

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

IN THE MATTER OF:)
)
TEXAS UTILITIES ELECTRIC)
COMPANY, ET AL)
(COMANCHE PEAK STEAM)
ELECTRIC STATION, UNITS)
1 AND 2)

DOCKET
USNRC
84 AUG 20 P5:07
50-445 OL-2
50-446 OL-2
OFFICE OF GENERAL INVESTIGATION
DOCKETING & SERVICE
BRANCH

PREFILED TESTIMONY OF
JAMES EDWARD ZWAHR
-and-
DANIEL THOMAS WILTERDING
AUGUST 15, 1984

PREFILED TESTIMONY OF JAMES EDWARD ZWAHR and
DANIEL THOMAS WILTERDING, taken on the 15th day of
August, 1984, in the above-styled and numbered cause,
at Glen Rose Motor Inn located at Highway 67 & FM
Road 201, in the City of Glen Rose, County of
Somerville and State of Texas, before Janet E.
Schaffer, a Certified Shorthand Reporter in and for
the State of Texas.

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PDR ADOCK 05000445
T PDR

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APPEARANCES:

BISHOP, LIBERMAN, COOK, PURCELL & REYNOLDS
Attorneys at Law
1200 Seventeenth Street, N.W.
Washington, D.C. 20036

BY: McNeill Watkins II, Esq.

APPEARING FOR APPLICANTS

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I N D E X

WITNESSES: JAMES EDWARD ZWAHR and
DANIEL THOMAS WILTERDING

Examination by Mr. Watkins Page 4

DEPOSITION EXHIBITS PAGE

Exhibit Number 1, Repair Process
Sheet written by Mr. Zwahr, dated 1/16/84 7

Exhibit Number 2, RT request 9

Exhibit Number 3, Weld Data Card for
Field Weld 40C 9

1 JAMES EDWARD ZWAHR

2 -and-

3 DANIEL THOMAS WILTERDING,

4 the witnesses hereinbefore named, being first duly
5 cautioned and sworn to testify the truth, the whole
6 truth and nothing but the truth, testified on their
7 oaths as follows:

8 MR. WATKINS: My name is McNeill
9 Watkins, with the law firm of Bishop, Liberman, Cook,
10 Purcell & Reynolds. We are counsel for Applicants
11 in this licensing proceeding.

12 This is the prefiled direct testimony of
13 James Zwahr and Dan Wilterding. Applicants will
14 present their testimony as a panel. Mr. Zwahr and
15 Mr. Wilterding are appearing as witnesses
16 voluntarily; they have not been subpoenaed by any
17 party.

18 MR. WATKINS: Mr. Zwahr, will you
19 state your full name, please.

20 MR. ZWAHR: James Edward Zwahr.

21 MR. WATKINS: Where are you employed?

22 MR. ZWAHR: Comanche Peak project at
23 Glen Rose.

24 MR. WATKINS: By whom are you employed?

25 MR. ZWAHR: Brown & Root.

1 MR. WATKINS: What's your title?

2 MR. ZWAHR: Weld tech five. Weld
3 technician five.

4 MR. WATKINS: How long have you been a
5 weld tech five at Comanche Peak?

6 MR. ZWAHR: Two and-a-half years.

7 MR. WATKINS: What department do you
8 work in?

9 MR. ZWAHR: Welding engineering.

10 MR. WATKINS: Would you briefly
11 describe your duties as a weld tech five?

12 MR. ZWAHR: My duties specifically are
13 to write repair process sheets and the accompanying
14 WFML, also.

15 MR. WATKINS: What is a WFML?

16 MR. ZWAHR: Weld filler material log.

17 MR. WATKINS: Is a repair process
18 sheet commonly referred to by its acronym, RPS?

19 MR. ZWAHR: That is correct.

20 MR. WATKINS: Mr. Wilterding, will you
21 state your full name, please.

22 MR. WILTERDING: Daniel Thomas
23 Wilterding.

24 MR. WATKINS: Where are you employed?

25 MR. WILTERDING: Comanche Peak.

1 MR. WATKINS: By whom?

2 MR. WILTERDING: Brown & Root.

3 MR. WATKINS: What is your position at
4 Comanche Peak?

5 MR. WILTERDING: Welding engineering,
6 weld tech four.

7 MR. WATKINS: How long have you been a
8 weld tech four at Comanche Peak?

9 MR. WILTERDING: Approximately three
10 years.

11 MR. WATKINS: What department do you
12 work in?

13 MR. WILTERDING: Welding engineering.

14 MR. WATKINS: Would you briefly
15 describe your duties as a weld tech four?

16 MR. WILTERDING: I prepare and review
17 ASME and non-ASME piping documentation.

18 MR. WATKINS: Mr. Zwahr, what's the
19 purpose of a repair process sheet?

20 MR. ZWAHR: To set forth the steps and
21 guidelines for the craft to follow in making a
22 repair, and also to document that repair.

23 MR. WATKINS: How many RPS's do you
24 prepare daily at this time?

25 MR. ZWAHR: At this time, I probably

1 prepare less than a dozen a day.

2 MR. WATKINS: In January 1984 how many
3 RPS's per day were you preparing?

4 MR. ZWAHR: Probably 15 to 20.

5 MR. WATKINS: Mr. Zwahr, I show you
6 this one-page document that's been identified as
7 Zwahr Exhibit 1. Does your signature appear on that
8 document?

9 MR. ZWAHR: Yes, sir, it does.

10 MR. WATKINS: Would you describe that
11 document, please?

12 MR. ZWAHR: This is a repair process
13 sheet that I wrote on January 16, 1984.

14 MR. WATKINS: To what weld does that
15 repair process sheet refer?

16 MR. ZWAHR: It applies to Field Weld
17 40C.

18 MR. WATKINS: What parts of the RPS
19 did you prepare?

20 MR. ZWAHR: I prepared all the
21 directions, the steps, the defect and descriptions.
22 The signatures and dates under "inspection results"
23 are not mine.

24 MR. WATKINS: Mr. Wilterding, would
25 you review Zwahr Exhibit 1 and tell me if your

1 signature appears on that?

2 MR. WILTERDING: Yes, it does.

3 MR. WATKINS: Where does it appear?

4 MR. WILTERDING: Adjacent to the word
5 "review."

6 MR. WATKINS: Does that indicate that
7 you reviewed this RPS?

8 MR. WILTERDING: Yes, it does.

9 MR. WATKINS: Mr. Zwahr, why did you
10 prepare this RPS?

11 MR. ZWAHR: An RT reject would have
12 initiated this RPS.

13 MR. WATKINS: What does RT stand for?

14 MR. ZWAHR: Radiography test.

15 MR. WATKINS: And was it a written
16 report?

17 MR. ZWAHR: Yes, it was.

18 MR. WATKINS: I show you a document
19 that's been identified as Zwahr Exhibit 2 and ask if
20 you can identify it?.

21 MR. ZWAHR: This is a request for RT
22 for Field Weld 40C on piping isometric drawing
23 AF-1-SB-007. It is stamped "rejected." This is the
24 document that triggered my preparation of the RPS.

25 MR. WATKINS: When you received this

1 paper, what documents did you gather in order to
2 prepare the RPS?

3 MR. ZWAHR: I gathered the weld data
4 card applicable to Field Weld 40C and the isometric
5 drawing that shows the system.

6 MR. WATKINS: I show you a document
7 that has been marked for identification as Zwahr
8 Exhibit 3, and ask if you can identify it?

9 MR. ZWAHR: Yes, sir. That's the weld
10 data card for Field Weld 40C.

11 MR. WATKINS: And if you could compare
12 Exhibit 1 and see if the RPS refers to the same weld.

13 MR. ZWAHR: Yes, sir, it does.

14 MR. WATKINS: You testified that in
15 order to prepare the RPS you gathered the weld data
16 card. How could you be sure you had the weld data
17 card in front of you when you prepared the RPS?

18 MR. ZWAHR: Because I wrote the RPS on
19 the back of the weld data card, which has the RPS
20 form on it.

21 MR. WATKINS: Is this a preprinted
22 form?

23 MR. ZWAHR: Yes, it is.

24 MR. WATKINS: And so the record is
25 clear, the weld data card is printed on the one side

1 and the RPS is on the other?

2 MR. ZWAHR: That's correct.

3 MR. WATKINS: Now, at the time that
4 you received these documents was part of the weld
5 data card already filled out?

6 MR. ZWAHR: Yes, that is correct.

7 MR. WATKINS: But the RPS was blank?

8 MR. ZWAHR: That's right.

9 MR. WATKINS: What kind of repair did
10 you specify in the RPS?

11 MR. ZWAHR: I specified an in-process
12 repair cycle one.

13 MR. WATKINS: What is an in-process
14 repair?

15 MR. ZWAHR: That's a repair that is
16 done before the final NDE's have been signed off.

17 MR. WATKINS: How did you know that
18 final NDE's had not been signed off?

19 MR. ZWAHR: By having the weld data
20 card in front of me, I could see that step five and
21 step six, the final NDE hold points for VT and PT
22 were blank and not been signed off by QC.

23 MR. WATKINS: In the lefthand column
24 of the RPS, where it says "Operation Number," there
25 appear a series of steps designated by a number four

1 and then A, B, C, D, and other letters; is that
2 correct?

3 MR. ZWAHR: That's true.

4 MR. WATKINS: What does the use of the
5 number four signify in connection with this weld
6 data card?

7 MR. ZWAHR: Four indicates that our
8 next operational step on returning to the weld data
9 card is going to be five, which I indicated is my
10 final step on the RPS, "return to step number five"
11 on the weld data card.

12 MR. WATKINS: And for the record, that
13 is just above your signature at the bottom of RPS?

14 MR. ZWAHR: Yes.

15 MR. WATKINS: Mr. Zwahr, is there any
16 way that you would have written "return to step five"
17 of the weld data card had step five on the weld data
18 card on the other side of the RPS already been
19 signed?

20 MR. ZWAHR: There is no way that I
21 would have written that RPS that way if step five
22 had been signed off.

23 MR. WATKINS: Let me ask you a
24 hypothetical. If, when you reviewed the weld data
25 card in connection with this repair, step five or

1 six had already been signed, would you have
2 designated this another kind of repair?

3 MR. ZWAHR: Yes, sir, I would have.
4 It would have no longer been an in-process repair.

5 MR. WATKINS: What kind of repair
6 would it have been?

7 MR. ZWAHR: It would have been a major
8 weld repair, repair cycle one.

9 MR. WATKINS: In that hypothetical
10 case, would you have included QC hold points in
11 connection with the repair?

12 MR. ZWAHR: Yes, sir, I would.

13 MR. WATKINS: Mr. Zwahr, are
14 in-process repairs procedurally defined?

15 MR. ZWAHR: Yes, they are. Inprocess
16 weld repairs are defined by construction procedure
17 CP-CPM 6.9D, section 3.19.1.

18 MR. WATKINS: Mr. Zwahr, I show you a
19 one-page document that has been marked as Zwahr
20 Exhibit 4 and ask you to identify it.

21 MR. ZWAHR: This is a copy of section
22 3.19.1 of CP-CPM 6.9D, which defines inprocess weld
23 repairs.

24 MR. WATKINS: Was Exhibit 4 the
25 revision of this procedure that was in effect when

1 you prepared the RPS for Field Weld 40C?

2 MR. ZWAHR: Yes, it was.

3 MR. WATKINS: Mr. Zwahr, is the
4 preparation of an RPS governed by procedure?

5 MR. ZWAHR: Yes. Section 3.3 of
6 CP-CPM 6.9G provides the procedure for preparing
7 Repair Process Sheets.

8 MR. WATKINS: Please identify Zwahr
9 Exhibit 5, which consists of four pages.

10 MR. ZWAHR: This is a copy of section
11 3.3 of CP-CPM 6.9G.

12 MR. WATKINS: Was this revision in
13 effect when you prepared the RPS for Field Weld 40C?

14 MR. ZWAHR: Yes, it was.

15 MR. WATKINS: Mr. Wilterding, you have
16 testified that you reviewed the RPS. When you
17 reviewed the RPS, did you also review the weld data
18 card that was associated with it?

19 MR. WILTERDING: Yes, I did.

20 MR. WATKINS: What things did you look
21 for when reviewing the RPS and the associated weld
22 data card?

23 MR. WILTERDING: I checked to make
24 sure that the final NDE had not been signed off. I
25 checked to see that the applicable information from

1 the front of the weld data card was transferred to
2 the back, that information from the RT reject,
3 referring to the defect, was properly transcribed on
4 the repair process sheet, and that the hold points
5 were correct.

6 MR. WATKINS: Mr. Wilterding, is it
7 clear to you that had step five or step six, the
8 final VT or final PT in connection with the weld
9 data card, already been signed, that that would have
10 made a difference in your review?

11 MR. WILTERDING: It would have made a
12 world of difference.

13 MR. WATKINS: And is that something
14 for which you specifically looked when you reviewed
15 the weld data card and RPS?

16 MR. WILTERDING: That is correct.

17 MR. WATKINS: Mr. Wilterding, do you
18 know a QC inspector named Jack Stanford?

19 MR. WILTERDING: I cannot put the name
20 with a face.

21 MR. WATKINS: Mr. Zwahr, do you know a
22 QC inspector named Jack Stanford?

23 MR. ZWAHR: No, I don't.

24 MR. WATKINS: Mr. Wilterding, have you
25 ever discussed this RPS or the weld data card with

1 any QC inspector?

2 MR. WILTERDING: I have not.

3 MR. WATKINS: Mr. Zwahr, have you
4 discussed this RPS or this weld data card with any
5 QC inspector?

6 MR. ZWAHR: No, sir, I have not.

7 MR. WATKINS: Mr. Wilterding, do you
8 remember discussing this RPS or this weld data card
9 with any person in the QA/QC organization at any
10 time?

11 MR. WILTERDING: I do not.

12 MR. WATKINS: Mr. Zwahr, do you
13 remember having any conversations with anyone in the
14 QA/QC organization regarding this RPS or its
15 associated weld data card after it was prepared?

16 MR. ZWAHR: No, sir, I do not.

17 MR. WATKINS: Does that conclude your
18 testimony, gentlemen?

19 MR. ZWAHR: Yes, it does.

20 MR. WILTERDING: Yes.

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I, JAMES E. ZWAHR, have read the foregoing deposition and hereby affix my signature that same is true and correct, except as noted herein.

JAMES E. ZWAHR

SUBSCRIBED AND SWORN to before me this the _____ day of _____, 1984.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

My commission expires: _____

1 STATE OF TEXAS)
2 COUNTY OF DALLAS)
3

4 I, Janet E. Schaffer, RPR, Certified
5 Shorthand Reporter in and for the State of Texas,
6 do hereby certify that there came before me on the
7 15th day of August, A. D., 1984, at the Glen Rose
8 Motor Inn, Glen Rose, Texas, the following named
9 person, to-wit: JAMES E. ZWAHR, who was by me duly
10 sworn to testify the truth and nothing but the
11 truth of his knowledge touching and concerning the
12 matters in controversy in this cause; and that he
13 was thereupon examined upon his oath and his
14 examination reduced to writing; same to be sworn
15 to and subscribed by said witness before any
16 Notary Public.

17
18 I further certify that I am neither attorney
19 or counsel for, nor related to or employed by, any
20 of the parties to the action in which this
21 deposition is taken, and further that I am not a
22 relative or employee of any attorney or counsel
23 employed by the parties hereto, or financially
24 interested in the action.

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In witness whereof, I have hereunto set my
hand and affixed my seal this 15th day of August,
A.D., 1984.

License Expires:
December 31, 1985
CSR No. 1453

JANET E. SCHAFFER, RPR, CSR
IN AND FOR THE STATE OF TEXAS
1226 Commerce, Suite 411
Dallas, Texas 75202
(214) 742-3035

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I, DANIEL T. WILTERDING, have read the foregoing deposition and hereby affix my signature that same is true and correct, except as noted herein.

DANIEL T. WILTERDING

SUBSCRIBED AND SWORN to before me this the _____ day of _____, 1984.

NOTARY PUBLIC IN AND FOR THE
STATE OF TEXAS

My commission expires: _____

1 STATE OF TEXAS)

2 COUNTY OF DALLAS)

3
4 I, Janet E. Schaffer, RPR, Certified
5 Shorthand Reporter in and for the State of Texas,
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8 Motor Inn, Glen Rose, Texas, the following named
9 person, to-wit: DANIEL T. WILTERDING, who was by
10 me duly sworn to testify the truth and nothing but
11 the truth of his knowledge touching and concerning
12 the matters in controversy in this cause; and that
13 he was thereupon examined upon his oath and his
14 examination reduced to writing; same to be sworn
15 to and subscribed by said witness before any
16 Notary Public.
17

18 I further certify that I am neither attorney
19 or counsel for, nor related to or employed by, any
20 of the parties to the action in which this
21 deposition is taken, and further that I am not a
22 relative or employee of any attorney or counsel
23 employed by the parties hereto, or financially
24 interested in the action.
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In witness whereof, I have hereunto set my
hand and affixed my seal this 15th day of August,
A.D., 1984.

License Expires:

December 31, 1985
CSR No. 1453

JANET E. SCHAPPER, RPR, CSR
IN AND FOR THE STATE OF TEXAS
1226 Commerce, Suite 411
Dallas, Texas 75202
(214) 742-3035

Change affects system turn over and clearance must be obtained from the Startup Engineer prior to starting work.

REPAIR PROCESS SHEET

WDC Serial No. 40851
 Drawing No. AF-1-36-001
 Weld No. FW-40C

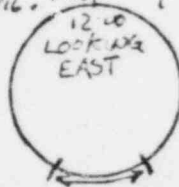
RT REJECT # 3096 ↓

IN-PROCESS REPAIR CYCLE-DESCRIPTION OF DEFECT (SKETCH)

↓-6, 6-8 : PROCSITY WITH TAILS
 E = .531
 RE-SHOOT ↓-6, 6-8 AFTER REPAIR

RECORD DIMENSIONS:

Area of excavation measured 3" H x 7" W x 3/8" DP
 3/8" DP being an approximate root thickness of 3/16" APD



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

OPER. NO.	OPERATION	HOLD POINTS			CON.	S or U	INSPECTION RESULTS (SIGN AND DATE)		
		WT	QC	ANI			QC OF WT	NDE CERT LEVEL	ANI
	12-1 WELD MAJOR REPAIR								
4A	LAYOUT	X	NA	NA		S	PH 1-16-84		
4B	GRIND	X	NA	NA		Sgt.	JWR 1-16-84		
4C	INT/PT CAVITY	X	NA	NA		Sgt.	Red Dening 1-16-84	PT II	
4D	EVALUATE EXCAVATION	X	NA	NA		Sgt.	Red Dening 1-16-84		
4E	CLEAN	X	NA	NA		Sgt.	Red Dening 1-16-84		
4F	PREHEAT	X	NA	NA		Sgt.	Red Dening 1-16-84		
4G	WELD: HELD TO	NA	NA	NA					
4H	GRIND & BLEND	NA	NA	NA					
4I	FINAL VT	X	NA	NA		Sgt.	JWR 1-17-84		
	RETURN TO STEP #5 W/ WDC								
	PREP: QC 3096/1/1/84								
	REVIEW: PH Red Dening 1-16-84								
	FOR INFORMATION ONLY								

VE *A.H. Sta 1/13/84* QC ANI G&H

Approval signatures shall be affixed on line immediately below the last step in each repair sequence.
 Base Metal Repair - WE, QC, CON, ANI
 Weld Metal Repair - WE, QC, ANI

DEPOSITION EXHIBIT
ZWAHR 1
 PENGAD Beyond, N. J.

AF/CC

No. 62071

Date Joint Welded 1-14-84

FILM TO: Quality Assurance

Final

Welding Engineering

Information Only

REQUEST FOR RT

REQUESTED BY M. Bee DATE 1-14-84 FLAGGED BY Ron DATE 1-14-84

PRIORITY # 1 HOT

DRAWING AF-1-SB ISO 007 LINE 036-2002-3 WELD FW.40C (R) -

PREVIOUS RT LOG NUMBER IF A REPAIR -

PIP DIAMETER 6" (IN.)

JOINT DESIGN:

WALL THICKNESS .473 (IN.)

OPEN BUTT

MATERIAL TYPE C/S

INSERT

PIPING SYSTEM CLASS III

BACKING RING

WELD PROCEDURE 11010

WELDER'S SYMBOL(S) ROOT-AHS

WELDOUT - AFK, AHS

STAGE OF MANUFACTURING

1. INFORMATION ONLY

FOR INFORMATION ONLY

(A) REPAIR

ROOT

INTERMEDIATE

COMPLETED

AREA(S) 100%

(B) ROOT

2. RT BEFORE STRESS

3. ROOT

4. REPAIR

AREA(S) _____

5. FINAL

DEPOSITION EXHIBIT 2WAHR2

REJECTED

LOCATION Room 72 S.B.#1 790 ELEV.

LOG NUMBER: ACCEPTED _____ BY R. Bee DATE 1-15-84

REJECTED 30964

Reshat

4-6 after inspection

4-6 - Same As 6-8

6-8 - Porosity with Tails R = .531

CLEARANCE REQUIRED
Change affects system turn-
over and clearance must be
BROWN & ROOT 1959 Startup
CPSES TOB 15411959
Engineer prior to starting
work.

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

WELD DATA CARD

WDC Serial No. 40851
Drawing No. AF-1-53-007R-1
Weld No. FU40G

DEPOSITION
EXHIBIT
Zwakr3

LINE # <u>6" AF-1-036-2002.3</u>	WPS # <u>11020</u>	REV#/ICN# <u>7/0</u>	FABRICATION CODE & CLASS/ACC. STD. ASME III CPM 6.9 <u>3</u>
	<u>11021</u>	<u>5/0</u>	
	<u>11010</u>	<u>3/0</u>	

BASE MATERIAL 1/2" 304
HT # 2/2-10-73 to HT# NA
PC # 1BF-057 to PC# 303
P # 1 to P # 1

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

QI-QAP/REV	<u>NA</u>	<u>PT/10.2-1</u>	<u>MT/10.2-2</u>	<u>RT/10.2-3</u>	<u>UT</u>
------------	-----------	------------------	------------------	------------------	-----------

MR#(S)	M.S.T.E.	CALIB. DUE DATE	QC	WELD FILLER MATERIAL REQUIRED
QC VERIF. DATE:	<u>1305</u>	<u>1/14/84</u>	<u>14118/84</u>	<u>13/11/84</u>
				ROOT CLASS <u>E-70S-2</u>
				FILL CLASS <u>E-70S-2</u>
				CLASS <u>E-7018</u> <u>per 1-13</u>
				CLASS

NOTES: (1) Applicable QC/ANSI hold points shall be indicated by checkmark ✓.
(2) ANSI 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	ANSI			QC or WT	NDE CERT. LEVEL	ANSI
1	Verify Cut	X	NA	NC		Sat. <u>DWR 1-3-84</u>			
2	Cleanliness	NA	✓	NC		*UNSAT <u>Stanford 1-3-84</u>	II		
3	Fitup	NA	✓	(V)		<u>Sat Stanford 1/14/84</u>	II		<u>957/1/14/84</u>
4	Preheat	NA	✓	NC		<u>Sat Stanford 1/14/84</u>	II		
5	Final VT	NA	✓	NC		<u>Sat Stanford 1/17/84</u> *	II		
6	Final NDE	NA	✓	NC		<u>Sat Stanford 1/17/84</u> *	II		
Reviewed: <u>Ray M...</u>						<u>1-3-84</u>			<u>1/1-3-84</u>
2A	Cleanliness	NA	✓	NC		* <u>Sat Stanford 1/14/84</u>	II		<u>DW 1/14/84</u>
Reviewed: <u>...</u>						<u>1-14-84</u>			

FOR INFORMATION ONLY

*Dated in error 1/26/84
NCR # 12963
WE A.K.S. 11/3/84 OC ... 5/23/84 ANI R. ... 5/28/84

Approval signatures shall be affixed on the line immediately below the last step in each sequence. CMC # NA *Ref. NCR # M-12,382-S

REF NCK 13963 (VOID) 5/23/84

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3.19.1 In Process Weld Repairs

Q

In process repairs shall be defined as those discovered prior to final code required NDE.

All major weld defects discovered before final inspection shall be evaluated by the PWE who may generate an RPS operational sequence at his discretion.

NOTE: Through wall repairs or those where 1/8 inch or less metal remains shall require an RPS.

The removal of starts and stops and slag, etc. may be routinely ground out during the welding process. No documentation is required.

When weld defects are discovered before final inspection (In process), and operational steps are not defined by the PWE, the following operational steps may be used to affect reworking:

- Grind as required to remove defects within the guidelines of this procedure.
- Perform information PT or MT
- Reweld utilizing original welding procedure
- Grind and fair deposited area into the surrounding metal surface
- Reinspect utilizing the original NDE method and acceptance criteria for information unless defined otherwise by the PWE.

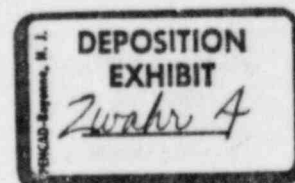
3.19.2 Weld Metal Repairs

3.19.2.1 Major Defects

BOP,Q

The following defects discovered during or after final code required NDE shall be classified as "Major Repairs":

1. All cracks and/or linear defects identified during the final inspection of a weld joint.
2. Cracks, that are repaired and then reappear after the repair.



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NOTE 7: Required holdpoint and inspection point operations shall be performed by the group defined on the WDC or RPS in the order shown from left to right (i.e., if an operational sequence requires WT and QC holdpoints, the WT inspection shall occur before QC inspection).

NOTE 8: Delta ferrite checks shall be performed as required by Appendix 6.9D.

NOTE 9: Line, drawing no., weld no.(s), and fabrication code and class entires shall be made on WDCs and MWDCs, as applicable.

NOTE 10: Upon acceptable completion of the WDC(s), the individual reviewing the above entries shall denote "Review" immediately below the last operational sequence and sign and date in the "WE" column. For BOP WDC's a line may be skipped.

3.2.1 Pre-established Repair Sequence (Optional - In Process)

1. A pre-established repair sequence may be added at the direction of the PWE below final NDE. Signoffs for review shall be made below such sequence. Normally the pre-established sequence will contain the following operations:
 - a. Excavate defect.
 - b. Perform Info PT.
 - c. Evaluate excavation and attach a sketch to the WDC and return to Welding Engineering.
2. In the event that this pre-established repair sequence is not used, all steps may be marked N/A by the PWE in the "Inspection Results" column.

3.2.2 The WDC shall reflect the revision and ICN's which are current at the time welding is started. Revision changes which occur after welding has started, but prior to completion of the item, will be documented on the WFML.

3.3 REPAIR PROCESS SHEET

Welds requiring rewelding which were rejected after final inspection, all "major" repairs, and all base metal repairs requiring welding shall be documented on the RPS, Figure

DEPOSITION
EXHIBIT
Zwahr 5



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6.9G-4 (or continuation sheet). The RPS is normally reproduced on the back of the WDC. Specific requirements by classification of repairs are given in Appendix 6.9D, Section 3. Before defining each repair operation sequence, the repair type shall be defined (i.e. Base Metal Repair, In-Process Repair, Cosmetic Repair, Major Weld Repair).

The applicable repair operations shall be established and approved before proceeding with the repair work.

NOTE 1: For socket, component supports, and pipe butt welds using the MWDCs and WDCs, the first repair sequence may be defined for each weld before initial issuance of the card. Should the repair not be required, the appropriate signoff areas are marked N/A by the cognizant QC Inspector or WT and initialed and dated.

NOTE 2: The repair work and the inspection holdpoints on the RPS must be totally completed (signed) by the QC Inspector. When the repair is complete and the RPS is signed, work may continue to the next sequential step on the front of the WDC or MWDC.

1. The rejectable operation identified on the front of the WDC is marked "U" for unsatisfactory and signed and dated by the QC Inspector before continuing to the RPS operational repair sequence.
2. Each major welded repair (excluding in-process welds) shall be numbered consecutively as R-1, R-2, etc. This shall be stated next to the repair type before the first operational step. Operation designations shall be "operation number" of the rejectable operation on the front of the WDC suffixed by an A, B, C, etc. In-process welds will be sequentially number IP-1, IP-2, etc.
3. Should an operational step result in a rejectable condition that cannot be considered an in-process repair, then one shall be added to the repair number and this shall be affixed prior to the next operational sequence, i.e.:



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R-1 Major Weld Repair
 7A Grind defect
 7B PT excavation
 7C Fill per WPS 88023
 7D Grind for NDE interpretation
 7E Perform final RT "U"
 7F Remove Purge Dam N/A
 R-2 Major Weld Repair
 7A Grind defect
 7B PT excavation
 7C Fill per WPS 88023

4. In a given operational sequence, steps that are not to be used may be marked "N/A" in the Inspection Results section by the PWE.
5. Upon completion of a given operational sequence, work shall proceed to the next succeeding step on the front of the WDC i.e., Step 7D is the last operational step which includes signoff for required final NDE.

On the Weld Data Card, Step 8 is the next step after signoff of the required NDE, as required by the last step on the RPS.

3.3.1 Required Approvals

Base metal repair - ANI, WE, G&H
 Major weld repair - ANI, WE
 In-process repairs - WE
 Cosmetic Repairs - ANI, WE

Approval signatures and dates shall be affixed in the appropriate column of the RPS directly below the last operation step defined. On MWDC's, sequences for several welds may be defined before affixing of approval signatures at the end of the last operation defined.

NOTE: A repair cycle shall be defined as operations on a weld after a rejectable code-required final NDE that results in either an acceptable or rejectable additional code-required final NDE.



The repair number on applicable RPS's shall be advanced only under these circumstances unless determined otherwise by the PWE.

3.3.2 Repair Process Sheet Initiation

The Repair Process Sheet shall be completed and verified as follows for repairs to ASME items:

1. The WDC Serial No. (where applicable), drawing no., and weld no. shall be entered at the top right corner. For component support applications, both the component support drawing number and the applicable piping isometric drawing number shall be provided. For base metal defects, the spool number shall be entered.

3.3.3 Weld Metal Repairs

1. Required approvals, inspections and holdpoints shall be established as delineated in Table 6.9G-2, required examination, QC holdpoints, and approvals required for repairs to ASME Section III, Subsection NB, NC, ND. For Subsection NF, see Table 6.9G-3, Note 6, page 3 of 3.
2. The Repair Process Sheet shall describe the defects, including sketches or attachments (i.e., overlays) in order to adequately locate the defect(s) at a later date.
3. For weld repairs, if the original weld points were completed, verify that in addition to the weld repair requirements of the original weld QC hold points are as required by Table 6.9G1. If a delta ferrite check is required, verify that "Delta Ferrite Check" has been entered.
4. The repair cycle (the number of repairs to this weld) shall be noted. Requirements for more than two repairs are given in Appendix 6.9D.
5. If all items on the RPS have been acceptably completed, the originator shall denote "Final Acceptance" on the line immediately below the last entry and sign and date in the appropriate column. The applicable documentation shall then be transferred to QA for QA/review/ANI review/ approval, as required.