

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	Docket Nos. 50-445
	)	50-446
TEXAS UTILITIES GENERATING	)	
COMPANY, <u>et al.</u>	)	Permit Nos. CPPR-126
	)	CPPR-127
(Comanche Peak Steam	)	
Electric Station)	)	EA No. 83-132

LICENSEES' ANSWER  
PROTESTING CIVIL PENALTY

On December 22, 1983, the NRC Staff (Region IV) proposed a \$40,000 civil penalty in the captioned enforcement action against Texas Utilities Electric Company,<sup>1</sup> et al. ("Licensees") for an alleged violation of 10 C.F.R. Part 50, Appendix B, Criterion I. Pursuant to 10 C.F.R. § 2.205 Licensees hereby respond to that Proposed Imposition of Civil Penalty.

I. Denial of Violation

For the reasons set forth in Section II of "Licensees' Response to Notice of Violation" (incorporated herein by reference), Licensees deny the alleged violation and respectfully request that the proposed civil penalty be withdrawn in full. Alternatively, Licensees request that for the reasons set forth in Section III of

<sup>1</sup> Please note that CPPR-126 and CPPR-127 were amended on December 30, 1983, to reflect the substitution of Texas Utilities Electric Company for Texas Utilities Generating Company as a licensee.

A/1

"Licensees' Response to Notice of Violation" (also incorporated herein by reference), the proposed civil penalty be mitigated in full.

## II. Extenuating Circumstances

The extenuating circumstances which Licensees believe warrant the withdrawal or complete mitigation of the proposed civil penalty are set forth in Section IV, below.

## III. Error in the NOV

Licensees submit that the Notice of Violation and Proposed Imposition of Civil Penalty ("NOV") is incorrect. First, contrary to the Atomic Energy Act and the NRC Rules of Practice, the NOV fails to identify with adequate specificity the date, facts and nature of each act with which Licensees are charged. Second, the NOV fails to take into account responsive actions Licensees initiated prior to this enforcement action. Because of these errors the proposed imposition of a civil penalty is inappropriate. *licon?*

Failure to Disclose the Basis for the NOV. Section 234(b) of the Atomic Energy Act provides that when NRC has reason to believe that a person has become subject to the imposition of a civil penalty, NRC must notify such person in writing "setting forth the date, facts, and nature of

each act or omission with which the person is charged . .  
."2 This requirement is reflected in 10 C.F.R. §  
2.205(a).

In Radiation Technology, Inc.<sup>3</sup> the Atomic Safety and  
Licensing Appeal Board addressed the question of whether  
the Staff provided a licensee with adequate notice of an  
alleged violation as required by the Atomic Energy Act and  
NRC Rules of Practice when proposing a civil penalty. The  
Staff in Radiation Technology, Inc. alleged in the Notice  
of Violation and Proposed Imposition of Civil Penalty  
instances of excessive radiation at two specified  
locations and at "several locations" not identified.<sup>4</sup> The  
licensee requested a hearing on the civil penalty, during  
which the Staff attempted to submit evidence relating to  
the areas of excessive radioactivity not specifically  
identified earlier. The presiding officer declined to  
admit such evidence. The Appeal Board upheld his ruling  
on the grounds that a "licensee is entitled to notice of

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2 42 U.S.C. § 2282(b).

3 ALAB-567, 10 NRC 533 (1979).

4 Radiation Technology, Inc. ALJ-78-4, 8 NRC 655, 658  
(1978), aff'd in part and rev'd in part, Radiation  
Technology, Inc. ALAB-567, supra, 10 NRC 533.

specific violations before civil penalties may be imposed" and that a reference to excessive radiation at "several locations" did not provide such notice.<sup>5</sup>

Licensees submit that they have not received notice of the specific violations for which the Staff proposes to issue a civil penalty as required by Section 2.205. Among other things, the NOV fails to identify the QC inspectors who were not provided sufficient organizational freedom, the identity of the QC supervisor allegedly intimidating personnel working for him, and when and under what specific circumstances the alleged intimidation took place.

The Report of Investigation<sup>6</sup> issued along with the NOV is equally uninformative. It refers to two meetings scheduled by the "supervisor in question" but does not state where and when the meetings took place. The Report also notes the existence of "additional craft management complaints," yet fails to identify the content of any craft management complaints. Lastly, the Report states that one QC inspector did not report defects for fear of

<sup>5</sup> Radiation Technology, Inc., ALAB-567, supra, 10 NRC at 549 n. 51.

<sup>6</sup> Report of Investigation, Comanche Peak Steam Electric Station, Intimidation of Coatings QC Personnel, Case No. 4-83-001, August 24, 1983 ("Report of Investigation").



reprisals. However, the Report does not disclose either the identity of the inspector or of the so-called defect allegedly not reported.

At bottom, just as in Radiation Technology, Inc.,<sup>7</sup> where the NRC Staff provided insufficient information, here the Staff has not satisfied the requirements of law because it has failed to provide Licensees with the factual basis for its claim that Appendix B, Criterion I was violated.<sup>8</sup> For this reason, Licensees submit that the NOV is erroneous and that the civil penalty in this proceeding should be withdrawn.<sup>9</sup>

<sup>7</sup> ALAB-567, supra, 10 NRC 533.

<sup>8</sup> In Connecticut Light and Power Company v. NRC, 673 F.2d 525, 530, cert. denied, 51 U.S.L.W. 3254 (1982), the Court observed that "to allow an agency to play hunt the peanut with technical information, hiding or disguising the information that it employs, is to condone a practice in which the agency treats what should be a genuine interchange as mere bureaucratic sport." Although the observation was made in connection with the duty of NRC to disclose the technical basis for proposed rules, Licensees submit that it is equally (if not more) applicable here, where Licensees must respond to claims made by NRC or face a substantial civil penalty.

<sup>9</sup> While Licensees may have investigated the alleged incident of harassment, their inquiry did not focus on the question of how NRC perceived the incident or on uncovering any information in the possession of NRC. Therefore, Licensees' investigation does not change the fact that it simply has no way of knowing the Staff's underlying factual bases for the instant enforcement action. Moreover, the fact that Licensees investigated the incident does not absolve NRC from its legal duty to disclose the underlying bases of this enforcement action.

One additional point should be noted regarding this deficiency in the NOV. Two goals of the Enforcement Policy are to obtain prompt corrective actions and to deter future violations of NRC requirements.<sup>10</sup> The NOV cannot serve these goals if the licensee is not informed with specificity of the facts on which an alleged violation is based. A licensee cannot formulate its responsive actions and evaluate the effectiveness of those actions unless the factual bases for the enforcement action are known. Similarly, future violations of NRC requirements cannot be deterred by enforcement actions unless the underlying bases of a violation are identified so that the licensee will know precisely how its conduct violated NRC requirements. Therefore, apart from the requirements of the Act and the Rules of Practice requiring NRC to disclose with specificity the facts surrounding an alleged violation, sound enforcement policy also dictates that NRC reveal the underlying factual bases for the alleged violations in this proceeding.

Mitigating Factors. The Enforcement Policy states that the promptness and extent to which a licensee takes corrective action, including actions to prevent recurrence, may be considered in modifying the civil

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<sup>10</sup> 10 C.F.R. Part 2, Appendix C § I.

penalty to be assessed.<sup>11</sup> When applying this provision, the Staff has in the past considered mitigation prior to proposing civil penalties formally. There have been approximately thirty-two Notices of Violation issued for Severity Level III violations where no civil penalties have been proposed.<sup>12</sup> In at least some of them civil penalties were not proposed because of a licensee's prompt and extensive corrective action.<sup>13</sup>

Despite the provision in the Enforcement Policy allowing mitigation and the past practice of the Staff to consider mitigation prior to proposing a civil penalty, there is no indication that the Staff at any time even considered responsive actions taken by Licensees here before NRC issued the Proposed Imposition of Civil Penalty. On September 28, 1983, Licensees responded to the Notice of Violation and Proposed Imposition of Civil Penalty in EA No. 83-64. In that response they set forth numerous responsive actions, all of which have been

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<sup>11</sup> 10 C.F.R. Part 2, Appendix C, § IV.B.2.

<sup>12</sup> SECY-83-487, "Revised General Statement of Policy and Procedure for Enforcement Actions," November 29, 1983, (SECY-83-487) at 3.

<sup>13</sup> See, e.g., January 6, 1984, letter from Thomas E. Murley, Regional Administrator, Region I, U. S. Nuclear Regulatory Commission to Mr. J. J. Carey, Vice President, Nuclear Division, Duquesne Lighting Co. regarding Enforcement Conference 50-334/83-27.

implemented.<sup>14</sup> Licensees committed to these actions well before the instant enforcement action was initiated by NRC. Indeed, because Licensees were aware in September, 1983, of the allegations involving harassment raised in this proceeding, they developed generic actions specifically designed to address such issues.

Our concerns in this regard represent far more than a disagreement with the Staff over the correct procedures to be followed when proposing a civil penalty. Instead, they raise fundamental questions as to the basic fairness of this enforcement action. As the Staff is aware, most licensees believe that they are "tried and convicted in the press" when NRC proposes a civil penalty, and that even if the penalty is subsequently mitigated or remitted, the damage to their reputation has already been inflicted.<sup>15</sup> Moreover, the Staff has conceded that it takes escalated enforcement actions in part because of the bad publicity they generate.<sup>16</sup>

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<sup>14</sup> These and other responsive actions are set forth in Section II of Licensees' Response to Notice of Violation in EA No. 83-132, and are incorporated here by reference.

<sup>15</sup> SECY-83-487 at 2.

<sup>16</sup> During a January 4, 1984, briefing by the Staff on the Enforcement Policy, Commissioner Gilinsky asked the Director of Inspection and Enforcement whether the NRC was trying to deter future violations through the threat of bad publicity or through the actual imposition of civil penalties. The Director  
(footnote continued)

Accordingly, it is particularly unfortunate that the Staff did not consider mitigation prior to proposing the civil penalty in this proceeding. The mere proposal of the civil penalty has already done considerable damage to the Licensees' reputation, and subsequent mitigation (which we obviously seek as an alternative to total withdrawal of the enforcement action) will not repair the damage. In short, it is difficult to understand what valid regulatory policies were served by proposing a civil penalty in this proceeding without first considering prior responsive actions initiated by Licensees.

Finally, Licensees again wish to emphasize that the responsive actions set forth in Section II of its Response to Notice of Violation are not designed merely to address specific alleged violations. Rather, they are programmatic in nature. Moreover, by any objective measure, these actions are comprehensive. Therefore, given Licensees' responsive actions, we submit that the civil penalty in this proceeding should be withdrawn or mitigated fully.

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(footnote continued from previous page)

responded, "I think a combination. I think it's more the publicity than the amount of money." Transcript of January 4, 1984, Commission Meeting, "Discussion of NRC Enforcement Policy" ("Jan. 4, 1984 Tr.") at 10.

#### IV. Extenuating Circumstances

Licensees believe that the instant enforcement action was not taken in a timely manner. Because of this and the extensive corrective actions to which Licensees have already committed, no valid regulatory policy will be furthered by imposing the proposed civil penalty.

Therefore, Licensees submit that it should be withdrawn.

During the January, 4, 1984, Commission meeting on the Enforcement Policy, the Staff represented that it takes about ten weeks from the time an alleged violation is identified until a resulting enforcement action is commenced. However, the Staff added that in certain cases, such as where an investigation is involved, the period could exceed ten weeks.<sup>17</sup>

When measured against these standards, the instant enforcement action is clearly not timely. The Report of Investigation indicates that the investigation into the matter took eight months. That inquiry was closed on August 3, 1983. The NOV was issued on December 22, 1983.

The Staff has recognized correctly that when enforcement actions are not taken on a timely basis, their effectiveness is limited. It has stated in this regard as follows:

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<sup>17</sup> Jan. 4, 1984, Tr. at 36.



In the past, civil penalties have frequently been proposed months after a violation was identified and corrective action taken. In these cases, issuance of a civil penalty probably had little remedial effect and may have had a negative effect on licensee morale.<sup>18</sup>

The instant case is a model to illustrate this point. Here the civil penalty was proposed nearly five months after a violation was finally identified and nearly four months after generic corrective actions were taken. Additionally, many of the individuals apparently involved in the incident, including the QC supervisor who allegedly intimidated QC personnel, are no longer employed at Comanche Peak. To impose a civil penalty under such conditions is inappropriate and unfair, could clearly undermine morale and has no valid policy justification.

Lastly, we note that on January 10, 1984, NRC Region II notified a licensee that the Commission decided not to propose a civil penalty for an alleged violation involving a material false statement. The violation was categorized as Severity Level III. The Commission declined to propose a penalty because the violation was over one year old and substantive improvement had been made to prevent

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<sup>18</sup> SECY-83-487 at 4. Commissioner Gilinsky stated recently that timely enforcement is needed because "as we know, with children and pets and other such instances, if a penalty comes late, it can be downright harmful." Jan. 4, 1984, Tr. at 34.

recurrence of the problem.<sup>19</sup> It is difficult for Licensees in reviewing the results of that case to understand the reason for such disparate treatment here. Therefore, because the instant enforcement action is not timely and in view of responsive actions already implemented, Licensees submit that the proposed civil penalty should be withdrawn.

#### V. Conclusion

For the reasons set forth above, Licensees request that the proposed civil penalty be withdrawn or mitigated in full.

January 23, 1984

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<sup>19</sup> January 10, 1984, letter from James P. O'Reilly, Regional Administrator, Region II, U. S. Nuclear Regulatory Commission to Mr. E. E. Utley, Executive Vice President, Carolina Power and Light, regarding Proposed Imposition of Civil Penalty in EA 83-88.

TEXAS UTILITIES GENERATING COMPANY  
SKYWAY TOWER \* 400 NORTH OLIVE STREET, L.B. 81 \* DALLAS, TEXAS 75201

JOE B. GEORGE  
VICE PRESIDENT

May 31, 1984

Mr. Richard L. Bangart, Director  
Region IV, Comanche Peak Task Force  
United States Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011

JUN - 4 1984

Dear Mr. Bangart:

Your letter of May 23, 1984 transmitting the "Interim Report on Protective Coatings" prepared by Brookhaven National Laboratory and dated April 25, 1984 requested additional information (identified in Section III of the report) in order to complete your review. While the information requested is generally available or obtainable and can be transmitted to you or reviewed on site at your request, we would like to propose an alternate approach.

Our review of the Brookhaven report indicates basic philosophical differences, and to a very large degree, a misunderstanding of the purpose and scope of the backfit program established by us in partial response to I&E Report No. 81-15. In view of our fuel load schedule and your policy in avoiding unnecessary delays, we believe that a meeting with you and your subcontractor is essential to resolution of these protective coating issues. We, therefore, request that such a meeting be established at the earliest possible date.

Thank you for your consideration.

Sincerely,

JBG:pew  
cc: T. Ippolito

*C. Johnson*

TEXAS UTILITIES GENERATING COMPANY

P O BOX 1002 - GLEN ROSE, TEXAS 76043

July 16, 1984

TXX-4225

Dockets: 50-445  
50-446

Mr. Richard L. Bangart, Director  
Region IV Comanche Peak Task Force  
United States Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

COMANCHE PEAK STEAM ELECTRIC STATION  
UNITS 1 AND 2  
BROOKHAVEN INTERIM REPORT ON PROTECTIVE COATINGS  
FILE NO. 906.1, 10010

Dear Mr. Bangart:

This responds to your letter of May 23, 1984, relative to the interim report on CPSES protective coatings prepared by Brookhaven National Laboratory (BNL). We have previously responded to each of the sixty allegations that you had received relative to the adequacy of protective coatings at CPSES (Letter: TXX-4201, dated June 22, 1984).

The attached responses provide information relative to Section III of the BNL Interim Report. We plan to provide a written response to Section IV of the BNL Interim Report on or before July 20, 1984.

Please advise if you require additional information.

Sincerely,

*J.T. Merritt, Jr.*  
J.T. Merritt, Jr.  
Assistant Project Manager

JTM:la

cc: Mr. Thomas A. Ippolito

Mr. John Collins (w/o documentation)

850/250491

A/b

Question III.A.1

Provide the document or series of documents that explains the Backfit Program in its entirety.

Response III.A.1

On September 14-18, 1981 TUGCO QA Audit TCP-24 was performed on Protective Coatings at CPSES. The findings of this audit identified deficiencies and concerns related to the Protective Coatings QA Program. The NRC's Region IV found the same deficiencies in the Program and reported its findings Docket 50-446/Rpt 81-15 and Docket 50-445/Rpt 81-15 dated November 6, 1983 which was responded to in Mr. R.J. Gary's letter to Mr. G.L. Maden, Chief Reactor Projects Branch, I&E, dated November 19, 1981.

The site's response to these findings are described in a memo from R.G. Tolson, TUGCO Site QA Supervisor, to D.N. Chapman, TUGCO QA Manager, dated December 30, 1981.

In the response, a commitment was made to perform destructive testing on coatings as necessary. This destructive testing program has become

to be known as the "Backfit Program". The details of the program are identified in the following procedures:

QI-QP-11.4-23 "Reinspection of Seal Coated and Finished

Coated Steel Substrates for which Documentation  
is Missing or Discrepant"

QI-QP-11.4-24 "Reinspection of Protective Coatings of Concrete

Substrates for which Documentation is Missing  
or Discrepant"

Copies of all relevant documents including the procedure history files are enclosed.



Question III.A.2

What is the estimated total square footage of applied coatings in Unit 1 containment? What portion of the total applied coatings represents coatings applied to concrete surfaces, miscellaneous steel and containment liner plate?

Response III.A.2

The total estimated footage of protective coatings in Unit 1 containment is 618,080 ft<sup>2</sup>. This is distributed between the various areas as follows:

Liner Plate	145,000 ft <sup>2</sup>	23.5%
Concrete	285,000 ft <sup>2</sup>	46.0%
Miscellaneous Steel	188,080 ft <sup>2</sup>	30.5%

Question III.A.3

Provide the location and boundaries and define all areas that have been exempted from the Backfit Program. Also provide the justification for the exemption.

Response III.A.3

- A) Liner: The location and boundaries of areas not included in backfit inspection are shown on the enclosed map and inspection reports (PCR). The areas not included in the inspections were either not coated at the time of backfit inspection or the surface was inaccessible for test equipment.
- B) Concrete: The location and boundaries of areas included in the backfit inspection are shown on the 634 inspection reports enclosed. The areas not subjected to backfit inspection were: areas not coated at the time of backfit inspection, areas inaccessible to test equipment, and areas not inspected due to termination of the test program. Termination was the result of a very high acceptance rate as demonstrated in the Response to Question III.A.12.

C) Miscellaneous: The location and boundaries of areas included in the backfit inspection are shown on the 2,189 inspection reports and printouts enclosed. The areas not subjected to backfit were: areas not coated at the time of the backfit inspection, areas inaccessible to test equipment, and areas not inspected due to termination of the test program. Termination was the result of a very high acceptance rate as demonstrated in the Response to Question III.A.12.

Question III.A.4

Provide the percentage of the three major areas (See Question 2), that was included/exempted in the Backfit Program.

Response III.A.4

- A) Liner: Approximately 96% of the surface was backfit inspected.
- B) Concrete: Approximately 50% of the surface was backfit inspected.
- C) Miscellaneous: Approximately 22% of the surface was backfit inspected. As agreed in a July 13, 1984 discussion with NRC project management, this figure was derived from the information available for pipe hangers, cable tray hangers and conduit supports. This information is considered to be representative of all miscellaneous steel items.
- Lists of all hangers and supports installed inside the containment and those that were backfit are enclosed with Response III.A.3. For calculational purposes it was assumed that all hangers and supports inside the containment were installed at the time of backfit, even though we know that some supports were not installed at the time of the backfit inspection.

Question III.B.5

Provide the operating procedure for instruments used during the Backfit Program.

Response III.B.5

The operating procedures for the Elcometer Model 106 Adhesion Tester and Micrometrics Tooke Gage are in the manufacturer's instructions enclosed. Quality Control inspectors are trained and tested in the use of each of these instruments as shown on page 2 of the examination enclosed.

Question III.B.6

Provide indoctrination and training records that demonstrate that those individuals performing testing for the Backfit Program were qualified.

Response III.B.6

Enclosed are the indoctrination and training records for each of the subject Quality Control Inspectors. These records also include examinations and certifications.



Question III.B.7

Provide procedure reference for field checking of instruments during the Backfit Program.

Response III.B.7

The only instrument requiring field checking is the Tooke Gage. The method of performing this check is described in QI-QP-14.4-23 paragraph 3.1, enclosed with Response III.A.1.

Question III.C.8

Provide instrument history/calibration records of each instrument used in the Backfit Program.

Response III.C.8

Records of calibration for the adhesion testers and dry film thickness gauges are enclosed. There is no requirement for calibrating the Tooke Gage as the scale is built into the optics of the instrument.

Question III.C.9

Provide the method used to evaluate and account for instruments found to be out of calibration during the Backfit Program. How was and is the deviation incorporated in reporting Elcometer Adhesion Test results?

Additionally, for an instrument found out of calibration, provide documentation that shows that all tests done with that instrument since its last calibration were invalidated. Also, provide the procedure used to handle those inspection reports written after the instrument went out of calibration.

Response III.C.9

The method used to evaluate and account for instruments is described in CPM 13.1, "General Calibration Procedure" (enclosed). Paragraph 3.7 details the handling of instruments found to be out of calibration. Deviations are not incorporated in reporting Elcometer Adhesion Test results as the calibration department ensures accuracy within specified limits prior to issue.

There have been no cases where the Elcometer Adhesion Tester was found to be out of calibration as procedurally prescribed during the backfit program such that it rendered the previous tests invalid. Should such an instance arise, Quality Engineering would have issued a nonconformance report (NCR) as specified in CPM 13.1, paragraph 3.7.

Question III.C.10

If not provided in the answers to Questions 7 and 8, provide the total number of instruments used in the Backfit Program. Provide the type and serial number of each instrument.

Response III.C.10

The total number of instruments used in the backfit program was as follows:

(a.) Adhesion testers	14
(b.) Tooke Gages	10
(c.) DFT gauges	341

The serial numbers or other permanent identification numbers are on the enclosed data and/or computer print-outs.

Question III.D.11

Provide the total number of individual pull tests performed and the number of individual pull tests that failed for each of the three major areas (See Question 2).

Response III.D.11

The total number of Adhesion dollies (individual tests) pulled is 7711. The breakdown by major area is as follows:

<u>Area</u>	<u>Number Pulled</u>	<u>Number Failed</u>
Liner plate	869	20
Concrete	2128	0
Miscellaneous	4714	26



Question III.D.12

Provide the final calculations for each of the three major areas (See Question 2) that demonstrates the estimated failure rate with its associated confidence limits, for each of the three major areas individually.

Response III.D.12

As agreed in the July 13, 1984 conversation with NRC project management the following response is for adhesion tests only. The mean failure rate of concrete adhesion dollies is zero as there were no failures. If one failure is assumed, then the 95% upper confidence limit is approximately 1/10 of 1%. Thus even assuming one failure there is 95% confidence that greater than 99% of the subject coatings on concrete in Unit 1 is acceptable.

The mean failure rate of miscellaneous steel adhesion dollies is 0.0055 or 0.55%. The 95% upper confidence limit is 0.73%. Thus there is 95% confidence that greater than 99% of the subject coatings on miscellaneous steel in Unit 1 have acceptable adhesion.

The mean failure rate of liner plate adhesion dollies is 0.0230 or 2.30%. The 95% upper confidence limit is 3.14%. Thus there is 95% confidence that greater than 97% of the subject coatings on the liner plate in Unit 1 have acceptable adhesion.

# UNIT 1 BACKFIT ADHESION FAILURE ANALYSIS

For each area, a one-sided confidence interval for the interval for the binomial parameter  $p$  (the proportion of failures) was developed with  $\alpha = .05$ .

$$p < \hat{p} + z_{\alpha} \sqrt{\frac{\hat{p}\hat{q}}{n}} \quad z_{.05} = 1.645$$

## Concrete

$$\hat{p}_1 = \frac{0}{2128} = 0 \quad ; \quad \hat{q}_1 = 1.00$$

Assume 1 failure:

$$\hat{p}_1' = \frac{1}{2128} = .00047 \quad ; \quad \hat{q}_1' = .99953$$

$$\therefore p_1' < .0012$$

## Miscellaneous Steel

$$\hat{p}_2 = \frac{26}{4714} = .0055 \quad ; \quad \hat{q}_2 = .9945$$

$$\therefore p_2 < .0073$$

## Liner Plate

$$\hat{p}_3 = \frac{20}{869} = .0230 \quad ; \quad \hat{q}_3 = .9770$$

$$\therefore p_3 < .0314$$

List of Attachments

<u>Question</u>	<u>Enclosure</u>	<u>Box Number</u>
1	(a) Audit Report TCP-24 (b) Memo: R. Tolson to D. Chapman, 11/06/84 (c) Letter: R.J. Gary to G.L. Madsen, 11/19/84 (d) Procedures QI-QP-11.4-23 and QI-QF-11.4-24	4 4 4 4
2	None	.
3	(a) Map of Liner PCR'S (b) PCRs 1-Liner 2-Concrete 3-Miscellaneous (c) List of Eangers Computer Print-outs	4 2 2 1 4
4	None	
5	(a) Manufacturer's Instructions (b) Inspectors Test	4
6	(a) Inspectors training and certification Records	4
7	None	
8	(a) M&TE Records DFT (b) M&TE Records Adhesion Testers	2/3 2
9	(a) Procedure CPM 13-1	4
10	(a) List of Adhesion Testers (b) List of IFT gauges Computer Print-out (c) List of Tocke Gages	4 4 4
11	None	
12	None	

CE5

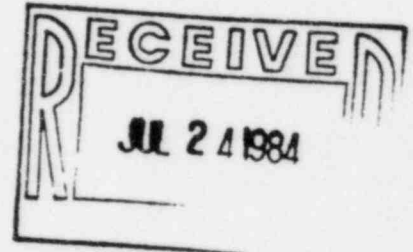
TEXAS UTILITIES GENERATING COMPANY  
SKYWAY TOWER • 400 NORTH OLIVE STREET, L.B. 81 • DALLAS, TEXAS 75201

L. F. FIKAR  
EXECUTIVE VICE PRESIDENT

July 20, 1984

TXX-4232

Dockets: 50-445  
50-446



Mr. Richard L. Bangart, Director  
Region IV Comanche Peak Task Force  
United States Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011

COMANCHE PEAK STEAM ELECTRIC STATION  
UNITS 1 AND 2  
BROOKHAVEN INTERIM REPORT ON PROTECTIVE COATINGS  
FILE NO. 906.1, 10010

Dear Mr. Bangart:

This responds to your letter of May 23, 1984 relative to the interim report on CPSES protective coatings prepared by Brookhaven National Laboratory (BNL). We have previously responded to each of the sixty allegations that you had received relative to the adequacy of protective coatings at CPSES and have provided documentation and other information relative to Section III of the BNL Report (see our letter numbers TXX-4201 dated June 22, 1984 and TXX-4225 dated July 16, 1984).

The attachment provides our responses to findings in Section IV of the BNL Interim Report.

Based on the information we have provided in responses to the sixty allegations, the documentation and other information provided to you in our response to Section III, and our responses to the findings in Section IV, we do not agree with the Conclusions (item 2 and 3) in Section V of the Brookhaven Report.

Our position is that there are no safety concerns with the protective coatings at CPSES, the backfit program was properly conceived and implemented, and, therefore, no corrective actions are necessary.

85012/50494

1/8

Mr. Richard L. Bangart  
July 20, 1984  
Page 2

Please advise if you require additional information.

Sincerely,

  
L. F. Fikar

LFF:pew  
cc: Mr. Thomas A. Ippolito  
Mr. John Collins

07/20/84

Finding IV. A.1

BNL has performed independent tests on the protective coatings at the site. On a random basis, 6 areas of approximately one hundred (100) square feet were chosen at various elevations and various azimuths. Two areas represented liner plate, two areas represented miscellaneous steel and two areas represented concrete surfaces. In each area, five (5) test dollies of approximately 1/2 square-inch were glued to the protective coatings and a pull of 250 psi was applied to the test dollies. If a dolly separated from the surface, the force that caused the separation was recorded. If the dolly did not pull off the surface at 250 psi, a reading of 250 psi was recorded and the dolly was knocked off of the surface after the instrument had been returned to a reading of zero and removed.

For the liner plate, a failure rate was exhibited of 4 out of 10, or 40%. Failures occurred in both test areas with corrected readings of 156, 186, 186 and 186. For miscellaneous steel, no failures were recorded in ten (10) tests, and for concrete surfaces, a failure of the concrete was experienced at a corrected reading of 156 psi for one test and no failures of the protective coatings in nine (9) tests.

In addition to the Elcometer adhesion pull tests, 30 Tooke (scratch) tests were performed adjacent to the pull tests. No "out of specification" conditions were recorded in the dry film thicknesses testing.

BNL's observed failure rate for the liner plate is unacceptable. Although it was limited in scope, it raises questions about the adequacy of the Backfit Program for the liner plate.

TXX-4232

07/20/84

Response IV. A.1

Applicants disagree with the finding by BNL relative to the coatings backfit program as the result of the few adhesion tests performed by them. This disagreement stems from two basic areas of the BNL evaluation:

- 1) BNL has apparently expanded the scope of the backfit program beyond that intended and documented by Applicants. A review of Applicants response to NRC I&E Report 81-15 as well as the backfit procedures clearly establishes the backfit program scope. It was designed to establish confidence in coatings that had been applied prior to late 1981 (where inspection records were incomplete) and not as a measure of coatings application activities accomplished since late 1981. These latter activities have been accomplished and fully documented in accordance with the established QA program.
- 2) The area under the equipment hatch (approximately Azimuth 225° and Elevation 813') where three of the four adhesion values were less than 200 psi (actual recorded readings were 150, 180 and 180 psi), had not been included in the backfit program because this area had not been painted at the time the backfit program was implemented. Furthermore, the BNL test results were classified as nonconforming via NCR C-84-00921. Additional testing clearly show the lower values obtained by BNL to be extremely isolated and of no consequence.

The fourth lower reading (180 psi) obtained by BNL was at Elevation 945' and Azimuth 180. Again, additional testing has shown this value to be extremely isolated.

Contrary to the finding by BNL, results of the backfit program demonstrate adequacy of the liner plate coatings. (See Response III. D.11 and III. D.12, TXX-4225 dated July 16, 1984).



TXX-4232

07/20/84

Finding IV. A.2

During the week of March 18, 1984, BNL observed an area at approximately elevation 860 and azimuth 175 of the liner plate that was being repaired because of recent unacceptable adhesion test readings and visible deterioration. This same area had acceptable adhesion test readings during initial backfit testing in December 1982. This again raises doubts about the adequacy of the Backfit Program for the liner plate.

Response IV. A.2

The area in question had been "backfit" inspected in December 1982. These tests were performed by pulling 3 dollies per test; each test representing 500 square feet of coating. NCR C-83-03015 (attached) was prepared November 9, 1983 for loss of adhesion properties. A sketch of the area found defective is attached to the NCR. BNL personnel observed rework of this area in progress as directed by the NCR disposition.

We are unable to reach the same conclusion drawn by BNL with regards to this NCR, i.e., raising doubts about the adequacy of the backfit program, for two reasons:

- 1) As only 3 dollies were pulled in an area of 500 square feet, it is certainly possible that the dollies were not placed over coatings which ultimately failed, and

TXX-4232

07/20/84

- 2) Coating work (which stripped existing coatings by power tooling), was performed in the referenced area after backfit inspection occurred. (See, for example, PC49,983 and PC100,005, attached). If these were the coatings that subsequently failed, they would not have been subjected to the backfit program.

In either case, the coatings which failed were identified by the QA program and subsequently reworked to acceptable standards. No further action is warranted.

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NC
1	Reactor Containment Bldg.	Protective Coatings	N/A	Az. 169 866' - 867'	N/A

## NONCONFORMING CONDITION

Applied coatings on Containment Liner Plate exhibit loss of adhesion properties, therefore rendering the quality of the applied coatings indeterminate. Original cause of failure appears to be mechanical damage, but surrounding areas exhibit total loss of adhesion properties. (i.e. total coating system, phenoline 305 & cz-11, is peeling at edges and exposing steel <sup>Substrate</sup> ~~substance~~). Area is located directly behind column #9 at Az. 169° El. 866' - 867'. Additional areas have been identified as approximately 5 feet to the left of the area directly behind column #9 (3-4 spots less than 2 sq. inches) and approximately 5 feet below <sup>at the</sup> ~~at the~~ floor level, El. 860' 0". (1 spot approximately 6 inches in diameter)

REFERENCE DOCUMENT: 2323-AS-31  
QI-QF-11.4-5 REV 1 26 PARA 3.9  
REPORTED BY: FRED DUNHAM / Fred Dunham DATE: 11/28/83

QE REVIEW/APPROVAL: K. WOLVERTON / K. Wolvert DATE: 11/28/83  
ACTION ADDRESSEE Kissinger DEPARTMENT Engineering

DISPOSITION: REWORK \_\_\_\_\_ REPAIR XXX USE AS IS \_\_\_\_\_ SCRAP ONLY  
With addition of other small areas in same general area, perform adhesion tests per QI-QF-11.4-23.  
Repair areas found unacceptable per CCP-30.

## QA RECORD

RTN.	QA REVIEW
	4-4-84
FILE NO.	
SUBFILE NO.	

ARMS  
INDEXED

DATE:

ENG. REVIEW/APPROVAL: J. Matthews DATE: 11/29/83  
QE REVIEW APPROVAL: KW W. K. W. DATE: 12/1/83  
DISPOSITION VERIFICATION & CLOSURE: C. Vega DATE: 4/4/84

## COMMENTS:

R. 1 issued to add to nonconformance and disposition.

# STEEL PROTECTIVE COATING INSPECTION TRAVELER

WORK PKG. # 1-40-M  
 ELEVATION: 860' Az 165°-170°  
 REF. DWGS: PFG-R11-500-01(42)

PCI TRAVELER # U1-005881

ITEM # / DESCRIPTION NCR - Area #42 (20)

PREPARED BY: J. Hall DATE 1-27-84 (201-0161)

STEP 1 SURFACE PREPARATION INSPECTED AND FOUND ACCEPTABLE  
 PER QI-QP II.4-26 AND RELEASED FOR PRIMER APPLICATION.  
 INSPECTOR J. Hall DATE 3-27-84  
 COMMENTS N/A

STEP 2 PRIMER APPLICATION INSPECTED AND FOUND ACCEPTABLE  
 PER QI-QP II.4-26 AND RELEASED FOR FINISH COAT APPLICATION.  
 INSPECTOR J. Hall DATE 3-28-84  
 COMMENTS N/A

STEP 3 FINISH COAT APPLICATION INSPECTED AND FOUND ACCEPTABLE  
 PER QI-QP II.4-26  
 INSPECTOR J. Hall DATE 3-28-84  
 COMMENTS N/A

STEP 4 FINISH COAT INSPECTED FOR FINAL ACCEPTANCE AND FOUND  
 ACCEPTABLE PER QI-QP II.4-26  
 INSPECTOR J. Hall DATE 4-1-84  
 COMMENTS N/A

STEP 5 COMPLETION OF INSPECTION TRAVELER VERIFIED.  
 QC REVIEW Fin DATE 4-4-84  
 COMMENTS REVIEWED FOR COMPLETION ONLY.  
ENTRIES #1 THRU #33.

NOTES

- 1) DOCUMENT INSPECTION ATTRIBUTES ON ATTACHED SUPPORTING DOCUMENTATION SHEET(S)
- 2) DOCUMENT REPAIRS AND ATTRIBUTES, IF REQUIRED, ON ATTACHED SUPPORTING DOCUMENTATION SHEET(S)
- 3) FOR ENVIRONMENTAL CONDITIONS REFERENCE THE ENVIRONMENTAL LOG.

# PROTECTIVE COATING INSPECTION TRAVELER REPORTING DOCUMENTATION

PCI TRAVELER NO. UL-002861

WORK PKG. NO. 1-40-M

ENTRY #	STEP	APPLICATORS QUALIFIED	BATCH LOG #	MIN DFT	MAX DFT	AVG DFT	INSTR USED	LOC ID	SAT UNSAT	INSP SIGNATURE	DATE	TIME	COMMENTS
1	1	NA	NA	NA	NA	NA	NA	NA	SAT	Frank Stange	7/17/89	3:00 PM	SP3 - Total Strip of an 2x2 from AZ 135° to 152° approximately EL from 850' to 870'. Refer to PC #1-0027211 for isolation of this area
2	2	E924	3-22-10	NA	NA	NA	NA	B	SAT	Frank Stange	7/17/89	5:10 PM	application of 191 Primer
3	1	NA	NA	NA	NA	NA	2913	A	SAT	Paul K. Sander	7/17/89	6:45 PM	Strip Prep 55P. 3 complete strip of LINEAR PLATE IN AREA DEFINED BY AZ 152° TO AZ 170° (APPROX) and EL 860 TO EL 868 (APPROX) - SEE ATTACHED SKETCH. SURFACE PROFILE SATISFACTORY AS DETERMINED W/ DIAL THICKNESS GAGE.
4	2	Q638, E934, E942, F944, E944	3-24-12	NA	NA	NA	NA	A	SAT	Paul K. Sander	7/17/89	NA	PLC Apply 191E EASY #3
5	2	E372, E944, F938	3-24-12	NA	NA	NA	NA	A	SAT	Paul K. Sander	7/17/89	1:15 PM	TURN OVER TO 2nd SHIFT
6	2	NA	NA	4.0	7.0	6.0	2940, 2834	NA	SAT	Paul K. Sander	7/17/89	3:30 PM	Additional application of primer on areas INSPECTION OF PRIMER ON AREAS RANGING FROM AZ 135° TO 152°
7	3	V507/SPRAY	3-26-02	NA	NA	NA	NA	NA	SAT	Paul K. Sander	7/17/89	4:00 PM	SPRAY APP OF 19800 TO LINEAR PLATE AT AZ 135° TO 152°
8	2	NA	NA	5.0	7.5	6.0	2946, 2839	A	SAT	Paul K. Sander	7/17/89	4:45 PM	INSPECTION OF PRIMER ON LINEAR PLATE AT AZ 152° TO 170°
9	3	E434, F940, SPRAY	3-26-02	NA	NA	NA	NA	A	SAT	Paul K. Sander	7/17/89	5:00 PM	SPRAY & BRUSH APP OF 19800 TO LINEAR PLATE AT AZ 152° TO 170° (SEE PKG.)
10	3	E888	3-26-05	NA	NA	NA	NA	A	SAT	Paul K. Sander	7/17/89	7:00 PM	TURN OVER TO DAY SHIFT
11	2	NA	NA	3.5	6.5	5.0	2992, 2828	A	SAT	Paul K. Sander	7/17/89	7:47 PM	Additional application of primer on areas INSPECTION OF PRIMER ON AREAS RANGING FROM AZ 135° TO 152°
12	3	E855	3-26-05	NA	NA	NA	NA	NA	SAT	Paul K. Sander	7/17/89	8:00 PM	Application of finish coat to entry #11
13	4	NA	NA	NA	NA	NA	NA	NA	SAT	Paul K. Sander	7/17/89	8:10 PM	UNSAT DUE TO LACK OF HIDING PROPERTIES
14	3	FJ76	3-27-06, 3-27-11	NA	NA	NA	NA	NA	SAT	Paul K. Sander	7/17/89	7:50 PM	RE-APPLICATION OF FINISH COAT
15	1	NA	NA	NA	NA	NA	NA	NA	SAT	Paul K. Sander	7/17/89	8:30 PM	RE-APPLICATION OF FINISH COAT
16	2	E924	3-27-06	NA	NA	NA	NA	NA	SAT	Paul K. Sander	7/17/89	8:50 PM	SP3 PREP - 55P. 3 complete strip of LINEAR PLATE IN AREA DEFINED BY AZ 152° TO AZ 170° (APPROX) and EL 860 TO EL 868 (APPROX) - SEE ATTACHED SKETCH. SURFACE PROFILE SATISFACTORY AS DETERMINED W/ DIAL THICKNESS GAGE.
17	4	NA	NA	NA	NA	NA	NA	NA	SAT	Paul K. Sander	7/17/89	9:50 PM	PLC Apply 191E EASY #3





$\angle DOL = 90^\circ$   
 $\angle EOL = 169^\circ$

(E WELD)

AREA "B" ← AREA "A"

EL-867.9"-1

6-20-79

9.057-69

1

Heil

19/11/2019

下<sub>6</sub>"

Y

[illegible]

WELD

WELD SEAM

A FLOOR SLAB

[illegible]

17,01

$$K = 5.4 \times 10^{-4}$$


↓

3	1
2	1
1	1
0	1



750

55

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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PCI-UI-005991

DRWN BY:

DATE: \_\_\_\_\_

SCALE:

133

## COMANCHE PEAK STEAM ELECTRIC STATION

## INSPECTION REPORT

SHEET 1 OF 2  
NO. PC 1-0027219

ITEM DESCRIPTION PROTECTIVE COATINGS		IDENTIFICATION NO. <u>LIVER PLATE</u>		SYSTEM / STRUCTURE DESIGNATION <u>RCB-1 AREA CODE 40</u>	
SPEC. NO. <u>AS-31</u>	REV. <u>1</u>	REF. Q.C. DOC. & REV. & CHANGE NO. <u>QI-QP-11.4-23, Rev. 12</u>		MEASURE OR TEST EQUIP. IDENT. NO. <u>2903 (3-17-84)</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	

## INST. RESULTS

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

Neil Butts 3-16-84  
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT	UNSAT	DATE	QC SIGNATURE	
	SEAL OR FINISH COAT					
1.	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. Spot Primer:					
	Max. Spot Primer:					
	Avg. Spot Primer:					
	Min. Spot Tot. System:					
	Max. Spot Tot. System:					
	Avg. Spot Tot. System:					
2.	Perform Adhesion test per para. 3.2.					
	RECORD: Adhesion Test Strength in psi: (SEE ATTACHED)					
	Dolly #1: Dolly #2: Dolly #3					
	* DUE TO LIMITED CALIBRATION OF ADHESION TESTER 8903 GUIDELINES OF QI-QP 11.4-29 REF. NCR C84-00917					
	DATE 0510					

REMARKS (DWGS, SPECS, ETC.) AZ 1520-1690  
EL. 860'6" - 868'6"

(SEE PC 1-0027219 FOR ADDL TESTING & ISOLATION OF FAILURE)

RELATED NCR NO. <u>C83-03015</u>	I.R. CLOSED <input type="checkbox"/>	DATE	SIGNATURE	QC INSPECTOR
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## COMANCHE PEAK STEAM ELECTRIC STATION

## INSPECTION REPORT

SHEET 1 OF 24  
NO. 21-002721

ITEM DESCRIPTION PROTECTIVE COATINGS		IDENTIFICATION NO. 2 SEE REMARKS		SYSTEM/STRUCTURE DESIGNATION FCB-1 AREA CODE 40	
SPEC. NO. AS-31	REV. 1	REF. Q.C. DOC. & REV. & CHANGE NO. QI-QP-11.4-23, Rev. 12		MEASURE OR TEST EQUIP. IDENT. NO. 2903(321-42) 2933(3-23-84)	
<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	

## INSPECTION RESULTS

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

*Neill Potts* 3-23-84  
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT	UNSAT	DATE	QC SIGNATURE	
	SEAL OR FINISH COAT					
1.	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. Spot Primer:	2.0	2.0			
	Max. Spot Primer:	4.0	2.0			
	Avg. Spot Primer:	2.8	2.0			
	Min. Spot Tot. System:	7.5	12.5			
	Max. Spot Tot. System:	11.0	12.5			
	Avg. Spot Tot. System:	8.1	12.5			
2.	Perform Adhesion test per para. 3.2.					
	RECORD: Adhesion Test Strength in psi: (SEE ATTACHED)					
	Dolly #1: Dolly #2: Dolly #3					
	* DUE TO LIMITED CALIBRATION OF ADHESION TESTER M&TE 2903 & M&TE 2933 GUIDELINES OF QI-QP-11.4-29 WERE USED. REF C84-00A17					

REMARKS (DWGS, SPECS, ETC.) LINER PLATE  
AT 1520'-1740'  
EL. 857'6" - 868'6"

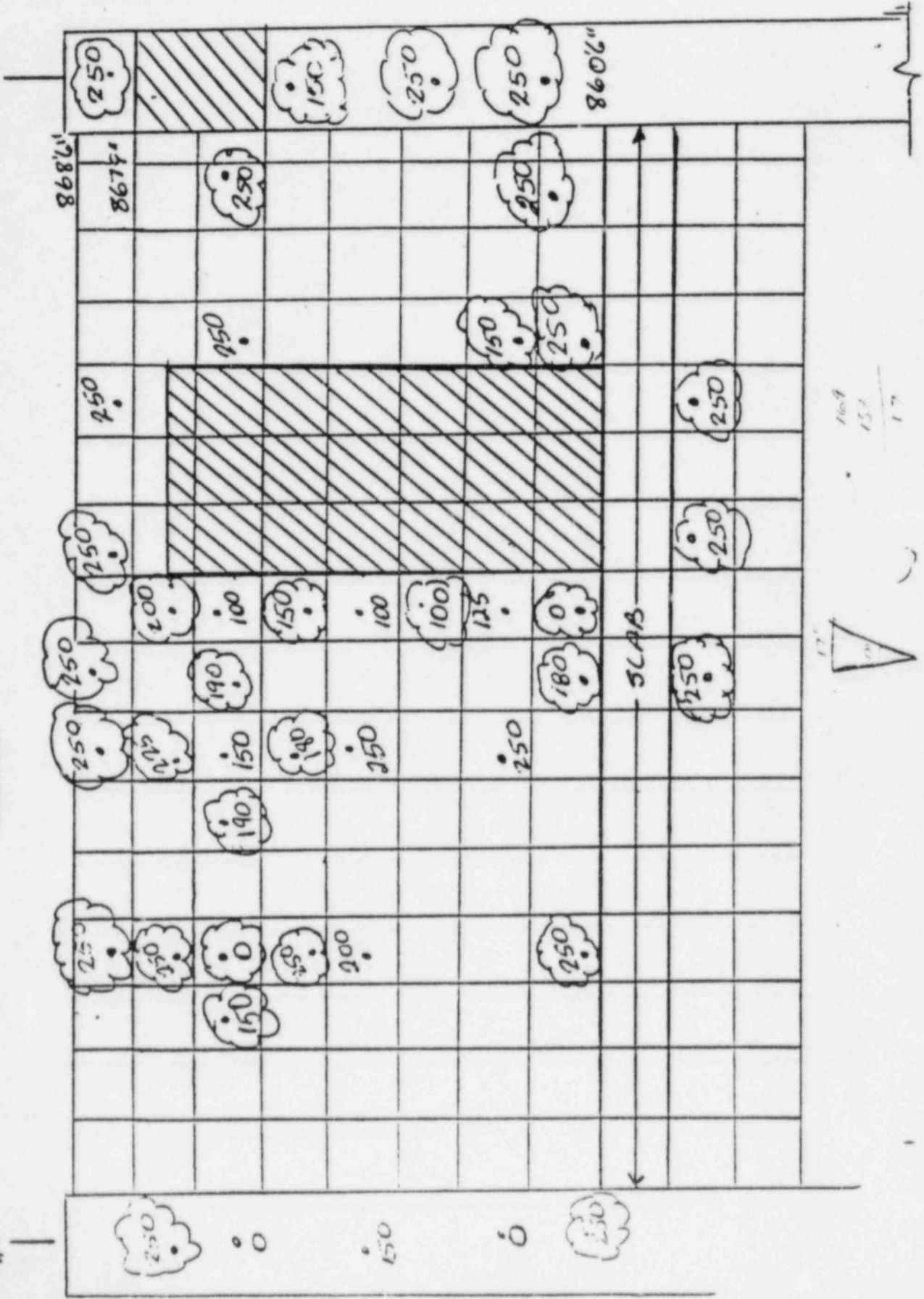
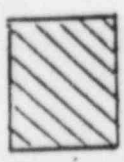
M&TE 2903 ADHESION PULLS SINGET-  
EO 3-20-83 AND COMPLETED  
WITH M&TE 2933 3-23-83

RELATED NCR NO. C83-03015	I.R. CLOSED <input type="checkbox"/>	DATE	SIGNATURE	QC INSPECTOR
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DEL 1-0027219

42152° BARE SUBSTRATE -

AZ/690



PAGE 30024

75 21 84

PC 1-0027219

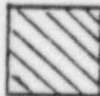
AZ 1900  
AZ 1690

75 21 84

860 1/2"

860 1/2"

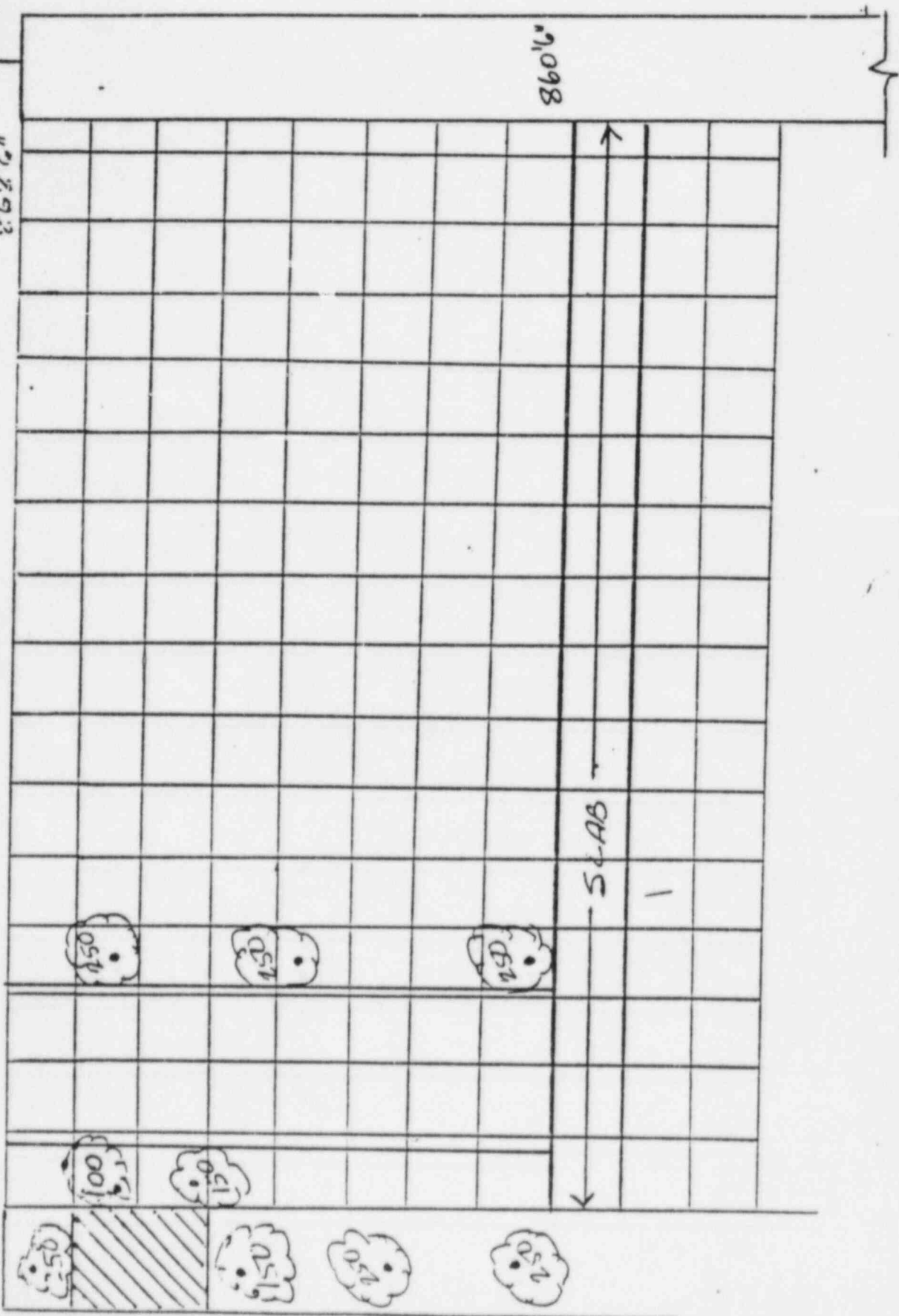
SLAB



BARE SUBSTRATE -



AZ 1690  
AZ 1590  
75 21 84



190°

8686"

BARE SUBSTRATE

AZ 169°

3'0"

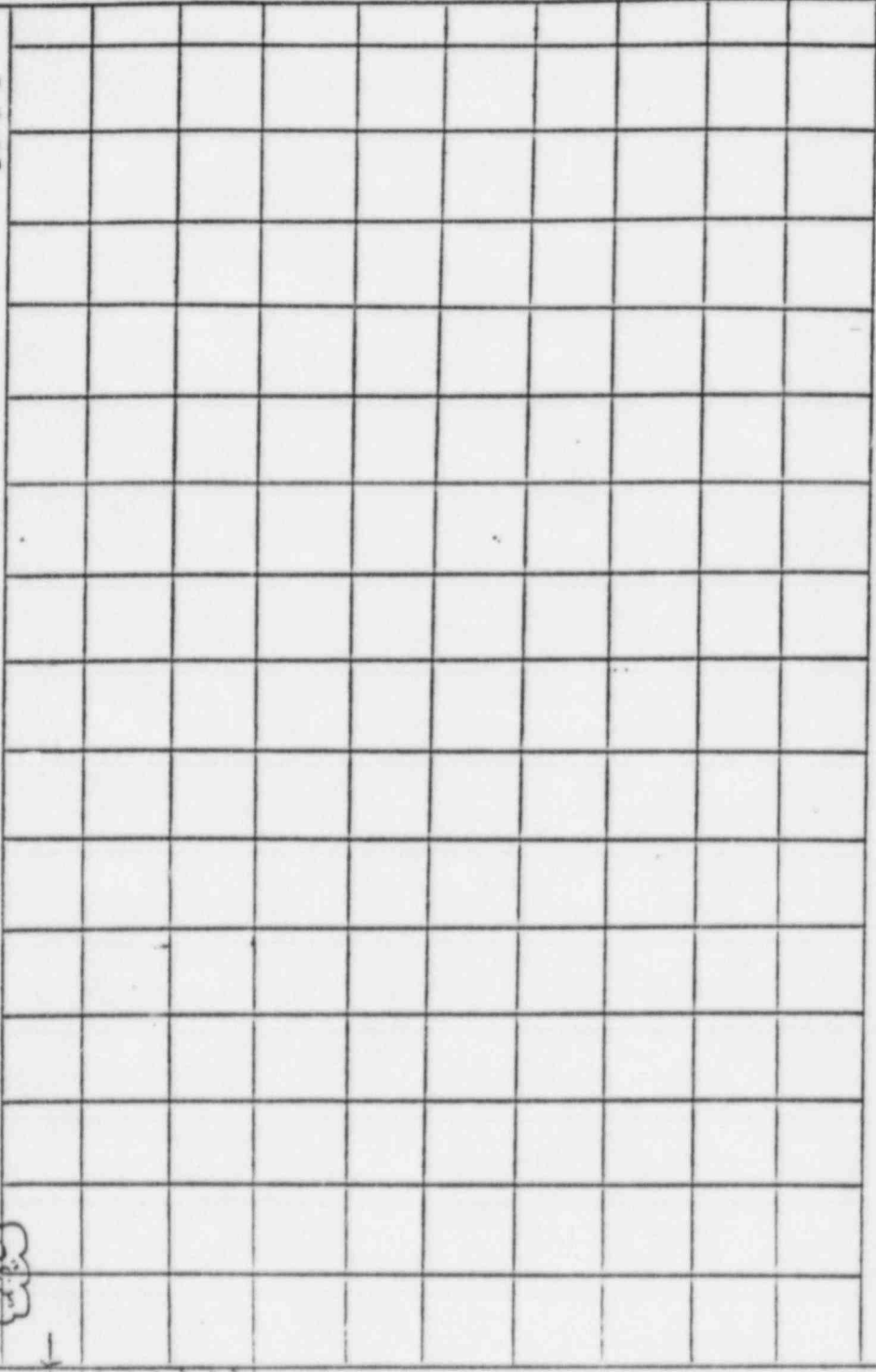
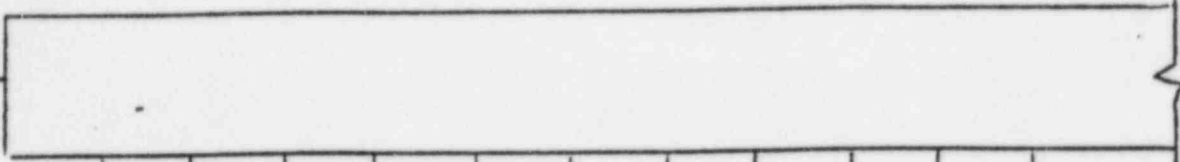
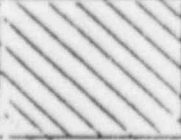
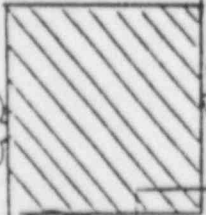
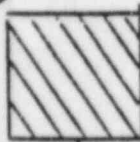
30"

1'8"

230

230

5"





COMANCHE PEAK STEAM ELECTRIC STATION  
INSPECTION REPORT

SHEET 1 OF 2  
NO. RRI-0027220

ITEM DESCRIPTION PROTECTIVE COATINGS		IDENTIFICATION NO. LINE PLATE		SYSTEM / STRUCTURE DESIGNATION RCB-1 AIC 40	
SPEC. NO. AS-31	REV. 1	REF. Q.C. DOC. & REV. & CHANGE NO. QI-QP-11.4-23, Rev. 12		MEASURE OR TEST EQUIP. IDENT. NO. 3484903 (3-16-84)	
<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	

INST. RESULTS

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

*[Signature]* 3-16-84  
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT		DATE	QC SIGNATURE
		12	UNSAT		
	SEAL OR FINISH COAT				
1.	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
	Min. Spot Primer:				
	Max. Spot Primer:				
	Avg. Spot Primer:				
	Min. Spot Tot. System:				
	Max. Spot Tot. System:				
	Avg. Spot Tot. System:				
2.	Perform Adhesion test per para. 3.2.				
	RECORD: Adhesion Test Strength in psi:				
	Dolly #1: Dolly #2: Dolly #3				
	(SEE ATTACHED)				

REMARKS (DWGS, SPECS, ETC.) HZ 1350-1520  
EL. 857'6" - 867'9"

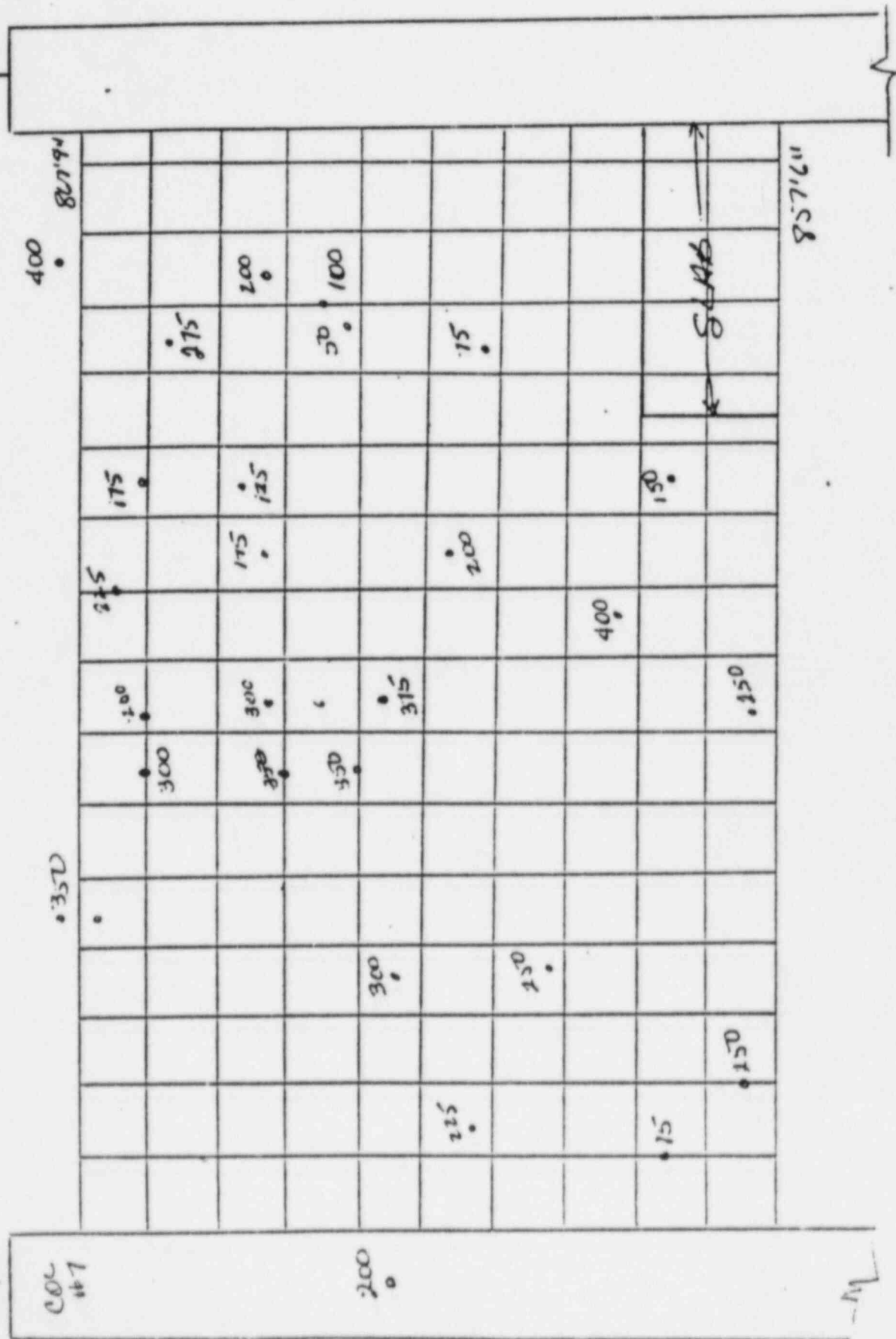
RELATED NCR NO. CB4 CC3015	I.R. CLOSED <input type="checkbox"/>	DATE	SIGNATURE	QC INSPECTOR
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A21350

602 147

200.

A21520



REPORTING PERSONNEL

QE

ACTION ADDRESSEE

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO
1	REACTOR CONTAINMENT BUILDING	PROTECTIVE COATINGS	N/A	AZ. 169° EL. 866'-867'	N/A
<p>NONCONFORMING CONDITION</p> <p>APPLIED COATINGS ON CONTAINMENT LINER PLATE EXHIBIT LOSS OF ADHESION PROPERTIES, THEREFORE RENDERING THE QUALITY OF THE APPLIED COATINGS INDETERMINATE. ORIGINAL CAUSE OF FAILURE APPEARS TO BE MECHANICAL DAMAGE, BUT SURROUNDING AREAS EXHIBIT TOTAL LOSS OF ADHESION PROPERTIES. (I.E. TOTAL COATING SYSTEM, PHENOLINE 305 &amp; CE-11, IS PEELING AT EDGES &amp; EXPOSING STEEL SUBSTRATE) AREA IS LOCATED DIRECTLY BEHIND COLUMN #9 @ AZ. 169° EL. 866'-867'</p>					
<p>REFERENCE DOCUMENT: <u>2323-AS-31</u> <u>QT-QP-11.4-5</u> REV <u>1</u> PARA <u>3.9</u></p>					
<p>REPORTED BY: <u>FRED DUNHAM / Fred Dunham</u></p>					<p>DATE: <u>11.9.83</u></p>
<p>QE REVIEW/APPROVAL: <u>K. M. WOLVERTON</u> <u>K. M. Wolvert</u></p>				<p>DATE: <u>11.9.83</u></p>	
<p>ACTION ADDRESSEE: <u>Kiewit</u></p>				<p>DEPARTMENT: <u>Engineering</u></p>	
<p>DISPOSITION: REWORK _____ REPAIR <u>XXX</u> USE AS IS _____ SCRAP _____</p> <p>Lack of adhesion is limited to area adjacent to impact (mechanical damage). Repair per CCP-30.</p> <p style="text-align: right;"><b>FOR INFORMATION ONLY</b></p>					
<p>ENG. REVIEW/APPROVAL: <u>J. Matthews</u></p>					<p>DATE: <u>11/16/83</u></p>
<p>QE REVIEW/APPROVAL: <u>W. Kiewit</u></p>					<p>DATE: <u>11/18/83</u></p>
<p>DISPOSITION VERIFICATION &amp; CLOSURE:</p>					<p>DATE: <u>1/1</u></p>
<p>COMMENTS:</p>					



# PERM. PLT. RECORD

ARMS  
INDEXED

FILE NO.	FILE LOC.
L	17.1.99.3
SUBFILE LOC.	

COMANCHE PEAK STEAM ELECTRIC STATION

## INSPECTION REPORT

SHEET	1	OF	2
NO.	PC 49983		

DESCRIPTION		IDENTIFICATION NO.		SYSTEM / STRUCTURE DESIGNATION	
PROTECTIVE COATINGS		21 Liner Plate		RCB #1	
SPEC. NO.	REV.	REF. Q.C. DOC. & REV. & CHANGE NO.		MEASURE OR TEST EQUIP. IDENT. NO.	
AS-31	1	QI-QP-11.4-5, Rev. 13		2404, 2403, 2462, 1611	
<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	

### INSP. RESULTS

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

*Timothy Wilkerson* 3-18-83  
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT	UNSAT	DATE	QC SIGNATURE
1.	For repair of sags and runs over 5.5 mils DFT, perform DFT of Primer Coat in areas which have been sanded or screened per Para. 3.2.1. (For multiple items, indicate Min. Spot, Max. Spot and Average DFT with corresponding QP & ID No's for each item in "Remarks.")	N/A			
	RECORD: Minimum Spot Test:				
	Maximum Spot Test:				
	Average DFT:				
2.	Abrasive acceptable per Para. 3.2.2.A. c. 3-18-83	N/A			
3.	Separators installed, drained, and drains left partially open.	N/A			
4.	Air supply free of contamination.	N/A			
5.	Blasted or power-tooled surface and profile: SP-3				
	a. Surface and surrounding areas cleaned per Para. 3.2.2.f. d 3-18-83	✓			
	b. Surface free of foreign matter incl. grease & oil	✓			
	c. Sharp (non-rounded) projections removed	✓			
	d. Anchor pattern depth 1.0 mil. minimum	✓			
	e. Surface lightly abraded per Para. 3.2.3	N/A			
	f. Surface wiped clean per Para. 3.2.3 or 3.2.4 (Repairs Only)	N/A			
6.	Unique Number stamped on piece(s). Record Unique Number(s) in "Remarks" below. Liner Plate	N/A			
7.	Ambient conditions checked per Para. 3.3.2 prior to primer application and record below:	✓			
	DATE: 3-18-83 TIME: 1:40 A.M. WET BULB TEMP: 60°				
	DRY BULB TEMP: 82° RELATIVE HUMIDITY: 25%				
	DEW POINT: 42° SURFACE TEMP: 87°				
8.	Substrate surface free of contaminants and less than 24 hours elapsed since blasting. SP-3 3-18-83	✓			

(Continued on Next Sheet)

COMANCHE PEAK STEAM ELECTRIC STATION Q1-QP-11.4-5, Rev. 13  
INSPECTION REPORT Sheet 2 of 2

(SUPPLEMENTAL)

ITEM NO.	INSPECTION ATTRIBUTES	SAT.	UNSAT.	DATE	Q.C. SIGNATURE
9.	Trap, filter or separator installed per para. 3.3.4.	✓			
10.	Air supply free of contamination.	✓			
11.	Qualfication of applicator. (List Applicators:) <i>F. Torres</i>	✓			
12.	Verify Mixing Operations per para. 3.2.2.h.	✓			
13.	Coating Material Product Identification: <i>CZ-11</i>	✓			
	a. Base Lot No.: <i>ZJ5821M</i> PART A: <i>N/A</i>				
	b. Filler Lot No.: <i>ZJ3051M</i>				
	c. Thinner Lot No.: <i>ZM3927M</i>				
	d. Time Mixed: <i>12:35 A.M.</i>				
14.	Pressure pot agitated.	✓			
15.	Pot life not exceeded.	✓			
16.	Hose less than 75 feet.	✓			
Pre Surface Prep. Ambients					
DATE <i>3-18-83</i>					
TIME <i>1:05 A.M.</i>					
WB <i>60°</i>					
DB <i>82°</i>					
ST <i>87°</i>					
DP <i>42°</i>					
RH <i>25%</i>					
FOR INFORMATION ONLY					

REMARKS: (DWGS, SPECS, ETC.) Total primer repair (SP-3 to bare substrate, with some primer remaining in the profile) to the following location on the liner plate;

ELV-  $858'7'' \pm$  to  $864' \pm$

AZ-  $135^\circ \pm$  to  $140^\circ 30' \pm$

⊗ Corrections have been made to Ref. correct Para.

RELATED NCR NO

*N/A*

I.R. CLOSED



DATE

*N/A*

SIGNATURE *N/A*

QC INSPECTOR

COMANCHE PEAK STEAM ELECTRIC STATION  
INSPECTION REPORT

PC 100005  
T.W. 3-20-83

SHEET 1 OF 2  
NO. PC 50005

ITEM DESCRIPTION PROTECTIVE COATINGS		IDENTIFICATION NO. 2. <u>Liner Plate</u>		SYSTEM / STRUCTURE DESIGNATION RCB#1	
SPEC. NO. AS-31	REV. 1	REF. Q.C. DOC. & REV. & CHANGE NO. QI-QP-11.4-5, Rev. 13		MEASURE OR TEST EQUIP. IDENT. NO. 2498, 2460, 2400, 3280	
<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

*Timothy Wilcox* 3-19-83  
QC INSPECTOR DATE

ITEM NO.	INSPECTION ATTRIBUTES	SAT	UNSAT	DATE	QC SIGNATURE
1.	For repair of sags and runs over 5.5 mils DFT, perform DFT of Primer Coat in areas which have been sanded or screened per Para. 3.2.1. (For multiple items, indicate Min. Spot, Max. Spot and Average DFT with corresponding QP & ID No's for each item in "Remarks.")	N/A			
	RECORD: Minimum Spot Test:				
	Maximum Spot Test: <b>FOR INFORMATION ONLY</b>				
	Average DFT:				
2.	Abrasive acceptable per Para. 3.2.2.f.b. <i>T.W. 3-19-83</i>	N/A			
3.	Separators installed, drained, and drains left partially open.	N/A			
4.	Air supply free of contamination.	N/A			
5.	Blasted or power-tooled surface and profile: <i>SP-3</i>				
	a. Surface and surrounding areas cleaned per Para. 3.2.2.f.d. <i>T.W. 3-19-83</i>	✓			
	b. Surface free of foreign matter incl. grease & oil	✓			
	c. Sharp (non-rounded) projections removed	✓			
	d. Anchor pattern depth 1.0 mil. minimum	✓			
	e. Surface lightly abraded per Para. 3.2.3	N/A			
	f. Surface wiped clean per Para. 3.2.3 or 3.2.4	N/A			
	(Repairs Only)				
6.	Unique Number stamped on piece(s). Record Unique Number(s) in "Remarks" below. <i>LINER PLATE</i>	N/A			
7.	Ambient conditions checked per Para. 3.3.2 prior to primer application and record below:	✓			
	DATE: <i>3-19-83</i> TIME: <i>12:20 AM</i> WET BULB TEMP: <i>62°</i>				
	DRY BULB TEMP: <i>84°</i> RELATIVE HUMIDITY: <i>26%</i>				
	DEW POINT: <i>46°</i> SURFACE TEMP: <i>83°</i>				
8.	Substrate surface free of contaminants and less than 24 hours elapsed since <del>blasting</del> <i>SP-3</i> <i>T.W. 3-19-83</i>	✓			

PERM PLT. RECORD  
FILED  
17.1993  
300/PC #

ARMS INDEXED

DATE

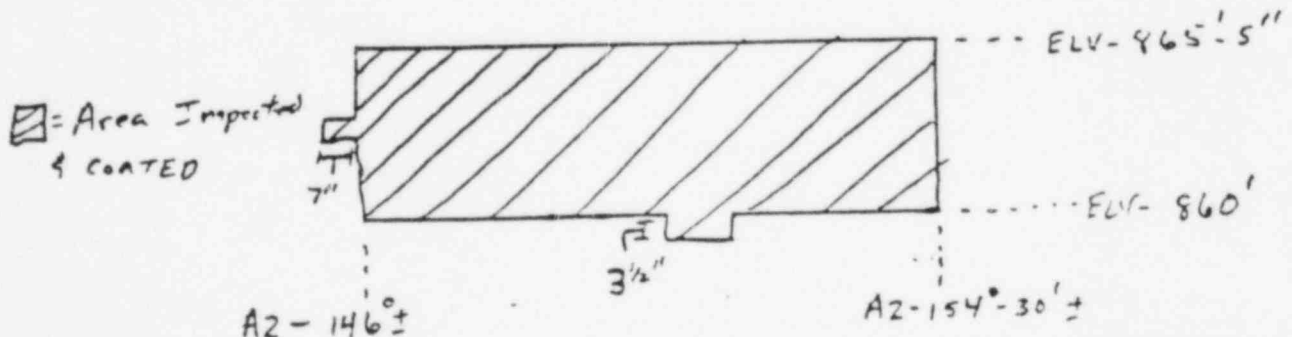
(Continued on Next Sheet)

COMANCHE PEAK STEAM ELECTRIC STATION Q1-QP-11.4-5, Rev. 13  
INSPECTION REPORT Sheet 2 of 2

(SUPPLEMENTAL)

ITEM NO.	INSPECTION ATTRIBUTES	SAT.	UNSAT.	DATE	O.C. SIGNATURE
9.	Trap, filter or separator installed per para 3.3.4.	✓			
10.	Air supply free of contamination.	✓			
11.	Qualfication of applicator. (List Applicators:) B. Bone	✓			
12.	Verify Mixing Operations per para. 3.2.2.h.	✓			
13.	Coating Material Product Identification: CZ-11	✓			
	a. Base Lot No.: 2L 3846 M PART A: N/A				
	b. Filler Lot No.: 2A5036 M				
	c. Thinner Lot No.: ZM3927 M				
	d. Time Mixed: 12:10 A.M.				
14.	Pressure pot agitated.	✓			
15.	Pot life not exceeded.	✓			
16.	Hose less than 75 feet.	✓			
	Pre Surface Prep Ambient Conditions				
	DATE: 3-19-83				
	TIME: 6:50 P.M.				
	WB: 63°				
	DB: 89°				
	ST: 84°				
	DP: 44°				
	RH: 20%				
	FOR INFORMATION ONLY				
	Corrections have been made to Ref. correct Para.				

REMARKS: (DWGS, SPECS, ETC.) Total primer repair (SP-3 to bare substrate with some primer remaining in the profile) to the liner plate.



RELATED NGR NO N/A	I.R. CLOSED	DATE N/A	SIGNATURE N/A	QC INSPECTOR
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TX-4232

07/20/84

Finding IV. B.3

Contrary to good industry practice, solvent has been used excessively to wipe down primed surfaces prior to the top coat application. Excessive solvent retention will inhibit the curing of inorganic films and can lead to coatings failure under operating conditions. The licensee's procedures do not provide direction or caution on solvent use, nor is there evidence of proper training to this effect. In three areas of coating system failures on the containment liner plate, BNL observed a solvent odor that was far in excess of what would be considered normal.

Response IV. B.3

Although some small areas have experienced a loss of coating adhesion, we do not concur with BNL as to the cause of failure. BNL is correct in stating that "excessive solvent retention will inhibit the curing of inorganic films...." We do not, however, agree with BNL's implication that the source of the entrapped solvent was the solvent wipe.

Apparently, BNL has hypothesized that "excessive solvent" from the solvent wipe would permeate the inorganic zinc film and become "trapped" when overcoated with Phenoline 305. They conclude from this hypothesis that this solvent is retained, thereby inhibiting full cure of the inorganic zinc. As stated above, we do not concur with this conclusion. If solvent becomes "trapped" in a partially or fully cured zinc film due to the porous nature of the inorganic zinc, it will eventually escape as a gas on the topcoat side of the zinc primer. (That being the path of least resistance). If and when this occurs, the escaping solvent would cause one of two things to occur:

- 1) The solvent could escape through the topcoat leaving a "bubbled" or cratered appearance, and/or

TXX-4232

07/20/84

- 2) The solvent could escape between the primer and topcoat causing lack of adhesion at this interface.

Neither of the above mentioned possibilities has been observed in finish coated steel at CPSES. The overwhelming majority of "adhesion failures" observed at CPSES, (including the "adhesion failures" described by BNL above), have been cohesive failures of the inorganic zinc primer. (See response to Allegation 38, TXX-4201, dated June 22, 1984).

The solvent retention noted in areas where "adhesion failures" have occurred is from the solvent applied with the inorganic zinc, not from the solvent wipe prior to topcoat.

TXX-4232

07/20/84

Finding IV. B.4

Contrary to CPSES FSAR Section 1A(B), Regulatory Guide 1.58, and ANSI/ASME N45.2.6-1978, Section 4 and Table 1, Level 1 Coatings QC Inspectors have been making judgments and evaluations that they are not qualified to make.

Examples of this were evident in procedures where level 1 inspectors were: a) evaluating surface preparation without instruments or approved visual standards, b) evaluating the adequacy of coatings materials when its "pot life" had been exceeded, and c) evaluating the acceptable extent of overlapping dry spray beyond the specific areas to be coated.

Response IV. B.4

We contend that there is not a significant judgment factor involved in the inspection process. The facts relative to the examples cited are as follows:

- a. evaluating surface preparation without instruments or approved visual standards - First, it must be kept in mind that the issue is power tooling of areas in need of repair prior to reapplication of primer (where required) followed by top coat application. Our combined Engineering and Quality Control experience indicated that an appropriate profile consistent with coating material manufacturer's recommendations could be achieved by simply specifying the process and equipment to be used for power tooling. Initial attempts at measuring this profile using available devices were not satisfactory. Accordingly, the process was specified in procedures. The inspector does not have to exercise judgement, but rather monitors the craft activities to assure that the specified process is used.

07/20/84

- b. evaluating the adequacy of coatings materials when its "pot life" has been exceeded - The coating materials used at CPSES reach a point (at the end of their "pot life"), when they can no longer be sprayed from the application equipment. Identification of this point is obvious to all and does not require "judgment."
  
- c. evaluating the acceptable extent of overlapping dry spray beyond the specific areas to be coated - Specifications state that a moderate amount of dry spray is acceptable for finish coat. Since dry spray is of commercial concern only and does not affect the integrity of the coating system, we fail to see how judgment by the inspector is required. Whatever judgment is required was put into the specifications and construction and quality control procedures.



TXX-4232

07/20/84

Finding IV. B.5

Contrary to Gibbs & Hill, Inc., Protective Coatings Specification No. 2323-AS-31, Revision 1 - March 15, 1978 for CPSES, Section 6.1b and Brown & Root, Inc. letter BRV-12605, dated May 7, 1981 to Tim Dolen, Carboline Company from D. C. Frankum, Project Manager, proper surface preparation was not achieved. Instruction Number QI-QP-11.4-5 allows 80 grit "flapper wheels" versus the 60 grit "flapper wheels" used to qualify surface preparation.

Response IV. B.5

Specification AS-31, Section 6.1.b simply requires manufacturer's application instructions to be complied with for surface preparation. The manufacturer's recommendation in this case is to obtain a minimum one mil surface profile. As stated above, our experience indicates that the desired profile will be achieved through power tooling (3-M Clean and Strip or Flapper Wheel). BRV-12605 reports the results of site tests to demonstrate the effectiveness of power tooling on adhesion (the important coating characteristic - not profile). Carboline responded to this letter on August 28, 1981 (attached) concurring with the results of the site tests and agreeing that additional preparation efforts on the surface were not necessary.

07/20/84

The site tests for flapper wheels were performed with 60 grit paper. In preparing the construction and quality control procedures, 80 grit paper was referenced inadvertently. However, the quality procedure statement was an explanation and not a specific inspection attribute. Additionally, the quality procedures prior to mid-August 1983 required measurement of surface profile on power tooled surfaces using roughness gauges or equivalent. Most measurements were taken with a needle point micrometer; however as stated above, neither the use of the roughness gauge nor the needle point micrometer produced repeatable results, which was a partial basis for reverting to process specifications. The oversight in the procedures (80 grit vs 60 grit) was corrected in early March 1984. It should also be noted that a review of purchasing documents shows that only a small amount of 80 grit paper was purchased. This material has been used for feathering of interface areas or stripping of surfaces and not to establish minimum profile.

BNL's subcontractor during the site evaluation recommended to again measure surface profile using a tape manufactured by Testex, Inc., stating in passing that some surfaces he observed in the field appeared as smooth as glass. We had previously considered the use of this device (in mid-1982) but rejected its use based on experience with lack of repeatability. We did experiment recently with the use of this tape and are currently using it in the field.

In summary, our experience and tests have shown that suitable surface preparation is achieved through the specified use of power tooling equipment. Attempts at measuring the resulting profiles have repeatability problems and are really stretching the art of protective coating application to an unjustified scientific level.

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



May 7, 1981

BRV: 12605

CARBOLINE COMPANY  
350 Hanley Industrial Court  
St. Louis, Missouri 63144

Attn: Tim Dolen

Reference: Purchase Order #35-1195-(Carboline B.O. #15795)

TEXAS UTILITIES SERVICES, INC.  
COMANCHE PEAK STEAM ELECTRIC STATION  
RE: PURCHASE ORDER No. 35-1195-15795

Gentlemen:

Recently the question of minimum acceptable surface preparation has arisen for steel inside containment structures to be coated with carbo zinc 11.

Under normal conditions, spot blasting, e.g. open or vacuum would be the most cost efficient method of surface preparation for repair work. However, inside containment buildings airborne contaminants must be limited because of delicate equipment. Presently, we are utilizing an elaborate system of enclosing an item or area to be repaired, and blasting or using a 3M Clean-N-Strip for removing damaged coating followed by needle scaling for added surface profile.

The necessity for follow-up needle scaling has been questioned where the repair is performed over previously blasted steel. In January of this year, we performed surface preparation on two pipe hangers in the containment which had previously been blasted and primed, utilizing 3M Clean-N-Strip only. After prime, one with Dimetcoat 6 and one with Carboline CZ-11 and cure, a pull test was performed on January 29, 1981 with results on Dimetcoat 6 ranging from 200-600 PSI and on Carboline CZ-11 from 200-900 PSI. Note PSI on attached pull test results.

Test plates were made and the panels were sandblasted to SP-10-63 and primed. After cure 3M Clear-N-Strip and 60 grit flapper wheels were used to clean the cured coatings from the panels, we again coated with

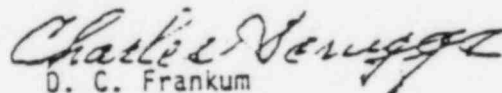
primer. After initial cure adhesion tests were performed, however Carboline CZ-11 on two panels had unacceptable results. The unacceptable adhesion could have resulted from cure time or application method; therefore, these two panels were tested again on March 17, 1981 with acceptable adhesion from 300-500 PSI. More panels were made by blasting/priming/cleaning after cure and recoating then pull test performed on March 23, 1981 with results per attached result sheet.

The above adhesion testing was performed by Brown & Root Paint Q.C. Department; also witnessed by Paint and Engineering Department representatives. All testing was performed over previously blasted steel and is not intended to reflect or imply satisfactory results over non-previously blasted steel. A slight amount of residue of coating was left on the surface after final preparation to simulate possible field conditions.

We feel the removal of damaged coatings by 3M Clean-N-Strip, or equivalent from previously blasted steel does not require a follow-up of needle scaling for proper adhesion of the coating. We would appreciate your professional opinion of the previous proposal as well as any ideas or procedure which Carboline may have for conditions such as we encountered inside of containment structures. Also, if the above is found acceptable, what limitations would we face in relation to size limitation, any difference in curing before top-coating, or any other limitations which we might encounter. If further information or clarification is needed, please contact us.

Very truly yours,

BROWN & ROOT, INC.

  
D. C. Frankum  
Project Manager

  
DCF/TVE/MW/v1

ATTACHMENTS

cc: Mark Wells (1L, 1A)  
J. B. Scott (1L, 1A)  
Bobby Lockamy (1L, 1A)  
Harry Williams (1L, 1A)

ADHESION TEST RESULTS

TEST DATE: 1-29-81

COATING: DIMETCOAT 6 OVER PIPE HANGER

SURFACE PREPARATION: PREVIOUSLY ABRASIVE BLASTED TO SP10, REFURBISHED WITH  
3M CLEAN-N-STRIP

ADHESION TESTER: ELCOMETER

DOLLIE #      TYPE FAILURE

1.	600	PSI	(GLUE)
2.	600	PSI	(GLUE)
3.	500	PSI	(GLUE)
4.	750	PSI	(GLUE)
5.	200	PSI	(GLUE)

TEST DATE: 1-29-81

COATING: CARBO ZINC 11 OVER PIPE HANGER

SURFACE PREPARATION: PREVIOUSLY ABRASIVE BLASTED TO SP10, REFURBISHED WITH  
3M CLEAN-N-STRIP

ADHESION TESTER: ELCOMETER

DOLLIE #      TYPE FAILURE

1.	250	PSI	(GLUE)
2.	525	PSI	(GLUE)
3.	900	PSI	(GLUE)
4.	200	PSI	(GLUE)
5.	200	PSI	(GLUE)

TEST DATE: 2-24-81

COATINGS: CARBO ZINC 11 OVER STEEL PLATES

SURFACE PREPARATION: PREVIOUSLY ABRASIVE BLASTED TO SP10, REFURBISHED WITH  
3M CLEAN-N-STRIP (Nos. 1-13) 60 GRIT FLAPPER WHEEL (Nos. 14-18)

ADHESION TESTER: ELCOMETER

DOLLIE #      FAILURE TYPE

1.	500	PSI	(COATING)	7.	200	PSI	(COATING)	13.	200	PSI	(COATING)
2.	500	PSI	(COATING)	8.	150	PSI	(COATING)	14.	200	PSI	(COATING)
3.	400	PSI	(COATING)	9.	0	PSI	(COATING)	15.	175	PSI	(COATING)
4.	875	PSI	(COATING)	10.	175	PSI	(COATING)	16.	200	PSI	(COATING)
5.	300	PSI	(COATING)	11.	150	PSI	(COATING)	17.	150	PSI	(COATING)
6.	100	PSI	(COATING)	12.	200	PSI	(COATING)	18.	175	PSI	(COATING)

ADHESION TEST RESULTS

TEST DATE: 2-24-81

COATING: DIMETCOAT 6 OVER STEEL PLATES

SURFACE PREPARATION: PREVIOUSLY ABRASIVE BLASTED TO SP10, REFURBISHED WITH  
3M CLEAN-N-STRIP (Nos. 6-10) 60 GRIT FLAPPER WHEEL (Nos. 1-5)DOLLIE #      FAILURE TYPE

1.	800	PSI	(GLUE)	6.	425	PSI	(GLUE)
2.	500	PSI	(GLUE)	7.	200	PSI	(GLUE)
3.	500	PSI	(GLUE)	8.	425	PSI	(GLUE)
4.	400	PSI	(GLUE)	9.	400	PSI	(COATING)
5.	550	PSI	(GLUE)	10.	375	PSI	(GLUE)

TEST DATE: 3-17-81.

COATINGS: CARBO ZINC 11 OVER STEEL PLATE (PREVIOUS TEST PANELS FROM 2-24-81)

SURFACE PREPARATION: PREVIOUSLY ABRASIVE BLASTED TO SP10, REFURBISHED WITH  
3M CLEAN-N-STRIP (Nos. 1-5) 6 GRIT FLAPPER WHEEL (Nos. 6-10)

ADHESION TESTER: ELCOMETER

DOLLIE #      TYPE FAILURE

1.	500	PSI	(GLUE/PAINT)	6.	375	PSI	(GLUE)
2.	350	PSI	(GLUE)	7.	375	PSI	(GLUE)
3.	400	PSI	(PAINT)	8.	500	PSI	(GLUE)
4.	400	PSI	(GLUE)	9.	350	PSI	(GLUE/PAINT)
5.	500	PSI	(GLUE)	10.	300	PSI	(GLUE)

TEST DATE: 3-23-81

COATINGS: CARBO ZINC 11 OVER STEEL PLATE

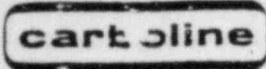
SURFACE PREPARATION: PREVIOUSLY ABRASIVE BLASTED TO SP10, REFURBISHED WITH  
3M CLEAN-N-STRIP (Nos. 6-20) and 60 GRIT FLAPPER WHEEL (Nos. 1-5)

ADHESION TESTER: ELCOMETER

DOLLIE #      TYPE FAILURE

1.	275	PSI	(COATING)	9.	225	PSI	(COATING)	17.	200	PSI	(COATING)
2.	200	PSI	(COATING)	10.	200	PSI	(COATING)	18.	200	PSI	(COATING)
3.	350	PSI	(COATING)	11.	50	PSI	(COATING)	19.	200	PSI	(COATING)
4.	300	PSI	(COATING)	12.	400	PSI	(COATING)	20.	200	PSI	(COATING)
5.	200	PSI	(COATING)	13.	375	PSI	(COATING)				
6.	200	PSI	(COATING)	14.	200	PSI	(COATING)				
7.	250	PSI	(COATING)	15.	300	PSI	(COATING)				
8.	300	PSI	(COATING)	16.	150	PSI	(COATING)				





COPY

August 28, 1981

Mr. D.C. Frankum  
Brown & Root Inc.  
P.O. Box 1001  
Glen Rose, TX 76043

Reference: Purchase Order #35-1195,  
Your letter of May 7

Dear Mr. Frankum:

We have evaluated the Elcometer Adhesion data you have developed on Carbo Zinc 11 over power tool cleaned steel. In regard to your question as to whether needle scaling is necessary after using the 3M Clean-N-Strip for application of Carbo Zinc 11 to previously SP 10 blasted steel, we concur that if the Elcometer Adhesion is at least 200 psi without using the needle scaling then it is not necessary.

In regard to size limitations for this type of surface preparation, we can only comment that our primary recommendation is to abrasive blast wherever practical for the highest assurance of optimum long-term performance. Generally, this type of surface preparation should be restricted to small components of difficult surface configuration or to touch-up of small areas. It is difficult and arbitrary to assign a specific size limitation. There are no limitations on cure time nor other parameters other than possible long-term performance.

To answer Mark Well's question on date discrepancies on Carboline Test Summary Report 149, we have had to have Oak Ridge National Laboratory send us a revision to page 10 because initially they

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Mr. D.C. Frankum  
Brown & Root Inc.  
August 28, 1981  
Page 2

omitted the initial temperature on the chart. When they received this page to correct this omission at our request, they put a current revision date on it also.

Please advise us to whether any clarification or additional information is desired on these matters.

Very truly yours,

CARBOLINE COMPANY

*Dan W. McBride*

Dan W. McBride  
Power Industry Manager

lrb/l/614/  
Frankum/082881  
oc: Mr. Mark Wells  
Brown & Root Inc.  
P.O. Box 1001  
Glen Rose, TX 76043  
cc: Mr. Charles Rushing



TXX-4232

07/20/84

Finding IV. B.6.a.1

The procedures are not "stand-alone" documents, acceptance criteria are found in other referenced documents.

Response IV. B.6.a.1

We disagree with this finding. Acceptance criteria required for inspection are furnished to the inspector and in most cases the required criteria are contained in quality instructions prepared expressly for the inspection function.

Occasionally, data needed by both the craft and QC (e.g., cure time, pot life, etc.), may be included in the construction procedure and referenced in the quality instruction. Irrespective, the needed information is available to QC via a controlled office copy of the construction procedure. There is no practice of referencing acceptance criteria which may be contained in project specifications or codes and standards which this BNL statement may infer.

TXX-4232

07/20/84

Finding IV. B.6.a.2

Procedures such as Instruction Number QI-QP-11.4-1 and QI-QP-11.4-5 requires a flashlight to be held perpendicular to the inspection surface only. Proper inspection technique would require a light to be positioned parallel to the surface to locate certain types of defects. Additionally, the minimum light required is not specified.

Response IV. B.6.a.2

We disagree with this finding, but have difficulty responding since we are dealing with a matter of opinion. Our experience is that defects which are detrimental to coating performance can be adequately evaluated by observing the inspection area from an arms length position and looking perpendicular at the surface. Looking parallel to the inspected surface may show surface dust not visible from the perpendicular position, but by ASTM definition of contaminants this is not deleterious to the coatings.

Minimum light is in fact defined in the procedure. It is the light produced from a two cell flashlight.

TXX-4232

07/20/84

Finding IV. B.6.a.3

Procedure QI-QP-11.4-1, paragraph 3.1.2, states that for abrasives "... All grease, oil and deleterious material is unacceptable", and yet provides no methods to determine if these materials are present. The procedure also does not define deleterious material.

Response IV. B.6.a.3

This statement is taken out of context. The exact quote is as follows:

"The inspector shall obtain a sample of the abrasive to be used from each work area. The abrasive shall be verified to be dry by feel. All grease, oil and deleterious material is unacceptable."

Grease and oil would not be dry. Deleterious material cannot be totally defined since it could be anything except sand. We elected to not define the issue. Instead we decided to let QC identify matters of concern via established procedures and then evaluate the inspection results with senior QC and technical personnel.

TXX-4232

07/20/84

Finding IV. B.6.b

Contrary to 10CFR 50 Appendix B Criterion V and CPSES FSAR, paragraph 17.1.1.5, the final coatings walkdown procedure contained no acceptance criteria and did not contain appropriate instructions regarding hiding quality, cracking, delamination, peeling, excessive overspray, excessive roughness, flaking, blistering or cracking. In conjunction with inadequate inspection procedures, this could allow acceptance of inadequate coatings.

Response IV. B.6.b

There is no paragraph 17.1.1.5 in the FSAR and it is assumed that the reference is to paragraph 17.1.5. The requirements of Criterion V of 10CFR50, Appendix B and FSAR Section 17.1.5 are not applicable to the final walkdown procedure. All QA program mandated quality control inspections are accomplished prior to implementation of the final walkdown procedure. These quality control inspections are accomplished in accordance with a series of instructions denoted by the prefix QI-QP-11.4-... In contrast, the final walkdown procedure is a procedure authored and implemented by CPSES Engineering personnel. Its purpose is to assure that the previously completed QC inspections have been maintained to the owners' satisfaction (i.e., construction activities subsequent to completion and QC acceptance of coatings work have not damaged the coatings). In the event that major damage is observed, the area is returned to the craft forces for rework in accordance with craft procedures and QC instructions applicable to the original work.

TXX-4232

07/20/84

Finding IV. B.6.c

Contrary to CPSES FSAR, page 1A(B)-11, R.G. 1.54, and ANSI N101.4-1972, paragraph 4.4.3, CPSES coatings procedures allow weld splatter to remain on metal surfaces. This could contribute to coatings failure.

Response IV. B.6.c

The correct terminology is weld spatter. Consistent with paragraph 4.4 and 4.4.3 of ANSI N101.4-1972, the project specification did and does "provide for" removal of all welding scale and spatter considered necessary by Engineering "to avoid contamination of substrates." We are not aware of nor does the Brookhaven report establish a basis for a concern with weld spatter from a safety related viewpoint. Commercial concerns are not subject to the stringent requirements applied to safety related activities. Neither the FSAR reference nor Reg. Guide 1.54 discusses the issue of weld spatter.

TXX-4232

07/20/84

Finding IV. B.6.d

Contrary to CPSES FSAR, page 1A(B)-22; R. G. 1.54, and ANSI N101.4-1972, paragraph 5.2.2, CPSES coatings procedures provide for the writing and approval of special coatings procedures, without the approval of the coating manufacturers.

Response IV. B.6.d

The finding by BNL is correct, but is a matter of form rather than substance. Nine special coatings procedures exist at CPSES. For eight of these procedures, the manufacturer's Product Data Sheet is the substantive portion of the procedure, and therefore, are approved by the coatings manufacturer. The remaining special coatings procedure is for repair of a Carboglass lining of the component cooling water heat exchangers. This procedure was developed to match the vendor's (Struthers Wells Corp) procedure which was based on Carboline's Product Data Sheet. As the coatings manufacturer's Product Data Sheet was an integral part of the special coatings procedures, the intent of the ANSI Standard has clearly been satisfied.



TXX-4232

07/20/84

Finding IV. B.6.e

Contrary to CPSES FSAR, paragraph 6.1B.2 and ANSI N.101.2, coatings applied over "drypack" concrete repairs were not DBA-qualified. Additionally, the "drypack" does not appear to meet paragraph 6.4.2 of ANSI N101.2-1972.

Response IV. B.6.e

Section 6.1B.2 of the FSAR simply discusses the types of coating materials used at CPSES and the industry standards which are applicable to them. Paragraph 6.4.2 of ANSI N101.2-1972 discusses general comments relative to preparation of concrete surfaces. Since "drypack" is a standard repair technique for concrete and since drypack is composed of the same basic ingredients as concrete, we fail to appreciate the significance of this finding.

TXX-4232

07/20/84

Finding IV. C.7

Based on a brief review of Design Change Authorizations (DCA's) written in the coatings area, it does not appear as though Quality Assurance is included in the review and approval chain, as would be required by 10 CFR 50 Appendix B, Criterion III. Also, there is no formal mechanism to ensure that users of controlled copies of the Coating Specification have received and are aware of all applicable DCAs. Finally, there is no requirement for specification revision after DCA's have been issued against it, either based on time or number of DCA's. Additional review in this area is needed to determine how quality is assured in the DCA program.

Response IV. C.7

Criterion III of Appendix B provides for the establishment of design control measures for verifying or checking the adequacy of design. The verification process shall be performed by individuals or groups other than those who performed the original design but may be from the same organization. Criterion III does not require that Quality Assurance be included in the "review and approval chain" for the design verification of the original design or subsequent design changes.

Contrary to this finding, formal procedures exist which describe the measures that have been established and implemented for the control of design documents. These procedures meet the requirements established for Criterion VI, Document Control, of 10CFR50, Appendix B.

TXX-4232

07/20/84

Relative to specification revisions, it is true that no requirement (regulatory or otherwise) exists which mandates when a specification should be formally revised, either based on time or number of DCA's. This is a management decision and specifications are revised when considered appropriate by management.

In summary, we fail to define a regulatory issue and thus do not agree that additional review is warranted.

TX-4232

07/20/84

Finding IV. C.8

Contrary to FSAR Section 6.1B.2, ANSI N101.2, Section 4, a number of coatings systems have been specified and used that have not been DBA qualified. After identification of this by BNL, the licensee has committed to submitting these coatings systems to the appropriate DBA testing.

Response IV. C.8

As delineated in our separate responses to the sixty allegations transmitted by Mr. Bangart's letter of May 19, 1984, some minute combinations of coatings have not been separately DBA tested. However, where these conditions do occur, they are small in magnitude and have been applied consistent with normal industry practice. It should be noted that no formal commitment to test these combinations of coating systems has been made nor is one currently anticipated. It was made quite clear to Region IV and BNL personnel at the outset, that no testing would be undertaken without management concurrence, particularly when the testing could be classified as "Research and Development."

TXX-4232

07/20/84

Finding IV. C.9

Contrary to FSAR Section 1A(B), Regulatory Guide 1.54 Section C.4, "STAF Hospital Spray Disinfectant", an aerosol containing chlorides, was used by painters inside containment where stainless steel is located.

Response IV. C.9

This matter is explained fully in our formal response to allegation number 41. (See TXX-4201, dated June 22, 1984).

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June 12, 1984

Joseph Felton  
Director  
Division of Rules and Records  
Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

**FREEDOM OF INFORMATION  
ACT REQUEST**

*FOIA 84-487  
Rec'd 6-13-84*

Re: Freedom of Information Request

Dear Mr. Felton:

Pursuant to the Freedom of Information Act, 5 U.S.C. § 552, and the regulations promulgated thereunder by the Nuclear Regulatory Commission ("NRC") at 10 C.F.R. Parts 2 and 9, we hereby request that you provide us with the following documents:

1. Copies of all records in NRC's files pertaining to any studies, investigations, inquiries (formal or informal) concerning the Comanche Peak Nuclear Power Plant ("Comanche Plant") in Texas as well as any agency documents, internal memoranda, reports, complaints, citations and orders which pertain to the Comanche Plant.

We are primarily interested in any materials related to or concerning construction of the Comanche Plant, by Brown & Root, Inc., including safety conditions, employee relations, work standards, allegations of inferior work, faulty workmanship, deficient work standards, and deficient performance.

2. Copies of all records in NRC's files pertaining to any studies, investigations, inquiries (formal or informal), agency documents, internal memoranda, reports, complaints, citations and orders which pertain to Brown & Root, Inc., a Texas corporation involved in the construction of nuclear power plants.

*850/280734*



ROGOVIN, HUGE & LENZNER  
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Joseph Felton  
June 12, 1984  
Page 2

Please call the undersigned as soon as the documents are available and please notify us if you anticipate that the expense of complying with this request exceeds \$200.00.

Thank you for your cooperation.

Sincerely,

ROGOVIN, HUGE & LENZNER

By: Harry Huge  
Harry Huge