U.S. NUCLEAR REGULATORY COMMISSION

'81 NOV 16 P12:35

OFFICE OF SECRETARY

In the matter of
CPCo. Midland Plant
Units 1 & 2

Docket Nos. 50-329
50-330
OM, OL

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

11/11/81

INTERVENOR REQUEST FOR ADMISSION OF THE GENUINENESS AND AUTHENTICITY OF TWO DOCUMENTS

I request Consumers Power Company to admit the genuineness and authenticity of the enclosed Audit Reports dated May 25 & June 8-10, 1977 and October 3-7, 1977, in accordance with section 2.742, Part 2 of NRC Rules of Practice.

I make this request now in the hopes of expediting the hearing by allowing the documents to be used in my proposed Findings of Fact due November 21, 1981, as opposed to requesting an extension of the Quality Assurance and Managerial Attitude issues into the upcoming sessions, or supplementing my Proposed Findings after the fact.

If Consumers Power Company would respond to this request at their earliest possible convenience, it would facilitate my ability to have complete Proposed Findings submitted by November 21, 1981.

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Respectfully Submitted,

Barbara Stamiris

cc: ASLB Members.
Wm. Paton, NRC
M. Miller, CPCo.
Sec. NRC

G

WLBarclay
WRBird
SHHowell
JMKlacking
BWMarguglio
JFNewgen
CLRichardson
QA SUBJ FILE

Consumers Power Company

QUALITY ASSURANCE PROGRAM

REPORT NO F-77-32

DATE October 3-7, 1977

PLANT: Midland UNIT 1 & 2

SUBJECT OF AUDIT: Soil Placement Records

I. AUDIT SCOPE

The purpose of this record review audit is to verify the documentation associated with the placement of Structural Backfill, North Plant Dike. West Plant Dike, and Plant Area Fill conforms to the specifications and to expedite dike turnover.

II. AUDITORS

***D. A. Blumenthal, CPCo QAE (IE&TV) - Team Member
**D. E. Horn, CPCo QAE Civil Supervisor - Team Leader

III. PERSONNEL CONTACTED

**Ben Cheek, Bechtel Lead Civil Quality Control Engineer
*Keith Berk, Bechtel QCE (QC Vault)
*Pat Guiette, Bechtel QCE (QC Vault)
*Mary Kerridge, Bechtel QC Documentation Clerk
*Jim Miller, Bechtel QC Documentation Lead
*Tom Lieb, Bechtel QCE (Civil)
****Daryl Osborn, Bechtel Assistant Lead Civil QCE
*John Speltz, U.S. Testing Lab Chief

IV. SUMMARY OF AUDIT

A. A Pre-Audit Conference was held on August 31, 1977 in Ben Cheek's office with those in attendance as noted in Sections II and III above. The audit scope was the only item discussed. The audit scope originally was to observe soil placement, however, due to heavy rains and no soil placement in "Q" areas, the audit scope was changed to that given in Section I.

B. The audit was performed on soil reports North Plant Dike MD 72 (5-23-74) through MD 514 (9-21-74), West Plant Dike MD 25 (9-12-74) through MD 307 (9-27-76), Structural Backfill MDR 611 (10-7-76) through MDR 1121 (8-11-77), Plant Area Fill MD 1122 (10-7-76) through MD 1854 (8-12-77) and gradation reports for structural backfill material received February 4, 1977 through August 31, 1977 to assure failing tests have been cleared by passing tests; correct optimum moisture contents, maximum and minimum dry lab densities have been used; the test results were properly evaluated for acceptance; and test reports could be located in the Quality Control Documentation Vault using the attached checklist.

C. The findings associated with this audit are noted in Section V.

*Contacted during Audit
**Attended Pre-Audit Conference and Post-Audit Conference
***Attended Post-Audit Conference
****Contacted during Audit and attended Post-Audit Conference

BY Donald E. Horn DATE 11-4-77 SHEET 1 OF 12

Donald A Blumenthal 11/4/77 Reviewed by J. J. Cook

FILE: [redacted].4.3.4 & 18.4.3.6
DATE: October 3-7, 1977
PLANT: Midland UNIT 1 & 2
SUBJECT OF AUDIT: Soil Placement Records

AUDIT REPORT NO F-77-32

IV. SUMMARY OF AUDIT (Contd)

D. Future audits will be run the same, when scheduled.

E. A Post-Audit Conference was held on October 11, 1977 in Ben Cheek's office with those in attendance as noted in Sections II and III above. The audit findings were presented to those in attendance by D. A. Blumenthal and D. E. Horn. Bechtel QC understood and agreed with the findings and recommended corrective action.

V. CLOSED OUT FINDINGS

Finding 1

West Plant Dike

MD-276 and 277 (sampled 9-15-76), 278 (sampled 9-16-76), and 285 (sampled 9-17-76) have NA in the optimum moisture content column.

North Plant Dike

MD-92 (sampled 5-25-74) shows maximum dry lab density 110.6. It should have been 103.4.

MD-93 (sampled 5-25-74) shows maximum dry lab desnity 110.6. It should have been 103.4.

MD-109 (sampled 5-28-74) shows maximum dry lab density 103.4. It should have been 115.1.

MD-119 (sampled 5-28-74) shows maximum dry lab density 127.2. It should have been 128.0.

MD-155 (sampled 6-4-74) shows optimum moisture content 18.8. It should have been 18.4.

MD-195 (sampled 6-24-74) shows optimum moisture content 11.0 It should have been 11.6.

MD-223 (sampled 6-25-74) shows optimum moisture content 10.3. It should have been 11.6.

MD-224 (sampled 6-25-74) shows optimum moisture content 13.5. It should have been 13.0.

MD-257 (sampled 7-11-74) shows optimum moisture content 9.8. It should have been 10.4. This also shows maximum dry lab density 126.8. It should have been 127.4.

FILE: [redacted].4.3.4 & 18.4.3.6
DATE: October 3-7, 1977
PLANT: Midland UNIT 1 & 2
SUBJECT OF AUDIT: Soil Placement Records

AUDIT REPORT NO F-77-32

V. CLOSED OUT FINDINGS

Finding 1

North Plant Dike (Contd)

MD-269 (sampled 7-12-74) shows maximum dry lab density 116.2. It should have been 116.3.

MD-290 (sampled 7-16-74) shows maximum dry lab density 125.2. It should have been 128.3.

MD-318 (sampled 7-19-74) shows optimum moisture content 13.0. It should have been 13.3.

MD-336 (sampled 7-20-74) shows optimum moisture content 20.5. It should have been 20.0.

MD-341 (sampled 7-25-74) shows optimum moisture content 17.0. It should have been 15.5.

MD-377 (sampled 8-6-74) shows maximum lab dry density 109. It should have been 112.9.

MD-476 (sampled 8-19-74) shows optimum moisture content 17.0. It should have been 17.1.

MD-512 (sampled 8-28-74) shows maximum lab dry density 109.4. This should have been 109.0.

Structural Backfill Area

MDR-919 (sampled 5-25-77) shows maximum dry lab density of 109.3. It should have been 125.3. It also shows minimum dry lab density as 90.3. It should have been 109.3.

Plant Area Fill

MD-1262 (sampled 4-8-77) gives maximum dry lab density of 117.0. It should have been 117.1.

MD-1300 (sampled 5-2-77) gives optimum moisture content of 11.1. It should have been 10.4.

MD-1385 (sampled 6-2-77) gives optimum moisture content of 13.5. It should have been 13.4.

FILE: 18.4.3.4 & 18.4.3.6
DATE: October 3-7, 1977
PLANT: Midland UNIT 1 & 2
SUBJECT OF AUDIT: Soil Placement Records

AUDIT REPORT NO F-77-32

V. CLOSED OUT FINDINGS

Finding 1

Plant Area Fill (Contd)

MD-1420 (sampled 6-8-77) gives optimum moisture content of 9.8. It should have been 8.6. It also gives maximum dry lab density of 127.3. It should have been 132.9.

MD-1521 (sampled 6-17-77) gives maximum dry lab density of 117.0. It should have been 117.1.

Corrective Action Requested: Recalculate the test results using the proper values and determine the acceptability of the corrected test results.

Corrective Action Taken: The test results were recalculated and corrections made. The above errors did not change the acceptance of these tests even though they did change the test results.

Corrective action verified October 25-26, 1977.

For further corrective action see Section VI "Open Findings" Finding 1.

Finding 2

Specification C-210, Revision 5 Section 12.6.1 states in part, "The water content during compaction shall not be more than 2 percentage points below optimum moisture content and shall not be more than 2 percentage points above optimum moisture content..."

Specification C-210, Revision 5 Section 13.7.1 states, "All cohesive backfill in the plant area and the berm shall be compacted to not less than 95 percent of maximum density as determined by ASTM D 1557, Method D".

Specification C-210, Revision 5 Section 13.7.2 states in part, "All cohesionless backfill in the plant area and the berm shall be compacted to not less than 80 percent of relative density as determined by ASTM D 2049..."

Contrary to these requirements, the following tests had failing results and did not indicate being cleared by passing tests.

AUDIT REPORT NO F-77-32

V. CLOSED OUT FINDINGS

Finding 2 (Contd)

"Q"

Plant Area Fill

Test No.	Date Sampled	Compaction	Moisture Actual	Moisture Optimum
MD 1153 ✓	10-21-76	61.6% of Relative Density		
1155 ✓	10-21-76	73.5% of Relative Density		
1191 ✓	11-03-76	74.6% of Relative Density		
1194 ✓	11-02-76	75.4% of Relative Density		
1317	5-09-77		18.0%	15.2%
1318	5-09-77		11.5%	15.2%
1319	5-09-77		11.7%	15.2%
1320	5-09-77		12.2%	15.2%
1321 ✓	5-09-77	94.0% of Maximum Density		
1337 ✓	5-17-77		12.4%	15.2%
1388 ✓	6-02-77		9.8%	15.2%
1393 ✓	6-03-77		11.1%	13.4%
1398 ✓	6-03-77		11.2%	13.4%
1404 ✓	6-03-77		10.2%	13.4%
1415 ✓	6-07-77		9.9%	13.4%
1498 ✓	6-15-77		14.5%	10.0%
1509 ✓	6-16-77	88.2% of Maximum Density	12.9%	15.2%

North Plant Dike

MD 418	8-14-74		17.2%	20.0%

Structural Backfill

MDR 620	10-13-76	72.3% of Relative Density
625 ✓	10-12-76	51.5% of Relative Density
629	10-20-76	79.2% of Relative Density
632	10-20-76	73.5% of Relative Density
637	10-21-76	76.3% of Relative Density
663 ✓	11-11-76	53.0% of Relative Density
664 ✓	11-11-76	72.3% of Relative Density
667 ✓	11-11-76	67.5% of Relative Density
673	11-23-76	33.9% of Relative Density
679	11-23-76	71.8% of Relative Density
680 ✓	11-23-76	60.0% of Relative Density
682 ✓	11-24-76	70.6% of Relative Density
688 ✓	11-24-76	77.1% of Relative Density
700	1-13-77	75.0% of Relative Density
701	1-13-77	68.1% of Relative Density
721 ✓	3-14-77	60.0% of Relative Density

FILE: .4.3.4 & 18.4.3.6
DATE: October 3-7, 1977
PLANT: Midland UNIT 1 & 2
SUBJECT OF AUDIT: Soil Placement Records

AUDIT REPORT NO F-77-32

V. CLOSED OUT FINDINGS

Finding 2

Structural Backfill (Contd)

Test No.	Date Sampled	Compaction	Moisture Actual	Moisture Optimum
MDR 734	3-17-77	34.0% of Relative Density		
736	3-18-77	79.0% of Relative Density		
737	3-18-77	41.9% of Relative Density		
738	3-18-77	72.4% of Relative Density		
739	3-18-77	70.6% of Relative Density		
740	3-18-77	69.3% of Relative Density		
741	3-21-77	77.8% of Relative Density		
744	3-21-77	56.2% of Relative Density		
746	3-21-77	54.9% of Relative Density		
757	3-23-77	68.7% of Relative Density		
767	3-29-77	54.3% of Relative Density		
768	3-30-77	66.9% of Relative Density		
770	3-30-77	65.0% of Relative Density		
785	4-07-77	69.3% of Relative Density		
799	4-12-77	78.8% of Relative Density		
826	4-19-77	70.4% of Relative Density		
843	4-28-77	66.8% of Relative Density		
845	4-29-77	70.4% of Relative Density		
854	5-09-77	67.4% of Relative Density		
861	5-10-77	76.3% of Relative Density		
862	5-10-77	74.0% of Relative Density		
889	5-13-77	56.5% of Relative Density		
914	5-24-77		9.0%	11.8%
922	5-26-77	75.7% of Relative Density		
925	5-27-77		11.4%	15.2%
938	6-08-77	56.5% of Relative Density		
940	6-08-77	78.6% of Relative Density		
993	6-25-77	60.2% of Relative Density		
998	6-25-77	77.4% of Relative Density		

Corrective Action Requested: Determine if there are passing tests in the same area to clear these failing tests.

Corrective Action Taken: Test reports Plant Area Fill MD 1317-1320; North Plant Dike MD 418; and Structural Backfill MDR 620, 629, 632, 637, 673, 679, 700, 701, 757, 767, 768 and 770 have been cleared by passing tests and Structural Backfill represented by MDR 854, 861 and 862 was removed.

Corrective Action Verified October 26, 1977.

AUDIT REPORT NO F-77-32

V. CLOSED OUT FINDINGS

Finding 2 (Contd)

Corrective Action Taken: Test reports Plant Area Fill MD 1153, 1155, 1191, 1194, 1321, 1337, 1388, 1393, 1398, 1404, 1415, 1498, 1509 and Structural Backfill MDR 625, 663, 664, 667, 680, 682, 688, 721, 734, 736-741, 744, 746, 757, 768, 770, 785, 799, 826, 843, 845, 889, 914, 922, 925, 938, 940, 993 and 998 are in a "Non-Q" area and have been given to CPCo Project Management Organization (Field) for resolution in letter 186FQA77.

For further corrective action see Section VI "Open Findings" Finding 2.

Finding 3

Relative Density Reports 59 and 61 were missing from the QC Vault.

Corrective Action Requested: Obtain copies of these reports and place them in the QC Vault.

Corrective Action Taken: Copies have been obtained and placed in the QC Document Vault.

Corrective action verified October 26, 1977.

VI. OPEN FINDINGS

Finding 1

Specification C-210, Revision 5 Section 12.6.1 states in part, "The water content during compaction shall not be more than 2 percentage points below optimum moisture content and shall not be more than 2 percentage points above moisture content..."

Specification C-210, Revision 5 Section 13.7.1 states, "All cohesive backfill in the plant area and the berm shall be compacted to not less than 95 percent of maximum density as determined by ASTM D 1557, Method D".

Specification C-210, Revision 5 Section 13.7.2 states in part, "All cohesionless backfill in the plant area and the berm shall be compacted to not less than 80 percent of relative density as determined by ASTM D 2049..."

Contrary to these requirements, the following tests had been passed using incorrect testing data. Using the correct testing data, the tests fail.

FILE: .4.3.4 & 18.4.3.6
DATE: October 3-7, 1977
PLANT: Midland UNIT 1 & 2
SUBJECT OF AUDIT: Soil Placement Records

AUDIT REPORT NO F-77-32

VI. OPEN FINDINGS

Finding 1 (Contd)

North Plant Dike

MD 290 (sampled 7-16-74) shows optimum moisture content 11.6. It should be 9.5. Using the correct optimum moisture content of 9.5%, the actual moisture content is 2.2% above optimum moisture content.

MD 360 (sampled 7-31-74) shows optimum moisture content as 21.4. It should be 15.2. This also shows maximum lab dry density as 103.2. It should be 115.1. Using the correct optimum moisture content of 15.2%, the actual moisture content is 5.4% above optimum moisture content. Also using the correct maximum lab dry density of 115.1, the correct percent of maximum density is 86.4%.

MD 377 (sampled 8-6-74) shows optimum moisture content as 18.0. It should be 15.2. Using the correct optimum moisture content of 15.2%, the actual moisture content is 4.5% above optimum moisture content.

Structural Backfill

MDR 621 (sampled 10-14-76) shows minimum dry lab density as 94.2. It should be 112.2. Using the correct minimum dry lab density of 112.2, the correct percent of relative density is 41.5.

Corrective Action Requested:

(1) Determine if there are passing tests in the same area to clear these failing tests.

(2) If these failing tests cannot be cleared by passing tests in the same area, present these findings to Bechtel Project Engineering so Project Engineering can determine what additional tests, reviews, etc. are needed to justify the material these tests represent. Have Project Engineering justify the material these failing tests represent.

(3) Determine the underlying cause(s) and take corrective action to preclude repetition.

Corrective Action Taken:

(1) North Plant Dike MD 290 and MD 377 have been identified on Bechtel NCR 1005. North Plant Dike MD 360 and Structural Backfill MDR 621 density problems have been identified on Bechtel NCR 1004.

Corrective action verified October 26, 1977.

North Plant Dike MD 360 moisture problem has been identified on revised NCR 1005.

Corrective action verified October 28, 1977.

FILE: [redacted].4.3.4 & 18.4.3.6
DATE: October 3-7, 1977
PLANT: Midland UNIT 1 & 2
SUBJECT OF AUDIT: Soil Placement Records

AUDIT REPORT NO F-77-32

VI. OPEN FINDINGS

Finding 1 (Contd)

NCR QF-199 has been written to resolve the corrective action still open.

Finding 2

Specification C-210, Revision 5 Section 12.6.1 states in part, "The water content during compaction shall not be more than 2 percentage points below optimum moisture content and shall not be more than 2 percentage points above optimum moisture content..."

Specification C-210, Revision 5 Section 13.7.1 states, "All cohesive backfill in the plant area and the berm shall be compacted to not less than 95 percent of maximum density as determined by ASTM D 1557, Method D".

Specification C-210, Revision 5 Section 13.7.2 states in part, "All cohesionless backfill in the plant area and the berm shall be compacted to not less than 80 percent of relative density as determined by ASTM D 2049".

Contrary to these requirements, the following tests had failing results and did not indicate being cleared by passing tests or had been marked passing.

North Plant Dike

MD 142 (sampled 5-30-74) shows optimum moisture content 8.0, moisture content 10.3. This test failed but it is shown as passing.

MD 143 (sampled 5-30-74) shows optimum moisture content 13.8, moisture content 11.4. This failed but it is shown as passing.

West Plant Dike

MD 227 (sampled 10-6-75) failed moisture but has not been cleared.

Plant Area Fill

Test No.	Date Sampled	Compaction	Moisture	
			Actual	Optimum
MD 1311	5-03-77	61.6% Relative Density		
1326	5-10-77		18.5%	15.2%
1328	5-10-77		12.2%	15.2%
1412	6-07-77		10.4%	15.2%

FILE: .4.3.4 & 18.4.3.6
DATE: October 3-7, 1977
PLANT: Midland UNIT 1 & 2
SUBJECT OF AUDIT: Soil Placement Records

AUDIT REPORT NO F-77-32

VI. OPEN FINDINGS

Finding 2 (Contd)

Structural Backfill

Test No.	Date Sampled	Compaction	Moisture Actual	Moisture Optimum
MDR 621	10-14-76	78.0% of Relative Density		
671	11-12-76	74.8% of Relative Density		
672	11-23-76	75.4% of Relative Density		
685	11-24-76	56.2% of Relative Density		
686	11-24-76	70.9% of Relative Density		
691	11-24-76	62.0% of Relative Density		

Corrective Action Requested:

(1) Determine if there are passing tests in the same area to clear these failing tests.

(2) If these failing tests cannot be cleared by passing tests in the same area, present these findings to Bechtel Project Engineering so Project Engineering can determine what additional tests, reviews, etc. are needed to justify the material these tests represent. Have Project Engineering justify the material these failing tests represent.

(3) Determine the underlying cause(s) and take corrective action to preclude repetition.

Corrective Action Taken:

(1) Bechtel QC has determined that none of the above have passing tests in the same area to clear the failing tests.

(2) North Plant Dike MD 142 and MD 143, West Plant Dike MD 227 and Plant Area Fill MD 1326, 1328 and 1412 have been identified on Bechtel NCR 1005. Structural Backfill MDR 621, 671, 672, 685, and 686 have been identified on Bechtel NCR 1004.

(3) Corrective action has been taken as of the last of July, 1977 by Bechtel QC and U.S. Testing to more adequately clear failing tests. Therefore, the corrective action to preclude repetition for not clearing failing tests need not be addressed.

Corrective action verified October 26, 1977

Plant Area Fill MD 1311 has been identified on revised NCR 1004.

Corrective action verified November 1, 1977.

NCR QF-199 has been written to resolve the corrective action still open.

AUDIT REPORT NO F-77-32

VI. OPEN FINDINGS (Contd)

Finding 3

Specification C-211 Revision 3 Section 5.6.2 states in part, "Material delivered to the jobsite for use as structural backfill shall be visually inspected, and tested in accordance with ASTM C-136..."

ASTM C136-71 Section 4.2 states in part, "In no case, however, shall the fraction retained on any sieve at the completion of the sieving operation weigh more than 4g/in.^{2} of sieving surface.

Note 2 - This amounts to 200g for the usual 8 in. (203-mm) diameter sieve".

To preclude repetition to NCR QF-152 (the same deficiency as this), U.S. Testing developed a new gradation form that has check points that include documenting that the 200 gram material limit on any individual 8 inch sieve has not been exceeded. In addition, a training session was held on February 21, 1977.

Project Quality Control Instruction No. SC-1.05 "Material Testing Services and Concrete Production" Rev. 3 Section 2.7.2 Reports, Item A states, "Perform a daily review of the subcontractor's jobsite inspection and test reports for acceptability, completeness, and the laboratory chief's signature for concrete, steel, and soils. Sign and date on the report verifying the acceptable status".

Contrary to these requirements:

Structural Backfill Log Number	Date Sampled	Amount Retained
G- 270	1-13-77	#40 Sieve - 225.2g
0364	4-27-77	#10 Sieve - 217.1g
0417	5-11-77	#10 Sieve - 221.4g
0431	5-16-77	#10 Sieve - 260.1g
0451	5-18-77	#10 Sieve - 211.7g
0505	6-02-77	#200 Sieve - 228.0g
0704	7-18-77	#10 Sieve - 249.5g

Corrective Action Requested:

(1) Present these findings to Bechtel Project Engineering and obtain engineering rationale from Bechtel Project Engineering as to the acceptability of the material these tests represent.

(2) Evidently the corrective action taken in NCR QF-152 was not adequate. Determine the underlying cause(s) and take further corrective action to preclude repetition.

AUDIT REPORT NO F-77-32

VI. OPEN FINDINGS

Finding 3 (Contd)

Corrective Action Taken:

(1) These findings have been identified on Bechtel NCR 1006.

Corrective action verified October 26, 1977.

NCR QF-195 has been written to resolve the corrective action still open.

VII. NONCONFORMANCE REPORTS

QF-195
QF-199

ROUTE TO	THIS COPY FOR	Consumers Power Company QUALITY ASSURANCE PROGRAM	FILE:
	WRBird JC Connolly JMKlacking JFNewgen GLRichardson HWSlager		DATE: May 25, & June 8, 9, 10, 1977 PLANT: Midland UNIT 1 & 2 SUBJECT OF AUDIT: Soils Placement and Inspection
	QA SUBJ FILE	REPORT NO F-77-21	

I. AUDIT SCOPE

The purpose of this audit is to verify that soils placement and inspection are being accomplished in accordance with Bechtel's procedures, specifications and codes.

II. AUDITOR

G. B. Johnson, CPCo Field Quality Assurance Engineer (Civil)

III. PERSONNEL CONTACTED

**Ben Cheek, Bechtel Lead Civil Quality Control Engineer
*Daryle Osborn, Bechtel Quality Control Engineer (Civil)

IV. SUMMARY OF AUDIT

A. A Pre-Audit Conference was held on May 23, 1977 at Daryle Osborn's desk with those in attendance as noted in Sections II and III above. The audit scope was the only item discussed.

B. The audit was performed on the placement and inspection of zone 2 material in the plant area South of the Turbine Building at elevations 620' - 622'. The backfilling operation was centered around plant coordinates S 5070 and E 360. The attached checklist was used.

C. The soils placement and inspection seemed adequate except as described in Section V of this report.

D. Future audits will be run the same, when scheduled.

E. A Post-Audit Conference was held on June 16, 1977 in Ben Cheek's office with those in attendance as noted in Sections II and III above. The Post-Audit Conference consisted of telling Ben Cheek and Daryle Osborn that the results of this audit were adequate except for Findings #1 & #2 in Section V.

CLOSED OUT
V. FINDINGS

Finding #1

Bechtel Specification 7220-C-210, Rev. 4, Section 12.6.1, states in part:

> The water content during compaction shall not be more than 2 percentage points below optimum moisture content and shall not be more than 2 percentage points above optimum moisture content. . . .

*Attended Pre-Audit Conference and Post-Audit Conference
**Attended Post Audit Conference

BY Gary B. Johnson DATE 5 July 77 SHEET 1 OF 3

1-25-78

File: 18.4.3.4, 18.4.3.6
Date: May 25, & June 8, 9, 10, 1977
Plant: Midland 1 & 2
Subject of Audit: Soils Placement and Inspection

Report No F-77-21

V. CLOSED OUT FINDINGS

Finding #1 (Contd)

Contrary to These Requirements:

Backfill was placed on a lift which was determined to be greater than 2% below optimum moisture content (Plant Backfill Test #1352, optimum 15.2%, actual 12.8%). When questioned, the Foreman directing the soils work stated that he would continue backfilling since satisfactory compaction had been obtained.

Recommended Corrective Action:

1. The Foreman directing the soils work should be instructed as to the required moisture content limits.

2. Bechtel QC should determine if a re-test had been accomplished on the lift in question. If a re-test had not been accomplished, it will be necessary to obtain one. If the affected material is found to be nonconforming, an evaluation will have to be made as to the acceptability of the in-place material by Project Engineering.

Corrective Action Taken:

1. Bechtel QC informed the foreman directing the soils work of the required moisture content limits and what to do if a failing test occurs.

2. A retest was taken in the area and the retest passed (Plant Backfill Test 1414).

Finding #2

Bechtel Specification C-200, Rev. 10, Table 9-1, states in part:

Field Densities and Moisture Contents will be taken at the frequency of one test per every 1000 cubic yards of fill.

Contrary to These Requirements:

During the audit it was discovered that the Foreman directing the soils work believed that the required frequency for testing of field density and moisture content was one test per 1000 cubic yards of fill.

Recommended Corrective Action:

1. The foreman directing the soils work should be instructed as to the correct test frequency requirements.

Date: May 25, & June 8, 9, 10, 1977
Plant: [redacted]land 1 & 2
Subject of Audit: Soils Placement and Inspection

Report No F-77-21

CLOSED OUT

V. FINDINGS

Finding #2 (Contd)

Recommended Corrective Action: (Contd)

2. Bechtel QC should determine if the 1/500 cy test frequency has been exceeded. If the test frequency has been exceeded, an evaluation will have to be made as to the acceptability of the in-place material by Project Engineering.

Corrective Action Taken:

1. Bechtel QC informed the foreman directing the soils work of the correct test frequency requirements.

2. Bechtel QC made an evaluation concerning the frequency of testing in the affected area. It was determined that between 5/13/77 and 6/17/77, 18,200 cy of random backfill was placed South and East of the Turbine Building. 57 tests were taken on this material which results in an overall test frequency of 320 cy/test. The majority of this 18,200 cy was placed in a NON-Q area.

VI. NONCONFORMANCE REPORTS

None