

WESTINGHOUSE CLASS 3

Number: RG-1.54 R0
Date: 6/77
Revision: 1



PWR SYSTEMS
NUCLEAR SAFETY POSITION PAPER

Prepared by: J. J. McInerney

Approved: *[Signature]*
R. C. Schneider, Manager
Nuclear Safety Department

Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants (Revision 0, June, 1973)

ISSUE:

Regulatory Guide 1.54 recommends that Quality Assurance programs encompassing all phases of the coating process be applied for surfaces located inside containment. These QA programs are intended to assure application of coatings such that a high degree of confidence will exist that the paint will not decompose or flake off or otherwise perform unsatisfactorily in normal operation or under accident conditions.

NUCLEAR SAFETY POSITION:

The Westinghouse NSSS equipment located in the containment building is separated into four categories to identify the applicability of this regulatory guide to various types of equipment. These categories of equipment are as follows:

Category 1 - Large equipment

in CEL Category 2 - Intermediate equipment

in CEL Category 3 - Small equipment

Category 4 - Insulated/stainless steel equipment

Category 1 - Large Equipment

The Category 1 equipment consists of the following:

1. Reactor Coolant System Supports
2. Reactor Coolant Pumps (motor and motor stand)
3. Accumulator Tanks
4. Manipulator Crane

The total exposed surface area for these items is approximately 20,830 square feet for a four loop plant.

8-15-84
T. Brant says:
Eliminated + updated
1980 on site

Includes part of Boiling pit:

not in CEL

Since this equipment occupies a large surface area and is procured from only a few vendors, it is possible to implement tight controls over these items.

Westinghouse specifies stringent requirements for protective coatings on this equipment through the use of a painting specification in our procurement documents. This specification defines requirements for:

1. Preparation of vendor procedures. *what are they?*
2. Use of specific coatings systems which are qualified to ANSI N101.2. *on coupons or on simulated equipment?*
3. Surface preparation.
4. Application of the coating systems in accordance with the paint manufacturer's instructions.
5. Inspections and non-destructive examinations.
6. Exclusion of certain materials.
7. Identification of all nonconformances.
8. Certifications of compliance. *DDA tests?*

The vendors's procedures are subject to review by PWRSD Engineering personnel, and the vendor's implementation of the specification requirements is monitored during the Westinghouse QA Surveillance activities.

This system of controls provides assurance that the protective coatings will properly adhere to the base metal during prolonged exposure to a post-accident environment present within the containment building. No loss of paint is anticipated.

Category 2 - Intermediate Equipment

The Category 2 equipment consists of the following:

1. Seismic Platform and Tie Rods
2. Reactor Internals Lifting Rig
3. Head Lifting Rig
4. Electrical Cabinets

The total exposed surface area of these items is approximately 3450 sq. ft. Since these items are procured from a large number of vendors, and individually occupy very small surface areas, it is not practical to enforce the complete set of stringent requirements which are applied to Category 1 items. However, Westinghouse does implement another specification in our procurement documents. This specification defines to the vendors the requirements for:

in Exemption log

1. Use of specific coating systems which are qualified to ANSI N101.2.
2. Surface preparation.
3. Application of the coating systems in accordance with the paint manufacturer's instructions.

The vendor's compliance with the requirements is also checked during the Westinghouse QA Surveillance activities in the vendor's plant. Westinghouse believes that these measures of control provide a high degree of assurance that the protective coatings will adhere properly to the base metal and withstand the postulated accident environment within the containment building. However, to be conservative, Westinghouse has not taken credit for this in calculating the amount of paint which might peel or flake off in the post-accident environment. 3450 ft² in LRL

Category 3 - Small Equipment

Category 3 equipment consists of the following:

1. Transmitters
2. Alarm Horns
3. Small Instruments
4. Valves
5. Heat Exchanger Supports

These items are procured from several different vendors and are painted by the vendor in accordance with conventional industry practices. Because the total exposed surface area is only 900 sq. ft. Westinghouse does not believe it is necessary to specify further requirements. For purposes of estimating the amount of paint that might peel or flake off, Westinghouse has assumed that all of this material might come off.

Category 4 - Insulated or Stainless Steel Equipment

Category 4 equipment consists of the following:

1. Steam generators - covered with wrapped insulation.
2. Pressurizer - covered with wrapped insulation.
3. Reactor Pressure Vessel - covered with rigid reflective insulation.
4. Reactor Cooling Piping - stainless steel.
5. Reactor Coolant Pump Casings - stainless steel.

The wrapped or rigid insulation captures and retains any paint which might come off the equipment surfaces, thereby preventing the paint from blocking the sump drains or interrupting the water flow in the containment spray system.

APPLICABILITY:

This Nuclear Safety Position Paper is for general guidance only.

To determine the applicability and implementation for an individual plant, refer to that plant's Safety Analysis Report.

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

CHANGE INDEX:OEI

: II

:III XX

(WILL) (WILLXNOT) BE INCORPORATED IN DESIGN DOCUMENT DCA NO. 18,657

1. SAFETY RELATED DOCUMENT: XX YES NO
2. ORIGINATOR: CPPE XX ORIGINAL DESIGNER
3. DESCRIPTION:

A. APPLICABLE SPEC/~~XX~~/DOCUMENT 2323-AS-31 REV. 1

B. DETAILS No provisions are made for recording unqualified and/or undocumented coatings in containment.

SOLUTION: Incorporate the following as paragraph 1.1 subparagraph E in the specification.

An exempt log for protective coatings shall be maintained. This log will be a part of permanent plant records. The log shall describe the item or area coated, the coating system, if known, and the square footage of surface involved. All painted surfaces with an unqualified and/or undocumented coating system shall be included on the log.

FOR OFFICE AND
ENGINEERING USE ONLY
35-11-95
SEP 12 1983

4. SUPPORTING DOCUMENTATION:

DOCUMENT CONTROL

5. APPROVAL SIGNATURES: TK/sgr/ 9-12-83
A. ORIGINATOR: *Mark Wells* DATE 9/12/83
B. DESIGN REPRESENTATIVE: *CR Horton* DATE 9/12/83
6. VENDOR TRANSMITTAL REQUIRED: YES NO XX
7. STANDARD DISTRIBUTION:

ARMS (Original)
Quality Engineering
TS for Orig. Design
Westinghouse-Site

(1) Peter Bush-QA Spec. Spvr. (1) DCA FORM 11-80
(1) Civil Engineering (1) Admin. Rev 7-82
(1)
(1)

Miscellaneous Steel
Took Tests
Concrete DFT Audit

TEXAS UTILITIES GENERATING COMPANY

OFFICE MEMORANDUM

To: K. G. Polson

Dallas, Texas August 16, 1983

Subject: Tooke Tests on Pipe, Cable
Tray, and Conduit Supports

I have completed the study of dft readings described in QTQ-411, dated 8/9/83. As we discussed, items 5 through 8, total system, are no longer part of the scope of this study. The results of items 2 through 4 are described below.

Pipe Hanger Primer

This sample included 319 dft measurements on 317 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

	<u>\bar{X}</u>	<u>S</u>
Average	2.54	1.744
Minimum	1.76	1.359
Maximum	3.40	2.350

These numbers appear to indicate that the primer on pipe hangers tend to be low although the averages are within the acceptable range. I can provide further statistical information on these data if desired.

Conduit Support Primer

This sample included 223 dft measurements on 223 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

	<u>\bar{X}</u>	<u>S</u>
Average	3.54	0.913
Minimum	2.78	0.986
Maximum	4.03	1.114

We can be 95% confident that the mean of the average primer is between 3.42 and 3.66; the mean of the minimum primer is greater than 2.67; and the mean of the maximum primer is less than 4.40. These numbers are well within the required 2.0 and 5.5 mils.

Cable Tray Support Primer

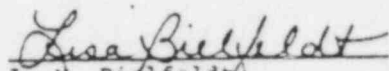
This sample included 301 dft measurements on 298 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

H. G. Tolson
QTQ-416 - page 2
August 16, 1983

	<u>X</u>	<u>S</u>
Average	3.89	0.781
Minimum	2.71	0.879
Maximum	5.24	1.310

We can be 95% confident that the mean of the average primer is between 3.80 and 3.98; the mean of the minimum primer is greater than 2.624; and the mean of the maximum primer is less than 5.36. These numbers are also well within the requirements.

If you have any questions or need additional information, please give me a call.


L. M. Bielfeldt
Special Projects Engineer

LMB/bll
cc: R. M. Kissinger
K. Falk

8-27-84

Concrete Tensile Test Acceptance Limits (Topcost)

CI-QF-1104-24 (Concrete)

Revision	Date	Minimum	Maximum	
0	2-5-82	3	12	Practice 1201
1	2-10-82	3	12	"
2	2-25-82	3	12	"
3	6-29-82	3	16	"
4	3-1-83	3	16	"
5	7-5-83	3	16	"
6	7-14-83	3	16	"
7	4-18-83	3	16	Notice 1201

OFFICE MEMORANDUM

M.R. McBay/Fred Burgess

Glen Rose, Texas September 20, 1983

Subject

COMANCHE PEAK STEAM ELECTRIC STATION

RECEIVED

TOOKE TESTS ON PRIMED STEEL

QC BACKFIT PROGRAM

REF: QTQ-416

SEP 22 1983

TUCSON
DALLAS

We have completed our review of the information contained in the above referenced document and have the following recommendations. The evaluations performed by the QA/QC Special Projects Engineer are valid evaluations and are representative of the field conditions of various primed steels. However, we offer the following observation for pipe hanger primer.

As indicated, based on a sample size of 319 dft measurements on 317 items, the sample mean and standard deviation of the average, minimum and maximum readings are:

	\bar{X}	S
Average	2.54	1.744
Minimum	1.76	1.359
Maximum	3.40	2.350

Based on these figures, we can be 95% confident that the average mil. primer is between 2.35 and 2.73, the minimum is between 1.61 and 1.91 and that the maximum is between 3.14 and 3.60. These ranges are within the specification limits but are on the low side as compared to other type of primed steels. A review of the data sheets used in the evaluation for pipe support provides 234 dft measurement specifically identified as pipe supports. It appears that the instrumentation supports were grouped in with the pipe support since they are likewise designed by PSE which would bring the number of observations to 319 to 330. We performed another statistical evaluation of the specified identified pipe support, 234 dft measurements, and obtained the following results.

Based on 234 observations:

	\bar{X}	S
Average	3.50	.9417
Minimum	2.42	.9186
Maximum	4.54	1.3920

BRJ #1699

Based on the figures obtained from the 234 observations, we can be 95% confident that the primer on pipe supports will be in the following ranges.

Average	3.38 to 3.62
Minimum	2.30 to 2.54
Maximum	4.369 to 4.725

Again, these ranges are well within the specification limits and would meet a specified coating thickness of 3 mils.

We performed a final analysis of the minimum primer thicknesses and provide the following results. Based on a mean minimum primer thickness of 2.42 mils and a standard deviation of .9186 mils, we can be 91% confident that the 234 observations are representative of the total field conditions and the field minimum primer thicknesses will be between 1 mil and 4.22 mils. The 1 mil is outside the current specified minimum of 1.5 mils; however, Carboline has performed DBA test on 1 mil primed steel and obtained satisfactory results (Ref. Carboline Testing Projects 01406/Dec. 26, 1975, 01377/Dec. 23, 1975 and 01499.1/Nov. 7, 1980).

Based on these calculation results, it is recommended that 5% of the pipe support coatings be added to the protective coatings "exempt log". This should adequately cover any questions related to unqualified coatings on structural steel inside containment. It is also recommended that the backfit inspection of primer by destructive Tooke test be discontinued based on the QA/QC Special Projects Engineer's evaluation as supplemented by this office's evaluation.

If there are any questions, please advise.


R.M. Kissinger
Project Civil Engineer

RMK/sgf

cc: J.T. Merritt-Assistant Project General Manager
R.G. Tolson-Site QA Supervisor (TUGCO)
L.M. BielFeldt-TUGCO Dallas
T. Kelly-Ebasco
K. Falk-G & H, NY

*impaired
ind. paint??*

9/22/82

Procedure QEQP 11.4-5 Rev. 27

Will Britton 322

Mike Bullock 327

11 4-5 Rev 29 5-4-84

App. test - 250 PSI

DFT - "spread mucky" -

	via	max
Control 191 spot	1.4	7.0
CZ-11 spot	1.5	7.0
D 6 spot	1.5	5.5
D 6 ave	2.0	5.0
CZ-11 ave	2.0	6.5
Control 191 ave	2.0	6.0

Same table in SI QP 11.4-26

5' to L.B. 6

1. Remaining Q's on Q21. Mainly corrected fill test
and x test. (not used for 11.4)

2. ~~Excess~~ Factor correction for 11.4 - on all
~~tests~~ 1.5 - 7.0

3. Pipe Hanger Prime QTT-416

QTD - 475

Oct 14, 83

TEXAS UTILITIES GENERATING COMPANY

OFFICE MEMORANDUM

To R. G. TolsonDallas, Texas August 16, 1983Subject Tooke Tests on Pipe, Cable
Tray, and Conduit Supports

214-979-5565
on all 10 + 12 items 97-979-5565

I have completed the study of dft readings described in QTQ-411, dated 8/9/83. As we discussed, items 5 through 8, total system, are no longer part of the scope of this study. The results of items 2 through 4 are described below.

Pipe Hanger Primer

This sample included 319 dft measurements on 317 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

	<u>\bar{X}</u>	<u>S</u>	<u>$\bar{X} - S$</u>
Average	2.54	1.744	0.8
Minimum	1.76	1.359	0.4
Maximum	3.40	2.350	1.0

These numbers appear to indicate that the primer on pipe hangers tend to be low although the averages are within the acceptable range. I can provide further statistical information on these data if desired.

Conduit Support Primer

This sample included 223 dft measurements on 223 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

	<u>\bar{X}</u>	<u>S</u>
Average	3.54	0.913
Minimum	2.78	0.986
Maximum	4.07	1.114

We can be 95% confident that the mean of the average primer is between 3.42 and 3.66; the mean of the minimum primer is greater than 2.67; and the mean of the maximum primer is less than 4.40. These numbers are well within the required 2.0 and 5.5 mils.

Cable Tray Support Primer

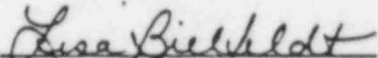
This sample included 301 dft measurements on 298 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

R. G. Tolson
QTQ-416 - page 2
August 16, 1983

	<u>X</u>	<u>S</u>
Average	3.89	0.781
Minimum	2.71	0.879
Maximum	5.24	1.310

We can be 95% confident that the mean of the average primer is between 3.80 and 3.98; the mean of the minimum primer is greater than 2.624; and the mean of the maximum primer is less than 5.36. These numbers are also well within the requirements.

If you have any questions or need additional information, please give me a call.


L. M. Bielfeldt
Special Projects Engineer

LMB/bl1

cc: R. M. Kissinger
K. Falk

QTQ-416

TEXAS UTILITIES GENERATING COMPANY

OFFICE MEMORANDUM

To R. G. Tolson

Dallas, Texas August 16, 1983

Subject Tooke Tests on Pipe, Cable
Tray, and Conduit Supports

5% consistent conservatism - 95% acceptable

I have completed the study of dft readings described in QTQ-411, dated 8/9/83. As we discussed, items 5 through 8, total system, are no longer part of the scope of this study. The results of items 2 through 4 are described below.

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Conduit Support Primer

This sample included 223 dft measurements on 223 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

	\bar{X}	S	$\bar{X} - S$
Average	3.54	0.913	2.4
Minimum	2.78	0.986	1.5
Maximum	4.03	1.114	2.9

We can be 95% confident that the mean of the average primer is between 3.42 and 3.66; the mean of the minimum primer is greater than 2.67; and the mean of the maximum primer is less than 4.40. These numbers are well within the required 2.0 and 5.5 mils. Rev 7.1/11.4-23 ?

Cable Tray Support Primer

This sample included 301 dft measurements on 298 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

R. G. Tolson
QTQ-416 - page 2
August 16, 1983

	<u>X</u>	<u>S</u>	<u>$\bar{X} - S$</u>
Average	3.89	0.781	3.1
Minimum	2.71	0.879	1.8
Maximum	5.24	1.310	2.2

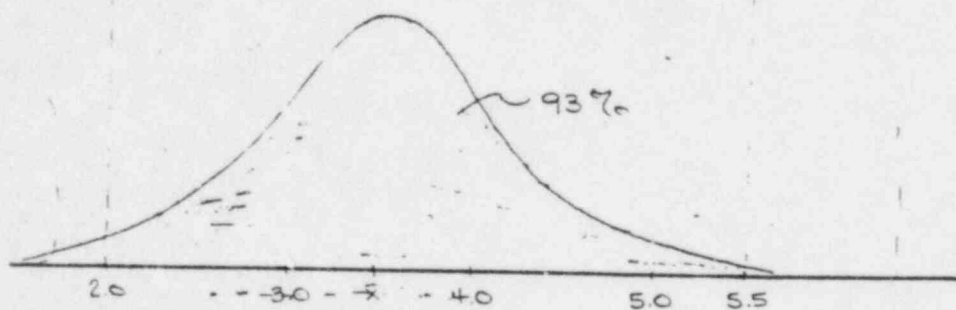
We can be 95% confident that the mean of the average primer is between 3.80 and 3.98; the mean of the minimum primer is greater than 2.624; and the mean of the maximum primer is less than 5.36. These numbers are also well within the requirements.

If you have any questions or need additional information, please give me a call.

L. M. Bielfeldt
L. M. Bielfeldt
Special Projects Engineer

LMB/bll
cc: R. M. Kissinger
K. Falk

CONDUIT SUPPORTS

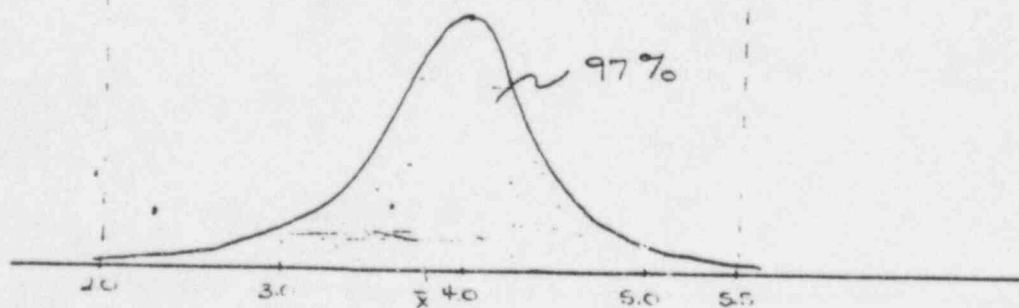


$$\bar{x} = 3.536$$

$$s = 0.9131$$

$$\bar{x} - s = 2.6$$

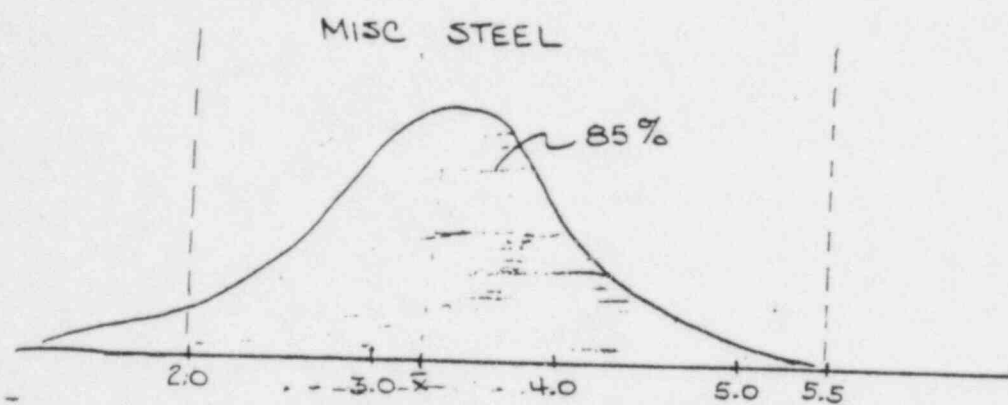
CABLE TRAY SUPPORTS



$$\bar{x} = 3.887$$

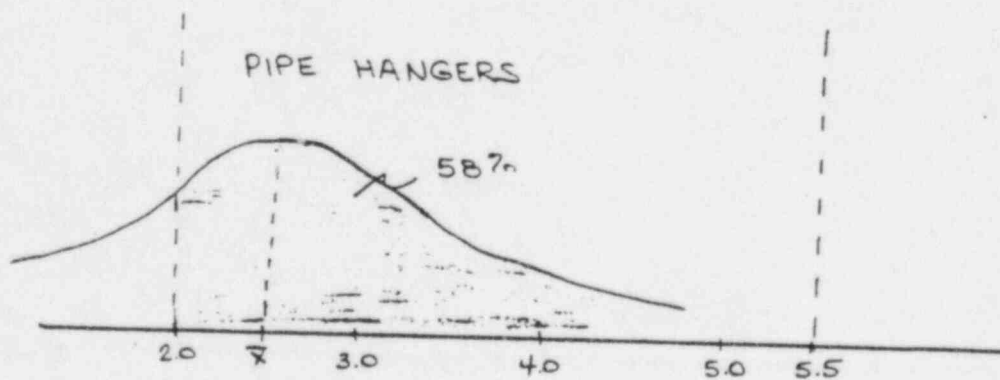
$$s = .7812$$

$$\bar{x} - s = 3.1$$



$$\bar{x} = 3.257$$

$$s = 1.0570$$



$$\bar{x} = 2.537$$

$$s = 1.7437$$

QTQ-475

TEXAS UTILITIES GENERATING COMPANY

OFFICE MEMORANDUM

To: R. G. Tolson

Dallas Texas October 14, 1983

Subject: CORRECTION OF BACKFIT RESULTS FROM

PIPE HANGER TOOKE TESTS
REF: QTQ-416, dated 8/16/83

As I mentioned to you earlier, I became aware (through discussion with R. M. Kissinger) of an error I had made in performing an essential calculation on the results of the pipe hanger tooke tests. In short, I reported the total number of dft readings to be 319; the correct total is 232. Since all the calculations are based on total dft measurements, the reported means and standard deviations for pipe hanger primer in QTQ-416 are in error. Corrected results are given below:

Pipe Hanger Primer

This sample included 232 dft measurements on 230 items. The sample mean and standard deviation of the average, minimum and maximum readings are:

	\bar{x}	s	$\bar{x} - s$
Average	3.49	0.923	2.6
Minimum	2.42	0.919	1.5
Maximum	4.67	1.273	3.3

We can be 95% confident that the mean of the average primer is between 3.37 and 3.61; the mean of the minimum primer is greater than 2.32; and the mean of the maximum primer is less than 4.81. These numbers are well within the required 2.0 and 5.5 mils.

Please note that the above results demonstrate that the pipe hanger primer is much better than originally believed. If you have any questions, please give me a call.

Lisa Bielfeldt
L. M. Bielfeldt
Supervisor, Quality Engineering

LMB:ln

cc: R. M. Kissinger
K. Falk (G&H)

QTQ-476

TE UTILITIES GENERATING COMPANY

File

OFFICE MEMORANDUM

To R. G. Tolson

Dallas, Texas October 14, 1983

Subject CPP-13729 Memo from R. M. Kissinger
to M. R. McBay & F. Burgess, dated 9/20/83

I have reviewed the subject memo and offer the following comments:

- Lisa*
214-970-6868
1. Mr. Kissinger correctly identified an arithmetic mistake in my calculations. Corrected values have been identified in QTQ-475. Instrumentation supports were grouped in with miscellaneous steel, not pipe hangers. } -
 2. Mr. Kissinger's results (based on 234 dft measurements) closely approximate those of my analysis.
 3. The first sentence on page two can be misleading. To be clear, the word "average" should be inserted such that the statement reads as follows:

"Based on the figures obtained from the 234 observations, we can be 95% confident that the average primer on pipe supports will be in the following ranges."

4. The approach taken by Mr. Kissinger appears to be extremely conservative. Thus I concur with his conclusion.

Lisa Bielfeldt
L. M. Bielfeldt

Supervisor, Quality Engineering

LMB:ln

cc: R. M. Kissinger

QTQ-476

TE UTILITIES GENERATING COMPANY

File

OFFICE MEMORANDUM

To R. G. Tolson

Dallas, Texas October 14, 1983

Subject CPP-13729 Memo from R. M. Kissinger
to M. R. McBay & F. Burgess, dated 9/20/83

I have reviewed the subject memo and offer the following comments:

1. Mr. Kissinger correctly identified an arithmetic mistake in my calculations. Corrected values have been identified in QTQ-475. Instrumentation supports were grouped in with miscellaneous steel, not pipe hangers.
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Lisa Bielfeldt
L. M. Bielfeldt
Supervisor, Quality Engineering

LMB:ln

cc: R. M. Kissinger

CPSES TRT

INTERNAL ☐

EXTERNAL ☐

Telephone Memorandum

RE: Weld DFT Test

CALL DATE: 9/20/94 TIME: 10:30 A.M. P.M.

INCOMING:

OUTGOING: ✓

BETWEEN Paul Anderson OF TRT

ADDRESS: CPSES

AND S. S. Kivall's OF TRT COATINGS TEAM

SUMMARY OF DISCUSSION: When performing a scratch test by a
Tack DFT tester, a single average reading of
primer thickness and topcoat thickness is
selected as representative of that scratch.
Out of the 5 resulting numbers obtained for each coat
from the 5 scratches per 100 ft², the
lowest is recorded as "minimum". The
highest of the 5 is recorded as "maximum".
The average of all five is recorded
on the form as "average."

SP Kivall's

COPIES TO:

Concrete DFT audit

PCR
2949

Good

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1

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1

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2690

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Current DFT Audit

Head L H S

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1

1

3708

(1) W/A DFT

3710

Concrete DFTS #1 & F4

Audit

R Road Low High

1 (15)

2 (15) 1

2 (15) 1

105 1 (3)

114 (1) surface only

873 1 (3)

872 1 (3)

106 1 (3)

1 (15)

1 (15)

1020 1 (15) 1

3853 1 (4)

3855 1 (15)

3857 1 Pipe Hanger

3785 1 (9) 2

25+5 1 (3) 1

7 2 (9) 1

3787 2 (15) 1

3780 1 (12)

2 1 (12)

3 1 (9)

22.15 = surface only

3690 1 (3)

2115 1 (12)

1822 1 (3)

1 1 (12)

3705 1 (15)

1 (15)

3705 1 (9)

1 (15)

1 15

FC

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FC

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Soundly - 2

Low - 6

High - 1

Hand - 22

Total 31 PCN's

904 (3) OK FC 6.25

Failures: 10 readings

Total: 12 15' = 180

+ 117

Total "readings" = 297

CONCRETE DET¹
& PULL TESTS

2.6, 41 + 44 Compartment $\frac{8 \text{ tests}}{32 \text{ tests}} = 25\%$

PCR	Date	Electron	Reading	Corr.	PSI	Area	Notes
3870	11-23-83		350 400			500	C-93-01720
2112	12-11-82	1911	300 225	20	180	500	C-93-01720
2113	12-11-82	1911	300	20	355	500	"
715	7-19-82	1911	350 350	30	320	500	"
2114	12-11-82	1911	- - -	20	-	100?	"
3873	11-28-83	2728	200 225 400	80	125	200	C-93-01720
3872	11-28-83	2728	300 400 -	80	220	500	"
906	7-19-82	1911	400 400 -	30	370		"
3874	8-9-83	2341	- - 300 - -	105	195	500	C-93-01720
3851	OK				-	500	
3520	pull test OK					500	Take 2.5 mil down 5 ft
3853	OK				-	200	
3855	OK				-	500	
3857	OK				-	100	
3855	OK				-	300	
3828	11-1-83	2341	- 500 -	75	225	100	Under 83-01720-6
3527	pull test OK					300	Take 1.5 + 2.4 ft
3787	8-17-83	2728	200 - - -	1150	50	500	Ellipt - 01719
3780	OK				-	400	
3782	8-9-83	2341	200 300 - -	110	190	400	Ellipt - 01719
3783	OK				-	300	
2215	12-19-82	2325	200 300 250	31	170	(300)	W. Dunlop C-93-01719
3690	7-22-83	2341	300 300 -	100	200	336 (not)	Ellipt - 01719
2115	OK				-	400	
1822	11-16-82	2325	- - 350	22	330	100	Curvature - 01719
1821	OK				-	400	
3705	8-4-83	1912	- 300 - 300	30	270	500	David - 01719
3702	8-3-83	1912	- - - 300 -	20	280	500	"
3707	OK				-	300	
3708	8-3-83	1712	- 200 350 350 -	20	280	500	David - 01719
3709	8-11-83	1012	- - - 300 -			500	"

Drawn To:	Date	Com.
1911	12-11-82	20
"	"	20
"	7-9-82	30
"	12-11-82	20
"	7-18-82	30
"	7-16-82	30
2728	11-28-82	80
	"	80
	8-17-82	150
2341	8-9-82	105
	11-1-82	75
	8-8-82	110
	7-22-82	100
2325	12-19-82	31
	11-16-82	22
1912	8-4-83	30
	-3-	20
	-3-	20
	-4-	30

9-6-84

J.G. K1 + K4 Compartment $\frac{0.25 \times 32}{32 \text{ tests}} = 25/10$

PCR	Date	Electron	Reading	Corr.	PSI	Area	Notes
3870	11-23-83		350 410			500	C-83-01720
2112	12-11-82	1911	Low 200 225	20	(180)	500	91-01013A2
2113	12-11-82	1911	Low 375	20	355	300	4.1111
915	7-17-82	1911	350 350	30	320	300	82-01013A2
2114	OK 12-11-82	1911	- - -	20	-	100?	81-01013A2
3873	11-24-83	2728	200 225 400	80	(120) (125)	200	83-01720
2372	11-28-83	2728	300 400 -	80	220	100	all
906	7-17-82	1911	400 400 -	30	370	100	82-01013A2
3874	8-9-83	2341	32 - 300 -	105	(195)	500	C-83-01720
3851	OK				-	500	
3520	pull test OK		Low 2.5 mil exp. 2 of 15			500	
3853	OK				-	200	
3855	OK				-	500	
3857	OK				-	100	
3785	OK				-	300	
3528	11-1-83	2341	- 500 -	75 225	200 225	100	83-01720-1
3527	pull test OK		Look 1.5 + 2.4 of 9		-	300	
3787	8-17-83	2728	200 - - -	1150	(50)	500	Ellipt - 0171
3780	OK				-	400	
3782	8-8-83	2341	2340 300 - -	110	(190)	400	Ellipt - 01719
3783	OK				-	300	
2215	12-19-82	2325	200 300 250	110	(170)	(300)	W. Dennis C-81-0151
3690	7-22-83	2341	300 300 -	100	(200)	100	Ellipt - 0171
2115	OK				-	400	
1822	11-10-82	2325	- - 350	22	330	100	Dennis - 01618A
1821	OK				-	400	
3705	4-4-82	1912	250 250 - 300	30	270	500	Dennis - 0171
3702	8-3-82	1912	- - - 300 -	20	280	500	
3727	OK		Pressure Relief Valve Room		-	300	
3705	4-3-82	1912	- 200 350 350 -	20	280	500	Dennis - 0171

Compartment SG #4

PCR 02115

1822 X

1821 X

03705 X

03702 ↑

3327 X

3703 ↑

5704 X

00904 X

03705 X

9/12/84

Estimate of Total Area
of Inside + Outside Wall (bot)
SG Compartments 1 + 4

by Matthews
+ Kirsalis from
BTR Dwg's

3573 Comparison of Area determined from Dwg vs PCR

$$14' \times 14' = 196 \text{ ft}^2 \text{ vs } 200 \text{ ft}^2$$

Dwg PCR

PCR
3655

$$2 \times 6 \times \left(\frac{16}{3}\right)^2$$

$$11' \times 32' = 350 \text{ vs } 520$$

Dwg PCR

Area Estimate

Vertical
Inside
Σ Area =

Inside Wall

Missile
Barrier

$$\Sigma L \times 905 - 805 + L (905 - 820)$$

+ (slate factor) $\left(\frac{1}{2}\right) (905 - 820)$

$$L = \left(2\frac{1}{4}" + 1\frac{1}{2}" + 3\frac{1}{4}" + 1" + 4\frac{1}{4}" + 3"\right) \frac{16}{3}$$

$$L = 2\frac{1}{4}" \times \frac{16}{3} = 3\frac{1}{3}$$

$$= 14 \times 16 = 224 \text{ ft}^2$$

$$L = \left(\frac{57}{4}\right) \left(\frac{16}{3}\right) = \frac{228}{3} = 76$$

Vertical
Inside
Area =

$$(75)(97) + (19)(55)$$

$$\approx 7350$$

$$1600$$

Vertical
Inside
Area Comp 4

$$\approx 4000$$

$$\approx 18000$$

Comp 4 + 1

Approx Vertical
Inside + Outside
Areas
Comp 1 + 4

$$\approx 36000$$

* Ignores inside wall + ceiling
of room outside SG compartments 1 + 4
and floor of SG Comp 1 + 4

905

873

32 0" = 1" 6.6

1" x 10/16

32.75' = 1.4125'

1" x 5/8

23.19 = 1"

23.19 x 5/8 x 23.19 = 336. ft^2

PCOR 3690

100

69

66

100

100

100

100

112 / 745 ft^2 = Total failed area in #1 + #4

teletype to Barbara Lark
attn: Fred Dunha

Unit 1 PCR's on Concrete
with ≤ 400 psi

~~00413~~
487
718
719
720
778
914
916
919 \rightarrow 420
922
923
924
1656
1672
1676
1811
1859
1892
1893
2112
2215
2242
2277
2480
2507
2553
2540
2546
2551
2580
2603
2609
2672
2732

02735
2806
2940
2943
2946
3124
3279
3280
3281
3282
3450
3454
3459
3484
3564
3571
3584
3585
3593
3595
3618
3619
3672
3684
3687
3690
3697
3735
3738
3740
3781
3782
3784

03787
3797
3873
3992
3993
4001

9-30-54, 3 PM

From the 1st and 2nd
last checked inst of
there no calibration.
About 1/4 accuracy.
In line = 00. Will
submit statistics on
this hour. One DFT
approx 100 ft.
This assumption will
be used for estimate
of field work.

LA CAT inspection

NCR - C-84-00096 R1

Reactor cavity \rightarrow CCH

$$14 \times 20 = 280$$

$$7 \times 4.5 = 31.5$$

$$2.75 \times = 7.5$$

$$\underline{319.5} =$$

$$\text{Ceiling} = 391 + 100 + 100 + 100 \approx 700 \text{ ft}^2$$

$$\text{Floor} \approx 30 \times 20 = 600$$

$$\text{Nuclear} = \rightarrow 957$$

$$\text{Small} = 331 + 100 = 431$$
$$\underline{1938 \text{ ft}^2}$$

- X C-83-01721 Concrete Procedure Viol
808'-532' 6-18-83
- X C-83-1722 Concrete Incomplete Documentation
783'-808' 6-18-83
- X C-84-00096 1-2-84 Cant' + Ceiling
AC-1 RM 153 El 793'
- X* C-84-00313 Concrete Pour 101-4812-004
Expand rebar El 821 A-33 Camp 1
- X C-84-00519 " 101-280 RM-003
A-31, 2-10-84 El 803'10"
- C-84-00500 Floor, roof El 782'7"
Rebar Concrete
- X C-84-00593 Pipe Hanger HCS-1-RB-063-003
Excessive piling overlapping
Camp 1 808 2-12-84
- X C-84-00710 Concrete Floor, cant' 905' 310°
2-29-84
- X C-84-00751 Concrete Patches El 809'01 3-9-84
- X C-84-00928 RI Ties to wall w/o churning El 800'01 3-17-84
- X C-84-00923 Concrete VASAT and steel, VASAT top
Buckham 800' 3-26-84
- X C-84-01053 Bad Concrete Patch A31 El 804'10" 4-9-84
- C-84-01052 Concrete Coatings, wall to door
Vasat RM-153 El 822'00 4-9-84
- X C-84-01414 Conc. Coatings, F-Cover no backfill
846'6" - 815' 5-7-84
- X C-84-01349 Same Pinner mixed Camp 7 879'21
C-84-01348 Crack in concrete Camp 2 A-31
- P C-84-01347 Not used cavity 7' x 1' x 1' 8"
- X C-84-01495 Concrete wall El 811' - 800' 5-14-84

AC-1 Rm 153 2E 793'

X* C-84-00313 Concrete Floor 101-4812-004
Expanded rebar El 821 A-33 Camp 1

X C-84-00519 " 101-2807-003
A-31, 2-10-84 El 803'10"

C-84-00500 Floor, cont El 783'7"
Rust Concrete

X C-84-00593 Pipe Hanger 14CS-1-RB-063-005
Excessive primer overlapping
Camp 1 8-0-8 2-12-84

X C-84-00710 Concrete Floor, cont El 905' 310°
2-29-84

X C-84-00721 Concrete Patching El 909' 3-9-84

X C-84-00928 RT - Filler to mud w/o churning El 909' 3-27-84

X C-84-00923 Concrete UNSAT rebar test, DFT only
Rebar El 900' 3-26-84

X C-84-01053 Bad Concrete Patch A-31 El 842'10" 4-9-84

C-84-01052 Concrete Coatings, w/o oil to mud
Rm 153 El 832' 4-9-84

X C-84-01414 Cove Coatings, F-Cover no backfill
2'x6" - 7'5" 5-7-84

* C-84-01349 Loose Primer mixed Camp 4 El 841' 5-11-84

C-84-01348 Cracks in Case coat Camp 2 A-35 5-11-84

P C-84-01347 Not dead cavity 7'5" x 7'5" 5-11-84

X C-84-01495 Comp wall El 841' - 5-14-84

X C-84-01476 Camp 2 El 841' cracks 5-11-84

X C-84-01719

X 1740 Camp 4 5-17-84

X 1717

X 1665 Loss of adhesion

X 1750 "

C-84-61739 Comp 4 853', A-30
 1737 Zoned 4
 1736 Comp 4
 1833 Comp 2 864
 1812 Comp 4
 1890
 1948
 1915
 1964 last of add. EL 508 A 32
 1951 Unset air supply #28-832 7-3-64
 100061
 100042 last of add.
 035 Blended
 122
 095
 087
 190 Floor Comp 4 812'
 178 " " " 808'
 174 Comp 2 & 3 841'
 158 Blended 808' 135°-90°
 141
 227 Comp. Max oil for DFT expansion 832'
 225 " " " " 808'
 220 " " " "
 219

TEXAS UTILITIES GENERATING COMPANY

OFFICE MEMORANDUM

To File Glen Rose, Texas September 10, 1984

Subject Re: Unit 1 Concrete Coating Adhesion Values
Elcometer Calibration Matter SDAR - CP-84-05

As documented in TUQ-1937, dated February 13, 1984, I have reviewed the backfit inspection records for potential effects of the error in calibration of the Elcometer Adhesion Testors on the in place adhesion characteristics of the concrete coatings in the Unit 1 reactor building. I have since again reviewed these records in order to answer a recent verbal question from the NRC TRT on protective coatings. The Unit 1 records for concrete segregated via the efforts described in TUQ-1937 are reflected on the attached memo and listing from Lisa Bielfeldt. Those records which record adhesion values which potentially could be below the acceptance limit of 200 psi are reflected on the attached tabulation dated 8/31/84.


R. G. Tolson

RGT/bh

cc: A. Vega
L. Bielfeldt
J. T. Merritt
Tom Kelly
C. T. Brandt

D- Kyle Vanden
(R) - Area reported

5 ft²

* - 5 ft²

Analysis of Adhesion TESTS Concrete COATINGS Elcometer CALIBRATION ISSUE

CBES

3/21/84

John

1/1

COLUMN - WRITE @

	Inspection REPORT (PCR)	Total Pull Tests	Questioned Pull Tests	Inspection REPORT (PCR)	Total Pull Tests	Questioned Pull Tests	
1	00718	3	1	03672	5	1	1
2	D 00916 *	3	1	03684	3	1	2
3	D 00919 *	3	1	03697	5	2	3
4	D 00920 *	3	1	03735	3	1	4
5	D 00923 *	3	1	03738	5	2	5
6	D 00924 *	3	1	03781	4	1	6
7	D 01656 *	3	+ (R)	03787	5	1	7
8	D 01672	5	1	03797	5	2	8
9	D 01811	3	1	03873	3	2	9
10	02112	5	1	03992	3	1	10
11	D 02215	3	1	03993	4	1	11
12	02277	3	3	04001	3	+ (R)	12
13	02480	3	2	03585	4	1	13
14	02507	5	1				14
15	02553	3	1			65	15
16	02551	5	1				16
17	02580	3	1				17
18	02603	4	1				18
19	02609	3	1				19
20	02732	4	1				20
21	02735	3	1				21
22	02806	4	1				22
23	02943	5	1				23
24	02946	3	1				24
25	03124	3	1				25
26	03279	4	3				26
27	03280	4	1				27
28	03281	5	3				28
29	03282	4	1				29
30	03450	6	1				30
31	03454	3	1				31
32	03459	5	1				32
33	03484	3	1				33
34	03564	5	2				34
35	03571	3	1				35
36	03584	5	1				36
37	03593	4	1				37
38	D 03593	3	2				38
39	D 03595	3	1				39
40	D 03618	5	1				40
	D 03619	4	1				

TOTAL CONCRETE Pull TESTS = 2128

∴ PERCENTAGE Questionable is

$$\frac{65(100)}{2128} = 3.1\%$$

Say 3% given small areas
Noted by *

TEXAS UTILITIES GENERATING COMPANY

ATTN: Ken Tolson
2 pages

OFFICE MEMORANDUM

To R.G. Tolson

Date September 7, 1984

Subject UNIT 1 CONCRETE PCR's

Last week I telecopied the attached list, entitled "Unit 1 PCR's on Concrete with \leq 400 psi", to Fred Dunham at CPSES. The list reflects those Unit 1 concrete which I have segregated for further review with regard to their associated adhesion valves.


L.M. Bielfeldt

LMB:tlg

cc: E.D. Dunham

teletype to: Barbara Lur,
attn: Fred Dunho.

Unit 1 PCR's on Concrete
with ≤ 400 psi

00473

487

718

719

720

778

914

916

919

922

923

924

1656

1672

1676

1811

1859

1892

1893

2112

2215

2242

2277

2480

2507

2553

2540

2546

2551

2580

2603

2609

2672

2732

02735

2806

2940

2943

2946

3124

3279

3280

3281

3282

3450

3454

3459

3484

3564

3571

3584

3585

3593

3595

3618

3619

3672

3684

3687

3690

3697

3735

3738

3740

3781

3782

3784

03787

3797

3873

3992

3993

4001

telecopy to: Barbara Lar,
attn: Fred Dunhe

Unit 1 PCR's on Concrete
with ≤ 400 psi

00473

487

718

719

720

778

914

916

919

922

923

924

1656

1672

1676

1811

1859

1892

1893

2112

2215

2242

2277

2480

2507

2553

2540

2546

2551

2580

2603

2609

2672

2732

02735

2806

2940

2943

2946

3124

3279

3280

3281

3282

3450

3454

3459

3484

3564

3571

3584

3585

3593

3595

3618

3619

3672

3684

3687

3690

3697

3735

3738

3740

3781

3782

3784

03787

3797

3873

3992

3993

4001

COMANCHE PEAK STEAM ELECTRIC STATION

INSPECTION REPORT

7-19-82
SHEET 1 OF 3
NO. PCR-00905

ITEM DESCRIPTION PROTECTIVE COATING		IDENTIFICATION NO. 2 SEE REMARKS	SYSTEM/STRUCTURE DESIGNATION RCB-1 ELV 832'4" - 835'4"
SEC. NO. AS-31	REV. 1	REF. Q.C. DOC. & REV. & CHANGE NO. QI-QP-11.4-24, Rev. 3	MEASURE OR TEST EQUIP. IDENT. NO. 1812, 1813, 1911

<input type="checkbox"/> IN PROCESS INSPECTION	<input type="checkbox"/> PRE-INSTALLATION VERIFICATION	<input checked="" type="checkbox"/> INSTALLATION INSPECTION	<input type="checkbox"/> FINAL INSPECTION	<input type="checkbox"/> PRETEST INSPECTION
--	--	---	---	---

INSP. RESULTS

☒ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY

☐ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

Shelia Brown 7-19-82
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT	UNSAT	DATE	QC SIGNATURE																								
	<input type="checkbox"/> SURFACER ONLY <input checked="" type="checkbox"/> FINISH COAT																												
1.	Perform Tooke test per Para. 3.1 to determine thickness in mils of finish coat. (Document one set of readings for each 100 square feet or less.)																												
	RECORD:																												
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Min. DFT</td> <td>3.0</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Max. DFT</td> <td>7.5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Avg. DFT</td> <td>5.3</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		1	2	3	4	5	Min. DFT	3.0					Max. DFT	7.5					Avg. DFT	5.3					✓			
	1	2	3	4	5																								
Min. DFT	3.0																												
Max. DFT	7.5																												
Avg. DFT	5.3																												

ARMS INDEXED

DATE:

TOOKE GAUGE 21982
Circle individual unacceptable readings.

PERM P.L.T. RECORD

1133

300/PC #

2. Perform Adhesion Test per Para. 3.2. (Document three readings for each 300 sq. ft. or less. Document one additional reading for each 100 sq. ft. or fraction thereof in excess of 300 sq. ft.)

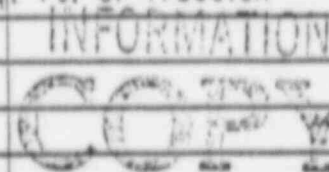
DOLLY #1: 350 PSI

DOLLY #2: 350 PSI

DOLLY #3: 400 PSI

DOLLY #4: N/A

DOLLY #5: N/A



PPRV

N/A

REMARKS (DWGS, SPECS, ETC.) INSPECTED AREA IN COMPARTMENT #1, EAST WALL. SEE, SHEET 2 AND 3.

RELATED NCR NO. C-81-01413 R-213	I.R. CLOSED <input checked="" type="checkbox"/>	DATE 7-19-82	SIGNATURE <i>Shelia Brown</i> QC INSPECTOR
--	---	------------------------	---

C-82-00327 USA 7-20-82



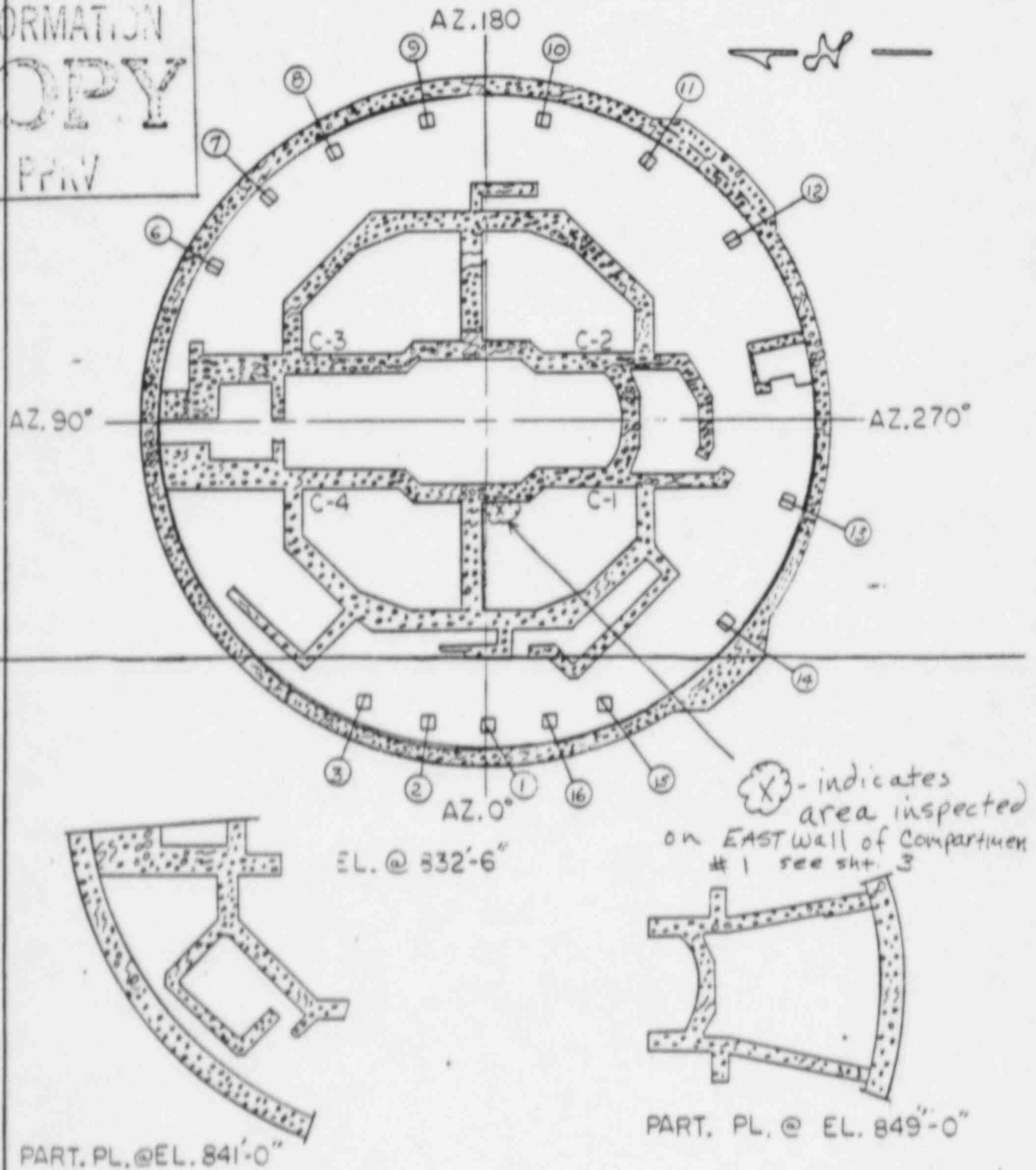
BROWN & ROOT, INC.

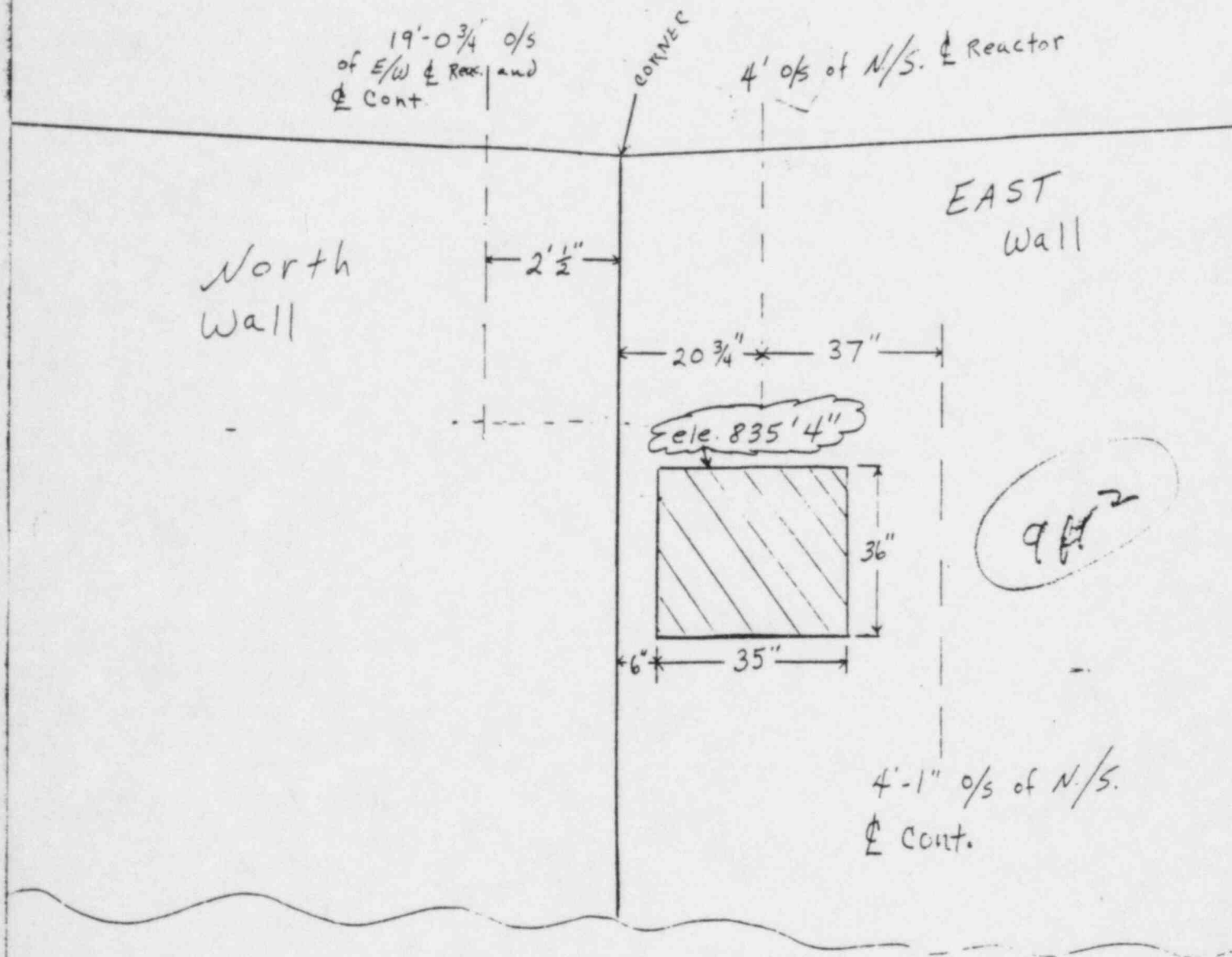
SHEET NO. 2 OF 3


LOCATION / ITEM RCB #1

PCR NO. 00905

INFORMATION
COPY
PPRV





 - indicates Area inspected

INFORMATION
COPY
PPRV

with SSK notes

TEXAS UTILITIES GENERATING COMPANY
OFFICE MEMORANDUM

To File

Glen Rose, Texas September 10, 1984

Subject Re: Unit 1 Concrete Coating Adhesion Values
Elcometer Calibration Matter SDAR - CP-84-05

As documented in TUQ-1937, dated February 13, 1984, I have reviewed the backfit inspection records for potential effects of the error in calibration of the Elcometer Adhesion Testors on the in place adhesion characteristics of the concrete coatings in the Unit 1 reactor building. I have since again reviewed these records in order to answer a recent verbal question from the NRC TRT on protective coatings. The Unit 1 records for concrete segregated via the efforts described in TUQ-1937 are reflected on the attached memo and listing from Lisa Bielfeldt. Those records which record adhesion values which potentially could be below the acceptance limit of 200 psi are reflected on the attached tabulation dated 8/31/84.

R. G. Tolson
R. G. Tolson

RGT/bh

cc: A. Vega
L. Bielfeldt
J. T. Merritt
Tom Kelly
C. T. Brandt

TEXAS UTILITIES GENERATING COMPANY

OFFICE MEMORANDUM

ATTN: Ron Tolson
2 pages

To R.G. Tolson

Date September 7, 1984

Subject UNIT 1 CONCRETE PCR's

Last week I telecopied the attached list, entitled "Unit 1 PCR's on Concrete with ≤ 400 psi", to Fred Dunham at CPSES. The list reflects those Unit 1 concrete which I have segregated for further review with regard to their associated adhesion valves.

L.M. Bielfeldt
L.M. Bielfeldt

LMB:tlg

cc: F.D. Dunham

*Does not say PCR's containing at least one
pull test below 200 psi after correction.
Contains 22 PCR's not on Tolson's list*

teletype to: Barbara Lar,
attn: Fred Dunham

Unit 1 PCR's on Concrete
with ≤ 400 psi

2?

00473

487

718

719

720

778

914

916

919

922

923

924

1656

1672

1676

1811

1859

1892

1893

2112

2215

2242

2277

2480

2507

2553

2540

2546

2551

2580

2603

2609

2692

2732

02735

2806

2940

2943

2946

3124

3279

3280

3281

3282

3450

3454

3459

3484

3564

3571

3584

3585

3593

3595

3618

3619

3672

3684

3687

3690

3697

3735

3738

3740

3781

3782

3784

03787

3797

3873

3992

3993

4001

LINKA PUNK TESTS

PC R	Date	Elements	Reading	Group	
0861	11-15-82	2342	400	J. Bell - ~10	390
02924	3-29-83	2341	250 400 400	V. Elliot -140	210 ?
02927	3-30-83	2341	400 400	" -140	260
02906	3-18-83	2325	300	Don Davis - 80	220?
✓ 1799	11-11-82	2342	300 - 300	J.D. - ~10	290
1765	11-9-82	2341	400	W.E. - 20	390
* 1766	11-9-82		375 400	J.D. - 20	355
1768	11-10-82	2342	275	J.D. - ~10	265
* 1770	11-10-82	2342	225 375 300	J.D. - ~10	215
2218	12-24-82	2325	400 300	W.D. - ~30	270
2219	12-20-82	2325	400	W.D. - 30	370
2220	12-21-82	"	300	W.D. - 30	270
2221	12-21-82	2325	300 400 400	W.D. - 30	270
2222	12-27-82	2325	300	W.D. - 40	260
3	12-27-82	2325	(200)	W.D. - ~40	(160)
4	12-26-82	2325	400	W.D. - ~40	310
02225	12-28-82	2325	300 (200) 400	W.D. - ~40	(160)
6	12-27-82	"	400 350	" - 40	310
8	12-29-82	"	350 350 350	" - 40	310
02210	12-17-82	"	400 350	" - 30	320
2211	12-17-82	2341	300 - -	T. Miller - 20	250
2191	12-27-82	2325	(200) 300 350	J.D. - ~40	(160)
2	28	"	400 400 375	J.D. - 40	335
2135	14	"	400 300 400	J.D. - 30	370
2133	14	"	350 400	W.D. - 30	370
4	15	"	400	J.D. - 30	370
02117	-11-	1912	350 400 300	Robt Wallen - 80	290
02118	-11-	"	350 400	Robt Wallen - 80	340
9	-11-	"	400 350 375	N. S. Taylor - 80	340
02121	-11-	"	300 300 350	" - 80	290
1578	11-27-82	2325	400 400	W.D. - 20	380
1535	11-29-82	"	375 - -	" - 20	355
0	22-82	"	375 400	" - 20	355

PCR	Date	Electron	Reading	Swamp	Δ
1529	10-27-82	2325	325 (200) 400	W.D. -20°	(150)
1530	"	"	300 - -	W.D. -20°	280
1	"	"	225 300 300	W.D. -N20°	205 ?
00784	6-3-82	1785	400 400 400	M. Puddy -160	240
787	"	"	(200)	" -160	(40)
788	6-4-82	"	400 250	" -N160	(90)
789	"	"	300 400 400	" -160	(140)
790	"	"	400 400	" -160	240
791	"	"	(200) 400 400	" -160	(40)
773	5-28-82	"	400 400	" -170	230 ?
775	"	"	400 400 400	" -170	230 ?
776	6-1-82	876	(200) 300	" -0	(200)
777	"	"	- - 225	" -N0	225
743	5-25-82	1785	400	" -170	230
727	5-24-82	876	400 225	Every -0	225 ?
8	"	"	- 400 -	" -0	400
717	5-18-82	"	- 400 -	M.D. -0	400
715	17	"	300 400 -	" -0	300
03650	7-11-83	2728?	400 - -	Don Davis -N150	250
1-0027218	3-21-84	2904	250 250 250	Frank Dierham -N6	240?
04773	5-25-83	1912	(300) 350	W.E. -100	(200)?
3474	5/25/83	1912	400 - -	W.E. -100	300
3462	6-1-83	2341	400	D.D. -130	270
3389	5-12-83	"	400	D.D. -160	240
3326	5-7-83	2325	400-400-	D.D. -110	290
2826	5-14-83	1785	(350)-400	W.E. -180	(170)
2832	5-15-83	1785	400 - -	W.E. -180	220
2834	5-16-83	1912	300 300 375	W.E. -50	250
2821	3-11-83	2341	- 400 400	W.E. -170	230 ?
2956	4-16-83	2325	400 400 -	N. Curtis -100	300
2958	3-28-83	2341	(300) 400	M.D. -120	(140)?
301?	3-29-83	2341	400	-80	320

PCR	Date	Electron	Reading	Strip	
02978	4-2-83	2341	- 350 400	N. Trip - N60	290
2992	3-31-83	2341	400 - -	WE - N80	320
4	4-4-83	"	- 375 -	WES - N40	335
7785	3-26-83	1912	400 400 -	MD - 50	350
2953	3-26-83	1912	400 350 400	TM - 50	250
2954	3-26-83	2325	400 - -	RA Daniels - 40	360
2934	4-4-83	2325	375 - 200	Cory Allen - 40	160
3691	7-25-83	2341	- - 400	WE - N120	280
3681	7-15-83	2728	400 400	WE - N150	250
2	"	"	400 400 -	WE - 150	250
3	7-18-83	missing? Probably 2728	- - 400	WE - 150	250
3664	7-12-83	2341	350 - 350	N.A. - N100	200?
5	"	1912	250 400 375	Cory Allen - 100	150
3652	7-11-83	2341	400 350	WE - 100	
3	"	"	300 - -	WE - 100	200?
00813	6-5-82	1785	- 400 -	MD - 160	240
814	4-5-82	"	- - 250	MD - N130	120
815	6-5-82	"	400 400 400	" - 160	240
817	6-8-82	876	375 - -	W. Davis - 0	375
821	6-11-82	"	200 300 300	" - 0	200?
822	"	"	350 - 400	" - 0	350
3	"	"	400 - -	" - 0	400
831	6-18-82	"	- 400 400	F. Daniels - 0	400
842	6-24-82	1785	400 - 400	" - 150	250
01044	5-31-82	876	300 300	Doc Davis - 0	300
1417	10-20-82	2325	300 - 400	F.D. - 20	250
1418	10-20-82	"	- 250 350	W.D. - 20	230
1121	9-9-82	1912	- 400 -	" - 0	400
1425	10-18-82	2325	350 - -	W.D. - 20	350
1491	10-21-82	2325	400 300 400	W.D. - 20	250
2015	12-6-82	2325	- 350 400	W.D. - 20	320
6	12-7-82	"	- - 300	W.D. - 30	270
	"	"	400 - -	WE - 30	270

PCR	Date	Elevation	Reading	Temp.	
02012	12-6-82	2325	400 - -	WE -10	370
4	"	"	400 400 400	" -30	370
7	-7-	"	350 400 -	WD -30	320
8	"	"	(200) 400 350	WD -30	(170)
9	-2-	"	350 400 400	" -30	320
2022	-3-	"	300 300	" -30	270
4	-9-	"	- - 300	" -30	270
5	-9-	"	350 375 400	" -30	320
7	15	"	- (225) -	" -30	(195)?
20258	-8-	"	400 - -	J.D. -30	370
00652	4-22-82	876	400 400 -	W.A. -0	400
3875	12-12-83	2341	(175) etc	D. Culbreath -50	(175)
3512	7-30-83	2729	375 - -	W.D. -150	225 ?
Q 03723 ? Day					
3506	5-26-83	1912	400 - 400	M. Lush -100	300
3505	5-25-83	2341	- - 400	" -110	290
4	"	"	400 400 -	" -110	290
3971	7-16-83	2729	400 (350) 400	W.D. -150	(200)?
3994	5-28-83	2325	(300) (350) -	" -100	(200)?
5	"	"	350 - 350	" -100	250
7	-7-	2341	400 400 -	" -110	290
8	"	"	- 400 -	" -110	290
01391	10-14-82	2325	375 400 -	" -20	355
5	-15-	"	375 - -	" -20	355
7	"	"	250 300 -	" -20	230
03119	4-21-83	735	- 400 -	C.A. -100	300
1944	12-2-82	2341	325 400	J.D. -20	305
7	-3-	"	- 400 400	J.D. -20	350
8	"	"	400 400 400	J.D. -20	350
00523	4-13-82	1912	400 400	W.A. -0	400
575	4-15-82	"	- 400 (200)	W.A. -0	(200)?
6	"	"	400 - 225	W.A. -0	225?
1578	"	"	- 400	" -0	400

PCR	Date	Elecometer	Reading	Swamp		
01981	12-3-82	2325	400-400	Thiellu	-30	370
3	"	"	375 400 375	WD	-30	345
4	12-4-82	"	400 400 400	Harry yards	-30	370
5	-3-	"	300 300 350	WD	-30	270
6	-4-	"	- - 400	GY	-30	370
7	-4-	"	350 400 (200)	WD	-30	(170)
8	-4-	"	300 400 350	WD	-30	270
1990	-2-	"	400 (200) 400	WD	-30	(170)
1370	10-11-82	"	400 - 250	WD	-20	230?
1	"	"	400 - 300 -	"	-20	280
2	10-12-82	2324	- 250 300	WD	-10	240
3	"	"	- 350 -	L. L. L. L.	-10	340
4	"	"	400 375	WD	-10	365
5	"	"	(200) - -	WD	-10	(190)?
6	-13-	2325	350.	WD	-20	330
1380	-14-	"	350 - -	WD	-20	330
2	"	"	400 250 300	WD	-20	230?
01809	-12-	2341	- - 400	Thouan 4 1/2 in	=10	390
1500	11-11-82	"	- 400 -	TM	-10	390
1640	11-1-82	2325	300 - -	WD	-20	250
1	"	"	300 - -	"	-20	250
1659	-5-	"	400 375 400	T.F.	-20	355
1660	"	"	225 350 400	WD	-20	205?
1916	12-27-??	"	- 400 400	"	-30	370
7	12-2-82	"	300 400 410	"	-30	270
8	"	"	350 400	WD	-30	320
9	"	"	- - 300	WD	-30	270
11-79	11-11-82	"	400 - -	"	-20	350
00507	11-13-82	1912	- - 300	WD	-0	300
1941	12-1-82	2341	225 (200) 300	JD	-20	(180)?
1861	11-15-82	2342	- 400 -	"	-10	390
1555	-16-	"	300 - -	"	-10	290
1851	-17-	"	325 - -	"	-10	295

(6)

PCR	Date	Electron	Reading	Imp	
01852	11-26-82	2342	375 - -	J.D. -10	365
1850	11-15-82	2342	290 350 -	J.D. -10	280
1836	-12-	2324	400 400	D.D. -40	360
1810	-15-	2342	400 - -	J.D. -10	390
615	4-17-82	1912	250 - -	W.A. -0	250
3	"	"	- 300 -	W.A. -0	300
4	"	"	400 - -	" -0	400
02061	12-10-82	2341	350 250 400	J.D. -20	230
5	-11-	"	400 - -	J.D. -20	380
6	-11-	"	400 - -	H.F. -20	380
7	"	"	400 400	" -20	380
02080	12-10-82	2325	(200) 350 400	W.D. -30	(170)
1	"	"	350 300 400	W.D. -30	270
3	"	"	- - 250	T.M. -30	220
6	"	"	400 - 400	T.M. -30	370
8	"	"	- 350 -	W.D. -30	320
9	-13-	"	- 300 300	W.D. -30	270
2090	"	1911	400 - -	W.D. -20	380
2	"	"	300 350	W.D. -20	280
4	-14-	2325	- - 400	W.D. -30	370
5	"	"	225 - -	W.D. -30	(195)
6	-16-	"	- 400 400	W.D. -30	370
7	"	"	400 400 (200)	W.D. -30	(170)
8	-17-	"	400 400 400	W.D. -30	370
9	"	"	- 400 -	" -30	370
01865	11-23-82	2342	400 275 400	J.D. -10	265
4	-22-	"	- 225 -	" -10	(215)
2	-15-	"	250 - -	" -10	240
00657	4-22-82	576	400 400 -	W.A. -0	400
8	"	576	(200) - 300	W.A. -0	(220)
9	"	"	(200) 400 450	W.A. -0	(220)
641	4-21-82	1912	- 375 -	W.A. -0	375
2	"	1912	(200) 400 -	W.A. -0	(200)

PCR	Date	Elecometer	Reading	Surge	
00645	4-22-82	874	- 400 -	WA -0	400
6	"	"	400 --	WA -0	400
7	"	"	400 400 400	WA -0	400
8	"	"	400 - 300	WA -0	300
00639	-21-	1912	(200) 300 -	WA -0	200
8	"	"	300 400	WA -0	300
7	"	876	400 --	WA -0	400
6	"	"	- 300 -	" -0	300
00629	-20-	1912	- - 375	" -0	375
7	"	"	400 --	" -0	400
00618	4-17-82	"	400 --	" -0	400

137 of above have at least one reading < 400

(Line Pull Tests > 200 psi or less)?
 do not include tests originally > 200 psi

PCR	Date	Eleometer	Notes
01529	10-27-82	2325(200)	

222

2121

00787	6-3-82	1785(200)	7/22/82 P. 1000
791	6-4-82	1795(200)	M.D.
776	6-1-82	876(200)	"
02934	4-4-83	2325(200)	Core puller
03683	7/18/83	Single but for thin. W. Ellipt	

+ 100 TC 10-2126 Primer Recast 7-20-83

C 83 - 03104 R1. NB 5-17-84

00821	6-11-82	876(200)	W.S. Avery
02018	12-7-82	2325(200)	W. Puller
03875	12-12-83	2341(175, 190 + 500)	2000

#1 EL 865.4' to 867.7', Az 165-170°

#2 EL 869.4' to 872.4' Az 169.25° to 172° 30'

#3 EL 867.7' to 869.2' Az 160° to 164° 30'

NCR C-83-03015 R1

03512	7-30-83	2728	W. Puller
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00575	4-15-82	1912(200)	Avery
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01987	12-4-82	2325(200)	Puller
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01990	12-2-82	2325(200)	"
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01375	10-12-83	2325(200)	" NCR C-81-01567
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C-83-03103 R1

Traveler RCI-VI-004465 Total PCR's

01941	12-1-82	2341(200)	Puller. New Primer
02080	12-10-82	2325(200)	Puller
02097	12-16-82	2325(200)	Puller
00558	4-22-82	876(200)	Avery
00659	4-22-82	876(200)	Avery
00642	4-21-82	1912(200)	Avery
00639	4-21-82	1912(200)	Avery

~~Are all these numbers in space 8 Ecometers?~~
~~Were the three readings on 3 different Ecometers?~~

2306	2307	2342
2452	1815	2341
2303	2307	2341
285	2408	1912
2303	2307	2341
2306	2309	2341
2452	285	2341
2452	1815	2341
1964	2307	2325
2303	2341	1812
2310	2450	2325
1964	2162	2342
2341	1964	2310
2342	1964	2310
2342	1964	2162
2342	1964	2162
2306	2307	2342
2342	1964	2162
2323	2012	2309
"	"	"
2012	2309	2325
"	"	"
"	"	"
"	200	"
"	"	"
"	"	"
"	200	"
2306	2302	2325
2012	2325	1798
2306	2307	2325
2316	2307	2341
200	200	200

PCR 02223
12-27-82

02223
1-28-82

12-17-82

02191
12-27-82
NCR-081-01567 R-1

24

2342 Data

11-18-42

11

10

10

18

16

15

15

15

23

4-11-83 → best

Dropped 12-6-82 (?)

Last received check: 10-11-82

Nominal	Actual
---------	--------

200	210
-----	-----

700	410
-----	-----

600	610
-----	-----

500	510
-----	-----

Check if any other calibration data before 10-11-82
" exact date of dropping Robert Morton

Calibration Records

LIST OF ADHESION TESTERS

K

2728
2324 ✓
2342 (Dropped 10-11-52) ✓

2325
2341 ✓

1912 ✓
1785 ✓
1911 ✓

2903

2933 ✓

2932 ✓

876 ? 811?

2904 ✓

735 ✓

Model 106-1

10% Accuracy

M&TE-2932 ✓

M&TE-2933 ✓

M&TE-2904 ✓

Model 106-2

20% Accuracy

M&TE-0735 ✓

M&TE-0867 876 ?

M&TE-1785 ✓

M&TE-1911 ✓

M&TE-1912 ✓

M&TE-2324 ✓

M&TE-2329

M&TE-2341 ✓

M&TE-2342 ✓

M&TE-2722

JD Martin knows
which one was dropped

Tom Brewster 326

LIST OF TOOKE GAGES

2

Serial No.

21963

24165

16938

26820

23704

26819

26411

26818

21962

21961

San Paul J. & T. Failure

① of 2

35
- 12
23

PCR	Date	Elevometer	Corrected Reading	Elevation	Azimuth
2223	12-27-82	2325	160	975-995	55°-62°
5	12-28-82	"	160	975-995	62°-73°
2191	12-27-82	"	160	960-975	55-62
5954	4-4-82	"	160	Equip. Hottel	103415 102927
7064	7-12-82	2341	200	1001-1006 1006-1019.5	268-267° 265-252°
5	"	1912	150	1006-1019.5	283-298 NCR 693- 61578R
3652	7-11-83	2341	200	995-1001	238-252
3653	"	"	200	1006-1016	238-253
0814	4-5-82	1785	120	1001-1006	238-253
1529	5-11-82	876	200	955-969	208-223°
787	10-27-82	2325	180	912-938	318-332
788	6-3-82	1785	40	969-995	253-262
789	6-4-82	"	90	950-955	152-238
790	"	"	140	950-955	32-120°
791	"	"	40	947-950	88°-115°
792	6-1-82	876	200	963-965	238-253
2473	5-25-82	1912	200	900-9041"	272°-27.29751'
2826	4-14-83	1785	170	930-933.6"	111'30'-117'25'
958	5-28-83	2341	180	846'-970'	319°30'-227°
2018	12-7-83	2325	170	861-883	235-254'11"
2027	12-15-82	"	195	955-975	152-162
3875?	12-12-83	2341	125	860'2"-872'2"	160°3'-172°30' 43 dollar
3512?	7-30-83	2725	225	1013'5"-1019'6"	~253° (DWG)
3771	"	"	"	1000'-1019'6"	253-268
3794	5-28-83	2325	200	995-1001	328-343 OFT
1987	12-4-82	"	170	885'6"-896'6"	14°30'-23°13'
575	1-15-82	1912	200	1058'6"-1063'8"	0°-90°
1990	12-2-82	2325	170	955-969	305'-320°
1375	10-12-82	2324	190	927-944	19°-63'45' 20%
1941	12-1-82	2341	180	888-933'6"	74-82°30' 100% Pave
2080	12-10-82	2325	170	909'4"-915	236°21'-255°26'
2095	12-14-82	2325	195	872-881	239-241°
2097	12-16-82	"	170	955-969	326-335°

607

Time

2042

PCR	Date	Elevations	Corrected Reading	Elevation	Azimuth
658	4-22-82	876	200	1019'6"-1034'10"	315°-337°20'
659	"	"	"	1019'6"-1034'10"	337°20'-360°
642	4-21-82	1912	"	1034'10'-1050'	45°-67°30'
639	4-21-82	876	200	1034'10"-1050'	337°20'-360°

5-14-84

PCP	Reading	Δ dy	Δ dy $\times 1.178$	Δ EL	Area	Total enclosed area = $(1000 - 808) \times \pi \times 135$
2223	160	7	8.2	20	165.	
5	160	11	13.0	20	259.	$= 81430 \text{ ft}^2$
2191	160	7	8.2	15	123	$\text{Dome} = 2\pi r^2$
2934 dome	100			?	50 (?)	$= 114,511$
3664 dome	200	15	17.7	18.5	327	$= \frac{28,428}{4}$
5	150	15	17.7	13.5	239	$= 28,428$
3652	200	15	17.7	6	106	$\text{Cap} + \text{dome} = 110,058$
3683	200	15	17.7	10	188	
814 (dome)	120	15	17.7	5	89	
821	200	15	17.7	14.	248	$\text{Dome} = 6800$
1529	180	14	16.4	26	429	$\text{Dome} = 500$
707	40	9		26	276	$3665 = 2000$
785	90	8	101.3	5	507	$2512 = 200$
789	140	8	104	5	518	$545 = 500$
791	40	3	35	3	106	1200
770	200	15	17.7	2	35	5595 ft^2
3472	200	15	17.7	4	71	
2826	170	8	9.4	3.5	33	
2955	180	7	8.2	24	198	$\frac{557}{91430} = 6.87\%$
2015	170	19	22.4	22	492	$\div 3 \rightarrow 3.3\%$
2027	195	11	12.9	20	259	
2572	125	12	14.1	12(?)	170	$\text{Total area} =$
2512 dome	225	?		6(?)	(20 est)	$96\% \text{ total area}$
2971	200	15	17.7	13.5	239	
2974	200	15	17.7	6	106	$\frac{3.3}{.96} = 3.4\%$
1957	170	9	10.6	11	117	
575	200	90	106.	5	548	
1975	170	15	17.7	14	247	
1275	190	43	50.7	7	355	
1941	180	8.5	10.0	45.5	456	
2040	170	9	10.6	6.7	71.	
1875	195	42?	49.5	8	396 (est)	
2040	170	15	17.7	14	249	

9-14-54

Areas of Contaminant from (Down) facility pull test

PCR	Δa_2	$\Delta a_3 \times 1.178$	ΔEl	area	Corrected Reading
658	(22.5)		15 1/3	406	200
659	(22.5)		15 1/3	406	"
642	(22.5)		16	402	"
639	(22.5)		16	402	"

$$9276 \div 3 = 3092$$

$$\frac{9276}{.96 \times 110,000} \times \frac{339}{275} = 0.107 \div 3 = \boxed{3.6\%}$$

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	RCB	PROTECTIVE COATING STEEL	VARIED	VARIED	NA

NONCONFORMING CONDITION

THE REFERENCED PAINT/UT PROCEDURE COATING APPLICATION PROCEDURE AND RELATED NON-CONFORMANCE REPORTS IN THE LINE FIFTE AND MISCELLANEOUS STEEL DUE TO MISSING OR DISCREPANT DOCUMENTATION INSPECTIONS HAVE BEEN PERFORMED YIELDING UNSATISFACTORY RESULTS OF ADHESION TESTING LESS THAN 200 PSI. THUS RENDERING THESE ITEMS UNACCEPTABLE (SEE ATTACHED)

NO HOLD TAGS APPLIED

ARMS
INDEXED

QA RECORD

RTN.	QA REVIEW
2	07-29-84
FILE NO.	15.1
SUBFILE NO.	0-83-03106

REFERENCE DOCUMENT: (SEE ATTACHED) DATE: _____

REPORTED BY:

NEILL BRITTON

Neill Britton

DATE:

6/15/84

QA REVIEW/ APPROVAL

[Signature]

DATE:

6/15/84

ACTION ADDRESSEE

TRIESTE

DEPARTMENT

ENGR

DISPOSITION:

REWORK

REPAIR

① X

USE AS

② X

SCRAP

① Solved plate to be repaired per CAP-30.

② Miscellaneous steel to be "Use As-Is" per entry in the inspection log as allowed by DCH 18657 to Spec. AS 31

2323 AS 31

INFORMATION
COPY
PPRV

FIG. REVIEW APPROVAL

[Signature]

DATE:

6/21/84

QA REVIEW APPROVAL

[Signature]

DATE:

6/21/84

DISPOSITION VERIFICATION & CLOSURE

Neill Britton

DATE:

6/29/84

COMMENTS

R1 ISSUED TO REVISE DISPOSITION: REVISE NON-CONFORMING CONDITION

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	RCB	PROTECTIVE COATINGS STEEL	VARIED	VARIED	NA

NONCONFORMING CONDITION

REPORTING PERSONNEL

THE REFERENCED BACKFIT PROCEDURE, COATING APPLICATION
PROCEDURE AND RELATED NCR CORRELATIVE REPORTS
(NCRS) ON LINER PLATE AND MISCELLANEOUS STEEL, DE-111113
DUE TO MISSING OR DISCREPANT DOCUMENTATION. INSPECTIONS
HAVE BEEN PERFORMED YIELDING UNSATISFACTORY RESULTS
OF ADHESION TESTING LESS THAN 200 PSI. THUS RENDERING
THESE ITEMS UNACCEPTABLE (SEE ATTACHED)

NCHAD TAGS APPLIED

REFERENCE DOCUMENT: (SEE ATTACHED) REV _____ PARA _____

REPORTED BY: NEIL BRITTON *Neil Britton* DATE: 11/28/83QE REVIEW/APPROVAL: K. WILVERTON *K. Wilverton* DATE: 11/29/83

ACTION ADDRESSEE RCB-1 TASK FORCE GEORGE TRUITT / TOM KELLY DEPARTMENT ENGR

DISPOSITION: REWORK _____ REPAIR ① XXX USE AS IS ② XXX SCRAP _____

- ① Liner plate to be repaired per CSP-30
② Miscellaneous steel to be used as is per ^{per 12/14/83} ~~per 12/14/83~~ *in exemption log maintained by LCH 19,657 to 3323-RS-31*

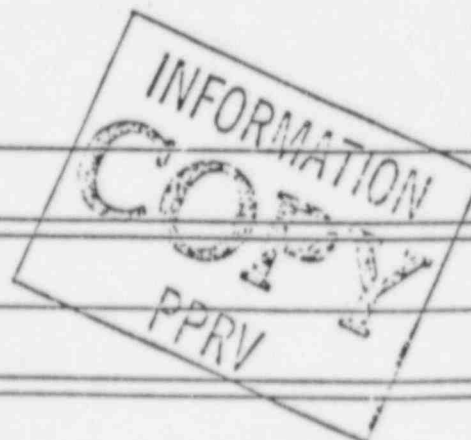
ACTION ADDRESSEE

ENG. REVIEW/ APPROVAL: *J.P.K. 12/8/83* DATE: 12/8/83QE REVIEW APPROVAL: *W. K. ...* DATE: 1/5/84

DISPOSITION VERIFICATION & CLOSURE: _____ DATE: 1/1/84

COMMENTS:

QE



UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	RCB	PROTECTIVE COATING STEEL	Varied	Varied	NA

NONCONFORMING CONDITION

The referenced backfit procedure, coating application procedure, and related nonconformance reports (NCR's) on Liner Plate and miscellaneous steel, due to missing or discrepant documentation, inspections have been performed yielding unsatisfactory Dry Film Thickness of the total system. Thus rendering these items unacceptable (See Attached)

No Hold Tags Applied

REFERENCE DOCUMENT: see attached

REPORTED BY: Neill Britton Neill Britton PPRV 6/5/84

GE REVIEW APPROVAL: [Signature]

DATE: 6/5/84

ACTION ADDRESSEE: Truste

DEPARTMENT: Eng.

DISPOSITION: REWORK _____ REPAIR ☒ X USE AS IS ☒ X SCRAP _____

① Liner plate to be repaired per CCP-30

② Miscellaneous steel to be inspected per CCP-30
to the exemption log as shown by D-10007 18657
to R-31

ARMS
INDEXED

QA RECORD

RTN.	QA REVIEW
7	7-3-84
FILE NO.	15.1
SUBFILE NO.	C-83-03103

ENG. REVIEW APPROVAL: [Signature]

DATE: 6/21/84

GE REVIEW APPROVAL: Neill Britton

DATE: 6/21/84

DISPOSITION VERIFICATION & CLOSURE: Neill Britton

DATE: 6/21/84

COMMENTS: REV 2- Issued to revise disposition.
REVISE NON CONFORMING CONDITION REF C-83-03103

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	RCB	PROTECTIVE COATINGS STEEL	VARIED	VARIED	NA

NONCONFORMING CONDITION

COATING APPLICATION PROCEDURE

THE REFERENCED EXHIBIT FICKELING AND RELATED
NCR CONFORMANCE REPORTS (NCRs) ON LINE PLATE
AND MISCELLANEOUS STEEL, DUE TO MISSING OR DEF-
ICIENT DOCUMENTATION, INSPECTIONS HAVE BEEN
PERFORMED YIELDING UNSATISFACTORY DRY FILM THICK-
NESS OF THE TOTAL SYSTEM. THIS RENDERING
THESE ITEMS UNACCEPTABLE. (SEE ATTACHED)

NO HOLD TAGS APPLIED

REFERENCE DOCUMENT: (SEE ATTACHED) REV _____ PARA _____

REPORTED BY: NEILL BRITTON - Neill Britton 11/9/83 DATE: 11/18/83

QE REVIEW/APPROVAL: K. WOLVERTON 11/19/83 DATE: 11/19/83

ACTION ADDRESSEE: RCB-1 TASK FORCE GEORGETRUITT/TOM KELLY DEPARTMENT: ENR

DISPOSITION: REWORK _____ REPAIR XX USE AS IS XX SCRAP _____

Serial plate to be replaced per CAP 30
Miscellaneous steel to be used as is per analysis
in exempt log as allowed by LCA 18, 657 to 18-3223-1831

INFORMATION
COPY
PPRV

ENG. REVIEW/APPROVAL: R. M. KISSINGER 12/8/83 DATE: 12/8/83

QE REVIEW APPROVAL: M. K. KISSINGER 1/9/84 DATE: 1/9/84

DISPOSITION VERIFICATION & CLOSURE: _____ DATE: 1/1/84

REMARKS: REV 1 - Issued to delete unrelated referenced IR numbers

FILE DOCUMENT 02-OP114-23

REV. 12

PAGE 5.1

FILE DOCUMENT 01-OP114-5

REV. 27

PAGE 3.3

FILE DOCUMENT NCR C-83-01564

REV. 1

PAGE -

NCR C-83-01565

NCR C-83-01566

NCR C-83-01567

NCR C-83-01570

NCR C-83-01571

NCR C-83-01572

NCR C-83-01573

NCR C-83-01574

NCR C-83-01575

NCR C-83-01576

NCR C-83-01577

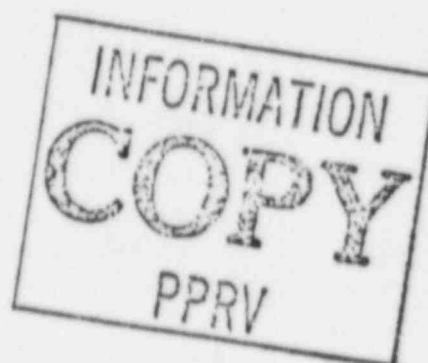
NCR C-83-01578

NCR C-83-01579

NCR C-83-01603

NCR C-83-01604

NCR C-83-01605



INSPECTION REPORT

NO. PC-1-0047507

JSP. RESULTS

☒ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY

☐ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

Neill Porter 6-21-84
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT	UNSAT	DATE	QC SIGNATURE
1.	ALL LINER PLATE HAS BEEN SATISFACTORYLY REPAIRED OR TRAVELERS ISSUED TO COVER DISCREPANT AREAS PER DT-QP 11.4-28 AND NCR DISPOSITION	✓			
2.	ALL MISCELLANEOUS STEEL IS USE AS-IS	✓			
3.	NO HOLD TAGS APPLIED.				
4.	THIS IS THE FINAL INSPECTION REPORT TO CLOSE NCR C030303R2	✓			

INFORMATION
COPY

REMARKS (SWGS, SPECIES, ETC.) 11/4

INFORMATION
COPY
PPRV

RELATED NCR NO. CR3-03103R2 I.R. CLOSED NA DATE NA SIGNATURE NA
GC INSPECTOR

EL QI-QP 11.4-23

JR#	PRIMER			TOTAL SYSTEM		
	MIN	MAX	AVG	MIN	MAX	AVG
PC2CC062	-	-	-	(5.5)	10.5	7.1
PC2CC067	-	-	-	(3.5)	10.0	6.8
PC2CC071	-	-	-	(4.0)	8.0	(5.8)
PC2CC082	-	-	-	(5.5)	10.0	7.3
PC2CC0114	-	-	-	(5.0)	9.5	6.9
PC2CC0255	-	-	-	(4.0)	9.0	6.7
PC2CC0265	-	-	-	(5.5)	8.0	6.5
PC2CC0347	-	-	-	(4.5)	10.0	6.6
PC2CC0373	-	-	-	(2.5)	(5.0)	(3.9)
PC2CC0389	-	-	-	(5.0)	11.0	8.0
PC2CC0393	-	-	-	(4.5)	6.0	(5.2)
PC2CC0394	-	-	-	(4.5)	(4.5)	(4.5)
PC2CC0395	-	-	-	(5.5)	7.0	6.2
PC2CC0396	-	-	-	(4.5)	7.5	6.0
PC2CC0398	-	-	-	(3.0)	7.0	(5.5)
PC2CC0399	-	-	-	(4.5)	6.5	(5.7)
PC2CC0506	-	-	-	(5.0)	7.5	6.1
"	-	-	-	(4.0)	7.5	(5.8)
"	-	-	-	(5.5)	9.0	6.9
PC2CC0507	-	-	-	(4.5)	10.0	6.5
"	-	-	-	(5.0)	10.5	7.1
PC2CC0515	-	-	-	(5.0)	7.0	6.1
"	-	-	-	(4.0)	7.5	(5.4)
PC2CC0523	-	-	-	(5.5)	7.5	6.2
"	-	-	-	(5.0)	9.5	7.2
PC2CC0534	-	-	-	(4.5)	9.5	8.2

INFORMATION
COPY
PPRV

REV1

REV1

COMANCHE PEAK STEAM ELECTRIC STATION
NONCONFORMANCE REPORT (NCR)

NCR NO

C-83 05104 R2

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	RCB	Protective Coatings Steel	Varied	Varied	NA

NONCONFORMING CONDITION

The referenced backfit procedure, coating application procedure and related non-conformance reports (NCRs) on Liner Plate and miscellaneous steel, due to missing or discrepant documentation. Inspections have been performed yielding unsatisfactory Dry Film Thickness of the primer thus rendering these items unacceptable. (See attached) Refer to attached for additional nonconforming condition.

No Hold Tags Applied

REFERENCE DOCUMENT: (See Attached)

REV

PARA

REPORTED BY:

Neill Britton neill britton

DATE:

6-15-84

CE REVIEW APPROVAL

[Signature]

DATE:

6-15-84

ACTION ADDRESSEE

Trieste

DEPARTMENT

Eng.

DISPOSITION:

REWORK

REPAIR

X

USE AS IS

X

SCRAP

Liner plate to be repaired per CAP-30.
Miscellaneous steel to be (use as is) per entries in. exempt log as allowed by DCA 12,657 to spec. 2323 Ad-31.

INFORMATION
COPY

RECORD

ARMS
INDEXED

PPRV

QA REVIEW

5-17-84

NO.

15.1

DATE:

FILE NO.

C-83-03104

DATE:

6-12-84

ENG REVIEW APPROVAL

[Signature]

CE REVIEW APPROVAL

Neill Britton

DATE:

6-12-84

DISPOSITION VERIFICATION & CLOSURE:

Neill Britton

DATE:

6-12-84

COMMENTS:

REV 2 - ISSUED to revise disposition of
NON-CONFORMING CONDITION
(REF. NCR C84-01925)

REPORTING PERSONNEL

OE

ACTION ADDRESSEE

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	Reactor Building	Pipe Hangers	See Below	808' to 832'	N/A

NONCONFORMING CONDITION

Surface preparation and prime coat application inspections shall be documented on the primer coat and surface preparation application checklists (Ref: QI-QP-11.4-1).

Contrary to the above the dry film thickness was not recorded on the checklist per the procedure nor is the checklist for surface preparation available on all the pipe hangers in the two reactors.

No hold tags applied.

QA RECORD

RTN.	QA REVIEW
2/26/11-84	
FILE NO.	15.1
SUBFILE NO.	NCR #

REFERENCE DOCUMENT: QI-QP-11.4-1

REPORTED BY:

J. Fazi

REV 4 PARA 2.0

DATE:
10/19/81

QE REVIEW APPROVAL:

[Signature]

DATE:

7/15/87

ACTION ADDRESSEE

R. G. Tolson

DEPARTMENT
QA

DISPOSITION:

REWORK _____ REPAIR XXX USE AS IS _____ SCRAP _____

Inspect above listed items in accordance with QI-QP-11.4-23.

INFORMATION
COPY
PPRV

ENG. REVIEW APPROVAL:

[Signature]

DATE:

7/18/83

QE REVIEW APPROVAL:

[Signature]

DATE:

7/20/83

DISPOSITION VERIFICATION & CLOSURE:

[Signature]

DATE:

6/6/84

COMMENTS: Rev. 4 issued to change the disposition. REF: NCR C-83-01572 R.1, C-83-01573 R.1, C-83-01574 R.1, C-83-01609 R.1, C-83-01610 R.1, C-83-01611 R.1, C-83-01626 R.1

NONCONFORMANCE REPORT (NCR)

NCR NO. C-81-01372 R-3

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	Reactor Building	Pipe Hangers	See Below	808' to 832'	N/A

NONCONFORMING CONDITION

Surface preparation and prime coat application inspections shall be documented on the primer coat and surface preparation application checklists (ref: QI-QP-11.4-1).

Contrary to the above the dry film thickness was not recorded on the checklist per the procedure nor is the checklist for surface preparation available on all the pipe hangers in the two reactors.

No hold tags applied.

REFERENCE DOCUMENT: QI-QP-11.4-1 REV 4 PARA 2.0

REPORTED BY: J. Fazi DATE: 10/19/81

QE REVIEW/APPROVAL: *Harry O. Williams* DATE: 6/21/83

ACTION ADDRESSEE: R. G. Tolson DEPARTMENT QA

DISPOSITION:

REWORK XXX REPAIR _____ USE AS IS _____ SCRAP _____

Areas which are uncoated may be coated in accordance with CCP-30 and CCP-30A. This includes tying in to the previously coated surface.

The above items shall be tested and inspected in accordance with QI-QP-11.4-23 and inspected for surface defects in accordance with QI-QP-11.4-1 and QI-QP-11.4-5 (as applicable).

Repair or rework (if required) shall be performed in accordance with CCP-30 or CCP-30A and shall be inspected in accordance with QI-QP-11.4-1 and QI-QP-11.4-5. Areas where primer thickness of a seal or finish coated item is not within the thickness range as specified in QI-QP-11.4-23 shall be reviewed by the Project Civil Engineer or his designee on a case-by-case basis. After an area has been tested and found acceptable as described above, coating operations may continue.

ENG. REVIEW/APPROVAL: *CR Hooten* DATE: 6/23/83

QE REVIEW/APPROVAL: *T. E. Hite* DATE: 6/23/83

DISPOSITION VERIFICATION & CLOSURE: DATE: 1/1

COMMENTS: R-3 reference NCR C-83-01572 R-1, C-83-01573 R-1, C-83-01574 R-1, C-83-01609 R-1, C-83-01610 R-1, C-83-01611 R-1, C-83-01626 R-1

INFORMATION
COPY
PPRV

REPORTING PERSONNEL

OE

ACTION ADDRESSEE

UNITES STATES
NAVY
INDEXED

NONCONFORMANCE REPORT (NCR)

C-83-01612 R.1

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	Reactor Building	Conduit Supports	See Below	808' to 832'	N/A

NONCONFORMING CONDITION

Surface preparation and prime coat application inspection shall be documented on prime coat application and surface preparation checklists. (Ref.: QI-QP-11.4-1)

Contrary to the above, the dry film thickness was not recorded on the checklist as per the procedure, nor is the checklist for surface preparations available on conduit supports.

No hold tags applied.

QA RECORD

RTN.	QA REVIEW
L 6-11-84	
FILE NO.	15.1
SUBFILE NO.	NCR #

REFERENCE DOCUMENT: QI-QP-11.4-1 REV 4/5 PARA 2.0

REPORTED BY: Joe Fazi DATE: 10, 19, 81

QA REVIEW APPROVAL: *[Signature]* DATE: 7, 15, 82

ACTION ADDRESSEE: R. G. Tolson DEPARTMENT: QA

DISPOSITION: REWORK _____ REPAIR _____ XXX _____ USE AS IS _____ SCRAP _____

Inspect above listed items in accordance with QI-QP-11.4-23.

INFORMATION
COPY
PPRV

ENG. REVIEW/APPROVAL: *[Signature]* DATE: 7, 18, 83

QA REVIEW APPROVAL: *[Signature]* DATE: 7, 20, 83

DISPOSITION VERIFICATION & CLOSURE: *[Signature]* DATE: 6, 6, 84

COMMENTS: Rev. 6 issued to change the disposition.
REF: C-83-01612 R.1, C-83-01613 R.1, C-83-01614 R.1, C-83-01569 R.1
C-83-01570 R.1, C-83-01571 R.1, C-83-01625 R.1

REPORTING PL (GOM) 1

QI

ACTION ADDRESSEE

E

REPORTING PERSONNEL

OF

ACTION ADDRESSEE

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1	Reactor Building	Conduit Supports	See Below	808' to 832'	N/A

NONCONFORMING CONDITION

Surface preparation and prime coat application inspections shall be documented on prime coat application and surface preparation checklists. (Ref.: QI-QP-11.4-1).

Contrary to the above, the dry film thickness was not recorded on the checklist as per the procedure, nor is the checklist for surface preparations available on conduit supports.

No hold tags applied.

REFERENCE DOCUMENT: QI-QP-11.4-1 REV 4/5 PARA 2.0

REPORTED BY: - Joe Fazi DATE: 10/19/81

CE REVIEW APPROVAL: *Harry O. Williams* DATE: 6/21/83

ACTION ADDRESSEE R. G. Tolson DEPARTMENT QA

DISPOSITION:

REWORK XXX REPAIR _____ USE AS IS _____ SCRAP _____

Areas which are uncoated may be coated in accordance with CCP-30 or CCP-30A. This includes tying in to the previously coated surface.

The above items shall be tested and inspected in accordance with QI-QP-11.4-23 and inspected for surface defects in accordance with QI-QP-11.4-1 and QI-QP-11.4-5 (as applicable).

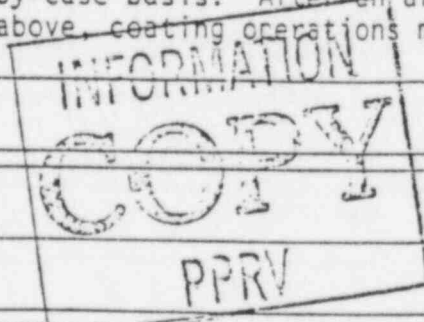
Repair or rework (if required) shall be performed in accordance with CCP-30 or CCP-30A and shall be inspected in accordance with QI-QP-11.4-1 and QI-QP-11.4-5. Areas where primer thickness of a seal or finish coated item is not within the thickness range as specified in QI-QP-11.4-23 shall be reviewed by the Project Civil Engineer or his designee on a case-by-case basis. After an area has been tested and found acceptable as described above, coating operations may continue.

ENG. REVIEW APPROVAL: *CL Hunter* DATE: 6/22/83

CE REVIEW APPROVAL: *McL...* DATE: 6/22/83

DISPOSITION VERIFICATION & CLOSURE: DATE: / /

COMMENTS R-5 referenced NCR C-83-01612 R-1, C-83-01613 R-1, C-83-01614 R-1, C-83-01569 R-1, C-83-01570 R-1, C-83-01571 R-1, C-83-01625 R-1.



UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO
1	Reactor Building	Conduit Supports	See Below	808' to 832'	N/A

NONCONFORMING CONDITION

Surface preparation and prime coat application inspections shall be documented on prime coat application and surface preparation checklists. (Ref.: QI-QP-11.4-1).

Contrary to the above, the dry film thickness was not recorded on the checklist as per the procedure, nor is the checklist for surface preparations available on the conduit supports.

No hold tags applied.

REFERENCE DOCUMENT: QI-QP-11.4-1 REV 4/5 PARA 2.0

REPORTED BY: Joe Fazi DATE: 10/19/81

QE REVIEW APPROVAL: *Harry O. Williams* DATE: 6/19/83

ACTION ADDRESSEE: R. G. Tolson DEPARTMENT: QA

DISPOSITION: Rework XXX REPAIR _____ USE AS IS _____ SCRAP _____

Areas which are uncoated may be coated in accordance with CCP-30 or CCP-30A. This includes tying in to the previously coated surface.

The above items shall be tested and inspected in accordance with QI-QP-11.4-23 and inspected for surface defects in accordance with QI-QP-11.4-1 and QI-QP-11.4-5 (as applicable).

Repair or rework (if required) shall be performed in accordance with CCP-30 or CCP-30A and shall be inspected in accordance with QI-QP-11.4-1 and QI-QP-11.4-5. Areas where primer thickness of a seal or finish coated item is not within the thickness range as specified in QI-QP-11.4-23 shall be reviewed by the Project Civil Engineer or his designee on a case-by-case basis. After an area has been tested and found acceptable as described above, coating operations may continue.

ENG REVIEW APPROVAL: *G. Heston* DATE: 6/10/83

QE REVIEW APPROVAL: *[Signature]* DATE: 6/11/83

DISPOSITION VERIFICATION & CLOSURE: DATE: 1/1/84

COMMENTS: Rev. 4 to separate unit 1 and 2. To change NCR to elevations for closure by elevation.

REPORTING PERSONNEL

ACTION ADDRESSEE

QE

INFORMATION
COPY
PPRV

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	R/R NO
1	Reactor Building	Cable Tray Hg.	See Below	808' to 832'	N/A

NONCONFORMING CONDITION

Surface preparation and prime coat application inspections shall be documented on the prime coat application and surface preparation checklists per QI-QP-11.4-1.

Contrary to the above, the dry film thickness was not recorded on the checklist as per the procedure nor is the checklist for surface preparation available on all cable tray hangers.

No hold tags applied.

QA RECORD

RTN.	CA REVIEW
FILE NO.	15.1
SUSFILE NO.	C81-01370

ARMS
INDEXED

REFERENCE DOCUMENT: QI-QP-11.4-1 DATE: REV 4/5 PARA 2.0

REPORTED BY: Joe Fazz DATE: 10/19/81

QE REVIEW/APPROVAL: [Signature] DATE: 7/15/83

ACTION ADDRESSEE: R. G. Tolson DEPARTMENT Engineering

DISPOSITION: Rework _____ Repair XXX Use as is _____ Scrap _____

Inspect the above listed items in accordance with QI-QP-11.4-23.

INFORMATION
COPY
PPRV

ENG. REVIEW/APPROVAL: [Signature] DATE: 7/18/83

QE REVIEW/APPROVAL: [Signature] DATE: 7/20/83

DISPOSITION VERIFICATION & CLOSURE: [Signature] DATE: 6/6/84

COMMENTS: Rev. 5 issued to change the disposition.
REF: C-83-01615 R.1, C-83-01616 R.1, C-83-01617 R.1, C-83-01624 R.1,
C-83-01566 R.1, C-83-01565 R.1, C-83-01564 R.1

REPORTING PERSONNEL

O

ACTION ADDRESSEE

DE

NONCONFORMANCE REPORT (NCR)

NCR No

C-81-01370 R-4

STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO
Reactor Building	Cable Tray Hangers	See Below	808' to 832'	N/A

UNCONFORMING CONDITION

Surface preparation and prime coat application inspections shall be documented on the prime coat application and surface preparation checklists per QI-QP-11.4-1.

Contrary to the above, the dry film thickness was not recorded on the checklist as per the procedure nor is the checklist for surface preparation available on all cable tray hangers.

No hold tags applied.

REFERENCE DOCUMENT: QI-QP-11.4-1 REV 4/5 PARA 2.0

REPORTED BY: Joe Fazi DATE 10/19/81

QE REVIEW APPROVAL: *Henry O Williams* DATE: 6/21/83

ACTION ADDRESSEE: R. G. Tolson DEPARTMENT: QA

DISPOSITION: REWORK XXX REPAIR _____ USE AS IS _____ SCRAP _____

Areas which are uncoated may be coated in accordance with CCP-30 or CCP-30A. This includes tying in to the previously coated surface.

The above items shall be tested and inspected in accordance with QI-QP-11.4-23 and inspected for surface defects in accordance with QI-QP-11.4-1 and QI-QP-11.4-5 (as applicable).

Repair or rework (if required) shall be performed in accordance with CCP-30 or CCP-30A and shall be inspected in accordance with QI-QP-11.4-1 and QI-QP-11.4-5. Areas where primer thickness of a seal or finish coated item is not within the thickness range as specified in QI-QP-11.4-23 shall be reviewed by the Project Civil Engineer or his designee on a case-by-case basis. After an area has been tested and found acceptable as described above, coating operations may continue.

ENG. REVIEW APPROVAL: *CEH* INFORMATION DATE: 6/22/83

QE REVIEW APPROVAL: *MAE* COPY DATE: 6/22/83

DISPOSITION VERIFICATION & CLOSURE: *PDY* DATE: 1/1

COMMENTS: R-4 NCR C-83-01615 R-1, C-83-01616 R-1, C-83-01617 R-1, C-83-01624 R-1, C-83-01566 R-1, C-83-01565 R-1, C-83-01564 R-1 reference.

REPORTING PERSONNEL

OF

ACTION ADDRESSEE

E

CS
CO

C MANCHE PEAK STEAM ELECTRIC STATION
NONCONFORMANCE REPORT (NCR)

NCR No
C-81-01370, R-3

STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
1 Reactor Building	Cable Tray Hangers	See Below	808' to 832'	N/A

NONCONFORMING CONDITION

Surface preparation and prime coat application inspections shall be documented on the prime coat application and surface preparation checklists per QI-QP-11.4-1.

Contrary to the above, the dry film thickness was not recorded on the checklist as per the procedure nor is the checklist for surface preparation available on all cable tray hangers.

No hold tags applied.

REFERENCE DOCUMENT: QI-QP-11.4-1 REV 4/5 PARA 2.C

REPORTED BY: Joe Fazi DATE: 10/19/81

GE REVIEW/ APPROVAL: *Harry O. Williams* DATE: 6/9/83

ACTION ADDRESSEE: R. G. Tolson DEPARTMENT: QA

DISPOSITION: Rework XXX REPAIR _____ USE AS IS _____ SCRAP _____

Areas which are uncoated may be coated in accordance with CCP-30 or CCP-30A. This includes tying in to the previously coated surface.

The above items shall be tested and inspected in accordance with QI-QP-11.4-23 and inspected for surface defects in accordance with QI-QP-11.4-1 and QI-QP-11.4-5 (as applicable).

Repair or rework (if required) shall be performed in accordance with CCP-30 or CCP-30A and shall be inspected in accordance with QI-QP-11.4-1 and QI-QP-11.4-5. Areas where primer thickness of a seal or finish coated item is not within the thickness range as specified in QI-QP-11.4-23 shall be reviewed by the Project Civil Engineer or his designee on a case-by-case basis. After an area has been tested and found acceptable as described above, coating operations may continue.

ENG REVIEW/ APPROVAL: *CR* DATE: 6/10/83

GE REVIEW/ APPROVAL: *W. F. F.* DATE: 6/12/83

DISPOSITION VERIFICATION & CLOSURE: DATE: 1/1

COMMENTS: R-3 to separate unit 1 and 2. To change NCR to elevation for closure by elevation.

REPORTING PERSONNEL

ACTION ADDRESSEE

QE

INFORMATION
COPY
PPRV

INDEXED

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO
1	RB	Protective Coatings Concrete	See Below	781' to 783'	N/A

NONCONFORMING CONDITION

Prior to 11/11/81 inspections for concrete surface preparation, coating material mixing, surfacer application, surfacer repair, finish coat application, and finish coat repair were required to be documented in accordance with the following QI-QP's respectively: 11.4-10, 11.4-11, 11.4-12, 11.4-13, 11.4-14, 11.4-15.

Contrary to the above, a majority of concrete coating reports issued prior to 11/11/81 exhibit omissions of various entries including dry film thickness, final acceptance signature and date, applicable inspection instruction, M&TE number for test equipment used, visual defects and continuity inspection results, names of qualified applicators, etc.

No hold tags applied.

QI-QP-11.4-10, 11.4-11, 11.4-12, 11.4-13, 11.4-14, 11.4-15 all previous Rev. as a
REFERENCE DOCUMENT: _____ REV _____ PARA _____

REPORTED BY: Bob Hamilton DATE: 11/23/81

QE REVIEW/APPROVAL: [Signature] DATE: 7/15/83

ACTION ADDRESSEE R. G. Tolson DEPARTMENT QA

DISPOSITION: REWORK _____ REPAIR XXX USE AS IS _____ SCRAP _____

Inspect the above listed coating in accordance with QI-QP-11.4-24.

INFORMATION
COPY
PPRV

QA RECORD
RTN QA REVIEW
DATE: 7-11-81
NO. 15.1
SUBFILE NO. NCR #

ENG. REVIEW/APPROVAL: [Signature] DATE: 7/18/83

QE REVIEW APPROVAL: [Signature] DATE: 7/20/83

DISPOSITION VERIFICATION & CLOSURE: [Signature] DATE: 6/7/84

COMMENTS: REF: NCR C-83-01719, C-83-01720, C-83-01721, C-83-01722
R-4 issued to revise disposition

REPORTING PERSONNEL

QI

ACTION ADDRESSEE

QI

COMANCHE PEAK STEAM ELECTRIC STAT
NONCONFORMANCE REPORT (NCR)

NCR No
C-81-01613 R-3

STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO
RB	Protective Coatings Concrete	See Below	781' to 783'	N/A

INFORMING CONDITION

Prior to 11/11/81 inspections for concrete surface preparation, coating material mixing, surfacer application, surfacer repair, finish coat application, and finish coat repair were required to be documented in accordance with the following QI-QP's respectively: 11.4-10, 11.4-11, 11.4-12, 11.4-13, 11.4-14, 11.4-15.

Contrary to the above, a majority of concrete coating reports issued prior to 11/11/81 exhibit omissions for various entries including dry film thickness, final acceptance signature and date, applicable inspection instruction, M&TE number for test equipment used, visual defects and continuity inspection results, names of qualified applicators, etc.

No hold tag applied.

QI-QP-11.4-10, 11.4-11, 11.4-12, 11.4-13, 11.4-14, 11.4-15 all previous Rev. as applic.
REFERENCE DOCUMENT: _____ REV _____ PARA _____

REPORTED BY: Bob Hamilton

DATE:
11 / 23 / 81

GE REVIEW/ APPROVAL:

DATE:

ACTION ADDRESSEE

R. G. Tolson

DEPARTMENT
QA

DISPOSITION:

REWORK _____ REPAIR _____ XXX _____ USE AS IS _____ SCRAP _____

Inspect the above listed coating in accordance with QI-QP-11.4-24.

Final Disposition

See Attached

ENG REVIEW/ APPROVAL

DATE

7 / 7 / 83

QE REVIEW APPROVAL:

DATE

7 / 8 / 83

DISPOSITION VERIFICATION & CLOSURE:

DATE:

/ /

COMMENTS:

R-3 to change NCR for closure by elevations.
Ref. NCR C-83-01719, C-83-01720, C-83-01721, C-83-01722.

INFORMATION
COPY

PPRV

DIPOSITION:

ANSI N101.6-1972, Section 9.1, specifies six basic requirements which a concrete protective coating must fulfill.

- (1) It must be resistant to chemicals under service conditions.
- (2) It must be easily cleaned and decontaminated and be resistant to the cleaning agents and acids used for decontamination.
- (3) It must be resistant to abrasion and peeling.
- (4) It must provide an impermeable barrier to radioactive substances for long period of time.
- (5) It must be resistant to deterioration by ionizing radiation.
- (6) It must be fire retardant.

To meet these six basic requirements, coatings used for Level I and II radiation levels are prequalified for use per ANSI N101.2 and application is in accordance with the jobsite protective coating specification. As stated under the nonconforming conditions of this NCR, omissions in documentation as required by QA/QC procedures in relation to the jobsite coating specification, are numerous.

In order to verify acceptability of previously applied coatings which do not have adequate documentation, criteria for this qualification must be established.

Methods such as scratch tests will not provide sufficient accuracy necessary to verify dry film thickness of the NUTEC 11 S surfacer coating. Coating operations involving concrete coatings inside Containment buildings are performed only by personnel that have been trained, tested and qualified for the application of the specified coatings. NUTEC 11 S surfacer, as normally applied, will yield from 10 - 20 mils of dry film thickness. It is doubtful that a coat of NUTEC 11 S would be applied to yield a dry film thickness greater than 50 mils. NUTEC 11 is often used to repair (smooth) the 11 S surface. A NUTEC 11 application will normally yield from 3 to 10 mils of dry film thickness. However, application at or above 25 mils dry film thickness is very improbable.

Considering the maximum probable thickness per coat of the surfacer (NUTEC 11 S) and surfacer repair (NUTEC 11), a total DFT of 75 mils is unlikely but still possible for the surfacer coat. Imperial test report No. 495-81 and No. 505-81 demonstrate acceptable results in accordance with ANSI N101.2 of surface applications up to 115 mils DFT and 105 mils DFT respectively under DBA conditions. Imperial test report No. 412360 demonstrates that the REACTIC 1201 finish coat applied directly to bare concrete exhibited acceptable DBA results in accordance with ANSI N101.2.

REPLICATION
COPY
PPRV

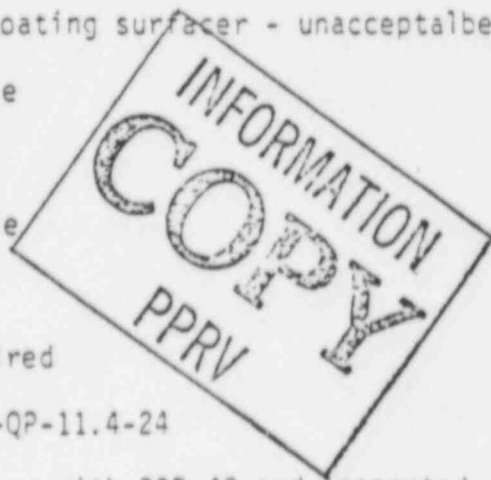
on the preceding technical reports, the concrete surfacer thickness is critical to the performance of the coating system. The REACTIC 1201 finish coat is the critical coating film for decontamination and cleaning purposes. To achieve this the coating must exhibit a continuous film which is free from surface defects. Minimum dry film thickness must be achieved to ensure a durable and sound coating. The system must exhibit a minimum adhesion tensile strength of 200 psi in accordance with Specification AS-31, Revision 1 and ANSI N5.12.

In order to verify acceptability of the existing concrete coating system which is affected by this NCR, the following criteria and inspections shall be performed.

- (1) Adhesion testing with an Elcometer 106⁷⁷⁵² adhesion tester or equal. One test shall be performed on each ~~50~~ square feet or less of affected areas of concrete coating. Each test shall consist of 3 dollies tested to failure.
- (2) Tooke testing of the REACTIC 1201 finish coat - 5 readings per each 100 square feet of affected area.
- (3) Visual inspection must be performed and the following conditions, if noted, must be repaired if determined not to be within acceptable limits:
 - (a) Pinholes - in accordance with NACE T-6F-3 Condition C
 - (b) Blisters - unacceptable
 - (c) Bubbling - unacceptable
 - (d) Fish eyes - unacceptable
 - (e) Excessive orange peel - unacceptable
 - (f) Mud cracking - unacceptable
 - (g) Run and sags - if detrimental to coating surfacer - unacceptable
 - (h) Skip and/or Holidays - unacceptable
 - (i) Dry spray - unacceptable
 - (j) Foreign contaminants - unacceptable
 - (k) Mechanical damage - unacceptable
 - (l) Color and gloss uniformity - required

Coating shall be inspected in accordance with QI-QP-11.4-24

Repair or rework of coatings shall be in accordance with CCP-40 and inspected in accordance with QI-QP-11.4-10.



STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO.
Factor Building	Protective Coatings Concrete	See Below	781' to 783'	N/A
FORMING CONDITION				

Prior to 11/11/81 inspections for concrete surface preparation, coating material mixing, surfacer application, surfacer repair, finish coat application, and finish coat repair were required to be documented in accordance with the following QI-QP's respectively: 11.4-10, 11.4-11, 11.4-12, 11.4-13, 11.4-14 and 11.4-15.

Contrary to the above, a majority of concrete coating reports issued prior to 11/11/81 exhibit omission of various entries including dry film thickness, final acceptance signature and date, applicable inspection instruction, M&TE number for test equipment used, visual defects and continuity inspection results, names of qualified applicators, etc.

No hold tag applied.

REFERENCE DOCUMENT: 11.4-11, 11.4-12, 11.4-14, 11.4-15, all previous Rev. as applicable.

REPORTED BY: Bob Hamilton DATE: 11/23/83

QE REVIEW/ APPROVAL: Gary C. Williams DATE: 6/22/83

ACTION ADDRESSEE: R. G. Tolson DEPARTMENT: QA

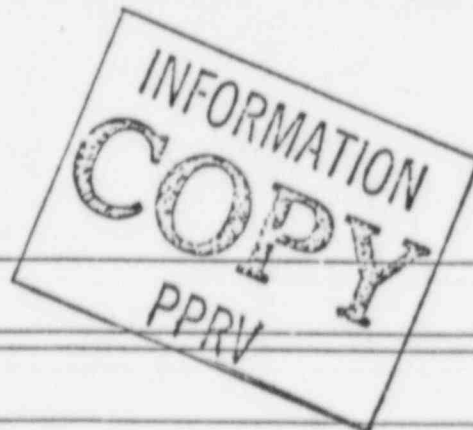
DISPOSITION: REWORK XXX REPAIR _____ USE AS IS _____ SCRAP _____

Interim Disposition:

Areas which are currently uncoated may be coated in accordance with CCP-40. This includes tying into previously coated surfaces. Tied areas and all other areas coated prior to 11/11/81 are subject to final disposition of this NCR.

Final Disposition:

See Attached.



ENG. REVIEW/ APPROVAL DATE: / /

QE REVIEW/ APPROVAL DATE: / /

DISPOSITION VERIFICATION & CLOSURE DATE: / /

COMMENTS: R-3 to change NCR for closure by elevations.
Ref. NCR C-83-01719, C-83-01720, C-83-01721, C-83-01722

Linear Plate
Castings Box 7-1
RCB-1 El 1000'-6" to 1008'

$$\frac{100}{100} = 1$$

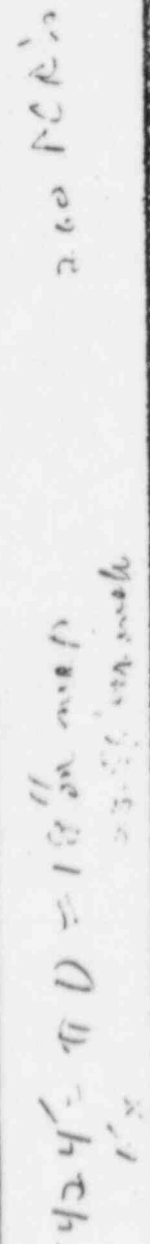
7.

Equipment

CIA
Doc

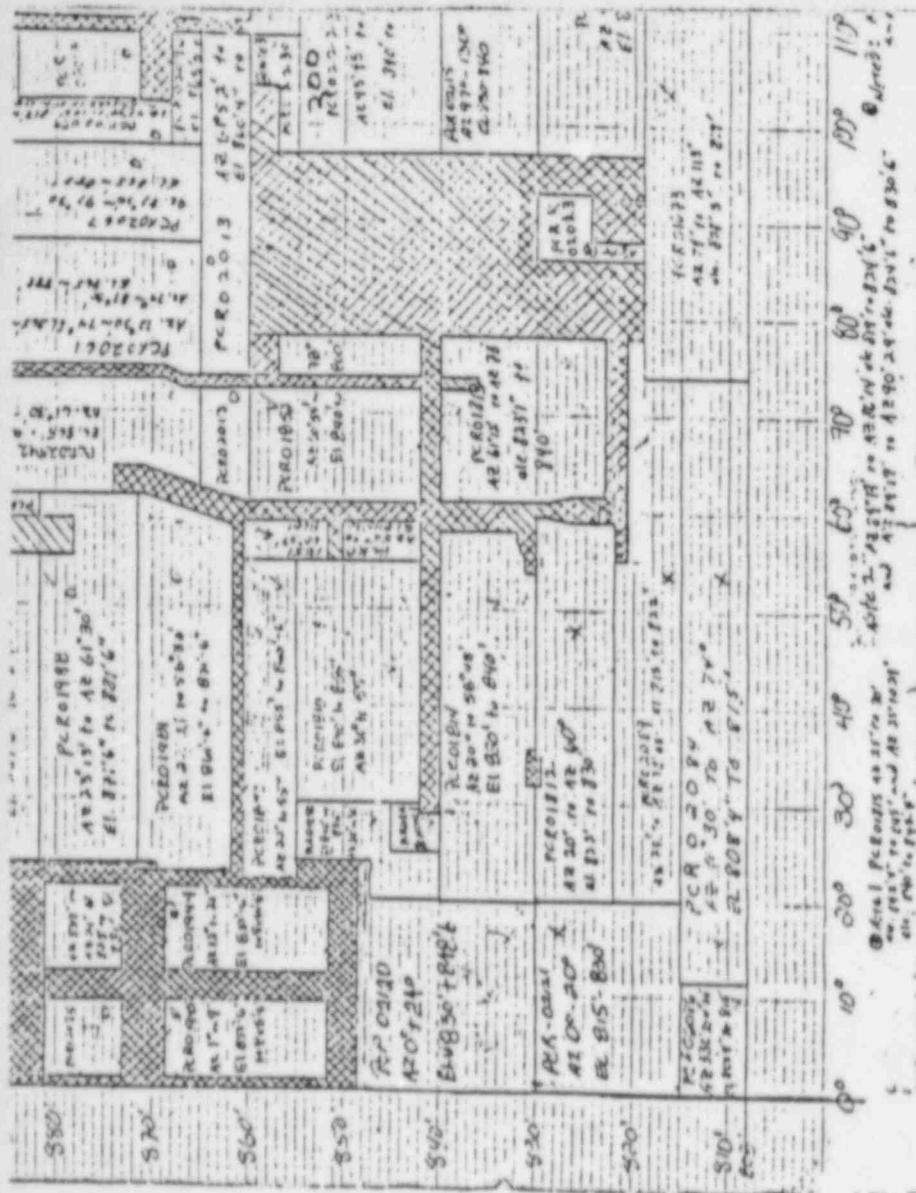
200

[illegible]



1917

23-71 44. mole



2000

135

$$1) = 2 \text{ auf}$$
$$r'_{\theta} \leq 1 = A$$
$$s_1 = r_0$$
$$K = 0.75$$
$$10^5 = 10^5$$

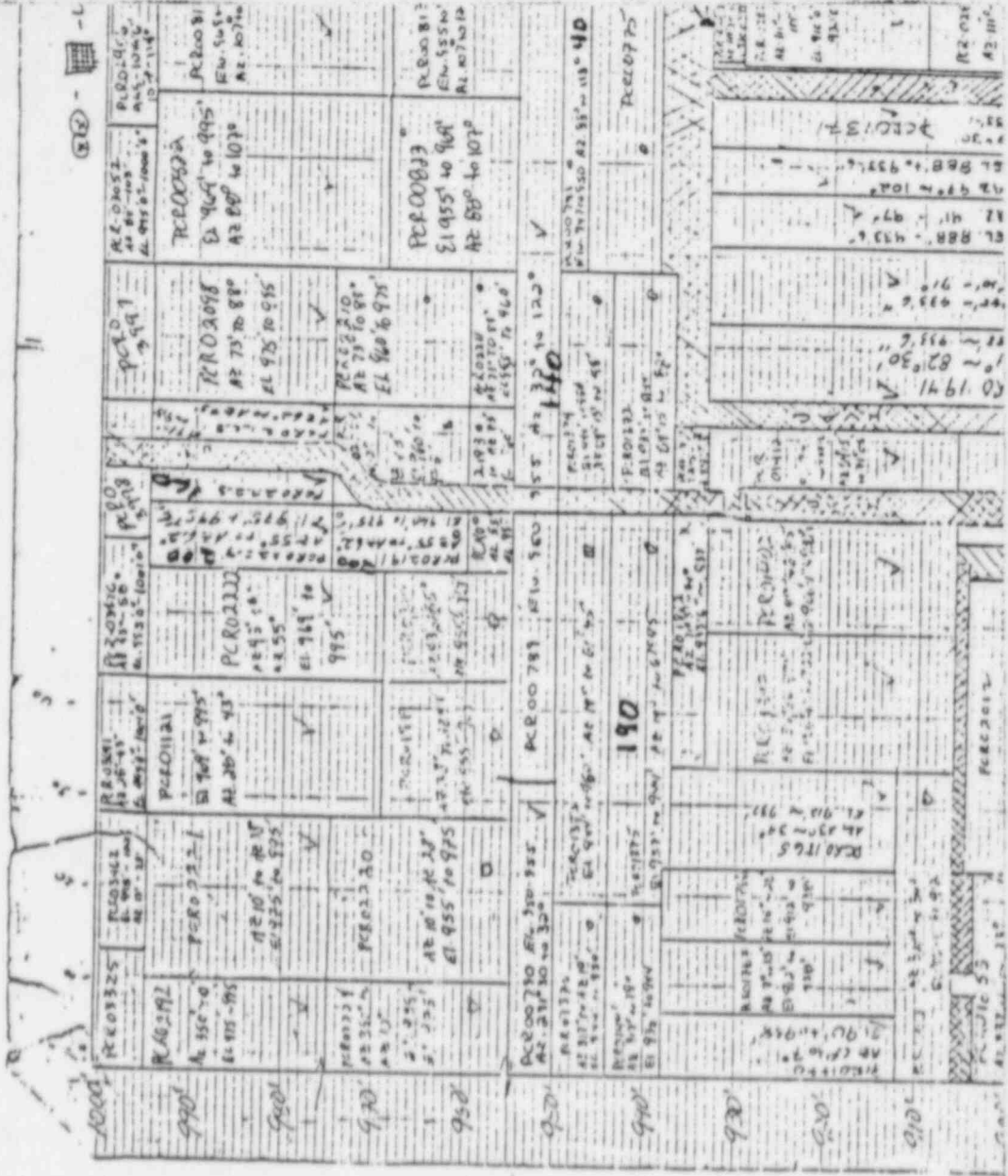
$510^\circ = 2\pi \times 67.9^\circ$

$$\left(\frac{1}{2} \pi, \frac{1}{2} \pi \right)$$

1977-1978 3.330

$$1 \times 3.50 = 1.10$$

195



COMANCHE PEAK STEAM ELECTRIC STATION
INSPECTION REPORT

FOR INFORMATION ONLY

DATE 12-15-82
NO. PCRO 2022

ITEM DESCRIPTION PROTECTIVE COATINGS		IDENTIFICATION NO. <u>Liner Plate</u>		SYSTEM / STRUCTURE DESIGNATION <u>RCB-1</u>	
SPEC. NO. <u>AS-31</u>	REV. <u>1</u>	REF. QC, CCC, & REV. & CHANGE NO. <u>QI-QP-11.4-23, Rev. 5</u>	MEASURE OR TEST EQUIP. IDENT. NO. <u>2012, 2309, 2325</u>		
<input type="checkbox"/> IN PROCESS INSPECTION		<input type="checkbox"/> PRE INSTALLATION VERIFICATION		<input checked="" type="checkbox"/> INSTALLATION INSPECTION	
<input type="checkbox"/> FINAL INSPECTION		<input type="checkbox"/> PRETEST INSPECTION			
INSER RESULTS <input type="checkbox"/> INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY <input checked="" type="checkbox"/> INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW					

Wm. A. Dunham 12-15-82
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT	INSAT	DATE	QC SIGNATURE
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SEAL OR FINISH COAT

- Perform Tooke test per para. 3.1 to determine thickness in mils of primer and total system (document one set of readings for each 100 sq. ft. when testing Containment liner)

RECORD:

	1	2	3	4	5			
Min. Soot Primer:						NA		
Max. Soot Primer:				A		SS		
Avg. Soot Primer:				A		NA		
Min. Soot Tot. System:	10.0	9.0	9.6	N		✓		
Max. Soot Tot. System:	13.0	13.0	11.5	N	A	✗	✓	Full test
Avg. Soot Tot. System:	11.4	11.4	10.5	✓	A	✗	✓	Full test

ARMS INDEXED

- Perform Adhesion test per para. 3.2.

RECORD: Adhesion Test Strength in psi:

Dolly #1: 500 Dolly #2: 225 Dolly #3: 550 ✓

PERM. PLT. RECORD

Handwritten notes:
0.111/2.11
1-13-84
1-13-84

REMARKS (DWGS, SPECS, ETC.) Liner Plate from AZ 152° to AZ 143° El. 955' to 975'

Adequate primer documentation exists for this Area

RELATED NCR NO. <u>C-21-01547 R.1</u>	I.R. CLOSED <input checked="" type="checkbox"/>	DATE <u>11-22-84</u>	SIGNATURE <u>Wm. A. Dunham</u> QC INSPECTOR
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FOR INFORMATION ONLY
COMANCHE PEAK STEAM ELECTRIC STATION
INSPECTION REPORT

ITEM DESCRIPTION PROTECTIVE COATINGS		IDENTIFICATION NO. Liner Plate ①		SYSTEM / STRUCTURE DESIGNATION RCB-1 ①	
SE-22 NO. AS-31	REV. 1	REF. 22 DOC. & REV. & CHANGE NO. QI-QP-11.4-23, Rev. 5		SEQUENCE OR TEST EQUIP. IDENT. NO. 2012, 2309, 2325	
<input type="checkbox"/> IN PROCESS INSPECTION	<input type="checkbox"/> PRE-INSTALLATION VERIFICATION	<input checked="" type="checkbox"/> INSTALLATION INSPECTION	<input type="checkbox"/> FINAL INSPECTION	<input type="checkbox"/> PRE-TEST INSPECTION	

INSPECTION RESULTS

- ☐ INSPECTION COMPLETED, ALL APPLICABLE ITEMS SATISFACTORY
- ☒ INSPECTION COMPLETED, UNSATISFACTORY ITEMS LISTED BELOW

W. O. D. Dunham 12-16-81
 GC INSPECTOR DATE

ITEM #2	INSPECTION ATTRIBUTES	SAT	INSP	DATE	GC SIGNATURE
	SEAL OR FINISH COAT				
1.	Perform Toots test per para. 3.1 to determine thickness in mils of primer and total system (document one set of readings for each 100 sq. ft. when testing Containment liner)				
	RECORD:				
		1	2	3	4
	Min. Soot Primer:	✓	✓	✓	✓
	Max. Soot Primer:	✓	✓	✓	✓
	Avg. Soot Primer:	✓	✓	✓	✓
	Min. Soot Tot. System:	9.2	6.0	8.5	✓
	Max. Soot Tot. System:	14.0	7.3	14.0	✓
	Avg. Soot Tot. System:	11.4	6.7	10.7	✓
2.	Perform Adhesion test per para. 3.2.				
	RECORD: Adhesion Test Strength in psi:				
	Dolly #1: 400 Dolly #2: 400 Dolly #3: 200				✓

PERM. PLT. RECORD
 MIN. 17.9
 MAX. 17.9
 AVERAGE 17.9

REMARKS (DWGS, SPEC, ETC) ① Liner Plate 2 from AZ 320° to AZ 335° E. 955' to 969'

② Adequate primer documentation exists for this area

RELATED NCR NO. C-21-01562 R1	I.R. CLOSED <input checked="" type="checkbox"/>	DATE 6-29-84	SIGNATURE <i>W. O. D. Dunham</i>	GC INSPECTOR
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C83-03105

6-29-84



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

Kew
5/21/84 (2) BML

MAY 14 1984

Mr. Vincent Lettieri
Brookhaven National Laboratory
Upton, New York 11973

Dear Vincent:

Enclosed please find a summary of our statistical analysis of the primer protective coating backfit inspection program at Comanche Peak, Unit 1. The analysis is based solely on the data we received from Lisa Bielfeldt of Texas Utilities Generating Company in letters dated 3/29/84, 4/17/84 and 4/23/84.

The two variables analyzed in this report are adhesion and dry film thickness (DFT). For each variable, we provide both the sample proportion of failed area as well as a 95% upper confidence interval for the population proportion of the defective area. The interpretation of the summary statistics should be made in light of the comments and assumptions we offer in the attachment.

Should you have any questions, please give either one of us a call.

Sincerely,

Dan Lurie

Dan Lurie, Mathematical Statistician
Cost and Management Support Branch
Office of Resource Management
(301) 492-4989

Lee R. Abramson

Lee R. Abramson, Section Leader
Reactor Risk Branch
Office of Nuclear Regulatory Research
(301) 443-7628

Enclosed:
As stated

cc: G. Burdick, RES
F. Hawkins, RGIII
E. Triner, RM
R. Hartfield, RM

FOIA-85-59

(A58)

85H050294

STATISTICAL ANALYSIS OF PROTECTIVE COATING (PRIMER ONLY)
BACKFIT INSPECTION PROGRAM AT COMANCHE PEAK - UNIT 1

Failure Rate and 95% Upper Confidence Limit (UCL)

	Adhesion Test	DFT test
I. CONCRETE		
Failure Rate	0/1691 = .000	101/4623 = .022
95% UCL	3.00/1691 = .0018 (a)	.022+1.645(.0022)=.0254 (b)
II. STEEL LINER		
Failure Rate	2/405 = .0049	105/1494 = .0703
95% UCL	6.30/405 = .0156 (a)	.0703+1.645(.0066) = .0812 (b)
III. Misc. Steel - PIPE SUPPORT		
Failure Rate	5/230 = .0217	17/230 = .0739
95% UCL	10.51/230 = .0457 (a)	25.50/230 = .1109 (a)
IV. Misc. Steel - CABLE TRAY SUPPORT		
Failure Rate	3/297 = .0101	35/297 = .1178
95% UCL	7.75/297 = .0261 (a)	46.40/297 = .1562 (a)
V. Misc. Steel - CONDUIT SUPPORT		
Failure Rate	1/225 = .0044	10/225 = .0444
95% UCL	4.74/225 = .0211 (a)	16.96/225 = .0754 (a)
VI. Misc. Steel - OTHER		
Failure Rate	11/765 = .0144	67/765 = .0876
95% UCL	18.21/765 = .2380(a)	.0876+1.645(.0102) = .1044 (b)

(a) Constructed from Poisson probability table
(b) Calculated from binomial probability distribution

STATISTICAL ANALYSIS OF PROTECTIVE COATING (PRIMER ONLY)
BACKFIT INSPECTION PROGRAM AT COMANCHE PEAK - UNIT 1

COMMENTS AND ASSUMPTIONS

1. The failure rate in a population is defined to be the ratio of the defective area to the total area in the population. It is virtually impossible to obtain the exact population failure rate without testing the entire population of interest. Two estimators of the population failure rate are derived from the sample and are given in this analysis. The first estimator is the sample failure rate which is the ratio of the number of defective tests to the number of tests in the sample. This estimator (often called a "point estimator") is and by itself may not be very meaningful, as no measure of assurance is associated with it. The second estimator is a 95% upper confidence limit (UCL) on the population failure rate. This estimator is constructed from the sample such that one is "95% sure" that the true failure rate does not exceed this UCL. Other UCL's, such as 90% UCL or 99% UCL, could be similarly constructed.

2. The 95% UCL's for the failure rates of the various items in Unit 1 were calculated using two approaches. Whenever the number of defective points was low (50 or less), a tabular value for the confidence limit for a Poisson variable was used. (See Table 40, "Biometrika Tables for Statisticians", vol 2, by Pearson and Hartley, Cambridge University Press, 1970). When the number of defectives exceeded 50, a normal approximation to the binomial distribution was used.

3. The failure rate is not necessarily the best single statistical criterion for determining the adequacy of the coating. Instead, one may wish to estimate the total area that would flake off in case of an accident. This may be accomplished by multiplying the given estimators by their corresponding total areas. The latter quantities are found in Bielfeldt's letters of 3/29/84 and 4/14/84.

4. As stated in the cover letter, the analysis is based solely on the data supplied by TUGG. It does not reflect the results of subsequent tests conducted by BNL.