold point for the additional excavation below the deep Q bank, which arose out of the May 20, 1982 meeting, in an inspection he prepared after July 2, 1982. (Landsman, Tr. 21,768; Staff Ex. 26, Attachment 11). Such an action by Dr. Landsman is totally inconsistent with Mr. Wheeler's testimony that the agreement he reached with Dr. Landsman covered the excavation below the deep Q duct bank. Moreover, as we noted earlier, the NRC staff was in total agreement at the May 20, 1982 meeting that the licensee was not to excavate beneath the deep Q duct bank without prior NRC approval. The NRC staff as we noted above, has consistently testified that the licensee was to provide additional information before it could proceed with the excavation below the deep "Q" duct bank.

Contrary to Mr. Wheeler's testimony that the excavation for relocation of the fire line was covered by the June 11, 1982 agreement



thus did not require NRC approval, the licensee's Soils Progress Schedule Status Reports for June 23, 1982 and June 30, 1982 show that for those dates that NRC approval was required. (Staff Ex. 32 at 2). Mr. Schaub was responsible for making that determination. (Id.)

. For the additional excavation below the deep "Q" duct bank, Mr. Schaub apparently approved the excavation. (Stamiris Ex. 123; Wheeler, Tr. 21986-88, 21990). Mr. Wheeler stated he does not recall whether he ever told Mr. Schaub about his June 11, 1982 agreement with Dr. Landsman. (Staff Ex. 27, Second OI report at 30; Wheeler, Tr. 22007). Mr. Schaub himself stated he did not know when he first learned of Mr. Wheeler's agreement with Dr. Landsman. (Staff Ex. 27, Second OI Report at 33).

. There is evidence based on a licensee prepared document that Mr. Schaub confirmed that NRC approval was given for these two excavations in question. (Stamiris Ex. 123; Wheeler, Tr. 21992). Further, the record contains no credible evidence that Mr. Schaub was aware of the agreement between Mr. Wheeler and Dr. Landsman.

. Given the presence of our April 30, 1982 Order and the other measures on site that control the approval and initiation of soils related activities, we find that Dr. Landsman's understanding of his agreement with Mr. Wheeler is much more consistent with the evidence that was addressed during the hearing.

. After weighing the evidence we find that neither the excavation below the deep "Q" duct bank nor the relocation of the fire line was covered by the June 11, 1982 agreement as understood by Mr. Wheeler. We find that the Wheeler/Landsman agreement as understood

by Mr. Wheeler does not constitute explicit prior NRC staff approval to conduct the excavations in question.

D. Conclusion

. At least two of the NRC staff witnesses testified that they believed at a minimum that the licensee's actions regarding these excavations constituted a careless disregard of NRC requirements. (Cook, Tr. 21642; Landsman, Tr. 21642). Both these witnesses testified that in their view there was an element of deliberateness in the licensee's action.

. Based on the whole record on the issue of whether the licensee violated our April 30, 1982 Order, we find that the licensee did violate our April 30, 1982 Order in not obtaining explicit prior NRC staff approval before conducting either the additional excavation below the deep "Q" duct bank or the excavation necessary to relocate the fire line. Because of the conflicting testimony about who in the licensee's organization knew precisely what the status of NRC approvals was at any point in time, we are able to find that the licensee intentionally violated our April 30, 1982 Order.



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 WASHINGTON, D. C. 20555

MAY 22 1984

*Ross L*

PRINCIPAL STAFF	
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D/RA	DE
A/RA	DRMSP
PC	DP/A
PAO	<i>la</i>
SGA	VL
EIF	File

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MEMORANDUM FOR: Harold R. Booher, Chief  
 Licensee Qualifications Branch, DHFS

THRU: Larry Crocker, Section Leader *hc*  
 Licensee Qualifications Branch, DHFS

FROM: Pete McLaughlin  
 Licensee Qualifications Branch, DHFS

SUBJECT: TRIP REPORT - MIDLAND, MICHIGAN, MAY 4, 1984

The purpose of this memo is to report on my May 4, 1984 trip to Midland, Michigan to participate in a public meeting on the Management Appraisal Program (MAP) to be performed on Consumer's Power Company's (CPCo) Midland Nuclear Project. Another program already in place at Midland, the Construction Completion Program (CCP), was also discussed. The all-day meeting was broken up into morning and afternoon sessions to discuss the CCP and MAP, respectively.

The morning discussion of the CCP was well attended by public and press (about 100 people), as well as, four television crews. The program's status was discussed and no major issues were identified. The program is a very ambitious one (a 100% reinspection of all available work with rework, as required) on a tight schedule (fuel load - July 1986).

The afternoon session was devoted to a presentation by Cresap, McCormick and Paget (CMP) on their proposed program to appraise management of the Midland Nuclear Project. Consumer's Power had engaged CMP to develop the program in response to a Confirmatory Order issued by Region III.

The format of the CMP presentation was to briefly discuss their plan, introduce the key team members and respond to the 11 comments that Region III had provided as a result of their review of the plan. I have enclosed a copy of the comments. I felt all the comments were successfully resolved except for 2 and 4 which I will now discuss.

CMP is an independent management consulting firm and is qualified to perform this type of appraisal program. However, for reasons not fully explained CMP has sub-contracted some of the work to TERA Corporation. Since, TERA is already doing the Independent Design and Construction Verification Program at the Midland Project, the question of conflict of interest can be raised. Several questions were asked concerning the conflict of interest issue and even though the plan was subsequently approved without bias to TERA's involvement, I believe it is still a potential problem. The fish-bowl environment in which the Midland Project exists makes it highly susceptible to public scrutiny and comment. I feel that the controversy surrounding the poor quality of work performed at Midland and CPCo's management involvement

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in it, will not be helped by even the suspicion of conflict of interest. I do not believe that the benefit to be received by TERA's involvement in the MAP is of sufficient magnitude to outweigh the potential damage to the credibility of the MAP's recommendations that can be caused by the inference of conflict of interest and/or whitewash.

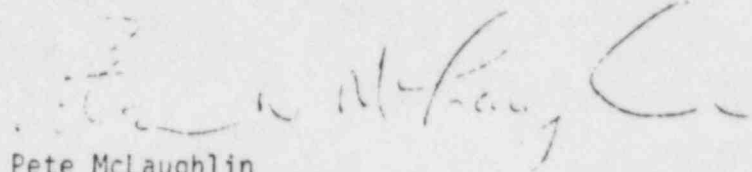
Another area in which I also believe that the MAP is flawed is in its assessment of the capability of the CPCo's management of the Midland Project. The Confirmatory Order directing that the MAP be performed, specifically stated that, "...the appraisal shall include a review of the licensee's site and corporate construction management and supervisory personnel involved in the Midland project to determine their capability and competency for managing construction activities consistent with regulatory requirements." The MAP proposal, as submitted, was not clear on whether or not the program would address this area or not. Under questioning at the meeting it was stated by CMP that they planned to do a function and roles analysis of all management/supervisory positions in the Midland Project organization. They then planned to evaluate each positions incumbent "competency" through resume review and interview. I believe that the appraisal of "capability" or how well did the individual actually perform his job will not be addressed. Since this was a specific requirement of the Order, it appears that the MAP may not be responsive to the Order in this area. The seriousness of this lack of responsiveness depends on the importance of the "capability and competency" issue to the authors of the Order.

Finally, having sat through 8-9 hours of discussion related to the Midland Project I have two personal observations to make.

First, the Midland Project got into the position it is presently in because of certain shortcomings, maybe in management and maybe not, but in any case, to correct the situation, in October of last year they proposed and we accepted their Construction Completion Program (CCP) plan. Part of that plan involved changes and realignments in management of the Midland Project. It also strengthened the Company's commitment to quality and schedule. Since, the situation has changed so significantly from what existed previously and we, the NRC have already approved and are monitoring their CCP, I don't know what purpose is to really be served by performing a Management Appraisal Program at this time. As a matter of fact, I would say that the MAP may have a deleterious impact on the CCP since performance of the MAP will require several people on site and at corporate offices doing interviews and observing administrative procedure and control implementation. I think this "mucking about" in the Project could divert attention from the CCP and cause more problems than it fixes. Also, the results of the MAP will not be known until Fall of this year, about a year and a half from fuel load, not much time will be left to implement recommendations much less make a difference to past and/or existing quality problems.

Second, the afternoon session of the Midland meeting was to discuss the CMP's proposed plan and the NRC's comments on it. To hold that kind of pre-decisional meeting in a public forum seemed inappropriate to me. I

believe the presence of the public and media inhibited to some degree the unrestricted meaningful exchange of information on the MAP and any constructive changes to the Program that might have resulted from that exchange of information. Depending on the topic, the constriction of free information exchange may be worth the cost, but I don't think that this was one of those topics.



Pete McLaughlin  
Licensee Qualifications Branch, DHFS

Enclosure:  
11 Comments of CMP Plan

cc: H. Thompson, NRR  
J. Taylor, I&E  
J. Keppler, Region III  
R. Purple, NRR

Enclosure 1

NRC Comments on the Independent Management Appraisal of CCo By  
Cresap, McCormick, and Paget

1. The independent management appraisal of CCo is proposed to be performed by Cresap, McCormick, and Paget (CMP) and TERA Corporation (TERA). The plan does not identify how the two organizations will function and interface nor how the responsibilities for performing the appraisal, analyzing the findings, and making recommendations will be assigned or shared between the two organizations. The plan should identify the roles and responsibilities of CMP and Tera in working together as a team in performing this appraisal.
2. The participation of TERA in the independent management appraisal has the potential for creating a conflict of interest based on previous and current TERA involvement at Midland. Please explain the basis for your conclusion that TERA's participation does not represent a conflict of interest.
3. Appendix A includes a list of "likely" members of the appraisal team. CMP and TERA should provide the list of actually assigned team members. This list, together with independence statements and resumes for all actual team members, needs to be furnished to Region III for the NRC staff evaluation of team members' competence and independence. Additional or substitute team members are expected to also meet the competence and independence criteria.
4. The Order specifically requires the appraisal to include review of "management and supervisory personnel involved in the Midland project to determine their capability and competency for managing construction activities consistent with regulatory requirements," but the appraisal plan makes no reference to such an evaluation. The appraisal plan should address this requirement.
5. The depth of the CMP management appraisal is not clear. No reference is made to specific events or cases to be independently examined to determine if the information developed through the interview process can be substantiated.
6. The Order specifically requires the appraisal to include a review of "management controls, [management] communication systems and [management] practices, both at the Midland site and between the corporate office and the site." The appraisal plan should describe the intended evaluation of management communication systems and management practices.

7. The NRC Order specifically requires the appraisal plan to include the provision of recommendations for changes that will provide assurance that the licensee will implement NRC requirements. The appraisal plan should confirm that the required recommendations will be made. The appraisal should also consider whether or not any past consideration of cost and schedule factors affected construction quality.
8. The CMP management appraisal appears to be limited to a prospective evaluation to determine how CPCo should proceed in completing the Midland project. The Order requiring the management appraisal was issued because of the past history of continued quality problems. The appraisal plan needs to include a retrospective evaluation of sufficient past events/problems to identify the contributing factors and causes of problems and management's responses to them. This will provide CMP with an understanding of how the project got to where it is today, in order to permit CMP to develop recommendations where necessary for improvements in organizational responsibilities, management controls, communications, and practices to comply with the Order.
9. The plan should identify the "various contractors" referred to in Part I, Objective and Scope, of the appraisal plan. The list of interviewees includes only Bechtel; no other contractors are identified.
10. CMP should consider interviewing representatives from all levels of supervision and management, as well as construction workers, QA/QC inspectors, and other workers. CMP should also consider interviewing previous workers of CPCo and Bechtel.
11. The SALP 3 for Midland, dated September 16, 1983, identified continuing problems in the soils area. The SALP Board recommended that the licensee review the performance of construction, engineering, and Quality Assurance managers in the soils area. The management appraisal should include a review of the licensee's followup actions in response to this NRC recommendation.

INTRODUCTION

GOOD AFTERNOON. I AM JOHN SELBY, CHAIRMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER OF CONSUMERS POWER COMPANY. WE APPRECIATE THE OPPORTUNITY TO ADDRESS THE COMMISSION TODAY ON THE STATUS OF THE MIDLAND PROJECT. WITH ME TODAY ARE STEPHEN HOWELL, EXECUTIVE VICE PRESIDENT WITH OVERALL CORPORATE RESPONSIBILITY FOR THE MIDLAND PROJECT; JAMES COOK, VICE PRESIDENT WITH DIRECT MANAGEMENT RESPONSIBILITIES OVER THE DAY-TO-DAY ACTIVITIES OF THE MIDLAND PROJECT; AND ROY WELLS, EXECUTIVE MANAGER OF THE MIDLAND QUALITY ASSURANCE DEPARTMENT. IN ADDITION, BECHTEL MANAGEMENT PERSONNEL ARE IN THE AUDIENCE.

ON APRIL 10, FOLLOWING DELIBERATIONS BY OUR BOARD OF DIRECTORS, WE ANNOUNCED NEW COST AND SCHEDULE PROJECTIONS FOR UNIT 2 OF THE MIDLAND PLANT. THE BOARD OF DIRECTORS CONCURRED WITH MANAGEMENT'S RECOMMENDATION THAT UNIT 2 OF THE MIDLAND PLANT SHOULD BE COMPLETED, AND BASED ON CURRENT PROJECTIONS, THIS PROCESS WILL RESULT IN COMMERCIAL SERVICE BY DECEMBER 1986 AT A COST OF 3.95 BILLION DOLLARS. A CORRESPONDING FUEL LOAD DATE OF JULY, 1986 WAS ALSO PROJECTED. WE HAVE NOT DECIDED UPON A COMPLETION COST OR SCHEDULE FOR UNIT 1, WHICH WAS DEFERRED LAST YEAR AFTER THE DOW CHEMICAL



COMPANY'S CANCELLATION OF ITS CONTRACT TO PURCHASE STEAM FROM THE PLANT.

I PROPOSE TO REVIEW WITH YOU TODAY THE ELEMENTS OF OUR CONSTRUCTION COMPLETION PROGRAM (CCP), AND TO PRESENT THE REASONS WHY WE BELIEVE IT CAN AND WILL ASSURE COMPLIANCE WITH PRESENT NRC REGULATIONS.

#### THE CONSTRUCTION COMPLETION PROGRAM

THERE WERE TWO MAJOR FACTORS WHICH LED TO OUR DECISION NEAR THE END OF 1982 TO INSTITUTE THE CONSTRUCTION COMPLETION PROGRAM. FIRST, THERE WAS AN AWARENESS ON OUR PART THAT PLANT CONSTRUCTION WAS NOT MEETING OUR OWN AND NRC EXPECTATIONS FOR DETAILED ADHERENCE TO PROCEDURES AND REQUIREMENTS. IN PARTICULAR, AN NRC TEAM INSPECTION CONDUCTED IN THE DIESEL GENERATOR BUILDING DURING THE FALL OF 1982 FOUND PROBLEMS WITH OUR INSPECTION PROCESSES AND RESULTS. SECOND, WE PERCEIVED AN INCREASING LEVEL OF EMPHASIS AND EXPECTATION REGARDING CONSTRUCTION QUALITY ASSURANCE ON THE PART OF THE NRC AS A RESULT OF EVENTS IN THE INDUSTRY DURING THE PRECEDING 18 MONTHS.

IN DECEMBER 1982, THE COMPANY STOPPED MOST SAFETY-RELATED WORK OF OUR PRIME CONTRACTOR, BECHTEL. IN JANUARY 1983, WE SUBMITTED A PROPOSAL FOR THE CONSTRUCTION COMPLETION PROGRAM. THE NRC STAFF INVITED PUBLIC COMMENT AND HELD SEVERAL PUBLIC MEETINGS ON THE PROPOSAL. DURING THE REVIEW OF OUR CCP SUBMITTAL, THE COMPANY REVISED ITS INITIAL PROPOSAL SEVERAL TIMES. IN

OCTOBER 1983, THE STAFF FORMALLY APPROVED THE CCP IN A CONFIRMATORY ORDER WHICH MADE THE CCP PART OF THE CONSTRUCTION PERMIT FOR THE PLANT.

IDE 1) THE MAJOR ELEMENTS OF THE CCP ARE SHOWN IN SLIDE 1 AND CAN BE DESCRIBED AS FOLLOWS:

1. THE FIRST STEP WAS TO SHUT DOWN MOST SAFETY-RELATED WORK BEING PERFORMED BY BECHTEL. NONSAFETY-RELATED WORK AND CERTAIN OTHER SAFETY-RELATED WORK WHICH I WILL ADDRESS SHORTLY WAS NOT COVERED BY THE CCP AND WAS ALLOWED TO PROCEED.

2. TO ASSURE THE EFFECTIVENESS OF QA IMPLEMENTATION UNDER THE CCP, WE REORGANIZED OUR QA DEPARTMENT AND ABSORBED BECHTEL'S QC FUNCTION UNDER DIRECT CP Co MANAGEMENT. THIS ACTION, WHICH BEGAN IN THE FALL OF 1982 AS A RESULT OF A STAFF SUGGESTION, MARKED THE LAST STEP IN OUR ASSUMPTION OF MOST QUALITY ASSURANCE AND QUALITY CONTROL FUNCTIONS FOR THE PROJECT. THE COMPANY ON ITS OWN INITIATIVE HAD ASSUMED THE MANAGEMENT OF PROJECT QUALITY ASSURANCE IN 1980. THE TAKEOVER OF QC INVOLVED THE TRAINING, TESTING, AND RECERTIFICATION OF ALL BECHTEL QC INSPECTORS TO THE STANDARDS ESTABLISHED BY CONSUMERS POWER COMPANY'S QA DEPARTMENT. QC INSPECTORS WERE TESTED FOR PROGRAMMATIC KNOWLEDGE AND CHECKED OUT ON EACH INSPECTION PLAN WHICH THEY WILL BE REQUIRED TO EXECUTE. IT IS ESTIMATED THAT APPROXIMATELY 187 MAN-YEARS HAVE BEEN CONSUMED IN THE INSPECTOR TRAINING AND TESTING EFFORT TO DATE.

IDE 2) 3. THE WORK UNDER THE CCP IS DIVIDED INTO TWO PHASES. THE FIRST PHASE INCLUDES BOTH A STATUS ASSESSMENT OF PARTIALLY

COMPLETED WORK COVERED BY THE PROGRAM AND A VERIFICATION OF THE ADEQUACY OF COMPLETED INSPECTIONS ON PRIOR WORK. OUR VERIFICATION PLAN, CALLED THE QUALITY VERIFICATION PLAN (QVP), IS AT PRESENT A 100% REINSPECTION OF ACCESSIBLE ATTRIBUTES AND A REVIEW OF DOCUMENTATION FOR INACCESSIBLE ATTRIBUTES ON COMPLETED WORK WITHIN THE PLANT.

4. TO CARRY OUT THE REMAINING WORK, WE HAVE CREATED A COMPLETION TEAM STRUCTURE FOR PRODUCTION WORK. EACH TEAM OPERATES UNDER A SINGLE SUPERVISOR AND IS RESPONSIBLE FOR THE COMPLETION OF ASSIGNED PLANT SYSTEMS AND AREAS. MEMBERS OF THE TEAMS INCLUDE ENGINEERING, QUALITY ASSURANCE, TESTING AND CONSTRUCTION PERSONNEL FROM BOTH CONSUMERS POWER AND BECHTEL. THE COMPLETION TEAMS CARRY OUT THE CONSTRUCTION ASPECTS OF THE STATUS ASSESSMENT PORTION OF PHASE 1. IN ADDITION, QC BRINGS ALL OPEN INSPECTION RECORDS UP TO DATE AS PART OF STATUS ASSESSMENT.

5. THE SECOND PHASE OF THE CCP INVOLVES THE PHYSICAL COMPLETION OF THE VARIOUS SYSTEMS OR AREAS, INCLUDING NECESSARY REWORK AS INDICATED FROM THE RESULTS OF THE FIRST PHASE. THIS PHASE MARKS THE RETURN TO THE NORMAL SEQUENCE OF FINISHING NUCLEAR PLANT CONSTRUCTION. THE WORK IS CARRIED OUT BY THE COMPLETION TEAMS WITH THE REQUIRED INSPECTIONS OF NEW WORK PROVIDED BY THE QC DEPARTMENT. THE SEQUENCE OF ACTIVITIES UNDER THE CCP RESULTS IN CONSIDERABLE EFFORT BEING EXPENDED BEFORE THE PHYSICAL COMPLETION WORK IS RESUMED. THIS IS A MAJOR DIFFERENCE BETWEEN THE MIDLAND WORK SEQUENCE AND THAT OF THE OTHER NUCLEAR

PROJECTS THAT ARE CURRENTLY PERFORMING MASSIVE REINSPECTIONS AT THE VERY END OF THEIR COMPLETION SCHEDULE.

6. SPECIFIC DETAILED PLANNING PRECEDED EACH PHASE OF THE CCP AND HAS TAKEN CLOSE TO A YEAR OF EFFORT. THE PHASE 1 PLANNING, WHICH HAS BEEN COMPLETED, CONSISTED OF ORGANIZING THE TEAMS, WRITING PROCEDURES AND INSTRUCTIONS AND TRAINING BOTH QC PERSONNEL AND THE TEAMS. THE PROGRAMMATIC ASPECT OF THE PHASE 2 PLANNING HAS ALSO BEEN COMPLETED. THIS INCLUDED TRAINING OF PERSONNEL, INTEGRATION OF QC INSPECTIONS INTO THE WORK PACKAGES AND PREPARATION OF PROCEDURES. THE RESULTS OF THE PLANNING FOR EACH PHASE ARE REVIEWED BY MANAGEMENT, BY THE THIRD-PARTY OVERVIEWERS AND BY THE NRC PRIOR TO EXECUTION OF THE WORK.

SLIDE 2:OFF)

7. CONSUMERS POWER COMPANY HAS CONTRACTED FOR AN INDEPENDENT THIRD-PARTY OVERVIEW OF THE IMPLEMENTATION OF THE CCP AND ALL OTHER SITE CONSTRUCTION ACTIVITIES. THE PURPOSE OF THE CONSTRUCTION IMPLEMENTATION OVERVIEW IS TO ENSURE THAT THE SITE WORK IS BEING PERFORMED IN ACCORDANCE WITH APPROPRIATE PROCEDURES AND REQUIREMENTS AND THAT THE COMMITMENTS MADE IN THE CCP ARE BEING FULFILLED. AUDITS OF THE MANAGEMENT REVIEWS OF THE CCP ARE ALSO COVERED BY THE CONSTRUCTION IMPLEMENTATION OVERVIEW. CONSUMERS POWER COMPANY HAS RETAINED STONE & WEBSTER, AN ENGINEERING AND CONSTRUCTION COMPANY WITH EXTENSIVE EXPERIENCE IN NUCLEAR POWER PLANT CONSTRUCTION PROJECTS, FOR THIS WORK. STONE & WEBSTER HAS PARTICIPATED IN OTHER THIRD-PARTY REVIEWS, INCLUDING

THE DESIGN VERIFICATION FOR DIABLO CANYON. IN ADDITION, STONE & WEBSTER IS PRESENTLY PERFORMING AN INDEPENDENT OVERVIEW OF THE AUXILIARY BUILDING UNDERPINNING WORK AT THE MIDLAND SITE. THE NRC STAFF HAS APPROVED THE CONSTRUCTION IMPLEMENTATION OVERVIEW AND SOILS REVIEW PLANS, AND THE TECHNICAL QUALIFICATION AND INDEPENDENCE OF STONE & WEBSTER.

IN ADDITION, AN INDEPENDENT DESIGN AND CONSTRUCTION VERIFICATION PROGRAM (IDCVP) IS BEING CARRIED OUT BY THE TERA CO. THIS PROGRAM IS A "VERTICAL SLICE" EVALUATION OF THE DESIGN AND CONSTRUCTION OF THREE SYSTEMS CHOSEN BY THE COMPANY AND APPROVED BY THE NRC STAFF. THE PROGRAM IS TYPICAL OF THE INDEPENDENT DESIGN VERIFICATIONS ENCOURAGED BY THE STAFF FOR NTOL'S.

AN INDEPENDENT MANAGEMENT APPRAISAL, ORDERED BY THE STAFF IN JANUARY, IS THE FINAL AREA OF THIRD-PARTY REVIEW FOR THE MIDLAND PROJECT. IT WILL CONSIST OF AN INDEPENDENT THIRD-PARTY OVERVIEW OF THE MANAGEMENT APPROACH OF THE COMPANY FOR COMPLETION OF THE PLANT. IT WILL FOCUS ON THE APPROPRIATENESS OF THE EXISTING AND PROPOSED MANAGEMENT ORGANIZATION, SYSTEMS AND METHODS FOR PLANNING AND CONTROLLING ALL ASPECTS OF THE PROJECT WHICH HAVE A BEARING UPON THE QUALITY AND SAFETY OF THE COMPLETED FACILITY AND UPON CONSUMERS POWER COMPANY'S ABILITY TO COMPLY WITH NRC REGULATORY REQUIREMENTS. A PLAN TO CONDUCT THIS APPRAISAL AND A RECOMMENDATION OF A FIRM TO CONDUCT THE REVIEW HAVE BEEN SUBMITTED TO THE NRC STAFF FOR APPROVAL. A PUBLIC MEETING TO DISCUSS THIS PROPOSAL HAS BEEN SCHEDULED FOR EARLY NEXT MONTH.

## CONSTRUCTION COMPLETION PROGRAM EXCLUSIONS

THE CONSTRUCTION COMPLETION PROGRAM IS A COMPREHENSIVE APPROACH TO THE QUESTION OF QUALITY ASSURANCE IMPLEMENTATION FOR THE MIDLAND PROJECT. HOWEVER, THERE ARE CERTAIN EXCLUSIONS TO THE SCOPE OF THE CCP. THOSE ARE AREAS OF WORK IN WHICH QA IMPLEMENTATION WAS DEMONSTRATED TO BE EFFECTIVE OR WHICH WERE SUBJECT TO QUALITY PROGRAM UPGRADING SIMILAR TO THE CCP. THE MAJOR EXCLUSIONS FROM THE CCP ARE SOILS; HEATING, VENTILATING AND AIR CONDITIONING (HVAC); AND THE NSSS ERECTION WORK.

MANY OF THE ELEMENTS OF THE CCP DIRECTLY PARALLEL STEPS PREVIOUSLY TAKEN IN THE SOILS AREA TO IMPROVE THE IMPLEMENTATION OF QUALITY ASSURANCE. AS AN EXAMPLE, THE COMPANY ON ITS OWN INITIATIVE ABSORBED THE CONTRACTOR'S QC FUNCTION FOR SOILS BEFORE DOING SO FOR THE BALANCE OF BECHTEL SITE WORK. SIMILARLY, AN INDEPENDENT THIRD-PARTY REVIEW OF THE SOILS WORK WAS COMMISSIONED IN 1982 AND USED AS A MODEL FOR THE CONSTRUCTION IMPLEMENTATION OVERVIEW. OTHER STEPS TAKEN TO UPGRADE QUALITY OF SOILS WORK IN 1982 INCLUDED A MAJOR TRAINING PROGRAM WHICH ENCOMPASSED BOTH MANAGEMENT-LEVEL AND CRAFT EMPLOYEES AND A DETAILED NRC COMMITMENT TRACKING SYSTEM.

THE HVAC AREA, LIKE SOILS, RECEIVED SPECIAL ATTENTION BEFORE THE INITIATION OF THE CCP. IN 1981, HVAC BECAME THE FIRST AREA OF WORK IN WHICH WE ASSUMED DIRECT RESPONSIBILITY FOR BOTH QA AND QC, AFTER PROBLEMS WERE IDENTIFIED IN CERTAIN ACTIVITIES OF THE HVAC SUBCONTRACTOR, THE ZACK Co. ALSO, IN RESPONSE TO THESE PROBLEMS, MAJOR REINSPECTION EFFORTS OF HVAC HANGERS AND SYSTEM

COMPONENTS WERE CONDUCTED. A NUMBER OF OTHER IMPROVEMENTS HAD BEEN MADE IN THE HVAC QA AREA, SUCH AS QA PROGRAM ENHANCEMENTS, STAFF INCREASES AND INSPECTOR TRAINING AND CERTIFICATION. IN ADDITION, THE COMPANY HAS CLOSELY MONITORED THE ZACK CO IN AUDITS ONSITE AND AT THE CONTRACTOR'S MANUFACTURING FACILITY IN CICERO, ILLINOIS. IN FACT, THE COMPANY WAS WELL INTO THE ZACK HOME OFFICE RECORDS PROBLEMS BEFORE THEY BECAME THE SUBJECT OF CONTROVERSY FOR ALL OF ZACK'S NUCLEAR PROJECT ACTIVITIES.

THE FINAL AREA OF WORK EXCLUDED FROM THE CCP IS THE NSSS WORK BEING PERFORMED BY THE BABCOCK & WILCOX CONSTRUCTION COMPANY. B&W HAS PROVED ABLE TO PERFORM ITS OPERATION WITH AN ACCEPTABLE QUALITY IMPLEMENTATION AND, THEREFORE, WAS EXEMPTED FROM THE CCP. THEIR EFFORTS IN THE CRITICAL PRIMARY SYSTEM COMPONENTS WERE UNDER VIGOROUS SCRUTINY BY BOTH CONSUMERS POWER OVERINSPECTIONS AND THE NRC RESIDENT INSPECTOR AND REGIONAL STAFF. WHEN PROBLEMS HAVE BEEN ENCOUNTERED, APPROPRIATE CORRECTIVE ACTIONS HAVE BEEN TAKEN. RECENTLY, THE PROJECT FOUND INSPECTION RESULTS FOR B&W ERECTED HANGERS TO BE INADEQUATE, AND INSPECTOR RETRAINING AND REINSPECTION OF THIS WORK HAS BEEN INITIATED.

#### CURRENT PROJECT STATUS

LET US TURN NOW FROM THE DESCRIPTION OF THE CCP AND THE VARIOUS ACTIONS WE HAVE TAKEN TO PUT MIDLAND'S QUALITY ASSURANCE PROBLEMS BEHIND US. HOW IS THE PROJECT CURRENTLY PERFORMING?

THUS FAR, THE PROGRESS OF THE CCP HAS BEEN SATISFACTORY. THE PHASE 1 AND 2 PLANNING IS COMPLETE. THE TEAMS ARE ORGANIZED AND TRAINED. THE STEPS TAKEN TO UPGRADE OUR QA PROGRAMS--THE

RECERTIFICATION OF QC INSPECTORS, THE QA REORGANIZATION, AND THE REVIEW OF QUALITY CONTROL INSTRUCTIONS--ARE COMPLETE. MANAGEMENT REVIEWS HAVE BEEN CARRIED OUT AND ACTION ITEMS IDENTIFIED AND CLOSED. THE CONSTRUCTION IMPLEMENTATION OVERVIEWER HAS BEEN CONDUCTING ITS REVIEW OF CCP ACTIVITIES SINCE AUGUST OF 1983.

EVEN THOUGH THE CCP WAS FORMALLY APPROVED BY THE STAFF IN OCTOBER OF 1983, PHASE 1 IMPLEMENTATION DID NOT ACTUALLY START UNTIL JANUARY 1984. THIS OCCURRED BECAUSE WE NEEDED TO CORRECT A SITE PROBLEM WITH THE PROCEDURES FOR DESIGN DOCUMENT REVISIONS. AS A RESULT, WE HAVE ONLY LIMITED RESULTS AVAILABLE FROM THE VERIFICATION AND STATUS ASSESSMENT WORK. HOWEVER, THE INITIAL PHASE 1 DATA, INSPECTION PLAN PILOT REPORTS AND RESULTS FROM THE MAJOR CABLE AND HANGER REINSPECTIONS (UNDERTAKEN PRIOR TO THE INITIATION OF THE CCP IN 1982 AND 1983) HAVE INDICATED NO MAJOR PROBLEMS WITH THE FUNCTIONAL CAPABILITY OF THE COMPONENTS INSPECTED. HOWEVER, NUMEROUS NONCOMPLIANCE REPORTS HAVE BEEN WRITTEN AND WILL HAVE TO BE RESOLVED TO ENSURE FULL COMPLIANCE OF THE HARDWARE WITH CURRENT DESIGN DOCUMENTS.

THE CCP IMPLEMENTATION HAS PROGRESSED TO A LEVEL OF SEVERAL HUNDRED NON-MANUAL AND INSPECTION PERSONNEL IN THE FIELD. PERSONNEL ARE BEING ADDED IN A CONTROLLED FASHION. WE EXPECT TO START THE INITIAL PHASE 2 ACTIVITIES IN THE NEXT MONTH.

IN THE SOILS AREA, WE RECEIVED REGION III APPROVAL TO INSTALL THE FIRST UNDERPINNING PIERS BENEATH THE AUXILIARY BUILDING IN DECEMBER OF 1982. TO DATE, 24 OF THE 57 TEMPORARY PIERS HAVE BEEN INSTALLED. MORE IMPORTANTLY, ALL CORNERS OF THE



MAJOR STRUCTURAL ELEMENTS HAVE BEEN SUPPORTED, WHICH CONCLUDES THE RISKIEST PORTION OF THE UNDERPINNING. ALL THE MAJOR UNDERPINNING CONSTRUCTION ACTIVITIES HAVE NOW BEEN DONE ONCE; THE LEARNING CURVE FOR CARRYING OUT THIS UNIQUE TECHNICAL ACTIVITY UNDER AN EXTREMELY RIGOROUS QA PROGRAM HAS BEEN EXPERIENCED AND THE LESSONS LEARNED INCORPORATED INTO OUR PROGRAMS AND PROCEDURES. IN SHORT, WE ARE IN A PRODUCTION MODE IN SOILS; AND, I BELIEVE, DOING WELL. IN BOTH THE 90-DAY AND 270-DAY REPORTS OF THE INDEPENDENT SOILS REVIEW PROGRAM, THE INDEPENDENT REVIEWER IN THE SOILS AREA COMMENDED OUR WORK, AS WELL AS THE COMPETENCE AND EXECUTION OF QUALITY ASSURANCE, SAYING IN THE 270-DAY REPORT, "THE ASSESSMENT TEAM CONTINUES TO BE SATISFIED WITH THE PERFORMANCE OF THE MIDLAND PLANT QUALITY ASSURANCE DEPARTMENT. THE QUALITY PROGRAM IS EFFECTIVELY PROVIDING ASSURANCE THAT THE CONSTRUCTION IS BEING CONDUCTED IN ACCORDANCE WITH THE DESIGN DOCUMENTS."

THE HVAC ACTIVITIES ARE ALSO PROCEEDING SATISFACTORILY, AND MAJOR QUESTIONS HAVE BEEN RESOLVED. RECENTLY, THE NRC STAFF ISSUED A SPECIAL INSPECTION REPORT CONCERNING A NUMBER OF OUTSTANDING HVAC ALLEGATIONS AND OTHER HVAC-RELATED QA ISSUES. ALTHOUGH SOME ITEMS OF NONCOMPLIANCE WERE FOUND, THE INSPECTION REPORT CONCLUDES:

"BASED ON THE RESULTS OF THIS INSPECTION, AND ASSUMING ADEQUATE RESOLUTION OF THE CONCERNS ASSOCIATED WITH THE IDENTIFIED VIOLATIONS, WE CONCLUDE THAT THE INSTALLED HVAC SYSTEMS AND

COMPONENTS AT THE MIDLAND NUCLEAR POWER PLANT ARE ACCEPTABLE AND THAT AN ADEQUATE QA PROGRAM IS BEING IMPLEMENTED WITH REGARD TO ONGOING HVAC ACTIVITIES."

OTHER EFFORTS HAVE BEEN TAKEN BY BOTH THE COMPANY AND THE STAFF TO VERIFY THE ADEQUACY OF HVAC COMPONENTS. IN PARTICULAR, PHYSICAL TESTING OF HVAC COMPONENTS AS PART OF A VERIFICATION EFFORT SIMILAR TO THE ONE USED AT THE LA SALLE FACILITY HAVE PROVED THE COMPONENTS ACCEPTABLE UNDER THEIR DESIGN CONDITIONS.

THE MAJORITY OF MY REMARKS HAVE BEEN FOCUSED ON THE PLANT'S SAFETY-RELATED WORK. WE ARE ALSO MAKING SIGNIFICANT PROGRESS IN THE SECONDARY SIDE OF THE PLANT. LAST MONTH WE SUCCESSFULLY PULLED VACUUM ON THE UNIT 2 CONDENSER AND THE PROJECT IS POINTED TOWARD A MID-SUMMER MILESTONE OF TURBINE ROLL USING STEAM FROM THE PLANT'S HIGH PRESSURE AUXILIARY BOILERS. THE SIGNIFICANCE OF THIS EVENT IS TWOFOLD. FIRST, COMPLETION OF THIS NON-0 WORK IS BEING CARRIED OUT USING OUR CCP PROCEDURES AND TEAM CONCEPT. WE ARE THUS GIVING OUR STAFF "HANDS ON" EXPERIENCE ON HOW TO DO PHASE 2 WORK. SECOND, COMPLETION OF THE SECONDARY SIDE OF THE PLANT THIS FAR FROM OUR FUEL LOAD DATE ENABLES US TO RESOLVE ANY TESTING-RELATED PROBLEMS WITH THIS EQUIPMENT AND THEREBY ADDS CONFIDENCE TO OUR OVERALL COMPLETION SCHEDULE.

#### PROJECT COMPLETION SCHEDULE

AS I NOTED EARLIER, OUR RECENT SCHEDULE AND COST DETERMINATION INDICATED THAT JULY 1986 IS OUR NEW PREDICTED FUEL LOAD DATE. THE RESULTS OF OUR EXPERIENCE LAST YEAR IN DEVELOPING AND

IMPLEMENTING THE CCP WERE INSTRUMENTAL IN REACHING THAT CONCLUSION. IN PARTICULAR, THREE CCP FACTORS SHOWN IN MY NEXT SLIDE HAD A MAJOR EFFECT ON SCHEDULE DEVELOPMENT. THESE WERE:

1. THE COMMITMENT TO CONDUCT A 100% QUALITY RE-VERIFICATION;
2. THE ESTIMATES OF THE TOTAL REWORK REQUIRED TO RESOLVE ALL CCP INSPECTION FINDINGS
3. THE TOTAL PAPERWORK PROJECTED FOR THE COMPLETION OF THE PROJECT

THE CAREFUL PLANNING AND TRAINING TO CONDUCT THE CCP HAS HAD TWO IMPACTS ON OUR SCHEDULE. FIRST, IT WAS A CAUSE OF A MAJOR PORTION OF OUR SCHEDULE EXTENSION. BUT IT ALSO PROVIDES SOME CONFIDENCE THAT WE DO, IN FACT, KNOW WHAT IS AHEAD AND HOW TO CARRY OUT THE WORK.

IN ADDITION TO THE IMPACT OF THE CCP, THERE ARE SEVERAL OTHER MAJOR ASSUMPTIONS INHERENT IN OUR SCHEDULE CONCLUSION. IN SUMMARY, THESE ARE:

1. OUR OVERALL PERFORMANCE MERITS REGULATORY SUPPORT. WE HAVE BEEN ENCOURAGED BY THE CONSTRUCTIVE RELATIONSHIP WHICH NOW EXISTS WITH THE REGION III STAFF, BUT WE REALIZE THAT THIS WILL CONTINUE ONLY AS LONG AS OUR PERFORMANCE MERITS SUPPORT.
2. WE REQUIRE ADDITIONAL QC INSPECTORS TO SUPPORT OUR PHASE 1 SCHEDULE. THESE PERSONNEL MUST BE RECRUITED, TRAINED AND CERTIFIED TO STAFF A TWO-SHIFT OPERATION BY MID-SUMMER.
3. THE PROJECT SCOPE OF WORK CANNOT CHANGE APPRECIABLY FROM THE CURRENT DESIGN.

4. THERE MUST BE ADEQUATE FINANCING AVAILABLE TO COMPLETE THE PROJECT.

EVEN WITH THESE UNCERTAINTIES, WE BELIEVE THAT OUR NEW FORECAST IS CREDIBLE AND, THEREFORE, ACHIEVABLE. A NUMBER OF FACTORS CONTRIBUTE TO OUR CONFIDENCE IN THIS PLAN. I HAVE LISTED SEVERAL OF THESE IN MY FINAL SLIDE.

SLIDE 4) THEY ARE:

1. SOILS ACTIVITIES ARE DEFINED AND DEMONSTRATED.
2. THE CCP PROGRAM DEFINITION AND PLANNING HAVE BEEN ACCOMPLISHED.
3. THE DESIGN OF THE PLANT WILL BE COMPLETE BY JUNE, AND THE REMAINING ENGINEERING ACTIVITIES WILL BE TO SUPPORT CONSTRUCTION AND TESTING.
4. SINGLE PLANT CONSTRUCTION AND STARTUP, WHILE WE REGRET THE DOW CANCELLATION, COMPLETING A SINGLE PLANT WILL BE A MAJOR SIMPLIFICATION.
5. MORE DETAILED PLANNING IS IN PLACE. DURING THE PAST YEAR, WE HAVE EXPENDED CONSIDERABLE EFFORT NOT ONLY ON THE CCP, BUT ALSO ON OUR PLANNING AND CONTROLS TECHNIQUES, ESTABLISHMENT OF COMPUTERIZED DATA BASE AND OVERALL ORGANIZATIONAL SCOPE DEFINITION AND INTEGRATION.
6. ADDITIONAL SENIOR STAFF IS IN PLACE IN BOTH CONSUMERS POWER AND BECHTEL. WE HAVE SYSTEMATICALLY ADDED PERSONNEL EXPERIENCED IN NUCLEAR PLANT COMPLETION OVER THE PAST MONTHS. THESE ADDITIONS SHOULD PAY DIVIDENDS IN THE REMAINING PROJECT ACTIVITIES.

7. BY ESTABLISHING SPECIFIC INTERMEDIATE MILESTONES FOR THE PROJECT, SCHEDULE PROGRESS CAN BE MORE READILY MONITORED. IN ADDITION, PERSONNEL PERFORMANCE IS ENHANCED BY SEEING SHORT-TERM OBJECTIVES ACHIEVED.

8. A TARGET SCHEDULE, SUPPORTED BY ANALYSIS, HAS BEEN ESTABLISHED. THE TARGET SCHEDULE FOR FUEL LOAD IS THREE MONTHS SHORTER THAN THE PUBLISHED SCHEDULE CONCLUSION.

NO ONE WOULD PRESUME TO COME BEFORE YOU AND TO CLAIM THAT HIS PROJECT'S COMPLETION PLAN IS WITHOUT RISKS. WE HAVE NOT YET HAD THE OPPORTUNITY TO PRESENT OUR SCHEDULE IN DETAIL TO THE NRC STAFF, ALTHOUGH WE WILL DO SO SHORTLY. MY PURPOSE IN REVIEWING IT BRIEFLY WITH YOU TODAY IS TO TRY TO EXPRESS SOME OF THE PROJECT'S CONFIDENCE THAT WAS CONVEYED TO THE COMPANY'S BOARD OF DIRECTORS IN RECOMMENDING THAT THE COMPANY FINISH THE PLANT, IN SPITE OF THE PROBLEMS THAT WE HAVE EXPERIENCED IN THE PAST AND THE CURRENT ENVIRONMENT WHICH SURROUNDS NUCLEAR POWER PLANT PROJECTS.

CONCLUSION

IN CONCLUSION, WE BELIEVE THE MIDLAND PROJECT CAN BE COMPLETED IN COMPLIANCE WITH NRC REGULATIONS. OUR WORK PLAN TO ACCOMPLISH THIS GOAL IS THE CCP, A COMPREHENSIVE RESPONSE BY MY COMPANY TO THE PROBLEMS WHICH HAVE BEEN ENCOUNTERED IN CONSTRUCTING THE MIDLAND PLANT. AFTER ALMOST A YEAR OF PREPARATION,

REVIEW AND REFINEMENT, THE CCP IS NOW IN PLACE AND WORKING. IN ADDITION, AREAS OF THE JOB EXCLUDED FROM THE CCP ARE SHOWING SATISFACTORY REGULATORY COMPLIANCE. TO CARRY OUT ALL REMAINING WORK, WE HAVE ASSEMBLED AN EXPERIENCED AND COMPETENT STAFF WHICH IS DEDICATED TO SUCCESSFUL EXECUTION OF THEIR TASKS. WE HAVE ALSO DEVELOPED A CREDIBLE AND CONSERVATIVE COMPLETION SCHEDULE--ONE THAT PROVIDES A CLEAR ROAD MAP TO COMPLETION OF THE PLANT. IN SUMMARY, WE THINK WE UNDERSTAND THE REQUIREMENTS FOR SUCCESSFUL PROJECT COMPLETION, AND AS LONG AS THEY REMAIN RELATIVELY STABLE, WE BELIEVE WE HAVE A REALISTIC PLAN FOR COMPLETION.

ONE CONSTRAINT ON OUR ABILITY TO COMPLETE MIDLAND, HOWEVER, IS PROJECT FINANCING, WHICH REMAINS UNCERTAIN AND IS DEPENDENT UPON THE PROGRESS OF DISCUSSIONS BEING HELD BETWEEN THE COMPANY, THE MICHIGAN PUBLIC SERVICE COMMISSION STAFF, THE STATE ATTORNEY GENERAL, AND OTHERS. THERE HAS BEEN CONSIDERABLE DEBATE OVER THE OPTIONS OPEN TO THE COMPANY REGARDING THE FUTURE OF THE MIDLAND PROJECT. WE BELIEVE THE BEST INTERESTS OF THE STATE AND THE COMPANY ARE SERVED BY COMPLETING THE PLANT. HOWEVER, UNLESS THE UNCERTAINTY SURROUNDING THESE DISCUSSIONS CAN BE RESOLVED, WE WILL BE UNABLE TO SECURE THE NEEDED EXTERNAL FINANCING AND MIDLAND WILL TAKE ITS PLACE ALONG SIDE THE GROWING NUMBER OF ABANDONED PROJECTS.

AS A FINAL MATTER, I WOULD LIKE TO INVITE MEMBERS OF THE COMMISSION AND STAFF TO VISIT THE MIDLAND SITE AND VIEW FIRST-

HAND THE STATUS OF CONSTRUCTION AND THE IMPLEMENTATION OF OUR PROGRAMS. I BELIEVE A VISIT TO THE SITE WOULD BE WELL WORTH THE EFFORT. I AM NOW READY TO ENTERTAIN ANY QUESTIONS YOU MAY HAVE.

JEB/CE

4/23/84

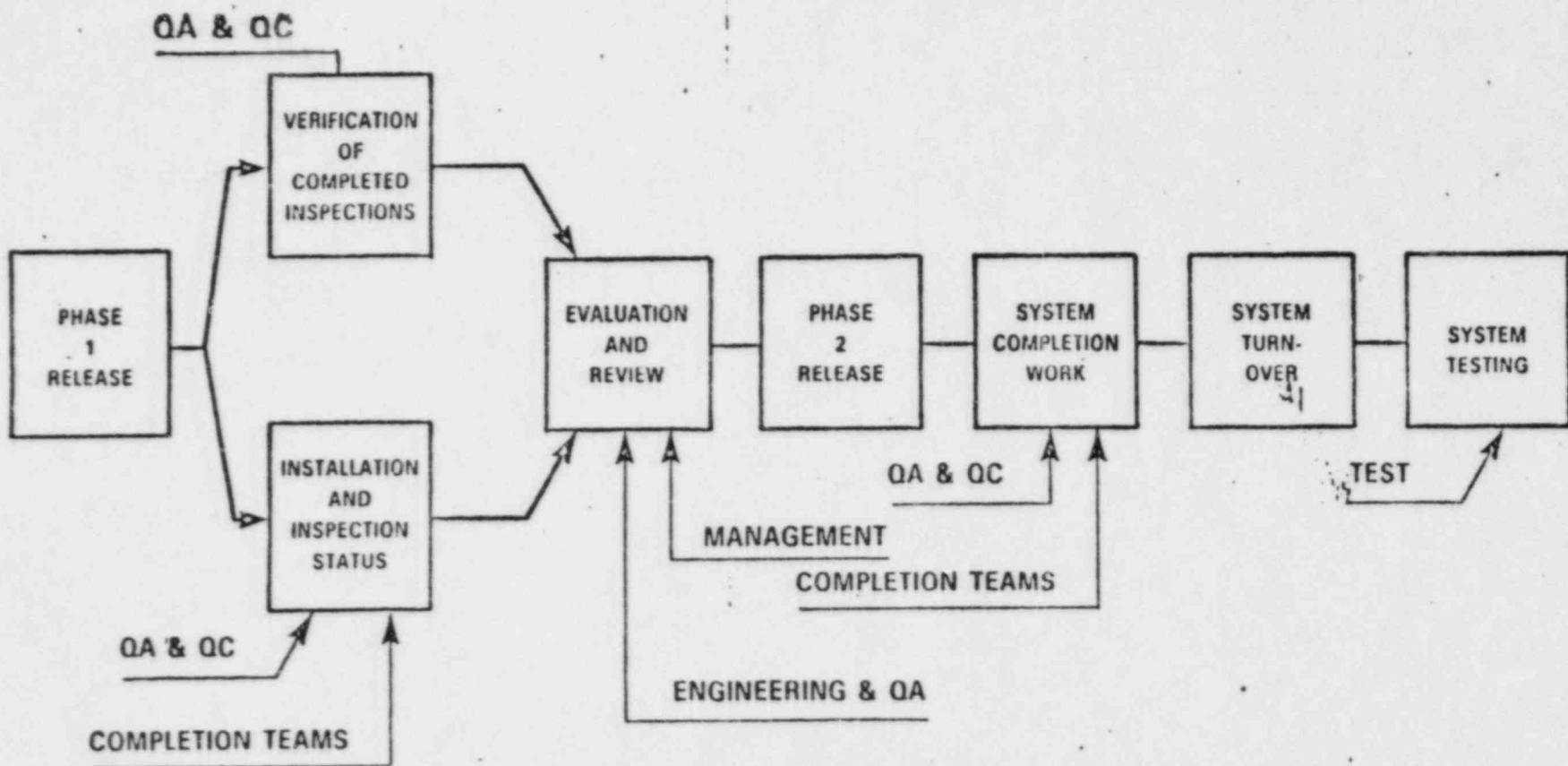
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# CONSTRUCTION COMPLETION PROGRAM (CCP)

- Shut Down Most Bechtel Safety-Related Work
- Proceed with Nonsafety-Related Work
- Reorganize CP Co QA Department and Absorb Bechtel QC
- Verify Past QC Inspections
- Form Completion Teams
- Status To-Go Work
- Resume and Complete Safety-Related Work
- Third-Party Review



# CCP OPERATIONAL LOGIC



# CCP ASSUMPTIONS

- 1) QVP — Based on 100% Reinspection
- 2) Rework From Reinspection — Estimated to Require  $1.6 \times 10^6$  Hours
- 3) Paperwork to Complete Job Estimated as 80,000 Construction Work Packages (CWPs), 33,000 NCRs and 16,500 FCRs/FCNs

# **BASES FOR SCHEDULE CONFIDENCE**

- **Soils Activities Defined and Demonstrated**
- **CCP Program Approved and Implementation Initiated**
- **Design Complete**
- **Single Plant Completion**
- **Improved Overall Project Planning**
- **Additional Senior Staff**
- **Project Milestones**
- **Target Schedule**