

895

CASE

1426 S. Polk
Dallas, Texas 75224

(CITIZENS ASSN. FOR SOUND ENERGY)

214/946-9446

September 14, 1984

DOCKETED
USNRC

'84 SEP 17 P

Administrative Judge Peter B. Bloch
U. S. Nuclear Regulatory Commission
4350 East/West Highway, 4th Floor
Bethesda, Maryland 20014

Dr. Kenneth A. McCollom, Dean
Division of Engineering, Architecture
and Technology
Oklahoma State University
Stillwater, Oklahoma 74074

Dr. Walter H. Jordan
881 W. Outer Drive
Oak Ridge, Tennessee 37830

Gentlemen:

SUBJECT: In the Matter of
Application of Texas Utilities
Generating Company, et al. for
An Operating License for
Comanche Peak Steam Electric Station
Units #1 and #2 (CPSES)
Docket Nos. 50-445 and 50-446 *OL*

CASE's Answer to Applicants' Motion for
Summary Disposition Regarding Richmond
Inserts

We are attaching the following documents, which were inadvertently omitted
from subject pleading:

- CASE Attachment N: Drawing CC-1-028-024-S33R
- CASE Attachment O: Drawing MS-1-025-004-S72K
- CASE Attachment P: Drawing RC-1-078-044-C51K
- CASE Attachment Q: Drawing CC-1-215-013-C53R

- Attachments to CASE Attachment D:
- DDR No. C-219, 2/16/76
 - DDR No. C-219, Rev. 1, 7/26/76
 - DDR No. C-246, 3/23/76
 - DDR No. C-239, 3/25/76
 - DDR No. C-220, 2/17/76

I believe this completes everything which should have been included with
our pleading. We apologize for any inconvenience.

Respectfully submitted,

Juanita Ellis
(Mrs.) Juanita Ellis, CASE President

cc: Service List

Attachments

8409180198 840914
PDR ADOCK 05000445
G PDR

DS03

CASE Attachments N, O, P, and Q to CASE's Answer to Applicants' Statement of Material Facts Relating to Richmond Inserts As To Which There Are No Material Issues -- see corrected page 44, first full paragraph.

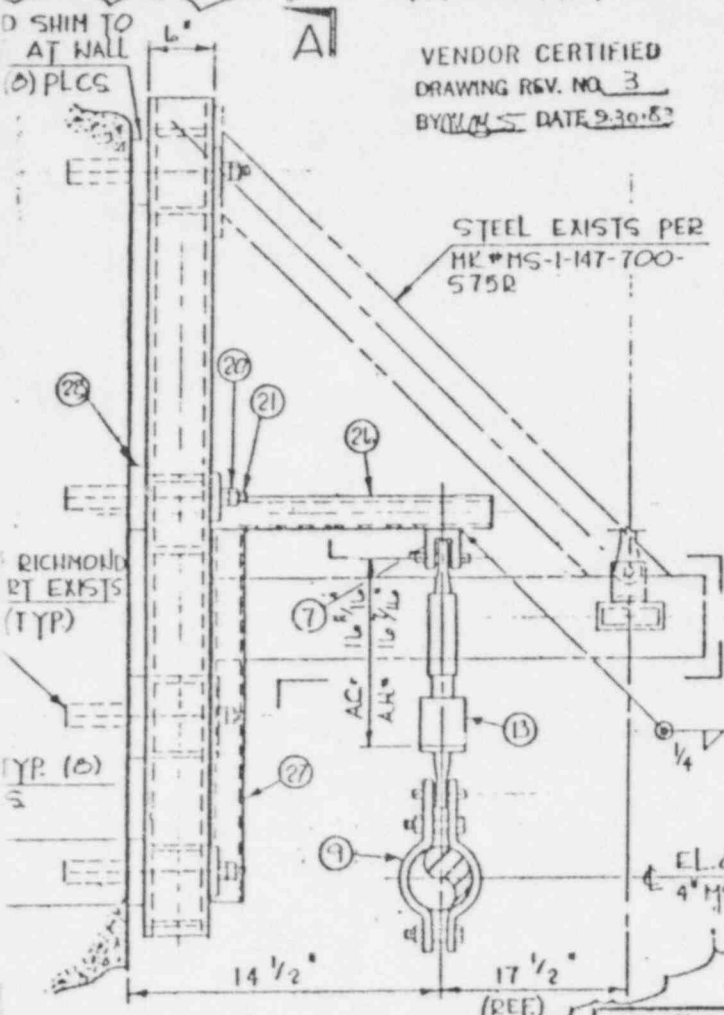
CASE Attachment N: Drawing CC-1-028-024-S33R
CASE Attachment O: Drawing MS-1-025-004-S72K
CASE Attachment P: Drawing RC-1-078-044-C51K
CASE Attachment Q: Drawing CC-1-215-013-C53R

LUELINE 13 SEPT 81

AS-BUILT

NOTES:

- 4) Locking devices for high strength bolts are not required per DCA 7607
- 5) FIELD TRIM ITEM
 - (2) THESE LOC. TO SUIT WITH A MIN. OF (2) EXPOSED FULL THREADS & USE (1) HEX NUT (ITEM 20) ONLY AT THIS LOCATION WITH THREADS UPSET ON ITEM (21).



VENDOR CERTIFIED
DRAWING REV. NO. 3
BY WMS DATE 9.30.83

STEEL EXISTS PER
MK#MS-1-147-700-575R

MOVEMENTS

X = +.314
Y = +.250
Z = +.210

EL. 001'-10 13/16"
4" MS-1-025-1505-2



THIRD PARTY INSPECTION
CODE CLASS: ASHE III-2

BSIL Iso. MS-1-50-07-R.3
I.P.D. Iso. MS-1-50-07-R2-II
Data Point 5951/AB-1-80DRD
Pipe Mat'l. SA-333 GR.B
Invol. 2" Bldg. 5B

ITEM NO.	MATERIALS & OPERATIONS	QUAN	SHIP	P.S.	L	CSS	PRIM	SEC
7	APB-10 REAR BRACKET (A-1668-D/SA-5L)	1						
9	SPC-10-040 PIPE CLAMP (SA-5L)	1						
19	SNF-3-50 SHUDDER	1						
19	72" CG B. PER DET. 19 FIELD TRIM TO SUIT (A316)	0						
20	FHT-1/2" HEAVY HEX NUT	14						
21	RET-12 x 15" LG. THREADED ROD 4" HD. FMB. FIELD TRIM TO SUIT	5						
23	TS 2" x 1/2" x 1/2" x 3'-10" LG. FIELD CUT TO SUIT (A500 GR. B)	2						
24	TS 2" x 6" x 1/2" x 2'-1" LG. FIELD CUT TO SUIT (A500 GR. B)	4						
26	TS 4" x 4" x 1/2" x 15" LG. FIELD TRIM TO SUIT (A500 GR. B)	1						
27	TS 4" x 4" x 1/2" x 23" LG. (A500 GR. B)	1						
28	1/4" CS 10 x 8" W/ 5/8" Ø HOLE IN CTR. (A500 GR. B)	5						
29	SHIM # PER DET. 19 (A316)	1						
29	SHIM # PER DET. C (A316)	1						

REV	DATE	OWN	CHK	APP	DESCRIPTION
1	8/24/81	WMS	WMS	WMS	ISSUE FOR CONST
2	9/30/83	WMS	WMS	WMS	REV'D AS NOTED - FOR OFFICE AND ENGINEERING USE

FOR OFFICE AND ENGINEERING USE

REV	DATE	OWN	CHK	APP	DESCRIPTION	QUAN	SHIP	P.S.	L	CSS	PRIM	SEC
1	8/24/81	WMS	WMS	WMS	ISSUE FOR CONST							
2	9/30/83	WMS	WMS	WMS	REV'D AS NOTED - FOR OFFICE AND ENGINEERING USE							

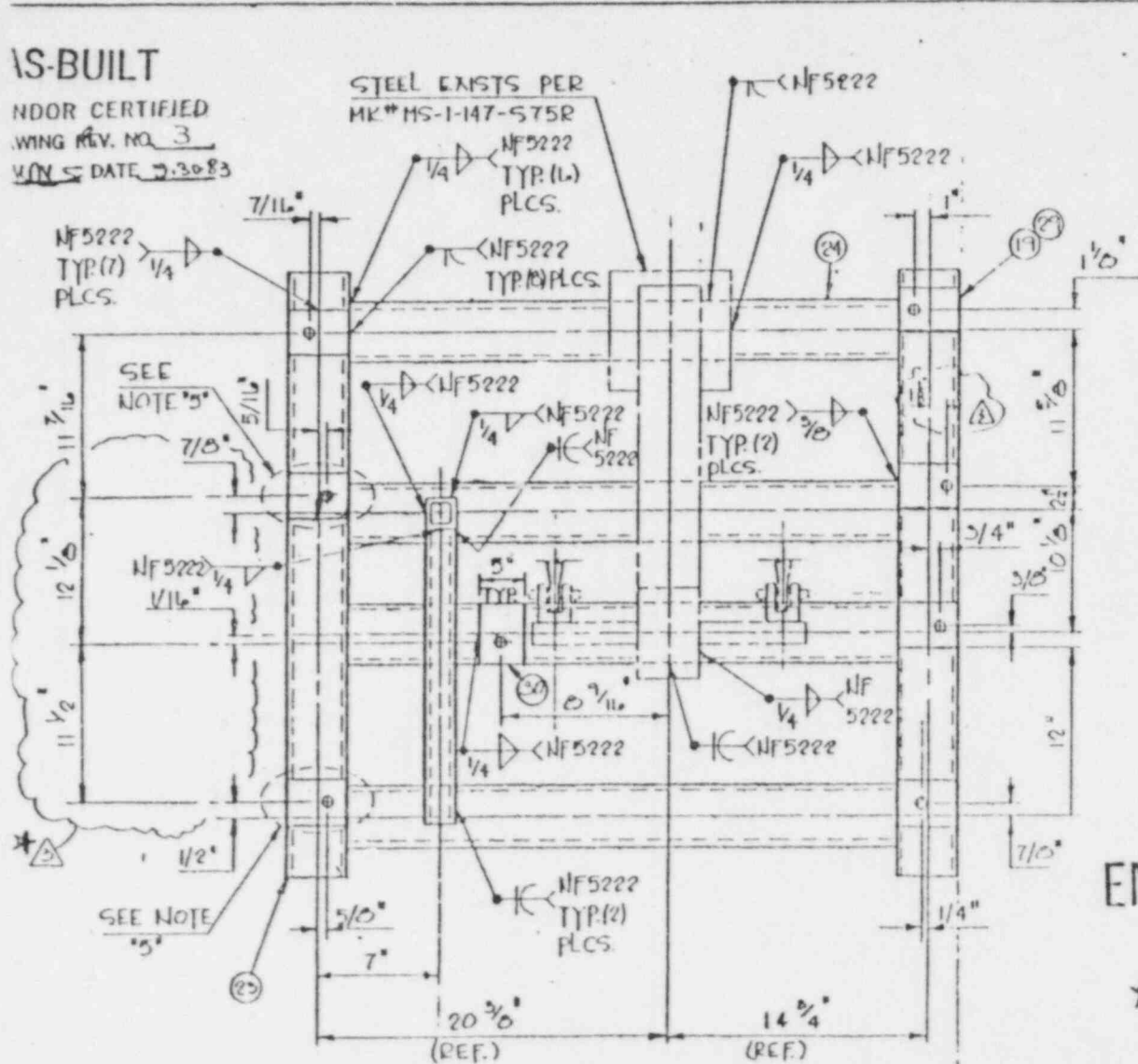
FOR MATERIALS AND OPERATIONS SEE SKETCH NO. _____ SHEET OF _____		BROWN & ROOT, INC. ENGINEERS & CONSTRUCTORS		CONDITIONS	Fx	Fy	Fz	Mx	My	Mz
REF. DRAWING NUMBERS		PIPE: III-0602-R.5 ELECT: EI-0602-R		DESIGN						
STEEL: I-0614-B.3 HV.A.C: III-0655-R.V		NORMAL & UPSET		EMERGENCY		747				
		FAULTED				445				

REV	DATE	OWN	CHK	APP	DESCRIPTION	CUSTOMER
1	8/24/81	WMS	WMS	WMS	REV'D AS NOTED. REF. CHC	TEXAS UTILITIES SERVICE, INC.
2	9/30/83	WMS	WMS	WMS	ADD'D SHEET 2 OF 2	ORDER OR CONT. NO. CP-0046
3	9/30/83	WMS	WMS	WMS	AS-BUILT VENDOR CERTIFICATION, CHC # B561	JOB NAME Comanche Peak 1B2
						MARK NO. MS-1-025-004-572K
						SKETCH NO. _____
						SHEET 1 OF 2 REV. _____

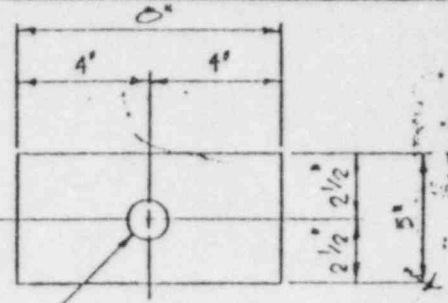
AS-BUILT

INDOR CERTIFIED
 WING REV. NO. 3
 VENDOR DATE 2.30.83

STEEL EXISTS PER
 MK# MS-1-147-575R

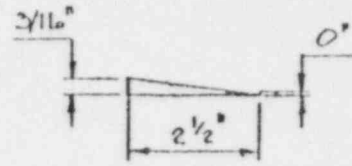


SECTION A-A

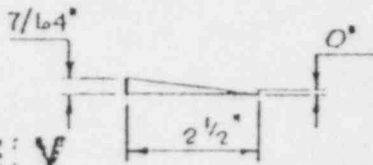


FIELD DRILL (1)
 1 5/8" Ø HOLE.

DETAIL #19



DETAIL B



DETAIL C

**FOR OFFICE AND
 ENGINEERING USE ONLY**

★ CHANGE NOT MADE
 BY CMC

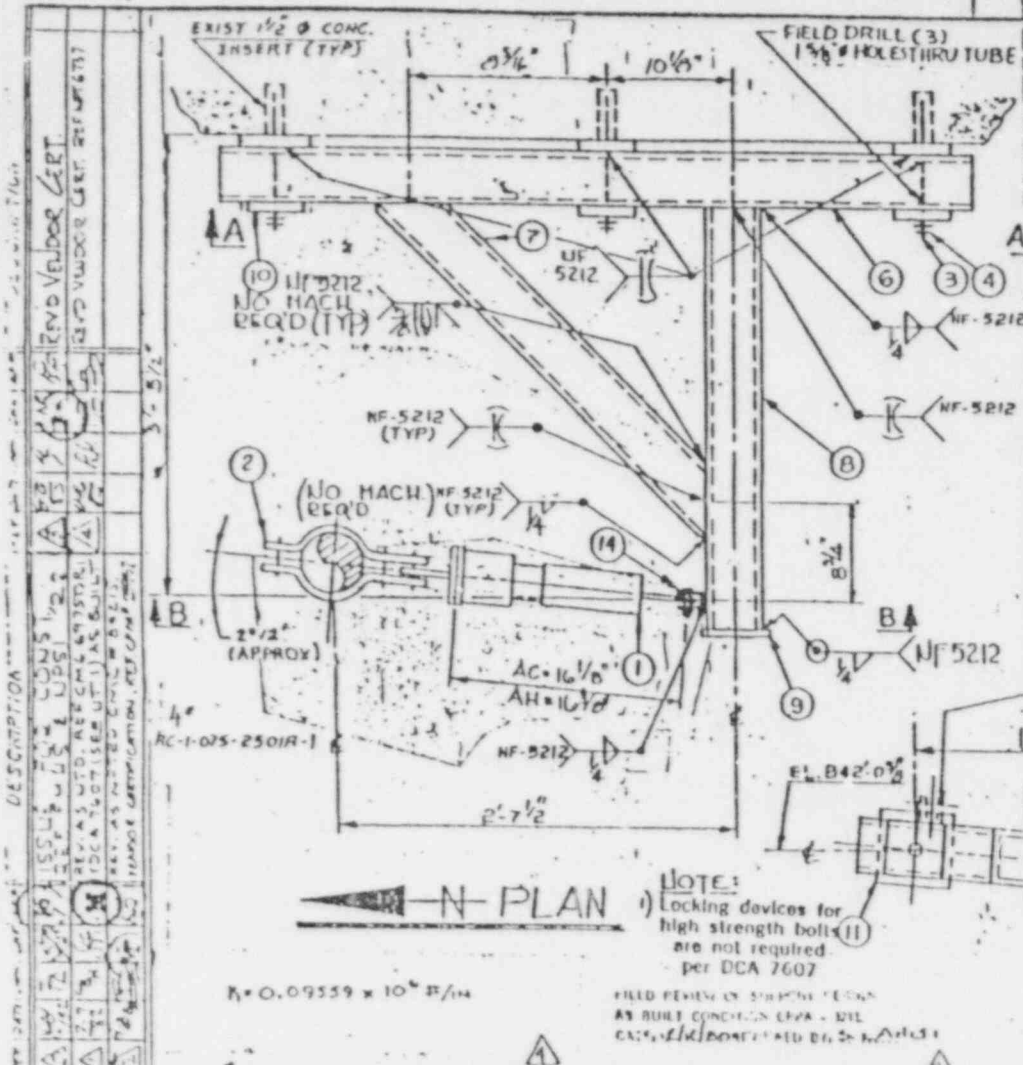
		BROWN & ROOT, INC. ENGINEERS & CONSTRUCTORS	
REF. DRAWING NUMBERS			
PIPE :	_____	ELECT :	_____
STEEL :	_____	H.V.A.C. :	_____

CUSTOMER	Texas Utilities Service, Inc.
ORDER OR CONT. NO.	CP-0046
JOB NAME	Comanche Peak 1B2
MARK NO.	MS-1-023-004-572E
SKETCH NO.	_____
SHEET	2 OF 2
REV	3

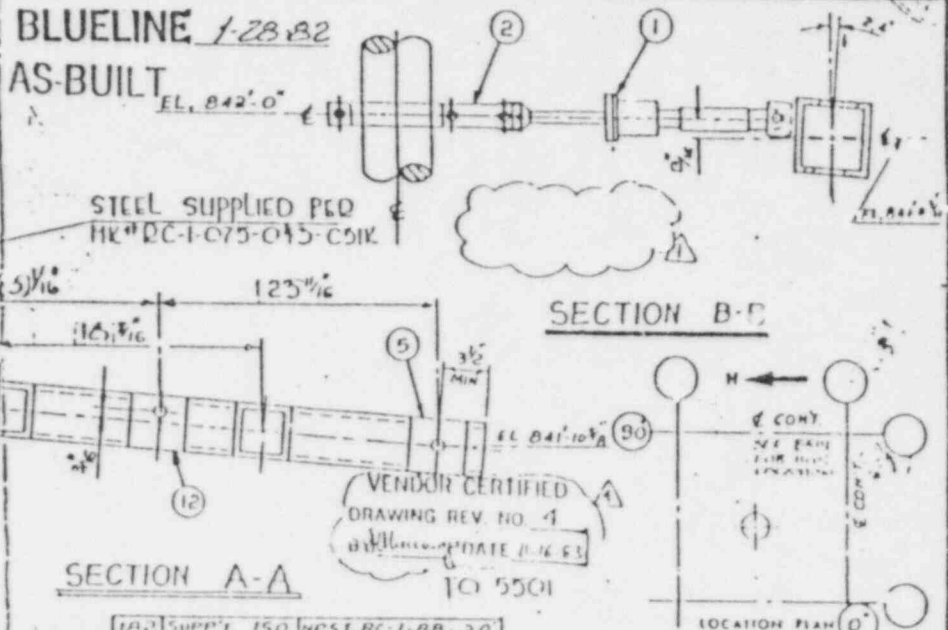
REV	DATE	OWN	CNA	APP	DESCRIPTION
Δ	1/30/83	R	Q	C	ISSUE FOR AS-BUILT REF. CMC & O.D.P.S. DRAWING WITH VENDOR CERTIFICATION PAGE. CPPA 2.61
~	~	~	~	~	~

THIRD PARTY INSPECTION YES NO
 CODE CLASS: ASME III - 2

TO 3705



ITEM NO	NO REQ'D	DESCRIPTION	ASME OR ASTM	W.T.	MIC.
1	1	SMF-3-50 CC = 1 1/4"			
2	1	MECH. SNUBBER			
3	3	PIPE CLAMP	SA-36		
4	6	RFT-12 X 1 1/2" LG ROD	SA-36		
5	6	FHN-1 1/2"	SA-307 GR 2		
6	2	HVY. HEX. NUT	SA-307 GR 2		
7	1	1" CSR 1/2" X 6" W/1 1/4" HOLE ON CTR	SA-516		
8	1	1" CSR 1/2" X 6" W/1 1/4" HOLE ON CTR	SA-516		
9	1	1" CSR 1/2" X 6" W/1 1/4" HOLE ON CTR	SA-516		
10	1	1" CSR 1/2" X 6" W/1 1/4" HOLE ON CTR	SA-516		
11	1	1" CSR 1/2" X 6" W/1 1/4" HOLE ON CTR	SA-516		
12	2	1" CSR 1/2" X 6" W/1 1/4" HOLE ON CTR	SA-516		
13	1	ASME III-NAME PLATE/ALT. MKG.			
14	1	KDB-10 READ BRACKET	AL6051		



NOTE:
 1) Locking devices for high strength bolts are not required per DCA 7607

FIELD REVIEW OF SHOPPING LIST AS BUILT CONDITIONS PER DCA 7607. ALL WORK SHALL BE PER DCA 7607.

$R = 0.09559 \times 10^{-6} \text{ in/in}$

NO.	DATE	BY	CHK'D	APP'D	DATE
1	5/11/81
2	5/11/81

OWNER	TEXAS UTILITIES SERVICES INC.
PROJECT	COMANCHE PEAK UNITS NO. 1 & 2
ENGINEER	GIBBS & HILL INC.

102 SUPPLY 150	NPSE RC-1-RB-20
REV 1	PIPING
REV 2	2323-MI-0519-01
REV 3	2323-MI-0522
REV 4	2323-MI-0551

DRAWN	DATE	CHK'D	DATE	APP'D	DATE
...
P.O. NO.	CF-0048 A 1	MFG. RES.			
PRODUCTION ORDER		SERIAL NUMBER		SHEET	
3044	MR. NO RC-1 D18-044-C5X	REV. 1		1 OF 1	

FOR OFFICE AND ENGINEERING USE ONLY

Attachments to CASE Attachment D to CASE's Answer to Applicants' Statement of Material Facts Relating to Richmond Inserts As To Which There Are No Material Issues -- regarding compressive strength of concrete:

- DDR No. C-219, 2/16/76
- DDR No. C-219, Rev. 1, 7/26/76

- DDR No. C-246, 3/23/76

- DDR No. C-239, 3/25/76

- DDR No. C-220, 2/17/76



Brown & Root, Inc.

QUALITY ASSURANCE DEPARTMENT DEFICIENCY & DISPOSITION REPORT

PROJECT: CPSES JOB NO.: 35-1195 UNIT: 2 PAGE 1 OF

DDR NO. C-219	CATEGORY: C-2	REPORTABLE DEFICIENCY: No
DOCUMENT VIOLATED: BRV-1031	REV. NO. N/A	PAR. 3
<p>DEFICIENCY</p> <p>Field cure cylinders for concrete pour #201-5781-001 (Reactor #2 cavity wall) of 2/13/76 were found to be in curing box on 2/16/76. These cylinders should have been on the pour and being cured in the same manner. Also, field cure cylinders for SWI base mat pour (#035-2755-001) were not on the mat and being cured in the same manner. They were on the side of a road near the mat. This pour was made 2/11/76 and cylinders found misplaced 2/16/76.</p> <p style="text-align: right; opacity: 0.5;">FOR INFORMATION ONLY</p>		
REPORTED BY: C. W. Killough <i>Killough</i>	DATE: 2/16/76	APPROVED BY: <i>Peter L. Bussolini</i>
		DATE: 2-17-76

DISPOSITION

RESPONSE:	REWORK <input type="checkbox"/>	REPAIR <input type="checkbox"/>	SCRAP <input type="checkbox"/>	USE AS IS <input checked="" type="checkbox"/>	OTHER <input type="checkbox"/>
CORRECTIVE ACTION	<p>All field cure cylinders involved in the deficiency were placed on their respective pours on 2/17/76. However, since their representation of the cure of the placements had been impaired, the curing reports rather than the field cure cylinder strengths must be used to judge the adequacy of curing. Copies of these reports are attached.</p>				
	ASSIGNED TO B. K. Kinkade	DATE: 2/17/76	SUBMITTED BY: <i>BK Kinkade</i>	DATE: 3/31/76	
	APPROVED BY: B&R QA <i>[Signature]</i>	DATE: 3-31-76	APPROVED BY: TUSI QA	DATE:	
PREVENTATIVE ACTION	<p>RESPONSE:</p> <p>The employee responsible for field cylinder placement was counselled at length concerning the procedures for handling field cured specimens and in particular the necessity of placing the cylinders on the pour location in all instances. This employee is now cognizant of his responsibility and of the proper procedures to prevent recurrence of this discrepancy. Also, the Curing Report Form & Checklist has been revised to include a check for field cure cylinders. A copy of this revised checklist is attached.</p>				
	ASSIGNED TO: B. K. Kinkade	DATE: 2/17/76	SUBMITTED BY: <i>BK Kinkade</i>	DATE: 3/31/76	

CLOSE-OUT (To be completed by Quality Assurance Department)

CORRECTIVE ACTION:	<input type="checkbox"/> SATISFACTORY	VERIFIED BY: B&R QA	DATE:
<input type="checkbox"/> DEFICIENCY CLOSED:	APPROVED BY: TUSI QA	DATE:	APPROVED BY: B&R QA
REMARKS:	QA RECORD 1		
	RTN. <i>L</i>	QA REVIEW <i>BB-1-1679</i>	COPIES:
	FILE NO. <i>15-1</i>	SUBFILE NO. <i>C-219R-1</i>	R.W. HUNT Co. <input checked="" type="checkbox"/>
		B&R CONST. SITE <input type="checkbox"/>	B&R QA, HOUSTON <input type="checkbox"/>
		B&R QA SITE <input type="checkbox"/>	TUSI QA, DALLAS <input type="checkbox"/>
		TUSI QA SITE <input type="checkbox"/>	NSSS SUPPLIER <input type="checkbox"/>



Brown & Root, Inc.
 QUALITY ASSURANCE DEPARTMENT
 DEFICIENCY & DISPOSITION REPORT

PROJECT: CPSES JOB NO.: 35-1195 UNIT: 2 PAGE 1 OF 13

DDR NO. <u>C-219, Rev. 1</u>	CATEGORY: <u>C-2</u>	REPORTABLE DEFICIENCY: <u>No</u>
DOCUMENT VIOLATED: <u>2323-SS-9</u> <u>BRV-1031</u>	REV. NO. <u>3</u> <u>N/A</u>	PAR. <u>7.3.a</u> <u>3</u>
DEFICIENCY Field cure cylinders for concrete pour #201-5781-001 (Reactor #2 cavity wall) of 2/13/76 were found to be in curing box on 2/16/76. These cylinders should have been on the pour and being cured in the same manner. Also, field cure cylinders for SWI base mat pour (#035-2755-001) were not on the mat and being cured in the same manner. They were on the side of a road near the mat. This pour was made 2/11/76 and cylinders found misplaced 2/16/76.		
NOTE: DDR revised to change "Document Violated." <div style="text-align: center; font-weight: bold; font-size: 1.2em;">FOR INFORMATION ONLY</div>		
REPORTED BY: <u>C. W. Killough</u> <i>file</i>		DATE: <u>7-26-76</u>
APPROVED BY: <u>P. Bussolini</u>		DATE: <u>7-27-76</u>

INTERNAL REVIEW <u>L</u> <u>8/13/76</u>	<u>1. QA LOG</u>
FILE NO. <u>DDR-76</u>	<u>2. RNB</u>
SUBFILE NO. <u>C-219.R1</u>	<u>3. _____</u>
	<u>4. _____</u>
	<u>5. _____</u>

DISPOSITION

CORRECTIVE ACTION	RESPONSE:	<input type="checkbox"/> REWORK <input type="checkbox"/> REPAIR <input type="checkbox"/> SCRAP <input checked="" type="checkbox"/> USE AS IS <input type="checkbox"/> OTHER	
	All field cure cylinders involved in the deficiency were placed on their respective pours on 2/17/76. However, since their representation of the cure of the placements had been impaired, the curing reports rather than the field cure cylinder strengths must be used to judge the adequacy of curing. Copies of these reports are attached. Attached also are copies of impact hammer tests performed on each of the affected concrete placements.		
	ASSIGNED TO: <u>B. K. Kinkade</u>	DATE: <u>7-26-76</u>	SUBMITTED BY: <u>B. Kinkade</u> DATE: <u>7-26-76</u>
	APPROVED BY: B&R QA <u>C. Killough</u>	DATE: <u>7-27-76</u>	APPROVED BY: TUSI QA <u>[Signature]</u> DATE: <u>8-11-76</u>
PREVENTATIVE ACTION	RESPONSE: The employee responsible for field cylinder placement was counselled at length concerning the procedures for handling field cured specimens and in particular the necessity of placing the cylinders on the pour location in all instances. This employee is now cognizant of his responsibility and of the proper procedures to prevent recurrence of this discrepancy. Also, the Curing Report Form & Checklist has been revised to include a check for field cure cylinders. A copy of this revised checklist is attached.		
	ASSIGNED TO: <u>B. K. Kinkade</u>	DATE: <u>7-26-76</u>	SUBMITTED BY: <u>B. Kinkade</u> DATE: <u>7-27-76</u>

CLOSE-OUT (To be completed by Quality Assurance Department)

CORRECTIVE ACTION:	<input checked="" type="checkbox"/> SATISFACTORY	VERIFIED BY: B&R QA <u>C. Killough</u>	DATE: <u>8-11-76</u>
<input checked="" type="checkbox"/> DEFICIENCY CLOSED:	APPROVED BY: TUSI QA <u>[Signature]</u>	DATE: <u>8-12-76</u>	APPROVED BY: B&R QA <u>P. Bussolini</u>
REMARKS: <u>NONE</u>	COPIES: B&R CONST. SITE <input checked="" type="checkbox"/> TUSI SITE <input checked="" type="checkbox"/> B&R QA SITE <input type="checkbox"/> B&R QA, HOUSTON <input checked="" type="checkbox"/> TUSI QA SITE <input checked="" type="checkbox"/> TUSI QA, DALLAS <input checked="" type="checkbox"/> NSSS SUPPLIER <input type="checkbox"/>		
<u>NR C-219 REV 0 ATTACHED</u> <u>1-16-79 1223</u>			

GHF-812

M E M O
Gibbs & Hill, Inc.
ENGINEERS, DESIGNERS, CONSTRUCTORS
NEW YORK

Page 2 of 13

To C. H. Gatchell

Date August 4, 1976

At TUSI - Jobsite

From J. J. Moorhead

At G&H - Jobsite

JOB NO. 35-1195

RECEIVED
AUG 05 1976
RECEIVED

COMANCHE PEAK STEAM ELECTRIC STATION
1980-82 2300 MW INSTALLATION
HANDLING OF FIELD CURED CYLINDERS
REF: DDR C-219
GHF-651

We have reviewed the curing records for the concrete represented by the subject DDR and have found them satisfactory. Past monitoring indicates adherence to the specification in regard to curing practices assure desired strengths.

The Engineer's position stated in GHF-651 remains unchanged, however, verification of proper curing is sufficient for evaluation of curing where an irretrievable situation exists. No further action is required.

FOR INFORMATION ONLY

J. J. Moorhead
J. J. Moorhead
Resident Engineer

JJM:MRM:te

- cc: R. W. Caudle 6L
- R. E. Hersperger 1L
- L. T. Van Amerongen 1L
- H. C. Dodd 1L

DIST.	DATE
DODD	1
BONIN	
CHILDRRESS	1
McCLINTOCK	
BUSSOLINI	1
KOTOWSKI	
WELLER	1
GHF	1
	1

GHF-651

M. E. M. O
Gibbs & Hill, Inc.
ENGINEERS, DESIGNERS, CONSTRUCTORS
NEW YORK

DDR C-219, R1
Pg 3 of 13

To C. H. Gatchell
At TUSI - Jobsite
From J. J. Moorhead
Ac G&H - Jobsite

Date May 28, 1976

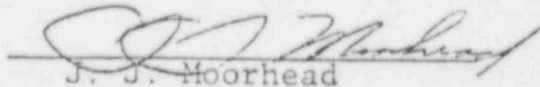
COMANCHE PEAK STEAM ELECTRIC STATION
1980-82 2300 M W INSTALLATION
HANDLING OF FIELD CURED CYLINDERS
REF: DDR C-219
FILE 05209

We are in receipt of DDR C-219 which was forwarded to us for consideration.

The attached DDR was issued due to a deficiency discovered in the handling of field cured cylinders as outlined in BRV-1031.

The mishandling of field cured cylinders is unfortunate, however, once this has occurred an irretrievable situation exists. Due to this deficiency addressing the noncompliance with guidelines established by B&R Quality Assurance, no further review by the engineer is required.

If we can be of further assistance, please advise.


J. J. Moorhead
Resident Engineer

^{MRM}
JJM:MRM:te
Attachment

cc: R. W. Caudle 6L
R. E. Hersperger 1L
L. T. Van Amerongen 1L
H. C. Dodd 1L
P. L. Bussolini 1L
P. M. Milam 1L
G&H Field 2L

DDR C-219, KIC
Pg 4 of 13

Brown & Root, Inc. Post Office Box 1001, Glen Rose, Texas 76043



November 3, 1975

BRV-1031

R. W. Hunt Company
810 S. Clinton Street
Chicago, Illinois 60607

ATTN: Mr. A. J. Bray

Texas Utilities Services, Inc.
Comanche Peak Steam Electric Station
1980-82 2300 MW Installation
Procedures for Handling Field Cured Specimens

Dear Mr. Bray:

Please institute the following outlined procedures for the handling of field cured specimens at the Comanche Peak Site.

- (1) Specimens are to be molded in accordance with the applicable procedures outlined in ASTM C-31-69.
- (2) Initial curing procedures outlined in ASTM C-31-69, para. 7.2 shall be instituted for 24 hours after molding.
- (3) At 24 hours after molding, strip the specimens and remove to the pour location represented. Field cure cylinders in the same manner and for the same period of time as the concrete represented. (7 days for regular mixes and 14 days for mass concrete mixes).
- (4) At the end of this field curing period, place specimens in the wire-mesh enclosure in the auxiliary bldg. area until time of testing at 28 days. Test specimens in the moisture condition resulting from the above procedures.

Sincerely,

BROWN & ROOT, INC.

Peter L. Bussolini

Peter L. Bussolini
Project Quality Assurance Manager

PLB
PLB/GHF/pw

cc:

R. W. Caudle (6L)
H. C. Dodd, Jr. (1L)
C. H. Gatchell (1L)
D. L. Hansford (1L)

CURING REPORT FORM & CHECKLIST

DDR C-219A1
Pg 5 of 13

Pour No. 035-2153-001

Location BUTTON HVT - SERVICE WATER INTERIOR

Date of Pour FEBRUARY 11, 1976

Mix I.D. 204

Method of Curing WET BURLAP

Date Curing Started FEBRUARY 11, 1976

Date Curing Finished 2-25-76

BROWN & ROOT, INC
RECEIVED
MAR 01 1976
FILES NOTED
QUALITY ASSURANCE

- | | Sat. | Unsat. | N/A |
|--|------|--------|-----|
| (1) Concrete surfaces are protected from premature drying. | ✓ | — | — |
| (2) Concrete surfaces are kept continuously wet for at least the first 48 hours after placement and any time during curing when the ambient temp. is above 90°F. | ✓ | — | — |
| (3) Concrete surfaces are maintained continuously moist throughout curing period. | ✓ | — | — |
| (4) Wood forms are not left in place during curing. | ✓ | — | — |
| (5) Concrete surfaces are protected against freezing when the ambient temperature is below 32°F. | ✓ | — | — |
| (6) Rate of air temperature change immediately adjacent to the concrete does not fall more than 3°F in any one hour nor more than 30°F in any 24 hours. | | | |

FOR INFORMATION ONLY

(7) Protected from mechanical injury?
(Construction equipment, rain, running water, application of curing methods, excessive vibration, loads, heavy shock)

RTN	QA REVIEW	ROUTING
L	S. G. G. G.	1. 35-1195
FILE NO.	31206/106	2. —
SUB-FILE NO.	31206/27	3. —
		4. —
		5. —

This form is to be used in conjunction with ACI 308, ACI 305 & ACI 306, and specifically refer to Table 1.4.1, ACI 306 (Cold weather).

Sherrin ^{Dw 2/5/76} *Thermometer Control No. 4-178-23*

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initials of Inspector	pld	(w)	hw	Dw	Dw	Dw	Dw	Dw	Dw	Dw	Dw	Dw	Dw	Dw
Date	2/12	2/13	2/14	2/15	2/16	2/17	2/18	2/19	2/20	2/21	2/22	2/23	2/24	2/25

2-25-76
Date

Danny W. W. W.
Q.C. Inspector

CURING REPORT POUR TEMPERATURE RECORD

POUR NO. 035-2755-001

TEMP RANGE OF FRESH CONCRETE DURING PLACEMENT 64°-68°

DATE	WEATHER CONDITIONS	AMBIENT TEMPS		CONC. SURFACE TEMP	MONITORED
		8:00-12:00	1:00-4:00		
AY 9	Cloudy Cool	67°	70°		67°
AY 10	Clear Cool	41°	49°	51°	
AY 11	Clear Cool	34°	53°	61°	
AY 12	Clear Warm	46°	72°	74°	
AY 13	PARTLY CLOUDY WINDY WARM	44°	70°		
AY 14	PARTLY CLOUDY WARM	57°	72°	64°	
AY 15	CLEAR + WARM	49°	81°		
AY					

FOR INFORMATION ONLY

59°
DDR C-219R1
Pg 7 of 13

66°
68°
2/26/76

DDK L-2.11
Pg 8 of 13

CURING REPORT FORM & CHECKLIST

MAR 01 1976

FILES NOTED

Pour No. 201-5781-001

Location CONTAINMENT #2 (CAVITY WALL)

QUALITY ASSURANCE

Date of Pour 2-13-76

REFERENCE ROUTING

Mix I.D. 204

RTN.	CA REVIEW	1. _____
<u>C</u>	<u>S. Galati</u>	2. _____
FILE NO.		3. _____
<u>56</u>	<u>3127/02 106</u>	4. _____
SUBFILE NO.		5. _____
<u>90</u>	<u>3127/27</u>	

Method of Curing WET BURLAP

Date Curing Started 2-13-76

Date Curing Finished 2-27-76

Sat. Unsat. N/A

- (1) Concrete surfaces are protected from premature drying. Sat. Unsat. N/A
- (2) Concrete surfaces are kept continuously wet for at least the first 48 hours after placement and any time during curing when the ambient temp. is above 90°F. Sat. Unsat. N/A
- (3) Concrete surfaces are maintained continuously moist throughout curing period. Sat. Unsat. N/A
- (4) Wood forms are not left in place during curing. Sat. Unsat. N/A
- (5) Concrete surfaces are protected against freezing when the ambient temperature is below 32°F. Sat. Unsat. N/A
- (6) Rate of air temperature change immediately adjacent to the concrete does not fall more than 3°F in any one hour nor more than 30°F in any 24 hours. Sat. Unsat. N/A
- (7) Protected from mechanical injury?
(Construction equipment, rain, running water, application of curing methods, excessive vibration, loads, heavy shock) Sat. Unsat. N/A

FOR INFORMATION ONLY

This form is to be used in conjunction with ACI 303, ACI 305 & ACI 306, (and specifically refer to Table 1.4.1, ACI 306 (Cold weather).

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initials of Inspector	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>	<u>Kello</u>
Date	<u>2/14</u>	<u>2/15</u>	<u>2/16</u>	<u>2/17</u>	<u>2/18</u>	<u>2/19</u>	<u>2/20</u>	<u>2/21</u>	<u>2/22</u>	<u>2/23</u>	<u>2/24</u>	<u>2/25</u>	<u>2/26</u>	<u>2/27</u>

3-1-76

Date

C. Kello
Q.C. Inspector

CURING REPORT FORM & CHECK LIST

DDR C-21911
Pg 11 of 13

Pour No. _____

Location _____

Date of Pour _____

Mix I.D. _____

Method of Curing _____

Date Curing Started _____

Date Curing Finished _____

FOR INFORMATION

	Sat.	Unsat.	N/A
(1) Concrete surfaces are protected from premature drying.	---	---	---
(2) Concrete surfaces are kept continuously wet for at least the first 48 hours after placement and any time during curing when the ambient temp. is above 90°F.	---	---	---
(3) Concrete surfaces are maintained continuously moist throughout curing period.	---	---	---
(4) Wood forms are not left in place during curing.	---	---	---
(5) Concrete surfaces are protected against freezing when the ambient temperature is below 32°F.	---	---	---
(6) Rate of air temperature change immediately adjacent to the concrete does not fall more than 3°F in any one hour nor more than 30°F in any 24 hours.	---	---	---
(7) Protected from mechanical injury? (Construction equipment, rain, running water, application of curing methods, excessive vibration, loads, heavy shock)	---	---	---

This form is to be used in conjunction with ACI 308, ACI 305 & ACI 306, and specifically refer to Table 1.4.1, ACI 306 (Cold weather)

When applicable, check to ensure field cured specimens are in place on structure and receiving same cure as parent concrete.

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initials of Inspector														
Date														

Date

Q.C. Inspector

3777-6
13-C-9927

Date 7-22-76

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REPORT HCP
PAGE 14068
ref 5-

Brown & Root, Inc.
P.O. Box 1001
Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
Comanche Peak Steam Electric Station
1980-1982 Units 1 & 2
Job No. 35-1195
B & R Subcontract No. 35-1195-0225
Hunt Project 513

Gentlemen:

We report results of concrete test hammer tests to determine compressive strength of concrete.

Concrete Pour No. 035-2755-001

Test Location S.W.T. - FOUNDATION WALL - 1 FT WEST OF EAST WALL
1 FT NORTH OF SOUTH WALL

Rebound Values

- 1. 36
- 2. (47)
- 3. (44)
- 4. 36
- 5. 30
- 6. 38
- 7. 36
- 8. 34
- 9. 35
- 10. (57)
- 11. 38
- 12. 33
- 13. (42)
- 14. 30
- 15. (29)

FOR INFORMATION ONLY

Mean Rebound Value = 35

Indicated Compressive strength-psi 5,200

Tested by Michael J. Hartman
LEVEL 2

Checked by Robert W. Hunt
LEVEL 10

Respectfully submitted,
ROBERT W. HUNT COMPANY

Robert W. Hunt
LEVEL 10

219-239

3777-6

13-C-9927

Date 7-22-76

Pg 13 of 13
REPORT HCP
PAGE 14068
2/2

Brown & Root, Inc.
P.O. Box 1001
Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
Comanche Peak Steam Electric Station
1980-1982 Units 1 & 2
Job No. 35-1195
B & R Subcontract No. 35-1195-0225
Hunt Project 513

Gentlemen:

We report results of concrete test hammer tests to determine compressive strength of concrete.

Concrete Pour No. 035-2755-001

Test Location S.W. I. - FOUNDATION SLAB - INSIDE NORTH WALL 15 FT
5 FT EAST OF SECONDARY WALL

Rebound Values

- 1. 39
- 2. 38
- 3. 40
- 4. 39
- 5. (51)
- 6. 40
- 7. (41)
- 8. (47)
- 9. 40
- 10. 39
- 11. (37)
- 12. 38
- 13. (12)
- 14. 40
- 15. 38

FOR INFORMATION ONLY

Mean Rebound Value = 39

Indicated Compressive strength-psi 6,000

Tested by Michael Hobbs
LEVEL 1

Checked by Robert W. Hunt
LEVEL 2

Respectfully submitted,

ROBERT W. HUNT COMPANY

Robert W. Hunt
LEVEL 2

219-239



Brown & Root, Inc.

QUALITY ASSURANCE DEPARTMENT DEFICIENCY & DISPOSITION REPORT

PROJECT: CPSES JOB NO.: 35-1195 UNIT: 2 PAGE 1 OF 2

DDR NO.	C-246	CATAGORY:	E-1	REPORTABLE DEFICIENCY:	No		
DOCUMENT VIOLATED:	Gibbs & Hill Spec. 2323-SS-9		REV. NO.	2	PAR.	7.3.a	
DEFICIENCY	<p>Field cured cylinder No. 6957 on R. W. Hunt Co. Report HCP 8744 failed to meet specification requirement of 85% of laboratory cured cylinders or at least 500 psi above design strength. This concerns Pour No. 201-5781-001 (Containment #2 cavity wall).</p> <p>See attached Hunt Report HCP 8744.</p>						
	FOR INFORMATION ONLY						
REPORTED BY:	C. W. Killough	DATE:	3/23/76	APPROVED BY:	Peter L. Bussolini	DATE:	3-23-76

DISPOSITION: RESPONSE: REWORK REPAIR SCRAP USE AS IS OTHER

CORRECTIVE ACTION	<p>This DDR has been cancelled since the field cured cylinders which are the subject of this DDR were not, in fact, representative of the cure of the concrete placed. (Reference DDR C-219, Rev. 1, closed 8-12-76).</p>			
	ASSIGNED TO	DATE:	SUBMITTED BY:	DATE:
	H. C. Dodd, Jr.	3/23/76	R.N. Best	8/13/76
	APPROVED BY: B&R QA	DATE:	APPROVED BY: TUSI QA	DATE:
	C Killough	8-13-76	[Signature]	8-13/76

PREVENTATIVE ACTION	RESPONSE:	<p>Not applicable.</p>		
	ASSIGNED TO	DATE:	SUBMITTED BY:	DATE:
	H. C. Dodd, Jr.	3/23/76	R.N. Best	8/13/76

QA RECORD ROUTING

RTN.	GA REVIEW	1. QA HQ
L	8/16/76	2. RNB
FILE NO.	DDR 76	3. _____
SUBFILE NO.	C-246	4. _____
		5. _____

CLOSE-OUT (To be completed by Quality Assurance Department)

CORRECTIVE ACTION:	<input checked="" type="checkbox"/> SATISFACTORY	VERIFIED BY: B&R QA	N/A	DATE:	N/A			
<input checked="" type="checkbox"/> DEFICIENCY CLOSED:	APPROVED BY: TUSI QA	DATE:	8/13/76	APPROVED BY: B&R QA	P. Bussolini	DATE:	8-13-76	
REMARKS:	NONE		COPIES:	TUSI SITE	<input checked="" type="checkbox"/>	B&R QA, HCUSTON	<input checked="" type="checkbox"/>	
	B&R CONST. SITE	<input checked="" type="checkbox"/>	B&R QA SITE	<input type="checkbox"/>	TUSI QA, DALLAS	<input checked="" type="checkbox"/>	TUSI QA SITE	<input checked="" type="checkbox"/>
	TUSI QA SITE	<input checked="" type="checkbox"/>	NSSS SUPPLIER	<input type="checkbox"/>				

FORM NO. 3771-6
 13-C-9977

Date: 3-12-76

Pg 2 of 2

#1000
 8744

Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Electric Service, Inc.
 Contract, Peak State Electric Station
 1930 1932 Units 1 & 2
 Job No. 35-1195
 B & R Subcontract No. 35-1195-0225
 Heat Project No. 513

FOR INFORMATION ONLY

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Rev. 11-59)

Cylinder No.	6953	6954	6957
Age-Days	28	28	28
Sec. per sq. in-lbs.	4257	4124	3559
Max. Load-lbs.	121,500	119,500	102,000
Type of Fracture	REG.	REG.	REG.
Date Made	2-13-76	2-13-76	2-13-76
Date Received	2-14-76	2-14-76	3-12-76
Date Tested	3-12-76	3-12-76	3-12-76
Type of Curing	STANDARD	STANDARD	FIELD
Concrete Mix	204	204	204
Temperature °F	63°	63°	63°
Slump Inches	2 1/2"	2 1/2"	2 1/2"
Air Content	3.5	3.5	3.5
Location Taken	201-5781-001		
TICKET	11307		
AREA	28.54	28.32	28.66

TESTED BY: *[Signature]*
 CHECKED BY: 65

Respectfully submitted,
 ROBERT W. BERRY COMPANY

Robert W. Berry
 LEVER II



Brown & Root, Inc.

QUALITY ASSURANCE DEPARTMENT DEFICIENCY & DISPOSITION REPORT

PROJECT: CPSSES JOB NO.: 35-1195 UNIT: N/A PAGE 1 OF 6

DDR NO. <u>C-239</u>	CATEGORY: <u>E-1</u>	REPORTABLE DEFICIENCY: <u>No</u>
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DOCUMENT VIOLATED: <u>Gibbs & Hill Spec. 2323-SS-9</u>	REV. NO. <u>2</u>	PAR. <u>7.3.a</u>
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DEFICIENCY

5 field cured cylinders of 14 tested for Pour No. 035-2755-001, dated 2-11-76, service water intake structure base mat, failed to meet specification requirement of 85% of laboratory cured cylinders or at least 500 psi above design strength. This involved Mix I.D. 204 only.

See attached R. W. Hunt Co. Reports #8539, 8543, 8545, 8547 and 8549.

FOR INFORMATION ONLY

REPORTED BY: <u>C. W. Killough</u> <i>Killough</i>	DATE: <u>3-15-76</u>	APPROVED BY: <u>Peter L. Bussolini</u>	DATE: <u>3-16-76</u>
---	-------------------------	---	-------------------------

DISPOSITION

RESPONSE: REWORK REPAIR SCRAP USE AS IS OTHER

CORRECTIVE ACTION

This DDR has been cancelled since the field cured cylinders which are the subject of this DDR were not, in fact, representative of the cure of the concrete placed. (Reference DDR C-219, Rev. 1, closed 8-12-76).

ASSIGNED TO <u>H. C. Dodd, Jr.</u>	DATE: <u>3-16-76</u>	SUBMITTED BY: <u>R. N. Best</u>	DATE: <u>8/13/76</u>
APPROVED BY: B&R QA <i>C Killough</i>	DATE: <u>8-13-76</u>	APPROVED BY: TUSI QA <i>[Signature]</i>	DATE: <u>8/13/76</u>

PREVENTATIVE ACTION

RESPONSE: Not applicable.

QA RECORD ROUTING

RTN	QA REVIEW	<u>1 QA Log</u>
<u>L</u>	<u>8/14/76</u>	<u>2. RNB</u>
FILE NO.		<u>3. _____</u>
<u>DDR 76</u>		<u>4. _____</u>
SUBFILE NO.		<u>5. _____</u>
<u>C-239</u>		

ASSIGNED TO: <u>H. C. Dodd, Jr.</u>	DATE: <u>3-16-76</u>	SUBMITTED BY: <u>R. N. Best</u>	DATE: <u>8/13/76</u>
--	-------------------------	------------------------------------	-------------------------

CLOSE-OUT (To be completed by Quality Assurance Department)

CORRECTIVE ACTION: <input checked="" type="checkbox"/> SATISFACTORY	VERIFIED BY: B&R QA <u>N/A</u>	DATE: <u>N/A</u>
--	-----------------------------------	---------------------

<input checked="" type="checkbox"/> DEFICIENCY CLOSED:	APPROVED BY: TUSI QA <i>[Signature]</i>	DATE: <u>8/13/76</u>	APPROVED BY: B&R QA <u>Peter L. Bussolini</u>	DATE: <u>8-13-76</u>
--	--	-------------------------	--	-------------------------

REMARKS: NONE

COPIES:	TUSI SITE	<input checked="" type="checkbox"/>
B&R CONST. SITE	B&R QA, HOUSTON	<input checked="" type="checkbox"/>
B&R QA SITE	TUSI QA, DALLAS	<input checked="" type="checkbox"/>
TUSI QA SITE	NSSS SUPPLIER	<input type="checkbox"/>

FILE NO. 3777-6
 ORDER 13-C-9977

Date: 3-10-76

REPORT 8539

PAGE CDDRC-239
 Pg 2 of 6

Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Command: Peak Steam Electric Station
 1930-1932 Units 1 & 2
 Job No. 35-1195
 B & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

FOR INFORMATION ONLY

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	6260	6261	6264
Age-Days	28	28	28
Str. per sq. in-lbs.	4734	4558	3809
Max. Load-lbs.	135,000	130,000	110,000
Type of Fracture	Reg.	Reg.	Reg.
Date Made	2-11-76	2-11-76	2-11-76
Date Received	2-12-76	2-12-76	3-10-76
Date Tested	3-10-76	3-10-76	3-10-76
Type of Curing	STANDARD	STANDARD	Field
Concrete Mix	204	204	204
Temperature °F.	61	61	61
Slump Inches	2 3/4	2 3/4	2 3/4
Air Content	3.2	3.2	3.2
Location Taken	Pour 035-2755-001		
TICKET	10984		
Average	28.52	28.52	28.88

TESTED BY: GS
 CHECKED BY: JR

Respectfully submitted,
 ROBERT W. HUNT COMPANY

Robert W. Hunt
 LEVEL II

FILE NO. 3777-6
 ORDER 13-C-9927

Date: 3-10-76

REPORT PAGE 8543
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 Pg 3 of 6

Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Company: Peak Steam Electric Station
 1980-1982 Units 1 & 2
 Job No. 35-1195
 B & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

Gentlemen:

FOR INFORMATION ONLY

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1031)

Cylinder No.	6788	6789	6792
Age-Days	28	28	28
Str. per sq. in-lbs.	4975	5082	4074
Max. Load-lbs.	141,500	145,000	116,000
Type of Fracture	REG.	REG.	REG.
Date Made	2-11-76	2-11-76	2-11-76
Date Received	2-12-76	2-12-76	3-10-76
Date Tested	3-10-76	3-10-76	3-10-76
Type of Curing	STANDARD	STANDARD	FIELD
Concrete Mix	204	204	204
Temperature °F.	68°	68°	68°
Slump Inches	3"	3"	3"
Air Content	3.4	3.4	3.4
Location Taken	POUR# 035-2755-eel		
TICKET	11053		
MPA	28.44	28.53	28.44

TESTED BY: GS
 CHECKED BY: P.E.

Respectfully submitted,
 ROBERT W. HUNT COMPANY

Robert W. Hunt
 11/10/76

FILE NO. 3777-6
 ORDER 13-G-9227

Date: 3-10-76

REPORT PAGE
 8545
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 Pg 4 of 6

Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Command: Peak Steam Electric Station
 1930-1932 Units 1 & 2
 Job No. 35-1195
 B & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

FOR INFORMATION ONLY

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	6802	6803	6806
Age-Days	28	28	28
Str. per sq. in-lbs.	5168	4924	4095
Max. Load-lbs.	146,000	140,000	116,500
Type of Fracture	REG.	REG.	REG.
Date Made	2-11-76	2-11-76	2-11-76
Date Received	2-12-76	2-12-76	3-10-76
Date Tested	3-10-76	3-10-76	3-10-76
Type of Curing	STANDARD	STANDARD	FIELD
Concrete Mix	2011	204	204
Temperature °F.	60°	60°	60°
Slump Inches	2"	2"	2"
Air Content	3.4	3.4	3.4
Location Taken	POUR ^{II} 035-2755-001		
TICKET	11074		
AREA	28.25	28.43	28.45

TESTED BY: GS
 CHECKED BY: P.G.

Respectfully submitted,

ROBERT W. HUNT COMPANY

Robert W. Hunt
 LEVEL II

FILE NO. 3777-6
ORDER 13-C-9927

Date: 3-10-76

REPORT
PAGE

HCP# 8547

PDR C. 23
Pg 5 of 6

To: Brown & Root, Inc.
P.O. Box 1001
Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
Command: Peak Steam Electric Station
1930-1932 Units 1 & 2
Job No. 35-1195
B & R Subcontract No. 35-1195-0225
Hunt Project No. 513

FOR INFORMATION ONLY

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	6816	6817	6820
Age-Days	28	28	28
Str. per sq. in-lbs.	4790	4910	3904
Max. Load-lbs.	136,000	139,500	111,000
Type of Fracture	Reg.	Reg.	Reg.
Date Made	2-11-76	2-11-76	2-11-76
Date Received	2-12-76	2-12-76	3-10-76
Date Tested	3-10-76	3-10-76	3-10-76
Type of Curing	STANDARD	STANDARD	Field
Concrete Mix	204	204	204
Temperature °F.	60	60	60
Slump Inches	2 3/4	2 3/4	2 3/4
Air Content	3.2	3.2	3.2
Location Taken	Pour 035-2755-001		
TICKET	11097		
RSEA	28.39	28.41	28.43

TESTED BY: GS
CHECKED BY: JK

Respectfully submitted,

ROBERT W. HUNT COMPANY

Robert W. Hunt
LEVEL II

FILE NO. 3777-6
 ORDER 13-C-9927

Date: 3-10-76

REPORT
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DDR C. 239
 Pg 6 of 6

Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Command: Peak Steam Electric Station
 1930-1982 Units 1 & 2
 Job No. 35-1195
 B & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

FOR INFORMATION ONLY

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	6830	6831	6834
Age-Days	28	28	28
Str. per sq. in-lbs.	4822	4733	3774
Max. Load-lbs.	137,000	134,500	107,000
Type of Fracture	Reg.	Reg.	Reg.
Date Made	2-11-76	2-11-76	2-11-76
Date Received	2-12-76	2-12-76	3-10-76
Date Tested	3-10-76	3-10-76	3-10-76
Type of Curing	STANDARD	STANDARD	Field
Concrete Mix	204	204	204
Temperature °F.	63	63	63
Slump Inches	3	3	3
Air Content	2.8	2.8	2.8
Location Taken Pour	035-2755-001		
TICKET	1113		
AREA	28.41	28.42	28.35

TESTED BY: GS
 CHECKED BY: OR

Respectfully submitted,

ROBERT W. HUNT COMPANY

Robert W. Hunt
 LEVEL III



Brown & Root, Inc.

QUALITY ASSURANCE DEPARTMENT
DEFICIENCY & DISPOSITION REPORT

PROJECT: CPSES JOB NO.: 35-1195 UNIT: 182 PAGE 1 OF 19

DDR NO. C-220	CATEGORY: E-1	REPORTABLE DEFICIENCY: No						
DOCUMENT VIOLATED: Gibbs & Hill Spec. 2323-SS-9		REV. NO. 2 PAR. 7.3.a						
<p>Field cured cylinders for auxiliary bldg. east wall and elevator shaft, Pour Nos. 002-5778-001 and 002-5778-004, placed 1-15-76, failed to be 85% of standard cured specimens or plus 500 psi over design strength. See R. W. Hunt Reports HCP 7335 to 7337 and HCP 7339. (Attached)</p>								
<p>QA RECORD ROUTING</p> <table border="1"> <tr> <td>RTN. L</td> <td>REVIEW 8/20/76</td> </tr> <tr> <td>FILE NO. DDR-76</td> <td></td> </tr> <tr> <td>SUBFILE NO. C-220</td> <td></td> </tr> </table> <p>1. CALOY 2. RWB 3. _____ 4. _____ 5. _____</p>			RTN. L	REVIEW 8/20/76	FILE NO. DDR-76		SUBFILE NO. C-220	
RTN. L	REVIEW 8/20/76							
FILE NO. DDR-76								
SUBFILE NO. C-220								
REPORTED BY: George H. Fisher	DATE: 2/17/76	APPROVED BY: Peter L. Bussolini DATE: 2-17-76						

DISPOSITION: REWORK REPAIR SCRAP USE AS IS OTHER

CORRECTIVE ACTION	<p>The deficient test results on the field cured cylinders are attributable to freezing temperatures as shown by the attached daily temperature log, and improper curing and/or handling of these test cylinders. The laboratory cured test cylinders gave satisfactory test results and the attached two QC Curing Reports document that satisfactory curing was performed on the in-place concrete.</p> <p>(See Corrective Action on attachment). W. F. Iyer 8-19-76</p>		
	ASSIGNED TO: H. C. Dodd, Jr.	DATE: 2/17/76	SUBMITTED BY: Brock for T. Cole DATE: 2-24-76
	APPROVED BY: B&R QA: [Signature]	DATE: 2-26-76	APPROVED BY: TUSI QA: [Signature] DATE: 2/17/76
RESPONSE: AND Killough	DATE: 8-19-76		

PREVENTATIVE ACTION	See attached IM-3080, IM-3079, IM-3106 and BRV-1587.		
	ASSIGNED TO: H. C. Dodd, Jr.	DATE: 2/17/76	SUBMITTED BY: Brock for T. Cole DATE: 2-24-76

CLOSE-OUT (To be completed by Quality Assurance Department)			
CORRECTIVE ACTION:	<input checked="" type="checkbox"/> SATISFACTORY	VERIFIED BY: Killough	DATE: 8-19-76
<input checked="" type="checkbox"/> DEFICIENCY CLOSED:	APPROVED BY: TUSI QA: [Signature]	DATE: 8/19/76	APPROVED BY: B&R QA: Peter L. Bussolini DATE: 8-19-76
REMARKS: NONE	<p>COPIES:</p> <p>B&R CONST. SITE <input checked="" type="checkbox"/> TUSI SITE <input checked="" type="checkbox"/></p> <p>B&R QA SITE <input type="checkbox"/> B&R QA, HOUSTON <input checked="" type="checkbox"/></p> <p>TUSI QA SITE <input checked="" type="checkbox"/> TUSI QA, DALLAS <input checked="" type="checkbox"/></p> <p>NSSS SUPPLIER <input type="checkbox"/></p>		

DDR C-220
Pg 2 of 19

Attachment to DDR C-220

Corrective Action

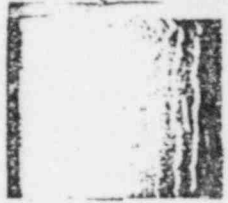
The attached QC curing reports and concrete test hammer test reports document that satisfactory curing was achieved on the in-place concrete.

FOR INFORMATION ONLY

W. F. Tyle

8-19-76

DDR C-220
Pg 4 of 19



Brown & Root, Inc.

P. O. BOX 3, HOUSTON, TEXAS 77001

MESSAGE

REPLY

To C. H. GATCHELL

DATE _____

REF. DDR C-220

INFORMATION ONLY

DA 2/26/76

PLEASE HAVE G+H ENGR. REVIEW THE ATTACHED COPY OF DDR C-220 AND NOTE THEIR CONCURRENCE WITH THE "USE-AS-IS" DISPOSITION ON THE REPLY PORTION OF THIS MEMO, THEY MAY KEEP THE DDR COPY FOR THEIR FILES.

~~DE/ST 84~~
DE/ST 136

THANK YOU,

BY JIM STANCOFF, BARQA

SIGNED _____

PDR C-220
Pg 5 of 19

CONFIRMATION COPY

UTILITY DAL
NO. 9
MAY 5 1976

TT-158

CAUDLE

JOB 2323

REUR: DC/DD REQUEST NO. 84

PLEASE REVISE DESIGN ENGINEERS COMMENTS ATTACHMENT TO THIS REQUEST TO READ AS FOLLOWS:

TEST DATA TO CONFIRM THAT REPRESENTED CONCRETE IN THE
ILIARY BUILDING WAS NOT ALSO SUBJECTED TO ADVERSE
EFFECTS OF FREEZING AS NEEDED. SWISS HAMMER TESTS
WOULD FULFILL THIS REQUIREMENT.

RE HERSPERGER/EJ ZIGMOND
GIBBS HILL NY
TX UTILITY DAL

GIBBS HILL NYK

*CEH
AMR/pks/950.84
Outgoing
THSI
EGZ
068
(B+R)*

FOR INFORMATION ONLY

International Telex Western Union International, Inc.

DDK ✓
Ag 705 19
REPORT HCP 14069
PAGE 1 of 2

3777-6
13-C-9927

Date 7-22-76

Brown & Root, Inc.
P.O. Box 1001
Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
Comanche Peak Steam Electric Station
1980-1982 Units 1 & 2
Job No. 35-1195
B & R Subcontract No. 35-1195-0225
Hunt Project 513

Gentlemen:

We report results of concrete test hammer tests to determine compressive strength of concrete.

Concrete Pour No. 002-5778-004

Test Location AVR BLDG. - ELEVATOR SHAFT - SOUTH WALL

Rebound Values

- 1. (58)
- 2. (52)
- 3. 44
- 4. 43
- 5. (37)
- 6. 47
- 7. 46
- 8. 42
- 9. (37)
- 10. 41
- 11. 46
- 12. 51
- 13. 40
- 14. 42
- 15. (54)

Mean Rebound Value = 45

Indicated Compressive strength-psi 6,800

Tested by Michael Horvath
Level 2

Checked by Robert W. Hunt
Level 2

Respectfully submitted,

ROBERT W. HUNT COMPANY

Robert W. Hunt
Level 2

3777-6
13-C-9927

Date 7-22-76

DUR
Pg 8 of 19
REPORT
NEP 14069
PAGE 2 of 2

Brown & Root, Inc.
P.O. Box 1001
Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
Comanche Peak Steam Electric Station
1980-1982 Units 1 & 2
Job No. 35-1195
B & R Subcontract No. 35-1195-0225
Hunt Project 513

Gentlemen:

We report results of concrete test hammer tests to determine compressive strength of concrete.

Concrete Pour No. 002-5778-004

Test Location AUX BLDG - ELEVATOR SHAFT - WEST WALL

Rebound Values

- 1. 42
- 2. 46
- 3. 50
- 4. 47
- 5. 45
- 6. 44
- 7. 52
- 8. 46
- 9. 48
- 10. 44
- 11. 48
- 12. 45
- 13. 53
- 14. 30
- 15. 46

Mean Rebound Value = 46

Indicated Compressive strength-psi 7,000

Tested by Michael Markita
LEVEL 1

Checked by Robert W. Hunt
LEVEL 1

FOR INFORMATION ONLY

Respectfully submitted,

ROBERT W. HUNT COMPANY

Robert W. Hunt
LEVEL 1

FILE NO. 3777-6
 ORDER 13-C-9927

Date: 2-12-76

← Run -
 Pg 9 of 19
 REPORT PAGE 7335

To: Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Comman. Peak Steam Electric Station
 1980-1982 Units 1 & 2
 Job No. 35-1195
 B & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	5329	5330	5333	5334
Age-Days	28	28	28	28
Str. per sq. in-lbs.	5500	5435	3695	3733
Max. Load-lbs.	156,500	154,500	105,500	106,200
Type of Fracture	Reg.	Reg.	Reg.	Reg.
Date Made	1-15-76	1-15-76	1-15-76	1-15-76
Date Received	1-16-76	1-16-76	2-12-76	2-12-76
Date Tested	2-12-76	2-12-76	2-12-76	2-12-76
Type of Curing	STANDARD	STANDARD	Field	Field
Concrete Mix	116	116	116	116
Temperature °F	60	60	60	60
Slump Inches	134	134	134	134
Air Content	2.5	2.5	2.5	2.5
Location Taken	Pour 002-5778-	001		
TICKET AREA	28.45	28.42	28.55	28.39

TESTED BY: *P.G.*
 CHECKED BY: *J.R.*

QA
 Rec'd Feb 16, 1976

FOR INFORMATION ONLY
 ROBERT W. HUNT COMPANY

Robert Auctioneer
 LEVEL II

FILE NO. 3777-6
 ORDER 13-C-9227

Date: 2-17-76

LOOK UP
 Pg 10 of 19
 REPORT PAGE 7336

To: Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Command: Peak Steam Electric Station
 1930-1932 Units 1 & 2
 Job No. 35-1195
 B & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	5344	5345	5348
Age-Days	28	28	28
Str. per sq. in-lbs.	5512	5700	3533
Max. Load-lbs.	156,500	162,500	153,000
Type of Fracture	Reg.	Reg.	Reg.
Date Made	1-15-76	1-15-76	1-15
Date Received	1-16-76	1-16-76	2-12-76
Date Tested	2-12-76	2-12-76	2-12-76
Type of Curing	Standard	Standard	Field
Concrete Mix	116	116	116
Temperature °F	58	58	58
Slump Inches	1 1/2	1 1/2	1 1/2
Air Content	2.9	2.9	2.9
Location Taken Pour	002-5778-	001	
TICKET	9270		
AREA	28.57	28.50	28.47

TESTED BY: *[Signature]*
 CHECKED BY: *[Signature]*

Rec'd in QA
 Feb. 16, 76

FOR INFORMATION ONLY

Respectfully submitted,
 ROBERT W. HUNT COMPANY

[Signature]
 LEVEL II

FILE NO. 3777-6
 ORDER 13-C-9927

Date: 2-17-76

DUK V-
 Pg 11 of 19
 REPORT # 7337
 PAGE

TO: Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Command: Peak Steam Electric Station
 1930-1982 Units 1 & 2
 Job No. 35-1195
 E & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	5358	5359	5362
Age-Days	28	28	28
Str. per sq. in-lbs.	4860	4770	2987
Max. Load-lbs.	137,500	136,000	85,000
Type of Fracture	Reg.	Reg.	Reg.
Date Made	1-15-76	1-15-76	1-15-76
Date Received	1-16-76	1-16-76	2-12-76
Date Tested	2-12-76	2-12-76	2-12-76
Type of Curing	STANDARD	STANDARD	Field
Concrete Mix	116	116	116
Temperature °F	62	62	62
Slump Inches	2 1/4	2 1/4	2 1/4
Air Content	2.7	2.7	2.7
Location Taken	Pour 002-5778-	001	
TICKET	9291		
AREA	28.29	28.50	28.46

TESTED BY: P.G.

CHECKED BY: J.K.

Rec'd in
 2/16

QA

Respectfully submitted,

ROBERT W. HUNT COMPANY

FOR INFORMATION ONLY

Robert W. Hunt
 S/E/C II

FILE NO. 3777-6
 ORDER 13-C-9927

Date: 2-12-76

DIX (U-220)
 Pg 12 of 19
 REPORT PAGE 7339

To: Brown & Root, Inc.
 P.O. Box 1001
 Glen Rose, Texas 76043

RE: Texas Utilities Services, Inc.
 Command Peak Steam Electric Station
 1930-1932 Units 1 & 2
 Job No. 35-1195
 E & R Subcontract No. 35-1195-0225
 Hunt Project No. 513

Gentlemen:

We report results of Concrete Compression Tests, ASTM C-39 (Hunt E1001)

Cylinder No.	5351	5352	5355
Age-Days	28	28	28
Str. per sq. in-lbs.	5537	5672	3439
Max. Load-lbs.	158,500	161,500	93,000
Type of Fracture	Reg.	Reg.	Reg.
Date Made	1-15-76	1-15-76	1-15-76
Date Received	1-16-76	1-16-76	2-12-76
Date Tested	2-12-76	2-12-76	2-12-76
Type of Curing	Standard	Standard	Field
Concrete Mix	116	116	116
Temperature °F	59	59	59
Slump Inches	2	2	2
Air Content	3.2	3.2	3.2
Location Taken	Pour 002-5778-004	004	
TICKET	9278		
AREA	28.62	28.36	28.50

TESTED BY: *[Signature]*
 CHECKED BY: *[Signature]*

Rec'd in QA
 2/16

Respectfully submitted,

ROBERT W. HUNT COMPANY
 FOR INFORMATION ONLY

Robert W. Hunt
 LEVEL II

Brown & Root, Inc. Post Office Box 1001, Chicago, Texas 78042

February 19, 1976

DDR C-220

Pg 13 of 19

BRV-1587

R. W. Hunt Company
810 S. Clinton St.
Chicago, Illinois 60607

ATTN: Mr. A. J. Bray

Texas Utilities Services, Inc.
Comanche Peak Steam Electric Station
1980-82 2300 MW Installation
Field Cured Cylinders - Concrete

Dear Mr. Bray:

Please notify the Concrete Superintendent each time cylinders for field curing are moved from your laboratory to the parent concrete structure. This is to assure that the responsible parties will be aware of their location and the necessary protection and curing can be provided. Instruct your responsible personnel regarding the importance of this action.

Sincerely,

BROWN & ROOT, INC. **FOR INFORMATION ONLY**

Peter L. Bussolini

Peter L. Bussolini
Project Quality Assurance Manager

[Signature]
PLB/GHF/pw

cc:

R. W. Caudle (6L)
H. C. Dodd, Jr. (1L)
C. H. Gatchell (1L)
D. L. Hansford (1L)
B. K. Kinkade (1L)
C. E. Bonin (1L)
P. M. Milam (1L)

CURING REPORT FORM & CHECKLIST

DDR C-220
Pg 14 of 19

Pour No. 002-5778-004

Location AUXILIARY Bldg (ELECTRICAL CONTROL) ELEVATOR BASE

Date of Pour 1-15-76

Mix I.D. 116

Method of Curing WET BURLAP; POUNDING; INSULATION MATS

Date Curing Started 1-15-76

Date Curing Finished 1-29-76

- | | <u>Sat.</u> | <u>Unsat.</u> | <u>N/A</u> |
|--|-------------|---------------|------------|
| (1) Concrete surfaces are protected from premature drying. | ✓ | — | — |
| (2) Concrete surfaces are kept continuously wet for at least the first 48 hours after placement and any time during curing when the ambient temp. is above 90°F. | ✓ | — | — |
| (3) Concrete surfaces are maintained continuously moist throughout curing period. | ✓ | — | — |
| (4) Wood forms are not left in place during curing. | ✓ | — | — |
| (5) Concrete surfaces are protected against freezing when the ambient temperature is below 32°F. | ✓ | — | — |
| (6) Rate of air temperature change immediately adjacent to the concrete does not fall more than 3°F in any one hour nor more than 30°F in any 24 hours. | ✓ | — | — |
| (7) Protected from mechanical injury?
(Construction equipment; rain, running water, application of curing methods, excessive vibration, loads, heavy shock) | ✓ | — | — |

This form is to be used in conjunction with ACI 308, ACI 305 & ACI 306, and specifically refer to Table 1.4.1, ACI 305 (Cold weather).

FOR INFORMATION ONLY

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initials of Inspector	CLB	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC
Date	1/14/76	1/17/76	1/18/76	1/19/76	1/20/76	1/21/76	1/22/76	1/23/76	1/24/76	1/25/76	1/26/76	1/27/76	1/28/76	1/29/76

1-30-76
Date

C. Tillough
Q.C. Inspector

CURING REPORT FORM & CHECKLIST

DDR C-220
Pg 15 of 19

Pour No. 002-5778-001

Location AUXILIARY BLDG. (ELECTRICAL CONTROL) EAST WALL

Date of Pour 7-16-76 1-15-76

Mix I.D. 116

Method of Curing WET BURLAP, PONDING, INSULATION MATS

Date Curing Started 1-15-76

Date Curing Finished 1-29-76

- | | <u>Sat.</u> | <u>Unsat.</u> | <u>N/A</u> |
|--|-------------|---------------|------------|
| (1) Concrete surfaces are protected from premature drying. | ✓ | — | — |
| (2) Concrete surfaces are kept continuously wet for at least the first 48 hours after placement and any time during curing when the ambient temp. is above 90°F. | ✓ | — | — |
| (3) Concrete surfaces are maintained continuously moist throughout curing period. | ✓ | — | — |
| (4) Wood forms are not left in place during curing. | ✓ | — | — |
| (5) Concrete surfaces are protected against freezing when the ambient temperature is below 32°F. | ✓ | — | — |
| (6) Rate of air temperature change immediately adjacent to the concrete does not fall more than 3°F in any one hour nor more than 30°F in any 24 hours. | ✓ | — | — |
| (7) Protected from mechanical injury?
(Construction equipment, rain, running water, application of curing methods, excessive vibration, loads, heavy shock) | ✓ | — | — |

This form is to be used in conjunction with ACI 308, ACI 305 & ACI 306, and specifically refer to Table 1.4.1, ACI 306 (Cold weather).

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Initials of Inspector	JLL	SC	JLL	JLL	JLL	JLL	JLL	JLL	JLL	JLL	JLL	JLL	JLL	JLL
Date	1/16/76	1/17/76	1/18/76	1/19/76	1/20/76	1/21/76	1/22/76	1/23/76	1/24/76	1/25/76	1/26/76	1/27/76	1/28/76	1/29/76

1-30-76
Date

C. Tillough
Q.C. Inspector

TEMPERATURE AT 30' LEVEL

DDR C-220 JANUARY
Pg 16 of 19

DATE	TEMP. AT 800	TEMP. AT 1400	HI	LO	TIME OF HI	TIME OF LO	RAINFALL
1	54	67	67	46	1400	2330	0
2	40	40	49	31	001	2400	0
3	23	37	39	23	1530	0750	0
4	21	37	40	21	1620	0800	0
5	23	42	47	22	1600	0720	0
6	44	60	67	32	1600	2400	0
7	18	25	27	16	1600	2400	0
8	11	27	30	10	1730	0700	0
9	19	50	53	18	1515	0700	0
10	42	67	67	41	1445	0500	0
11	37	54	57	37	1630	0815	0
12	32	68	72	30	1600	0810	0
13	52	61	62	44	1420	2400	0
14	33	50	53	33	1520	0810	0
15	35	63	67	30	1640	0600	0
16	45	42	58	39	1345	2315	0
17	35	65	67	30	1525	0540	0
18	50	73	74	46	1530	0050	0
19	56	45	59	42	1015	1730	0.03
20	35	49	50	33	1530	2320	0
21	35	62	64	29	1630	0350	0
22	35	67	69	32	1530	0810	0
23	52	75	78	50	1515	0600	0.01
24	60	71	72		1315		
25							
26	28	36					0
27	19						
28							
29							
30							
31							

FOR INFORMATION ONLY

DDR C-220
Pg 17 of 19

INTEROFFICE MEMO

IM-3079

TO: P. L. Bussolini

DATE: February 18, 1976

FROM: C. E. Bonin

SUBJECT: Concrete - Field Cured Cylinders

Request Hunt Lab to notify the Concrete Superintendent or his designated representative (s) at what time during the day, following the initial 24 hours curing period at the lab, the field cured cylinders are being returned to the in-place parent concrete location from the laboratory. Such notification will insure that craft personnel are aware of the location of the cylinders.

EOR INFORMATION ONLY

Charles E. Bonin

C. E. Bonin
Assistant Project Manager

WEC
CEB/GWM/JMJ/eke

- cc:
- T. L. Howard
- A. Depew
- B. G. Banks
- B. K. Kinkade
- W. F. Tyler

INTEROFFICE MEMO

DDR C-2205

Pg 18 of 19

IM-3080

TO: Travis Howard
Al Depew

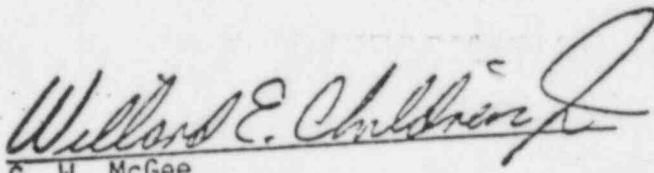
DATE: February 18, 1976

FROM: G. W. McGee

SUBJECT: Concrete - Field Cured Cylinders

Recently, several field cured cylinders have had compressive strength results which are low because of exposure to freezing weather and rough handling. Please emphasize to craft personnel that all field cured cylinders are to be treated and cured with the same attention and protection that is given to in-place concrete. This is a G&H specification requirement which is imposed in order to verify that proper curing is being done. Proper curing and protection, as is done to the in-place parent concrete, of the field cured cylinders will result in good strength results.

GWM/JMJ/eke

cc:
C. E. Bonin
W. F. Tylerfor 
G. W. McGee

DDR C-220
Pg 19 of 19

INTEROFFICE MEMO

IM-3106


TO: P. L. Bussolini

DATE: February 19, 1976

FROM: H. C. Dodd, Jr.

SUBJECT: DDR C-220, IM-3079, 3080

In reviewing the action response to the DDR and the two subject memos, it comes to mind that your Curing Report Form & Checklist(s) might be revised to include a checklist for field cured cylinders to insure that IM-3080 is complied with.


H. C. Dodd, Jr.
Project Manager

HCD/TAC/eke

- cc:
- W. E. Childress, Jr.
 - C. E. Bonin
 - W. V. Tyler
 - D. L. Howard
 - A. Depew
 - B. E. Banks
 - B. K. Kinkade
 - G. W. McGee
 - T. E. Cole
 - T. A. Caudle
 - R. N. Best

see also BTRV-1587