

ORIGINAL

UNITED STATES
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

DOCKET NO: 50-445-OL2
50-446-OL2

TEXAS UTILITIES GENERATING COMPANY,
et al.

(Comanche Peak Steam Electric
Station, Units 1 and 2)

LOCATION: WASHINGTON, D. C.

PAGES: 20451 - 20774

DATE: MONDAY, NOVEMBER 26, 1984

TR.01 0/1
Orig to E. Pleasant, 1121-H

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NATIONWIDE COVERAGE

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of:
TEXAS UTILITIES GENERATING COMPANY, : Docket Nos.
et al. :
: 50-445-OL2
(Comanche Peak Steam Electric : 50-446-OL2
Station, Units 1 and 2)
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Nuclear Regulatory Commission
4350 East-West Highway
Fifth Floor Hearing Room
Bethesda, Maryland

Monday, November 26, 1984

The hearing in the above-entitled matter was reconvened
pursuant to adjournment at 8:45 a.m.

BEFORE:

JUDGE PETER BLOCH, Chairman
Atomic Safety and Licensing Board

JUDGE HERBERT GROSSMAN, Member
Atomic Safety and Licensing Board

JUDGE WALTER JORDAN, Member
Atomic Safety and Licensing Board

1 APPEARANCES:

2 On behalf of the Applicants:

3 McNEILL WATKINS, ESQ.
4 MARK L. DAVIDSON, ESQ.
5 Bishop, Liberman, Cook,
6 Purcell & Reynolds
7 1200 Seventeenth Street, N.W.
8 Washington, D. C. 200369 On behalf of the Nuclear Regulatory
10 Commission Staff:11 STUART A. TREBY, ESQ.
12 GREGORY A. BERRY, ESQ.
13 Office of the Executive Legal Director
14 U. S. Nuclear Regulatory Commission
15 Washington, D. C. 2055516 On behalf of Citizens Association for
17 Sound Energy:18 ANTHONY Z. ROISMAN, ESQ.
19 BILLIE GARDE, ESQ.
20 Trial Lawyers for Public Justice
21 2000 P Street, N.W.
22 Suite 611
23 Washington, D. C. 2003624 On behalf of Oliver B. Cannon & Sons,
25 Joseph Lipinsky, and John J. Norris:JOSEPH GALLO, ESQ.
PETER THORNTON, ESQ.
VICTOR COPELAND, ESQ.
Isham, Lincoln & Beale
1120 Connecticut Avenue, N.W.
Washington, D. C.

C O N T E N T S

<u>WITNESS</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>
George W. Chaney by Mr. Watkins	20456			
by Mr. Bachmann		20520		
by Mr. Watkins			20525	
C. Thomas Brandt by Mr. Watkins	20571			
by Mr. Roisman		20617		
by Mr. Watkins			20664	
RECESSES:				
Noon - 20533				
P.M. - 20568				
P.M. - 20738				
LAY-IN - PREFILED TESTIMONY OF GEORGE W. CHANEY AND ATTACHMENTS, Pages 20458 - 20472				
LAY-IN - PREFILED TESTIMONY OF C. THOMAS BRANDT, 11/21/84, AND ATTACHMENTS, Pages 20574 - 20615				
LAY-IN - TRAVELER PACKAGE FOR WELD 663 AND WELD 236, Pages 20645 - 20656				
LAY-IN - BRANDT DIAGRAM, Page 20665				
LAY-IN - TRAVELER PACKAGE FOR WELD 23, WELD 29 AND WELD 660, Pages 20752 - 20773				

E X H I B I T S

<u>NUMBER</u>	<u>IDENTIFIED</u>	<u>RECEIVED</u>
Exhibits 1, 2, and 3	20480	

P R O C E E D I N G S

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JUDGE BLOCH: The hearing will please come to order.

First, Mr. Gallo's motion to defer the start of the opening of testimony on December 3, until 1:00 p.m. for personal reasons, is granted. We will decide later in the week -- we will decide later in the date with other matters related to this part of the case.

On the other side of the case, there was a motion to reconsider our decision on multiple filings, and in response to that motion, we will take some action to clarify and extend the decision we previously made. The principal action we are taking is that we will require a showing, consistent with the multiple filings decision, for third round filings as well as fourth round, so that when Applicants respond to CASE responses, they will have to do the same thing to justify new information that they include in their motions, that we had imposed upon CASE.

In addition, we will state that it was never our intention in allowing responses by Applicants to CASE answers to permit wholesale filing of new information that should have been included in the first instance, so we will, in each case, be examining answers that may have been made by Applicants to see whether there was information lacking the first time around that should have

1 been there, rather than having been included in a response.

2 MR. WATKINS: Mr. Chairman, will there be a
3 written order to that effect?

4 JUDGE BLOCH: No. I think given the specificity
5 of the multiple filings motion that there's no need to
6 explain further why we are extending it to third round
7 decisions. It just fits.

8 We had earlier allowed, wholesale, applicants would be
9 allowed to respond without application. We do notice an
10 improvement in the filings of the CASE filings and believe
11 that the wholesale permit to respond to CASE answers
12 should no longer have special applicability and of course
13 that means that there is also no wholesale right to
14 respond to Staff answers, either. The same multiple
15 filings considerations would respond to third party
16 filings with respect to Staff answers.

17 Mr. Watkins, your witness.

18 MR. WATKINS: We call George W. Chaney.
19 Whereupon,

20 GEORGE W. CHANEY
21 was called as a witness and, having been first duly sworn,
22 was examined and testified as follows:

23 JUDGE BLOCH: Mr. Chaney, I would like to advise
24 you this is a hearing before the Nuclear Regulatory
25 Commission which is of course a branch of the United

1 States Government. The matters that we are hearing may
2 affect public safety and the economy of the area near
3 Glenrose, Texas.

4 The testimony that you are about to give should be the
5 truth, the whole truth, and nothing but the truth and the
6 obligation to testify in that way is supported by possible
7 penalty for perjury.

8 Do you understand and accept the warning that I have
9 just given to you?

10 THE WITNESS: Yes, your Honor.

11 CHAIRMAN BLOCH: Please be seated.

12 DIRECT EXAMINATION

13 BY MR. WATKINS:

14 Q Mr. Chaney, do you have with you a document
15 consisting of nine pages of questions and answers with
16 pages of attachments?

17 A Yes, I do.

18 Q Is your microphone on?

19 A I guess not.

20 Q Is that document your prefiled testimony in this
21 case?

22 A Yes, sir, it is.

23 Q Do you have any corrections to make in your
24 testimony?

25 A No, sir.

1 Q Is your testimony true and correct?

2 A Yes, sir.

3 MR. WATKINS: Mr. Chairman, Applicants move the
4 admission of George W. Chaney's prefiled testimony with
5 attachments.

6 JUDGE BLOCH: There being no objections, it is
7 received into evidence and may be bound into the record at
8 this point.

9 (The document follows:)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)	
)	
TEXAS UTILITIES ELECTRIC	)	Dockets Nos. 50-445-2 and
COMPANY, <u>et al.</u>	)	50-446-2
)	
(Comanche Peak Steam Electric	)	(Applications for
Station, Units 1 and 2)	)	Operating Licenses)

PREFILED TESTIMONY OF
GEORGE W. CHANEY

Q1. Please state your name.

A1. George W. Chaney.

Q2. By whom and where are you employed, Mr. Chaney?

A2. I am the principal Questioned Document Examiner of James L. Lewis and Associates, 5934 Royal Lane, Suite 255, Dallas, Texas 75230.

Q3. Please briefly describe your employment background.

A3. I was a Special Agent with the United States Secret Service from 1954 to 1977, and worked in the San Antonio, Dallas, and Washington, D.C. field offices. From 1963 to 1969, I was Assistant Special Agent in Charge of Personnel and Training. From 1969 to 1974, I was Assistant Special Agent in Charge of the Dallas Field Office. From 1974 to 1977, I was Special Agent in Charge of the El Paso Field Office. I retired from the Secret Service in February, 1977.

Q4. Have you had any training in the examination of documents?

A4. Yes. As a Special Agent, I attended 120 hours of the Secret Service's Questioned Document School. I later taught at the Questioned Document School, in the Training Division.

Q5. Did your employment with the Service include work with questioned documents?

A5. Yes, I worked with documents extensively as a Special Agent. My duties included the investigation of forgeries and alterations of United States Treasury checks, Savings Bonds, and the counterfeiting of United States currency and other obligations. I also investigated anonymous and threatening letters to the President and other dignitaries. As Assistant Special Agent in Charge of the Dallas Field Office, and as Special Agent in Charge of the El Paso Office, I was directly responsible for all forgery and other document investigations assigned to those offices. During my work as a Special Agent, I reviewed and examined thousands of documents for forgery or alteration.

Q6. When did you begin working with James L. Lewis and Associates?

A6. In March, 1977.

Q7. Please describe your work with Lewis and Associates.

A7. As a Questioned Document Examiner, I examine documents, such as deeds, wills, promissory notes, checks, leases, and anonymous writings, for forgery, alteration, verification of typing, and other attributes. I have examined thousands of documents during my employment with Lewis and Associates.

Q8. Have you testified regarding documents in any judicial or administrative proceedings?

A8. Yes. As a Special Agent with the Secret Service, I testified numerous times in criminal cases as a document expert. More recently, I have testified in State and Federal courts in numerous cases involving questioned documents.

Q9. Mr. Chaney, I show you two documents marked as Attachments 1 and 2 to your testimony. Have you been asked to examine the originals of those documents?

A9. Yes. On October 2, 1984, I examined the originals of these documents under a microscope. I also directed the photography of aspects of two of the documents.

Q10. Did you add any markings to the documents identified as Attachments 1 and 2?

A10. My photographer made certain marks on the documents, which are copies of the originals, to identify the frame numbers of the film. On Attachment 1, for example, next to lines 5 and 6 on the right-hand side,

my photographer wrote "42" and "43" with arrows, to identify the frame number and item that he photographed.

Q11. Mr. Chaney, please identify Attachment 3 to your testimony.

A11. Attachment 3 is an enlarged print of part of frame 43, showing a portion of lines 5 and 6 of the original of Attachment 1.

Q12. Please identify Attachment 4 to your testimony.

A12. Attachment 4 is an enlarged print of part of frame 22, showing an area on the left-hand side of the original of Attachment 2.

Q13. Mr. Chaney, were you given any other documents in connection with your examination?

A13. Yes. I also examined Attachments 5 and 6 to my testimony.

Q14. With respect to the original of Attachment 1, what were you asked to examine?

A14. I was asked to examine the area on lines 5 and 6 of the document where the dates "1/14/84" had been corrected to read "1/17/84." Specifically, I was asked to determine whether the "17" appearing above the crossed-out "14" on each line was made by the same person who wrote the full entries on those two lines, and whether the "17" above the crossed-out "14" was made with the same writing instrument as the other

entries. I was also asked whether the initials and dates appearing immediately below the signatures and dates on lines 5 and 6 were in the same hand, and by the same writing instrument, as the entries on lines 5 and 6. Finally, I was asked whether the line-out of the "14" on each line was performed with the same writing instrument as the other entries on those lines.

Q15. Mr. Chaney, do you have an opinion as to whether all of the writing appearing on lines 5 and 6, as enlarged on Attachment 3, was performed by the same person?

A15. Yes. Based on my microscopic and visual examinations, it is my opinion that all of the writings on lines 5 and 6 as shown on Attachment 3 were made by "JStanford," assuming that this is the person who made these entries. By "all of the writings," I mean the original dates of "1/14/84," the cross-out bar through the "14s," the "17s" above the "14s," the initials "JS," and the dates "1/17/84" next to the initials.

Q16. On what do you base your opinion?

A16. The signature "JStanford" on lines 5 and 6 is distinctive, and is repeated at several other places, both on Attachment 1 and on Attachment 5. The initials "JS" that appear immediately below lines 5 and 6, as shown on Attachment 3, conform to the "J" and "S" of the signatures. The initials "JS" also appear at other places on Attachment 1, in the same handwriting.

As to the dates, both the "8" and the "4" of the "84" in this individual's writing are distinctive. As clearly shown on Attachment 3, each of the "8s" is formed similarly, especially as to the opening in the upper right-hand corner in each of the "8s," top to bottom. The "8s" at other places next to the signature "JStanford" or initials "JS" elsewhere on Attachment 1 and on Attachment 5 reflect the same similarities. The "4s" are also similar, consisting essentially of a check mark with a downstroke to complete the "4."

The "7s" also share points of similarity. Referring to the "7s" on Attachment 3, each "7" tends to come to a point, or sharp angle, where the writer makes the downstroke. This characteristic also appears in the "7s" on Attachment 5. The top three "7s" on Attachment 3 also show a tic at the point where the writer began the figure; the tic is a short downstroke in the upper left-hand corner of the figure. This tic is more apparent from microscopic examination than in Attachment 3, the enlargement.

The same tic appears in more pronounced fashion in the bars that cross out the "14s" in the "1/14/84" dates on lines 5 and 6 of Attachment 1. These tics clearly appear on Attachment 3, the enlargement.

Referring to Attachment 1, the same tic appears in the bottom bar of the Roman "II" appearing to the right of the signatures and dates on lines 3, 4, 5 and 6.

Q17. Mr. Chaney, do you have an opinion as to whether the signatures, initials, dates, and cross-out bars on lines 5 and 6 were written with the same instrument?

A17. All of these markings were made with a ball-point pen. The color is uniform for each of the writings. I cannot, however, determine whether all of these writings were made by the same pen.

Q18. Are the bars through the "14s" and the "17s" above the crossed-out "14s," significantly different from the other writings on lines 5 and 6 of Attachment 1?

A18. As shown on Attachment 3, the bars through the "14s" and the uppermost "17" are somewhat darker in shade than the other writings on lines 5 and 6. This was caused by the writer's bearing down more heavily when he made these entries. This can be seen from the back side of the original of Attachment 1, where the indentation of the bar through the "14" on line 5 is plainly visible. The bar through the second "14" is not as apparent. The "17" above the crossed-out "14" on line 6 is not that much different from the "17" immediately above it. In my opinion, the principal differences between the bars through the "14s" and the

"17s" above them and the other writing on lines 5 and 6 is that the writer pressed down more firmly as to some of these markings.

Q19. Is there any reason, based on your experience as a document examiner, why the writer pressed down more firmly in marking through the "14s"?

A19. Yes. Almost anyone who is crossing out something on any document tends to do so firmly, more firmly than that person normally writes.

Q20. Mr. Chaney, what were you asked to examine with respect to Attachment 4?

A20. I was asked to examine the crossed-out "13s" and the "14s" immediately above them on lines 3 and 4, and to determine whether the writing instrument used to make those entries was the same instrument used on lines 5 and 6 of Attachment 1. I was also asked to determine whether the handwriting is the same.

Q21. Mr. Chaney, do you have an opinion as to whether the writing instrument used in the entries you have described on Attachment 4 is the same instrument used in the entries on lines 5 and 6 of Attachment 1?

A21. Yes, I do.

Q22. What is your opinion?

A22. As I have testified, all of the entries on lines 5 and 6 shown on Attachment 1 were made with a ball-point pen. The bars through the "13s" and the "14s" above

them shown on Attachment 4, which is an enlargement of Attachment 2, were made with a fluid ink pen. The entries on Attachment 4 were made with a fountain pen, a felt-tip pen, or a pen with a similar point, such as a Pentel. The differences are apparent by comparing Attachments 3 and 4. Attachment 4 also shows that the edges of the bars and the "14s" are not sharply defined. This feature, which is even more apparent in a microscopic examination, is caused by the fluid ink soaking into the paper. All entries in Attachment 3, in contrast--including the bars--are sharply-edged. That is characteristic of a ball-point pen.

Q23. Do you have an opinion as to whether the bars and "14s" on Attachment 4 were made by the same person who made the entries on lines 5 and 6 of Attachment 1?

A23. In my opinion, the individual who made the entries on lines 5 and 6 of Attachment 1 was not the same person who marked through the "13s" and wrote the "14s" on Attachment 4. I base that opinion principally on the differences between the "4s" on the two documents. Attachment 3 reflects a uniform formation of the numeral "4," which appears there numerous times in the same hand. The "4s" on Attachment 4 are formed differently.

Q24. Does that conclude your testimony?

A24. Yes, it does.

29-Jue

Attachment 1
20467

WOC Serial No. 40851

Drawing No. AF-1-SB-007R-146

Weld No. FU400

INSTALLATION TO BE IN
ACCORDANCE WITH PROCEDURES
REFERENCED IN -CPM-6.11

WELD DATA CARD

27

CLEARANCE REQUIRED
Change affects system turn-
over and clearance must be
checked by the Startup
Engineer prior to starting

LINE # 6-AF-1-036-2002.3	WPS #	REV#/ICN#	FABRICATION CODE & CLASS/ACC. STD. ASME III CPM 6.9
	11030	7/0	
	11031	5/0	

BASE MATERIAL	HT #	HT #
1/2" 304	3/10 304-73	NA
PC #	IAE-CX-7	303
P #	1	1

POSTWELD HEAT TREATMENT	TIME	NA	Hrs.	TEMP.	NA	°F
HEATING RATE	NA	°/Hr.	NA			
SPECIFICATION WPS/CPM 6.9D						

QI-QAP/REV	VT/11.1-26	PT/10.2-1	MT/10.2-2	RT/10.2-3	UT
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MR#(S)	M.&T.E.	CALIB.	QC	WELD FILLER MATERIAL REQUIRED
		DUE DATE		
QC VERIF.	1355	1/14/84	14 MAR 84	13 MAR 84
DATE:				
				ROOT CLASS E-705-2
				FILL CLASS E-705-2
				CLASS E-7018 Rev 1-13-84
				CLASS

NOTES: (1) Applicable QC/ANI hold points shall be indicated by checkmark ✓.
 (2) ANI inspection points indicated by (X).
 (3) Denote Satisfactory inspection by an "S": Unsatisfactory inspections by a "U".

PRODUCTION RELEASE

OPER. NO.	OPERATION	HOLD POINTS			CON	SAT. or UNSAT.	INSPECTION RESULTS (SIGN AND DATE)		
		WT	QC	ANI			QC or WT	NOE CERT. LEVEL	ANI
1	Verify Cut	X	NA	NC		Sat. JWR 1-3-84			
2	Cleanliness	NA	✓	NC		*UNSAT (Small Water) 1-3-84	II		
3	Fitup	NA	✓	(V)		Sat. B. Stanford 1/14/84	II		157/1/14/84
4	Preheat	NA	✓	NC		Sat. B. Stanford 1/14/84	II		
5	Final VT	NA	✓	NC		Sat. B. Stanford 1/17/84*	II		← 42
6	Final NDT	NA	✓	NC		Sat. B. Stanford 1/17/84*	II		← 43 ✓
	Reviewed: JWR					1-3-84			1/13-84
	Reviewed: B. Stanford					1-14-84			1/14/84

*Dated in error 19 1/26/84

28

NCR # 12963

WE A.H. 11/13/84 QC JWR 3/23/84 ANI R. B. 3/28/84

Approval signatures shall be affixed on the line immediately below the last step in each sequence.

PER. NCR # M-12,382-5 1-13-84

20468

40851

23-7-2000

WPS #	11010	11020
		11021

WDC Serial No.

Drawing No.

AF-1-SB-07R-14

WELD FILLER MATERIAL LOG

Weid No.

FW40C

WELD NO.	DATE	SIZE/CLASS	WELDER SYMBOL	WPS/ICN #	HEAT/LOT # or CODE #	AMT. ISS.	AMT. RT'D.	ISSUANCE APPROVAL
FW 40C	1/3/84	6"x1/2" X E70S-2	A HS	11021 5-0	42508131	1	1	<i>[Signature]</i>
FW 40C	1/3/84	3/32 E70S-2	A HS	11021 5-0	87401	10	10	<i>[Signature]</i> R350
FW 40C	1/4/84	E-70S-2 3/32	AHS	11010 5-0	87401	10	7	<i>[Signature]</i> R-389
FW 40C	1/4/84	E-70S-2 1/8	AHS	11010 5-0	97401	10	5	<i>[Signature]</i> R2434
FW 40C	1/4/84	3/32 E70S-2	A AFK	11010 5-0	G64772 0268227	40	0	<i>[Signature]</i>
FW 40C	1/4/84	3/32 E7018	AHS	11010 5-0	G64772 0268227	40	0	<i>[Signature]</i> R-6291
FW 40C	1/16/84	3/32 E70S-2	AHS	11020 7-0	87401	10	10	<i>[Signature]</i> R250
FW 40C	1/16/84	1/8 E70S-2	AHS	11020 7-0	97401	10	10	<i>[Signature]</i> R608
FW 40C	1/10/84	E-7018 3/32	AHS	11010 5-0	G64772 0268227	50	5	<i>[Signature]</i> R250

WELD

NO.

DATE

SIZE/CLASS

Attachment 4
20470

FW
40C

1/3
/84

6" ¹/₈ X ³/₃₂

E705-2

FW
40C

1/3
/84

3/32

E705-2

F.W.
40C

1/04
12/14
/84

E-705-2

3/32

F.W.
40C

1/04
12/14
/84

E-705-2

1/8

FW
40C

1/14
/84

3/32

E705-2
~~E705-2~~



Brown & Root Inc.

Post Office Box 1001, Glen Rose, Texas 75043

**QUALITY ASSURANCE DEPARTMENT
VISUAL EXAMINATION CHECKLIST**

33-Jul

20471

PROJECT: COMANCHE PEAK JOB NO. 35-1195 UNIT 1 PAGE 1 OF 1

DR. WING <u>AF-1-SB-007</u>	SYSTEM <u>AF</u>	CLASS 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>
WELD/ITEM NUMBER <u>FW-40C</u>	LOCATION <u>EL 805' SB #1</u>	<u>Am 72</u>

Enter NA adjacent to attribute when not applicable. Enter Sat./Unsat. or NA above results in each section 1 through 4 as applicable.

WDC#40851

SKETCH AND REMARKS (S)	Inspector	Level	DATE
<p>1. FITUP (Prior and During)</p> <p>Base Metals _____</p> <p>Joint Design _____</p> <p>Cleanliness _____</p> <p>Card Spring _____</p> <p>Joint Fitup _____</p> <p>Joint Alignment _____</p> <p>Socket Engagement _____</p> <p>Socket End Gap _____</p> <p>Interline Inspection Status <u>NA</u></p> <p><u>DURGE</u></p> <p>Orientation/Direction of Flow _____</p>	<u>34</u>	<u>Sat</u>	<u>1/14/84</u>
<p>2. AFTER WELDING OF ROOT</p> <p>External Surface _____</p> <p>Internal Surface _____</p>	<u>34</u>	<u>NA</u>	<u>35</u>
<p>3. COMPLETION OF WELD (10)</p> <p>Surface _____</p> <p>Reinforcement _____</p> <p>Corrosion _____</p> <p>Cracks _____</p> <p>Unconsumed Insert _____</p> <p>Inc. Fusion (Inc. Penetration) _____</p> <p>Burn-Through _____</p> <p>Undercut _____</p>		<u>NA</u>	<u>35</u>
<p>4. COMPLETION OF WELD (00)</p> <p>Surface _____</p> <p>Reinforcement _____</p> <p>Undercut _____</p> <p>Filler Size <u>NA</u></p> <p>Blending of Surface _____</p> <p>Joint/Welder Indent _____</p> <p>Suitability of Surface for NDT _____</p> <p>Removal of Tapes, Attachments <u>NA</u></p> <p>Surface free from Arc Strikes _____</p> <p>Weld Spatter, etc. _____</p> <p>Purge Cam Removed <u>VA</u></p>		<u>Sat</u>	<u>37</u>

QC Supervision	Date
WQE PROCEDURE QI-QAP 11.1-26	Rev.
CERTIFICATION LEVEL	



QUALITY ASSURANCE DEPARTMENT
MT/PT REPORT

20472*


PROJECT: COMANCHE PEAK JOB NO. 35-1195

UNIT 1 PAGE 1 OF 1

MT PT

WDC/Traveler # 40851

Class 3

Drawing AFI-SB-007  System A.F.

Welds/Item # F.W. 40C Location Ele. 805'-3 3/16" S.G.1 Rm.# 72

Mfg Stage FINAL NDE Procedure No QI CAP 10.2-1 Rev. 3

Equip/Mat'ls Mfg. MAGNAflux Acceptance Std. ASME Sec. III

Penetrant Batch # 814071 Cleaner Batch # 834100 Developer Batch # 82C090

AC Yoke DC Prods NA Model # NA M&TE IRC # NA

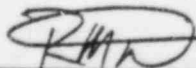
Mat'l Type P-1 Mat'l Thickness 5/16 Diameter Length 6"

Sketch & Comments ID OD

No rejectable indications noted

24

25



1 MR. WATKINS: Mr. Chairman, at a couple of
2 points in Mr. Chaney's motion, he indicates that the tics
3 to which he refers in blowups are more easily visible in a
4 microscope. Mr. Chaney brought his microscope with him
5 this morning but any opportunity for the board and parties
6 to look through it is precluded by apparent damage on the
7 airplane. The microscope isn't working. I will note that
8 Ms. Ginsberg brought the original data about weld data
9 cards.

10 I have a copy of the testimony for the reporter.

11 JUDGE BLOCH: Before Mr. Chaney starts, I would
12 like to state for the record that we have raised
13 informally that before we start the weld data card section
14 of the hearing, that the parties may wish to make brief
15 summaries of their positions in light of the statements of
16 position on the part of the other party. I'm not going to
17 ask for a response on that, but I would like the parties
18 to think about that and respond whether that's a good idea,
19 later in the day.

20 I would also ask of Mr. Roisman whether he has read and
21 whether he will be able to respond orally later in the day
22 for the motion for discovery concerning CASE's alleged
23 investigation into the liner plate documents.

24 MR. ROISMAN: What motion for discovery?

25 JUDGE BLOCH: Okay. Mr. Watkins, that may be

1 something you may like to repair. He apparently hasn't
2 seen your motion.

3 MR. WATKINS: We haven't filed a motion. We
4 filed a request for interrogatories from the Intervenors.

5 JUDGE BLOCH: It's a request for --
6 interrogatories.

7 MR. ROISMAN: I have never seen it.

8 JUDGE BLOCH: You may want to make a copy
9 available as soon as possible so Mr. Roisman won't have
10 that problem.

11 MR. WATKINS: I'll make one available right now.

12 MR. ROISMAN: Mr. Chairman, I also didn't
13 understand what you were saying about the weld data card
14 and a discussion later in the day.

15 JUDGE BLOCH: That was not the weld data cards.
16 That was about the liner plates.

17 MR. ROISMAN: I'm sorry, I thought you had said
18 weld data cards.

19 JUDGE BLOCH: I well may have. I was talking
20 about the liner plates. There have apparently been an
21 exchange of information three times where people were
22 cross each other and intersecting and I would like to know
23 later in the day whether the parties would discuss with us
24 whether we ought to start that portion of the proceedings
25 with a current summary of the positions of each of the

1 parties.

2 Please proceed with cross, Mr. Roisman.

3 CROSS-EXAMINATION

4 BY MR. ROISMAN:

5 Q Mr. Chaney, when you were originally made aware
6 of the weld data card and information about which you
7 testified today, what was your understanding of what you
8 were supposed to do with the information that you received?

9 A I was informed that I was to make a
10 determination regarding the deletions or the alterations
11 on the weld data card and the numerals that had been
12 placed above it and the initials; and I was to advise
13 Mr. Watkins what my opinion was, whether these initials
14 and the altered dates were in fact written by the same
15 person who had written the other entries on that
16 particular date.

17 Q Did Mr. Watkins explain to you the nature of the
18 controversy?

19 A No, sir, he did not.

20 Q Did he indicate to you what result it was that
21 favored his client?

22 A No, sir.

23 Q When you did your investigation, did you look
24 for dissimilarities as well as similarities between the
25 various markings on the paper that you were trying to

1 determine the authenticity of?

2 A Yes, sir, I did.

3 Q What dissimilarities did you note between the --
4 let's start with your Exhibit Number -- attachment 3 to
5 your testimony. What dissimilarities did you note between
6 the markings that are crossed through, through number "14,"
7 and a writing of the number "17" directly above it, on the
8 one hand; and the writing of the date "1/17/84" with the
9 initials "JS" next to it. What are the dissimilarities
10 between those two?

11 A None.

12 Q There are no dissimilarities at all?

13 A No, sir. Not in my opinion.

14 Q Well, let's take a look at what is the fourth
15 line of attachment 3. Do you have that?

16 A Yes, sir.

17 Q If you look at the number "1" next to the "17"
18 in the full date, "1/17/84," it would appear, at least to
19 my untrained eye, that the bottom of the number "1" is
20 curved slightly to the right, whereas the same number "1"
21 in the "17," written above the "14," the "1" ends straight
22 down. Do you notice that?

23 A Yes, sir. But this is what we consider a
24 variation in the writing.

25 If you'll notice, in all of the "1s" on that particular

1 exhibit, attachment 3, you'll notice that on "Stanford
2 1/14/84," before the first deletion, the "1" -- both of
3 the "1s" in "1/14" are both curved to the right; and also
4 in the "Stanford," before the deletion was made, the "1"
5 and then the "14" were both curved to the right. A person
6 has variations in their writings. In my estimation, in
7 the variation in the first one where there is no curve to
8 the right, the "1" is the reason for the fact that there
9 was such heavy pressure used on the pen when this
10 particular "1" was placed down. Also on that and the "7."

11 Q So that it's your testimony that a person who
12 bears down will not follow the same track as they would
13 follow if they were not bearing down?

14 A Yes, sir. Because you don't have the fluidity
15 of movement. You are writing so heavy, your indentation
16 is so heavy, that you don't have that little upward tic
17 that you normally have when you are writing when it's very
18 fluid.

19 Q Why, then, is there an upward tic on the cross
20 lines between the "14s" and on the upper part of the "7,"
21 the left-hand side of each of the "7s" written above the
22 "14s"?

23 A Well, if you'll notice the "7" is not as heavily
24 written as the "1" -- in the first "1," in the "17." The
25 "7" is not nearly as heavily indented as the "1." The "7"

1 is more heavily indented. Of course the tic on the "7" on
2 the first deletion or alteration is -- does appear there,
3 does appear down below where it's initialed on "1/17/84"
4 and also in the altered "17/84," in the last one.

5 Q I'm not sure that answered my question. Why is
6 it on the "17" -- instead of calling them first and second,
7 let's refer to the line that they are on on attachment 3,
8 if that will be all right with you.

9 A Yes, sir.

10 Q On the fourth line, the "17" that is written
11 immediately above the "14," why is that "17" -- which
12 appears if anything that the "7" is darker than the "1" --
13 why does that "17" have a tic at the beginning if your
14 premise is right that when you bear down, you don't put in
15 your tics?

16 A In my opinion, the fact that there's no
17 difference -- he makes "7s" differently throughout the
18 exhibits. If we look at other exhibits, attachment 5 and
19 6, attachment 5 in particular, you'll find "7s" that do
20 not have a tic. So in my opinion, this is a variation of
21 this type of writing.

22 Q Did you take blowups of attachment 5?

23 A Yes, sir, I did.

24 MR. ROISMAN: Are these able to be put in?

25 MR. WATKINS: I think you have multiple copies,

1 don't you, Mr. Chaney?

2 THE WITNESS: I just have the one copy of each.
3 These are blowups of different portions of attachment 5.

4 MR. WATKINS: Mr. Chairman, we can put these in.
5 They do Xerox quite well. Or alternatively we can supply
6 the board and the parties with additional copies later.

7 MR. ROISMAN: I don't care. Xeroxes are all
8 right, as long as we mark so the record will show what we
9 are talking about. At this point we are talking about an
10 unmarked document.

11 Let's start with this and --

12 JUDGE BLOCH: I'm not sure that a Xerox of this
13 will do. The pictures are going to be a lot clearer on
14 the kind of detail that we are talking about than a Xerox.

15 MR. ROISMAN: At the moment, I would just like
16 to get the reporter to mark this as Exhibit 1 to the
17 witness' testimony so that we'll be able to call it
18 Exhibit 1.

19 MR. ROISMAN: Okay. We'll mark it on the back,
20 please.

21 MR. ROISMAN: And I take it you are going to
22 talk about this one also?

23 THE WITNESS: Yes, sir. All of these. These
24 are all from attachment 5.

25 MR. ROISMAN: But these are the only two that

1 have "7s" on them?

2 THE WITNESS: No. This one here also.

3 MR. ROISMAN: I'm going to give the reporter to
4 mark with the board's permission Exhibits 1, 2, and 3.
5 Exhibit 1 is an attachment of portion 5, which is a
6 photograph, and has on the right-hand side of it, page 1
7 of 1, is a noticeable marking on that.

8 Exhibit 2 is also a photograph of a portion of
9 attachment 5, and has on the upper part of it: "1 inch JLL
10 document examiner" which appears to be superimposed on the
11 document.

12 And Exhibit 3 is a substantially larger photograph
13 which shows the signature "J Stanford," and a date, "1/17/84"
14 on it, and I would ask the reporter simply to mark those
15 three and then I will examine the witness as to them.

16 (Exhibits 1, 2 and 3 identified.)

17 JUDGE BLOCH: Mr. Chaney, do I understand your
18 earlier statements to be to the effect that you had no
19 idea at all, one way or the other, whether you were --
20 whether your client wanted you to conclude that you would
21 find that these handwritings were the same or different?

22 THE WITNESS: That's true. That's right, sir.

23 BY MR. ROISMAN:

24 Q Mr. Chaney, I'm now going to give you back what
25 now has been marked by the reporter. Would you identify

1 these -- identifying these, now, tell me what you said
2 before about attachment 5 so we are clear on it, please?

3 A Yes, sir. Attachment 5 has a number of
4 exemplars, or what we call "standards," of the writing of
5 Mr. Stanford, which were used on that one document. In
6 addition to his signature and the writing of the word
7 "sat," there were several numerals on there that were used
8 as standards of his writing on that particular document.
9 At least they were given to me as writings -- Mr. Stanford's
10 writing.

11 Q All right.

12 A If you'll notice, in the upper portion of the
13 attachment 5, the first item appearing on there, with the
14 "007" the "AF-1-SB-007."

15 JUDGE BLOCH: This is on attachment 5?

16 THE WITNESS: Yes, sir. The Brown & Root
17 Quality Assurance Department --

18 JUDGE BLOCH: Thank you.

19 THE WITNESS: -- Visual Examination Checklist.

20 The second "7" appearing on that document appears on
21 the next line, which says "room 72." Then the third "7"
22 appears at the bottom where it's signed "J Stanford, II
23 Level, 1/17/84."

24 BY MR. ROISMAN:

25 Q These photographs that we have marked Exhibits

1 1, 2, and 3 are blowups of these three portions of
2 attachment 5 that show where the "7s" have been written;
3 is that correct?

4 A That's correct, sir.

5 Q And it's your testimony that in these, the tic
6 at the beginning of the "7" does not appear, and thus that
7 it's not surprising that Mr. Stanford did not have a tic
8 on the "7" that he wrote, according to your testimony, on
9 line 4 of attachment 3 immediately above the crossed-out
10 "14"; is that correct?

11 A That's correct, sir.

12 Q Do I see that in looking at what has been marked
13 as Exhibit 3, that the "17" there has a tic on the bottom
14 right of the "7"; is that correct?

15 A That's correct, sir.

16 Q And that the "17" that appears on line 4 of
17 attachment 3, immediately above the "14," while it has a
18 tic at the beginning has no tic on the bottom right; is
19 that correct?

20 A That's correct, sir.

21 Q So you are telling us that Mr. Stanford
22 basically produces an uneven writing style? That it does
23 not have a common characteristic with regard to the "7"
24 that varies throughout all of his writings of the "7"; is
25 that correct?

1 A That's correct, sir.

2 Q Does that make it more or less probable that you
3 would be able to determine whether a particular "7" was in
4 fact written by him or by somebody else?

5 A It makes it more probable that, because he does
6 have variations in his "7" -- no person writes the same
7 way the second time -- that he does have variations, that
8 he puts a tic -- on occasion; he doesn't put the tic on
9 occasion. But the style of the "7," the style of the
10 numeral is similar in all respect to the "7s" that are in
11 question on attachment 1.

12 Q I'm just talking now about the tics?

13 A Yes, sir.

14 Q Given that he has one sometimes, in your
15 testimony, and sometimes he does not, does that make it
16 easier for you to use the tic as a characteristic for you
17 to identify his "7" or less easy for you to use the tic to
18 identify the "7" as being his "7"?

19 A It's easier for me to identify with the tic.

20 Q Even though sometimes he doesn't have a tic?

21 A That's true.

22 Q I'm not sure I understand that. Can you explain
23 that a little bit?

24 A Yes. If you'll notice on his writing on
25 attachment 1, on the items in question except for the

1 first --

2 Q I'm sorry, attachment 1 or attachment 3?

3 A Attachment 3. I'm sorry. The blowups --

4 Q Right.

5 A The fourth line there, the first "7" -- "1" --
6 appear to have no tic. If you'll notice the "17" --
7 "1/17" -- directly opposite the initials, opposite that
8 first alteration, you'll notice that the "7" at the bottom
9 has a tendency to lean to the right which is indicative of
10 the fact that there is probably or would probably have
11 been a tic at the end.

12 Also, on the "7" immediately below that, you see where
13 it leans to the right, the bottom portion of the "7." And
14 the "7" at the end there, where the initials "JS 1/17/84,"
15 it bends to the right, which is indicative of the fact
16 that it would be a tendency to have a tic there for some
17 reason but you can't see it to the naked eye or through
18 the microscope.

19 Q But then, when you don't see the tic, doesn't
20 that confound the problem, as you don't on the "17" that's
21 written directly above the "14" on the fourth line?

22 A Not necessarily; because of the standards that
23 we have where he doesn't have the tic. So, you have to be
24 prepared, if he does use a tic or if he doesn't use a tic,
25 that you have to have standards of known writing of his

1 where he does or he doesn't. And there are standards in
2 here which show that he does use a tic on occasion -- most
3 of the time. But some of the time he does not.

4 Q Well, then, if you had another person who was
5 writing the "7" instead, and that was a person who never
6 used the tic, and you saw a "7," and all we are looking at
7 is the existence or absence of a tic; that wouldn't be
8 able to tell you whether just the existence or the absence
9 of the tic -- wouldn't be able to tell you whether it was
10 Mr. Stanford or this other person who doesn't ever use a
11 tic when they write the "7"; isn't that correct?

12 A Partially. But mainly when we use the "7" in
13 this fashion, if a person were writing a "7" or trying to
14 simulate his "7" to look like his "7," they would be
15 drawing it rather than -- they would have pen lifts or
16 they would have stops in the numeral -- what we call a "pen
17 lift" is where they have to stop the pen, and when you try
18 to simulate somebody's writing you have to pick up the pen
19 because you don't know which way you are going when you
20 are copying some feature of the handwriting or somebody
21 else's numeral. You are copying somebody else's writing
22 so you don't have the fluidity or you don't do it
23 automatically as Mr. Stanford would do, which would be
24 indicated because this person would have a break or a stop
25 in the writing of the numeral which would be indicative of

1 the fact that it was not Mr. Stanford's "7."

2 JUDGE BLOCH: That was interesting, but there is
3 actually no suggestion that anybody was trying to imitate
4 Mr. Stanford's writing.

5 THE WITNESS: I'm sorry, Judge, but I thought if
6 he suggested if someone else were writing the "7" --

7 JUDGE BLOCH: Exactly. But he said if somebody
8 else were writing, not imitating.

9 BY MR. ROISMAN:

10 Q If you had somebody whose natural style of
11 writing a "7" did not have a tic at bottom and they had
12 written a "7" on the page and all you were looking at was
13 the tic part, to distinguish it, or the non-tic part, and
14 you are looking at Mr. Stanford who sometimes uses a tic
15 and sometimes doesn't, how would the absence of the tic on
16 that "7" tell you that it was Mr. Stanford who had written
17 it?

18 A Because of the similarity in the "7s." It would
19 be very unusual --

20 Q You mean other aspects of it?

21 A Yes.

22 Q The tic would become irrelevant then; wouldn't
23 it?

24 A In some regards; yes, sir.

25 Q Not in some; in all regards it would be

1 irrelevant and you would have to look at another feature
2 of the "7" to match it up to Mr. Stanford; isn't that
3 correct?

4 A That's true. That's why you have variations in
5 the writing of the numeral. Yes, sir.

6 Q Now, we started off by asking about whether
7 there were any differences between any of the writing.
8 And I believe you started by first telling me, no, there
9 were no differences. But now I think we have already
10 identified one, that is that some of the "7s" do have the
11 tic and some don't. Although in your opinion they are all
12 written by Mr. Stanford; correct?

13 A Yes, sir. I don't call it a difference. I call
14 it a variation.

15 Q Okay. Would you give us your definition of
16 "difference"?

17 A A "difference" is where there is no similarity
18 to the writing of the "7," or between the "7s" that
19 Mr. Stanford makes and the "7" on the document.

20 Q All right. Then let me rephrase my question.
21 What variations did you find between the "17" written
22 above the "14," on line 3, and the "17" written above the
23 "14" on line 4 of attachment 3; and other "17s" that you
24 believe were written by Mr. Stanford? Either the "1" or
25 the "7"?

1 A The variation would be that he uses a tic at the
2 beginning, sometimes at the end. These are the variations,
3 at the beginning of the "7" or at the end of the "7," or
4 at the "1" -- the beginning of the "1" or the end of the
5 "1." So these are indicative of the fact that these --
6 these are called variations in writing.

7 Q And that's the only variations that you
8 identified?

9 A Yes, sir. But they are not differences in my
10 opinion.

11 Q Okay. I didn't want to get into a semantic
12 struggle with you.

13 Now, what about looking at the "17" on line 4 right
14 above the "14," and then look at the "7" written
15 immediately above that "17."

16 Isn't the top line of the "17" that's on the lower part
17 of the line substantially shorter than the top bar of the
18 "7" that's written in the upper portion of line 4 of
19 attachment 3?

20 A Yes, sir.

21 Q And isn't that a variation?

22 A Yes, sir.

23 Q So that's another variation that he has in his
24 style?

25 A Yes, sir.

1 Q Now, looking at the "17" that appears on what
2 has been marked as Exhibit 3, the large photograph to your
3 right that we just marked a few moments ago --

4 A Yes, sir.

5 Q -- the "7" that's written there has a certain
6 swoop up, doesn't it? From the cross bar, before it goes
7 to the down stroke?

8 A Sort of a curve; yes, sir.

9 Q Yes, sir. Now that's a variation also on the "7,"
10 isn't it, that we don't see on the "7s" that appear on
11 attachment 3?

12 A Yes, sir.

13 Q So that's another variation?

14 A A variation of his "7."

15 Q When, in your opinion, does a variation rise to
16 the dignity of being a difference?

17 A When it's written completely differently from
18 the "7" of the individual. That's why we have to look at
19 as many known standards of the individual whose writing is
20 in question, to be able to be sure that there are -- that
21 he does have these variations in his writing.

22 Q How many samples of Mr. Stanford's writing did
23 you look at, other than what is actually attached to your
24 testimony?

25 A All of the standards that are attached -- are

1 the only standards that I had to examine.

2 Q In your normal work, would you normally seek
3 more samples of the person's signature, or writing as the
4 case may be, in order to more carefully pin down your
5 opinion?

6 A On occasion; yes, sir. But there appears to be
7 a sufficient number of standards of his writing for
8 comparison here on these documents.

9 Q Well, as I understand it now we have, looking at
10 your attachment 5, it would appear that on attachment 5,
11 that the "7" in the upper left-hand corner, which is
12 marked Exhibit 2, I believe --

13 A That's correct; yes, sir.

14 Q Okay. -- that that "7" is written with the
15 cross bar of the "7" pretty much horizontal, with a much
16 longer vertical line in comparison to the horizontal line.

17 That on Exhibit 1, which is the blowup of the next "7"
18 that appears on attachment 5, the cross bar is slanted
19 downward, is longer by some substantial margin than the
20 first "7"; and that the third "7," which is on Exhibit 3,
21 the third "7" on attachment 5 has an upward curve before
22 the down stroke and has a short cross bar before the down
23 stroke; and that no -- that those three "7s" are not the
24 same. That they are all, at least, variations if not
25 differences?

1 A They are variations. Yes, sir, that's true.
2 These are variations of his writing.

3 Q Don't you reach a point with someone where their
4 writing is so varied that you're not able to say with any
5 confidence that a particular mark that you find is made by
6 them?

7 A No, sir, I haven't.

8 Q You have never experienced that?

9 A No, sir, I haven't.

10 Q And would you say that the "7" that appears on --
11 looking at attachment 3, now -- that the "7" that appears
12 on line 3 and the "7" that appears on line 4 immediately
13 above the crossed-out "4s," that those "7s" represent
14 Mr. Stanford's predominant "7"? The one that he most
15 frequently writes?

16 A I would say so; yes, sir.

17 Q Can you show me other places where a "7" with
18 the same characteristics appears on the documents that you
19 looked at? Let's start with the "7" that appears above
20 the "4" on line 4. That's a "7" with a tic at the
21 beginning, no tic at the end, and a certain ratio and
22 slant to the horizontal and vertical lines?

23 A Yes, sir. The "7" on Exhibit 2, which is taken
24 from attachment 5 at the top, the "007"; the tic appears
25 under the beginning stroke rather than at the top of the

1 "7" -- appears at the bottom.

2 Q That's a variation; correct?

3 A That's a variation of his writing. But other
4 than that, the "7" there appears strongly similar to the "7"
5 on Exhibit 2; in my opinion.

6 Q Is it the slant, if you will, the angle between
7 the vertical part of the "7" and the horizontal part of
8 the "7" -- isn't it substantially narrower? It's a
9 narrower angle on the "7" that appears on line 4 of
10 attachment 3 than the "7" that appears in Exhibit 2, which
11 is the Attachment 5 "7"?

12 A Somewhat. But not enough to be disturbed as far
13 as I'm concerned.

14 Q But it's a variation; correct?

15 A It's a variation.

16 JUDGE BLOCH: Mr. Chaney, have you ever
17 participated in any double blind determinations of the
18 accuracy of your observations?

19 THE WITNESS: Double blind, Judge Bloch?

20 JUDGE BLOCH: Yes, sir. Do you know what that
21 is?

22 THE WITNESS: No, sir, I don't.

23 JUDGE BLOCH: Have you ever had an experimental
24 method applied to determine the extent to which you were
25 able to accurately differentiate handwriting samples from

1 a basic sample?

2 THE WITNESS: No, sir.

3 BY MR. ROISMAN:

4 Q Mr. Chaney, when you undertake the task of doing
5 a handwriting analysis, is there a standardized set of
6 procedures that you go through in order to make your
7 determinations?

8 A Yes, sir, there is.

9 Q Would you please describe those to us in as much
10 detail as you can?

11 A Yes, sir. Where the original document in
12 question is available, we examine the original document
13 under the microscope -- I'm sorry it's not working today.
14 And -- to look at the items that the naked eye cannot see.

15 After you examine the item under the microscope, you
16 then compare the initials or dates or numerals, or
17 whatever is in question, with any known standards, to see
18 whether or not -- or any pen lifts, tics, or whatever may
19 occur in that particular writing. And then past that, we
20 make our photographs, and then we develop our film and
21 make our enlargements, and make a further comparison.

22 Q And do the photographs give you something that
23 you don't get out of the microscope or do they just give
24 you a record of what you were seeing in the microscope?

25 A It gives you a pictorial record of what you've

1 seen, because the microscope only covers a certain area.

2 Q But it's not -- the process of photographing it
3 doesn't give you another dimension of detail; is that
4 correct?

5 A No, sir. It just shows you what you've really
6 seen under the microscope. It's four times larger than
7 the regular document or the item itself.

8 Q Now, how do you decide whether you are going to
9 get 20 standards, which I take it is your term for meaning
10 samples of the signature or samples of the writing of the
11 particular person; whether you want 20 of them or two of
12 them or 200 of them, in order to make your analysis? What
13 factors enter into that consideration?

14 A Where you find wide variations or differences
15 that you have to either prove or disprove.

16 If you have one difference in handwriting, you have to
17 assume it was written by somebody else. If there's one
18 difference -- significant difference -- that you can't
19 account for in handwriting examination, you have to assume
20 it was written by some other individual.

21 Q Is the presence or absence of a tic a difference
22 in that sense?

23 If you only had two things to look at, one where a
24 person had written a "7" with a tic, and another where a
25 person had written a "7" without a tic, would the absence

1 of the tic, just looking at those two, be at that point a
2 difference that would require you to have to look further?

3 A Yes, sir.

4 Q And the way you would do that is look far enough
5 to see if you couldn't find that this individual sometimes
6 used this tic and sometimes didn't, in order to make the
7 difference become nothing more than a variation? Is that
8 the process you go through?

9 A Yes, sir.

10 Q So the more variations that you discover, the
11 more samples you have to get so that you can make sure
12 that the variations fit within the universe of writing
13 styles that are used by the person in question; is that
14 correct?

15 A That's correct. Yes.

16 Q Now, how can you -- I take it that if we get
17 enough variations in one person's writing style, it ranges
18 over a wide enough area that we could, then, overlap the
19 writing style of another person who writes the same way,
20 or within that range of variations; isn't that correct?

21 A It's possible; yes, sir.

22 Q In other words, that person A's natural way of
23 writing a "7" includes so many variations that person B's
24 natural way of writing a "7" is at least similar to one
25 way of writing a "7" that person A has; isn't that correct?

1 Q How do you know whether you are in that realm
2 when you are doing your examination? How do you know that
3 you haven't in fact got, within the variations of person A,
4 a style which is the same as person B?

5 A By other items which are in question on the same
6 document. The "84s" -- the items that are in question and
7 the items that are standard -- in other words, you just
8 don't go on one, identification of one "7." It would be
9 difficult because two people could write it very similarly.

10 Q But looking here, now, let's take a look at our
11 attachment 3 for a moment.

12 Now, on attachment 3, the only numerals in question are
13 the "1" and the "7" that are written above each of the two
14 crossed-out "14s"; and the other mark that's in question
15 is the cross-out itself of the "14."

16 A Marked in.

17 Q Now you and I have been just focusing on the "7"?

18 A The bar.

19 Q The bar?

20 A Yes, sir.

21 Q All right. Now, my question to you is: How can
22 you know -- let's just focus on the "17" -- on the "7" for
23 a moment -- how can you know that that "7," which is one
24 of a variety of "7s" that are written in your judgment by
25 Mr. Stanford, that that "7" is not a "7" actually written

1 by someone other than Mr. Stanford who happens to fall
2 within Mr. Stanford's wide variation of "7" writings?

3 A My only opinion in that regard is that I know,
4 based on previous experience of previous numerals of this
5 type, that it would be extremely rare for someone to come
6 along and write a "7" similarly, that works with an
7 individual, that would write it so similar to the other
8 individual who is writing unless they were simulating the
9 "7," trying to copy the "7."

10 Q Let's look at the two "7s" that are written
11 directly above the crossed-out "4s" on lines 3 and 4 on
12 attachment 3.

13 Isn't it a fair statement that those two "7s" are more
14 similar to each other than those two "7s" are similar to
15 other "7s" written by Mr. Stanford?

16 A Somewhat; yes, sir.

17 Q Well, go ahead and explain to me what you meant
18 by "somewhat." Isn't it exactly the case that those two
19 "7s" are more like each other than either of them are like
20 the "7s" that appear on attachment 5 and that are shown in
21 the blowups of exhibits 1, 2, and 3?

22 A Except the second "7" on the second item that
23 was stricken out, the third -- in the third "17," it bends
24 to the right where the one -- the one at the beginning,
25 the "7" does not bend at all. It is very rigid.

1 JUDGE BLOCH: I couldn't tell which ones you
2 were referring to.

3 THE WITNESS: Sir? This is, item 4 is the first
4 cross-out.

5 MR. ROISMAN: Just a moment. The first line
6 that has a cross-out on it is the third line of attachment
7 3?

8 THE WITNESS: That's line 5, I think, on the --

9 MR. ROISMAN: Let's just use the line numbers as
10 they appear on attachment 3.

11 THE WITNESS: It would be line 3, then.

12 BY MR. ROISMAN:

13 Q Looking at line 3 on attachment 3, what do you
14 want to tell us about that "7"?

15 A That "7" does not bend at the end. It has no
16 room -- it comes rigidly and comes straight down without
17 any kind of bend or any kind of curve to the right.

18 Q Now tell me about the --

19 A And the "7" on the item 6 does, just above the --

20 Q You don't mean item 6. I'm sorry. Line 4 of
21 attachment 3?

22 A Line 4; yes, sir.

23 Q I'm sorry to keep interrupting you, but it's
24 going to be so hard to follow -- are you talking about the
25 "7" that is immediately above the "14"?

1 A Yes, sir.

2 Q And now what do you want to say about that "7"?

3 A The ending "7" bends to the right, curves to the
4 right.

5 MR. ROISMAN: Ms. Ginsberg, may I have the
6 original, please?

7 (Discussion off the record.)

8 JUDGE BLOCH: Let the record reflect that during
9 the break Mr. Roisman handed the witness a copy of the
10 original document involved.

11 MR. ROISMAN: Not a copy. "The original."

12 JUDGE BLOCH: Excuse me. The original document.

13 BY MR. ROISMAN:

14 Q Mr. Chaney, what I wanted to ask you is, with
15 regard to the "17" that appears on line four of attachment
16 3, looking now at that line on the original, how is it
17 possible to tell, since the end of the "7" runs into an
18 upward line coming from the 14 below it, whether what
19 appears to be a bend to the right is caused by the writer
20 or is caused by the blurring of the line from the "4" and
21 the "7" together?

22 A By the heavy indentation of the ink that was
23 used in the movement of the "7" going down to the "4."

24 Q Have you looked at the rear of that?

25 A Yes, sir.

1 Q Does the rear impression of the "7" also show
2 the slight curve to the right?

3 A It's hard to tell without having the side
4 lighting on the document, which we had with the microscope
5 before, as to whether -- but you can see the heavy
6 indentation of the "7" going down. But I can't see the
7 bottom part of the "7". But I can in the face -- the face
8 of the document.

9 Q So that there is that variation between the "7"
10 that appears on line 3 of attachment 3, and the "7" that
11 appears on line 4 of attachment 3; is that correct?

12 A In my opinion; yes, sir.

13 Q And is it also your opinion that that variation
14 is a more significant variation than the variations
15 between either of those two "7s" and the three "7s" that
16 appear on attachment 5, and are shown in the blow ups,
17 Exhibits 1, 2, and 3?

18 A It is just significant in the fact that he does
19 make these variations. He has variations.

20 Q I know. But my question is, is that a more
21 significant variation between those two "7s" than between
22 both of those "7s" on the one hand and the three "7s" on
23 attachment 5?

24 A In my opinion; yes, sir.

25 Q Can you explain that to me a little bit?

1 Looking -- let's look at the "7" that appears on Exhibit 3,
2 which is the last "7" on attachment 5. That's the one
3 that has the upward swoop to it. Do you have that in
4 front of you?

5 A Exhibit 3?

6 Q Not attachment 3 but Exhibit 3.

7 A Exhibit 3.

8 Q It's the big photo, Mr. Chaney.

9 A Here. Yes, sir.

10 Q Isn't that upward swoop a very significant
11 variation, compared to a tic? Or a tendency of a line to
12 move slightly to one side or the other?

13 A I don't think -- it's a variation. I wouldn't
14 call it any more significant. He just has that variation
15 in his writing of the numeral, either straight or curved --

16 Q But --

17 MR. WATKINS: Would you let the witness finish,
18 please?

19 JUDGE BLOCH: Sustained.

20 THE WITNESS: Either straight or curved,
21 evidently this is one of his variations in writing.

22 BY MR. ROISMAN:

23 Q All I'm saying is it takes more -- more movement
24 of the hand to a different position in order to make that
25 variation in that "7" than it does to have or not have a

1 slight curve at the bottom of the straight line of the "7";
2 doesn't it?

3 A Yes, it does.

4 Q And, by the same token, looking at the Exhibit 1,
5 which is the -- one of the blowup photographs of the "7"
6 on attachment 5, making a "7" with such a long vertical --
7 excuse me -- horizontal line, as compared to the length of
8 the vertical line; that, too, requires substantially more
9 hand movement by the writer than does slightly curving or
10 not curving the vertical line of the "7"; doesn't it?

11 A Yes, sir.

12 Q And looking at the "7" which appears on Exhibit
13 2, which is a blow up of the first "7" on attachment 5,
14 making the vertical -- excuse me -- making the horizontal
15 line more parallel to the line on which the "7" is written
16 also involves a larger amount of change in the way in
17 which the writer writes it than a very small change at the
18 very end of the "7," as it appears on attachment 3; isn't
19 that true?

20 A Yes, sir.

21 JUDGE BLOCH: Mr. Chaney, is the variation in
22 handwriting reduced when people press hard?

23 THE WITNESS: Yes, sir, because the heavier
24 pressure they put on, of course they don't have the
25 fluidity of movement. It is more of a straight -- it's a

1 drawing type thing. And it makes it heavier. And just,
2 for whatever reason, whether it's what they are writing on
3 or their mental attitude, of course the mind guides the
4 hand, tells what you to write, what you are doing, stress,
5 whatever --

6 JUDGE BLOCH: So if you felt stress at a
7 particular time you would expect less variation in the
8 "17s" that you were writing?

9 THE WITNESS: Yes, sir.

10 BY MR. ROISMAN:

11 Q Just one last question, or at least I think one
12 last question on these "7s," I was noticing that there's a
13 "7" that appears on attachment 5. Do you have attachment
14 5 there in front of you?

15 A Yes, sir.

16 Q Down near the lower right-hand corner that I
17 believe you have testified was written by your
18 photographer or your assistant, as a way of identifying
19 different photographs -- isn't that correct?

20 A Yes, sir, that's correct.

21 Q Now, I take it that that "7," which has -- it
22 looks to me like a little curlicue at the beginning of it,
23 a down stroke, a circle, and then out to the "7" -- that's
24 a fairly distinctive "7"; is it not?

25 A Yes, sir.

1 Q I mean if that person normally wrote all of his
2 "7s" that way, you would spot that rather obviously if you
3 were looking at a writing, trying to find out: Did he
4 write the "7"; isn't that correct?

5 A Yes, sir.

6 Q Isn't it true that the kind of "7s" that
7 Mr. Stanford writes, doesn't have anything quite so
8 obviously distinctive about it? It's more -- everybody
9 writes "7s" pretty much like that; don't they?

10 A I'd say about half the people. Although a lot
11 of people use a little -- a little downward stroke at the
12 beginning of the "7," before they go to make the upper bar
13 of the "7," and coming down.

14 Q Right. But his is a fairly common "7," in terms
15 of just the basic style of it; isn't it?

16 A Yes, sir. As far as I'm concerned it is very
17 common.

18 Q In your work do you regularly have occasion to
19 try to develop a level of confidence as to the accuracy of
20 your opinion? Is that a standard part of your work?

21 A Yes, sir.

22 Q And how do you go about determining what your
23 level of confidence is, once you have reached an opinion
24 and you say: Okay, my opinion is this; how do you give it
25 a confidence level?

1 A Before I reach a final -- first -- final
2 decision, I look at it two or three times before I reach a
3 final decision. And once I get -- make that decision, I'm
4 pretty confident in my own mind that this is the item I'm
5 looking for, or that this person wrote this item, or
6 whatever.

7 Q My question was, among the different opinions
8 that you have over the course of your work, not just this
9 particular situation, are there some in which you have a
10 greater degree of confidence that you are right than
11 others?

12 A Yes, sir. Some are more obvious than others.

13 Q How would you rank this one? That is, how would
14 you rank your opinion that the "1" and the "7" were
15 written by the same person who wrote the "1" and the "7"
16 which appears next to the initials? High? Medium? Low?
17 Average? What?

18 A Because of the variation in the writing, I would
19 rate it high. I was confident. I have confidence.

20 Q Because of the variations?

21 A Yes, sir.

22 Q I would have thought that if there were no
23 variations in writing and a person always wrote their "7"
24 the same way, that that would give you a higher confidence
25 than it would if there were variations; why isn't that so?

1 A Yes, sir, I'm sure it would be higher. But you
2 are talking about high levels. I feel pretty confident
3 with this.

4 Q But you would use the qualifier "because of the
5 variations you had high confidence"; and it seems to me
6 that based upon what you have said, that the more
7 variations there are the lower your confidence level
8 should be; isn't that true?

9 A If you can't prove that he has these variations
10 or you don't find the variations in his writing; yes, it
11 would be.

12 Q No. I didn't mean that. Assuming that you've
13 got a person and he writes "7s" 11 different ways. And
14 you find a "7." And you find in all of his writing that
15 that "7" is one of the kinds of "7s" that he writes.

16 Don't you have a lower degree of confidence that he
17 actually wrote that "7" than you would have you had an
18 individual who always wrote the "7" exactly the same way,
19 and you found the "7" matched all of their other "7s"?

20 A Possibility; yes, sir.

21 Q Isn't it not possibility -- it is the case,
22 isn't it that you would have a lower degree of confidence
23 when a person had 11 different ways of writing their "7"
24 than if a person had only one way of writing their "7"?

25 A Yes, sir, it's probably true.

1 Q Not just probably true -- it is true; isn't it?

2 A Well, I don't know. There again you are dealing
3 with cases -- if I can prove -- if there are 11 variations
4 in the way a person does his "7" and I can find where he
5 does this in all of his writing, then I would say I was
6 100 percent sure. If I can only find one "7," and the "7"
7 in question doesn't match one of his variations I wouldn't
8 be very confident. I'd say he didn't do it.

9 Q I understand. I'm talking about the case where
10 he has 11 different ways of writing a "7" and you have
11 found the "7" that is written and it matches one of those
12 11 different ways. And I'm asking you isn't there going
13 to be less confidence that that "7" was written by the
14 person who has the 11 variations than in another case, all
15 other things being equal, where you have a person who
16 writes all their "7s" exactly the same and you get a "7"
17 and you see that it matches the way they always write
18 their "7s"?

19 A In that case I would probably say you are right.

20 Q I would like to direct your attention to page 7
21 of your testimony, please?

22 A Yes, sir.

23 Q In particular, answer "17." You are being asked
24 whether or not you can tell whether the same instrument
25 was used to write the "17," and the cross-out, as is used

1 to write either what is being crossed-out or what's above
2 it where the initials appear. And your answer is: I
3 cannot, however, determine whether all of these writings
4 were made by the same pen.

5 Do you mean there is no technique available that you
6 could have used? Or that you didn't use the technique
7 that was available?

8 A We don't have -- we don't test inks. It's a
9 very difficult process. And the only ink testing document
10 examiners are with the Alcohol and Tobacco Tax Unit here
11 in Washington, D.C. and of course they only work on
12 criminal cases or this type. So we don't have the
13 feasibility to submit ink tests to them to test the inks
14 to see whether it's the same type of pen.

15 Q But there's -- I'm sorry, go on?

16 A There's so many different types of ballpoint pen
17 it's difficult to tell. Any pen you get, it may be the
18 same type of pen but it may have a different filler or
19 different refill-type pen in it, which might give it a
20 different color of ink.

21 MR. ROISMAN: Mr. Chairman, are you looking for
22 the original?

23 BY MR. ROISMAN:

24 Q But I take it, it's not an unheard-of process to
25 take a scraping of the ink off of the paper and subject it

1 to chemical analysis and determine whether or not it is
2 the same ink, is it? I understand you didn't have it but
3 it's not an unheard-of process?

4 A No, sir, it is done.

5 Q And it doesn't only get done by alcohol tobacco
6 people, it could be done by any sophisticated chemical
7 laboratory, couldn't it?

8 A Yes, sir. If they had the proper equipment.

9 Q When you say it can't be done you mean that
10 given what you have available as tools, you don't have the
11 ability to do that?

12 A Yes, sir. I can't. I don't have the
13 feasibility or the money for the equipment.

14 JUDGE BLOCH: Mr. Chaney, can you tell whether
15 the cross-out and the "17" above the line was written with
16 the same backing under the sheet as the other one? With
17 the initial next to it?

18 MR. WATKINS: Could you explain? I'm not sure I
19 understand the question.

20 JUDGE BLOCH: Do you know whether the document
21 was resting on the same material when the two marks were
22 made? That is, the cross-out in the "17" above, as
23 opposed to the initialing and the date underneath.

24 MR. WATKINS: Your Honor, we'll stipulate he
25 doesn't know. I believe your question should be: Does he

1 have an opinion?

2 JUDGE BLOCH: Yes. Do you have an opinion as to
3 whether they were made with the same backing under the
4 document?

5 THE WITNESS: I have no reason to believe that
6 they weren't, sir. I can't say for sure but because of
7 the heavy indentation that appears on the back of the card
8 itself, it is indicative of the fact that it was probably
9 done at the same time. But I can't tell that for sure.

10 JUDGE BLOCH: You say you have no indication
11 that they were different? Do you have any indication that
12 they were the same?

13 THE WITNESS: No, sir.

14 JUDGE BLOCH: And so do you have an opinion as
15 to whether they were made at the same time?

16 THE WITNESS: No, sir. There again, I can't
17 tell for sure whether they were made at the same date or
18 at a later date or what.

19 BY MR. ROISMAN:

20 Q Mr. Chaney, at the bottom of page 7 and the top
21 of page 8, you are testifying about the bars through the
22 "14s" and the "17s" above them and the other writings on
23 lines 5 and 6. And you indicate that in your opinion the
24 difference between them is that the writer pressed down
25 more firmly as to some of those markings as opposed as

1 opposed to others.

2 Now, if the writer was pressing down with the same
3 pressure, rather than more firmly, but was writing with
4 different substances under the paper -- in one case softer,
5 in one case harder -- would that also produce a variation
6 in the darkness of the color and the extent to which there
7 would be an indentation on the paper being written on?

8 A No, sir.

9 Q That would not change the indentation, if you
10 were writing on a softer as opposed to a harder backing?

11 A Not with this heavy card; no, sir. This is a
12 pretty heavy document itself. The card itself is heavy
13 material. It's not -- if you were writing on a piece of
14 bond paper; yes. But not on a heavy card of this nature.

15 JUDGE BLOCH: I don't understand that. The
16 extremes of course are I hold the card up in my hand and I
17 write on it and the other is I put it down and a hard
18 surface and write on it. You say there would be no
19 difference in the impressions?

20 THE WITNESS: Oh, yes, sir, even if I pressed
21 the same degree of hardness --

22 If you put it up, held it up, and tried to make the
23 same indentation you couldn't do it. You don't have the
24 strength in your hand to make the "V" indentation onto the
25 document as you have where you are sitting and writing in

1 this fashion. When you are standing up -- unless you are
2 writing against the wall where you might have the pressure.

3 JUDGE BLOCH: What about if you are holding a
4 bunch of documents on the one hand as opposed to putting
5 it down on a firm surface in the other, would there be a
6 difference in the degree of impression?

7 THE WITNESS: Possibly. Yes, sir.

8 BY MR. ROISMAN:

9 Q Even though the same amount of pressure was
10 being applied?

11 A Yes.

12 Q Even with that card?

13 A Even with this card.

14 Q What about in terms of the darkness or lightness
15 of what would appear? Is that directly a function of what
16 kind of resistance you get to the pressure you apply to
17 the paper?

18 A Or the pen; yes, sir.

19 Q Or the pen?

20 A Yes, sir.

21 Q So that either of those could vary. Writing
22 against a very hard surface with the same pressure, and
23 writing as you write against a very soft surface, might
24 give you a different darkness --

25 A Different -- darkness.

1 Q -- as well as pressing harder one time than the
2 other?

3 A -- than the other -- yes, sir.

4 Q Now, you also did a comparison of the line outs
5 that appear on attachment 4 to your testimony. And I
6 believe you indicated that when one looked at attachment 4
7 in its original, it was apparent that it had been written
8 with an entirely different kind of writing instrument than
9 the writing instrument that was used on the crossed-out
10 portions on attachment 3. Is that correct?

11 A Yes, sir. That's correct.

12 Q And if I understand it, the essential difference
13 between the two kinds of writing instruments was that
14 whatever the particular one that was used on attachment 4
15 was softer, and tended to make a more indistinct edges to
16 the writing than the kind of ball point that was used on
17 attachment 3. Is that sort of the essence of what the
18 difference was?

19 A Yes, sir, because of the fluidity of the ink
20 that was flowing onto the document.

21 Q But things like tics, those would tend to appear
22 if you made that little extra mark equally on either type
23 of pen; is that correct? If that was the writer's style?

24 A They could. It depends. A felt tip pen covers
25 up a multitude of sins because it covers up -- it makes

1 you a better writer than what you ordinarily are and it
2 covers up a lot of things that you ordinarily do in
3 writing, a felt tip pen. It's broader and it covers up
4 the little idiosyncrasies that you might have in your
5 handwriting.

6 Q So idiosyncrasies that came through when you
7 used the felt-tip pen would be significant in the sense
8 that whatever came through would have had to be fairly
9 distinctive not to have been, in effect, disguised or
10 masked by the kind of pen you were using?

11 A Yes, sir.

12 Q Now, looking at the third line on which writing
13 appears on attachment 4, the cross-out for the 13. I
14 notice that that cross-out has, or appears to have a tic
15 at the beginning of it; is that correct?

16 A Yes, sir, it does.

17 Q Okay. And looking at the cross-outs that appear
18 on attachment 3 on lines 3 and 4, those cross-outs also
19 have a tic; do they not?

20 A Yes, sir.

21 Q Do you have an opinion as to whether those
22 cross-outs were made by the same person? The attachment 3
23 cross-outs and the attachment 4 cross-out, where the "13"
24 is crossed out on line 3?

25 A No, sir. I don't.

1 Q Did you attempt to form an opinion on that?

2 A No, sir, I didn't.

3 Q Is it possible to form an opinion, if you were
4 to go back to your lab and use your microscope and the
5 other techniques that you use?

6 A No, sir.

7 Q Why is that?

8 A Because they are made with a fluid ink pen.
9 There's no way of telling. It's just one idea by itself
10 you can't determine, like a cross bar, whether one
11 individual did all three of these or four of these cross
12 bars.

13 Q Is that equally true for the cross bars on
14 attachment 3? That is you cannot say with any confidence
15 who actually made those cross bars? Whether it was
16 Mr. Stanford or anybody else?

17 A In my opinion, they are made similar to the way
18 he makes his cross bar. And in my opinion, based on the
19 numerals, the cross bar, and the other numerals appearing
20 in the "/84" of Exhibit 3, that there is no reason for me
21 to believe that it is not his writing.

22 Q Where were the other cross-outs of his that you
23 looked at to get a sense of how it is that he did his
24 cross-outs?

25 A The Roman numerals that appear throughout -- on

1 the document in question. Exhibit attachment 1 and
2 attachment 3, of course they don't appear on attachment 3
3 but they do appear on --

4 Q On attachment 1?

5 A Yes, sir.

6 Q Under the column listed, "NDE CERT. level"
7 there's a whole line of those. That's what you are
8 looking at?

9 A Yes, sir.

10 Q But I take it that that cross-out, or that bar --
11 I take it, because there nothing is being crossed out, but
12 that those bars, they are not any different, are they,
13 than the bar that crosses out the 13 on line 3 of
14 attachment 4?

15 A Not really; no, sir.

16 Q So that you also don't have any basis to say
17 that he didn't do the cross-out on -- of the "13" on
18 attachment 4; do you?

19 A I couldn't say whether he did or not. No, sir.

20 JUDGE BLOCH: Let's take a break.

21 (Recess.)

22 JUDGE BLOCH: The hearing will please come to
23 order.

24 BY MR. ROISMAN:

25 Q Mr. Chaney, in your testimony there are a number

1 of places where you talk about the distinctiveness of
2 Mr. Stanford's "8s" when he writes "84" and also the way
3 he writes his "4s."

4 A Yes, sir.

5 Q And I take it that that's a factor which was
6 important in your evaluation?

7 A Yes, sir, it was.

8 Q I'm not sure I understand what role it played,
9 at least as to this question. The question that I
10 understood was of interest here was: Who wrote the "17"
11 that's above the crossed-out "14s"; and who crossed out
12 the "14s"; was it Mr. Stanford or was it somebody else?

13 How does the fact that Mr. Stanford has a very
14 distinctive "8," and a certain style of writing a "4,"
15 give you any clue as to that?

16 A The combination of all of them together were
17 what was used in making the opinion altogether at one time.
18 The way the "8s" are made, the "4s," his "7s," and his "1s" --
19 the "1s" are not a very distinct characteristic by itself,
20 but "7s" and "8s" and "4s" are very distinct in trying to
21 make a comparison. And that was used -- I used all these
22 numerals in comparison.

23 I was asked to not only identify the "17s" that were
24 added or altered, placed on the document, but also the
25 dates and the initials of the person who had, underneath,

1 underneath the document -- or underneath the items that
2 had been altered.

3 Q Well the "/84," that is the special
4 characteristics of Mr. Stanford in doing the "8" and doing
5 the "4," I take it, is really only relevant to the
6 question of whether the initial -- initials and the date
7 that follow those initials were written by the same person
8 who wrote the signatures and dates that appeared elsewhere
9 on attachment 1; isn't that right?

10 A So far as I know; yes, sir.

11 Q So it doesn't really help us to know whether it
12 was Mr. Stanford who did the "7" or somebody else who did
13 the "7"; does it?

14 A It does. In my opinion it does.

15 Q Then explain it to me because I don't think I
16 understand why it is helpful for you to know that it's
17 Mr. Stanford who did the "8s" and "4s" that appear
18 throughout these documents in deciding whether it was
19 Mr. Stanford who did the "1s" and the "7s" in the cross-out?

20 A The "7s" that were altered, that are on lines 4
21 and 6, on the weld data card, and the "7s" that appear
22 immediately below those two lines, were used in addition
23 to the "84," as -- for my comparison, to determine whether
24 the "7s" and the "8s" and the "4s" were all in fact made
25 by Mr. Stanford.

1 Q But what is it -- I'm sorry?

2 A I'm sorry. Go ahead, sir. That's all right.

3 Q What is it about the way he makes an "8" that
4 helps you know whether it's he who made the "7"?

5 A The small portion of the loop of the "8" and the
6 openness of the "8" at the top, to where it doesn't close,
7 the top of the "8." In this particular instance they are
8 all consistent. They may be varied a little bit but they
9 are consistent in what he does in his "8s."

10 JUDGE BLOCH: Mr. Chaney, I don't understand
11 either. The openness in the loop of the "7" helps you
12 have confidence that he also made the "7"? Is that what
13 you are saying?

14 THE WITNESS: No, sir. That he made the "8s."

15 JUDGE BLOCH: But is that isn't the question in
16 the proceedings. The only question is that he made the
17 "17s."

18 THE WITNESS: In my opinion the "7s" are his and
19 the "1s."

20 JUDGE BLOCH: But it has nothing to do with the
21 way he made the "8s"?

22 THE WITNESS: No, sir. But that was done in
23 conjunction with it.

24 BY MR. ROISMAN:

25 Q So that was answering a different question?

1 A Yes, sir.

2 Q Did you ask for or did you get samples of
3 handwriting of people, other than Mr. Stanford, who might
4 have been thought to have written the "17s" and done the
5 cross-out of the "17," if Mr. Stanford hadn't done it?

6 A No, sir.

7 Q Wouldn't you need to have that if you were to
8 say with confidence that those were not done by Mr. -- by
9 someone other than Mr. Stanford?

10 A I probably would have liked to have had it. But
11 then as far as I was concerned, I didn't need it.

12 Q But, if we had a finite number of possible
13 authors of the strike-through in the "17," other than
14 Mr. Stanford, I take it that, if you had had their sample
15 handwriting and could have either clearly excluded them as
16 possible authors of these numbers, that that would have
17 tremendously increased the confidence level that you have
18 that these three marks were made by Mr. Stanford and not
19 by somebody else?

20 A I'd have to say "yes," sir.

21 MR. ROISMAN: I have no further questions for
22 Mr. Chaney.

23 JUDGE BLOCH: Staff?

24 CROSS-EXAMINATION

25 BY MR. BACHMANN:

1 Q Mr. Chaney, earlier a question was asked you
2 about the number of samples of handwriting that you might
3 look at to determine whether or not a person had written a
4 particular handwriting specimen. I believe you testified
5 that the only samples that you looked at for Mr. Stanford
6 would be contained on attachments 1, 5, and 6 of your
7 testimony; is that correct, sir?

8 A That's correct.

9 Q How do you determine, on any given handwriting
10 analysis, whether you have a sufficient number of
11 handwriting specimens to be able to make a determination?

12 A By the number of variations that appear in the
13 writing. In other words, if there's an item or a
14 signature or whatever is in question, your determination
15 is made as to whether or not you can find the variation
16 that might appear in the item in question that would
17 appear in the individual's writing.

18 You write differently each time that you write a
19 numeral or a signature, and these things don't always
20 appear in every signature, every numeral that you make.
21 Some -- most of the time they do, but not all of the time.
22 You write them differently.

23 Q Now, bringing it back to Mr. Stanford's
24 handwriting, how did you determine that you had a
25 sufficient number in this case? That is, just the ones

1 contained on those three attachments I named earlier.

2 A I felt that the variations in his initials and
3 his signatures were sufficient enough on the document
4 itself, and document 5 and document 6, for me to make my
5 determination; that there was consistency enough that I
6 could prove the variations in his writing and his
7 signature and his initials.

8 Q Earlier some questions were asked about the
9 timing of various dates. And just to make the record
10 clear, was it your testimony that you have no opinion as
11 to whether or not, on attachment 1, whether the original
12 date, 1/14/84, and the date, the changed date, to the 17th
13 and then the "1/17/84," with the initials, that you had
14 not formed an opinion as to whether or not these were done
15 at the same time or at some other time?

16 A Yes, sir. That's true. I did not form an
17 opinion as to whether they were done at the same time or
18 at a later time.

19 Q Generally speaking, would there be a difference
20 in the handwriting if a particular number, in this case
21 the dates, were made on different days?

22 A Yes, sir. Possibly a variation might appear --
23 of course the pen pressure, a different pen -- such as the
24 darkness of the "17s" on the items in question which is
25 indicative of heavy pen pressure or a different ball type,

1 ball point pen, were used.

2 Q I guess what I'm trying to get at is, if there
3 would be a difference, given the fact that a date was
4 written at one time followed up and then written again,
5 such as we have here, is there a particular reason why or
6 why not you cannot form an opinion as to whether these
7 were written at the same time or, say, separated by a day
8 or two?

9 A Well, in the first place I can't -- there's no
10 way I can tell because I -- I don't think anyone can tell.
11 Because it's just an item that is not -- you just can't
12 make an opinion as to that point. Because it could have
13 been made any time: Same day or two days later. And
14 there's no way I can arrive at an opinion as to when they
15 were made.

16 MR. BACHMANN: Staff has no further questions.

17 JUDGE BLOCH: Mr. Chaney, on page 9 of your
18 testimony?

19 THE WITNESS: Yes, sir.

20 JUDGE BLOCH: Will you read question 23?

21 THE WITNESS: "Do you have an opinion as to --"

22 JUDGE BLOCH: No. No. To yourself. I wasn't
23 testing your reading ability.

24 THE WITNESS: Oh.

25 JUDGE BLOCH: Is this the first time, when this

1 question was asked of you, that you learned that you were
2 to make a comparison between attachment 4 and the other
3 documents we were looking at, attachment 1 -- attachment 4
4 and attachment 3.

5 THE WITNESS: No, sir. Mr. Watkins told me on
6 the day -- at Fort Worth, when I picked up the documents
7 to look at.

8 JUDGE BLOCH: Please continue.

9 THE WITNESS: He asked me at the time to
10 determine whether those dates on Exhibit 4, or attachment
11 4, were in fact made by the same person who made the
12 alterations on attachment 3.

13 JUDGE BLOCH: So the words he used when he gave
14 you the first assignment were about the same as the words
15 he used on page 9, question 23?

16 THE WITNESS: Yes, sir.

17 JUDGE BLOCH: Doesn't that question assume an
18 answer, as to who made the other marks?

19 THE WITNESS: Are you talking about the marks on
20 document, attachment 2?

21 JUDGE BLOCH: Yes. If they were made by
22 different people you wouldn't be able to ask the question
23 in those words, would you?

24 THE WITNESS: No, sir.

25 JUDGE BLOCH: But he asked in those words when

1 he first gave you the assignment?

2 THE WITNESS: No. Possibly he asked me in the
3 office that day. Just asked me to make my comparison and
4 see whether these numerals were similar to the writing
5 altered "17s." Maybe I misunderstood the question. But
6 as I understand it, he did ask me to make my comparison
7 and find out: Were these "14s" on attachment 4, if they
8 were in fact made by the same person who made the "17s" on
9 attachment 3, the altered portion.

10 JUDGE BLOCH: Maybe you can clarify this,
11 Mr. Watkins?

12 REDIRECT EXAMINATION

13 BY MR. WATKINS:

14 Q Mr. Chaney, what document did I ask you to
15 examine first when I first asked you to examine the
16 documents, the weld data cards -- well, the package of
17 materials?

18 A Lines 5 and the alterations.

19 Q Did you provide me with an opinion?

20 A No, sir. Not at that time.

21 Q In evaluating handwriting, do variations in the
22 handwriting amount to similarities sometimes?

23 A Yes, sir.

24 Q With reference to attachment 3, lines --

25 JUDGE BLOCH: Is he going to explain that? I

1 don't understand how a variation amounts to a similarity.

2 Maybe he can explain that.

3 BY MR. WATKINS:

4 Q With reference to attachment 3, lines 3, 4, and
5 5, is that the case here?

6 A Yes, sir. I was able to prove that the
7 variations in the way that he makes the "7s" appears in
8 his standards of writing which are similarities to his
9 writing. So a variation is a similarity. It's not a
10 difference.

11 If can you find the variations in the writing.

12 JUDGE BLOCH: Okay. Similar to another sample?
13 It doesn't mean that the two variations are similar to
14 each other?

15 THE WITNESS: No, sir.

16 JUDGE BLOCH: It's similar to the other sample?

17 THE WITNESS: No, sir. Similar to the other
18 standards of writing.

19 JUDGE BLOCH: Okay.

20 MR. WATKINS: We have nothing further.

21 JUDGE BLOCH: Thank you, Mr. Chaney, you are
22 excused. Thank you for your testimony.

23 THE WITNESS: Thank you, sir. I'm sorry about
24 the microscope. I apologize.

25 JUDGE BLOCH: Those things nappen. Thank you.

1 Mr. Watkins, was this the only handwriting expert you
2 consulted?

3 MR. WATKINS: Yes. For the record we did
4 explore the possibility of chemical analysis but we were
5 told that, first, it's very difficult; second of all, it
6 would have destroyed the originals; and third, you can
7 rarely be conclusive. I mean we could have shown that all
8 of the ink on the weld data card was ink from a Bic pen.
9 But it wouldn't have told you whether it was ink from two
10 different Bic pens.

11 MR. ROISMAN: I assume none of that is
12 evidentiary and has nothing to do with -- if the Applicant
13 wants to put in testimony on the questions that were
14 raised --

15 JUDGE BLOCH: It's argument only. It is not
16 testimony.

17 MR. WATKINS: I agree.

18 Your Honor, I wonder if I could have a brief recess to
19 consult with Mr. Chaney about copies of the exhibits.

20 JUDGE BLOCH: Sure. How much time?

21 MR. WATKINS: Three minutes? Five?

22 JUDGE BLOCH: Let's make it five minutes.

23 (Recess.)

24 JUDGE BLOCH: The hearing will please come to
25 order. Mr. Watkins?

1 MR. WATKINS: We have Cecil Manning.

2 MR. ROISMAN: Mr. Chairman? I thought we were
3 doing Mr. Brandt. I didn't know we were doing
4 Mr. Manning now. And I would also like to address this
5 interrogatories question.

6 JUDGE BLOCH: Well, before you get to the
7 interrogatories question, do you have a problem with going
8 with Mr. Manning?

9 MR. ROISMAN: Yes. We are prepared to do Brandt
10 and not to do Manning at this time. In other words, we
11 are not prepared to do the Corry Allen stuff now. We are
12 prepared to do the liner plate matters now.

13 JUDGE BLOCH: Now you have a real problem
14 because Mr. Watkins told me that they are prepared to
15 start with Mr. Brandt on the Corry Allen matters.

16 MR. ROISMAN: They never talked to us about it.
17 We have our people here up from Texas specifically to do
18 the liner plates and that's where we focused our attention.
19 I don't know what the Staff's situation is. But I mean,
20 up until now, my assumption had been that the order of
21 things was that we would do them in the order in which
22 they have arisen. Mr. Chaney we took out of order at the
23 Applicant's request because they wanted to get him in and
24 out and so forth, and that was fine. But we expected that
25 we would do Mr. Brandt on the items which were still, if

1 you will, his direct testimony on the liner plates and not
2 rebuttal testimony on a witness called only relatively
3 recently.

4 JUDGE BLOCH: Mr. Watkins, does this
5 misunderstanding pose a serious problem for applicants?

6 MR. WATKINS: Mr. Manning has come up from Texas
7 to be here this morning and he is going back this
8 afternoon. If we have to send him back, I guess we'd want
9 to know when he's going to have to come back and when we
10 are going to do the Corry Allen cross.

11 Our situation is different. Perhaps it wasn't clear
12 from the colloquy. My understanding was we would go with
13 Mr. Manning and then with Mr. Brandt's Corry Allen
14 rebuttal. That's what we are prepared to do.

15 JUDGE BLOCH: The Court isn't clear on what the
16 understanding was so I can't side with either side at this
17 point.

18 JUDGE GROSSMAN: What was the Staff's
19 understanding?

20 MR. TREBY: There were not discussions. I don't
21 recall that we had any discussions amongst the parties.
22 We assumed that the travelers was going to be the first
23 order of business after Mr. Chaney; based, I guess, on the
24 conversation last week when the board inquired as to
25 whether we would go forward with these matters or continue

1 to go forward with the O.B. Cannon. The Intervenors said:
2 No, they wanted to do the travelers. So I assumed that
3 was going to be the first order of business. But that was
4 just my assumption. It wasn't based on any conversations
5 with any of the parties.

6 JUDGE BLOCH: Mr. Watkins, what would you
7 suggest?

8 MR. WATKINS: A five-minute recess so we can
9 consult with the Intervenors.

10 JUDGE BLOCH: Granted.

11 (Recess.)

12 JUDGE BLOCH: The hearing will come to order.
13 The parties have reached an agreement that we can go
14 forward on the liner plates at 12:30 today, having
15 completed our lunches. Mr. Roisman would like to address
16 the interrogatories.

17 MR. ROISMAN: Mr. Chairman, we have not received
18 a copy of these until this morning and in looking at the
19 service list it appears that we were never served with a
20 copy either. I would like to move to strike the document.

21 JUDGE BLOCH: The service list we have it on
22 page 2.

23 MR. ROISMAN: Yes, but if you look at
24 introduction of the service list it says that there are
25 two classes of people on that list who got service. One

1 got it first class mail who have a single asterisk.
2 Others who got it hand delivered, they have a double
3 asterisk. If you look next to our name, we have neither.
4 Which is consistent with the fact because we didn't get it.

5 JUDGE BLOCH: It seems to me the proper remedy
6 is declare it served now rather than strike it.

7 MR. ROISMAN: Well, it seems to me that we have
8 a sworn statement here by an attorney from the applicant
9 that indicates that they didn't make service of this on us,
10 or indicates that they did when they didn't. One or the
11 other. And so I want a remedy.

12 JUDGE BLOCH: It appears there's a deficiency.
13 The remedy is right now.

14 MR. WATKINS: Every service list that I have
15 seen doesn't have an asterisk. I'm trying to track down
16 whether this was served last Tuesday. I thought it was.
17 I apologize for the lack of the asterisk, but I think the
18 chairman's point is well taken.

19 MR. ROISMAN: It's the lack of service, not the
20 lack of the asterisk that we are complaining about.

21 JUDGE BLOCH: Okay. I see you leafing through
22 it, you have it now --

23 MR. ROISMAN: We have it here. I would like the
24 responses to the discovery to be three days after it was
25 allegedly served -- I would like to move now that it have

1 the normal discovery response time to it and not anything
2 like this. We certainly can't begin to look at it or
3 address it between now and the end of next week, since we
4 have got nothing but hearings or other commitments between
5 now and the end of next week.

6 JUDGE BLOCH: Mr. Watkins?

7 MR. WATKINS: The reason we requested a response
8 by last Friday is that so we could use, attempt to use the
9 materials in connection with Mr. Brandt's testimony which
10 has now been filed. So the request makes sense.

11 JUDGE BLOCH: There appears to be a problem of
12 not having served the document. It seems strange to speed
13 up the answer to a document that hasn't properly been
14 served.

15 MR. WATKINS: Perhaps you misunderstood. I'm
16 not suggesting that the answer be speeded up. How much
17 time are you requesting?

18 MR. ROISMAN: I think under the rules it's 30
19 days from service so we would want 30 days from today.

20 JUDGE BLOCH: Is that because the rules provide
21 that or because you need that much time? After all, the
22 purpose that the board has in setting deadlines is to do
23 what's fair and necessary.

24 MR. ROISMAN: I understand. I see 15 questions,
25 most of it subparts. And, if I understand -- and I have

1 not read it but I glanced at a couple of the questions --
2 the thrust seems to do with us giving full bases for
3 certain statements and full explanations of where various
4 information came from. It will involve --

5 JUDGE BLOCH: It's complex. I agree.

6 MR. ROISMAN: As I said, I think the next two
7 weeks are out for us, so we don't even start on it until
8 at the end of two weeks from now. And I've got --
9 Ms. Garde is still attending law school and they expect
10 exams to be taken sometime around the end of this year.

11 JUDGE BLOCH: You want 30 days from today?

12 MR. ROISMAN: Yes, please.

13 JUDGE BLOCH: Is that a problem, Mr. Watkins?

14 MR. WATKINS: Yes, please.

15 JUDGE BLOCH: The expedited deadlines are struck
16 and the 30-day deadline in the rules is reinstated. The
17 hearing is adjourned until 12:30 p.m.

18 MR. ROISMAN: Thank you.

19 (Whereupon, at 10:35 a.m., the hearing was
20 recessed, to reconvene at 12:30 p.m., this same day.)

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1 intended to represent a definitive statement.

2 The liner plate issue started because Susie Neumeyer
3 indicated that she was forced against her will to sign off
4 on certain liner plate documents; that a fit-up and
5 cleanliness had taken place on a date substantially
6 earlier than the date on which she was asked to sign off,
7 and that she didn't want to do that and eventually she did
8 it with the asterisks as we have seen on the document.
9 And the Applicants disputed that and they said she was not
10 forced to do it. And one of the reasons that we got into
11 the liner plate issue was to determine whether it was
12 reasonable to assume that Susie Neumeyer would have signed
13 off these documents, without having complained; and that,
14 in turn, depended on whether the documents were in proper
15 order or not. And so we started that process.

16 I think with respect to that issue, the record is now
17 fairly clear that Ms. Neumeyer was right; that there were
18 a lot of things wrong with the documents, not only the
19 ones that she was signing off but others, and that a
20 skilled QC level inspector, of her level of competence,
21 would have been extremely concerned about signing them off
22 and that therefore there's at least credence to her
23 statement that she did it only under duress and not
24 voluntarily.

25 The record shows that the utility's principal witness

1 on this matter, Mr. Brandt, has conceded that there were
2 problems not previously identified with the documents;
3 that there have now, even as recently as within the last
4 couple of weeks, been new NCRs written with regard to the
5 documents, and of those some 18 or 20 of the documents
6 were ones actually that Ms. Neumeyer was signing off on
7 that night.

8 So, on that -- for lack of a better term -- somewhat
9 narrow question, I think that CASE has made the point that
10 it set out to make and that the -- that there's probably
11 relatively little additional that further testimony is
12 going to shed on that, at least through Mr. Brandt.

13 Presumably, Applicant could bring back another witness
14 and we tried to say, well, we told her all those problems
15 and she said: Gee, I'm glad to sign it. But at this
16 state in the record --

17 There was a second question which was also part of this
18 proceeding but admittedly didn't start off to be part of
19 what got us into the whole liner plate question, and that
20 is: What is the role of documents and procedures in the
21 QC program at Comanche Peak? And documents are intended
22 to be freestanding documentation, if you'll pardon the
23 representation, of the existence of certain events, which
24 is why we started off by saying here are the documents,
25 and anybody can read them and draw their own conclusions

1 from it, and felt it was unnecessary, once the documents
2 were in evidence, to actually put on testimony.

3 In a large respect, the very existence of Mr. Brandt's
4 testimony in two different parts, and his presence here
5 today, is a concession that the documentation program
6 didn't work. The documents don't speak for themselves.
7 They need a spokesperson in Mr. Brandt, and there are
8 ambiguities created by the documents which are not able to
9 be determined by simply going through the documents and
10 looking at them, according to Mr. Brandt's presence here.

11 We think those ambiguities are themselves -- themselves
12 create the flaw. The document should not need an
13 interpreter. It should be obvious on its face that
14 something was done or that it wasn't done; when it was
15 done; what order it was done in. So that's a second part
16 of what CASE is about in this proceeding. And, again, I
17 think the record on that is fairly clear.

18 The documentation process didn't work as a
19 documentation process is required to work under 10 CFR,
20 part 50, appendix B.

21 The explanation that we have for that - essentially
22 what I'll call the Brandt theory of appendix B -- is that
23 if, subsequent to the discovery of a breakdown in the
24 documentation, if you can go back and explain away the
25 problem -- the best example being explain away the absence

1 of an ability to establish that fit-up and cleanliness
2 were done on the outside wells by saying that on second
3 look it was determined that it was not safety-important to
4 know whether fit-up and cleanliness were done -- if you
5 can do that after the fact then the existence of the flaw
6 in the original procedure can be ignored. It doesn't
7 matter.

8 And, related to that, it seems to me, are two questions:
9 One, just is that approach right? And, again it's not an
10 evidentiary question, it's a quasi-legal question based on
11 documentation -- do the regulations permit that kind of,
12 if you will, documentary backfitting? And secondly, what
13 is the Applicant's response with respect to the discovery
14 that, with respect to the liner plates there were
15 breakdowns, that there were proper procedures that were
16 not followed. If Mr. Brandt is correct, even if this --
17 they were innocuous to the question of safety. And that
18 goes to a question constantly occurring in these
19 proceedings, and that is: How does the Applicant treat
20 bad news? Does it do damage control or does it look for
21 the root of the problem? And again, I think the answer
22 here is fairly clear. Applicants, with many opportunities
23 to do so, have never shown us that we went back and did
24 anything remote like a thorough investigation to find out
25 how and why these various problems arose in the first

1 place and how widely did the problem reach?

2 We have just looked at a snapshot, a piece of the whole
3 liner plate issue at the plant. Because we've only looked
4 at reactor cavity, unit number 2. We haven't looked at
5 transfer canals, we haven't looked at the fuel pool
6 building, and we haven't looked at reactor number 1. And
7 even there applicant's testimony, if we take it as
8 complete at this point, stops the investigation well short
9 of even the whole reactor cavity in unit number 2.

10 It goes to the limits, essentially, of what my team
11 here points out and Mr. Brandt then proceeded to
12 investigate up to the point that my team has investigated.
13 His investigations and the company's investigations don't
14 appear to go beyond that.

15 The third thing that comes out of this, which is -- and
16 at this point I think it's fair to say that we begin to
17 rub against the edge of, if not actually intrude upon, the
18 other side of the hearing -- is the disclosure of specific
19 subsequent problems with the liner plates as revealed by
20 these documents.

21 And there's quite a number of these on which the
22 testimony of the utilities is, in a sense, a concession
23 that the problems were there.

24 Early on Mr. Brandt admitted that the proper form was
25 never used during a discrete period of time back in '78

1 for the recording of this material. He has indicated that
2 there were forms on which the word "sat" apparently was
3 written before any inspector ever got to the form. And of
4 course, that means that there is no way for the inspectors
5 to record "unsat," so we have a trending problem. Every
6 time an inspector views a weld, if the form said "sat" on
7 it, he didn't cross that through and write "unsat," he
8 said, "I can't sign yet." That's the best we can say of
9 what happened. So we don't have a trending situation. We
10 don't have reports of unsat conditions, because these
11 forms that were used didn't seem to lend themselves to
12 that. They weren't like the traveler that we looked at
13 this morning in conjunction with weld 40 C --

14 JUDGE BLOCH: I'm sorry, you interpret
15 Mr. Brandt's testimony as substantiating that statement in
16 that the inspectors, when there was a form already marked
17 sat, would initial it or not do it, but never indicate unsat?

18 MR. ROISMAN: I would say it was a concession by
19 omission rather than a concession by admission. Unlike
20 the first point which I made, in which I think there's a
21 concession by admission.

22 I would note, by the way, that a similar kind of
23 inability to record unsat conditions, and only to be able
24 to report sat conditions, was the source of \$120,000 fine
25 to the Midland nuclear plant some years ago, so it's not a

1 matter of insignificance in our judgment.

2 Third, there is the problem of the chit, and the use of
3 the chit.

4 Here again, I think there is essentially no doubt, by
5 looking at the procedures, that chits had a very
6 specialized way in which they were to be used. The
7 documents were required to be maintained in the millwright
8 office. The chit was to go to the field. It was to have
9 the inspection reported on it and then the chit was to be
10 brought back to the office. And when it got back to the
11 office that same day, the information from the chit was to
12 be recorded on the form and then the chit was to go to the
13 vault. And this was apparently a way that the company
14 devised for dealing with the problem, that you didn't take
15 the traveler to the field and yet you had to have some
16 record that you made when you were in the field that was a
17 true document.

18 Well, we note that didn't happen. We know the chits
19 didn't reach the vault. We know the chit's information
20 didn't get recorded simultaneously on the forms and that's
21 apparent throughout the forms.

22 Now, in addition, we show that we have forms that were
23 signed on the days that certain chits were dated. And yet
24 similar chits, ostensibly dated the same day, don't show
25 for a signature: This is the step 1, the fit-up and

1 cleanliness line, where there was a chit and a date for
2 that chit; and then lines 2 and 3, we have another chit
3 for the line 2 and 3 inspection, and a signature on lines
4 2 and 3 for the same date that appears on all three chits.
5 But no signature on line 1. And it is that that creates
6 an unexplained anomaly, which there's nothing in the
7 record here to indicate that it's anything other than what
8 it appears to be, which is that the inspector did not do
9 the inspection on the same day, contrary to what it says
10 on the face of the chit. Or that he did it on the same
11 day, and followed procedures for steps 2 and 3 and ignored
12 procedure for step 1.

13 Either way, it's a choice of which improper procedure
14 was done. But in either event, there was an improper
15 procedure.

16 The fourth problem is the problem of whether we are
17 dealing with ASME or non-ASME matters here.

18 At some places in his testimony, Mr. Brandt is very
19 clear that he says: This is not an ASME system, and thus
20 we did not have to and did not follow ASME code, except to
21 the extent that we used it for welder qualifications.
22 Beyond that it is not a relevant document.

23 We have cited the regulations of the agency, and
24 procedures, to indicate that the liner plates in the --
25 throughout, for wherever you are going to have spent fuel,

1 are, in fact, ASME components; that they have to have
2 seismic verification, and the like. That point of
3 controversy at this point is not explained. It remains.

4 Our case is based upon the documents and now Mr. Brandt's
5 essentially admission, although he feels it's not an
6 admission that causes him trouble, but his admission that
7 it wasn't being done under ASME.

8 JUDGE BLOCH: Can I take it that the case where
9 it's required to be under ASME is based on NRC standards
10 and codes?

11 MR. ROISMAN: That's correct.

12 JUDGE BLOCH: And it really doesn't have to
13 depend on evidence?

14 MR. ROISMAN: No. And that's our point. Either
15 we have the correct view of those regulations and
16 standards or we don't. It's not that we are putting on
17 someone's opinion that says that they think it is or is
18 not.

19 I would note that in his testimony Mr. Brandt does
20 provide us with a number of documents that reference ASME.
21 For instance, in the early procedures for the liner plates,
22 the procedures that were in place up through the early
23 part of '79, they all use as a reference point the ASME
24 code, and they use it without the qualifiers that
25 Mr. Brandt has added to it. But there again, it's not so

1 much what he thinks the code says or what we think it says,
2 it's what you think it says. He's not an expert to tell
3 you how to read those. That will be something for the
4 board to decide.

5 But I think it is important to note that basically the
6 battle lines are drawn on those. There is no more
7 evidence to be had. It is or it is not in. There's a
8 concession that, if we are right about what the codes say,
9 then the company has violated them.

10 Mr. Brandt doesn't say that he reads the code
11 differently, he just says, essentially, that Gibbs & Hill
12 decided that, in their judgment it didn't make sense to
13 apply the code to that particular thing, and so they wrote
14 up procedures that excluded it. And that's apparently
15 true for procedures after '78 and early '79. But in '78
16 and '79, the documents in question reference the ASME code
17 specifically.

18 JUDGE BLOCH: Do we know about the application
19 documents? Whether they required ASME or not?

20 MR. ROISMAN: Do you mean the PSAR and FSAR? No,
21 we do not. I mean that's knowable, but we don't know have
22 that information.

23 Now, in point number 5, Mr. Brandt, during his October
24 3rd testimony, which is prefiled, and transcript pages 345
25 to 360 and 361, tells us that he has gone through the

1 documentation and he has -- that is, the liner plate
2 documentation for unit 2 -- and that all the problems in
3 his judgment have been identified and that deficiency
4 paper written on it.

5 We now know from his current prefiled testimony that at
6 least five additional NCRs had to be written on some 30 or
7 40 liner plate documents.

8 That's not just a "aha, we caught you" sort of thing.
9 It's more important because Mr. Brandt has, on a number of
10 occasions, testified at this hearing that he's done
11 something and he's satisfied and therefore you should be
12 satisfied that it's okay because he's checked it. And it
13 appears that the nature of that check and the thoroughness
14 of that check is brought into substantial question by that
15 very question that we have here.

16 Six, Mr. Brandt has indicated at the same transcript
17 pages -- I'm sorry, yes, I'm sorry -- the same transcript
18 pages -- and this is sort of a variation on, again, what
19 I'll call the Brandt theory -- and that is that the
20 procedure is only of concern to him if he subsequently
21 finds that there was a substantive reason why full
22 compliance with the procedure would be important. And, so,
23 on numerous occasions we will have: Yes, we did violate
24 the procedure where that is undeniable, but not to worry
25 about it because it is not structure -- is one of the

1 answers that we get -- or we checked the cleanliness and
2 fit-up on the inside after we've done it on the outside
3 anyway, and if there was a problem with fit-up we would
4 have picked it up -- and those sort of explanations, post
5 hoc rationalizations, seems to me, are again not a
6 matter on which we need more testimony. It's still a
7 question that, given that, was it a proper or improper
8 procedure to be taken in the case?

9 JUDGE BLOCH: I take it because there's two
10 issues: Was there a violation of procedures? And the
11 second one is, what's the significance of that? Was there
12 either a total breakdown in the area which would be a
13 concern, or did it safety significance?

14 So, even if there was a breakdown we would still have
15 to inquire further into the significance, so that
16 Mr. Brandt's testimony on safety significance would be
17 relevant although it may not explain why the procedure was
18 violated.

19 MR. ROISMAN: It would be relevant in the sense
20 that once you learn that, let's say a particular
21 cleanliness and fit-up had not occurred, whether you would
22 feel that unless it did occur you would have to flunk the
23 plant for the safety, not procedure, for the safety
24 problem. But it wouldn't bear -- it wouldn't help on the
25 general question: Did the company meet 10 CFR part 50 B?

1 One of the important points that we are making here is
2 that appendix B is not merely a make weight on the
3 question of whether the plant is safe. It is a
4 freestanding NRC regulatory requirement; and that even if
5 one could explain every single defect that a particular
6 procedural glitch was designed to have detected at an
7 earlier date, away as an insignificant safety matter, you
8 would not have passed the 10 CFR part 50 appendix B test.
9 You would have yourself still having to establish -- now,
10 admittedly if you had 10 isolated examples would you have
11 to weight that and decide how important was that in the
12 overall question of how demanding was the 10 CFR 50 B.
13 But it's not enough to answer that I don't have to go back
14 and redo the fit-up and cleanliness tests because I can
15 write it off.

16 And of course, I'll mention in a moment there's still
17 controversy over whether you could write it off. But, I'm
18 trying to establish what we are not really debating about
19 any more.

20 Next. With regard to the existence of a substantial
21 time period between when fit-up and cleanliness tests were
22 done and when welding was done, essentially on transcript
23 45,373, 45,394, and 45,400 -- and when I'm talking about
24 transcript, I'm talking about transcript page numbers put
25 on Mr. Brandt's prefiled testimony, which is the way the

1 Applicants helped identify it, just as we did with the
2 depositions this summer in Glenrose.

3 That here again, the gap is explained by the untested
4 hypothesis that if a welder came back to do the weld four
5 years later and cleanliness and fit-up had been done in
6 the first instance, he would check or should we check and
7 make sure that it was still clean and that the fit-up was
8 still proper and that they would never weld if it wasn't
9 all right. And thus you didn't need the inspector.

10 Obviously, that line of logic would extend to all the
11 inspections. All the inspectors are doing the work that
12 is a follow-up or a test of the work of presumably
13 competent, well-qualified well-intentioned welders,
14 electricians and the like. Nevertheless, the requirement
15 is there.

16 JUDGE BLOCH: They said the fit-up and
17 cleanliness are not required at all for the line?

18 MR. ROISMAN: For some they have said that the
19 fit-up and cleanliness is not required for the -- well --
20 they said that cleanliness is not required as a safety
21 matter, now. Not that it wasn't procedurally required.
22 But that after the fact you could ignore it because it was
23 only relevant if structure was the function of the weld.
24 If the weld was to be leak tight, that could be tested
25 with the vacuum box test and the hydrostatic tests, and

1 that would allow you to ignore the cleanliness problem, if
2 there had been one that was undetected.

3 On the fit-up question, I think there's a little bit
4 more ambiguity about that. On the one hand, if the fit-up
5 appears to be something that's important and yet it's not
6 always clear that the first fit-up is verifiable -- but I
7 believe Mr. Brandt's position is that when they get to the
8 inside of the weld they recheck the fit-up. And thus, if
9 it's still okay it must have been okay in the first
10 instance. Or, if it's okay now, it doesn't matter whether
11 it was okay in the first instance.

12 Now, that disputes the fact that there are two separate
13 fit-up tests for the two sided welds.

14 Next --

15 JUDGE BLOCH: Is there going to be any evidence
16 that that's wrong? I understand that it's required twice.
17 But it is wrong, physically on that?

18 MR. ROISMAN: You mean on the question of
19 whether or not you can ignore the cleanliness because they
20 are not structure?

21 JUDGE BLOCH: No. On the question of whether a
22 fit-up inspection on the inside necessarily entails
23 satisfactory fit-up on the outside?

24 MR. ROISMAN: We have no evidence to offer at
25 this point, in an affirmative nature, on that. We may

1 have some questions for Mr. Brandt but we don't have an
2 independent expert that we are offering at this point on
3 that question.

4 Next, there's the question of whether chits were
5 available for all of the inspections. And there's a
6 concession that -- this is on pages 45,369, 45,376, and 45,393,
7 that there were instances in which there weren't chits.
8 But there is a signature on the appropriate line of the
9 form, of the traveler form; and, thus, that is a
10 verification that the inspection was done.

11 And, again, I think all the testimony needed is in on
12 that. The real question is, given what we know about what
13 the procedures were, is that a legitimate way to conclude
14 that the inspections were done. The traveler had to stay
15 at the millwright shop and could not go to the field by
16 procedure. The chit was the record of what took place in
17 the field. If there's no chit and there's just a
18 signature on the line, there are two equally plausible
19 explanations: One is the signature was put on the line
20 after looking at a chit which subsequently got lost --
21 which is the one that Mr. Brandt would have us follow; and
22 the other is the signature was put on the line without any
23 chit having been looked at and either the document was
24 taken to the field in violation of procedures, since it
25 was a control document and not to go to the field, or it

1 was assumed that the inspection had been done, but it had
2 not actually been recorded in any way and thus this was
3 done as a post hoc recordation of the inspection.

4 Fourth -- I'm sorry -- next, hardly fourth, and this is
5 a point which was explored by Judge Grossman during the
6 hearings in September, there is the problem of the
7 handwriting on some of the inspection lines.

8 There is not any question but that on some of the lines
9 the word "sat" and the date and the signature are in
10 different handwritings. There's a question regarding
11 whether that has any significance. But that it happened
12 seems now to be generally conceded and it's just a
13 question -- Mr. Brandt gives us his explanation of that at
14 45,379 and 380.

15 JUDGE BLOCH: Did the explanation involve the
16 issuance of any deficiency paper to investigate what
17 happened?

18 MR. ROISMAN: No. No, it does not. I believe
19 Mr. Brandt's statement is, and I'm sure at an appropriate
20 time he or his counsel will correct me if I'm wrong -- but
21 I believe his explanation is that the signature is the key
22 and that the person who signs it won't sign it whether "sat"
23 is there or not. It's unsat unless it's "sat," and unless
24 that date is the right date. Thus, even if the signature
25 was put in after the "sat" was in and after the date was

1 there, the signature is the documentation, if you will.

2 JUDGE BLOCH: Just like the form was preprinted
3 with "sat," and it just doesn't matter.

4 MR. ROISMAN: Precisely. That is correct.

5 Next, there is what I'll call the Brandt hypotheses.
6 In a number of instances we have identified events which
7 seem to have no explanation. Mr. Brandt hypothesizes an
8 explanation, not surprisingly an innocent one, in which
9 nothing wrong has occurred.

10 An example of that would be at transcript page 45,476,
11 where we've identified the fact that a form was signed on
12 the wrong line, for purposes of doing the inspection. And
13 he looks at some extraneous events and testifies about
14 them, and says that he believes that it was nothing more
15 than just a mistake, that it was signed on the wrong line
16 and that the failure, in effect, for the documentation to
17 match the events is just an innocuous glitch.

18 The problem with that, of course, is that the
19 hypothesis is not testimony and that we are left -- and
20 will, of course, in our proposed findings give you several
21 other hypotheses that will equally well fit the fact
22 situation and are substantially less innocent. The event
23 remains there and there is no real evidence that rebuts
24 the more sinister hypotheses that one might draw from it.

25 The next point -- and I'm having a little trouble

1 reading my notes here -- has to do with the use of
2 different inspections for different welds. Mr. Brandt has
3 told us that certain types of welds -- that is, plate to
4 plate, on angle to plate, on angle to angle -- those give
5 you a different set of inspection procedures which you are
6 to follow. And thus the absence of a certain type of hold
7 point sign-off as to one of those is irrelevant, because
8 there is nothing to worry about.

9 What's difficult for us to follow is that there is no
10 documentation of that.

11 It would appear that in the documents which have been
12 provided of the procedures for inspections, that the early
13 procedures -- the CP-QCI procedures, which were the ones
14 that were in existence up until '79 -- that these documents
15 covered QCI, which is a QC inspection. My understanding
16 is that there is also in existence a QCP, which is a QC
17 procedure.

18 If there is a set of procedures which allow you to
19 disregard certain hold points for certain types of welds
20 and not for others, that the QC procedure would include
21 that. That has not been provided. The document would be
22 KP-QC P-2.1, which would match CP-QC I-2.11. -- the first
23 one should have been two "1s" -- 2.11.

24 JUDGE BLOCH: Is that a document that you think
25 you should have had or we should have had? What's the

1 status of that one?

2 MR. ROISMAN: I think in the scope of what the
3 board asked for, that to have had all the inspection
4 procedures, that only the inspection instructions was
5 inadequate and that the inspection procedures should also
6 have been included.

7 JUDGE BLOCH: But you would infer that the
8 inspection procedure was in full effect if there was no
9 instruction for not using it?

10 MR. ROISMAN: That's correct. The instruction
11 alone does not tell you you can treat the different types
12 of fit ups or different types of welds differently. It
13 tells you with some minor exceptions which are not
14 pertinent here, that they are all to be treated the same.

15 JUDGE BLOCH: And on that score Mr. Brandt's
16 testimony would not be the best evidence? Would have to
17 precede the QCP?

18 MR. ROISMAN: That's correct. We are surmising
19 what we think it shows because we haven't seen it, but
20 you'll note in the subsequent documents, you remember they
21 changed the lettering and we later got a document that has
22 lettering such as QI-QP-11.14.

23 Now, that appears to be a merger of the QI instruction
24 and QP procedure into one document. That, again, is also
25 just a surmise, that that's what all those letters really

1 stand for and that it's not just randomly selected letters.

2 Lastly we have in this category, is the Cole paper, and
3 its relevance on the entire issue.

4 Certainly the first explanation of Mr. Cole's discharge,
5 given under oath by Mr. Purdy, is inconsistent with the
6 actual paper produced in the other side of the proceeding --
7 well, I guess in this side of the proceeding. The
8 deficiency paper was in the other side. And that is,
9 there was some irregularity about how he dealt with
10 documents that caused his discharge. The paper does not
11 on its face tell us whether that was because of
12 falsification or simple error, and there are no examples
13 attached of which were the things that he does that were
14 wrong.

15 Our point, as you remember, was that if Mr. Cole's
16 reason for discharge was such that it cast doubt upon the
17 work that he did at the plant, then one should have to go
18 back and re verify all the work that he did at the plant.

19 I think it is not relevant for that inquiry,
20 particularly, whether the work was in error because of
21 falsification or an error because of incompetence, which
22 seems to be at least on its face what the Applicants were
23 claiming was the reason for the discharge. The same point
24 is made.

25 I would note -- ask the board to take official notice

1 of the document in the other side of the proceeding, that
2 the absence of deficiency paper, of course, means that
3 there was no trending and thus no way for anyone to even
4 be notified outside of those immediately involved, that
5 maybe we should spotcheck the Cole documents given that
6 he's been making a mistake. If it seemed to be a bunch of
7 random mistakes that didn't seem to be repetitive, you
8 might draw one conclusion; if all the mistakes were in one
9 way, you might draw other conclusions about the adequacy
10 of training or Mr. Cole -- apparently that has all been lost,
11 since there was no record kept of it at all. That's
12 pertinent to our part of the case either way.

13 In addition to those, I don't mean to suggest that
14 that's exhaustive but more illustrative points, where I
15 think we really don't have much more that this record
16 needs to say.

17 There are four major unanswered questions. Again, I
18 think these unanswered questions, even more so does the
19 overlap between the issue in our proceeding and the issue
20 in the other side of the proceeding occur.

21 First, we have the question which was raised by
22 Ms. Neumeyer and on which there is no complete answer, and
23 that is whether or not the words "fit-up and cleanliness"
24 were written on the chit sometime after Ms. Neumeyer saw
25 the chits. All we have is the reality that most of those

1 chits were written in one of two hands, where "fit-up and
2 cleanliness" was written, and on its face where they
3 appear they were not written by the same person who wrote
4 the other information on the chit, either ordering the
5 inspection or the inspector himself or herself.

6 JUDGE BLOCH: We have exhibits by which we are
7 to conclude that through our own examination of the
8 handwritings?

9 MR. ROISMAN: Well, yes or no, absent the
10 originals to see whether it's the same pen, same color pen
11 or something. You don't necessarily have the most, but
12 you do have enough, I think, on its face, to show -- and
13 that the words "fit-up and cleanliness" were basically
14 written by one of two people on most of the chits which
15 are attached to these travelers.

16 JUDGE BLOCH: So, if we were to conclude that,
17 would we have to request that the evidence -- request the
18 evidence directly? Or would we be able to see that
19 without seeing the originals of the chits?

20 MR. ROISMAN: You can conclude that, without
21 more, that they were all written essentially by one of two
22 people. What you can conclude without them in front of
23 you is that Ms. Neumeyer concludes, sometime after she did
24 the signing of the liner plate documents or before that
25 date, and presumably contemporaneously with the production

1 of the chits, which I believe Mr. Brandt has said. That's
2 a nonresolved question at this point. We simply have
3 contrary testimony of two people.

4 I would say that on balance Ms. Neumeyer is giving us
5 eyewitness testimony. Mr. Brandt is giving us testimony
6 based on a variation of hearsay and confidence in the
7 process.

8 That is, he didn't see Ms. Neumeyer's chits, she did.
9 And she said they were blank. And he doesn't say: Oh, no,
10 I saw the same ones and they were written on. He tells us,
11 instead, that cleanliness and fit-up designation were on
12 there at an earlier date. And that is apparently hearsay.
13 I don't believe his work would have brought him in touch
14 with it in a personal way.

15 All right, secondly, we have this unanswered question
16 of whether the inspections were ever actually performed,
17 irrespective of what documentation may show.

18 Here again, if the documentation were in order such
19 that the inspection would appear to have taken place at
20 the time that the work took place, and the documentation
21 was signed at the right place at the right time and all
22 procedures had been followed, I think it's fair to say
23 there's a presumption under the act and under the
24 regulations that we can assume, that therefore the work
25 was done as he said it was done when it was done.

1 Here we have a set of documents in which the
2 inspections were done at one time, the signatures were
3 done at a second time in a variety of different ways; and
4 even as to those on which there was no deficiency paper
5 written and on which the Brandt paper applies to explain
6 that, well, it looks like it is okay now, you don't really
7 know the inspection took place because the one mechanism
8 that was put in place to answer that question failed.

9 JUDGE BLOCH: I take it that you are requesting
10 that we basically find there's a pattern in the
11 documentation that would be rebutted only by direct
12 testimony that the inspections were done?

13 MR. ROISMAN: Yes. I think the documents
14 themselves do not substantiate that the inspections were
15 done; that they could have only done that if they followed
16 the procedures that were done; that they could have
17 demonstrated that only if it were done in minor and
18 irrelevant ways. Ms. Neumeyer was asked several years
19 after the event took place to sign the document and say
20 the event took place at an earlier date, is itself enough
21 to raise all of those questions. All that's happened
22 since Ms. Neumeyer's testimony is that in addition to her
23 140 or so travelers, we have now seen another 1100, that
24 we found that there was a lot more of that that went on,
25 signing on the lines on days different than when the

1 inspections were done and not following the clearly laid
2 out procedure on that.

3 Third, there's still the question of: How did the
4 procedural breakdown occur and what did the Utility do to
5 respond to that?

6 As early as June of 1979, an article appeared in the
7 Fort Worth Star Telegram quoting from a former welder by
8 the name of Dave from the plant, in which he says "the
9 concrete wall encasing the liners will absorb the
10 leakage." He says, "It will never leave the reactor
11 itself." But the thing of it is, it was all done wrong.
12 If that's done out of procedure, I wonder how much else is?
13 And Butler was wondering about the welds done on the fuel
14 pool liners when he was there as a welder, according to
15 the article.

16 We know, beyond this newspaper, that in '81 and '82, J.R.
17 Dillingham was raising concerns about this.

18 JUDGE BLOCH: What would we make of the hearsay
19 reports through the newspapers?

20 MR. ROISMAN: Only that the company was on
21 notice that there was something in error and only a way of
22 you being able to test what kind of notice they had, what
23 was the nature of the response. It is not an effort -- no,
24 of course it could be -- to say that Mr. Butler was right
25 or even that Mr. Dillingham was right. But Mr. Brandt

1 also was an early observer of this problem. As he
2 testified in 1982 when he first came to the site, he
3 became aware that the wrong form was being used for a
4 number of these liner plate travelers and that's when he
5 revised the procedures and clarified that. But there was
6 no investigation done at that time to determine how did
7 that happen and how widespread was the problem.

8 JUDGE BLOCH: And you think that under part B --
9 appendix B, rather, there was a requirement to undertake
10 an investigation at that time to find out the cause of the
11 deficiency?

12 MR. ROISMAN: In order to be able to determine
13 the breadth of the problem; that's right. If it was a
14 single person or if it was a major problem throughout the
15 plant.

16 I would note that in the current testimony filed by
17 Mr. Brandt that was filed just last week, that a number of
18 NCRs have been written on documents which were already in
19 the vaults. And even now Mr. Brandt's testimony does not
20 tell us that the presence of documents which were in
21 violation of procedure to the point that an NCR could have
22 been written, has produced anything more than an NCR to
23 deal with the document.

24 We still, to this moment, there is no full scale
25 investigation being conducted by the Utility into the

1 question of admitted breakdown -- forgetting about the
2 controversial ones -- the admitted breakdown in the
3 documentation and procedure for the plant.

4 JUDGE BLOCH: You are also suggesting a
5 breakdown in the documentary view process which allowed
6 the documents to go to the vault?

7 MR. ROISMAN: Sure. Absolutely. It went all
8 the way through the system and some of them -- I guess now
9 the NCR was written, they come out of the vault. Yes.
10 Here again I think the major question is: Utility
11 response to the breakdown, and what does that show us?

12 And, lastly, there is the question raised --

13 JUDGE BLOCH: What was three?

14 MR. ROISMAN: I'm sorry, three was that --

15 JUDGE BLOCH: The vault?

16 MR. ROISMAN: Yes. Three was the procedural
17 breakdown on which they have had notice and still have not
18 done this investigation to find out why and how it
19 happened, to root out the root cause of it.

20 And lastly, using the hypotheses approach, what
21 hypothesis that neatly fits the facts of how it happened,
22 that you had so many signatures that looked -- that are
23 the same by the same people on the same day or very nearly
24 the same day, and that you had a set of forms that
25 apparently had "sat" prewritten on them, and that you had

1 all of these people, like Dillingham, complaining that the
2 documentation may have been missing -- one explanation,
3 one hypothesis that fits all those facts, is that a
4 substantial number of control documents were lost at the
5 plant site sometime in 1978-80 time period; and that after
6 they were lost, a new set of documents was created,
7 applying the thesis that all that work wouldn't have been
8 done and approved if it hadn't been done right, so what we
9 are doing is morally acceptable even though procedurally
10 irregular.

11 And, what we show as an example of that is the Exhibit
12 Number 2 which is attached to our supplemental filing,
13 which is a copy of the proper form as required back in
14 1978 for doing liner plate inspections; the form which
15 Mr. Brandt had indicated had not been used.

16 Mr. Brandt's testimony here, his most recent testimony
17 says: Well, that's on the transfer canal and it's not on
18 the liner plate cavity for reactor number 2, and I have
19 never pretended to be testifying about that.

20 But the form which appears on page 2 of that Exhibit 2,
21 that is the same form which you'll find attached to the
22 original procedures which were in place in '78 and '79.
23 And most importantly, you'll notice that the signature
24 line in the "sats" are there by Larry Wilkerson. His name
25 also appears all over reactor cavity number 2.

1 So Larry Wilkerson, according to Exhibit 2 on page 2,
2 on the 2nd of May of 1978, or depending upon whether he's
3 from Canada or not, the 5th of February, 1978, was --

4 JUDGE BLOCH: I'm sorry, I don't understand that
5 part.

6 MR. ROISMAN: In Canada they write the dates
7 differently than we do. When you are using only numbers,
8 there's an ambiguity when you are on a low month.

9 JUDGE BLOCH: They don't usually use that in
10 Texas.

11 MR. ROISMAN: I don't know which they use in
12 Texas.

13 In any event, Mr. Wilkerson knew very well what the
14 right form was when he was using it. How do we explain
15 that Mr. Wilkerson, when working on reactor cavity 2, was
16 using the wrong form, not raising any question about it
17 and not being bothered by it? One explanation is that he
18 wasn't. He was using the right form over there too, but
19 he lost it. Not he personally, but it got lost in the
20 transfer of the documents. That's where we have the
21 anomaly of the wrong form being used. In the millwright
22 shop it was discovered and the millwrights used a document
23 which followed their QCQP -- strike the QCQP -- whatever
24 those construction procedures are called -- and that's why
25 that form shows up for this large number of documents.

1 JUDGE BLOCH: Three and four are really tied
2 together. You can't prove four. You think because of the
3 possibility of four there's a stronger case for
4 investigation being done under three?

5 MR. ROISMAN: Yes, and also I think it's
6 important to identify what we felt were the major open
7 questions that a reasonable mind would want to inquire
8 into, in our judgment, further, based upon what we now
9 know -- what have we learned.

10 JUDGE BLOCH: Did you learn anything from
11 Mr. Brandt's testimony that leads you to want to drop any
12 of the former allegations that CASE made?

13 MR. ROISMAN: Yes. Mr. Brandt's testimony at
14 page -- this is -- this is not definitive and I will
15 confess to the normal advocate's error of not looking for
16 things that contradict me -- I did go through the
17 testimony at least to the point where I found one major
18 one: Mr. Brandt explains beginning at question and answer
19 on page 15, at question 7 of his just recently filed
20 testimony, that "our concern as expressed in -- on page 5
21 of Exhibit 1 to our supplemental filing regarding the use
22 of an improper welding procedure was in error because, in
23 fact, the welding procedure had been modified in time to
24 fully accommodate that."

25 Our analysis indicates that Mr. Brandt is correct, that

1 we were not aware of that change, and that with respect to
2 those items, that we, in effect, we don't withdraw it but
3 we concede that his explanation is valid.

4 JUDGE BLOCH: Will there be room at the
5 conclusion of Mr. Brandt's testimony to file further
6 stipulations which may narrow the issues? It sounds like
7 you have some that you think are important. Can we get
8 rid of the unimportant ones? Are there others that you
9 may be able to stipulate away?

10 MR. ROISMAN: I would never say "no" to that
11 question.

12 JUDGE BLOCH: Okay. So there's a possibility we
13 should consider whether that might be helpful later. I
14 would hope the parties might talk about that possibility
15 themselves and then we would have that happen if there's
16 room for that on both sides.

17 MR. ROISMAN: I think probably the key to it
18 will be whether and to what extent we are able to agree:
19 What are the items on which you are not seeking testimony?
20 But it's your decision to make, rather than us to put
21 somebody on who says something, or the Applicant to put on
22 somebody who says the opposite.

23 The more of that -- we may have a broader view of what
24 those are than the Applicant may, so that may narrow some
25 of the items that we can stipulate on. But I'm more than

1 amenable to talking it over with Mr. Watkins and
2 Mr. Hoffman, for the Staff.

3 JUDGE BLOCH: Have you concluded your
4 presentation?

5 MR. ROISMAN: With one addition. Since there's
6 been so much discussion about independent investigations
7 that were conducted by us, I thought at least for the
8 record that I should introduce my team. Of course next to
9 me is Ms. Garde, and to her right is Ms. Meddie Gregory,
10 who did much of the document analysis work.

11 To my left and sitting further back is Dobie Hatley,
12 who was a document control specialist at the company and
13 has been a document control specialist of ours; and at the
14 table with me is Ms. Neumeyer who, of all the people here
15 in the room, I believe is the only one who is qualified as
16 an ASME QC inspector. Should the board have any questions
17 about ASME QC procedures, Ms. Neumeyer is willing and we
18 are more than happy to put her on the witness stand to ask --
19 to answer questions about technical matters of that nature
20 that she has special qualifications to be able to answer.

21 JUDGE BLOCH: First we'd have to find out that
22 the ASME code is applicable; right?

23 MR. ROISMAN: And I think she could certainly
24 give you the opinion of someone who is an ASME inspector
25 on that question. Since you may remember it was she who

1 was asked out of the inspectors to come and sign these
2 documents. That would of course have been unnecessary to
3 get a QC, an ASME QC inspector to sign them if they were
4 not themselves ASME QC documents.

5 JUDGE BLOCH: I think we'll be consistent on
6 that and rely on the code themselves rather than rely on
7 testimony about the codes.

8 Mr. Watkins, you said you had no response. Have you
9 changed your mind?

10 MR. WATKINS: I would like to reintroduce our
11 witness, C. Thomas Brandt, and announce that he would like
12 a brief recess.

13 JUDGE BLOCH: Sure. We'll come back at half
14 past.

15 (Recess.)

16 Whereupon,

17 C. THOMAS BRANDT

18 resumed the stand, having been previously duly sworn, was
19 examined and testified further as follows:

20 JUDGE BLOCH: Okay. Mr. Watkins?

21 MR. WATKINS: Mr. Brandt has testified and is
22 here to testify as to the technical merit or lack of merit
23 in many of the allegations just summarized by Mr. Roisman.
24 And I'll leave that technical testimony to our expert.

25 Precious few of the travelers and the majority of the

1 issues about which we are now talking have anything to do
2 with the testimony of Sue Neumeyer. We are now dealing
3 principally with purely technical issues regarding these
4 travelers.

5 We don't think that many of the issues that the
6 Intervenors have raised have any merit. I say we don't
7 think because we are not sure what their bases are for
8 making some of the statements that they make, for example
9 in their most recent additional allegations. For that
10 reason we filed interrogatories so that that we can find
11 out what the bases are.

12 If they are, as we suspect -- and many of those issues
13 lack merit -- the majority of those are identified in
14 Mr. Brandt's testimony filed last week. We now believe,
15 and the responses to the interrogatories may indicate
16 further, that many of these issues are appropriate either
17 for summary disposition or, as the Chairman suggested,
18 certainly stipulations by the parties.

19 Mr. Roisman identified one. There are others.

20 Mr. Brandt has identified limited instances in which we
21 agree with the Intervenors that there were some problems
22 with some of the travelers and some of the welds.

23 These limited number of cases indicate neither a
24 quality control breakdown as the Intervenors would have
25 the board believe nor do they have any safety significance

1 as the board inquired. That concludes our statement.

2 JUDGE BLOCH: We, I assume, are going to be
3 briefed on the codes themselves rather than testimony.

4 MR. WATKINS: You are not going to be briefed by
5 me. Mr. Brandt is here precisely for that reason.

6 Do you want a legal brief?

7 JUDGE BLOCH: We prefer to know from the codes
8 themselves what apply. We said that in the other side of
9 the case. We mean it. The documents should speak for
10 themselves.

11 MR. WATKINS: I believe the answer to that,
12 subject to correction by Mr. Brandt, should be found in
13 the FSAR --

14 THE WITNESS: Would a reference to the safety
15 commitments in the FSAR answer your question?

16 JUDGE BLOCH: That may be a full answer. I'm
17 not sure what other documents apply. But if you think
18 that's the controlling document, yes, we would like to
19 have the citation.

20 THE WITNESS: I won't say the controlling
21 document, but that's a clear indication that it's not ASME.

22 JUDGE BLOCH: What is the citation?

23 THE WITNESS: It's in table 17, A-1.

24 JUDGE BLOCH: And it has been that way since
25 when?

1 THE WITNESS: I won't attempt to guess. I know
2 of no changes with regards to safety classification on the
3 fuel pool liners.

4 JUDGE BLOCH: I assume if there were,
5 Applicant's counsel will inform us?

6 MR. WATKINS: Noted.

7 Mr. Chairman, the witness has been sworn before. If
8 you want to remind him that he continues to be under oath?

9 JUDGE BLOCH: Yes. You are reminded, Mr. Brandt.
10 Thank you.

11 EXAMINATION

12 BY MR. WATKINS:

13 Q Mr. Brandt, do you have before you a document
14 consisting of 13 pages of questions and answers with
15 attachments dated November 21, 1984?

16 A Yes, I do.

17 Q Would you identify that document, please?

18 A It's titled "Prefiled testimony of C. Thomas
19 Brandt regarding CASE's further 'evidence' of a quality
20 control breakdown in the construction, installation, and
21 inspection of the stainless steel liner plate."

22 Q Is that your testimony, Mr. Brandt?

23 A Yes, it is.

24 Q Do you have any corrections to make in your
25 testimony?

1 A No, I don't.

2 Q Is this testimony true and correct?

3 A Yes, it is.

4 MR. WATKINS: Mr. Chairman, Applicants move the
5 admission into evidence of prefiled testimony of
6 Mr. Brandt that I have just identified.

7 JUDGE BLOCH: There being no objection, it is
8 admitted into evidence and may be bound into the
9 transcript as if read.

10 May I ask for clarification whether the exhibits are
11 being offered as evidence also?

12 MR. WATKINS: Yes, your Honor, with this
13 qualification. My review of my document indicates that
14 some of these are illegible due to duplicating errors, and
15 we will supply legible copies to the parties and to the
16 board as quickly as we can.

17 CHAIRMAN BLOCH: And to the reporter?

18 MR. WATKINS: And to the reporter.

19 JUDGE BLOCH: Is that a clear copy?

20 MR. WATKINS: The attachments are not clear and
21 that's why we are going to have to supply them.

22 (Discussion off the record.)

23 JUDGE BLOCH: We'll bind these in and make
24 provision for service of the other document at a later
25 time.

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(The document follows:)

November 21, 1984

UNITED STATES OF AMERICA
 NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
TEXAS UTILITIES GENERATING	)	Docket Nos. 50-445-2 and
COMPANY, <u>et al.</u>	)	50-446-2
)	
(Comanche Peak Steam Electric	)	(Application for
Station, Units 1 and 2)	)	Operating Licenses)

PREFILED TESTIMONY OF C. THOMAS BRANDT REGARDING
 CASE'S FURTHER "EVIDENCE" OF A QUALITY CONTROL
 BREAKDOWN IN THE CONSTRUCTION, INSTALLATION
 AND INSPECTION OF THE STAINLESS STEEL LINER PLATE

- Q1. Mr. Brandt, have you had an opportunity to review the memorandum concerning the stainless steel liner plate filed by the Citizens Association for Sound Energy on November 15, 1984?
- A1. Yes.
- Q2. Mr. Brandt, directing your attention to page two of that memorandum, CASE contends that applicants incorrectly assert that the liner plate is not safety-related. Do you see that passage?
- A2. Yes. It is set out in the first three paragraphs on the page.
- Q3. Is that contention correct?

A3. No. CASE's contention shows a lack of understanding of my testimony and the procedures applicable to the fabrication and installation of the stainless steel liner plate. As I testified before, the fabrication and installation of the stainless steel liner have been designated safety-related activities by the architect engineer. I would like to note my testimony on this point appears at page 45,315 of the transcript of this proceeding. Therefore, CASE is factually incorrect when it asserts that applicants have testified that the liner plate is not safety related. What I testified to, and what CASE appears not to understand, is that the welds in question are non-structural; this point is different from, and unrelated to, the fact that the fabrication and installation of the liner plate are safety-related activities.

The significance of the welds being non-structural is that the architect-engineer did not impose stringent requirements such as those imposed by the ASME code, for the fabrication, installation, inspection and testing of the liner and the welding associated with these activities. The architect-engineer's only concern was that the welds not leak. Accordingly, welding on the liner plate is not now, nor has it even been, under the jurisdiction of the ASME Code.

Only two matters remotely tie the liner plate to ASME activities, but neither of these matters apply ASME fabrication and installation requirements to the liner plate.

First, the specification for the liner plate requires that welders who work on, and welding procedures used in connection with, the liner plate be qualified in accordance with Section IX of the ASME Code. This Section, however, is limited to the qualifications of procedures and welders, and it is not a fabrication code. Accordingly, the Code's fabrication requirements simply do not apply to the liner plate. Second, as an administrative matter, the inspection group originally assigned to perform these inspections was the ASME group. In February 1982, responsibility for these inspections was transferred to the non-ASME inspection group; this transfer was also an administrative matter. Again, I want to emphasize that these assignments were unrelated to the applicability of the ASME Code requirements to the fabrication and installation of the liner plate.

- Q4. Mr. Brandt, directing your attention to pages two and three of CASE's memorandum, CASE asserts that the correct traveler form was used for weld no. 988, and that you either were wrong in testifying that all travelers were initiated on the wrong form or that you knew that some travelers were initiated on the correct form and your testimony was deceptive. Do you see these allegations?
- A4. Yes, I do.
- Q5. Is CASE correct?

A5. No. First, my testimony was that I could find no evidence that the correct traveler form was used before April 18, 1979. My review of the travelers indicates that the correct form was used after that date. Second, all of my testimony, as I have stated several times, is limited to the travelers for the Unit 2 refueling cavity, which is located inside the Unit 2 reactor building. All thirteen hundred travelers at issue in this proceeding are for that cavity. I would like to point out that I made this point on pages 15,921-923, 15,927 of the transcript of this proceeding. Traveller 988 cited by CASE is not for a weld in this cavity. It is for a weld in the Unit 2 fuel transfer canal, which is located inside the fuel building. This is not only a completely different cavity; it is for a cavity located in a completely different building. Thus, CASE's allegation is premised on a traveler that was not even included in the travelers that were the subject of my testimony.

Q6. Directing your attention to page 3 of Exhibit I to CASE's memorandum, CASE alleges that certain welds lack QC verification of the fit-up and cleanliness of the outside welds. In support of this allegation, CASE identifies a total of 147 welds which it claims lack QC verification of the fit-up and cleanliness of outside welds. Do you see those allegations?

A6. Yes I do.

Q7. Have you reviewed the travelers for these welds?

A7. Yes.

- Q8. What were the results of your review?
- A8. In each instance, I found that there was either a chit and/or a traveler documenting QC verification of the fit-up and cleanliness of the outside weld. Accordingly, CASE's allegation is factually wrong.
- Q9. CASE asserts on page three of Exhibit 1, "it is evident that the chits [attached to the 147 travelers] were not intended to verify step 1, but was [sic] intended to verify Step 3 and/or 2 only." Is this correct?
- A9. No. The chits themselves reflect that they document QC verification of the fit-up and cleanliness of the outside weld.
- Q10. CASE also alleges on page 3 that 170 other welds lack QC verification for fit-up and cleanliness of the outside weld. Did you review the documentation for these welds?
- A10. Yes.
- Q11. What were the results of your review?
- A11. With the exception of weld 326, I found that there was a chit and/or traveler substantiating the QC inspection of the fit-up and cleanliness of the concrete side of these welds. Thus, with the exception of weld 326, CASE's allegation is factually wrong.
- Q12. Have you determined why there was no documentation verifying the cleanliness and fit-up of the outside weld for traveler 326?
- A12. Yes, I have.

- Q13. Why was documentation of the QC verification for this weld not found during your review?
- A13. The weld has not been made. It is a weld between an angle and the top plate of the cavity, which as of November 20, 1984, had not yet been fit-up.
- Q14. CASE next states on page four of Exhibit 1 that five welds lacked QC verification of fit-up and cleanliness for the outside welds prior to welding which allegedly renders their conditions indeterminate, contrary to procedure and 10 C.F.R. Part 50, Appendix B, Criteria V. Do you agree with this characterization?
- A14. I cannot agree with CASE's position. I do agree with CASE's contention that, because of the dates of the signatures, the chits attached to these travelers do not definitely establish that the five cleanliness and fit-up inspections were performed prior the time the backing strip was tack-welded to the plates. This is a violation of site procedures, and I have directed that an NCR be written to address this deficiency.

While I agree that there is a paper problem with these five travelers, I cannot agree that the deficiency is technically significant. The fit-up of the plates associated with the travelers identified by CASE was reverified and documented and the cleanliness of the inside joint was verified and documented prior to making the inside welds. Under these circumstances, the verification of the fit-up and cleanliness of the plates prior to tack-welding the

backing strip to the plates is not a technical concern. The only purpose of verifying the cleanliness of the plates prior to tack-welding the backing strip to the plates was to assure that the backing strip could be securely tacked on and would not become dislodged inside the leak chase channel. The sole purpose for the inspection is to ensure that the backing strip remains in place until the time of the inside fit-up. The reason for verifying fit-up prior to tack-welding the backing strip to the plates was to prevent difficult rework which would be required after the attachment of the leak chase channel if the original fit-up between the plates was out of tolerance. In any event, if the backing strip had dislodged or if the fit-up have been improper those deficiencies would have been noted when the cleanliness and fit-up inspections were performed for the inside welds.

- Q15. On page five of Exhibit 1, CASE identifies a number of welds which were done using welding procedure 88023 and claims that the correct procedure for those welds was welding procedure 88025. Do you agree with this assertion?
- A15. No. The welds CASE identified are embed to plate welds. All welds made on the liner plates between embeds and plates are groove welds in which the deposited weld metal thickness (joint thickness) is .1875" (the thickness of the plate). The proper procedure for making this weld in 1978 was WPS 88023, which was qualified for thickness ranges .0625" through .750". Prior to October 15, 1979, WPS 88025

was qualified for welds with thicknesses of 0.75" through 3.5". On October 15, 1979, WPS 88025 was revised and the thickness range was expanded from 0.75" through 3.5" to 0.185" through 3.50". After this date either WPS 88023 or WPS 88025 could have been followed when making the welds to which CASE refers. Therefore, CASE is wrong in contending that the wrong procedure was used in making the referenced welds. To confirm my observations on this point, copies of WPS 88023, WPS 88025 and 1977 ASME IX, QW 202.2 are appended to my testimony as attachments 1, 2 and 3 respectively.

Q16. On page six of Exhibit 1, CASE identified 243 travelers which CASE claims lack QC verification for Step 5, fit-up and cleanliness of the inside welds. Have you reviewed the traveler packages for these welds?

A16. Yes.

Q17. What was the result of your review?

A17. It is difficult to understand CASE's allegations with respect to the various welds included on the lists on page 6 of Exhibit 1 to CASE's memorandum. Initially, it is important to note that CASE's list includes five-line travelers and eight-line travelers. With respect to the five-line travelers, for example weld 6, the fifth line is for the final V.T. inspection, not for a fit-up and cleanliness inspection. Thus, CASE's allegations for the five-line travelers does not make any sense. In any event,

where the fifth line of the five-line traveler is unsigned, it simply means that weld is in process, and it does not reflect any paper or technical deficiency.

The eight-line travelers on the list fall into several categories. First, many of the travelers are for welds that are welded on one side only (welds 875, 896, 901, 908, 909, 910, 912, 682, 713, 714, 779, 783, 784, 785, 797, 798, and 799). For these welds CASE's allegation is wrong because there is welding on only one side of the liner; consequently, there are no fit-up or cleanliness inspections to be performed on the second side of the liner. Second, CASE is correct with respect to a small group of eight-line travelers (welds 12, 51, 59, 65, 66, 72, 73, 90, 93, 107, 147, 203, 709, 851, and 907), and I have directed that an NCR be written identifying the welds for which the inside fit-up and cleanliness inspections have not been documented. Finally, my examination of all of the remaining eight-line travelers on CASE's list reveals that CASE is factually wrong because the inside fit-up and cleanliness inspections were performed and documented.

Q17. On pages 7-8 of Exhibit 1, CASE lists twenty-seven (27) welds which CASE contends are missing the final V.T. of the inside weld. Have you reviewed this allegation?

A17. Yes.

Q18. What conclusions have you drawn as a result of that review?

- A18. This is another example of CASE's lack of understanding of the fabrication and inspection process. CASE is correct in noting that a final visual inspection has not been performed for these welds, but the final visual inspection has not been performed because the welding/inspection process has not been completed. My review of the travelers indicates that no holdpoints have been bypassed and no violation exists for any of these welds.
- Q19. Mr. Brandt, CASE also lists twenty-two (22) welds on page 8 for which WFMLs are not in the package. Have you had an opportunity to review this allegation?
- A19. Yes. However, the absence of WFMLs in these traveler packages does not constitute a violation of procedure or a deficiency. There is simply no requirement specifying that a copy of the applicable WFML is to be kept in each traveler. I might also add, there is no requirement for filler metal traceability on any of these welds.
- Q20. On pages 9-15 of Exhibit 1, CASE alleges that WFMLs are referenced on travelers indicating that new welding was done, but there is no QC verification or involvement when the welding is done. Assuming this to be true, what significance does this allegation have?
- A20. Although I have not reviewed all the travelers listed by CASE on pages 9-15, I have reviewed enough to lead me to believe that this is another instance where CASE does not understand the requirements and/or the fabrication sequence. In all travelers I reviewed, no inspection hold-

points have been bypassed. If CASE is attempting to infer that QC must perform some type of "verification" each day welding is performed, this simply is not the case. All required inspections are procedurally described, and there is no requirement for "verification" each day welding is performed. From the sample I reviewed, I am unable to detect any violation.

Q21. Mr. Brandt, turning your attention to pages 16-20 of Exhibit 1, CASE lists numerous welds for which welding was done, but no QC verification or involvement is shown, and that WFMLs are attached to, but not references on, the travelers. What significance, if any, is there to this allegation.

A21. None. Once again, as I discussed above, this is apparently another instance where CASE is attempting to assert that verification of welding must be performed on each day that welding occurs. Of the travelers that I reviewed in connection with this allegation, all welds were still in-process, i.e., they had not yet received final inspection. CASE's observation that WFMLs are attached to, but not referenced on, the travelers is correct; however, the allegation is without significance. This information is not required by specification, and serves no quality function. The millwrights are procedurally required to enter this information but they simply have not done so as of this date.

- Q22. Mr. Brandt, CASE identifies 5 NCRs on page 21 of Exhibit 1 which describe welds for which vacuum box testing was improperly noted as not applicable. Is there significance to this observation?
- A22. No. It was an error made by the inspector, but was properly reported and dispositioned on an NCR.
- Q23. On page 22, CASE lists fifty-seven (57) welds which it alleges are deficient because final V.T. has been performed without vacuum box and/or liquid penetrant examination being performed. Have you reviewed this allegation?
- A23. Yes, I have.
- Q24. What was the result of your review?
- A24. CASE apparently misunderstands the inspection testing sequence. The final V.T. precedes the vacuum box testing and the liquid penetrant examination. As these welds are clearly still in process, no holdpoints have been bypassed and no violation exists.
- Q25. On the bottom of page 22, CASE notes "the final V.T. of the inside welds were signed off on the following welds by other inspectors." What is the significance, if any, of this observation?
- A25. I am not quite sure to whom CASE is referring by the use of the phrase "other inspectors." I assume CASE is referring to the fact that the final V.T. has been performed by inspectors other than those who performed the P.T. and/or V.B. test. If this is CASE's allegation, it is without

merit because there is no requirement that the same inspector perform V.T. and P.T. and/or vacuum box testing. No violation exists.

Q26. Mr. Brandt, on page 23 of Exhibit 1, CASE lists 131 welds which it alleges are deficient because the "completion of weld inspection block on attachment 1 signed off as completed prior to the completion on welds prior to [sic] vacuum box testing and/or P.T. inspection being performed."

Have you reviewed this allegation?

A26. Yes, I have.

Q27. What did your review indicate?

A27. The welds listed fall into several different categories. For a number of welds which CASE asserts that "completion of weld inspection block on attachment 1 signed off as completed prior to the completion on welds prior to [sic] vacuum box testing and/or P.T. inspection being performed," CASE is incorrect as the travelers clearly indicate that the weld is still in process. Welds 5, 7, and 8 are examples of this category. As the welds are incomplete, no violation exists. For a small group of welds, (weld numbers 1240, 1242, 1245, 1248, 1182, 1209, and 1210), CASE is correct and I have directed that an NCR be written identifying the condition as nonconforming. For all other welds listed on page 23, CASE is incorrect because the referenced tests are not required; therefore, no violation exists.

Q28. CASE alleges on page twenty-four of Exhibit 1 that "[m]any NCR's were written for welds that James Cole had N/A'd the vacuum box test on. The vacuum box test has been reestablished on all but the ones below." Have you had an opportunity to review this allegation and the travelers involved with this allegation?

A28. Yes, I have.

Q29. What was the result of your review?

A29. Apparently CASE alleges that vacuum box was required for these welds. CASE lists eighty-eight (88) welds which it believe are deficient. As a result of my review, I have determined that with one exception (weld 932) that CASE's allegation is incorrect. All other welds are not pressure boundary welds and therefore do not require vacuum box testing, and the step is properly marked not applicable ("N/A") on the traveler. I have directed that an NCR be written for weld 932 noting that the vacuum box test for that weld was improperly marked "N/A."

Q30. Mr. Brandt, CASE alleges on the bottom of page twenty-four of Exhibit 1, that "PT test has been performed on these welds but vacuum box has not". Have you had an opportunity to review this allegation and the related travelers.

A30. Yes I have.

Q31. What were the result of your review of these travelers?

A31. CASE lists an additional forty-eight (48) welds for which vacuum box has not been performed. For four (4) of these welds (welds 1230, 1232, 1235, and 1238), CASE is correct

and I have directed that an NCR be prepared describing this condition. For all other welds listed here, CASE is incorrect; the step has properly been marked not applicable as these welds do not require vacuum box testing.

- Q32. Mr. Brandt, directing your attention to page twenty-five of Exhibit 1, in particular to CASE's discussion of NCR M-83-01847 dated 7/7/83. CASE states that "The NCR was written in 1983 and a hold tag applied. It has not been dispositioned yet, and there is no copy of this NCR in traveler 151. There is no RPS in package for weld 154. 154 was signed off by Don Vogt, S.M. McCoy, for steps 2, 3, and 4. Jim Cole inspected 151 on 4/20/80 and 153 on 4/24/80." What is the significance, if any, of these allegations?
- A32. First, CASE is incorrect in stating that "...it has not been dispositioned yet." In fact, CASE describes the disposition of this NCR on page 25 of Exhibit 1. Second, original NCRs are not filed with traveler packages, nor does the lack of a copy of the NCR in package 151 constitute a violation of any code, standard, specification, or procedure. Third, CASE's observation that no RPS is in package 154 is correct, but it is without significance for two reasons: first, the repair is not yet complete, and second, the repair, when completed, will be of weld 151, not weld 154, and accordingly a copy of the RPS will be in package 151, not 154. Fourth, with respect to CASE's observation that "Jim Cole inspected weld 151 on 4/20/80, [actually 4/2/80] and 153 on 4/24/80," CASE is apparently

speculating on Mr. Cole's ability as an inspector. There is no indication that weld 153 was improperly inspected. The NCR clearly states that the backing bar had been ground through. No evidence exists which indicates that the backing bar was not intact when Mr. Cole performed his inspection on 4/24/80, and, as CASE notes, the incident (grinding through the backing bar) was properly reported as nonforming. In the other incident described, i.e., the failure of the backing bar to continue for the full length of the weld at the intersection of welds 166 and 153, CASE again seems to allege that this weld was improperly inspected by Mr. Cole. Although not extremely clear from the face of the document, what Mr. Halcomb, the originator of the NCR, was attempting to indicate by attaching the Chit for first fit-up of weld 154, was that the "deficient" backing strip was from weld 154, not from weld 151. Therefore, Mr. Cole clearly was not involved with this deficiency. The deficient condition becomes clearer after looking at the drawing. Weld 151 is a vertical weld which attaches a plate (A35) to a gate guide. Although the vertical weld continues on down the gate guide, it is numbered differently for each plate it attaches. Welds 151, 155, 157, and 159 all form the vertical weld which attaches a gate guide to plates A35, B35, M35 and M35, respectively. This weld (although 4 weld numbers) was fit up on 5/17/79. The backing strip for this weld (weld numbers 151, 155, 157, and 159) was continuous for the length of the weld. The fact

that the backing strip for weld 154 lacked 3/8" from running the full length of the weld was properly reported on an NCR, and is attributable to inspector error.

Q33. On page 26 of Exhibit 1, CASE refers to a numbering discrepancy which was reported on NCR M-83-00907. What significance, if any, is there for this allegation?

A33. This allegation is correct, however without significance.

In this case the construction group which issued the travelers, assigned separate weld numbers for the welds attaching the backing strip and leak chase to the gate guide. Although clearly indicated on the traveler, the millwrights were not timely in assignment of these weld numbers to the marked-up drawing which they were procedurally required to maintain. This condition was properly identified by QC on an NCR and the situation was corrected. In no way was this an inspection deficiency.

Q34. Mr. Brandt, on page 27 of Exhibit 1, CASE identifies two nonconformance reports, NCR M84-01969 and NCR M84-00498. Have you had a chance to review CASE's allegation regarding these NCRs?

A34. Quite frankly, I am unable to find that CASE alleges anything with regard to these two NCRs. Both identified problems, and both were properly dispositioned in accordance with site procedures. CASE's note regarding the absence of a copy of the NCR in all of the packages is not a violation of any requirement. As I stated earlier, the original NCR is filed in a location separate from the

traveler package. All packages do contain the corrected PT report and reference NCR M-84-00948. Other than the deficiency which was reported on these two NCRs, I am not aware of any deficiency in the way they were processed or dispositioned.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
TEXAS UTILITIES ELECTRIC	)	Docket Nos. 50-445-2 and
COMPANY, <u>et al.</u>	)	50-446-2
)	
(Comanche Peak Steam Electric	)	(Application for
Station, Units 1 and 2)	)	Operating Licenses)

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "Prefiled Testimony of C. Thomas Brandt Regarding CASE's Further 'Evidence' of a Quality Control Breakdown in the Construction, Installation, and Inspection of the Stainless Steel Liner Plate" in the above-captioned matter were served upon the following persons by hand-delivery or deposit in the United States mail, * first class, postage prepaid, this 20th day of November, 1984:

Peter B. Bloch, Esq.
Chairman, Atomic Safety and
Licensing Board
U.S. Nuclear Regulatory
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Commission
Washington, D.C. 20555

Stuart A. Treby, Esq.
Office of the Executive
Legal Director
U. S. Nuclear Regulatory
Commission
Washington, D. C. 20555

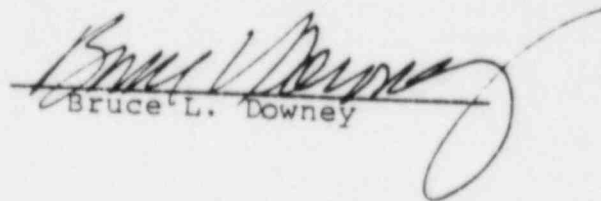
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Licensing Board Panel
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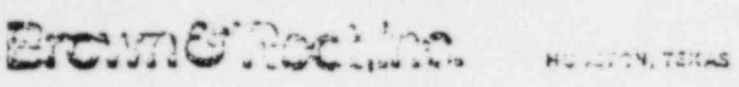

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President, CASE
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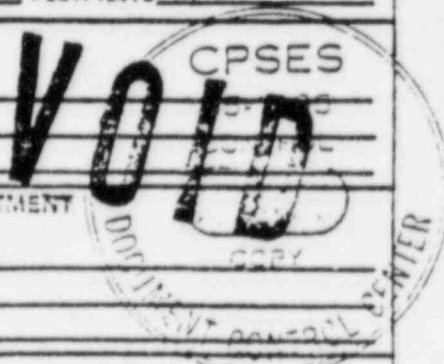
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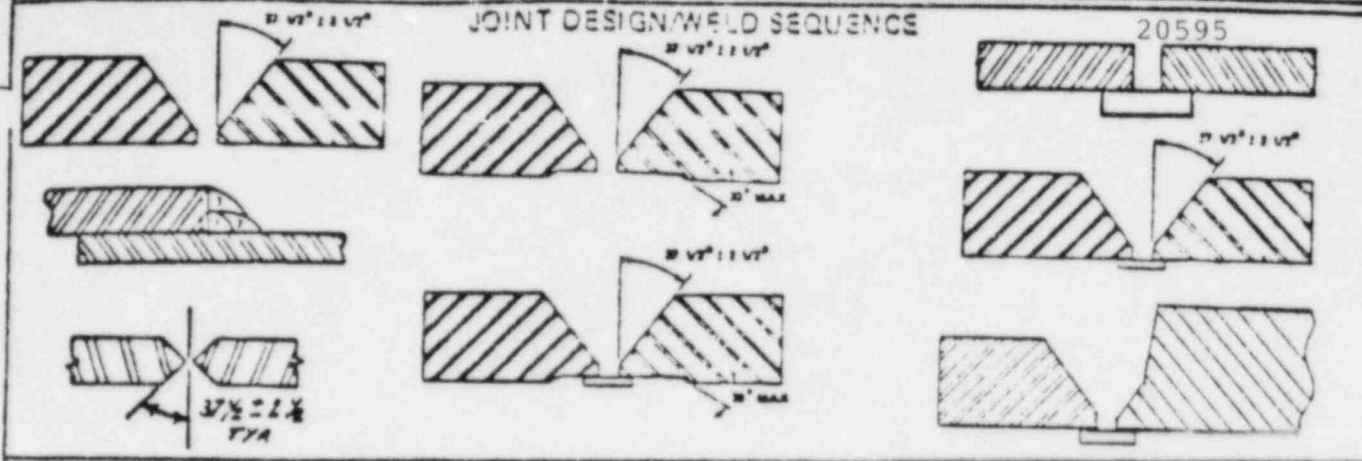
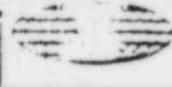
Ellen Ginsberg, Esq.
Atomic Safety and Licensing
Board Panel
U. S. Nuclear Regulatory
Commission
Washington, D. C. 20555


Bruce L. Downey

cc: Homer C. Schmidt
John W. Beck
Robert Wooldridge, Esq.

			WELD PROCEDURE NO. <u>38023</u> REVISION <u>4</u> PAGE <u>1</u> of <u>2</u>
APPLICABLE CODE(S) <u>ASME Sec. IX</u> <u>ASME Sec. III</u> <u>ANSI B31.1</u>	WELD PROCEDURE QUALIFICATION COMANCHE PEAK STEAM ELECTRIC STATION		SUPPORTING PQR(S) <u>Q308A4204 Rev. 3</u> <u>Q308A8106 Rev. 4</u> <u>Q308A114 Rev. 1</u>
BASE METAL P NO. <u>9</u> GROUP <u>1</u> TO P NO. <u>9</u> GROUP <u>1</u> THICKNESS RANGE <u>0.0625" through 0.750"</u> DIAMETER RANGE <u>Unlimited</u>	JOINT PREPARATION <u>Weld ends may be prepared by machining, shears and cutting, and/or grinding.</u>		
PROCESS(ES) <u>Gas Tungsten Arc</u>	CLEANING (INITIAL & INTERPASS) <u>Welded surfaces shall be wire brushed or ground as required to remove slag, scale, or other contaminants.</u>		
POSITION <u>All Positions</u> PROGRESSION <u>Upward</u>	GAS SHIELDING <u>Argon</u> FLOW RATE <u>15 CFH Min.</u> PURGE <u>Argon (1)</u> FLOW RATE <u>5 CFH Min.</u> TRAILING <u>N/A</u> FLOW RATE <u>N/A</u>		
FILLER METAL PROCESS <u>GTAW</u> SPA NO. <u>E 9</u> P NO. <u>9</u> AND <u>9</u> PROCESS <u>N/A</u> SPA NO. <u>N/A</u> P NO. <u>N/A</u> AND <u>N/A</u> OTHER <u>N/A</u>	FLUX CLASSIFICATION <u>N/A</u> PARTICLE SIZE <u>N/A</u> TRADE NAME <u>N/A</u>		
PREHEAT PREHEAT TEMP., °F <u>600F</u> INTERPASS RANGE, °F <u>600F - 750F</u>	POSTWELD HEAT TREATMENT TYPE <u>None</u> TEMPERATURE <u>N/A</u> TIME <u>N/A</u>		
ADDITIONAL OR SUPPLEMENTARY REQUIREMENTS <ol style="list-style-type: none"> 1. Prior to the start of welding, the exiting gas from the purge area shall be checked for its oxygen content. Oxygen content of the exiting gas must be 2% or below before welding can commence. The purge shall be maintained for at least two (2) passes (i.e., Root and one Fill). 2. All weld joints shall be free of moisture, oxide, grease, oil and protective coatings. All slag and/or surface defects shall be removed as prescribed from each weld bead prior to the continuation of welding. <p>(1) Purge requirement shall be deleted when backing strip is utilized.</p>			
PREPARATION APPROVAL <u>[Signature]</u> WELDING ENGINEERING <u>[Signature]</u> MATERIALS ENGINEERING <u>[Signature]</u> QUALITY ASSURANCE <u>[Signature]</u>	DATE <u>9-20-78</u> <u>9-20-78</u> <u>9-20-78</u>	ISSUE DATE <u>September 20, 1978</u> NEG SUPPLIER <u>N/A</u> ENGINEER <u>Approval GHF 3250 10-6-78</u> PROJECT NO. <u>CR-0172</u> <p style="text-align: center; font-size: 1.2em;">ATTACHMENT 1</p>	





WELD PARAMETERS

PASS	PROCESS	FILLER METAL		GAS/FLUX		ELECTRICAL DATA		TRAVEL IPM	MAX. BEAD WIDTH
		SIZE	CLASS	TYPE	Min. FLOW	TYPE	AMPERAGE VOLTS		
1	GTA	1/16"	See Note 7	Argon	15 CFH	DCSP	100 Max. 11 Max.	-	3/8"
	GTA	3/32"	See Note 7	Argon	15 CFH	DCSP	100 Max. 11 Max.	-	3/8"
2-3	GTA	1/16"	See Note 7	Argon	15 CFH	DCSP	115 Max. 11 Max.	-	3/8"
	GTA	3/32"	See Note 7	Argon	15 CFH	DCSP	115 Max. 11 Max.	-	3/8"
4&ON	GTA	3/32"	See Note 7	Argon	15 CFH	DCSP	140 Max. 11 Max.	-	3/8"
	GTA	1/8"	See Note 7	Argon	15 CFH	DCSP	140 Max. 11 Max.	-	3/8"

PREHEAT	<u>60°F</u>	BACK GOUGING METHOD	<u>N/A</u>
INTERPASS TEMP.	<u>60°F - 350°F</u>	CONTACT TUBE TO WORK (IN.)	<u>N/A</u>
SINGLE OR MULTIPLE ARC	<u>Single</u>	GRIFICE OR CUP SIZE	<u>3/8" Min.</u>
SINGLE OR MULTIPLE PASS	<u>Multiple</u>	WELD PROGRESSION	<u>Upward</u>

SPECIAL INSTRUCTIONS

1. Preheat shall be established prior to the start of welding.
2. The interpass temperature (above 150°F) shall be checked using temperature indicating crayons or an approved equal.
3. The number of weld beads may vary with section thickness.
4. The starts and stops of all tack welds shall be tapered by grinding so that the initial pass can be properly consume the tack.
5. Tack welds which are used at the root of joints shall be complete penetration.
6. The non-consumable electrode for the Gas Tungsten Arc process shall conform to AWS A5.12 Class EWTh-1 (1% Thoriated Tungsten) or Class EWTh-1 (2% Thoriated Tungsten).
7. The type of bare wire selected for the base metal to be welded shall be as follows:

BASE METAL TYPE	BARE WIRE TO BE USED
304 or 304L to 304 or 304L	ER305 or ER308L
316 or 316L to 316 or 316L	ER316 or ER316L
304 or 304L to 316 or 316L	ER316 or ER316L

PROCEDURE QUALIFICATION RECORD

20596

Material Spec. SA-312 TP304 to SA-312 TP304
 P No. 8 Gr. No. 1 to P No. 8 Gr. No. 1
 Welding Processes 1. Gas Tungsten Arc
 Manual or Automatic 1. Manual
 Thickness Range 1. -
 Total Qualified Thickness Range 0.0625" thru .550"
 Thickness and O.D. .200" Wall Thickness x 6.0" O.D.
 2. N/A
 2. N/A
 2. N/A

FILLER METAL

F.No. 1. 6 2. N/A
 A.No. 1. 8 2. N/A
 SFA Spec. 1. 5.9 2. N/A
 AWS Class. 1. ER308 2. N/A
 Filler Size 1. 3/32" 2. N/A
 Trade Name 1. ARCOS
 2. N/A

Describe Filler Metal if not included in Section IX
1/8" x 5/32" Arcos Consumable Insert

FLUX OR ATMOSPHERE

Trade Name 1. - 2. N/A
 Shielding Gas 1. Argon 2. N/A
 Flow Rate 1. 16CFH Min. 2. N/A
 Purge 1. 16CFH Min. 2. N/A

WELDING PARAMETERS

Joint Type Single Vee Groove Weld
 Position 6G Upward
 Backing Consumable Insert (Type K)
 Preheat 600F
 IPT Range 600F - 3500F
 PWHT None
 Passes/Side 1. Multiple 2. N/A
 No. of Arcs 1. Single 2. N/A
 Current 1. DCSP 2. N/A
 Amps 1. 70-100 2. N/A
 Volts 1. 8-10 2. N/A
 Travel Speed 1. 1"-2" IPM 2. N/A
 Oscillation 1. 3/8" Max. 2. N/A
 Bead Type 1. Stringer 2. N/A

TENSILE TEST

Specimen No.	Dimensions		Area	Ultimate Total Load Lb.	Ultimate Unit Stress psi	Character of Failure And Location
	Width	Thickness				
QW-462.1(b)#1	0.724	0.208	.1505	13,100	87,000	Weld
QW-462.1(b)#2	0.710	0.205	.1474	13,200	90,200	Weld

GUIDED BEND TESTS

Type and Figure No.	Result	Type and Figure No.	Result
QW-462.3(a) Face	Satisfactory	QW-462.3(a) Root	Satisfactory
QW-462.3(a) Face	Satisfactory	QW-462.3(a) Root	Satisfactory

Welder's Name Jimmy E. Hite Clock No. 2314 Stamp No. AAC
 Who by virtue of these tests meets welder performance requirements. Laboratory Test No. 29559-60
 Test Conducted by Southwestern Laboratories Address Houston, Texas
 per Mr. Don Sprou Date 2-20-76

We certify that the statements in this record are correct and that the test welds prepared, welded and tested in accordance with the requirements of Section IX of the ASME Code.

Signed BROWN & ROOT, INC.
 (Manufacturer)

Date 3-7-78

By [Signature]

SUPPLEMENTAL TESTS

TOUGHNESS TEST

TYPE _____ PER _____
 SIZE _____ PER _____

20597

SPECIMEN IDENTIFICATION	TEST TEMP	NOTCH LOCATION	ENERGY FT.-LBS.	MILS LAT. EXP	% SHEAR	DROPPED WEIGHT	
						BREAK	NO BREAK

HARDNESS TEST

TYPE _____ PER _____

NO.	WELD METAL	HEAT AFFECTED ZONE	BASE METAL

FILLET WELD TEST

FIG _____

MACRO TEST RESULTS	FRACTURE TEST RESULTS

CHEMICAL ANALYSIS %

METHOD Wet Chemical PER ASTM E250-74

ELEM.	C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Ti	N	Cb	Fe
WELD	0.033	1.76		.42	19.89	9.45	.29				.059	0.0	

Approximate Delta Ferrite Content: 9% (Schaeffler Diagram per Figure 2432-1 of the ASME Section III Code)

ADDITIONAL TESTS

Delta-ferrite tests were conducted on the completed weld at 12:00, 3:00, 6:00, and 9:00 o'clock with a severn ferrite indicator. All positions recorded a 7.5 to 10% delta-ferrite content.

We certify that the statements in this record are correct and that the tests were conducted in accordance with PQR No. 0808AA204 Rev. 3 and the requirements of N/A

Signed BROWN & ROOT, INC.
 By [Signature]

Date 3-7-78

SUPPLEMENTAL TESTS

TOUGHNESS TEST

TYPE _____ PER _____
SIZE _____ PER _____

20598

SPECIMEN IDENTIFICATION	TEST TEMP	NOTCH LOCATION	ENERGY FT-LBS	MILS LAT. EXP	% SHEAR	DROP WEIGHT	
						BREAK	NO BREAK

HARDNESS TEST

TYPE _____ PER _____

NO.	WELD METAL	HEAT AFFECTED ZONE	BASE METAL

FILLET WELD TEST

FIG _____

MACRO TEST RESULTS	FRACTURE TEST RESULTS

CHEMICAL ANALYSIS %

METHOD _____ PER _____

ELEM.	C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Ti	Fe
WELD											
BASE											

ADDITIONAL TESTS

Bend tests were examined at 10X magnification after bending to meet the acceptance criteria of "Interim Regulatory Guide 1.31." No fissures exceeding 1/64" were present.

Radiographic Report of Welder Qualification: Radiographic report WQRT 00009, was run in accordance with Section IX, 1974, Paragraph QW-142. The acceptance criteria of Section VIII, Division 1 was herein met.

We certify that the statements in this record are correct and that the tests were conducted in accordance with PQR No. 0309AA204 Rev. 3 and the requirements of N/A

Signed BROWN & ROOT, INC.

Date

3-7-78By [Signature]

SUPPLEMENTAL TESTS

TOUGHNESS TEST

TYPE _____ PER _____
 SIZE _____ PER _____

20599

SPECIMEN IDENTIFICATION	TEST TEMP	NOTCH LOCATION	ENERGY FT-LBS	MILS LAT. EXP	% SHIFAR	DROP WEIGHT	
						BREAK	NO BREAK

HARDNESS TEST

TYPE _____ PER _____

NO.	WELD METAL	HEAT AFFECTED ZONE	BASE METAL

Two (2) specimens were sensitization tested in accordance with ASMT A262-70, Practice E. Specimens were examined at 20X magnification for presence of microcracking. No fissures were present.

The following parameter excerpts have been extracted from the actual parameters utilized within qualification of said procedure and are calculated to asseverate that the maximum energy input range during qualification is within that prescribed by the PSAR.

ADDITIONAL TESTS

ENERGY INPUT RANGE

GTAW Process

Amperage	80	90
Voltage	10	8
Travel Speed (in. per/min.)	2.0	1.0
Kilojoules/inch	24,000 min.	43,200 max.

Note: Parameters noted are indicative of the maximum and minimum energy input range and do not necessarily reflect the maximum/minimum amperage/voltage utilized during qualification

We certify that the statements in this record are correct and that the tests were conducted in accordance with PQR No. 0808AA204 Rev. 3 and the requirements of N/A

Signed BROWN & ROOT, INC.

Date 3.7.78

By [Signature]

PROCEDURE QUALIFICATION RECORD

Material Spec. SA-312 TP 304 to SA-312 TP 304 20600
 P No. 8 Gr. No. 1 to P No. 8 Gr. No. 1 Thickness and O.D. 0.250" Wall Thickness x 6.0"
 Welding Processes 1. Gas Tungsten Arc 2. Shielded Metal Arc
 Manual or Automatic 1. Manual 2. Manual
 Thickness Range 1. - 2. -
 Total Qualified Thickness Range 0.0625" thru 0.560"

FILLER METAL

F.No. 1. 6 2. 5
 A.No. 1. 8 2. 8
 SFA Spec. 1. 5.9 2. 5.4
 AWS Class. 1. ER308 2. ER308-16
 Filler Size 1. 3/32" 2. 3/32" & 1/8"
 Trade Name 1. Arcos
2. Arcos

Describe Filler Metal if not included in Section IX
N/A

FLUX OR ATMOSPHERE

Trade Name 1. - 2. N/A
 Shielding Gas 1. Argon 2. N/A
 Flow Rate 1. 15 CFH Min. 2. N/A
 Purge 1. 10 CFH Min. 2. N/A

WELDING PARAMETERS

Joint Type Single Vee Groove Weld
 Position 6G Upward
 Backing None
 Preheat 60°F
 IPT Range 60°F-350°F
 PWHT None
 Passes/Side 1. Multiple 2. Multiple
 No. of Arcs 1. Single 2. Single
 Current 1. DCSP 2. DCRP
 Amps 1. 89-95 2. 70-95
 Volts 1. 8-10 2. 16-22
 Travel Speed 1. 3-4 IPM 2. 2.5-5.0 IPM
 Oscillation 1. 5/16" Max. 2. 5/16" Max.
 Bead Type 1. Stringer 2. Stringer

TENSILE TEST

Specimen No.	Dimensions		Area	Ultimate Total Load Lb.	Ultimate Unit Stress psi	Character of Failure And Location
	Width	Thickness				
QW-462.1(b) #1	.732	.146	.1069	9,750	91,200	Weld
QW-462.1(b) #4	.733	.156	.1143	10,100	88,400	Weld

GUIDED BEND TESTS

Type and Figure No.	Result	Type and Figure No.	Result
QW-462.3(a) Face	Satisfactory	QW-462.3(a) Root	Satisfactory
QW-462.3(a) Face	Satisfactory	QW-462.3(a) Root	Satisfactory

Welder's Name Jimmy Hite Clock No. 2314 Stamp No. AAC
 Who by virtue of these tests meets welder performance requirements. Laboratory Test No. 17923
 Test Conducted by Southwestern Laboratories Address 222 Cavalcade, Houston, TX
 per Henry Habenicht Date May 5, 1975

We certify that the statements in this record are correct and that the test welds prepared, welded and tested in accordance with the requirements of Section IX of the ASME Code.

Signed Brown & Root, Inc.
 (Manufacturer)

Date 9-20-78 By T. J. Patareyi

SUPPLEMENTAL TESTS

TOUGHNESS TEST

TYPE _____ PER _____
SIZE _____ PER _____

20601

SPECIMEN IDENTIFICATION	TEST TEMP	NOTCH LOCATION	ENERGY FT-LBS	MILS LAT. EXP	% SHEAR	DROP WEIGHT	
						BREAK	NO BREAK

HARDNESS TEST

TYPE _____ PER _____

NO.	WELD METAL	HEAT AFFECTED ZONE	BASE METAL

FILLET WELD TEST

FIG _____

MACRO TEST RESULTS	FRACTURE TEST RESULTS

CHEMICAL ANALYSIS

METHOD Wet Chemical PER ASTM E350-74

ELEM.	C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cl	Fe
WELD	.079	1.59			.70	19.79	9.13	.29		.060		0.0
BASE	Approximate Delta Ferrite Content: 7% (Schaeffler Diagram per Figure 2433-1 of the ASME Section III Code).											

ADDITIONAL TESTS

Bend tests were examined at 10X magnification after bending to meet the acceptance criteria of "Interim Regulatory Guide 1.31." No fissures were present.

Radiographic Report of Welder Qualification: Radiographic report WQRT 00030 was run in accordance with Section IX, 1974, Paragraph QW-142. The acceptance criteria of Section VIII, Division I was herein met.

We certify that the statements in this record are correct and that the tests were conducted in accordance with PQR No. 0308AB106 Rev. 4 and the requirements of N/A.

Signed Brown & Root, Inc.
By T.J. Portaraji

Date 9-20-78

SUPPLEMENTAL TESTS

TOUGHNESS TEST

TYPE _____ PER _____
 SIZE _____ PFR _____ 20602

SPECIMEN IDENTIFICATION	TEST TEMP	NOTCH LOCATION	ENERGY FT-LBS	MILS LAT. EXP	% SHEAR	DROP WEIGHT	
						BREAK	NO BREAK

HARDNESS TEST

TYPE _____ PER _____

NO.	WELD METAL		HEAT AFFECTED ZONE		BASE METAL	

FILLET WELD TEST

FIG _____

MACRO TEST RESULTS	FRACTURE TEST RESULTS

CHEMICAL ANALYSIS

METHOD Wet Chemical PER ASTM E350-74

ELEM.	C	Mn	Si	Ni	Mo	Cr	N	Cb
WELD	.013	1.61	.35	9.38	.07	19.96	.0586	<.01

Approximate Delta Ferrite Content: 10% (Schaeffler Diagram per Figure 2-11-1 of the ASME Section III Code)

ADDITIONAL TESTS

- Bend tests were examined at 10X magnification after bending to meet the acceptance criteria of "Interim Regulatory Guide 1.31." No fissures were present.
- Delta-Ferrite tests were conducted at twelve (12) points (six per side), along the length of the procedure qualification coupon. Ferritescope MTE/726 was used and the following results noted:

<u>Position</u>	<u>Delta-Ferrite Number</u>
All	All positions ranged between 9.5 and 11.5

We certify that the statements in this record are correct and that the tests were conducted in accordance with PQR No. C308AA114 Rev. 1 and the requirements of N/A

Date 9-20-78

Signed Brown & Root, Inc.
 By T.J. Palancin

SUPPLEMENTAL TESTS

TOUGHNESS TEST

TYPE _____ PER _____
SIZE _____ PER _____

20603

SPECIMEN IDENTIFICATION	TEST TEMP	NOTCH LOCATION	ENERGY FT-LBS	MILS LAT. EXP	% SHEAR	DROP WEIGHT	
						BREAK	NO BREAK

HARDNESS TEST

TYPE _____ PER _____

NO.	WELD METAL	HEAT AFFECTED ZONE	BASE METAL

FILLET WELD TEST

FIG _____

MACRO TEST RESULTS	FRACTURE TEST RESULTS

ADDITIONAL TESTS

- Two (2) specimens were sensitization tested in accordance with ASTM A262-70, Practice E. Specimens were examined at 20X magnification for presence of microcracking. No fissures were present. In addition, Westinghouse Document WCAP - 8678 states that energy input of 80 KJ/inch for base metal thickness of 3/4" resulted in no sensitization of the base metal.

We certify that the statements in this record are correct and that the tests were conducted in accordance with PQR No. 080SAA114 Rev. 1 and the requirements of N/A

Signed Brown & Root, Inc.Date 9-20-78By T. J. Postarajan

SUPPLEMENTAL TESTS

TOUGHNESS TEST

TYPE _____ PER _____
SIZE _____ PER _____

20604

SPECIMEN IDENTIFICATION	TEST TEMP	NOTCH LOCATION	ENERGY FT-LBS	MILS LAT. EXP	% SHEAR	DROP WEIGHT	
						BREAK	NO BREAK

HARDNESS TEST

TYPE _____ PER _____

NO.	WELD METAL	HEAT AFFECTED ZONE	BASE METAL

FILLET WELD TEST

FIG _____

MACRO TEST RESULTS	FRACTURE TEST RESULTS

ADDITIONAL TESTS

- Delta Ferrite tests were conducted on the completed weld test pad at six equidistant locations at the centerline with a severn ferrite indicator. All positions recorded the following delta-ferrite content:

Greater than 7.5, less than 10%.

- Two (2) specimens were sensitization tested in accordance with ASTM A262-70, Practice E. Specimens were examined at 20X magnification for presence of microcracking. No fissures were present. In addition, Westinghouse document WCAP-8679 states that energy input of 80 KJ/inch for base metal thickness of 3/4" resulted in no sensitization of the base metal.

We certify that the statements in this record are correct and that the tests were conducted in accordance with PQR No. 0809AB106 Rev. 4 and the requirements of N/A

Signed Brown & Root, Inc.Date 9-20-78By T.T. J. Taraji

PROCEDURE QUALIFICATION RECORD

Material Spec. SA-240 Type 304L to SA-240 Type 304L 20605
 P No. 8 Gr. No. 1 to P No. 8 Gr. No. 1
 Welding Processes 1. Gas Tungsten Arc
 Manual or Automatic 1. Manual
 Thickness Range 1. -
 Total Qualified Thickness Range 0.1875" thru 3.500"
 Thickness and O.D. 1-3/4" plate
2. N/A
2. N/A
2. N/A

FILLER METAL

F.No. 1. 6 2. N/A
 A.No. 1. 8 2. N/A
 SFA Spec. 1. 5.9 2. N/A
 AWS Class. 1. ER308 & 309L 2. N/A
 Filler Size 1. 3/32" & 1/8" 2. N/A
 Trade Name 1. 3/32" Arcos; 1/8" Sandvik
2. N/A

Describe Filler Metal if not included in Section IX

FLUX OR ATMOSPHERE

Trade Name 1. - 2. N/A
 Shielding Gas 1. Argon 2. N/A
 Flow Rate 1. 20 CFH Min. 2. N/A
 Purge 1. 20 CFH Min. 2. N/A

WELDING PARAMETERS

Joint Type Double Vee Groove Weld
 Position 2G
 Backing None
 Preheat 600F
 IPT Range 110°F through 350°F
 PWHT None
 Passes/Side 1. Multiple 2. N/A
 No. of Arcs 1. Single 2. N/A
 Current 1. DCSP 2. N/A
 Amps 1. 100-130 2. N/A
 Volts 1. 11 2. N/A
 Travel Speed 1. 2.1-4.0 IPM 2. N/A
 Oscillation 1. 3/8" Max. 2. N/A
 Dead Type 1. Stringer 2. N/A

TENSILE TEST

Specimen No.	Dimensions		Area	Ultimate Total Load Lb.	Ultimate Unit Stress psi	Character of Failure And Location
	Width	Thickness				
QW-462.1(a) #1	1.002	1.614	1.617	144,700	89,487	Weld Metal
QW-462.1(a) #2	1.005	1.491	1.498	134,000	89,453	Weld Metal

GUIDED BEND TESTS

Type and Figure No.	Result	Type and Figure No.	Result
QW-462.2(a) Side	Satisfactory	QW-462.2(a) Side	Satisfactory
QW-462.2(a) Side	Satisfactory	QW-462.2(a) Side	Satisfactory

Welder's Name Curtis Marquis S.S.No. 260-64-7775 Stamp No. AAJ
 Who by virtue of these tests meets welder performance requirements.
 Test Conducted by Materials Engineering Lab. Laboratory Test No. 3107 Clinton Dr., Houston, Texas
 per G. E. Dawson Date March 9, 1978

We certify that the statements in this record are correct and that the test welds prepared, welded and tested in accordance with the requirements of Section IX of the ASME Code.

Signed Brown & Root, Inc.
(Manufacturer)

Date 9-20-78

By T.J. Portorajan

Brown & Root, Inc.

HOUSTON, TEXAS



WELDING PROCEDURE NO
WPS - 83025

REVISION 3

PAGE 1 OF 2

WELDING CODE

ASME B & PV
SECTION IX

WELDING PROCEDURE SPECIFICATION

SUPPORTING PQR(S)
20606
*0808AA114 Rev. 3

WELDING PROCESS(ES) 1. Gas Tungsten Arc TYPE Manual
2. N/A TYPE N/A

BASE METALS (QW-403)

P No. 8 Gr. No. 1 to P No. 9 Gr. No. 1
Thickness Range 1/8" thru 1/2" IN
Pipe Dia. Range Unlimited IN
Range for Fillet Thk 1/8" Dia. Unlimited IN

POSTWELD HEAT TREATMENT (QW-407)

Type N/A
Temperature N/A °F
Time Range N/A

FILLER METALS (QW-404)

F No. 1. 5 2. N/A
A No. 1. 2 2. N/A
SFA Spec. No. 1. 5.9 2. N/A
AWS Class. No. 1. E308L 2. N/A
Size of Electrode 1. 1/8" 2. N/A IN
Size of Filler 1. 3/32, 1/8" 2. N/A IN
Electrode - Flux Class N/A
Consumable insert N/A

GAS (QW-405)

Shielding Gas 1 Argon
Percent Comp. 100
Shielding Gas Flow Rate 15 CFH (min.)
Purge Gas Argon (6) Flow Rate 5 CFH (min.)
Torch Shielding Gas Composition N/A

ELECTRICAL CHARACTERISTICS (QW-409)

Current 1 DCSP 2. N/A
Amps Range 1. 50-125 2. N/A
Volts Range 1. 6-14 2. N/A
Tolerated Elec. Size Type 1/8"-1/8"/E/Th-1 or 2

POSITION (QW-405)

Welding Position All
Welding Progression Progressive

TECHNIQUE (QW-410)

Shielding Vee Bead 1. Stringer 2. N/A
Shielding Vee Bead 2. N/A
Orifice or Gas Cup Size 1/4" - 1/2" IN
Initial and Interpass cleaning: Welding surfaces shall be wire brushed
in-ground as required to remove slag, scale or other contaminants.
Method of back chipping N/A

PREHEAT (QW-406)

Preheat Temp 40 °F (Min.)
Interpass Temp Range 50-150 °F
Preheat Maint 50 °F

JOINT DESIGN (QW-402)

Groove Design Single V or U
Joint Type G or N/A ES MS
Backing Mat. Type Similar to base material

Orifice or Gas Cup Size 2. N/A IN
Current Tube to work distance N/A IN
Multiple or Single Layer 1. Multiple
Multiple or Single Layer 2. N/A
Multiple or single electrodes Single
Travel Speed (Range) 1. N/A 2. N/A IPM
Peelback Not allowed

REMARKS *This PQR inc' for Supplemental Test Results.

Prior to the start of welding, the exiting gas shall be checked for oxygen content. It must be 2% or lower before welding can commence. Maintain purge for at least two layers (i.e., root and one fill). Westinghouse supplied components require purge maintenance for at least three layers (i.e., root and two fills).

PREPARATION APPROVAL

[Signature]

DATE

10-12-73

Welding Engineering

[Signature]

10-12-73

Materials Engineering

[Signature]

10-15-73

Quality Assurance

Fab. Code: ASME Section III, ANSI B31.1

Project: CPSES

Job No. CR-0172

ATTACHMENT 2

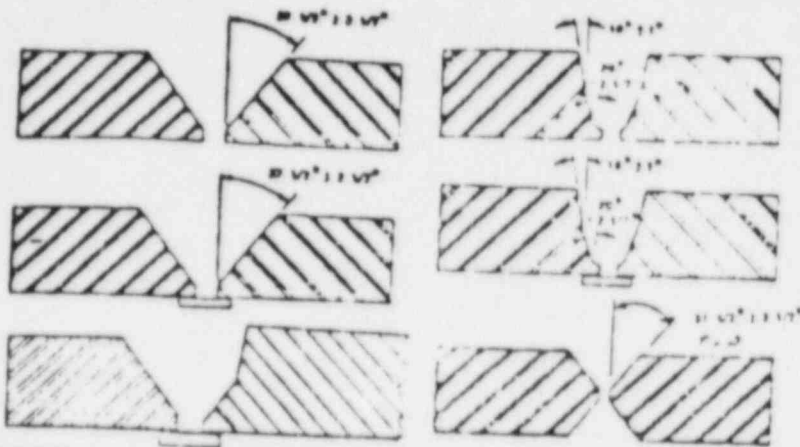
WELDING TECHNIQUE SHEET

P.N.O. 8 GROUP 1 TOP NO. 8 GROUP 1
 THK RANGE .187 thru 1.50 IN

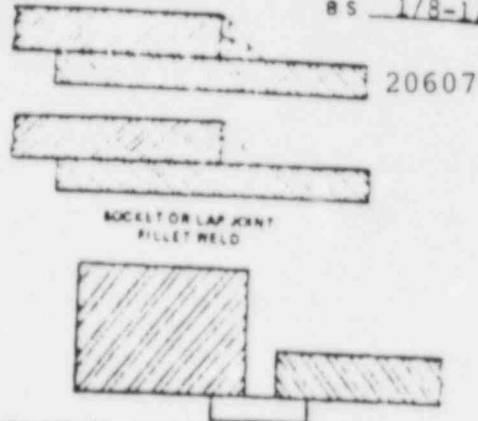


WELDING PROCEDURE No.
 WPS 88025
 REVISION 3
 PAGE 2 OF 2

TYPICAL JOINT DESIGNS PERMITTED



ROOT OPENING O.B. 1/16-3/16
 B.S. 1/8-1/4 IN



WELDING PARAMETERS

*SINGLE VALUES ARE MINIMUM

LAYER	WELDING PROCESS	FILLER METAL		GAS TYPE	GAS FLOW RATE (CFH)		ELECTRICAL DATA			TRAVEL SPEED (IPM)	MAX BEAD WIDTH (IN)
		SIZE (IN)	AWS CLASS		TYPE	SHIELD	PURGE	TYPE/POLAR	AMPERAGE RANGE			VOLTS RANGE
1-3	GTA or	3/32	See Note 5	Argon	15	5	DCSP	50-150	8-14	N/A	3/8
	GTA	1/8	See Note 5	Argon	15	5	DCSP	50-150	8-14	N/A	3/8
Alt.	GTA or	3/32	See Note 5	Argon	15	N/A	DCSP	50-150	8-14	N/A	3/8
3 & on	GTA	1/8	See Note 5	Argon	15	N/A	DCSP	50-150	8-14	N/A	3/8

Maximum thickness of any single deposited layer shall not exceed 1/2".

PREHEAT TEMP 60 OF (MIN) OF (MAX)
 INTERPASS TEMP 60-350 OF
 PREHEAT MAINT 60 OF
 TUNGSTEN ELECT SIZE & TYPE 1/16-1/8 IN
 WITH 1 OF 2

FLUX Not allowed
 BACK GOUGING METHOD N/A
 CONTACT TUBE TO WORK DIST N/A IN
 GRIND OR FILE SIZE 1/4 - 1/2 IN
 WELDING PROGRESSION Left to Right

INSTRUCTIONS

1. Preheat and interpass temperature (above 100°F) shall be checked using temperature indicating crayons or an approved equal.
2. Tack welds shall employ the parameters for the root pass.
3. Tack welds shall be complete fusion; for starts and stops shall be tapered by grinding so that the initial pass can properly consume the tack.
4. All welding shall utilize stringer beads.
5. Bare wire selected for the base metal to be welded shall be as follows:

BASE METAL TYPE

304 or 304L to 304 or 304L
 316 or 316L to 316 or 316L
 304 or 304L to 316 or 316L

ARE WIRE TO BE USED

ER308 or ER308L
 ER316 or ER316L
 ER316 or ER316L

For Westinghouse supplied Reactor Coolant Piping, ER308 will be used for base metal type 304 or 304L to 316 or 316L.

6. Purge requirement may be deleted for socket welds or when specified by the Project Welding Engineer.
7. Preheat maintenance shall be continuous during welding only; cool completed weld in still air.
8. Variation in the joint geometries shown above is permitted provided the joint is single or double welded and the root spacing maintained within the specified tolerances.



WELDING PROCEDURE SPECIFICATION CHANGE NOTICE 20608

CURRENT REVISIONS ARE INDICATED BY CHANGE BARS

REV.	DATE	ORIGINATOR	APPROVAL*
1	9-22-77	J. Bronicki	<i>R.P. Culbertson</i>
2	3-10-79	J. Bronicki	<i>R.P. Culbertson</i>
3	10-1-79	J. Bronicki	<i>R.P. Culbertson</i>

REVISION NO. _____ DESCRIBE THE CHANGE _____

- 1 Noted PQR revision. Revised thickness range, joint details, maximum values of amps and volts and deleted reference to travel speeds.
- 2 Retyped on new form. Added the following information: fillet weld angle, base and diameter, electrode - flux classification, preheat maintenance, joint description, trailing shield gas, gun-tong size and type, bead type, initial and interpass cleaning, back gouging method, oscillation and root spacing. Noted PQR revision. Added values to amp and volt values. Added Westinghouse requirement for RCP welds.
- 3 Added preheat maintenance, preheat, root spacing, cup size ranges and notes T and R. Noted PQR revision. Revised thickness range. Added layer thickness limitation.

* REVISIONS MUST BE APPROVED BY THE MANAGER OF MATERIALS ENGINEERING OR HIS DESIGNEE



**CHANGE NOTICE
PROCEDURE QUALIFICATION RECORD
QUALIFYING WELDING PROCEDURE SPECIFICATION**

20609

ESSENTIAL VARIABLES CANNOT BE CHANGED

CURRENT REVISIONS ARE INDICATED BY CHANGE BARS

WPS/PQR	REV.	DATE	ORIGINATOR	APPROVAL*
POE	1	1-22-78	J. P. Hill	J. P. Hill
PQT	1	1-22-78	J. P. Hill	J. P. Hill
WPS/PQR	1	1-22-78	J. P. Hill	J. P. Hill

WPS/PQR	REVISION NO.	DESCRIBE THE CHANGE
PQR	1	Deletion of heat input parameters and addition of Westinghouse WCAP-8678 reference.
PQR	2	Retyped on new form. Added the following information: WPS number, joint sketch & dimensions, O.D. range qualified, thickness range qualified per process, electrode size, electrode-flux class, consumable insert, welding progression, PWHT type & time range, purge flow rate, bead width, orifice or gas cup size. Changed "passes/side" to "multi or single layer", "number of arcs" to "multiple or single electrode". Deleted reference to "atmosphere trade name", "backing", and "who by virtue of these tests meets welder performance requirements". Changed filler trade name to "N/A". Information previously indicated under "oscillation" is entered under "bead width" and added "N/A" under oscillation. Changed shielding gas & purge flow rate from 20CFH min. to 20.
WPS	3	Deleted reference to supporting PQR and added peening, preheat maintenance and cup size range.
PQR	3	Change "thickness range qualified" to "deposited weld metal thickness". Add joint dimension information, tungsten size and type, peening and backgouging.

* REVISIONS MUST BE APPROVED BY THE MANAGER OF MATERIALS ENGINEERING OR HIS DESIGNEE

Brown & Root, Inc.



ASME SEC IX

Welding Procedure Specification No. 0808AA114
 Revisions 3

Date 6-18-79

20610

WELDING PROCESS(ES) 1 Gas Tension Arc
 2 N/A

TYPE Manual
 TYPE N/A

BASE METALS (QW-403)
 P No 8 Gr No 1 to P No 6 Gr No 1
 Thickness Range .187 thru 3.5 IN
 Pipe Dia. Range Unlimited

POST WELD HEAT TREATMENT (QW-407)
 Type N/A
 Temperature N/A °F
 Time N/A

FILLER METALS (QW-404)
 F No 1 6 2 N/A
 F No 2 8 2 N/A
 SFA Spec No 1 5.9 2 N/A
 AWS Class No 1 EP-155 308L 2 N/A
 Size of Electrode 1 N/A 2 N/A IN
 Size of Filler 1 3/32, 1/8 2 N/A IN
 Electrode - Flux Class N/A
 Consumable insert N/A

WELDING SPEED (QW-405)
 Welding Speed 100 CFH
 Groove Depth 20 Min. CFH
 Flow Rate 20 Min. CFH
 Traveling Gas Composition N/A

POSITION (QW-405)
 Welding Position 2G
 Welding Progression N/A

ELECTRICAL CHARACTERISTICS (QW-409)
 Current 1 DCSP 2 N/A
 Amperage 1 100-130 2 N/A
 Voltage 1 4-12 2 N/A
 Tungsten Tip Size Type 1/16"-1/8"/EWTh-1or2

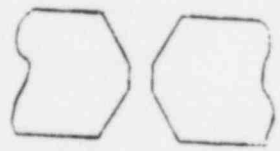
PREHEAT (QW-406)
 Preheat Temp 60 °F (Min)
 Interpass Temp Range 110-350 °F
 Preheat Maint 60

TECHNIQUE (QW-410)
 Stringer or Wave Head 1 Stringer 2 N/A
 Bevel Width 1 3/16 2 N/A IN (Max)
 Orifice Gas Gun Size 1/4-1/2 2 N/A IN
 Intra and Interpass Cleaning: Welding surfaces shall be wire brushed or ground to remove slag scale or other contaminants.
 Method of Back gouging ARJ air and/or Grinding

JOINT DESIGN (QW-402)
 Groove Design Double V
 Joint Type CB Yes CS N/A BS N/A
 Backing Mat Type N/A

Shielding Gas N/A 2 N/A IN
 Contact Tube to work distance N/A IN
 Multiple or Single Layer 1 Multiple
 Per Side 2 N/A
 Multiple or single strokes Single
 Travel Speed Range 2-10 2 N/A IPM
 Root Face N/A Allowed

Sketch/Comments



Cap: 1/8"
 Land: 1/16" + 1/32" ± 0
 Bevel: 37-1/2° ± 2-1/2°

Prepared by Arcel Bonicchi 6-18-79
 WELDING ENGINEERING DATE

Approved by R. P. Culbertson / JFB 6-18-79
 MATERIALS ENGINEERING DATE

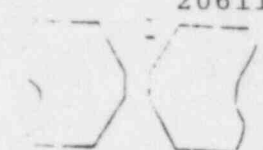
BROWN & ROOT, INC.

NO. 100-1000

PROCEDURE QUALIFICATION RECORD

WELDING PROCESS (ES) 1. Gas Tungsten Arc TYPE Manual
 2. SA TYPE SA

BASE METALS (QW-403)
 Matl Spec SA- 240 To SA- 240
 Type or Grade 304L
 P No 8 Gr No 1 To P No 8 Gr No 1
 Coupon OD N/A Thickness 1.75 IN.
 J. D. Range Qualified Unlimited
 Deposited Weld Metal Thk 1. 1.75 2. N/A IN.
 Total Thk Range Qualified 1.75 IN.

SA-240-403
 20611

 B S
 Matl N/A
 (Joint Design Used)

FILLER METALS (QW-404)
 F No 1. 6 2. N/A
 A No. 1. 8 2. N/A
 CFA Spec. No. 1. 5.8 2. N/A
 AWS Class No 1. ER308 2. N/A
 Size of Electrode 1. 1/8 2. N/A IN.
 Size of Filler 1. 3/32 2. N/A IN.
 Electrode - Flux Class N/A
 Consumable Insert 1. N/A
 Trade Name N/A

ER308-408
 Flow Rate _____ CFH
 Pulse Gr _____ CFH
 Flow Rate _____ CFH

POSITION (QW-405)
 Welding Position 2G
 Welding Progression N/A

ELECTRICAL CHARACTERISTICS (QW-409)
 Current 1. _____ 2. N/A
 Amps 1. _____ 2. N/A
 Volts 1. _____ 2. N/A
 Transformer or Source Type Not Specified

REHEAT (QW-406)
 Preheat Temp. 50 °F
 Interpass Temp. 110-250 °F

TECHNIQUE (QW-410)
 Stringer or Weave Bead 1. Stringer 2. N/A
 Root Width 1. 1/2 Maximum 2. N/A IN.
 Gas Flow or Gas Cup Size 1. 5/16 2. N/A IN.
 Oscillation N/A 2. N/A IN.
 Multiple Passes 1. Multiple

POSTWELD HEAT TREATMENT (QW-407)
 Type N/A
 Temperature N/A °F
 Time Range N/A

Multiple Passes 2. N/A
 Multiple Large Electrodes Single
 Post Weld Heat 1. None 2. N/A IPH
 Preheat Not Specified
 Backing Not Specified

No.	Specimen Fig No.	Dimensions (IN)		Area (sq. in.)	Width (IN)	Ultimate Tensile (ksi)	Character of Failure and Location
		Width	Thickness				
1	QW-462.1(a)	1.002	1.614	1.617	144.7	80,500	20% Metal
2	QW-462.1(a)	1.005	1.601	1.606	144.7	80,500	20% Metal

No.	Specimen Fig No.	Type	Result	Specimen			Result
				No.	Fig No.	Type	
1	QW-462.2(a)	SB	Satisfactory	3	QW-462.2(a)	SB	Satisfactory
2	QW-462.2(a)	SB	Satisfactory	4	QW-462.2(a)	SB	Satisfactory

Welder's Name Curtis Marquis ID No. 252-100-1075

Test Conducted by B&R Materials Engineering Lab per George Dawson
 Laboratory Test No. 79-42
 Address: 3100 Center Blvd., Houston, Texas
 Date: March 9, 1979

We certify that the statements in this record are correct and that the test was properly prepared, welded and tested in accordance with the requirements of Section IX of the ASME Code.

Signed BROWN & ROOT, INC.
 (Manufacturer)

Date 6-18-79 By R.P. Livingston / JEB



SUPPLEMENTAL TEST RESULT CHANGE NOTICE

20612

CURRENT REVISIONS ARE INDICATED BY CHANGE BARS

REV	DATE	ORIGINATOR	APPROVAL*
1	9-20-77	J. Brundage	[Signature]
2	10-1-77	J. Stuhl	[Signature]
3	10-27-77	J. Brundage	[Signature]

REVISION NO.	DESCRIBE THE CHANGE
1	Deletion of test input parameters and addition of Westinghouse data source reference.
2	Typed on new form.
3	Added testing laboratory, lab test no. and testing date.

* REVISIONS MUST BE APPROVED BY THE MANAGER OF MATERIALS ENGINEERING OR HIS DESIGNEE

20613

CHEMICAL ANALYSIS

METHOD Wet Chemical PER ASTM E350-74

FLEM. - WELD	C	Mn	Si	NI	MO	Cr	N	CS
	.013	1.61	.35	9.3-	.07	19.5-	.05-6	<.01

SENSITIZATION

Two (2) specimens were sensitization tested in accordance with ASTM A262-70, Practice E. Specimens were examined at 20X magnification for presence of microcracking. No fissures were present.

MICRO FISSURE

Bend test were examined at 10X magnification after bending to meet the acceptance criteria of "Interim Regulatory Guide 1.31." No fissures were present.

DELTA-FERRITE

Delta-Ferrite tests were conducted at twelve (12) points (six per side) along the length of the procedure qualification weld. Ferritoscope MBT 725 was used and the following results noted:

All positions ranged between 9.5 and 11.5 Fd.

Approximate Delta Ferrite Content: 10% (Schaeffler Diagram per Figure 2433-1 of the ASME Section III Code)

Test conducted by B&R Materials Engineering Lab.
 Address: 3100 Clinton Drive, Houston, Texas
 per George Dawson

Lab No 78-42
 Date March 9, 1978

We certify that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the above listed PQR and per requirements of the listed code/standards).

Signed Brown & Root, Inc.

Date 6-18-79 By R.P. Culbertson / CR

the necessary Procedure Qualification Record(s) (PQR).

QW-202 Type of Tests Required

20614

S77
S78

QW-201.2 Procedure Qualification Record (PQR).

The specific facts including the base metal specification Type and Grade (or chemical analysis and mechanical properties), and the essential variables (as listed in QW-252 through QW-282) used in qualifying a WPS shall be recorded in a form called Procedure Qualification Record (PQR). This form shall also record the test results.

It is required that the essential and nonessential variables of a WPS be followed in welding the test coupons. The WPS identification (including date and revision number) shall be listed on the PQR. These documents shall be certified by the manufacturer or contractor and shall be available for examination by the Authorized Inspector. A suggested format is given in QW-483. This PQR format may be changed to fit the needs of each manufacturer or contractor.

A change in any essential variable shall require requalification, to be recorded in another PQR. A change in any nonessential variables does not require requalification. A change from one welding process to another welding process is considered a change in an essential variable.

QW-201.3 Combination of Welding Processes or Procedures. More than one process or procedure may be used in a single production joint. Each welding process or procedure shall be qualified either separately or in combination with other processes or procedures (within the thickness limits specified in QW-202.2, QW-403, and QW-451) for the base metal thickness and for the deposited weld metal thickness range for each of the processes or procedures to be used in the production joint. For multiprocess or multiprocedure applications, the qualified thickness of each process or procedure shall not be additive in determining the maximum thickness of the production joint to be welded. One or more processes or procedures may be deleted from a production joint qualified by a combination of processes or procedures provided each remaining process or procedure has been, in the specific combination welding process or procedure qualification, qualified (within the thickness limits specified in QW-202.2, QW-403, and QW-451) for the deposited weld metal thickness range for each of the processes or procedures to be used in the production joint.

QW-202.1 Mechanical Tests. The type and number of test specimens that must be tested to qualify a welding procedure are given in QW-451, except that, where qualification is for fillet welds only, the requirements are given in QW-202.2 and, where qualification is for stud welds only, the requirements are given in QW-202.3. All mechanical tests shall meet the requirements prescribed in QW-150, QW-160, QW-170, or QW-180 as applicable.

QW-202.2 Base Metals—Groove and Fillet Welds.

Except for vessels or parts of vessels constructed of P-11 (excluding P-11A Subgroup 1 and 2) metals, WPS qualification tests for groove and fillet welds may be made on groove welds using reduced-section tension specimens and guided-bend specimens. The groove-weld tests shall qualify the WPS for use with groove welds within the range of essential variables listed. Groove-weld tests shall also qualify for use with fillet welds in all thicknesses of metal, sizes of fillet welds, and diameters of pipe or tube, within the other remaining applicable essential variables. Where a WPS qualification of fillet welds only is required, tests shall be made in accordance with QW-180. The tests shall qualify the fillet WPS for use only with fillet welds in all thicknesses of metal, sizes of fillet welds, and diameters of pipe or tube, for use within the other remaining applicable essential variables.

For vessels, or parts of vessels, constructed of P-11 (excluding P-11A Subgroup 1 and 2) metals, WPS qualification tests for groove welds shall be made on groove welds, using reduced-section tension specimens and guided-bend specimens. The groove-weld tests shall qualify the WPS for use only with groove welds within the range of essential variables listed. WPS qualification tests for fillet welds shall be made in accordance with QW-180. The tests shall qualify the fillet WPS for use only with fillet welds in all thicknesses of metal, sizes of fillet welds, and diameters of pipe or tube, for use within the other remaining applicable essential variables.

Groove weld procedure qualifications shall encompass thickness ranges to be used in production, for both the base metals to be joined or repaired and the deposited weld metal to be used, except as allowed in (1) below for both the base metal and the deposited weld metal.

(1) For welding procedure qualifications made with the SMAW, SAW, GTAW, GMAW, or PAW welding processes, using weld layer(s) of 1/2 in. (13 mm) or less in thickness, there is no limit on the minimum depth of deposited weld metal for repair or

"built-up" welding, not on the minimum thickness or the thinner of the base metals being joined where they are of dissimilar thickness, and groove weld procedure qualification made in base metal having a thickness of 3 in. (75 mm) or more shall be applicable for production use for deposited weld metal thickness up to the maximum given in QW-451 for:

(a) Repair or "built-up" welds in any thickness of base or weld metal, with no limit on the minimum depth of deposited weld metal, and

(b) Welds joining dissimilar thicknesses of base metals in which the base metal on one side is equal to or less than the maximum thickness qualified in the

test on the metal on the other side, and in any thickness.

20615

QW-262.3 Steel Welding Procedure qualification W77
tests for stud welds shall be made in accordance with W78
QW-392. The procedure qualification tests shall S78
qualify the welding procedures for use within the
range of the essential variables of QW-261. For studs
welded to other than P-No. 1 metals, five additional
welds shall be made and subjected to a macro-
examination, except that this is not required for studs
used for extended heating surfaces.

1 MR. WATKINS: Mr. Brandt's prepared prefiled
2 testimony, dated October 3, and it was filed for docketing
3 with the parties and the board -- on -- my copy says
4 October 16. I would like the consent of the parties and
5 the board to treat that document as a stand-alone document,
6 just for efficiency purposes.

7 On the other hand, we can bind it into the record now.

8 JUDGE BLOCH: Which document is that?

9 MR. WATKINS: Prefiled testimony of C. Thomas
10 Brandt, dated October 3, 1984.

11 JUDGE BLOCH: That's the one that starts with
12 45,358, document page?

13 MR. WATKINS: Yes.

14 JUDGE BLOCH: You are offering that as an
15 exhibit only but not as testimony?

16 MR. WATKINS: No. As testimony.

17 JUDGE BLOCH: As testimony only. Then -- I see.
18 Do you want to ask the witness at this time when we
19 receive it whether it's still correct to the best of his
20 knowledge?

21 MR. WATKINS: I will ask him that.

22 BY MR. WATKINS:

23 Q Mr. Brandt, do you have a copy of this document
24 in front of you?

25 A Yes, I do.

1 Q Have you reviewed that document, Mr. Brandt?

2 A Yes, I have.

3 Q Do you have any corrections or additions to make
4 to it?

5 A No, sir. I don't believe so.

6 MR. WATKINS: Your Honor, that testimony was
7 sworn when taken. That's why I suggested we simply
8 treated it as standing alone.

9 JUDGE BLOCH: Let's treat it as a stand-alone
10 document but let us use the page numbers on it as the
11 reference and treat it just as if they were transcript
12 pages, so those transcript pages will not be reassigned.
13 So it is admitted into evidence.

14 MR. WATKINS: The witness is available for
15 cross-examination.

16 JUDGE BLOCH: CASE?

17 CROSS-EXAMINATION

18 BY MR. ROISMAN:

19 Q Mr. Brandt, there are several of the documents,
20 several of the liner plate documents that have the word "sat"
21 written on the document, apparently at a time other than
22 when the signature on the document appeared.

23 Can you tell me, was that a standard procedure at
24 Comanche Peak at any time while you were there, to have
25 the word "sat" appear on the form before the inspector had

1 occasion to actually write it and sign it?

2 A Is your question limited to the time that I was
3 there, Mr. Roisman?

4 Q For right now I just want it based on what your
5 personal knowledge may be.

6 A Personal knowledge? No, sir. It was not a
7 practice.

8 Q And what do you know of what it was prior to
9 that time; was it a practice?

10 A Without trying to be argumentative, Mr. Roisman,
11 I'm not sure what you mean by "practice." As I have
12 earlier stated in this proceeding, it appears -- and I
13 would draw the same conclusion, apparently, that you
14 have -- that the handwriting on some of the travelers, the
15 word "sat" is in a different handwriting than the
16 signature of the inspector.

17 JUDGE BLOCH: Can we quantify it somehow? What
18 percentage of the travelers?

19 THE WITNESS: I have never looked at it from
20 that aspect.

21 JUDGE BLOCH: I'm sure we'll get that from CASE.
22 Do you have some idea for us? It's a physical thing that
23 can be verified.

24 If you can't, you can't.

25 MR. ROISMAN: On the five-line travelers, now,

1 it appears on all of those the "sat" is, and the "NAs" are
2 in a different hand than the signatures.

3 JUDGE BLOCH: Is that consistent with your
4 understanding, Mr. Brandt?

5 THE WITNESS: I'm not sure I'd say "all."
6 There's a number of them. I haven't looked at it from
7 that aspect, I mean as far as separating out all the
8 five-line travelers and looking at that particular
9 situation. I guess I'm just going to have to stick with
10 saying "there's a number of them." I wouldn't attempt to
11 quantify them.

12 JUDGE JORDAN: Would you agree the "sat" might
13 just as well have been printed on the form?

14 THE WITNESS: Yes, sir, I think I stated that
15 earlier. It could just as well have been typed on there.

16 JUDGE JORDAN: It could just as well have been
17 typed.

18 MR. ROISMAN: Based on what you know about event
19 at the site, either before you came to the site or when
20 you were at the site, were you aware of any other
21 inspections forms where the "sat" was either represented
22 or put on the form by a person other than who is actually
23 signing it?

24 A Not off the top of my head, Mr. Roisman.

25 Q And if a form that had the "sat" on it was in

1 the hand of an inspector and the inspector went out to do
2 the inspection and found -- let's take "fit-up and
3 cleanliness" -- that the fit-up and cleanliness was not
4 satisfactory, what is your understanding of the procedure
5 that the inspector was supposed to follow at that time
6 regarding the form?

7 A You've asked a question that assumes something I
8 don't think you can assume, Mr. Roisman.

9 Q Okay. You are right. Let me withdraw the
10 question and give --

11 JUDGE BLOCH: Objection is sustained. Do you
12 want to explain further, Mr. Brandt?

13 THE WITNESS: I can explain why I'm having
14 difficulty with it, if that helps anybody. You are
15 assuming the five-line traveler was proper. That's not my
16 testimony.

17 JUDGE BLOCH: I couldn't hear what you just said.

18 THE WITNESS: I said: He is assuming that the
19 five-line traveler was properly used. I believe it's my
20 earlier testimony, and I think everybody understands, that
21 the five-line traveler was not the correct form to be used.

22 BY MR. ROISMAN:

23 Q Okay. That wasn't even the confusion that I saw
24 in the question. But I appreciate that clarification.

25 First of all, I take it that irrespective of which form

1 was used, the procedure was that the form was not to go to
2 the field in any event, but it was to remain at the
3 millwright office; isn't that correct?

4 A Mr. Roisman, when you made that comment in your
5 opening argument, I flagged that as something to look at.
6 I don't have procedures in front of me.

7 Q Okay -- let me show you -- I'm now looking at
8 CP-QC I-2.11. Let me get the right rev -- rev 2. And the
9 rev is dated 1/9/78. And I'm going to ask you to take a
10 look at that note, at the top of page number 3.

11 MR. WATKINS: Mr. Chairman, I'm going to ask
12 that the witness be permitted to review as many or as much
13 of the procedure as he feels is necessary.

14 JUDGE BLOCH: Mr. Brandt, you understand that
15 any time you are shown a document, you can look at
16 surrounding context?

17 MR. ROISMAN: For the witness' convenience I'm
18 disengaging from it for the moment the subsequent QC
19 inspection procedures and leaving him with rev 1, rev 2,
20 and rev 0 of the QC -- CP-QC I-2.11.

21 THE WITNESS: I'm now ready to answer your
22 question, Mr. Roisman.

23 BY MR. ROISMAN:

24 Q Good.

25 A No. The assumption that you made isn't correct.

1 Q You do not read that note to indicate that the
2 traveler is not to go to the field but is to remain in the
3 millwright office?

4 A That's correct. The note clearly reads: "attachment
5 4-A is a traveler and NDE report combination and shall
6 remain at the work area or millwright office until it has
7 been completed." The note continues, but the substance of
8 my observation to Mr. Roisman's question is answered in
9 the first sentence.

10 Q So your understanding is that you could have --
11 putting aside for a moment that one was not to have had
12 the form, the five-line form at all in use -- that if you
13 had the form you might have it with you at the "work area"
14 and that would be all right; or you might be out there
15 with just a chit; correct? Either would be acceptable as
16 you understand it?

17 A I just want to make sure we understand each
18 other, Mr. Roisman. I understand the hypothesis that you
19 were trying to draw was that it had to remain at the
20 millwright office?

21 Q No. I was now taking the hypothesis based upon
22 what you just testified to.

23 A I mean your original question.

24 Q Correct.

25 A The note to me clearly indicates that the

1 traveler, albeit in this case it's talking about a
2 traveler that, as I said before, was not used on the unit
3 2 refueling cavity -- whatever traveler could either be
4 retained at the millwright office or in the work area in
5 the field.

6 Q Okay. And my question to you was: What did you
7 understand was the procedure that was to be followed by
8 the inspector that had that five-line form in their
9 possession, or had a chit out in the field and then came
10 back to the millwright office, if when they went to do a
11 fit-up and cleanliness inspection they found that the
12 fit-up or the cleanliness was not proper; what were they
13 supposed to do with the form?

14 A I think we are back to our original problem.
15 You keep asking me what was the procedure. And I've now
16 testified -- maybe I'm misunderstanding what your question
17 is or you are misunderstanding me. The five-line traveler
18 was never procedurally endorsed as an inspection document.

19 Q But in fact people were using it; right?

20 A Right.

21 JUDGE BLOCH: So do you want to know the
22 practice?

23 THE WITNESS: Maybe my problem is with the term
24 "procedure." By "procedure," I'm assuming you are meaning
25 some written procedure. If you want to know what the

1 practice was -- maybe that's the problem between the two
2 of us.

3 BY MR. ROISMAN:

4 Q Let's put it in terms of practice. What do you
5 understand is the practice that was followed?

6 A There's evidence in some cases that
7 nonconformance reports were written. I know from
8 conversations with QC inspectors that if the fit-up
9 inspection was not yet satisfactory, that they were --
10 they notified the draft that they did not yet have it
11 within fit-up tolerance, and were asked to be recalled for
12 the inspection when they did have it proper.

13 JUDGE BLOCH: I'm sorry, you combined that with
14 a comment about NCRs. How did those mesh?

15 THE WITNESS: I'm sorry. No. There's evidence
16 to indicate, at least in one case that I am familiar with,
17 that due to a misfabrication of the plate, to where the
18 plate -- rather than being rectangular was trapezoidal --

19 JUDGE BLOCH: Rectangular, you mean?

20 THE WITNESS: It was a parallelogram, but not at
21 right angles.

22 JUDGE BLOCH: That's rectangular -- okay.

23 THE WITNESS: Rectangular -- okay. A new word.

24 The corners were not at 90 degree angles. All four
25 sides were parallel to the opposite side. And no matter

1 how much you worked on it, you would never get a proper
2 fit-up. In that case there was an NCR written. But due
3 to the nature of a fit-up from a production standpoint,
4 not an inspection standpoint, if the plates aren't close
5 enough together, the way you fix it is move them closer
6 together.

7 JUDGE BLOCH: Without paper, generally.

8 THE WITNESS: Right.

9 BY MR. ROISMAN:

10 Q And that also would apply if not properly clean.
11 You would then clean it until the inspector said it was
12 okay?

13 A Right. Clean it some more.

14 Q So there wouldn't be an occasion where, in
15 practice, one would have expected to find the "sat"
16 crossed through and an "unsat" written in? They would
17 never have signed until it was okay?

18 A Yes. I was --

19 JUDGE JORDAN: Excuse me, Mr. Brandt, would you
20 wait until he finishes issues, because the reporter is
21 going to have a big problem here.

22 BY MR. ROISMAN:

23 Q With regard to the "sat" that appeared on the
24 five-line traveler, have you actually seen any of the
25 five-line travelers in their original, the original

1 traveler?

2 A Is that your question?

3 Q Yes.

4 A Yes, I have.

5 Q And can you tell me, based upon that, whether it
6 appeared to you that each one of the travelers had
7 individually had "sat" written on it? Or whether in fact
8 there was a Xerox copy that was used?

9 A Mr. Roisman, I think I earlier explained that I
10 did not look at them from that standpoint. I have looked --
11 the travelers I saw -- I guess I can answer your question.
12 I have seen enough five-line travelers to say no, the
13 assumption you are making is incorrect. Because the "sat"
14 written on the line to the left of the signature space on
15 line 1 on the five-line traveler, on the travelers I have
16 looked at, was in ink It was not in Xerox.

17 Q That was exactly what I wanted to know. Did you
18 do most of your review of documents for purposes of the
19 testimony that you prepared and was just received in
20 evidence, both sets of testimony, from the originals or
21 from copies?

22 A I would say the majority of my preparation was
23 done from copies.

24 Q Now, looking at page 2 of your November 21, 1984
25 testimony, you state at the bottom of page 2 and the top

1 of page 3 that there were only two matters that remotely
2 tie the liner plate to the ASME activities, and go on and
3 discuss what those are carrying over onto page 3.

4 On page 8 you give a citation to the ASME code and
5 attached -- there is attached to page 3 of the testimony,
6 QW-202.2.

7 Now, is it your testimony that that section of the ASME
8 code that's reproduced as attachment 3 to your testimony
9 is limited to qualifications of procedures and welders,
10 and is not a fabrication code?

11 A You are talking about ASME section 9? Yes, sir,
12 that's exactly my testimony.

13 Q And by drawing that distinction between what is
14 qualification of procedures and welders in the fabrication
15 code, what is the line you are attempting to draw in more
16 general English than those words? What would be in the
17 fabrication code and wouldn't be in the qualification of
18 procedures portion

19 "Answer: I think I can answer your question, Mr.
20 Roisman, best, by outlining what the ASME code is, all 11
21 sections. There's essentially two sections -- excuse me --
22 three sections that don't -- that you could not physically
23 construct anything to.

24 ASME section 11 is in-service inspection, where after a
25 nuclear power plant goes into service. Section 9 is

1 qualification of welders, welding procedures, and welding
2 operators -- essentially a welding operator is a welder
3 who operates an automatic welding machine. And, section 5,
4 which outlines the requirements for NDE procedures.

5 The other sections of the code --

6 JUDGE BLOCH: Those three sections do apply?

7 THE WITNESS: No, sir. I said there's three
8 sections that don't have anything to do -- that are
9 nonfabrication sections. Section 11 remotely is a
10 fabrication section because it refers --

11 JUDGE BLOCH: I understand that. But do those
12 three sections you have just outlined apply to the
13 construction of the liner plates?

14 THE WITNESS: I want to be careful that we don't
15 get into a matter of semantics, Judge Bloch. You can't
16 construct anything to section 5 or section 9. There's no
17 installation criteria for either. There's a qualification
18 of welders --

19 JUDGE BLOCH: There's a QC documentation?

20 THE WITNESS: No. Section 5 discusses
21 nondestructive examination procedures.

22 JUDGE BLOCH: There's nondestructive examination?

23 THE WITNESS: Qualification of welder, and
24 section 11, which is in-service inspection.

25 JUDGE BLOCH: In-service inspection. So it does

1 not apply to the inspection of the welds as they are being
2 made?

3 THE WITNESS: It refers you back to section 3,
4 basically.

5 Section 11, in any case, is totally nonrelevant to this
6 issue. It's only applicable after commercial operation or
7 certification as a system.

8 JUDGE BLOCH: Okay. Please continue.

9 THE WITNESS: What I'm saying, by "not a
10 fabrication code," there is no installation, fabrication,
11 or inspection requirements in section 9, other than for
12 acceptability of the welder's test coupons, that he
13 performs, and welding procedure test coupons.

14 By "fabrication tolerances," I'm talking about, oh,
15 misalignment, for example, in section 3 under "cut, lack
16 of fusion," outlining inspectors -- the authorized nuclear
17 inspector's duties in section 3, or the authorized
18 inspectors duties in the SME section 1.

19 Section 9 is not something you could go out and
20 physically go out and construct anything to. That's the
21 distinction I'm attempting to draw here on page, whatever
22 it was -- 8, I think.

23 JUDGE BLOCH: Of course that's true also for the
24 section NF; right? You couldn't construct --

25 THE WITNESS: No, sir.

1 JUDGE BLOCH: What's the difference?

2 THE WITNESS: Section NF you can construct
3 something to. Section NF of the code gives you design
4 criteria, procurement criteria, installation criteria, and
5 inspection criteria. Section 9 does not do that.

6 JUDGE BLOCH: Okay.

7 BY MR. ROISMAN:

8 Q I'm going to show you what appears to be the QA
9 portion of the FSAR for Comanche Peak, and ask you if you
10 could identify in it -- show us the chart that you were
11 referring to that lists the stainless steel liner plates
12 as "nonsafety." I don't think this is a trick question, I
13 just want the witness to do that so we will have it pinned
14 down.

15 MR. WATKINS: I do want to be sure this is the
16 current FSAR.

17 MR. ROISMAN: Okay. I think that's fair.

18 MR. WATKINS: I would like to ask or ask the
19 Chairman to ask whether the witness knows this is a
20 current copy of the FSAR. It's not an exhibit in this
21 phase of the proceeding.

22 JUDGE BLOCH: Can the witness verify for us
23 whether or not this is a current copy of the FSAR?

24 THE WITNESS: No, I cannot.

25 MR. ROISMAN: Mr. Chairman, I assume it's

1 possible to tell because there are amendment dates that
2 are on there. The witness could tell us at least through
3 what date that's relevant. We are going through a whole
4 period of time here so there would be some relevance in at
5 least pinning that much down, even if we don't know that
6 we have the 1984 version.

7 JUDGE BLOCH: Mr. Watkins, how can we get a
8 stipulation as to having the current copy?

9 MR. WATKINS: I'm not objecting to questions
10 based on this document. We would like the opportunity to
11 review that we know to be the current FSAR, so long as
12 it's understood that Mr. Brandt's answers are on the basis
13 of what this document is and I would like the pages of
14 this document on which he's questioned bound into the
15 record.

16 JUDGE BLOCH: Any objection, Mr. Roisman?

17 MR. ROISMAN: I don't have any objection to
18 having it bound in. I don't have an extra copy of it at
19 this moment.

20 JUDGE BLOCH: We'll arrange to have it bound in
21 as an exhibit with the understanding that Mr. Watkins will
22 correct it if he finds it's not the current FSAR.

23 JUDGE GROSSMAN: Is it the current FSAR you want
24 anyway here?

25 MR. ROISMAN: It is the current. We have been

1 led to believe that this is. I can't independently verify
2 that.

3 JUDGE BLOCH: Judge Grossman's question was do
4 you want the current one or the earlier one that might
5 have been applicable when the liner plates were made?

6 MR. ROISMAN: We are interested in both. We
7 want to know what it is now and what it was back then.

8 JUDGE BLOCH: The liner plates are still being
9 made?

10 MR. ROISMAN: There's still some fabrication on
11 them, is my understanding.

12 JUDGE GROSSMAN: I haven't seen that. Are there
13 dates on each page there?

14 MR. ROISMAN: Yes. It tells you "amendment as
15 of" and then it gives a date which presumably are the most
16 current amendments. I believe the dates Mr. Brandt is
17 looking at appear to be 1981 -- well, no, there's some '82.
18 It just depends on when the amendment took place.

19 JUDGE GROSSMAN: My recollection is that the
20 liner plates we are talking about, a lot of them were in
21 1981, those travelers.

22 MR. ROISMAN: That's correct. Why don't we do
23 this. I had thought it was a quicker process. When we
24 take a break I'll take Mr. Brandt --

25 JUDGE BLOCH: We'll use that as a basis for

1 questions and then Mr. Watkins will correct it if it turns
2 out to be wrong.

3 MR. ROISMAN: Mr. Brandt seems to be still
4 looking and rather than have us all sit and look, he can
5 do that at a break and I'll just move on to something else
6 and he can do that later.

7 MR. WATKINS: I want to make sure he has enough
8 time to review.

9 JUDGE BLOCH: How much time do you need to
10 review that?

11 THE WITNESS: I don't know. The table is 50-something
12 pages long.

13 MR. ROISMAN: He indicated earlier, I think in
14 answer to a question about the appropriate table of the FSAR,
15 that this stainless steel liner was listed as "non-safety,"
16 and I'm asking him to identify where that is in there.

17 MR. WATKINS: To correct the testimony, that it
18 was "non-ASME."

19 JUDGE BLOCH: Non-ASME.

20 MR. ROISMAN: I believe it was non-safety. I
21 don't know what his current testimony is but --

22 THE WITNESS: What I intended was non-ASME. My
23 prefiled testimony clearly states that it is
24 safety-related, and it is considered safety-related by the
25 designer.

1 JUDGE BLOCH: Why don't we accept Mr. Roisman's
2 suggestion and hold the study of that document for the
3 next break and we can prolong that break if Mr. Brandt
4 needs it.

5 MR. ROISMAN: Okay.

6 JUDGE BLOCH: That would seem to be something
7 that could be handled by stipulation of counsel, frankly.
8 I mean, that table either says it or it doesn't.

9 MR. ROISMAN: I hope that's correct.

10 JUDGE BLOCH: I think we have shifted the burden
11 to Mr. Watkins reading it during the break. It seems we
12 can have a stipulation of counsel as to what that table
13 says or doesn't say. It doesn't seem to me that we need
14 testimony as to whether it is or is not ASME in the table.

15 MR. WATKINS: I'll have to consult with my
16 expert during the break, your Honor.

17 JUDGE BLOCH: Okay.

18 BY MR. ROISMAN:

19 Q I would like to take a look at weld 62, 63, and
20 64. If you have them there, I'll have them here and then
21 we can talk about them.

22 JUDGE BLOCH: The witness is looking for the
23 documents about that weld. This refers to the second set
24 of testimony and second filing? This is for your further
25 evidence submittal?

1 MR. ROISMAN: You are asking me -- I don't know.
2 I didn't divide up my questions, whether it was the first
3 or second set. I'm sorry.

4 JUDGE BLOCH: Can you help us find it?

5 MR. ROISMAN: Can you look at the contention?
6 Is that the question?

7 JUDGE BLOCH: We would like to look at the same
8 document Mr. Brandt is looking at. How can we do that?

9 MR. ROISMAN: We didn't attach these to our
10 filing.

11 JUDGE BLOCH: Okay. We don't have them.

12 MR. ROISMAN: You have them only if you have
13 them from another source than us. We have not filed the
14 document itself.

15 JUDGE BLOCH: We have not conducted an
16 investigation.

17 BY MR. ROISMAN:

18 Q Looking at 3, the chit, which is signed by
19 Mr. Wilkerson, it's dated 9/12/78; is that correct?

20 A Yes, it is.

21 Q And line 2 of the five-line traveler on the
22 front page has "sat," and is signed by Mr. Wilkerson, and
23 is dated 9/12/78; is that correct?

24 A Yes, it is.

25 Q Line 1 is signed by Mr. Evans, and a subsequent

1 date around the 3rd, it looks like the 3rd of March of
2 1983. Is that also your reading of it?

3 A Yes, sir.

4 Q Now, do I understand that your explanation of
5 this is that the inspector -- well, let me just ask you
6 for your explanation. That will make it simpler.

7 How is it that if Mr. Wilkerson did both the number 1
8 and number 2 inspection on September 12, 1978, he only
9 entered it with respect to line 2 and not with respect to
10 line 1 on 9/12/78?

11 A Mr. Roisman, I think that's something we talked
12 about, about eight hours in September; and the fact that
13 my testimony, regarding this very form, was that it didn't
14 have enough lines. And that line 1 was not signed off
15 until the second fit-up and cleanliness inspection was
16 performed.

17 Q You mean, in other words, your hypothesis is
18 that Mr. Wilkerson did the test as required and filled out,
19 for line 1, the inspection, and filled out a chit and
20 didn't enter it on line 1 of the form because, if he did,
21 there wouldn't have been a line 1 of the form for purpose
22 of doing the second fit-up and cleanliness? And he
23 intended for the chit to be the evidence of that
24 inspection?

25 A He intended for the chit to be the inspection of

1 the -- I want to say outside, but in this case it's
2 actually the inside. This is a weld made from the back
3 side, contrary -- I don't want to confuse you. Most welds
4 are welded, the backing strip is tack welded on the back
5 side or concrete side, and welded from the water side.

6 This particular weld is welded -- it is tack welded --
7 the backing strip is tack welded on the inside and welded
8 the other way prior to concrete placement.

9 Q Okay. Regardless of that, what you are saying
10 is that for this weld there were two sets of fit-up and
11 cleanliness required and only one line to mark that that
12 had been inspected; right?

13 A Yes, sir.

14 Q And that Mr. Wilkerson didn't sign the one line
15 when he did the first of those two inspections but saved
16 that line so it could be signed for the second of those
17 two inspections; correct?

18 A Yes, sir.

19 Q Now, is Mr. Wilkerson still at the site, still
20 on the plant site?

21 A As far as I know, yes, sir. I haven't been
22 there for a while.

23 Q Did you talk to him about this?

24 A He was -- it was discussed. I did not
25 personally discuss it with him.

1 Q Who did discuss it with him?

2 A One of two quality engineers that were working
3 on the situation.

4 Q By "the situation" what do you mean?

5 A Why line 1 isn't signed on some travelers.

6 Q I see. Was it their duty to report back to you
7 what they learned?

8 A I believe the way it came about was that I -- I
9 had discussed it with people, both in the craft and QC,
10 whenever this process first started. By "this process"
11 I'm talking about this particular proceeding. Due to my,
12 I want to say limited availability at the site, the TRT
13 was looking into liner plate travelers concurrent with my
14 testifying in these proceedings, so essentially there was
15 a parallel effort going between what I had done and what
16 the existing quality engineering organization had done.

17 I discussed the quality engineering's -- or quality
18 engineering's discussions with the inspectors that were
19 still there, with them as those discussions occurred.

20 Q Are they the source of your testimony that what
21 happened was that Larry Wilkerson did the inspection of
22 the fit-up and cleanliness, the first fit-up and
23 cleanliness inspection on, when the five-line travelers
24 were in use that he did that and left the line blank,
25 intending the chit to be used as the verification that the

1 first inspection had been done?

2 A I don't want to say it was the source,
3 Mr. Roisman. I think I drew that conclusion on the paper
4 that's in front of me. That substantiated my filing.

5 Q Well, then is the other true? Is Mr. Wilkerson
6 not a source of that conclusion by you?

7 A I guess I don't understand, Mr. Roisman. I told
8 you I didn't personally talk to Larry Wilkerson.

9 Q That's right.

10 A I told you I independently drew the same
11 conclusion that quality engineering did, by talking to
12 Larry Wilkerson.

13 Your question to me is what is my source? My source, I
14 guess, in answer to your question, is the paper in front
15 of me.

16 Q And nothing more than that?

17 A I didn't say that.

18 Q I want you to pin your source for me, Mr. Brandt,
19 so I can test it. I don't think that's an unreasonable
20 thing to ask you; do you?

21 A I don't think it's unreasonable at all,
22 Mr. Roisman. But just like so many other things in this
23 proceeding, I don't know what you are asking.

24 JUDGE BLOCH: Do you know whether quality
25 engineering drew its conclusion based on the paper or

1 based on talk with Mr. Wilkerson?

2 THE WITNESS: I know that quality engineering
3 has both talked to Mr. Wilkerson and looked at the paper.
4 I won't attempt to sit here today and testify what their
5 basis for deciding anything was at this point. I'm saying
6 the paper in front of me now, and then in these boxes, is
7 enough to lead me to believe without any doubt what that
8 chit signed by Larry Wilkerson on September 12, 1978
9 stands for.

10 JUDGE BLOCH: But on particular welds you just
11 can't testify as to whether information came directly from
12 a QC inspector?

13 THE WITNESS: That's exactly my testimony.

14 BY MR. ROISMAN:

15 Q I take it, Mr. Brandt, that but for the writing
16 on the chit, the handwritten "first fit-up and cleanliness
17 of plate to plate (assembly A-17)"; that but for that
18 writing on the chit, you wouldn't know whether that chit
19 was for step 1 or step 2; would you?

20 A Was your question, Mr. Roisman, the writing that
21 says, "first fit-up through (A-17)"?

22 Q Yes.

23 A No, there's more on the chit that would indicate
24 to me that it is the first fit-up.

25 Q What is it? Is it the WMR number?

1 A Yes, it is.

2 Q Now, look on the first page of the traveler,
3 please. I guess it's the first page?

4 A The first page of the five-line?

5 Q Yes. Right.

6 A Okay.

7 Q Now, on the line where that WMR number appears,
8 which is the first line, there's a number 2, and then
9 above that "first fit, 2." Is that correct?

10 A Yes, it is.

11 Q And what is that designed to denote? What is
12 that line supposed to be telling us?

13 A That -- welding consumables drawn on WORA017 and
14 143, using well procedure 88125, were used and performance
15 of the first fit-up up and the tacking of the backing
16 strip to the two plates referenced on the top part of the
17 traveler.

18 Q So that the WMR number is a number for both the
19 second step and the first step; correct? The first
20 inspection and the second inspection?

21 A As a practical matter, Mr. Roisman, I think
22 you'll find that's true for all of them.

23 Q But my --

24 A The answer to your question is "yes." But I'm
25 not sure you understand why.

1 JUDGE BLOCH: Explain further so the board will
2 understand.

3 THE WITNESS: The step 2 is simply a matter of
4 looking at the tacks that are maintained in the fit-up.

5 BY MR. ROISMAN:

6 Q Which comes first, step 1 or step 2?

7 A It depends on how it was fit up. It could have
8 been done simultaneously.

9 Q You would simultaneously check the back
10 stripping tack and the fit-up and cleanliness?

11 A You could. On this particular joint geometry,
12 you could easily, yes, because it's welded from an
13 atypical side, if you will. Welded toward the back side
14 rather than toward the inside.

15 JUDGE BLOCH: But cleanliness, doesn't that have
16 to be looked at before the tack weld is made and looked at
17 after the tack weld?

18 THE WITNESS: Can I draw you a picture?

19 JUDGE BLOCH: If that is true you just say it.
20 Can you look after the tack weld is made or before?
21 Explain the difficulty.

22 THE WITNESS: Judge Bloch, you are talking about
23 a weld that might be an eighth, quarter of an inch -- maybe
24 as long as a half inch long. The tack weld just holds the
25 backing strip to the cleanliness plate.

1 JUDGE BLOCH: But is the tack weld done first or
2 second?

3 JUDGE JORDAN: Do you do cleanliness inspection
4 on the tack weld?

5 THE WITNESS: Is your question "could you look
6 at it after"?

7 JUDGE BLOCH: From plant procedures.

8 THE WITNESS: I would prefer to see the
9 procedures. If you are asking from a practical standpoint
10 I'll answer your question. If you want a practical answer
11 I will. If I had every document pertaining to these 1302,
12 I would have a lot more documents with me.

13 JUDGE BLOCH: So you don't notice whether the
14 cleanliness inspection had to be done prior to the tack
15 welding or not?

16 THE WITNESS: Are you saying procedurally
17 mandated, Judge Bloch?

18 JUDGE BLOCH: You don't know whether it was
19 procedurally mandated that the cleanliness inspection had
20 to be done before the tack weld because you don't have the
21 procedure before you?

22 THE WITNESS: Yes, that's true. I don't have it
23 in front of me and I don't remember what was required in
24 1978.

25 BY MR. ROISMAN:

1 Q Mr. Brandt, I'm going to show you what you
2 previously provided, which is some instructions procedures.

3 MR. WATKINS: Mr. Chairman, before he does that,
4 we request that the traveler package for weld 663 be bound
5 into the record at this point for comprehensibility of the
6 explanation the witness has just given.

7 JUDGE BLOCH: That may be done.

8 Who is going to provide the copy?

9 MR. ROISMAN: The person who asked to have it
10 bound in, I trust.

11 MR. WATKINS: Are you finished asking questions
12 on that traveler?

13 MR. ROISMAN: No.

14 JUDGE BLOCH: Let us have it bound in at this
15 point but we'll provide it to the reporter when we are
16 done with the questions on the traveler.

17 (The document follows:)

18

19

20

21

22

23

24

25

NON DESTRUCTIVE TEST
INSPECTION REQUEST

FOREMAN

TIME

DATE

9-12-78

page 4 of 4
9-11-78

WELDER: Mitchell AEO

DRAWING # BB 2401A

5/8 Liver #2

INSP.
REQ.

CLEAN FIT-UP

VISUAL L.P.

FINAL

FIELD WELD JT.# 663

V.B.

COMMENTS:

WNR: A017143 AEO

First fit up &
Cleaners of Plate to
Plate (assembly AIR)

INSPECTOR:

Samuel Williams

ACCEPT:

DATE:

9-12-78

FOR INFORMATION ONLY

QUALITY ASSURANCE DEPARTMENT
LEAK TEST REPORT

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

DRAWING BB 2401A	SYSTEM S.S. LINER R#2	CLASS 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>
WELD/ITEM NUMBER 663	LOCATION RB#2 830'	

MTL TYPE S.S.	MTL THICK 1 1/2"	DIA/LENGTH 5"
STAGE OF MFG. <input type="checkbox"/> REPAIR <input type="checkbox"/> ROOT <input type="checkbox"/> INTERMEDIATE <input checked="" type="checkbox"/> FINAL	JOINT DESIGN <input type="checkbox"/> INS <input type="checkbox"/> OPEN BUTT <input checked="" type="checkbox"/> OTHER	

LEAK DETECTION SOLUTION SNOOP	PRELIMINARY CHECK <input checked="" type="checkbox"/> SAT <input type="checkbox"/> UNSAT
PRESSURE GAUGE M & TE NUMBER 2440	PRESSURE GAUGE CAL. DUE DATE 10-29-84

EXAMINATION	SATISFACTORY	UNSATISFACTORY	NOT APPLICABLE
SURFACE PREPARATION	SAT		
SURFACE CLEANLINESS	SAT		
TEMPERATURE	SAT		
LIGHTING	SAT		
PRESSURE DURING EXAM (___ PSI)	0-2-5-8		
HOLD TIME (___ sec)	20 SEC.		

REMARKS

PROCEDURE/ACCEPTANCE STD QI-QP 11.18-6	ACCEPT <input checked="" type="checkbox"/> REJECT <input type="checkbox"/>
INSPECTOR Serry Holcombe	CERTIFICATION LEVEL H I
	DATE 8 14 84

TAK 8-14-84

FOR INFORMATION ONLY

DEPARTMENT
RT

No. T 20648
3039

PROJECT: COMANCHE PEAK JOB NO. 35-1195

UNIT 2 PAGE OF

MT PT

Drawing BB 2401A

System SS. LINER R#2

WDC/Traveler # F.W. 663

Class NA

Welds/Item # 663

Location RB#2 830'

Mfg Stage FINAL

NDE Procedure No. QT-QP11.18-1 Rev. 2

Equip/Mat'ls Mfg. MAGNAFLUX

Acceptance Std. 1B

Penetrant Batch # 82B097

Cleaner Batch # 83C015

Developer Batch # 82E041

AC Yoke DC Prods

NA

Model # NA

M&TE IRC # NA

Mat'l Type SS

Mat'l Thickness 1/2"

Diameter
Length 5"

Sketch & Comments

ID

OD

Inspector *Serry Holcomb*

Certification Level II

Date 8-13-84

Results Accept Reject

FOR INFORMATION ONLY

20651

236

WELD NO.

B&R Stainless Steel Liner Inspection Traveler

Weld Inspection Sheet

Page ___ of ___

Acceptance Std.
Gibbs & Hill 2323-SS-18

- 7a. Penetrant Mfg. Magnaflux-Spotcheck _____
- Cleaner Mfg. Magnaflux-Spotcheck _____
- Developer Mfg. Magnaflux-Spotcheck _____

NDE Procedure

Final P.T. Level II

RESULTS	INSPECTOR SIGN.	DATE

7b. Vacuum Box GASKET TYPE SOLUTION TYPE

_____ by _____

Pretest Cleaning _____ Pressure _____ Temperature _____ NDE Procedure _____

Solution Application Method _____ Post Test Cleaning _____

Gauge Serial Number _____ Pressure Differential
Maintained for _____ Sec. _____ Min.

Final V.B. _____

N/A - Not Applicable

Satisfactory _____ Unsatisfactory _____
Level II Inspector _____ Date _____

20652

FOR INFORMATION ONLY

NON DESTRUCTIVE TEST INSPECTION REQUEST		FOREMAN <u>FOWLES</u>		TIME/DATE <u>1/12/82</u>
WELDOR: <u>CFA</u>				
DRAWING # <u>BB2401A</u>				
INSP. REQ.	CLEAN VISUAL	<input checked="" type="checkbox"/>	FIT-UP L.P.	<input checked="" type="checkbox"/>
	FINAL	<input type="checkbox"/>		
				FIELD WELD # <u>236</u>
				WFML : <u>B293</u>
COMMENTS:				
INSPECTOR : <u><i>[Signature]</i></u>		ACCEPT: <u><i>[Signature]</i></u>		DATE: <u>1/12/82</u>

NON DESTRUCTIVE TEST
INSPECTION REQUEST

FOREMAN _____

TIME _____

DATE

10-17-78

WELDER: _____

Justice AEU

DRAWING # _____

BB 2401A

INSP.

CLEAN FIT-UP FIELD WELD JT.# *236*

REQ.

VISUAL L.P. V.B. _____

FINAL

COMMENTS:

*Just fit up and
cleanliness of bevel
to plate*

WMR: _____

A068850 AEU

INSPECTOR: _____

J.M. McCoy

ACCEPT: _____

DATE: _____

10-18-78

20653

FOR INFORMATION ONLY

FOR INFORMATION ONLY

TRIC STATION
RT (NCH)

20654

NCR No
M83-00795 Δ

UNIT	STRUCTURE/SYSTEM	ITEM/COMPONENT	TAG/ID NUMBER	LOCATION OR ELEVATION	RIR NO
2	RB 55 liner T/0 4.0	welds	BB2401A	EGG RB2 AC 15	N 4

NONCONFORMING CONDITION

A Review of STAINLESS STEEL LINER TRAVELERS, for RB#2 Cavity welds, has found that the required Fitup/Cleanliness inspections of INSIDE (waterside) welds cannot be verified AS BEING PERFORMED. Quality of welds indeterminate. See Attached Sheet for welds reviewed.

REFERENCE DOCUMENT: QI-QP 11.14-6 REV 2 Attach I PARA Step 5

REPORTED BY: R.D. SMITH / C.C. RANDALL / Lou Tessier (A) Bill Clump DATE: 3/17/83

REVIEW/APPROVAL: D.T. Ott DATE: 8/8/84

ACTION ADDRESSEE: Bill Baker / Koenigler / Hooper DEPARTMENT: Eng.

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

SUBJECT WELDS ARE SEAM WELDS UTILIZED TO PROVIDE LEAK TIGHTNESS OF THE LINER. ACCEPTABILITY OF WELDS SHALL BE BASED ON ^{LAB 1984} VACUUM BOX AND HYDROSTATIC TESTS.

REVIEW/APPROVAL: CPHooten DATE: 8/13/84

QE REVIEW APPROVAL: D.T. Ott DATE: 8/14/84

DISPOSITION VERIFICATION & CLOSURE

COMMENTS

REPORTING PERSONNEL

QE

ACTION ADDRESSEE

QE

FOR INFORMATION ONLY

NCR M83 00795

R.D. SMITH / RICHMOND / L. TESSER

3/17/83 / 8/7/84

ATTACHMENT

WELD #	Weld #	Weld #
1145	330	210
729	299	209
709	291	200
700	288	192
699	285	
695	282	
353	281	
351	280	
349	278	
348	277	
347	274	
346	271	
345	263	
344	261	
341	257	
338	252	
337	251	
336	250	
335	248	
334	246	
333	236	
332	235	

1 BY MR. ROISMAN:

2 Q I'm going to show you what is marked as
3 construction procedure 31-1195-CCP-38, revision 3; and for
4 reasons that I do not fully understand -- I'm going to
5 show you what is marked as page 5 of 18 listing QC hold
6 points, and ask you whether it is a correct assumption,
7 based upon this page, that fit-up and cleanliness is a
8 hold point which precedes the visual testing of the
9 backing strip tacks fillet weld, and that you must do
10 cleanliness before the tacks.

11 A What you are showing me is number 1 to this date,
12 September 23, 1979. The answer to your question is "yes."
13 It specified that fit-up and cleanliness check is to be
14 performed prior to the backup bar weld.

15 Q Can you tell me who is governed by this
16 construction procedure? Was Mr. Wilkerson? Strike that.
17 Was the inspector doing inspections at the time this
18 procedure was in effect, was he governed by this, or was
19 it only the construction people who were governed by it?

20 A The inspection procedure defined a QC inspector's
21 responsibility.

22 Q Looking at CP QCI-2.11 rev. 2, which is dated 1/9/78,
23 where does this inspection -- and looking under section 3.1,
24 QC hold points inspection and documentation requirement,
25 does a similar requirement of fit-up and cleanliness

1 preceding tack welding appear on pages 1 and 2 of that
2 document, which I'm now showing you, for welding operation?

3 A It doesn't come out and actually say it. It is
4 certainly implied, Mr. Roisman.

5 Q All right. Now I would like you to look at
6 pages 45,420 and 45,421 of your prefiled testimony that
7 was originally dated October 3, but filed on October 1,
8 1984. And starting on line 7 of 45,420 and going over to
9 line 2 of 45,421, tell me if it is not your testimony
10 there that the tacking is done before the cleanliness and
11 fit-up inspection occurs?

12 MR. WATKINS: Your Honor, I would like to invite
13 the witness to review as much of the surrounding pages as
14 he feels necessary.

15 THE WITNESS: Please restate your question.

16 BY MR. ROISMAN:

17 Q I'm asking you whether or not the testimony that
18 I'm asking you to look at there doesn't say that in fact
19 you do the tack welding before you do the fit-up and
20 cleanliness inspection and that that's an explanation that
21 you give for another apparent discrepancy in documentation?

22 A I'm trying to figure out how I can answer your
23 question without confusing the issue more.

24 In order for a fit-up to be maintained and thereby
25 signed off, whether you are talking about a fit-up of two

1 pieces of pipe, two pieces of, in this case liner plate,
2 or a fit-up of a piece of angle to a piece of plate, it
3 has to be tacked. Otherwise the fit-up is not maintained.

4 If you have two pieces of plate that are physically
5 separated by, say a quarter of an inch, and there's not
6 something absolutely maintaining that quarter-inch
7 separation, there's no way of signing off the fit-up as
8 proper.

9 Q So you are saying that every time a fit-up was
10 verified, it had to have been preceded by a tacking weld
11 on any of these liner plates?

12 A There had to be a tack weld holding --
13 maintaining the space, not necessarily the tack weld that
14 attached the backing strip to the liner plate.

15 Q What would the tack weld be attaching? What two
16 things would be being attached by it?

17 A Possibly the spacer bar in the plates. I'm not
18 sure. There's a spacer bar inside -- this weld is a bad
19 example, as I said, because it's welded the wrong way, but
20 on a conventional plate-to-plate weld there's a spacer bar
21 which maintains the gap between the two plates. But
22 there's nothing that prevents the two plates -- the spacer
23 bar from a physical limitation prevents the two plates
24 being drawn closer together, and in order for them to be
25 drawn closer together for a practical purpose they would

1 have to crush or displace the spacer bar.

2 But there's nothing, without either the plates being
3 welded to the spacer, tack welded to the spacer, or the
4 backing strip tack welded to the plates, that would keep
5 the plates from drawing further apart from one another.

6 Q Is the spacer bar left in?

7 A No. It's removed.

8 Q So if it had been tacked in, you'd have to
9 physically remove the weld, right, break the weld in some
10 way?

11 A Yes.

12 Q Does that seem plausible, that they would have
13 done that?

14 A I don't know. You've got me at a loss because I
15 don't -- I'm sitting here trying to figure out how they
16 tacked it together to sign off. I understand the point
17 you are trying to make and I'm really trying to answer you
18 to the best of my ability. And I wasn't there when it was
19 done so I'm at a disadvantage.

20 JUDGE BLOCH: If you don't know you can always
21 say you don't know.

22 THE WITNESS: That is the answer, Judge Bloch.
23 I'm trying to hypothesize and answer his questions. If
24 I'm not supposed to do that I'll be glad to stop.

25 I'm trying to be as honest as I can and yet explain

1 both the fabrication and inspection sequence.

2 BY MR. ROISMAN:

3 Q The two plates that are to have a certain
4 distance between them, they are set down and then moved to
5 the point where the construction people believe that they
6 have the right distance between them; correct?

7 A What do you mean "set down," Mr. Roisman?

8 Q Well, they are leaned up against the wall or
9 laid down against the wall, wherever the welding work is
10 going to be done; right? They are not hanging in the air?

11 A But if you have two plates that are to be fit to
12 where the seam is a horizontal weld seam between two
13 vertical plates, there has to be something to keep -- or
14 even a horizontal weld -- there has to be something that
15 maintains the gap at a fixed distance.

16 Q It could be just the weight of the plates;
17 couldn't it? I mean, if they weighed 2300 pounds each, it
18 wouldn't be easily moved.

19 A Or horizontal -- you could bump it, move it
20 quite easily -- excuse me -- I mean for a vertical weld.
21 For a vertical seam, if two plates were butted up as they
22 were fabricating the liner out of place, if you had bumped
23 either plate it would tend to broaden the gap.

24 Q Do either the construction or inspection
25 procedures tell us how they were to deal with this dilemma

1 that you are presenting?

2 A It is more construction practice, Mr. Roisman,
3 than something -- there's several different ways to do it.
4 I don't know how that was done. That's clearly my answer.

5 Q Well, let's -- it seems that there are several
6 options, though. I'm trying to see if I understand
7 whether you think you have covered the field.

8 One option is that the backing strip was tack welded on
9 to hold it on, and then the fit-up inspection was done; is
10 that correct? That's one option?

11 A Yes, sir.

12 Q Another option is that the spacer bar was tack
13 welded in place and then the inspection was done; is that
14 correct?

15 A That's an option; yes, sir.

16 Q Now, in the case of the spacer bar, it would
17 still be possible to determine both cleanliness and fit-up
18 without having had any part of the plate covered, the
19 spacer bar being between the plates rather than
20 overlapping the plates; correct?

21 A Yes, sir.

22 Q But in the case of the tacking -- of the backing
23 strip, you would actually be overlapping the point where
24 the two plates are coming close to each other and the
25 cleanliness would not be visible from the side that the

1 tacking -- that the backing strip has been tacked to;
2 would it?

3 A Please repeat your question.

4 Q If the backing strip were tacked on to the two
5 plates, you wouldn't be able to do a cleanliness
6 inspection for the side of the weld that the backing strip
7 was applied to, because the backing strip would be
8 covering part of what you had to look at to determine
9 cleanliness; wouldn't it?

10 A There is no weld on that side, Mr. Roisman.

11 JUDGE BLOCH: Cleanliness, as I understand your
12 testimony, would be an inspection by eye of the inside of
13 the tacking strip and the edges of the metal? Is that
14 what you are saying?

15 THE WITNESS: No, sir. Judge Bloch, I offered
16 when we first got into this to draw a picture, and I think
17 we are to the point in order to explain this and ever end
18 this conversation --

19 JUDGE BLOCH: Let's do it. Draw a picture.
20 Do we have a white piece of paper that we can put into
21 the record later?

22 (Discussion off the record.)

23 JUDGE BLOCH: Could you help the witness so he
24 can mark what he's done and then describe it orally.

25 (Discussion off the record.).

1 JUDGE BLOCH: We'll take a status check in 10
2 minutes.

3 (Recess.)

4 JUDGE BLOCH: The hearing will come to order.
5 Mr. Watkins, would you like to conduct the examination
6 which will enable us to identify the drawing and insert it
7 into the transcript for reference?

8 MR. WATKINS: Sure.

9 EXAMINATION

10 BY MR. WATKINS:

11 Q Mr. Brandt, will you explain this drawing,
12 please?

13 MR. ROISMAN: Why don't we give it an
14 identification first?

15 JUDGE BLOCH: If we are going to bind it into
16 the record -- okay. Call it the Brandt diagram.

17 MR. WATKINS: Your Honor, I'm going to give a
18 copy to Mr. Brandt, the original to the reporter. May we
19 have it bound in at this point?

20 JUDGE BLOCH: Let's label it the Brandt diagram.

21 (The document follows:)

22

23

24

25

WATER

Fit-up gap

SPACER BAR

A A

CONCRETE

ALL STEPS REFER TO 5 LINE TRAVELER

20665

BEFORE STEP 1

WATER

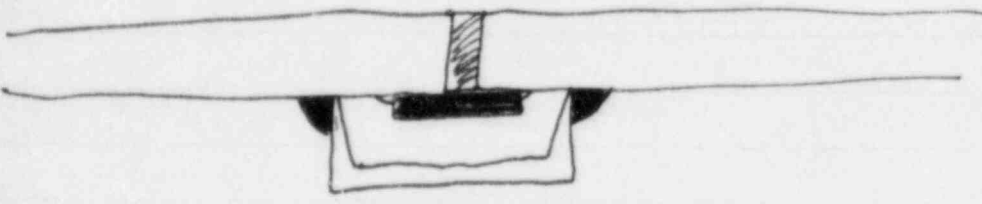


CONCRETE

TACK WELD

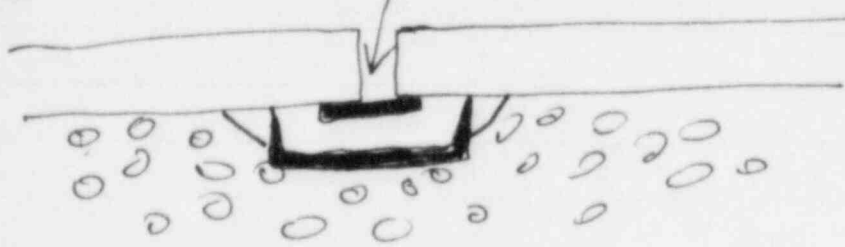
SURFACE B

AFTER STEP 2, BEFORE STEP 3

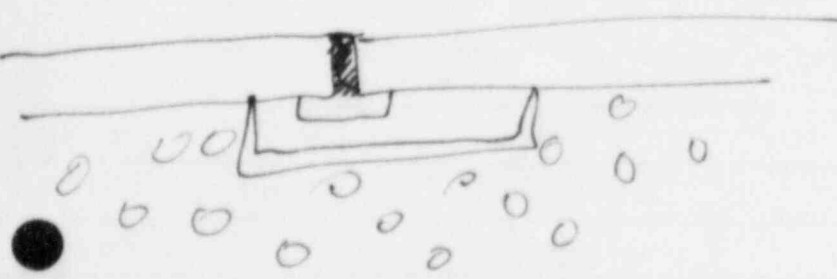


AFTER STEP 4 BEFORE CONCRETE PLACEMENT

SPACER REMOVED TO REVERIFY FITUP & CLEANLINESS



STEP 1 (REVERIFY)



AFTER STEP 5

BRANDT DIAGRAM

1 THE WITNESS: Mr. Chairman, I have got the
2 original back and I'm going to identify the spacer bar, as
3 you suggested on the break.

4 On top of the drawing, if you will, the top indication
5 on this page, the top shaded-in material between the
6 fit-up gap is the spacer bar, and I'm going to so note it
7 on the original of the drawing.

8 JUDGE BLOCH: The spacer bar fills the fit-up
9 gap?

10 THE WITNESS: Correct.

11 JUDGE BLOCH: For this particular weld? Is that
12 what this is?

13 THE WITNESS: This is for a typical weld, your
14 Honor. This one, of all the welds we could have chosen,
15 this is atypical because it's exactly backwards.

16 MR. WATKINS: By "this," do you mean weld 663?

17 THE WITNESS: Yes, I do.

18 The two plates are drawn together and a spacer bar is
19 inserted.

20 JUDGE JORDAN: This is a typical weld, not this
21 unusual weld; is that correct?

22 THE WITNESS: Right. I think it will serve the
23 same purpose, Dr. Jordan, in the way of explanation. This
24 weld that we have been discussing is essentially the same
25 thing only it's reversed with respect to water side,

1 concrete side. And it has no leak chase channel.

2 JUDGE BLOCH: What?

3 THE WITNESS: I don't believe it has a leak
4 chase channel.

5 The plates are drawn together. The initial surface, as
6 I have stated up in the upper right-hand corner, all these
7 steps that are numbered refer to the five-line traveler.

8 The purpose of conducting the initial fit-up inspection,
9 fit-up and cleanliness inspection, is two-fold. It is to
10 assure the back side surface of the two plates being
11 joined, which I have indicated by surface A; that that
12 area there is clean, and the gap between the two plates,
13 which I have labeled as "fit-up gap" is within procedural
14 tolerances.

15 JUDGE BLOCH: So it's only the concrete side
16 that has to be clean and the space between where the space
17 bar -- where the spacer bar is placed doesn't have to be
18 clean?

19 THE WITNESS: At this time, your Honor.

20 JUDGE BLOCH: Okay.

21 THE WITNESS: The purpose of this inspection is
22 not one of quality. It's certainly not one of safety.
23 But the purpose of this inspection is to assure that the
24 backing strip remains on until the inside weld is made.
25 The reason being, if these tack welds that are ultimately

1 going to be placed holding this backing strip to the two
2 liner plates crack and the backing bar falls off into the
3 leak chase channel, when you come around to the inside or
4 water side of the weld to deposit that weld, you now have
5 no backing strip.

6 Do you follow me? The weld would have to be made with
7 a welder qualified to an open butt procedure rather than a
8 welder qualified with backing; or the backing strip would
9 have to be reinserted to slide it through the opening and
10 retack it.

11 JUDGE BLOCH: If the backing strip were just not
12 firm, then couldn't there be a shift occurred during the
13 welding of the inside so that you'd actually have a
14 structural problem in the inside weld?

15 THE WITNESS: No, sir. Let me take you through
16 the sequence and then I'll offer the explanation.

17 At any rate, the surface that you are interested in
18 when you are signing -- if we can assume for a moment,
19 just for reasons of explanation, that when the inside
20 fit-up -- excuse me -- outside, concrete side fit-up and
21 cleanliness inspection are performed, that step 1 would be
22 formed as Mr. Roisman has suggested. This is, as I say,
23 just for explanation purposes only. And let's insert a
24 new line, call it line 1-A, just for purposes of this
25 explanation.

1 At the time the inside -- outside fit-up, or concrete
2 side fit-up -- or what's referred to in the travelers in
3 many cases as first fit -- is done, you are interested in
4 verifying that the gap between the two abutting plates is
5 proper and that the surface that I've labeled there as "surface
6 AA" is cleaned.

7 JUDGE BLOCH: Are there tack welds at that point?

8 THE WITNESS: This is the point that Mr. Roisman
9 and I discussed this morning. There are several
10 possibilities.

11 The one possibility we didn't explore is construction
12 could have cleaned it in this configuration and had the
13 inspector there while they tacked it in place. In that
14 situation the inspector would be signing line 1 and line 2
15 at the same time he saw him do it. That's a possibility
16 that we did not discuss this morning -- not this morning,
17 in the earlier session. At any rate --

18 JUDGE BLOCH: Is that just a possibility or is
19 that what was required by the procedure?

20 THE WITNESS: The procedure required
21 verification of both, Judge Bloch. I can't sit here and
22 tell you how it was done. I can think of at least three
23 ways to do it.

24 JUDGE BLOCH: The procedure is supposed to say
25 the way it's done. You not only write procedures, you

1 interpret them and make sure your men follow them.

2 THE WITNESS: The procedure implies that it's
3 supposed to be clean before the tack weld is made. That's
4 clear.

5 JUDGE BLOCH: An inspection of the cleanliness?

6 THE WITNESS: Yes, sir.

7 JUDGE BLOCH: Before the tack weld is made?

8 THE WITNESS: Yes, sir.

9 JUDGE BLOCH: So that it should have been done
10 that way?

11 THE WITNESS: Yes, sir. I think what
12 Mr. Roisman and I were talking about is when the traveler
13 was signed, whether it occurred at the same time,
14 different times, if 1 preceded 2 or 2 preceded 1.

15 JUDGE BLOCH: Do you want to continue with the
16 story or is that enough for now for Mr. Roisman?

17 MR. ROISMAN: No. I would like him to go
18 through the whole explanation, his point that we all have
19 it so that we have a common understanding, and I think
20 it's useful to have the whole story laid out.

21 THE WITNESS: Okay. At this point, using this
22 hypothetical traveler which I have described as a step 1
23 and a step 1-A, the step 1-A being the inside fit-up and
24 cleanliness inspection -- after step 1 was signed off, our
25 concurrent -- excuse me -- after the step 1 inspection was

1 performed, the backing strip would be tacked on the back
2 side as we see in the second figure from the top. The
3 little circles that are drawn, or quarter circles that are
4 drawn to the right and left of the darkened strip on the
5 back side of the weld, are these tack welds.

6 JUDGE BLOCH: Okay. Just for the record, when
7 Mr. Brandt says "back side," he's referring to the part he
8 marked "concrete." When he says "inside," he's referring
9 to the part he marked "water."

10 THE WITNESS: And the darkened strip in the
11 second picture is the backing strip. That's also not
12 labeled.

13 These quarter circles are the tack welds.

14 After a visual inspection -- after a visual inspection
15 of these tack welds adjoining this backing strip to the
16 two abutting plates is performed, step 2 can be signed off.

17 At this point, the surface that I've got in the second
18 picture labeled "surface B," which is the area on the back
19 side, or the concrete side of the liner plates, and the --
20 what is ultimately going to contain a fillet weld on the
21 outside edges of the channel, have to be inspected for
22 cleanliness.

23 MR. ROISMAN: May I interrupt him and ask a
24 question?

25 JUDGE BLOCH: I didn't understand what he just

1 said, so maybe he can just clarify it.

2 MR. ROISMAN: That's what I was going to ask him.

3 JUDGE BLOCH: What is going to be inspected for
4 cleanliness? You have the spacer bar in place and it
5 looks to me that you are saying the part under the spacer
6 bar is going to be inspected for cleanliness.

7 THE WITNESS: No, sir. Assuming that you are
8 looking at this in section, just as it's drawn. Surface B
9 is the surface on the back side of the stainless steel
10 liner plates. Do you see where the arrow draws?

11 JUDGE BLOCH: Yes. That's not the problem.
12 It's the two small arrows that are puzzling me.

13 THE WITNESS: That's a channel that's going to
14 be welded over the backing strip. The outside edges of
15 the flange of the channel also have to be inspected for
16 cleanliness.

17 JUDGE BLOCH: Okay. I've got it.

18 THE WITNESS: At that point, step 3 on the
19 five-line traveler can be signed off.

20 MR. ROISMAN: Can I just ask him --

21 BY MR. ROISMAN:

22 Q Is the shaded area between the plates on the
23 second drawing, second line of the drawing, is that still
24 the spacer bar?

25 A Yes, sir.

1 JUDGE BLOCH: I notice in the third drawing that
2 you've drawn it so that the weld comes on a portion of the
3 channel?

4 THE WITNESS: It's a fillet weld; yes, sir.

5 JUDGE BLOCH: I assume the cleanliness of
6 surface B has to include the portion that is going to be
7 touched by that weld on the outside of the channel?

8 THE WITNESS: That's what I'm saying. If you'll
9 note, the arrows on surface B point to the back side of
10 the liner, and it was attempted to -- it looks like it's
11 drawn to the bottom edge of the channel. Actually what it
12 was attempting to refer to are the outside edges of the
13 flange, the channel flange itself.

14 In fact, the tip of the channel, if you will, is not
15 welded at all.

16 At this point, in the third picture, the fillet welds
17 are made, attaching the leak chase channel to the back
18 side of the liner plate. These fillet welds are indicated
19 by a shaded mark on the outside of the channel which is
20 now in place in figure 3. Are you with me so far?

21 At this point, concrete is placed -- at this point the
22 liner plate is lifted from its out-of-place fabrication
23 area to inside the building, form work -- excuse me --
24 rebar is installed behind it, studs are shot onto the
25 reinforcing plates and the liner, to be embedded in

1 JUDGE BLOCH: I notice in the third drawing that
2 you've drawn it so that the weld comes on a portion of the
3 channel?

4 THE WITNESS: It's a fillet weld; yes, sir.

5 JUDGE BLOCH: I assume the cleanliness of
6 surface B has to include the portion that is going to be
7 touched by that weld on the outside of the channel?

8 THE WITNESS: That's what I'm saying. If you'll
9 note, the arrows on surface B point to the back side of
10 the liner, and it was attempted to -- it looks like it's
11 drawn to the bottom edge of the channel. Actually what it
12 was attempting to refer to are the outside edges of the
13 flange, the channel flange itself.

14 In fact, the tip of the channel, if you will, is not
15 welded at all.

16 At this point, in the third picture, the fillet welds
17 are made, attaching the leak chase channel to the back
18 side of the liner plate. These fillet welds are indicated
19 by a shaded mark on the outside of the channel which is
20 now in place in figure 3. Are you with me so far?

21 At this point, concrete is placed -- at this point the
22 liner plate is lifted from its out-of-place fabrication
23 area to inside the building, form work -- excuse me --
24 rebar is installed behind it, studs are shot onto the
25 reinforcing plates and the liner, to be embedded in

1 concrete, and concrete is placed.

2 At this point, after concrete placement, the channel
3 and the backing strip are inaccessible. They are now in
4 concrete -- excuse me, the back side of the backing strip
5 is now inaccessible.

6 JUDGE BLOCH: So when you say "reverify fit-up,"
7 but cleanliness isn't reverification. This is a different
8 cleanliness check; is that right?

9 THE WITNESS: The inside cleanliness is to
10 verify that the cleanliness on the inside is clean prior
11 to commencement of welding from that side.

12 JUDGE BLOCH: Knowing that does not let you know
13 whether the cleanliness of step 1 was done properly on the
14 outside?

15 THE WITNESS: No. But that's the point I'm
16 trying to make.

17 JUDGE BLOCH: Okay.

18 THE WITNESS: At the point in the fabrication
19 sequence to where you get to the fourth picture down --
20 chronologically we are in that timeframe now -- you have
21 only performed one inspection at that point that's
22 critical -- it's not even critical but it's important to
23 quality or safety, and that is the visual inspection of
24 that fillet weld attaching the channel to the back of the
25 liner plate.

1 The reason that you measure the fit-up cap in the
2 beginning and to verify -- well, let's take it one by one.

3 The reason that you measure and verify that the fit-up
4 gap is proper when you attach the backing strip and
5 ultimately the leak chase channel to the back side of the
6 liner is to minimize your construction list. Once the
7 leak chase channel is welded to the liner, the liner isn't
8 going anywhere. However, if that gap is wrong at that
9 point, it is going to involve much more costly rework than
10 if the gap was proper.

11 The reason I say the backing strip weld, the visual
12 inspection of the backing strip tack welds and the
13 cleanliness of the back side of the liner is not important
14 is, the purpose of performing that inspection is to give
15 you a high degree of confidence that the backing strip
16 will remain in that position through the fourth picture.
17 Because at this point, the backing strip, as you noted
18 earlier, the tacks have cracked for some reason, or the
19 backing strip has accidentally become dislodged. The
20 backing strip is now within this leak channel and you now
21 have no backing strip to weld against. You have one of
22 two options.

23 Either you can weld the weld as an open butt procedure,
24 or you can try to reaffix the backing strip. In either
25 case, it's also on a construction risk basis because it's

1 reverified.

2 So, from a practical matter, and from a quality matter --
3 assuming, as Mr. Roisman did in his -- I believe inferred
4 in his opening statement, that the purpose of quality was
5 to assure that all the requirements were met -- which I'm
6 not sure that I can agree with it -- in most industries
7 quality control plays as much a function in minimizing
8 production risk or assuring final endproduct than it does
9 assuring absolute safety in the product.

10 There are other purposes -- quality control can perform
11 other functions, I think. That's the only point I'm
12 trying to make.

13 Here, in inspecting this backing strip, the reason for
14 doing so is not a matter of safety but a matter of
15 minimizing rework and expense of that rework.

16 JUDGE BLOCH: Your inspectors do it the same way,
17 regardless of the purpose?

18 THE WITNESS: Right. I'm not -- I'm just
19 attempting to define the reason for structuring the
20 inspection program that way. The inspector's function is
21 to follow the inspection procedure. But from a realistic
22 standpoint, if you are at the fourth picture, the only
23 inspection -- and have not performed the inside fit -- if
24 you have not performed any welding on the inside, the only
25 inspection that QC has performed that is either quality or

1 safety significance is the visual inspection of that fillet
2 weld attaching the -- excuse me, there's two. The
3 cleanliness inspection prior to making the fillet weld
4 between the liner plate and leak chase channel, which is
5 step 3 on the traveler, and step 4 on the traveler which
6 is the visual inspection of the fillet weld.

7 JUDGE BLOCH: Does the leak chase channel
8 collect fluid that may come through that weld so you know
9 there's a leak? Is that the purpose?

10 THE WITNESS: The purpose of the leak chase
11 channel is to collect any leakage that seeps through that
12 joint for whatever reason. It's a second safeguard, if
13 you will, and it's collected in a sump under the liner;
14 yes, sir.

15 At this point, as I stipulated in picture 4, the gap is
16 reverified and the cleanliness of the surfaces to be
17 joined is verified. And in this hypothetical traveler,
18 line 1-A would be signed off, for fit-up and cleanliness
19 of the inside inspection.

20 At that point, the joint is welded out and you would
21 see it in a configuration as is the fifth picture from the
22 top, once step 5 is signed off.

23 BY MR. ROISMAN:

24 Q In the lined area in step 5 now, that's not the
25 spacer bar but is the weld?

1 A Yes, sir, it is.

2 Q Now, as I understand your testimony, there are
3 three ways in which one might go about getting to step 2
4 in this basic approach.

5 One is that you would put the spacer bar in between the
6 two plates and tack it in place to hold the fit-up.

7 Second is that you would put the backing plate in with
8 a tack weld to hold the two in place.

9 The third is that the inspector would actually be
10 present just before you were going to put the tack weld in
11 for the backing plate, and at that point he would verify
12 the cleanliness of the liner plate surfaces AA; and then
13 the tack welding would be done. Is that correct?

14 A I'm sorry, Mr. Roisman. I missed your second
15 hypothetical.

16 Q I was trying to find out the three ways in which
17 one -- in which you hypothesize that one would properly do
18 the cleanliness inspection for a plate to plate weld for
19 the concrete side of the weld.

20 JUDGE BLOCH: I think he has a simpler question.
21 The second one, was it?

22 THE WITNESS: The first was that you tack the
23 spacer bar to the plates, the third one was do it
24 simultaneously. I don't remember what the second was.

25 JUDGE BLOCH: The second was tacking in the

1 backing strip.

2 MR. ROISMAN: The spacing bar.

3 JUDGE BLOCH: The backing strip.

4 MR. ROISMAN: That's right, backing strip.

5 Excuse me. Correct.

6 THE WITNESS: Spacer bar, one; backing strip,
7 two; third one, be there and see the whole thing --
8 whichever one of the first two you are going to do.

9 THE WITNESS: I would say of those three
10 likelihoods, probably the third one is most likely the way
11 it happened.

12 BY MR. ROISMAN:

13 Q You mean the inspectors were there watching and
14 inspecting for cleanliness as the backing strip was being
15 tacked on, or just about it was being tacked on?

16 A Yes, sir. But either of the three cases could
17 have conceivably happened.

18 Q And a fourth way is that they could have tacked
19 on the backing strip before anybody inspected cleanliness,
20 and there was no cleanliness done of the concrete side for
21 surfaces AA?

22 A Are you asking is that a possibility?

23 Q Yes.

24 A Yes, that's a possibility.

25 Q And the form don't tell us when there is not --

1 when you are using the five-line report in the NDE chit,
2 you can't tell which, if any of those four possibilities
3 are used, do they? It is not broken up enough to tell how
4 they followed the steps; is it?

5 A Using your hypothesis, you are hypothesizing
6 that cleanliness was not performed at all.

7 Q No. I'm just saying you can't tell from the
8 documentation which of those four procedures, one of which
9 would be "no cleanliness test done" -- in fact basically
10 two of them were, wouldn't they?

11 A No.

12 Q If you put the spacer plate -- if you put the
13 spacer bar in and welded it, then it's possible to do
14 cleanliness and fit-up inspection without any obstruction.
15 If you are physically there before they put the backing
16 plate on and you verify fit-up and cleanliness before they
17 tack on the backing plate, then you have done both steps.
18 But if they put the backing plate on before you got there to
19 do any inspection, you can't do the cleanliness inspection
20 for surfaces AA; can you? They have obstructed your view?

21 A Since we are on the hypothetical, Mr. Roisman,
22 surfaces AA that are of concern is the surface of AA which
23 falls under the tack.

24 Q Correct.

25 A I find it totally improbable, due to the nature

1 of the tacking on of the backing strip, they are not done
2 at prescribed intervals. It's an intermittent-type
3 welding operation -- in that the distance between any two
4 consecutive tacks might be anywhere from three feet to
5 three inches --

6 JUDGE BLOCH: What does it have to do with the
7 area of the tack? Once it's tacked on, it covers the area.

8 JUDGE BLOCH: If there is no tack weld, it is
9 highly improbable that the area of 3/8 of a tack weld is
10 dirty, or unclean.

11 JUDGE BLOCH: Looking at figure 2 --

12 THE WITNESS: Those little circles, keep in mind,
13 are not fillet welds. They are only 3/8 of an inch long.

14 JUDGE BLOCH: Once they are on there, even the
15 backing covers the whole area?

16 THE WITNESS: You are interested in the area
17 under the tack weld. The purpose of the inspection is to
18 see that the tack weld is properly made.

19 JUDGE JORDAN: What you are saying is it really
20 doesn't have to be clean under the backing strip except at
21 the very edges; is that correct?

22 THE WITNESS: No. Maybe I'm --

23 JUDGE BLOCH: It only has to be cleaned under
24 the tack welds which are already on?

25 THE WITNESS: No, sir. Maybe I'm confusing you

1 with from a practical consideration, or the purpose behind
2 the inspection versus what the procedures require.

3 The procedures require that the whole area be clean.
4 The purpose of doing such is to assure that you have a
5 clean surface to make those tack welds on.

6 I'm saying if the surface is clean on either side of
7 this tack weld, the probability of it being dirty for the
8 3/8 of an inch under the tack weld --

9 JUDGE BLOCH: Okay. It's a sampling problem.
10 You think the portion between the tack welds will
11 represent what would have happened under the tack weld?

12 THE WITNESS: Yes, sir. From a practical
13 consideration. I'm not saying that's what the procedure
14 required. The procedure required the whole appear to be
15 clean.

16 JUDGE BLOCH: And I take it that Mr. Roisman is
17 right, that once the strip is in place you could not
18 follow the procedure because you could not inspect the
19 area under the backing strip?

20 THE WITNESS: Yes, sir.

21 BY MR. ROISMAN:

22 Q And just to close that, because there are two
23 separate questions: The procedure requires, does it not,
24 Mr. Brandt, that there must be a cleanliness inspection,
25 even of the portion of the plate that's going to be

1 covered by the backing strip as well as the portion of the
2 plate that's going to have the fillet weld that's going to
3 hold the backing strip in place clean; isn't that true?

4 A If you are referring to the tack weld that holds
5 the backing strip in place, that's true, Mr. Roisman.

6 Q But on line 2 of the five line traveler, it can
7 be tack or fillet weld, isn't it? The inspection calls
8 for either tack or fillet weld, doesn't it?

9 A Yes, sir.

10 Q So there are times when the backing strip is
11 being laid in with a fillet weld and not a tack weld;
12 correct?

13 A Yes, sir. For certain types of welds that's the
14 case. But a fillet -- a tack weld is a fillet weld. But
15 in some cases the fillet welds are continuous.

16 Q What is this line on line 2 of the five-line
17 traveler which has "backing strip tack/fillet welds
18 intended to communicate to the inspector"; what's he
19 supposed to be looking at?

20 A However the backing strip is affixed to the
21 plate.

22 Q You mean there's no procedure as to whether it
23 is to be done with a tacking or a fillet weld?

24 A I think I tried to tell you, Mr. Roisman, a tack
25 weld is a fillet weld.

1 JUDGE BLOCH: He meant with an interrupted tack
2 weld or a continuous fillet weld.

3 THE WITNESS: I don't believe the drawings ever
4 require a continuous fillet weld.

5 JUDGE BLOCH: It was the option of the welder?

6 THE WITNESS: It was a construction option due
7 to the nature of the joint being fitted.

8 JUDGE BLOCH: Do we know it was a construction
9 option or is that what the procedure says?

10 THE WITNESS: I'm telling you I don't know.
11 It's not in the procedure. It would be on the drawing.
12 For embedded plates, I know the construction sequence was
13 they fillet welded using a continuous fillet weld of the
14 backing strip to the embed, to hold the backing strip
15 rigidly against the embed; place this embed, with its now
16 fillet welded backing strip, and tack welded the backing
17 strip on the side of the liner. Picture, if you will, a
18 wall with a hole cut out for a window.

19 JUDGE BLOCH: As I understand, it's being held
20 firmly by the continuous weld on the outside. Why would
21 you tack weld on the inside?

22 THE WITNESS: I didn't say the inside. I said
23 on the plate side.

24 If you have a wall with a window cut out of it, you are
25 going to put a window in. You install a backing strip,

1 and rather than putting your window in and tacking your
2 backing strip to one side and then the other, thereby
3 holding all three pieces in close contact, these embed
4 plates are thicker than the liner itself. The liner is 3/16
5 of an inch thick; the plate is 3/16 of an inch thick.

6 So what construction did was offset the backing strip
7 on these embed plates by 3/16 of an inch, and fillet
8 welded the backing strip to the embed plate.

9 Now you've got a liner with a hole cut out of it and
10 you've got an embed plate with a backing strip fillet
11 welded to it -- two pieces.

12 JUDGE BLOCH: I'm beginning to feel that if this
13 is important we need another drawing.

14 Is this important, Mr. Roisman? Can you understand it
15 from the words?

16 MR. ROISMAN: I'm not sure. Why don't you let
17 me ask a couple of questions and then we will find out.

18 BY MR. ROISMAN:

19 Q First, is it your testimony that it is not a
20 part of --

21 JUDGE BLOCH: Mr. Roisman, you are missing the
22 mike.

23 BY MR. ROISMAN:

24 Q Is it your testimony that it is not part of the
25 drawing that the welder is looking at, for him to know

1 whether he's supposed to put in a full fillet weld or only
2 tacking fillet welds?

3 A I think I said I don't know, Mr. Roisman. I'm
4 telling you what they did.

5 Q How do you know that that's what they did?

6 A The traveler clearly indicates that on some of
7 them there's an embed fillet weld, and that's what it
8 refers to. I talked to the construction foreman that did
9 it.

10 Q Who is that?

11 A Craig Fowles.

12 Q And you didn't ask him whether he was following
13 a drawing or not? You just asked him what he did?

14 A I didn't see that it made a whole lot of
15 difference.

16 Q That wasn't my question either. My question was:
17 You didn't ask him, did you?

18 A No.

19 Q So you don't know what he was supposed to do.
20 All you know is what he did do?

21 A No. I think what I said was: I don't know, I
22 don't believe that it's specified in the procedure whether
23 it can be a tack weld or a fillet weld. A tack weld by no
24 code has no maximum dimension, and what I said is I do not
25 know if the drawings required for these embedded plates to

1 be a continuous fillet.

2 JUDGE GROSSMAN: Excuse me, Mr. Roisman, I don't
3 want to derail this discussion now that we've passed the
4 point that I have a question on, but nevertheless, was
5 there any difference between example 2 and example 4 that
6 you gave?

7 MR. ROISMAN: No.

8 JUDGE GROSSMAN: 2, if I understand it, was tack
9 welding the backing strip on without having examined the
10 liner plate for cleanliness; and I believe 4 was the same
11 thing.

12 MR. ROISMAN: That's right. The only difference
13 was that Mr. Brandt accepted number 3 as one of the
14 hypotheses and when it was expressed as number 4 he
15 categorized it as highly improbable, which I suspect is
16 just a confusion on his part.

17 JUDGE GROSSMAN: Let's assume we are using
18 example 2: once a backing strip is tack welded on, it is
19 never removed; isn't that correct, Mr. Brandt?

20 THE WITNESS: That's correct.

21 JUDGE GROSSMAN: Okay. Fine.

22 JUDGE BLOCH: I think it would be preferable not
23 to characterize testimony or statements by counsel.

24 BY MR. ROISMAN:

25 Q Now, Mr. Brandt, let's go back to pages 45,420

1 and 45,421, where you have -- where what you were
2 discussing was an apparent problem identified in a CASE
3 filing of "rods appear to have been burned prior to the
4 fit-up and cleanliness inspection," which starts at 45,419
5 where you are asked the question.

6 MR. WATKINS: Before you do that, have you
7 finished with 663?

8 MR. ROISMAN: No.

9 MR. WATKINS: We are still on the first weld. I
10 wanted to bind it into the record at this point but it can
11 wait.

12 BY MR. ROISMAN:

13 Q Mr. Brandt, my question to you was, as I
14 understand your explanation, your explanation was that,
15 well, you could burn rods before you did the first
16 inspection because you would be tacking on the backing
17 strip in order to keep the two plates from moving apart
18 from each other. Isn't that what the essence of your
19 explanation is, starting on page 45,420?

20 A Yes, sir.

21 Q And isn't it true that, if that were the case
22 then, absent the -- well, strike that -- that according to
23 your testimony on pages 45,419 through 45,421, you were
24 hypothesizing that the cleanliness and fit-up inspection
25 take place after the tacking is done; isn't that true?

1 Particularly look at the bottom of 45,420 and the top of
2 45,421.

3 A Please repeat your question. The tacking was
4 done after?

5 Q That cleanliness and fit-up inspection was done
6 after the tacking was done.

7 A The signature on line 1 was done after the
8 tacking was done; yes, sir.

9 JUDGE BLOCH: That's your hypothesis there? Is
10 that right?

11 MR. ROISMAN: No --

12 THE WITNESS: I think Mr. Roisman is asking me
13 to speculate that the inspection wasn't done until
14 afterwards. The only --

15 JUDGE BLOCH: Let me ask --

16 BY MR. ROISMAN:

17 Q I'm asking you to look at your words, Mr. Brandt.
18 With all due respect -- and I have been directing you to
19 them. Now I'll ask you to read them. Please read the
20 question at --

21 JUDGE BLOCH: One second --

22 MR. ROISMAN: Mr. Chairman, please. -- the
23 question at the bottom of 45,420, at line 25. Would you
24 please read the question and then read your answer.

25 A "So it is necessary, in fact, to issue and burn

1 welding rod prior to the time of fit-up and cleanliness
2 inspection is performed?

3 "Answer: Yes, it is. In all these cases that I have
4 in front of me, I believe the only rod burn prior to the
5 first inspection was only one or two rods, which is a
6 clear indication to me that the rod was used only to make
7 the tags, as one weld rod will not deposit a significant
8 amount of filler material."

9 JUDGE BLOCH: Can that answer be right? The "yes,
10 it is"?

11 THE WITNESS: I'm having a hard time, Judge
12 Bloch. The way it is written, no, that answer can't be
13 right.

14 JUDGE BLOCH: Because in fact --

15 THE WITNESS: What I'm trying to distinguish
16 today, and admittedly this is not clear, is if the
17 inspector was verifying this at the time of the fit-up, or
18 if he verified that this afternoon the two plates were
19 clean, they drew rods, they didn't finish tacking them up
20 until tomorrow -- say tomorrow morning -- they still would
21 only burn one rod, tomorrow morning he could conceivably
22 sign both steps 1 and 2.

23 JUDGE BLOCH: But it is not necessary, is it, to
24 burn any weld prior to the cleanliness inspection?

25 THE WITNESS: It is not necessary at all to burn

1 rod prior to cleanliness.

2 JUDGE BLOCH: And your answer, therefore, is
3 just wrong? It's a mistake?

4 THE WITNESS: On my part; yes, sir. It's not
5 clear what I was talking about.

6 JUDGE BLOCH: I think it is clear. What's
7 unclear about it? It's wrong.

8 THE WITNESS: All right. It's wrong. I don't
9 agree with you but --

10 JUDGE BLOCH: What's unclear about it?

11 THE WITNESS: It is not clear what I'm talking
12 about. We are talking about a signature on the one hand
13 versus when the inspection was performed on the other.
14 The line says "fit-up and cleanliness." If I do
15 cleanliness today and fit-up inspection tomorrow, when do
16 I sign line 1? I do it tomorrow when the entire
17 inspection is done. That's the point I'm trying to make.

18 JUDGE BLOCH: But you didn't have to have any
19 inspection prior to -- you didn't have to have any rod
20 burn prior to the first inspection? The man could be
21 standing there.

22 THE WITNESS: I don't see where that's a
23 contradiction of what I'm saying. I'm not trying to
24 confuse the issue, believe me.

25 JUDGE BLOCH: My problem is that it seems so

1 simple to me. If you can't understand, I have difficulty
2 knowing what to do with the rest of your testimony.

3 THE WITNESS: Apparently you don't understand
4 what I'm saying.

5 JUDGE BLOCH: That's clear.

6 THE WITNESS: Even to me.

7 JUDGE BLOCH: Maybe Mr. Watkins would like to
8 clarify -- help you clarify it. I was thinking of asking
9 questions of the witness, not explaining it.

10 MR. WATKINS: I'm not going to even attempt to
11 explain it.

12 JUDGE BLOCH: Wait -- this should not -- why
13 don't you explain it to us? If you can explain it to your
14 counsel, you can explain it to us.

15 THE WITNESS: I failed on three occasions, your
16 Honor.

17 JUDGE GROSSMAN: Answer one question of mine
18 before you do that. That is, are we discussing cases now
19 in which the one or two rods were burned the day before?
20 Or is that another hypothetical that's in there?

21 THE WITNESS: I would have to pull all the
22 examples. Judge Grossman, my understanding -- to my
23 recollection now as we were doing this testimony, the WFMLs
24 for these welds that they had cited indicated that rod was
25 burned maybe a day or two prior to when step 1 was

1 actually signed off.

2 JUDGE GROSSMAN: That's what I'm asking you,
3 then.

4 THE WITNESS: We are talking of a period of a
5 day or two. And what I'm trying to say is if the fit-up
6 inspection, or what's termed here the fit-up and
7 cleanliness inspection, was called for late one afternoon --
8 say even at noon -- and I came over and said: Okay, it's
9 clean, go ahead and tack it; and I wanted to wait until
10 after -- as I said before -- to maintain that the gap was
11 maintained at an acceptable level, or acceptable interval
12 prior to signing step 1, and I didn't get back to inspect
13 or finish the inspection until the next morning, I would
14 sign it the next morning which would explain the one-day
15 difference.

16 JUDGE GROSSMAN: Okay. Although this is not
17 evidence, Mr. Roisman, do you agree that these are all one
18 or two days that we are talking about now, in which the
19 rods were burned and the inspection signed off?

20 MR. ROISMAN: I don't have those right here in
21 front of me but my recollection is we were talking about
22 days as opposed to months or years.

23 MR. WATKINS: Mr. Chairman, I suggest the
24 witness be allowed to pull the travelers about which he
25 was talking in his testimony.

1 MR. ROISMAN: If the question is troublesome, he
2 ought to be able to explain it on that basis because
3 that's the basis on which he has offered this testimony.

4 JUDGE GROSSMAN: If everybody is agreed on this,
5 why should we bother throwing a wrench in the works? Are
6 you talking about my question or Judge Bloch's question?

7 MR. WATKINS: I'm talking about Judge Bloch's
8 earlier question with Mr. Brandt's explanation.

9 JUDGE BLOCH: Sure, if his looking at the
10 documents will help, there's no reason why he couldn't
11 look. I don't think he thinks that will help him.

12 THE WITNESS: You are right. I'm almost sure of
13 that.

14 All I'm trying to explain to you -- with that whole
15 line of discussion, I'm trying to explain to you that it's
16 my recollection of the travelers that we were talking
17 about a day or two.

18 JUDGE JORDAN: Part of the problem comes with
19 what you mean by "inspection" and "the signing."
20 Inspection can occur at one time, the signing can occur on
21 a later date.

22 THE WITNESS: That's exactly the point I tried
23 to make, Dr. Jordan. I failed for 15 minutes now.

24 JUDGE BLOCH: The problem is when the word "performed"
25 is used on 45,422. You read it "signed" instead of "performed."

1 THE WITNESS: That's what I was trying to
2 explain to you, Judge Bloch, that it's not clear. The way
3 it reads right now it says "inspection performed." What I
4 was thinking at that time, or October 3 or whatever it was,
5 was "signed."

6 JUDGE BLOCH: Now I at least understand what you
7 were trying to explain.

8 BY MR. ROISMAN:

9 Q But Mr. Brandt, you went over that testimony
10 after October 3, didn't you?

11 A I ran through it quickly; yes, sir.

12 Q Quickly?

13 A I was leaving the country. I read through it
14 quickly.

15 Q So that the changes that we see that are written
16 all over that draft testimony, taken October 3rd, are not
17 your changes?

18 A Yes, they are. That was done at a period from
19 about 9:30 or 10:00 Thursday morning, October 4; and about
20 1:00, October 4th.

21 Q And that's the sum total of all the looking --
22 or, if you will, relooking that you did of the October 3
23 testimony, that you did before it was filed in final form?

24 A Yes, sir.

25 Q Mr. Brandt, I would like you to take a look at

1 page -- well, you don't even have to take a look at it.

2 You did testify, did you not, in reference to the
3 question about Mr. Duncan signing a number of travelers,
4 all apparently on one day, and the question that CASE
5 presented was: It didn't seem plausible that one person
6 could do that. Your testimony was depending on how many
7 the millwright shop would have ready, he could have done
8 even more than that; isn't that true?

9 A Yes, sir.

10 Q So I take it if you were going to go out and
11 make an inspection of cleanliness only on a weld, and even
12 as soon as the next morning come back in order to verify
13 that the fit-up was proper, absent some paperwork, you
14 might not have any idea whether you had done a cleanliness
15 inspection on that weld the day before or not; would you?

16 A You are assuming, Mr. Roisman, that these -- at
17 least that's what I read into your statement -- that these
18 are at scattered locations. Generally they were in a very
19 programmatic or systematic-type sequence. They didn't
20 move, for example, from one area to 60 feet away to make
21 another inspection at another side of the cavity, to make
22 another fit-up inspection.

23 Q But all these welds look the same; don't they?

24 A No. No.

25 Q All these plate-to-plate welds are so

1 distinctive that you could remember when you came back
2 that you had actually looked at weld 404 the evening
3 before?

4 A I didn't say that.

5 Q That's what I want to know about. How do you
6 know that when you came back and saw the backing strip
7 tacked up there, that that's one of them you had done the
8 cleanliness inspection on six hours earlier or 12 hours
9 earlier?

10 A I don't know what Mr. Duncan was working with.

11 Q Whether it is Mr. Duncan or any of the other
12 people. My question to you is: Without making a written --
13 some kind of written record that you have done the
14 cleanliness inspection for a particular weld, it is really
15 very difficult to know when you returned to that weld and
16 the backing strip is on it, that that is one of those you
17 did the cleanliness inspection on; isn't it?

18 A But you're assuming he didn't make a note to
19 himself on a marked up drawing or something. I'm not
20 willing to make the assumption. And in the particular
21 case that you mentioned, I know Mr. Duncan quite well.
22 Mr. Duncan is a very competent inspector.

23 Q Mr. Duncan was only used to reference somebody
24 who did a lot of inspections. He's not necessarily the
25 one who did the ones on the early 400s.

1 But putting that aside, the reason the procedures call
2 for putting the NDC chits in vaults, and keeping all these
3 documents, is so we don't have casual notes on drawings;
4 isn't that true?

5 A The answer to your question I guess is "yes,"
6 but before we have any greater detail, if you would wish
7 to continue this discussion, I would like to look at the
8 travelers to see what he was signing for.

9 Q You are perfectly willing to look at anything
10 you want, but let's be clear I wasn't asking about
11 Mr. Duncan except that you mentioned at a point a welder
12 might do a lot of these inspections over a period of time,
13 and I was only using that as a premise to ask you: Given
14 that any welder -- Duncan, Wilkerson, Neumeyer -- might do
15 a lot of inspections over a short period time, how could
16 they know and remember, without having done proper paper,
17 that they had done the cleanliness on a particular weld if
18 they had to come back to it, even within a few hours?

19 A I believe my testimony is limited to Mr. Duncan.
20 Mr. Hawfort, you claimed, signed off for numerous wells.
21 Mr. Hawfort is not a QC inspector. He was signing on WFMLs.
22 And I wanted to look at the travelers because I believe
23 the welds signed by Mr. Duncan were cleanliness, which
24 could be done in a matter of seconds.

25 MR. WATKINS: Your Honor, I suggest the witness

1 be permitted to look at the travelers.

2 THE WITNESS: There is no coming back to the
3 inspection on an inside fit-up. It's either there or not.

4 BY MR. ROISMAN:

5 Q I'm talking now about the concrete side
6 inspection before the backing strip is tacked on. And my
7 question to you is: If you don't have a record that you
8 did the cleanliness inspection, and you don't make your
9 record until after you do the fit-up inspection, how can
10 you be confident as an inspector that the weld for which
11 you are doing the fit-up inspection is one that you had
12 earlier done an unrecorded clean-up inspection --
13 cleanliness inspection on?

14 A If we are talking about outside fit-up
15 cleanliness and fit-up inspections, unless you have some
16 record and you have done a number of them, as you have
17 hypothesized, it would be very difficult if not impossible
18 to accurately remember what you did.

19 Q Okay. That's all I wanted to know. Thank you.

20 Now, I would like to show you two -- well -- I'm going
21 to show you a copy of the traveler for weld number 236,
22 and traveler for weld number 663. And I have one question
23 for you.

24 Can you explain why it is for 236 an NCR was written
25 and for 663 no NCR was written?

1 MR. WATKINS: Mr. Chairman, I would like to ask
2 the witness to compare the copies he's been given with our
3 copies.

4 MR. ROISMAN: I have a better idea, since
5 Mr. Watkins seems to be concerned about that. Let me take
6 my copies back, Mr. Brandt, and you can look through your
7 copies and we'll follow that procedure from now on,
8 Mr. Chairman. I don't want any questions raised by
9 implication or otherwise that they might be a different
10 document.

11 JUDGE BLOCH: I understand, Mr. Roisman, there's
12 some tension here but that's a legitimate objection
13 counsel made.

14 MR. ROISMAN: I understand. I'll give him the
15 numbers and he can take it from his file.

16 JUDGE BLOCH: I understand. It was the
17 irritation you expressed that was unnecessary.

18 MR. ROISMAN: I was hoping we would finish Mr.
19 Brandt this calendar year.

20 MR. WATKINS: For the record, so we were.
21 Emphasis on the past tense.

22 JUDGE BLOCH: Mr. Roisman, to speed things up
23 overnight, would it be possible to give him a list of
24 documents that he should find for tomorrow?

25 MR. ROISMAN: If we break a little before 6:00,

1 we'll do it that way.

2 JUDGE BLOCH: Will it expedite things to do it
3 that way?

4 MR. ROISMAN: In all candor, I don't think so.
5 But I'm willing to try.

6 JUDGE BLOCH: If you don't think so, we'll do it
7 your way.

8 THE WITNESS: What were the numbers, Mr. Roisman,
9 236 and 663?

10 MR. ROISMAN: Yes. And do you have the question
11 in mind or do you want me to --

12 THE WITNESS: No. I remember it.

13 236 was included on an NCR, NCR number M83-00795, which
14 I believe in the September hearings I testified was not
15 meant to be an all-inclusive review of the travelers, but
16 that this type of problem was typical. That's -- once
17 again, speaking from my recollection -- that inside fit-up
18 and cleanliness inspection were performed, and as a matter
19 of fact I feel the question from the Chairman saying to
20 the extent that if others existed of this nature, would
21 they be dispositioned the same way, and I answered, in my
22 judgment, "yes." It's the same type of weld. And looking
23 at the documents in front of me, I do not know why 663 was
24 not on the NCR. The only explanation I can offer is
25 apparently it was not reviewed by Mr. Randall or Mr. Smith.

1 BY MR. ROISMAN:

2 Q Is it your testimony that an NCR should be
3 written on 663 for the same reason that one was written on
4 236?

5 A If it hasn't been already; yes, sir.

6 Q Are there any NCRs that you know of that have
7 been written with respect to these liner plates that you
8 haven't already testified about in either phase of your
9 prefiled testimony?

10 A There are other NCRs on the liner plate; yes,
11 sir.

12 Q I'm sorry. I didn't hear you.

13 A I said there are other nonconformance reports on
14 the liner plate.

15 Q Do they relate to problems with the
16 documentation of inspections for the liner plates?

17 A Some of them do; yes, sir. In answer to your
18 question, the reason I had not reviewed 663 prior to my
19 final filing testimony on this subject is that it was not
20 included by you on your list, to the best that I can tell.

21 Q Let me be clear that I understand the scope of
22 your work on the liner plates -- what the scope of your
23 work on the liner plates has been. First yours and then,
24 if you know, the company's in general.

25 Have you conducted a thorough review of the liner

1 plates for the reactor 2 cavity and determined in your own
2 mind that all the NCRs that should be written have been
3 written? And all of the procedural glitches that exist
4 have been picked up?

5 A Have I personally done that? Is that your
6 question, Mr. Roisman?

7 Q That's the first question.

8 A No, I have not reviewed all the liner plate
9 travelers.

10 Q Right.

11 A I have reviewed all the travelers to which I am
12 aware of that you had some specific allegation. I
13 reviewed them for the context of that allegation.

14 Q And what about with respect to people who are at
15 the plant site that you are aware of? Is there somebody
16 or some people who have done or are in the process of
17 doing the complete review of all the documents for the
18 reactor liner -- reactor cavity liner for unit number 2 to
19 determine what, if any, NCRs should be written with
20 respect to them and what procedural irregularities may
21 exist?

22 A I am not sure whether that review is yet
23 complete. I have, however, made a recommendation to the
24 Utilities management that such a review be conducted.

25 JUDGE BLOCH: Are you sure whether it started?

1 THE WITNESS: To say that every traveler has
2 been looked at, your Honor? No, I'm not.

3 JUDGE BLOCH: Has review that would do that
4 started? You said you are not sure whether it is complete.
5 Are you sure whether it has started?

6 THE WITNESS: Excuse me. I don't know whether
7 it has been performed. I don't know to what extent it has
8 been performed. All I can say is I have recommended -- it
9 is my personal recommendation to Texas Utilities
10 management and have made such, as a result of my review
11 last week, that an investigation be conducted.

12 JUDGE BLOCH: The first time you made that
13 recommendation was last week?

14 THE WITNESS: The first time I made a
15 recommendation that each traveler be gone through --
16 traveler by traveler, essentially is what you are asking --
17 was based on my review last week; yes, sir.

18 JUDGE BLOCH: What was the breadth of that
19 recommendation? Does it extend only to this cavity?

20 THE WITNESS: No. That was for all liner
21 travelers.

22 BY MR. ROISMAN:

23 Q To whom did you make that recommendation?

24 A I made it to Texas Utilities management.

25 Q I'm sorry, I don't know who that is; the name of

1 the person.

2 MR. WATKINS: Objection, your Honor. It's not
3 relevant. He's testified that he's recommended that the
4 review be done. What difference does it make to whom it
5 was?

6 MR. ROISMAN: A great deal. If he made it to
7 the construction side or he made it to the QC side. And a
8 number of those people whom he might have made it to are
9 people whose performance in response to whether problems
10 exist or not is exactly one of the issues in this
11 proceeding. So it would be helpful to know who and then
12 we can watch and see whether there is a response to
13 Mr. Brandt's suggestion and that is probative on the issue,
14 how the company responds.

15 MR. WATKINS: I'm not sure the company's
16 response here is at issue; is it? That doesn't mean it's
17 relevant to the allegations made here.

18 JUDGE BLOCH: The company's comprehension of the
19 problem in the liner plate and its response to it is an
20 issue. So the question may be allowed.

21 THE WITNESS: I made it via telephone to a group
22 which included Ron Tolson, Lou Feiker, Bill Clemens, and
23 Mike Spence.

24 BY MR. ROISMAN:

25 Q Were there any other management people there,

1 other than the ones you just mentioned?

2 A I do not know, Mr. Roisman. I did not speak
3 with any of them personally. As I said, the message was
4 conveyed to this group of management, via messenger.

5 Q I'm sorry, I thought you said by telephone?

6 A That's what I mean. I spoke to Mr. Tolson on
7 the phone who I called out of a meeting. Mr. Tolson went
8 back to the meeting and notified this group that I had
9 made that recommendation.

10 JUDGE BLOCH: So you were planning on Mr. Tolson
11 to explain in full to that meeting your reasons for
12 wanting it done?

13 THE WITNESS: I don't know that I even went into
14 the full reason, Judge Bloch. Basically my message was
15 based on my view and what I perceive of the quality of the
16 documentation that exists for the reactor unit 2 refueling
17 cavity liner plate, that a thorough review of all liner
18 plate documentation needs to be conducted.

19 JUDGE BLOCH: Shouldn't your conclusions about
20 the cause of these deficiencies and the likely follow-up
21 be in writing?

22 MR. WATKINS: Objection, your Honor. Mr. Brandt
23 has testified he has made the recommendation.

24 JUDGE BLOCH: But he made it orally. I want to
25 know why, in an appendix B system, that recommendation

1 would be made orally?

2 THE WITNESS: All nonconforming conditions,
3 Judge Bloch, that I have identified, through the -- with
4 the exception of the fact of the use of the wrong form --
5 I believe everyone is aware of -- anything that I have
6 identified personally as deficient, I have identified as
7 nonconforming in accordance with site procedures.

8 JUDGE BLOCH: My problem is part of the purpose
9 of appendix B is to have documentation of the root cause
10 of deficiencies. And you seem to be the person who is
11 most knowledgeable at th's point, in the plant, about that
12 root cause.

13 Now, I would have thought that that should have been
14 done in writing.

15 MR. WATKINS: Your Honor, I'll object to the
16 extent that the question assumes Mr. Brandt now knows what
17 the problem is. He's identified nonconformances. He's
18 made a recommendation to management that they review.

19 JUDGE BLOCH: Do you have a conclusion about the
20 root cause of the problems that you have been studying?

21 THE WITNESS: I don't have any conclusions other
22 than the one that I believe I stated the first week of
23 hearings on the subject, in which I stated it was a lack --
24 you were trying to get me to assess blame, either on the
25 procedure or on the inspector's activities. And which

1 after a one-night review I came back and told you it was
2 my position that it was a lack of inspection to detail on
3 the part of the QC inspectors.

4 Other than that, the specific deficiencies I noted,
5 these liner plate matters, I haven't looked -- I haven't
6 had time, to be honest about it. I haven't been in Texas
7 for three weeks. I have been here. I haven't had time to
8 sit down and say: This is the list of this type of
9 problem, this is the list of this type of problem, this is
10 the list of this type of problem; to weigh each deficiency,
11 if you will. And to even think about assessing a root
12 cause, I just really haven't had time.

13 What I thought was imperative was to properly identify
14 the deficiencies that I personally noted, which I did do,
15 and to make a recommendation to TU's management on what I
16 felt was the necessary course of action on their part.

17 MR. WATKINS: And --

18 JUDGE BLOCH: But something happened last week.

19 MR. WATKINS: And, I might add, prepare
20 testimony in order to prepare testimony in response to
21 them, which has consumed a great deal of his time.

22 JUDGE BLOCH: Has something happened last week
23 that led you to believe that this investigation might
24 properly be expanded? What happened last week?

25 THE WITNESS: I spent almost every waking minute

1 looking at liner plate travelers.

2 JUDGE BLOCH: At the time you told Mr. Tolson
3 your conclusion, was there anything done by Mr. Tolson or
4 this group to get proper documentation?

5 THE WITNESS: I guess I don't understand,
6 Mr. Chairman, what you are asking for in the way of proper
7 documentation. All known deficiencies have been reported
8 by me.

9 JUDGE BLOCH: And as far as possible, the root
10 cause is not reflected in the company's documents?

11 THE WITNESS: I don't know what the NCRs say. I
12 wrote the NCRs over the telephone. I don't have NCRs here.
13 Rather than calling and saying: I would like an NCR
14 number, this is the description of the deficiency and have
15 someone type it there, I essentially made a laundry list,
16 if you will, and called in two or three discrepant items
17 at a time. I have not even physically seen the typed copy
18 of my conformance.

19 JUDGE BLOCH: I would like to note I have now
20 asked a few questions and it looks to me Mr. Brandt might
21 need a break before Mr. Roisman continues. If you would
22 rather continue it's okay, but it seems to me -- I had the
23 feeling that you felt pressured.

24 THE WITNESS: No. I don't feel pressured. I
25 just don't understand. If it seems I feel pressured, it's

1 just because I'm having such a difficult time in
2 explaining -- you and I seem to be having more of a
3 communication problem today than we normally do.

4 JUDGE BLOCH: Okay. Mr. Roisman?

5 BY MR. ROISMAN:

6 Q Mr. Brandt, directing your attention now to page
7 45,360 and 361, this is your prefiled testimony for
8 October 3, 1985.

9 THE WITNESS: '84.

10 MR. ROISMAN: Excuse me. It's near the front of
11 that, 45,360 and 361.

12 THE WITNESS: Okay.

13 BY MR. ROISMAN:

14 Q Now, I want you to look at the question starting
15 on line 15 of page 45,360. The question is:

16 "Question: Mr. Brandt, you have testified in many
17 cases the wrong traveler form was used to document the
18 construction and inspection activity with respect to these
19 welds; is that a correct characterization of your prior
20 testimony?

21 "Answer: Yes, it is.

22 "Question: And when this matter was brought to your
23 attention, what were your principal concerns as a QC
24 supervisor at Comanche Peak?"

25 And then you give an answer. And I believe what your

1 answer said is -- well, let's just read it here:

2 "Answer: I wanted to ensure that the procedurally
3 required inspections could be verified as having been
4 performed through objective evidence of the performance of
5 the inspections. In cases where such evidence could not
6 be found, I wanted to be sure that appropriate deficiency
7 paper was initiated to describe the missing documentation."

8 Now, was that testimony intended to indicate that in
9 all instances where the five-line traveler was used, an
10 inspection -- an investigation was conducted by you or
11 under your supervision to find those travelers where there
12 had been procedural errors and to make sure that proper
13 deficiency papers were prepared on them?

14 A You are speaking of where I state about the
15 five-line traveler?

16 I just stated to the Chairman, with that single
17 exception -- i.e. the use of the wrong form -- I have
18 addressed everything I'm personally aware of on
19 nonconformance reports.

20 The use of the wrong form, to my knowledge, has not
21 been documented on a nonconformance report. What my
22 testimony on 45,360 and 45,361 was attempting to state was
23 that my concern was to verify that all required
24 inspections had been performed.

25 Q And that effort on your part to ensure that all

1 required inspections had been performed was directed to
2 all the travelers which had incorrectly used the five-line
3 traveler form; is that not correct?

4 A Yes, sir.

5 Q And 663, which we have just been looking at, is
6 in fact one of the travelers that correctly used a
7 five-line form at one time; is that correct?

8 A Yes, sir.

9 Q And that's one which you did not do a deficiency
10 paper on; is that correct?

11 A Once again, Mr. Roisman, I just want to make
12 clear what I'm -- the fact that five-line form was used --

13 JUDGE BLOCH: Before you explain, yes or no
14 first.

15 THE WITNESS: I don't understand the question.
16 Maybe that's a better answer.

17 CHAIRMAN BLOCH: Did you do deficiency papers on
18 that 663 as well?

19 THE WITNESS: Mr. Chairman, that's what I'm
20 attempting to answer but I can answer one of two ways.

21 JUDGE BLOCH: Say yes or no.

22 THE WITNESS: I'll ask you the question then.

23 Are you talking about the fact that the five-line form was
24 used rather than the eight-line form, or the fact that the
25 inside inspection was not documented?

1 MR. ROISMAN: No; that's the one.

2 THE WITNESS: That's what I was trying to
3 clarify before I answered. I don't know. I found it
4 unusual that Fred Evans signed it on November 1, 1983, and
5 yet it was not included on the original NCR. I don't know
6 the reason.

7 JUDGE GROSSMAN: Excuse me -- before, a few
8 questions back, you said: "Is that not correct?" And the
9 witness answered "yes."

10 I take it -- isn't that correct? And the answer was "yes,
11 it is correct"?

12 MR. ROISMAN: Yes, thank you, Judge Grossman.

13 JUDGE GROSSMAN: Do you agree with that?

14 THE WITNESS: I don't remember the question.

15 JUDGE GROSSMAN: We'll read it that way.

16 MR. WATKINS: Maybe if it's not clear to the
17 witness, you shouldn't read it that way. Maybe we can
18 reask the question.

19 THE WITNESS: I'm not sure which question you
20 are referring to.

21 BY MR. ROISMAN:

22 Q The question was, when you make your reference
23 on page 45,360 and 45,361 to what was the universe of
24 travelers that you were going to look at, the universe was
25 all the travelers where the five-line form had been used

1 improperly; is that correct?

2 A The universe was limited to five-line forms
3 where it is my understanding the universe was five-line
4 forms where line 1 had not yet been signed off.

5 Q Can you just show me where that premise is
6 contained in the testimony? The premise that you just
7 added, that it was only those where line 1 was not signed
8 off?

9 A I don't see where it states otherwise,
10 Mr. Roisman. The answer that starts on line 24 of 45,360
11 states that I wanted to assure myself that all the
12 required inspections had been performed. If line 5 is
13 blank, it's a simple matter of going out and performing
14 the inspection.

15 Q The question is -- going back on page 45,360, at
16 line 21, the question:

17 "Question: And when this matter was brought to your
18 attention --"

19 The "this matter" refers to the question and answer
20 that starts at 15. And isn't it true that that question
21 and answer are with respect to cases where the wrong
22 traveler form was used, without any qualifier regarding
23 whether line 1 of the wrong traveler form had been signed
24 or not?

25 A It says "wrong traveler form"; yes, sir.

1 Q So the universe of travelers, which was the
2 subject of "this matter was brought to your attention" was
3 "all travelers where the wrong traveler form was used";
4 correct?

5 A Mr. Roisman, I'm at a loss. It appears that we
6 are arguing over the English language. If your question
7 is what does the English language say the way it is
8 written, I'm not sure. If you want to know what the
9 universe was, I can answer your question.

10 JUDGE BLOCH: Let me ask you. I think I may
11 understand the problem. Is it your opinion that if line 1
12 was signed, then that would be a verification, through
13 objective evidence, that the required inspections were
14 performed?

15 THE WITNESS: Both inside and outside fit-up was
16 performed.

17 JUDGE BLOCH: If line 1 was performed?

18 THE WITNESS: If line 1 was performed. At that
19 time that was my understanding and still is.

20 MR. WATKINS: Can we take a short recess?

21 JUDGE BLOCH: All right. We'll be back in seven
22 minutes.

23 (Recess.)

24 JUDGE BLOCH: Come to order. Mr. Roisman?

25 BY MR. ROISMAN:

1 Q Mr. Brandt, when we broke, I believe your
2 testimony was to the effect that when you speak at the
3 bottom of page 45,360 and the top of page 45,361 about
4 those documents, those travelers which were reviewed and a
5 deficiency paper was written on, the only ones that you
6 wrote the deficiency paper on were ones that did not have
7 a signature on line 1; is that correct?

8 MR. WATKINS: Objection. That's not a fair
9 characterization. Talking about the universe --

10 JUDGE BLOCH: All right. Let him answer now.
11 You said it's not a fair characterization. Let the
12 witness answer it.

13 THE WITNESS: I agree with counsel. That is not
14 at all what my testimony was. Your question was, what was
15 the universe that I thought was reviewed at that time.
16 You tried to state that it was all the five-line travelers.
17 I clarified it that the travelers that were reviewed at
18 that time were only those travelers that clearly did not
19 have line 1 signed off, early March, 1983, as Fred Evans
20 signed it. You also asked why it didn't appear on the NCR,
21 and I stated I didn't know.

22 JUDGE BLOCH: I don't think the question was
23 answered. Am I right, Mr. Roisman?

24 MR. ROISMAN: Yes. That's correct.

25 BY MR. ROISMAN:

1 Q I'm just trying to get clear -- the Chairman had
2 asked you a question. I'm trying to get clear which are
3 the travelers, among the five-line travelers, for which a
4 thorough investigation was conducted by you or under your
5 supervision, and to which you are referring to on pages 45,360
6 and 45,361? And, in that context my question is: Is it
7 your testimony that if the five-line traveler had line 1
8 signed off, then that was sufficient objective evidence of
9 the performance of the inspections, to use your words at
10 the top of page 45,361, that you did not go further and
11 prepare deficiency papers with regard to that traveler?

12 A I think you are conveniently using, Mr. Roisman,
13 the words "prepare deficiency paper on" on those travelers
14 which didn't have line 1 signed off and saying that's the
15 same population.

16 If you are not attempting to do that, I'm understanding
17 something other than what you stated.

18 There was a certain population in early March, 1983,
19 that didn't have line 1 signed off. That is the
20 population of travelers that I referred to in stating: "I
21 wanted to ensure that the procedurally required
22 inspections could be verified as having been performed
23 through objective evidence of the performance of the
24 inspections. In cases where such evidence could not be
25 found, I wouldn't ensure that appropriate deficiency paper

1 was initiated to describe the missing documentation."

2 663 was a member of this population.

3 JUDGE BLOCH: Which population? The population
4 that was --

5 THE WITNESS: The population that I'm referring
6 to on 45,360 and -361; ie, the population which didn't
7 have line 1 signed off.

8 It is evident, from looking at NCR, NCR M83-00795, that
9 this weld number, weld number 663, is not on that
10 nonconformance report.

11 I do not know the reason for the lack of inclusion of
12 this weld number on this nonconformance report.

13 JUDGE BLOCH: A little earlier you were talking
14 about not having included it because it wasn't on the list
15 that Mr. Roisman gave you. What did that have to do with
16 it?

17 THE WITNESS: I think Mr. Roisman was trying to
18 find out to what extent I had reviewed, or to what number
19 I personally had reviewed these travelers.

20 One of CASE's latest contentions is on page 6 of
21 Exhibit 1 to their November 15, 1984 filing, which lists
22 "inspection travelers for the following welds lack QC
23 verification of stud 5, fit-up and cleanliness of the
24 inside (water side) welds, welds have been performed,
25 leaving the acceptability of the welds indeterminate."

1 And they list about 200 welds, approximately. And then
2 they list another group of welds, in which they state the
3 same thing except an NCR was written for this condition.
4 Unless I have overlooked it somewhere in these two lists,
5 weld 663 is nowhere on these two lists. The only point I
6 was trying to make there is as far as welds and traveler
7 packages that I have personally reviewed, I have not
8 looked at weld 663 from what I can tell from what's in
9 front of me.

10 BY MR. ROISMAN:

11 Q Looking at that same prefiled statement by CASE,
12 if you look at page 3 under Arabic number 1, 663 is listed,
13 is it not, on the bottom row, fourth one in?

14 A But it's for a different allegation.

15 Q That's what I wanted to get clear. When you
16 took a look at these, you took a look at them solely for
17 the purpose, did you not, of seeing if you could respond
18 to the allegation, not for determining whether or not in
19 fact the documentation was complete and proper; isn't that
20 true?

21 A When I looked at them, between the time that
22 this was filed, Mr. Roisman, and today; yes, sir. There
23 was what I consider, even know, a severe time constraint
24 on reviewing this many travelers.

25 Q But going back to the testimony on pages 45,360

1 and 361, that testimony which was prepared on October 3
2 and 4 contains in it the statement that is intended to
3 suggest, is it not, that you had in fact reviewed at least
4 all of the five-line travelers that did not have line 1
5 signed on them, and that you were, in your words, "to the
6 best of your knowledge has that objective been
7 accomplished?" "Yes, it has. The objective being that
8 they had all been looked at and where deficiency paper was
9 appropriate and that it had been initiated." Correct?

10 A Yes. But I think I previously indicated in live
11 testimony that this was not done by me personally. This
12 was done by my staff.

13 Apparently, 663 was an omission from the list, as there
14 are other omissions from NCR M83-00795. I don't know
15 whether that happened.

16 Q Now, isn't it true that when you had a five-line
17 traveler with the first line signed, that is signed prior
18 to the time that Ms. -- Mr. Evans and Ms. Neumeyer did
19 their signatures of that line 1, signed on line 1 with a
20 date -- that on the face of that traveler you didn't know
21 whether that was the fit-up and cleanliness test for the
22 water side or the concrete side; that the signature alone
23 didn't tell you that, did it?

24 A The signature alone can tell you that it wasn't
25 the concrete side. But that signature did not represent

1 an inspection of -- if the signature was dated in '81, for
2 example, it can reasonably be established that wasn't for
3 the concrete side because the concrete was poured. As a
4 matter of fact, you can tell from looking at it if the
5 leak chase channel is welded over in the back side in 1978.
6 It is apparent, in my opinion anyway, to anyone, that that
7 signature does not reflect inspection of the back side of
8 the weld prior to making it inaccessible by attaching the
9 leak chase channel.

10 Q Unless that line was signed with the same kind
11 of intent as was intended when Ms. Neumeyer was asked to
12 sign it, but no one put an asterisk down; correct?

13 A You'll have to explain that a little further,
14 Mr. Roisman.

15 Q Well, if Ms. Neumeyer had signed line 1 as she
16 was requested to do, directed to do, and had not put an
17 asterisk, we would have ended up with a line 1 on a
18 five-line traveler, which was signed with a date in 1983;
19 isn't that true?

20 A That's true.

21 Q And what she was being asked to sign for was the
22 first fit-up and cleanliness; isn't that true?

23 A No, sir. She was being asked to sign for the
24 line 1.

25 Q For line 1 for both the first fit-up and

1 cleanliness and the inside fit-up and cleanliness?

2 A Yes, sir. That's, I believe, consistent with
3 what I said three or four other times before; that the
4 signature on line 1 would mean that the required fit-up
5 and cleanliness inspections had been performed.

6 Q Both sets of them - where we are dealing with a
7 weld that requires both sets?

8 A Yes, sir. But it's not -- if --

9 Q How do --

10 A If I could expand on that a little bit. I don't
11 know what Ms. Neumeyer was told. I was not privy to any
12 of these conversations. I have never discussed this with
13 Ms. Neumeyer. So if your question is what she was told
14 when she signed, that I don't know.

15 JUDGE BLOCH: No, that was a premise to the
16 question. I don't think you were agreeing to the premise.

17 THE WITNESS: Okay. I just wanted to make that
18 clear.

19 JUDGE BLOCH: The question was, hypothetically,
20 if someone was asked to sign off on that line in 1982 and
21 they did it without an asterisk --

22 THE WITNESS: That would indicate on the face of
23 the document that the inside fit-up inspection had been
24 performed in 1982.

25 JUDGE BLOCH: Yet on the hypothetical you

1 wouldn't know without further investigation whether all
2 the required inspections had been done?

3 THE WITNESS: I'm not sure I understand, Judge
4 Bloch.

5 JUDGE BLOCH: If some inspector was willing, in
6 1982, to sign those lines and date them without an
7 asterisk, then you could have a form that looked like it
8 stood for all of the inspections being done but they
9 wouldn't have been done; is that right?

10 THE WITNESS: Yes, sir. That's the case with
11 anything, though.

12 JUDGE BLOCH: Okay. And if you thought that
13 that had happened once, that someone had done that, I take
14 it then you would have to investigate that possibility?

15 THE WITNESS: It's a bad word but I don't know
16 another one for it. You are implying that someone forged
17 a name on a document? I don't understand what your
18 question is, I guess.

19 Are you saying that someone just picked up an
20 inspection document and signed it? Is that the
21 hypothetical we are going after?

22 JUDGE BLOCH: Yes. That in 1982 they signed the
23 document, dated it in 1982, without having proof that all
24 of those things had been done.

25 THE WITNESS: That which things had been done?

1 The existence of the chit?

2 JUDGE BLOCH: If you thought there was a
3 possibility of the improper signing of the document then
4 you couldn't rely on the signing. That's all it asks for.

5 THE WITNESS: Yes, sir, I'll agree with that
6 statement.

7 BY MR. ROISMAN:

8 Q Then if on the face of a five-line traveler you
9 saw one with a signature dated 5/1/82, and no asterisk,
10 you wouldn't know whether that had been someone who had
11 been asked to verify that cleanliness and fit-up
12 inspection that had taken place earlier on the concrete
13 side had been completed, or that it was intended to verify
14 that a new inspection for the inside weld of fit-up and
15 cleanliness had been completed, without looking further;
16 would you?

17 A I'm sorry to be so hesitant, Mr. Roisman. We
18 are on the hypothetical; I'm trying to make sure I
19 understand everything.

20 If someone had signed in '82, line 1, it would be not
21 clear -- if you had evidence to believe you -- or to lead
22 you to believe that he had forged that signature or signed
23 it without performing an inspection --

24 JUDGE BLOCH: That wasn't in Mr. Roisman's
25 question.

1 BY MR. ROISMAN:

2 Q Let me try it again, Mr. Brandt. First, line 1
3 is signed in 1982. Second, there's no asterisk by it.

4 A Okay.

5 Q And you have no more information other than what
6 you can see on the face of the traveler, it shows line 1
7 signed in 1982.

8 A There's nothing attached to the traveler.

9 Q Well, at this point I'm not assuming that you
10 are looking beyond the first part of it. Because my
11 understanding of your testimony was that you didn't look
12 beyond any of those travelers where line 1 was signed.
13 You only -- in this testimony on 45,360 and -361, that if
14 they had line 1 signed then you moved on and looked only
15 at the ones that had line 1 not signed. Am I mistaken in
16 that assumption?

17 A Mr. Roisman, maybe it's a problem I'm having
18 today. Maybe it's a problem you and I are having
19 communicating.

20 What happened in March of 1983 is I was brought a group
21 of inspection travelers and said: These have hold points
22 that should have been signed that are not signed; namely
23 that line 1 was not signed off and the leak chase channel
24 was on.

25 At that point I directed my staff to go back and do

1 whatever they had to do to satisfy themselves that all
2 required inspections had been made. And it was my
3 impression that they wrote up deficiency papers where they
4 couldn't establish that.

5 Q All right. And what did you do at that time, if
6 anything, about looking at, or having your staff look at
7 the other five-line traveler forms in which line 1 was
8 signed? What did you do in that case?

9 A I think I've clearly stated that the population
10 that we reviewed at that time was the group of travelers
11 where line 1 was unsigned.

12 Q And isn't it the case that there are instances
13 in which, because of the shortcomings already long ago
14 testified to by you, in the five-line traveler, that due
15 to those shortcomings there are instances in which line 1
16 had been signed and it still wouldn't have told us that
17 all of the appropriate inspections had been done, for
18 fit-up and cleanliness?

19 A Once again, Mr. Roisman, you are conveniently
20 limiting yourself to the face of the traveler.

21 JUDGE BLOCH: Could you just answer the question
22 first and then explain it?

23 THE WITNESS: Does it make a difference?

24 JUDGE BLOCH: He is limiting himself to the face
25 of the traveler.

1 MR. ROISMAN: Yes.

2 THE WITNESS: From the face of the traveler you
3 are correct.

4 BY MR. ROISMAN:

5 Q So you would then --

6 JUDGE BLOCH: Wait a second. I said he could
7 explain it if he wanted to.

8 THE WITNESS: That's what -- I tend to do it the
9 other way, your Honor. This has happened more than once.

10 If the face of the traveler were signed and there was
11 nothing to substantiate the outside inspection, you would
12 have a deficient, or a missing inspection.

13 At that point, and at this point, for that matter, it --
14 I'm unaware of that even being an allegation. All the
15 travelers that I have personally looked at that have line
16 1 signed, I can tell from looking at the face of the
17 traveler and the attachments to the traveler, that both
18 inspections were performed where required.

19 (Discussion off the record.)

20 BY MR. ROISMAN:

21 Q Have you finished your explanation?

22 A I think so; yes, sir.

23 Q So your testimony is that when the face of the
24 documents show that line 1 was signed and there was no
25 asterisk or anything, you would go and look at the rest of

1 the paper, or your staff would go and look at the rest of
2 the paper to make sure that in fact both the outside and
3 the inside fit-up and inspection had occurred before they
4 passed that document? Or not?

5 A Mr. Roisman, I think this is now the fourth time.
6 If the first line was signed, it was outside the
7 population that was reviewed.

8 JUDGE BLOCH: So they looked no further,
9 Mr. Roisman.

10 BY MR. ROISMAN:

11 Q So you didn't care that there might be an
12 ambiguity created by the face of the document with merely
13 the top line signed? You didn't want to look past that at
14 the time that you were doing this look that you've
15 testified about, or having your staff do, on 45,360 and -361?

16 A At that time it was not a concern; no, sir.

17 Q And the time you are talking about is around --

18 A March of 1983.

19 Q Not around October of '84 when you were
20 preparing this testimony?

21 A October of '84, when I prepared this testimony,
22 I was talking, as I said now five times, that the
23 population involved in the review at that time were
24 travelers where line 1 was blank.

25 Q Has anybody up until now conducted a review of

1 the five-line travelers to determine whether or not there
2 are other deficiencies associated with that, beyond
3 looking at five-line travelers identified by CASE in its
4 filings?

5 A As I believe I've stated earlier also today,
6 there has been a review conducted by quality engineering
7 on the site, concurrent with the technical review team's
8 investigation of the matter. To what extent that review
9 went I am unaware at this time.

10 Q Did you make any effort to determine the scope
11 of that review before your testimony, either on the 3rd of
12 October or the 21st of November or today?

13 A As far as -- I asked questions to the extent of:
14 Has the technical review team found problems with the
15 travelers? As far as asking questions: Are there
16 problems with traveler number 1? Or listing the 20
17 different possible things you could look for with a
18 five-line traveler; no, I didn't ask that question.

19 JUDGE BLOCH: You just answered "on the
20 technical review team." I thought there were people for
21 the Applicants who had done a review, not just the
22 technical review team.

23 THE WITNESS: I was referring to that team, your
24 Honor.

25 BY MR. ROISMAN:

1 Q You didn't mean the Nuclear Regulatory
2 Commission's technical review team?

3 A The technical review team I was referring to in
4 that answer, two answers ago, is when the NRC technical
5 review team was on the site, they were looking into liner
6 plate allegations.

7 Working with that technical review team were members of
8 the quality engineering staff. They looked at a number of
9 travelers. They answered, I'm sure, a number of questions
10 from the NRC's technical review team.

11 I'm sure -- and in that course of action there were
12 members of Applicant's quality engineering staff -- that
13 reviewed travelers.

14 JUDGE BLOCH: Are you informed of the problems
15 that they found?

16 THE WITNESS: I have asked if they found
17 problems in that review, and they had not found any
18 generic types of problems that I had not already seen.

19 JUDGE BLOCH: Because we would expect that the
20 testimony given by a company official today would be
21 consistent with what the company knows and that testimony
22 today will not be misleading because the company goes
23 beyond in its knowledge.

24 BY MR. ROISMAN:

25 Q Can you put a timeframe on when this TRT review

1 and your quality engineering people's response to that
2 review was occurring?

3 A The -- I believe it was in September of this
4 year, Mr. Roisman. I know there were still discussions
5 going on with the technical review team as this portion of
6 the hearing, in September -- whenever it was, 20th maybe --
7 convened.

8 Q I would like you to take a look, if you would,
9 at the traveler for weld number 660.

10 JUDGE BLOCH: After you are done with that, I
11 want you to know that if you feel tired, at this point we
12 are going to go beyond 5:00, you should not hesitate to
13 tell us that you want to break until the morning.

14 THE WITNESS: Thank you, your Honor.

15 BY MR. ROISMAN:

16 Q Do you have 660 in front of you?

17 A Yes, I do.

18 Q Can you tell me, does the face of the traveler
19 tell you what the signature on line 1 is signing -- what
20 the signature on line 1 is verifying has occurred?

21 A Your question is what the signature on line 1
22 stands for?

23 Q Yes.

24 A The face of the traveler does not; no, sir.

25 Q Would you look at the whole traveler and tell me,

1 if you can, what does it stand for?

2 A It stands for that the inside fit-up was
3 satisfactory and that there's a chit that substantiates
4 that the outside fit-up was satisfactory.

5 Q And how does it verify that the inside fit-up
6 was satisfactory? What is the document in the traveler
7 package that gives you that?

8 A There's a chit that says, "clean," signed by
9 Dave Stinson on March 1, 1982.

10 Q Does it reference any weld, material rod
11 document, or weld filler material log document?

12 A No.

13 Q Is there such a document referenced on the face
14 of the traveler?

15 A There's a WFML reference; yes, sir.

16 Q How can you tell, then, whether it is for the
17 fit-up and cleanliness that had occurred, if one did occur,
18 on 3/1/82, as opposed to being a verification that there
19 had been a fit-up and cleanliness done in 1978, per the
20 Larry Wilkerson, NDE chit, which is attached also to the
21 traveler?

22 A From the chit itself?

23 Q Yes.

24 A The chit was filled out by construction at the
25 request of inspection. Construction would not request

1 that QC verify that letter inspection exists.

2 Q Is that based upon some specific fact that you
3 know? I mean that they told you that? Or is it an
4 assumption that you are making?

5 A I know why the nondestructive inspection
6 requests were used. I also talked to the gentlemen that
7 initiated this one, another not for this particular chit.
8 The foreman was Craig Fowles. I have talked to him.

9 Q But if you had intended it to relate to a new
10 fit-up and cleanliness inspection, then why wouldn't he
11 have filled in the blank for the WFML number?

12 A He may not have drawn rod at that time -- at the
13 time that they requested the inspection.

14 Q Where in the traveler will we be able to tell
15 when the rods were drawn?

16 A On the copy of the WFML B649, which is
17 apparently filed with a different traveler package.

18 Q So that you can't tell from this whether your
19 supposition that the weld rods were drawn at a different
20 time is correct or not; can you?

21 A No. But I don't think it's important. The chit
22 clearly states that it was for a cleanliness inspection of
23 weld 660; it's signed by Mr. Stinson. The front of the
24 traveler is also signed by Mr. Stinson.

25 Q If we are going to do it by the chit, the

1 signature line is for a fit-up and cleanliness; isn't it?
2 And the chit doesn't tell you that there's a fit-up, only
3 that there's a cleanliness; isn't that true?

4 A Right.

5 Q So there's no verification of a fit-up; is there?

6 A You are talking about for the weld itself? The
7 traveler says "fit-up and cleanliness." Dave Stinson
8 signed the traveler. I have no reason to believe that Mr.
9 Stinson did not mean that that signature was for both
10 fit-up and cleanliness.

11 Q Except that the chit which is the -- which is
12 used by you to verify when inspections have occurred back
13 in 1978, the chit is the document that doesn't tell us for
14 fit-up and cleanliness, only that it's for cleanliness?

15 A The chit that you are talking about is the
16 document I'm using for 1982.

17 Q And it's only marked for fit-up and cleanliness;
18 is it?

19 A That's right. But you have said '78.

20 JUDGE BLOCH: We have gotten confused in the
21 dates. Maybe you can clarify it, Mr. Roisman.

22 BY MR. ROISMAN:

23 Q I'm sorry. Insofar as the fit-up and
24 cleanliness of the water side weld is concerned, the chit
25 only indicates that there was an inspection for the

1 cleanliness, and does not indicate that there was an
2 inspection for the fit-up; isn't that correct?

3 A That's true. That's true.

4 Q And that's signed by Mr. Stinson; is it not?

5 A That's true.

6 Q So we have inconsistent signatures by
7 Mr. Stinson, one for a line that says "fit-up and
8 cleanliness" and the other that says only "cleanliness";
9 isn't that true?

10 A If you are talking about the inconsistency
11 between the face of the document and the chit, yes, sir,
12 that's true.

13 Q Now, can you explain to me why, in 1983, you
14 deemed it important to have line 1 signed to verify that
15 the fit-up and cleanliness back in 1978 had taken place,
16 but apparently don't consider the absence of a signature
17 on line 1 for that purpose on this weld number 660 is a
18 problem?

19 A Mr. Roisman, if I could make one thing clear
20 maybe that would eliminate the need for this question. I
21 wasn't concerned that line 1 was signed. Line 1 could
22 have just as easily said, "see attached chit."

23 Q Or it could have said --

24 A My concern --

25 Q Nothing?

1 A -- it did say nothing at the time. My concern
2 at the time was to verify that the required inspections
3 had been performed.

4 Q What did you need an inspector to do that for,
5 Mr. Brandt?

6 A I didn't direct an inspector to do it.

7 Q You expected that all your people would do after
8 they saw that there were a whole group of five-line
9 travelers with line 1 blank, is that they would just go
10 and look to see if there was an NDE chit for fit-up and
11 cleanliness that took place for the concrete side weld and
12 that would end their work right there?

13 A I expected my staff to satisfy themselves that
14 the required inspections had been performed.

15 Q That instruction from you, did that take place
16 before or after Ms. Neumeyer's signing of the travelers in
17 the first two or three days of March of 1983?

18 A Before.

19 Q And who were the people, who were the staff
20 people who you gave these directions to?

21 A I believe I stated earlier, the way I became
22 aware of the problem was Mr. C.C. Randall came to me with
23 it. The millwrights were getting ready to work on the
24 liner on night shift. C.C. Randall was my night shift QC
25 superintendent. He explained to me what the situation was.

1 I told him what we needed to do.

2 As the original lack of signatures had been performed
3 by the ASME inspection group, I told him to get up with
4 Mr. Ted Blicks and see -- excuse me, I told him to get up
5 with ASME QC. He eventually got up with Ted Blicks,
6 that's my understanding, to straighten the situation out.

7 My concern the next time, as expressed to Mr. Randall,
8 was to satisfy themselves that the required inspections
9 had been done.

10 Q So is it your testimony that Mr. Randall was
11 basically going beyond what you think he would have needed
12 to do to make the verification in those cases where NDE
13 chits existed and had -- and showed on their face that
14 fit-up and cleanliness had occurred back in 1978?

15 A I don't understand what you mean by "going
16 beyond what was required."

17 Q Just that. I thought it was your testimony that
18 there's no signature required on line 1 to verify that a
19 fit-up and cleanliness took place in 1978, if there's a
20 chit that says --

21 A That's right. That is my testimony. I said it
22 would have been equally acceptable to me to just note the
23 existence of the chit, in line 1.

24 Q If I --

25 A Chits noting both the inside and outside

1 inspection, if both existed.

2 Q Wouldn't it have been just as good to have noted
3 nothing, since the NDE chit was physically attached to the
4 package?

5 A Except that the vault would not have accepted
6 travelers with a blank line. These travelers have never
7 been to the vault, contrary to what you argued earlier.
8 They are still in the possession of construction.

9 Today they are maintained in a construction
10 organization called the "interim records vault," but it is
11 not the permanent plant records vault, and historically
12 the term "vault" in this proceeding has referred to the
13 permanent plant records vault.

14 JUDGE BLOCH: We'll take a seven-minute recess.

15 (Recess.)

16 JUDGE BLOCH: Mr. Roisman?

17 BY MR. ROISMAN:

18 Q Mr. Brandt, with reference, I think, to the last
19 or almost the last thing that you said as we were
20 adjourning, you indicated that none of these documents had
21 gone to the permanent plant records vault. And I would
22 like to direct your attention to document for weld numbers
23 1182, 1209, and 1210, which, in our copy in the upper
24 right-hand copy has stamped "permanent plant record" and
25 then a little box, and on that box there is a file

1 location number and a subfile location number.

2 A I see it on several, Mr. Roisman.

3 Q What does that mean?

4 A That's a stamp affixed by the vault.

5 JUDGE BLOCH: Which vault?

6 THE WITNESS: By the permanent plant records
7 vault. I'll clarify my earlier misstatement. Apparently
8 some of them have. The majority of them are still in the
9 interim records vault, which is a construction
10 organization.

11 BY MR. ROISMAN:

12 Q But in fact these are three on which you are
13 going to do or you have now done or are going to do NCRs;
14 is that not correct?

15 JUDGE GROSSMAN: Is that correct?

16 BY MR. ROISMAN:

17 Q Those three are for documents for which NCRs
18 were written; is that correct?

19 A Yes.

20 Q Let me take you to 660 for a moment.

21 A Are we done with these last three?

22 Q Yes. I just wanted to see if I was correct in
23 my assumption that that stamp meant that they had been in
24 the permanent plant records vault in light of your earlier
25 statement. You clarified it. Thank you.

1 Now, looking at 660, we were discussing the signature
2 on the first line and I was trying to understand from you
3 whether, in your judgment, the presence of the signature
4 with the accompanying NDE chit that marks cleanliness only
5 is sufficient verification that the cleanliness and fit-up
6 inspection was done, that you feel no need for further
7 investigation. My question to you is: Is that correct?

8 A Are you talking about assuming the line 1 on the
9 traveler is now blank?

10 Q No. I'm talking about actually looking at 660
11 itself.

12 A As a package?

13 Q As a package. Do you see anything wrong with 660
14 in your judgment? Is it a perfectly proper traveler?

15 JUDGE BLOCH: Package.

16 MR. ROISMAN: Package. Thank you, traveler
17 package.

18 THE WITNESS: I see nothing wrong with it; other
19 than the fact "sat" is entered on the traveler on line 5
20 without an inspector's signature, which I earlier
21 testified is insignificant. It doesn't mean anything.

22 BY MR. ROISMAN:

23 Q Now I would like you to look at weld 29, please.

24 JUDGE BLOCH: Wait a second -- does this mean we
25 are passing on from 660?

1 MR. ROISMAN: I have no more questions.

2 JUDGE BLOCH: No, it means we can put it in the
3 record.

4 THE WITNESS: We started with 663, your Honor,
5 and now we are done with 660. Are we done with both of
6 them?

7 MR. WATKINS: I have a little list that I'm
8 going to request be bound in at the end of the session.

9 JUDGE BLOCH: Well, 663 will have to be bound in
10 earlier. Let's bind 663 where we said we were going to
11 bind it, and put 23 in at the end.

12 MR. WATKINS: Can I suggest that 23 be bound in
13 with 663?

14 JUDGE BLOCH: Let's do that, then.

15 BY MR. ROISMAN:

16 Q Number 29.

17 A Okay.

18 Q Now, this is one that has line 1 blank; is that
19 correct?

20 A Line 1 of the five-line traveler is blank; yes,
21 sir.

22 Q Okay. Now, is that within the universe of ones
23 that then were looked at under the testimony of 45,360
24 and -61?

25 A I would assume so. There's no indication on the

1 traveler that that was part of that population.

2 Q No indication that it was or that it wasn't?

3 A No indication that it was, because no action was,
4 apparently, taken on it.

5 Q But your testimony is that it should have been?

6 A Yes, sir.

7 Q Now, looking at it on the second page of the
8 traveler, there is an eight-line traveler?

9 A Yes, sir.

10 Q And there's a line 1 signed there by Mr. Cole?

11 A Yes, sir.

12 Q Dated 2/17/81; correct?

13 A Yes, sir.

14 Q What is that? What does that line indicate?
15 What does that mean?

16 A In this case it indicates that Mr. Cole signed
17 on the wrong line. The fit-up at that time was for the
18 inside weld. He should have signed on line 5, as the
19 outside weld at that time was in concrete.

20 Q Or it could have meant that he was doing a
21 signature similar to the one that Ms. Neumeyer did, but
22 without an asterisk; namely, verifying that an earlier
23 fit-up and cleanliness had occurred; isn't that true?

24 A That's a possibility.

25 JUDGE BLOCH: Could it also have meant that he

1 didn't know what he was doing on these travelers?

2 THE WITNESS: That's a possibility.

3 BY MR. ROISMAN:

4 Q Now, is there anything in the traveler package
5 that would tell us whether Mr. Cole -- whether the
6 inspection that's supposed to be done and identified on
7 line 5 was in fact done?

8 A Line 5 of what, Mr. Roisman?

9 Q I'm sorry, of the eight-line traveler. Excuse
10 me.

11 A No, sir. On the face of the document.

12 Q Not only on the face of the document?

13 A Nor any attachments. It requires some
14 interpretation, yes, sir, if that's the point you are
15 trying to make.

16 Q All right. Is this one that you have now, in
17 your testimony of the 21st of November, identified that an
18 NCR will be written on?

19 A You'll have to give me a second to check my
20 notes.

21 No, sir, it's one that I determined through my review
22 that I believe Mr. Cole signed in the wrong place. And
23 that that fit-up and inspection was for the inside.

24 Q But your testimony now is that there isn't
25 anything in the traveler package itself that will tell us

1 whether he signed in the wrong place, or that the
2 inspection that's supposed to be on line 5 simply was
3 never done; isn't that correct?

4 A Yes, sir.

5 Q Now I would like you to take a look at traveler
6 number 23.

7 A Okay.

8 Q On this five-line traveler, Mr. Cole has signed
9 line 1, fit-up and cleanliness?

10 A Yes, sir.

11 Q Can you tell me, what does line 1 signify? What
12 does it signify with his signature there? What is he
13 attesting to?

14 A The fact that the outside fit-up had been
15 performed. And there is a chit to indicate that that
16 inspection was performed and that now the inside fit-up is
17 satisfactory, on March the 3rd, 1980.

18 Q How could -- I'm sorry.

19 A You'll also note there's included in the package
20 a chit dated 2/25/80, where he released part of the inside
21 seam for fit-up and cleanliness, and came off -- came by
22 later, eight days later, and signed off the entire seam
23 for fit-up and cleanliness.

24 Q How can we -- how would we tell that, by looking
25 at this document, that that's exactly what happened?

1 A It's clear to me, Mr. Roisman.

2 JUDGE BLOCH: Can you make it more specific,
3 Mr. Roisman, as to what it is that you meant by "that"?

4 JUDGE GROSSMAN: I'm sorry. Did you finish your
5 answer now, Mr. Brandt?

6 THE WITNESS: That's all I intended to say, was
7 that it was clear to me.

8 BY MR. ROISMAN:

9 Q What is it about the document that makes it
10 clear to you that when Mr. Cole signed line 1 on 3/30/80 --

11 A On March 3rd, Mr. Roisman.

12 Q On 3/3/80, thank you. -- that he was verifying
13 that the full cleanliness and fit-up for the water side
14 weld had been completed and that the fit-up and
15 cleanliness for the outside weld had been conducted?

16 A I think it -- it is fairly clear from the chit
17 dated February 25, 1980, that this is a chit for a fit-up
18 and cleanliness inspection for a field weld number 23. It
19 is also fairly apparent from the face of the document,
20 from the face of the traveler, that this could not be a
21 fit-up and cleanliness inspection for the back side of the
22 weld, as the back side of the weld was made inaccessible
23 at least on October 23, 1978; sometime between September
24 12th and October 23rd. There's only one side of the weld
25 that that could be a partial cleanliness and fit-up

1 inspection for.

2 Q Assuming for a moment that the chit that's dated
3 2/25/80 is the documentation that there was a partial
4 cleanliness inspection and a fit-up inspection done on
5 that date, and that it was for the water side weld, how do
6 you know that the signature on line 1 of the traveler was
7 intended to confirm that the full cleanliness had been
8 inspected and confirmed? Or that any comments were being
9 made with regard to the presence of a fit-up and
10 cleanliness examination in 1978?

11 A From conversations that I've had with the people
12 involved on how the things were documented.

13 Q You mean with Mr. Cole?

14 A I have not talked with Mr. Cole.

15 Q Who did you talk to? And did you talk to them
16 about this particular weld?

17 A No, sir, I did not talk to anyone about this
18 particular weld.

19 Q With whom did you talk and what did they tell
20 you?

21 A I talked with both QC, QE, and craft people on
22 what happened in that timeframe; as I have stated I think
23 twice in prefiled testimony, that the way that line 1 of
24 this five-line traveler was signed off was, it was not
25 signed off until the inside fit-out was satisfactory. To

1 me, that's what it indicates.

2 There's a chit that fairly indicates that the first
3 fit-up inspection was performed on the concrete side dated
4 September 12, I think, 1976. There's a chit that
5 indicates he released the partial fit-up and cleanliness
6 on February 28, 1980, and that the entire joint was
7 satisfactory for fit-up and cleanliness on March 3, 1980.

8 Q By looking at the weld filler material logs that
9 are attached to the traveler package, is it correct that a
10 substantial amount of welding with respect to this weld
11 was done a month or more after the fit-up and cleanliness
12 inspection was completed, if it was in fact completed on
13 3/3/80?

14 A Please repeat your question. A substantial
15 amount of welding was done after?

16 JUDGE BLOCH: Was there welding done after the
17 final inspection was done before fit-up --

18 THE WITNESS: Welding after the final fit-up
19 inspection? That's exactly what I would expect.

20 BY MR. ROISMAN:

21 Q But it was done at least a month or more after
22 that final fit-up inspection?

23 A It might be being welded as we speak,
24 Mr. Roisman. The final visual is not signed off.

25 Q Well, are you able to look at the weld filler .

1 material log, and looking at the -- excuse me -- the
2 number of rods burned, are you able to tell anything about
3 when the welding was done on that weld?

4 A There was some welding done using 12 lengths of
5 bare wire on April 3rd, 1980. There was some welding done
6 using a half a role of automatic GTAW wire, on March 4,
7 1980. There were three rods burned of bare wire on April
8 10, 1980. And there was a half role of automatic GTAW
9 wire burned on April 3, 1980. I see nothing irregular
10 about that.

11 JUDGE BLOCH: Is that a usual pattern of welding?
12 You just do a little bit at four different times? You
13 don't finish a weld?

14 THE WITNESS: You usually weld on it until you
15 get it done. And I don't mean to be flip with that answer --
16 but, no, there's no -- as many times as schedule or
17 pressures have dictated. The millwrights is a small craft
18 group. And if the schedule pressures are on unit 1 at the
19 time, they might be pulled off unit 2. For long periods
20 of time there was virtually no work going on on unit 2. I
21 find nothing unusual about the situation.

22 MR. ROISMAN: Hold on just one second.

23 JUDGE BLOCH: Mr. Brandt, does your conclusion
24 on that particular weld depend on your believing that
25 Mr. Cole knew what he was doing when he signed off on that

1 weld?

2 THE WITNESS: Yes, sir.

3 MR. ROISMAN: I'm sorry. I didn't hear your
4 answer, Mr. Brandt.

5 THE WITNESS: Yes, sir.

6 MR. ROISMAN: Mr. Chairman, we seem to be at a
7 breaking point here. I am ready to shift gears but it's
8 going to take me a couple of minutes to sort of mesh the
9 gears together.

10 JUDGE BLOCH: Can we clarify, then, what
11 happened with the review of the FSAR as to the ASME code?

12 THE WITNESS: I can, if you would like.

13 I looked through the table that I referenced earlier.
14 It was my impression that it was contained -- the table
15 was provided in chapter 17 as kind of a quick summary of
16 what's in the body of the FSAR themselves, as far as the
17 safety commitments.

18 Either I have missed it in a quick overview of it -- it
19 has been incorporated in a later amendment to the table --
20 or it is just not there and I was in error.

21 I will endeavor to find it in the body of the FSAR this
22 evening in the copies of the FSAR that are back in
23 Washington and brief you on it in the morning, if you wish.

24 JUDGE BLOCH: When he does that, do we only care
25 about the current version or do we care about any of the

1 earlier versions?

2 MR. ROISMAN: No. I want to know about the
3 version that was in effect at the time that the
4 inspections in question were done.

5 JUDGE BLOCH: Starting in '79?

6 MR. ROISMAN: Starting actually in '78.

7 JUDGE BLOCH: Starting '78 to the present.

8 THE WITNESS: Mr. Chairman, the historical
9 copies of the FSAR will have to come from Dallas, I
10 believe. In the event that when I review this copy that's
11 in Washington, that the amendment date on that particular
12 page of that particular section is of 1979 vintage, I
13 think that will answer your question.

14 JUDGE BLOCH: Is that something that Staff
15 archives can do for us or is this something only the
16 Applicants can do? Let's rely on the Applicants for now.

17 MR. ROISMAN: Mr. Chairman, it may be that the
18 board's archives can. If I understand correctly, you keep
19 a copy of the FSAR in the board's library and they are
20 filed -- should be in the front of the FSAR an index for
21 all of the amendments to it.

22 JUDGE BLOCH: Since I have been Chairman of the
23 Board, I haven't received any updates. So -- well, if
24 amendments are being received all the time, they are not
25 being received by me.

1 MR. ROISMAN: I don't know that they have had
2 any amendments since the time that you became Chairman of
3 the Board.

4 JUDGE JORDAN: Yes. We get amendments every
5 month or two.

6 MR. WATKINS: Would you read them if you did?

7 JUDGE BLOCH: No, but we would file them. Then
8 we'd have a copy.

9 JUDGE JORDAN: I think it's very possible that
10 the Chairman has not seen amendments, in spite of the fact
11 that he has been serviced.

12 MR. ROISMAN: Maybe Dr. Jordan knows if the
13 library here is likely to have a current version of the FSAR
14 with an index for the amendments.

15 JUDGE BLOCH: Not if they haven't been served on
16 me. Dr. Jordan should have them.

17 JUDGE JORDAN: It should be in our library here,
18 I assume, and also in the appeal board library, but it is
19 unlikely that it has been kept up to date. It's probably
20 like mine.

21 MR. WATKINS: Mr. Chairman, could we have the
22 travelers for welds 23 and 29 bound into the record at
23 this point?

24 (The documents follow:)

25

FOR INFORMATION ONLY

WELD NO. 25

20753

B&R Stainless Steel Liner Inspection Traveler

Weld Inspection Sheet

Page ___ of ___

Acceptance Std.
Gibbs & Hill 2323-SS-18

7a. Penetrant Mfg. Magnaflux-Spotcheck _____
Cleaner Mfg. Magnaflux-Spotcheck _____
Developer Mfg. Magnaflux-Spotcheck _____

NDE Procedure

Final P.T. Level II

RESULTS INSPECTOR SIGN. DATE

7b. Vacuum Box GASKET TYPE SOLUTION TYPE

_____ by _____

Pretest Cleaning ___ Pressure ___ Temperature ___ NDE Procedure _____

Solution Application Method ___ Post Test Cleaning _____

Gauge Serial Number _____ Pressure Differential
Maintained for ___ Sec. ___ Min.

Final V.B. _____

N/A - Not Applicable

Satisfactory ___ Unsatisfactory ___ Level II
Inspector _____ Date _____

FOR INFORMATION ONLY

20755

NON DESTRUCTIVE TEST INSPECTION REQUEST

FOREMAN

TIME DATE
2-25-80

WELDER: Luter

DRAWING # BB 2401A

23

INSP. REQ.	CLEAN <input checked="" type="checkbox"/>	FIT-UP <input checked="" type="checkbox"/>	FIELD WELD #
	VISUAL <input type="checkbox"/>	L.P. <input type="checkbox"/>	V.B. <input type="checkbox"/>
	FINAL <input type="checkbox"/>		

COMMENTS:

Partic. Cleanliness of seam

WFML: D-2019-AWAK

INSPECTOR: James W. Cole ACCEPT: DATE: 2/25/80

FOR INFORMATION ONLY

20756

NON DESTRUCTIVE TEST
INSPECTION REQUEST

FOREMAN

TIME

DATE
9-12-78

WELDER:

See Below

DRAWING #

BB 2401A

5/5 Lines #2

INSP.

REQ.

CLEAN

VISUAL

FINAL

FIT-UP

L.P.

V.B.

FIELD WELD JT. # 23

COMMENTS:

WWR: A017040 ATR

Just fast up and

Cleanliness of plate

To Plate

INSPECTOR: S.M. McCoy

ACCEPT:

DATE: 9-12-78

FOR INFORMATION ONLY

20765

NON DESTRUCTIVE TEST
INSPECTION REQUEST

FOREMAN _____

WELDER: SEE BELOW

DRAWING # BB 2401A
5/8 LINER #2

INSP. REQ.	CLEAN <input type="checkbox"/>	FIT-UP <input type="checkbox"/>	FIELD WELD JT.# <u>29</u>
	VISUAL <input type="checkbox"/>	L.P. <input type="checkbox"/>	V.B. _____
	FINAL <input type="checkbox"/>		

COMMENTS:

*First fit up
and cleanliness of
bottom angle to
plate*

WMR: A008028 AHS
A008037 AET

INSPECTOR: S.M.M. Coy ACCEPT: DATE: 8-29-78

FOR INFORMATION ONLY

BOP _____, QS , M _____

WDC Serial No. 1 N/A 20767

MILLWRIGHT DEPT.

Drawing No. BB 2401-A

NUMBER D-5713

WELD FILLER MATERIAL LOG Weld No. N/A

WELD NO.	DATE	SIZE/CLASS	WELDER SYMBOL	WPS/ICN #	HEAT/LOT # OR CODE #	AMT. ISS.	AMT. RT'D.	ISSUANCE APPROVAL
29	2/14/81	3/32 ER308	BMD	88025 4-2	463638	40	0	 R-374
29	2/15/81	3/32 ER308	BMD	88025 4-2	463638	30	0	Jan F. Gilfield R-374
29	3/16/83	3/32 ER308	ABF	88025 5-2	463516	10	0	 R346
29	3/21/83	3/32 ER308	ABF	88025 5-2	463516	15	1	 R303
29	3/28/83	3/32 ER308	CFA	88025 5-2	463516	1	0	 R366
29	4/6/83	3/32 ER308	CFA	88025 5/2	463516	6	6	James Hartmann R-663

Bnd
4/6/83

FOR INFORMATION ONLY

20769

660

WELD NO.

B&R Stainless Steel Liner Inspection Traveler

Weld Inspection Sheet

Page ___ of ___

Acceptance Std.
Gibbs & Hill 2323-SS-18

7a. Penetrant Mfg. Magnaflux-Spotcheck _____
 Cleaner Mfg. Magnaflux-Spotcheck _____
 Developer Mfg. Magnaflux-Spotcheck _____

NDE Procedure

Final P.T. Level II RESULTS INSPECTOR SIGN. DATE

7b. Vacuum Box GASKET TYPE SOLUTION TYPE

_____ by _____

Pretest Cleaning _____ Pressure _____ Temperature _____ NDE Procedure _____

Solution Application Method _____ Post Test Cleaning _____

Gauge Serial Number _____ Pressure Differential Maintained for _____ Sec. _____ Min.

Final V.B. _____

N/A - Not Applicable

Satisfactory _____ Unsatisfactory _____ Level II Inspector _____ Date _____

NON DESTRUCTIVE
INSPECTION REQUEST

FOREMAN Faulks

DATE 3-1-82

ELDER: NA

DRAWING # BB2461A

INSP. REQ. CLEAN FIT-UP FIELD WELD # 600
 VISUAL L.P. V.S.
 FINAL

COMMENTS:

RRP 11.14.81

WFML:

INSPECTOR: D.G. [Signature]

ACCEPT:

DATE: 3-1-82

20771

FOR INFORMATION ONLY

NON DESTRUCTIVE TEST INSPECTION REPORT

F. EMAN

Fowler

TIME DATE

3-1-82

WELDER: NA

DRAWING # BB2401A

INSP. REQ.

CLEAN FIT-UP FIELD WELD # 660

VISUAL L.P. V.S.

COMMENTS:

WFML:

STOP 11.145 copy

INSPECTOR: [Signature]

ACCEPT:

DATE: 3-1-82

FOR INFORMATION ONLY

NON DESTRUCTIVE TEST
INSPECTION REQUEST

FOREMAN

DATE
8-14-78

WELDER:

Stephens ART

DRAWING #

Boston - Baygas 2401A

S/S Jaws #2

INCL. REQ. CLEAN FIT-UP FIELD WELD JT.# *600*
VISUAL L.P. V.B.
FINAL

COMMENTS:

NMR: *A007581 ART*

*Fit up and Cleanliness
of Plate to Plate*

INSPECTOR:

James W. D. Brown

ACCEPT:

(Signature)

DATE: *8-14-78*

FOR INFORMATION ONLY

1 (Discussion off the record.)

2 MR. WATKINS: Mr. Chairman, one final thing and
3 I don't mean to trigger a burst of acrimony in saying this.
4 A lot of what we've heard today, both questions and
5 answers, appears in the record of this case already. I
6 haven't gone out of my way to make a lot of "asked and
7 answered" objections, just for the sake of Mr. Roisman's
8 continuity, which is one point.

9 Another point is we spend an awful lot of time
10 establishing the obvious. With respect to traveler 23,
11 for example, weld 23, we established that welding took
12 place after the fit-up and cleanliness inspections, which
13 is of course the way it is supposed to be. I wonder if
14 you could encourage Mr. Roisman if possible to edit his
15 questions so we can focus on that which he believes is
16 really at issue.

17 JUDGE BLOCH: There's no need for a response.
18 We count on counsel at all times to try to conduct
19 efficient examination and I don't want to make any
20 judgment as to whether that has been done.

21 The hearing is adjourned until -- let's make it 8:40
22 tomorrow morning.

23 (Whereupon, at 5:45 p.m., the hearing was
24 adjourned, to reconvene at 8:40 a.m., November 27, 1964.)

25

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING: TEXAS UTILITIES GENERATING COMPANY, et al.
(Comanche Peak Steam Electric Station,
Units 1 and 2)

DOCKET NO.: 50-445-OL2
50-446-CL2

PLACE: BETHESDA, MARYLAND

DATE: MONDAY, NOVEMBER 26, 1984

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

(sig) Joel Breitner

(TYPED)

JOEL BREITNER

Official Reporter
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