VOID SHEET

TO: License Fee Management Branch

FROM: Region IV

SUBJECT: VOIDED APPLICATION

Control Number: 462999

Applicant: Panhandle NDT & Inspection

Date Voiced: 6/26/90

Reason for Void: Applicant stated per telcon with J. Whitten that he would not pursue a license. He will send letter requesting withdrawal of application. Review begun and deficiency letter sent.

Billie Grucyynski 6/26/90
Signature Date

9010180132 900626
REG4 LIC30
MATLSLICENSING PDR

RECEIVED
'90 JUL 30 P2:45
U.S. N.R.C.
LIC. FEE MGMT. BRANCH

Attachment:
Official Record Copy of
Voided Action

FOR LFMB USE ONLY

Final Review of VOID Completed:

☐ Refund Authorized and processed

☑ No Refund Due

☐ Fee Exempt or Fee Not Required

168

MV40

Comments: ______

Log completed ☑

Processed by: M. Messier 8/1/90

PANHANDLE NDT AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

June 26, 1990

U.S. Nuclear Regulatory Commission
Region IV
(Material Radiation Proct. Sec.)
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 78011

Attn: Vivian Campbell

Ms. Campbell,

I am withdrawing my application for and N.R.C. License.

Thank You,

Orvil Couch

PANHANDLE N D T AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

May 30, 1990

United States
Nuclear Regulatory Commission
Region IV
611 Ryan Plaza, Suite 1000
Arlington, Texas 76011

Docket No.: 030-31654
Control No.: 462999

Attn: Vivian H. Campbell, Health Physicist
Nuclear Materials Licensing Section

Vivian H. Campbell,

I am requesting another 30 days to resubmit my application for an N.R.C. License.

Thank You,

Orvil Couch
President
Panhandle N.D.T. & Inspection, Inc.

Approved 6/4/90 to extend to 8/31/90.
NRC

RECEIVED
JUN 4 1990

462999

MAY 10 1990

Panhandle N.D.T. & Inspection, Inc.
ATTN: Orvil Couch
President
P.O. Box 1474
Borger, Texas 79008-1474

Docket No.: 030-31654
Control No.: 462999

Gentlemen:

This refers to your correspondence dated March 29, 1990, requesting a byproduct material license.

Since the Nuclear Regulatory Commission issues material licenses for 5-year periods, the application should be complete in all respects. We have reviewed your application and have found that it does not provide much of the information identified in the enclosed draft "Guide for the Preparation of Applications for the Use of Sealed Sources and Devices for Performing Industrial Radiography" which has been prepared with regard to 10 CFR Part 34.

Therefore, we request that you submit a complete up-to-date application supplying all of the information as outlined in the enclosed guide. We trust that your use of the draft guide will help acquaint you with the requirements specified in 10 CFR 34. Also enclosed is Form 313 for use in filing your application.

If we do not receive a reply from you within 30 calendar days from the date of this letter, we shall assume that you do not wish to pursue your application. Please reply in duplicate and refer to Control No. 462999.

Sincerely,

Original Signed By:
William L. Fisher

Vivian H. Campbell, Health Physicist
Nuclear Materials Licensing Section

Enclosure:
1. Guide for the Preparation of Applications for the Use of Sealed Sources and Devices for Performing Industrial Radiography (October 1984)
2. 10 CFR Part 34
3. Form 313

RIV:NMLS
VHCampbell
5/10/90

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: _____
STATUS CODE: 3
FEE CATEGORY: _____
EXP. DATE: 0
FEE COMMENTS: _____

LICENSE FEE TRANSMITTAL

A. REGION IV

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: PANHANDLE N.D.T. & INSPECTION, INC.
RECEIVED DATE: 900403
DOCKET NO: 3031654
CONTROL NO.: 462999
LICENSE NO.:
ACTION TYPE: NEW LICENSEE

2. FEE ATTACHED
AMOUNT: ~~$700.00~~
CHECK NO.: 2014

3. COMMENTS

SIGNED Billie Giuseppucki
DATE 4/13/90

RECEIVED
APR 13 1990

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED / Y)

1. FEE CATEGORY AND AMOUNT: 3D $700

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:
AMENDMENT _____
RENEWAL _____
LICENSE ✓

3. OTHER _____

SIGNED M. Nyrauer
DATE 4/13/90

NRC FORM 313
(9-89)
10 CFR 30, 32, 33,
34, 35 and 40

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Expires: 9-30-90

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATIONS FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY, NMSS
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS. IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIALS SAFETY SECTION B
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
NUCLEAR MATERIALS SAFETY SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
NUCLEAR MATERIALS SAFETY SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

[X] A. NEW LICENSE
[ ] B. AMENDMENT TO LICENSE NUMBER _____
[ ] C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include Zip Code)*

Panhandle N.D.T. & Inspection, Inc.
1203 Industrial Blvd.
P.O. Box 1474
Borger, Texas 79008-1474

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

1203 Industrial Blvd.
Borger, Texas 79007

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Orvil Couch or Norman Reneau

TELEPHONE NUMBER: (806) 273-2733

SUBMIT ITEMS 5 THROUGH 11 ON 8½ x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.
Industrial Radiography

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE
Orvil Couch- Norman Reneau

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

9. FACILITIES AND EQUIPMENT

10. RADIATION SAFETY PROGRAM

11. WASTE MANAGEMENT
Amersham Corp.

12. LICENSEE FEES *(See 10 CFR 170 and Section 170.31)*
FEE CATEGORY 3 O
AMOUNT ENCLOSED $ 700.00

13. CERTIFICATION. *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SIGNATURE - CERTIFYING OFFICER	TYPED/PRINTED NAME	TITLE	DATE
Orvil Couch	Orvil Couch	President	3-29-90

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS
Appl	Apr-2-IV	30	
AMOUNT RECEIVED	CHECK NUMBER		
$700	2079		

APPROVED BY
M. Meisner

DATE 4/10/90

RECEIVED
90 APR -9 AM
U.S. NRC
FEE MGMT BRANCH

NRC FORM 313 (9-88)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 7.8 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE OFFICE OF INFORMATION AND REGULATORY AFFAIRS, OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

TRC FORM 41-3
(10-78)
Item #5

TEXAS DEPARTMENT OF HEALTH
RADIOACTIVE MATERIAL LICENSE

08573

Pursuant to the Texas Radiation Control Act and Texas Department of Health regulations on radiation, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess and transfer radioactive material listed below; and to use such radioactive material for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Texas Department of Health now or hereafter in effect and to any conditions specified below.

LICENSEE

1. Name: Panhandle N.D.T. & Inspection, Inc.

2. Address: Attn: Orvil Couch
P.O. Box 1474
Borger, Texas 79008

This license issued pursuant to and in accordance with
☐ APPLICATION ☒ LETTER ☐ _____
Dated: December 8, 1989
Signed By: Orvil Couch

3. License Number	Amendment Number
L02627	22

PREVIOUS AMENDMENTS ARE VOID

4. Expiration Date: January 31, 1992

RADIOACTIVE MATERIAL AUTHORIZED

5. Radioisotope	6. Form of Material	7. Maximum Activity*	8. Authorized Use
A. Ir-192	A. Sealed Sources (SNC Model G-[illegible] or G-3F; AM Model 89911 or 89912)	A. 12 Sources not to exceed 100 Ci each	A. Industrial Radiography in Gulf Nuclear Model 20V exposure devices. Source storage and exchange in Gulf Nuclear Model U-110 or RC-6C, or Source Production and Equipment Company Model C-1 source changers.

☐ CONTINUED ON PAGE 2, IF CHECKED.

CONDITIONS

9. Radioactive material shall be stored only at:

Sub-site Number	Sub-site Location
000	Borger - 1203 Industrial Blvd.

10. Unless otherwise specified, the authorized place of use is at temporary job sites throughout Texas.

11. The licensee shall comply with the provisions of Parts 11, 12, 13, 21, 22, 31 and 41 of the Texas Regulations for Control of Radiation.

* Ci-Curies mCi-Millicuries μCi-Microcuries

CONDITIONS CONTINUED ON PAGE 2.

TEXAS DEPARTMENT OF HEALTH
RADIOACTIVE MATERIAL LICENSE

22475

Supplementary Sheet

LICENSE NUMBER	AMENDMENT NUMBER
L02627	22

CONDITIONS CONTINUED:

12. The individual designated to perform the functions of Radiation Safety Officer for activities covered by this license is Orvil Couch. The Deputy Radiation Safety Officer is Norman Reneau.

13. Radioactive material used for industrial radiography shall only be used by radiographers and radiographer trainees designated by Orvil Couch. Training in Appendix 31-A will be presented by Radiation Consultants or In-House Safety Training instructed by Orvil Couch in accordance with the licensee's training program. No individual shall be designated as a radiographer until a TRC Form 31-1, "Radiographer Radiation Safety Training Certification", has been submitted to the Agency by the licensee to verify completion of the required radiation safety training.

14. Sealed sources containing radioactive material shall not be opened.

15. On the job training for industrial radiographer trainees shall be under the direct personal supervision of the following radiographer trainer(s):

Jenaro Robles	#00780	Terry Standley	#00778
Orvil Couch	#00776	Norman Reneau	#00782
Mike Dally	**#02014**	Glen Eggleston	#01749

16. Sealed sources of radioactive material, Nickel 63 foil, and/or plated alpha emitting sources shall be tested for leakage and/or contamination in accordance with the provisions of Texas Regulations for Control of Radiation 11.7.

17. The licensee is authorized to receive, possess and use sealed sources of Iridium-192 where the radioactivity exceeds the maximum amount of radioactivity specified in Item 7 of this license provided:

    A. such possession does not exceed the quantity per source specified in Item 7 by more than 20% for Iridium-192.

    B. records of the licensee show that no more than the maximum amount of radioactivity per source specified in Item 7 of the license was ordered from the supplier or transferor of the radioactive material.

CONDITIONS CONTINUED ON PAGE 3

TRC FORM 41-3a
(2/88)
Item #5

TEXAS DEPARTMENT OF HEALTH
RADIOACTIVE MATERIAL LICENSE

22476

Supplementary Sheet

LICENSE NUMBER	AMENDMENT NUMBER
L02627	22

CONDITIONS CONTINUED:

C. the levels of radiation from radiographic exposure devices and storage containers do not exceed those specified in the Texas Regulations for Control of Radiation 31.101.

18. Pursuant to Texas Regulations for Control of Radiation, Part 41, the licensee is authorized to receive and possess up to 999 kilograms of depleted Uranium used as shielding material in the radiography exposure devices authorized by this license or in collimators used in radiographic operations.

19. Except as specifically provided otherwise by this license, the licensee shall possess and use the radioactive material authorized by this license in accordance with statements, representations, and procedures contained in the following:

application dated December 31, 1986,
letters dated April 20, 1987,
May 18, 1987, and
July 31, 1987.

The Texas Regulations for Control of Radiation shall prevail over statements contained in the above documents unless such statements are more restrictive than the regulations.

JTB:mr

FOR THE TEXAS DEPARTMENT OF HEALTH

Date February 21, 1990

Ralph S. Hoyer
Administrator, Licensing Branch

PANHANDLE N D T AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

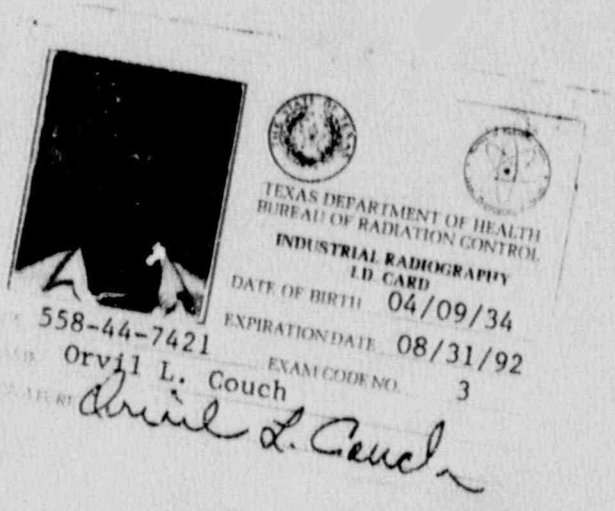
NORMAN RENEAU, Field Superintendent

Item #7

EDUCATION AND EXPERIENCE RESUME

NAME: Orvil L. Couch (Abe) DATE March 1, 1990

EDUCATION	PLACE	DATE
Consolidated X-ray	Dallas, TX	1-4-70 to 4-15-70
Level II Test	Dallas, TX	5-70 Consolidated X-ray
U.S. Motors	Mena, Ark.	5-70 to 5-74
Davis X-ray	Little Rock, Ark.	5-74 to 4-77
Bravo X-ray	Odessa, TX	5-77 to 7-78
Level II Test	Odessa, TX	5-77 Bravo X-ray
Basin X-ray	Odessa, TX	7-78 to 5-79
Panhandle X-ray	Borger, TX	5-79 to present - Owner
Level III Test	Borger, TX	6-79 Panhandle X-ray



PANHANDLE N D T AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

Item #7

EDUCATION AND EXPERIENCE RESUME

NAME: Norman Reneau DATE: 3/1/90

4/9/84 - Present: Panhandle N.D.T. & Inspection, Inc.
Field Supt. & Deputy Radiation Safety Officer

May 1974 - April 1984: Markle Manufacturing Co.
Amarillo, Texas
Quality Control Level II X-ray Tech.
A.S.M.E. Certified Welder

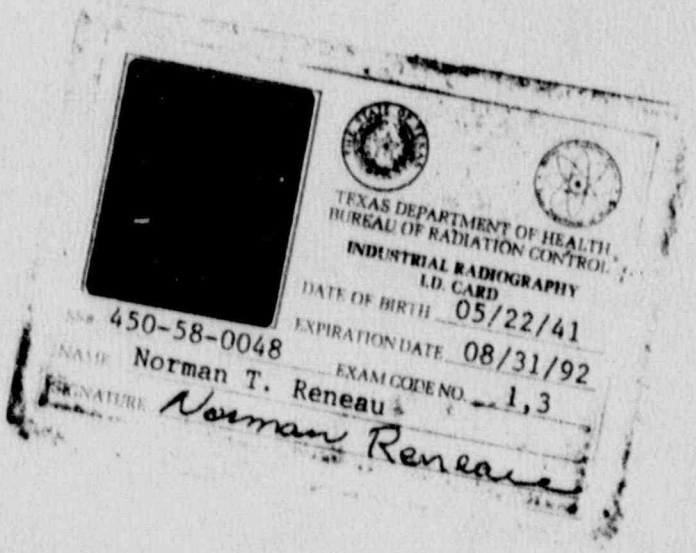
August 1970 - May 1974: Consolidated X-ray
Dallas, Texas
X-ray Manager of Amarillo Office

July 1969 - August 1970: Conam Inspection Inc.
Tulsa, Oklahoma
X-ray Tech.

(20 years experience in Industrial X-ray.)

Education

High School Diploma received from United States Armed Forces Institute Military test. (1959)



PANHANDLE N D T AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

Item #8

EXAMINATION NUMBER 1

RADIATION SAFETY OFFICER:_____ DATE:_____

INSTRUCTOR:_____ DATE:_____

TRAINEE:_____ DATE:_____

QUESTIONS 1 THROUGH 19

1. The basic principles for protection from ionizing radiation are _____, _____, & _____.

2. What is the mr/hr. reading that distinguishes between a restricted and a non-restricted area?_____.

3. The permissable dosage that may be received in any calendar quarter is: _____. a. 3 rems b. 5 rems c. 1¼ rems

4. A dosimeter as used for personnal monitoring in industrial radiography work should have a range from zero to:
   a. 100 mr b. 200 mr c. 1,000 mr

5. A dosimeter shall be recharged_____ or whenever the hairline nears the high end of the scale.

6. In the process of making ragiographs, you discover your dosimeter has been discharged off scale, you are to:
   a. Assume you will receive total allowable limit for that film badge period.
   b. Immediately calculate amount of exposure by use of Inverse Square Law.
   c. Send in film badge for immediate processing and reading.

7. Should you loose your film badge, you are to:

   a. Notify your supervisor or radiation safety officer, so you can be issued another film badge.

   b. Be more alert for health officers that they do not catch you without one.

   c. Do not let anyone know you have lost your film badge, so you will not be charged for it.

8. When whould a survey instrument be used?

   a. When uncertain about radiation levels.

   b. When in doubt about source being in shielded position.

   c. During any radiation activity or source manipulation.

9. One making a radiograph shall put up a rope barrier and display "Caution Radiation Area" signs at what mr/hr. level?

   a. 5 mr/hr. b. 100 mr/hr. c. 2 mr/hr.

10. Radiographer's making a radiograph, with radiation area well posted happen to see an unauthorized person entering into the radiation area, he should?

    a. Call to the person so they will see the radiographer on duty.

    b. Give the person a lecture on Radiation Safety, so he or she will know they are in a radiation area and not stay too long.

    c. Attract the person's attention, and advise that they are entering into a radiation area, and should not enter, if the person should fail to heed the warning return source to its shielded position (or shut off the x-ray machine) until the area is cleared of unauthorized personnel.

11. In the event you, as a radiographer, should have a disconnect while making an exposure, and are not able to return source to shielded position, you are to:

    a. Notify the Superintendent of Construction or Fabricating Company and close the operation.

    b. Recheck your radiation level boundries to make sure no one could receive an exposure in excess of 2 mr/hr., post guards to prevent anyone from entering disaster area, call your supervisor and Radiation Officer.

    c. Rope off a large area, notify everyone around that you have a disconnect, and put source back into exposure device.

12. In case of vehicle accident carrying radioactive isotopes you should:

    a. Call the insurance company stating damage done, then call your company so they can get another vehicle underway.

    b. Set our flags and flares as soon as possible to prevent hazards from oncoming vehicles, get out of the area of the accident so you will not receive an over exposure and call your Radiation Officer.

    c. Check survey meter to see if operable, try to establish location and condition of radioactive material. If in hazardous condition rope off as large an area as possible, send for police and send for or inform your Radiation Officer of accident and procedures taken.

13. Radiographers are required to maintain records for safety purpose such as:

    a. Film badge, dosimeter readings and occupational exposure history.

    b. Dosimeter readings, area survey reports, utilization record of source check in and out, storage survey.

    c. Film badge, dosimeter reading, delivery film tickets, quarterly inventory.

14. The unit of exposure is: a. the Roentgen b. Curie c. Rem

15. Overexposure to x-rays or gamma rays may cause damage to human_____.

    a. blood tissue b. skin c. internal organs d. all listed above

16. What is considered to be fatal dose if applied to the whole body in single exposure?

    a. 25,000 milliroentgens or more b. 125 to 150 roentgens c. 450 to 600 rems

17. When using x-ray machines the same safety requirements as needed for radioactive isotopes are to be used. True_____ False_____

18. X-ray machines are not radiation productive except when energized:

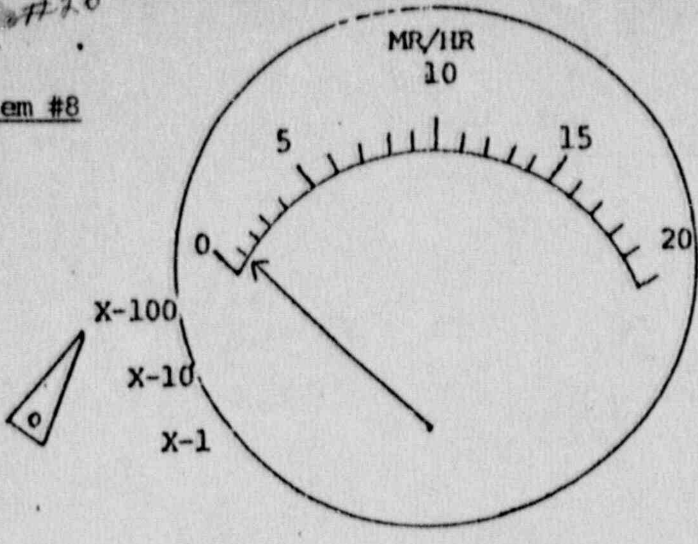
    True_____ False_____

19. Governing agencies for radiation control are only concerned about over exposure to personnel from by product materials.

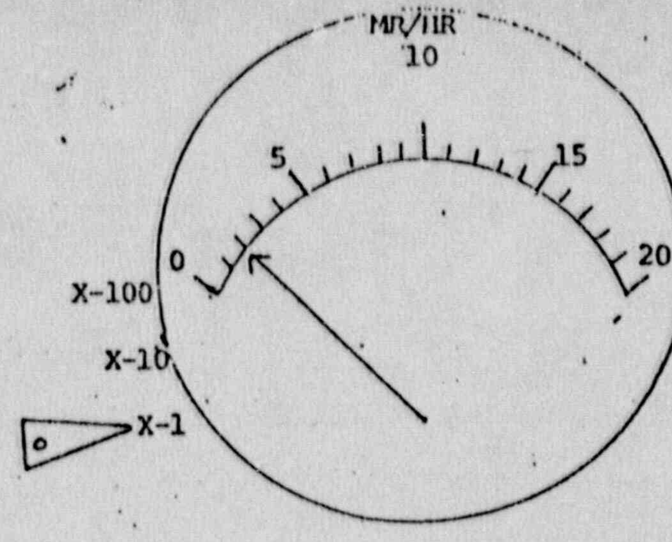
    True_____ False_____

#20

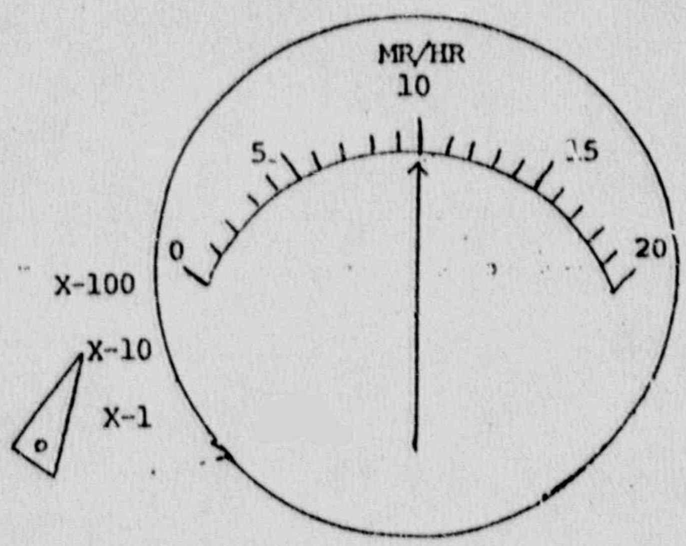
Item #8



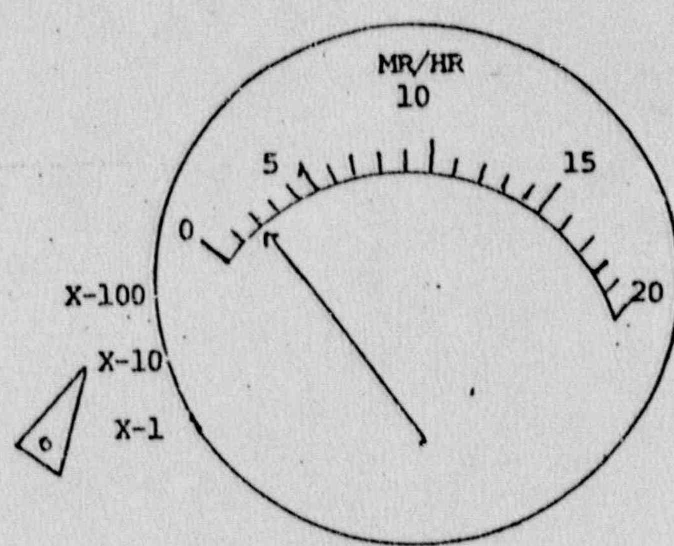
Answer ____________________



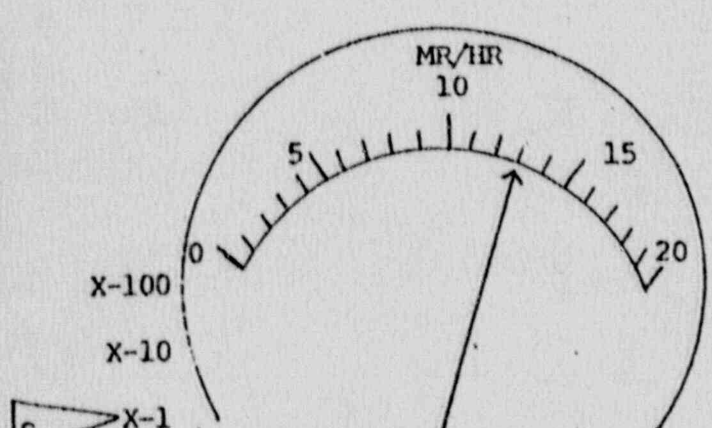
Answer ____________________



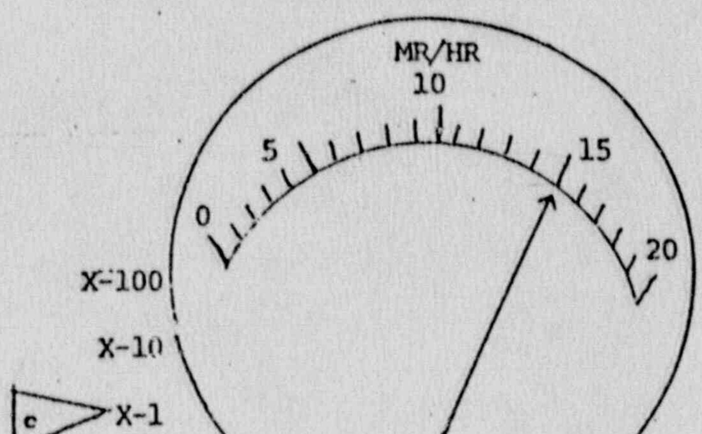
Answer ____________________



Answer ____________________



Answer ____________________



18-a

Answer ____________________

PANHANDLE NDT AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

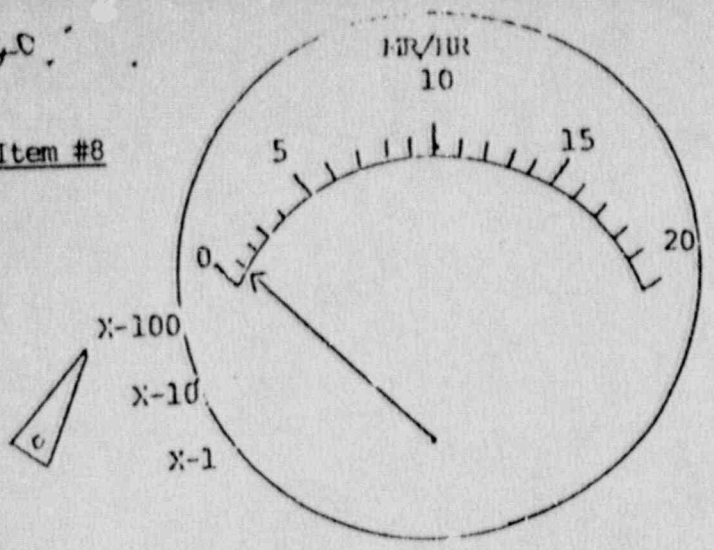
NORMAN RENEAU, Field Superintendent

Item #8

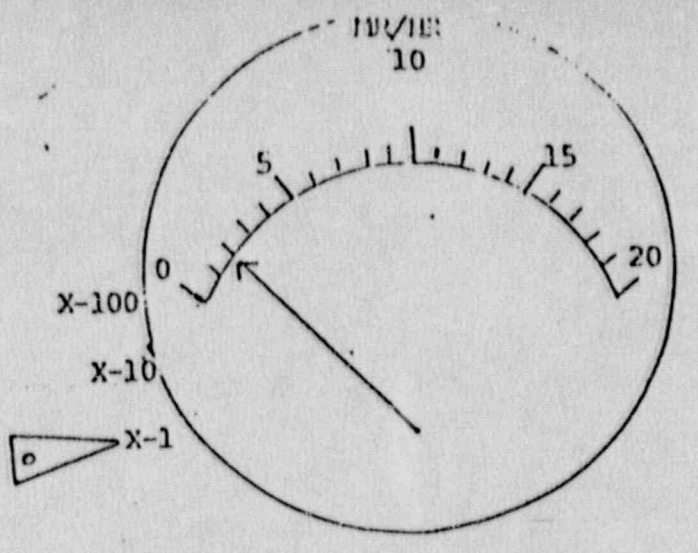
ANSWERS TO EXAMINATION #1

1. time, distance, and shielding
2. 3 mr
3. (c)
4. (b)
5. at the end of each day
6. (c)
7. 9a)
8. (c)
9. (c)
10. (c)
11. (b)
12. (c)
13. (b)
14. (c)
15. (d)
16. (a)
17. True
18. True
19. False
20. Answers on page 2

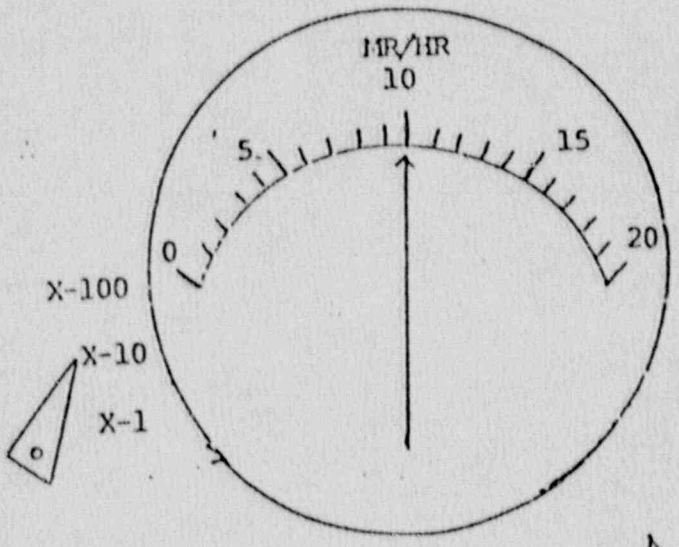
Item #8



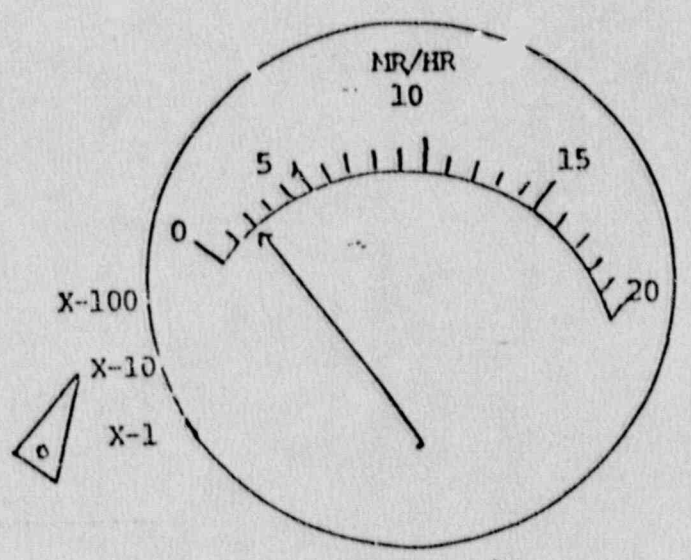
Answer 100 mR



Answer 2 mR



Answer 100 mR



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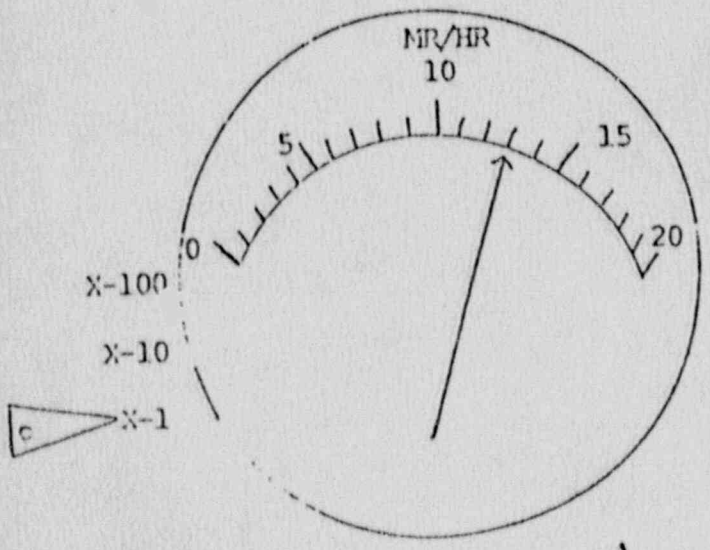
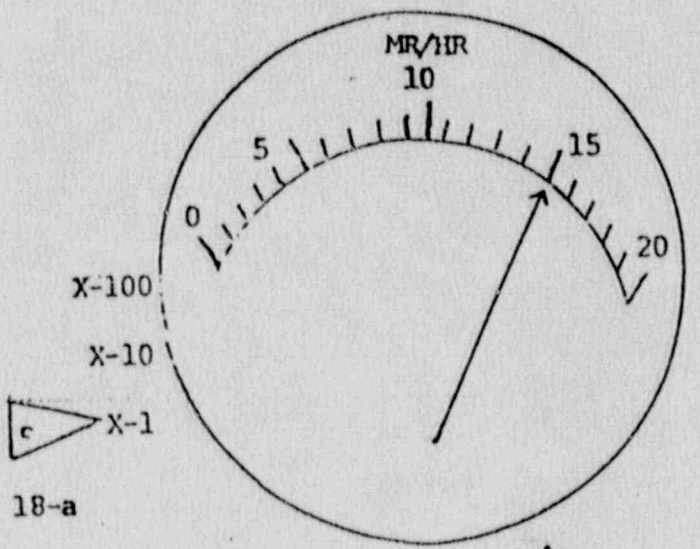


Answer 13 mR



18-a

Answer 15 mR

PANHANDLE N D T AND INSPECTION

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NORMAN RENEAU, Field Superintendent

Item #8

PRACTICAL EXAMINATION

LEVEL II - RADIOGRAPHER

CONDUCTED BY:_____ APPLICANT:_____

GRADED BY:_____ DATE:_____

SOURCE:_____

DESCRIPTION OF ITEM RADIOGRAPHED:_____

_____

_____

_____

_____

1. INDIVIDUAL FILM DENSITY_____

2. HAS A CALABRATED SURVEY METER_____

3. DOES AREA SURVEY AND ROPES OFF A M/R BOUNDRY_____

4. CORRECT PENETRAMETER_____

5. "F" MARKER ON PENETRAMETER

6. HAS A FILM BADGE AND CALABRATED DOSIMETER ON PERSON_____

7. CORRECT FILM ALIGNMENT_____

8. CLOCK NUMBER PLACEMENT_____

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NORMAN RENEAU, Field Superintendent

Item #8

9. CORRECT IDENTIFICATION_____

10. RADIOGRAPHIC INTERPRETATION_____

11. HAS A COPY OF PANHANDLE N.D.T. & INSPECTION, INC. EMERGENCY PROCEDURES ON RIG_____

12. HAS A DOSIMETER CHARGER ON RIG_____

13. DOES A LOCK OUT SURVEY AND CHECKS AFTER EACH EXPOSURE TO SEE THAT SOURCE HAS RETURNED TO SAFE POSITION_____

COMMENTS: 90% OF PREKNOWN INDICATIONS FOUND

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NORMAN RENEAU, Field Superintendent

Radiographer Safety Test

Item #8.2

1. What unit is used when measuring the activity of a radioactive source? (II, 2.0)

2. Is it possible for a person to survive radiation doses of 1000 rems? (III, 1.2)

3. How can shielding be used in the field, to check if a survey meter is operating properly? (V, 1.3)

4. What should you do if you suspect that your survey meter is not working properly during a job? (V, 1.3)

5. What part of the TRCR outlines radiographer's responsibilities? (VII, 4.3)

6. How is security maintained over radiation areas where entrance is possible by anyone? (VII, 4.3, 3)

7. When performing a daily equipment check, what do you look for when inspecting the portion of the pigtail that you can see? (VI, 2.0)

8. Among the records required at temporary job-sites are survey records for the job. What are the surveys which must be recorded? (VII, 4.3, 1 &16)

9. If someone enters your posted area while the source is exposed what must you do? (VII, 4.1, 2)

10. What part of the regulations covers a worker's rights? (VII, 4.2)

PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

Radiographer Safety Test

Item #8.2

11. What is the purpose of a company's operating procedures? (IX, 1.0)

12. Can failure to preform a survey after a radiograph lead to an over-exposure? Explain. (X, 1.0)

13. How does the rate at which you crank a source out and in affect your radiation exposure? (IV, 1.1)

14. What items should be checked on a survey meter to ensure that it is working properly before being taken into the field? (V, 1.3 & VII, 4.3, 7)

15. How often must survey meters, used in radiography, be calibrated? (V, 1.5 & VII, 4.3, 7)

16. If you are told not to wear a film or TLD badge on a radiographic job, what should you do? (VII, 4.2, 4)

17. What scale must pocket dosimeters have which are used for industrial radiography? (V, 2.1)

18. How far from the driver must the typical camera be placed when being transported? (VIII, 4.0, d)

19. If a survey meter breaks while performing a radiographic job, can the dosimeter be used to ensure that the source is in a safe shielded position in order to finish the job? Explain. (V, 1.0 & 7.3)

PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

Radiographer Safety Test

Item #8.2

20. What is the unit of radiation dose where biological effects are being considered? (I, 2.2)

21. What wording must be on labels placed on radiography cameras? (VII, 4.3, 13)

22. What do you look for when inspecting the source guide tube during a daily equipment check? (VI, 2.0)

23. What should you do if you lose or damage a film or TLD badge? (V, 2.3)

24. Does a company have any obligation to provide training to it's personnel in radiation safety? Explain. (VII, 4.2, 1)

25. Is it okay for a radiographer trainer to be developing film while a radiographer trainee is making radiographs, as long as the trainer is available to help if an emergency occurs? (VII, 4.3, 17)

26. Under what circumstances is it okay to perform radiography without a dosimeter and film or TLD badge? (VII, 4.3, 4)

27. What area on a job site must be posted with signs and what wording must be on the signs? (VII, 4.1, 2)

28. What type of supervision must be given to a radiographer trainee, by a radiographer trainer when the trainee uses the source? (VII, 4.3, 17)

29. In about half of the radiation overexposures, what did the radiographer fail to do? (X, 1.2)

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Radiographer Safety Test

Item #8.2

30. How do you read a survey meter? (V, 1.2)

31. Where on a person's clothing should a film or TLD badge be worn? (V, 2.3)

32. When inspecting the pigtail and drive cable connectors during a daily equipment check, what do you look for? (VI, 2.0)

33. In an emergency is it okay to leave the source so you can call for help? (IX, 2.2)

34. Can radiation area and high radiation area signs be posted anywhere along the appropriate boundry? (VII, 4.3, 2)

35. Which one of man's physical senses can detect radiation? (IX, 1.0)

36. What is the general formula for calculating radiation dose? (I, 2.3)

37. When must you lock a camera? (VII, 4.3, 5)

38. When is the only time you are allowed to perform a radiograph without a survey meter? (VII, 4.3, 1)

39. What should you do, while working, if you notice that your pocket dosimeter is off-scale? (V, 2.1, 5)

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Radiographer Safety Test

Item #8.2

40. Using a long set of control cables and stretching them out straight, is an example of which radiation safety principle? (IV, 1.3)

41. What is the maximum dose allowed to anyone in an unrestricted area? (VII, 4.1, 2)

42. What are the training requirements for a radiographer trainee? (VII, 4.3, 14)

SHOW YOUR FORMULA

43. Using 75 curies of Ir-192 with a collimator, and making 5 shots at 2 minutes each, where is the 2 MR boundry?

44. Using 95 curies of Ir-192 with a collimator, and making 20 shots at 15 seconds each, what will the technicians' dosimeter read (assuming it was on zero at the beginning), when he is finished, if he is 25 feet from the source?

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Radiographer Safety Test

Answer Sheet

Item #8.2

1. Curie
2. Yes, if the dose is spread over several weeks.
3. Put the meter behind shielding and see if the reading drops.
4. Stop work until you get a new one.
5. Part 31, (NRC Part 34)
6. By visual surveillance over the area.
7. Frayed or broken wires, birdcaging, or crooks.
8. Survey of restricted area boundry, lock-out surveys, vehicle surveys and any other surveys specified in your company's operating procedures.
9. Crank the source in and tell them that they should keep away.
10. Part 22 (NRC Part 19)
11. To detail procedures which are to be followed so that no excessive radiation exposure is received.
12. Yes, if a survey is not preformed you don't know if the source is in a shielded position or not.
13. The faster you crank the source the less time it is out of the shielded position and therefore the less your radiation dose will be.
14. Batteries, calibration date, and see if it reads radiation.
15. Every 6 months (NRC every 3 months).
16. Notify the RSO. If the problem is not resolved notify the regulatory agency.
17. 0 to 200 mR.
18. At least 2' from the driver.
19. No. The dosimeter measures dose and cannot be used to replace a survey meter. A new meter must be obtained before continuing work.
20. Rems.

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NORMAN RENEAU, Field Superintendent

Radiographer Safety Test

Answer Sheet

Item #8.2

21. Caution, Radioactive Material, Do Not Handle, Notify Civil Authorities.

22. Crimps, dents, fraying and dirt.

23. Notify RSO and have dose calculated. Do not return to work until RSO approves and you've been issued a new film or TLD badge.

24. Yes, they must provide training to allow a person to protect themselves from radiation exposure.

25. No. The trainer must be present and watching the trainee.

26. It is never okay to perform radiography without personnel monitoring.

27. Radiation area must be posted "Caution, Radiation Area" and high radiation area must be posted "Caution, High Radiation Area".

28. Trainer must be present, watching the trainee and able to give assistance if it is needed.

29. Perform a proper radiation survey.

30. Multiply the number the needle is pointing to times the number that the range selector is pointing to.

31. Between the waist and neck.

32. For wear and to see if they are bent.

33. No. You never leave the source unattended, especially during an emergency.

34. Yes, as long as they are visible to anyone approaching the area.

35. None of man's senses can detect radiation.

36. DOSE = DOSE RATE X TIME

37. After each exposure, before moving the camera, before storing the camera and at all times when not under surveillance of a radiographer.

38. Never.

39. Stop work, notify your RSO and have your badge sent in for processing.

40. Distance.

41. 2 mrem in any one hour, or 100 mrem in any 7 consecutive days.

42. Must be instructed in the topics in TRCR Appendix 31A, the company's operating and emergency procedures and must pass a test on these subjects.

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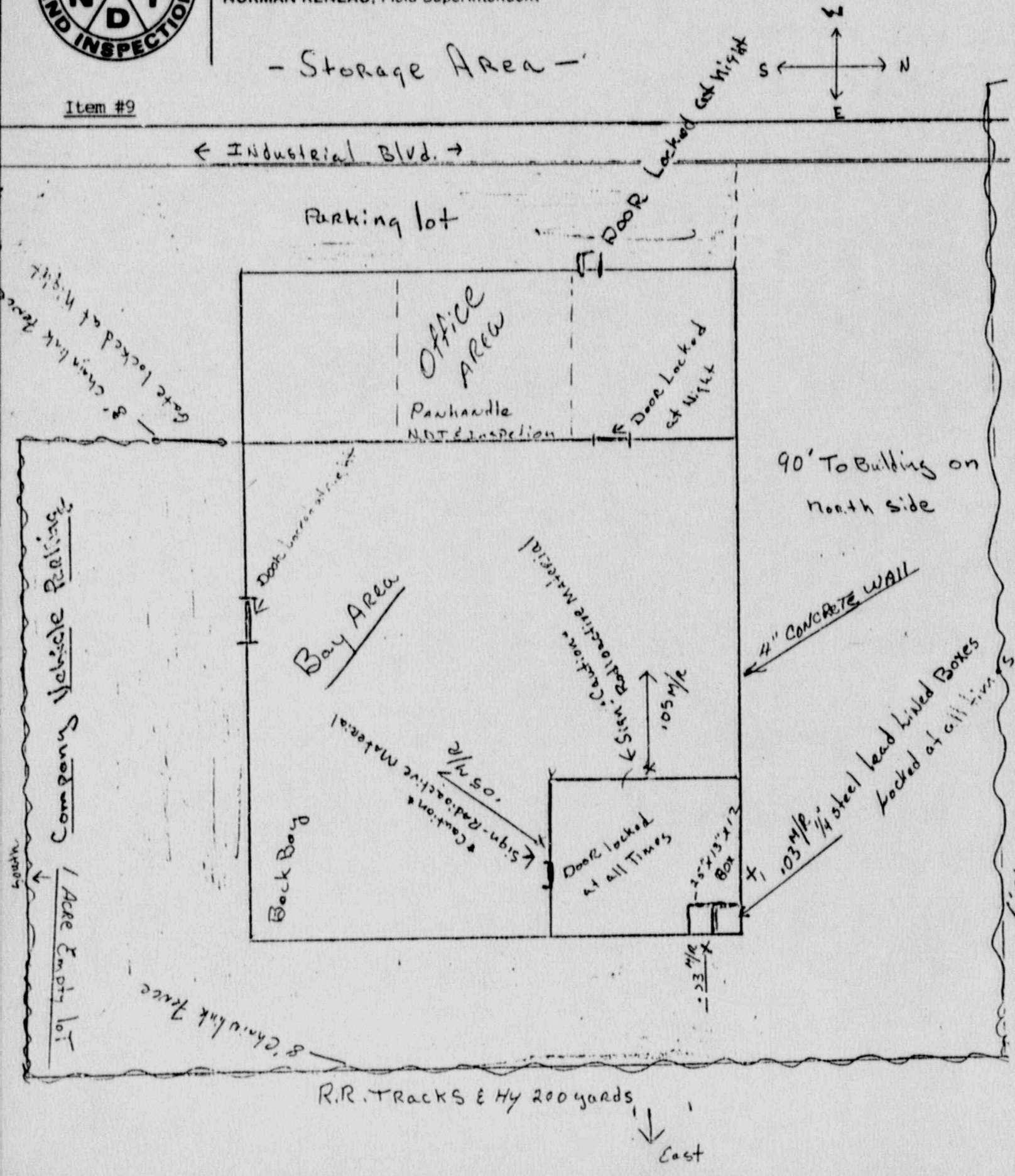
Item #9



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NORMAN RENEAU, Field Superintendent

EMERGENCY PROCEDURES

Item #10.4.7

2.7 Remain at your post until relieved by authorized personnel of Panhandle N.D.T. of Borger, Texas.

2.8 For all other emergencies, notify the office and/or any of the following individuals:

Orvil Couch - Radiation Safety Officer
(806) 273-2733 - Borger, Texas

Norman Reneau - Deputy Radiation Safety Officer
(806) 273-3633 - Borger, Texas

3.0 Instructions contained in the above text shall constitute the rules of safety regarding radiation, of Panhandle N.D.T. and Inspection of Borger, Texas. Willful disregard of the rules shall be reason for immediate dismissal. It is the responsibility of every employee to insist that safety rules be followed.

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NORMAN RENEAU, Field Superintendent

Item #10.4.10

RADIOGRAPHY EXPOSURE DEVICE
DAILY INSPECTION REPORT

DATE_____

A. EXPOSURE DEVICE

Camera Model_____Serial #_____

1. Radiation level top_____Bt._____Ft._____Br._____
   Left side_____Rt.Side_____
2. Condition of Safety Plugs 1._____2._____
3. Condition of Locking Device on Camera_____
4. Condition of Lock on Storage Box in Dark Room_____
5. Condition of Pigtail on Source_____
6. Alignment of "S" Tube w/exit port_____
7. Condition of Handle_____
8. Proper Labeling_____

B. SOURCE TUBE

1. Clean Source Tube and Check for Damage_____
2. Check Connections for Damage and Wear_____
3. Clean Source Stop and Check for Damage and Wear_____

C. CONTROL CABLES AND DRIVE MECHANISM

1. Clean Drive Mechanism and check for Wear_____
2. Clean Drive Cable and Check for Wear_____
3. Lubricate and Reassemble_____
4. Check all Connections on Drive Cable and Crank You Device_____

_____

(Make note of conditions)_____

_____

PANHANDLE N D T AND INSPECTION

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

NDE PERSONNEL CERTIFICATION PRACTICE

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NORMAN RENEAU, Field Superintendent

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PANHANDLE N D T AND INSPECTION

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

NDE PERSONNEL CERTIFICATION PRACTICE

1.0 PERSONNEL CERTIFICATION

1.1 This document describes Panhandle N.D.T. Standard Practice for the control and administration of Nondestructive Examination (NDE) Personnel training, testing, qualification and certification. This practice is in compliance with the ASME Codes, Sections I & VIII, & SNT-TC-1A (1988).

1.2 This practice has been prepared to establish the requirements for the qualification and certification of NDE Personnel whose specific jobs require appropriate knowledge of the technical principle underlying the nondestructive examinations they perform, witness, or evaluate.

1.3 This practice includes three levels of qualification - Level I, II, & III - for the nondestructive test methods on (RT) (PT) (MT) (UT). In the process of being qualified an individual will be considered as a trainee.

2.0 QUALIFICATIONS

2.1 NDT Level I - shall be qualified to properly perform specific calibrations, tests, and evaluations, in accordance with written instructions and to record the results. He shall receive the necessary direction from a Level II or III.

2.2 NDT Level II - shall be qualified to set up and calibrate equipment and to interpret and evaluate results with respect to applicable codes, standards and specifications. He shall be thoroughly familiar with the scope and limitation of the NDE method and shall exercise assigned responsibility for on-the-job training and guidance of trainees and Level I personnel. He shall be able to prepare written instructions and to organize and report NDE investigations.

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

2.3 NDT Level III - shall be capable and responsible for establishing techniques; interpreting results, standards and specifications; and designing the particular examination method and technique to be used. He shall be responsible for the complete NDE operation he is qualified for and assigned to. He shall be capable of evaluating results as required by existing codes, standards and specifications.

2.4 He shall have sufficient practical background in applicable materials, fabrication and product technology to establish techniques and to assist the design engineer in establishing acceptance criteria, if not available. He shall be responsible for the training, examination, qualification and certification of Level I and II examiners.

3.0 EDUCATION - TRAINING - EXPERIENCE

3.1 Personnel considered for certification under this practice shall have sufficient education, training and experience to ensure an understanding of the principles and procedures of those areas of testing in which they are being considered.

3.2 NDT Level I & II - Table "A" lists the minimum training and experience factors. The experience factor in months is based on a normal 40-hour work week (175 hours per month). When Nondestructive examinations are performed in excess of a 40-hour work week, credit may be based on total hours.

3.3 NDT Level III - Graduate of a 4-year accredited engineering or science univeristy with a degree in engineering or science, and one year's experience in NDE in an assignment comparable to that of a NDE Level II in the applicable test method.

OR

3.4 Completion with a passing grade of at least two years of engineering or science study at an accredited university or technical school, plus two years' experience at a certified NDE Level II in the applicable test method.

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OR

3.5 Four years experience as a certified Level II in the applicable test method.

4.0 TRAINING PROGRAM

4.1 A level III examiner shall be assigned the responsibility for establishing the training, testing, qualification, and certification program for Panhandle N.D.T. The training program shall include sufficient examination questions to ensure that the training material has been comprehended.

4.2 Course training materials are identified in SNT-TC-1A (1988) Tables 1A, 1B, 1C and 1D. Technical information from SNT-TC-1A (1988) Tables 11A, 11B, 11C and 11D is also available. This information will be used by the Level III, as appropriate in the training programs for the Level I and II.

5.0 EXAMINATIONS - PHYSICAL

5.1 All Level I, II and III examiners shall be given an examination to assure natural or corrected near distance acuity in at least one eye such that the examiner is capable of reading a minimum of Jaeger 2 at a distance of not less than 12" (30.6 CM) on a standard Jaeger chart or equivalent (Ortho-Rater 8). The examination shall be conducted by qualified personnel on an annual basis. Examination results shall be maintained on file for the period of certification. Examiners will also be tested to assure 20-30 far distance visibility in accordance with the Snellen test method or equivalent.

5.2 Examiners should also be capable of distinguishing and differentiating contrast between colors used in the method for which qualified.

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PANHANDLE N D T AND INSPECTION

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

6.0 EXAMINATION - WRITTEN - Level I and II

6.1 GENERAL - A general examination shall be given to cover basic test principles applicable to the NDE method and level of qualification. The suppliments A (RT), B (MT), C (UT) and D (PT) to SNT-TC-1A shall be used for selecting appropriate questions for the NDE method and level of qualification.

6.2 SPECIFIC - a specific examination shall be given to cover the equipment, operating procedures and test techniques that the applicant may encounter in conducting his normal duties for Panhandle N.D.T. The examination shall cover the codes, specifications, and acceptance criteria for NDE procedures used by Panhandle N.D.T.

6.3 The written examination shall be a closed-book examination.

7.0 EXAMINATION DEMONSTRATION - LEVEL I AND II

7.1 PRACTICAL - Demonstration to the satisfaction of the Level III, the familiarity necessary to operate the Panhandle N.D.T. equipment and to analyze the resultant information to the degree required.

7.2 At least one selected specimen shall be tested and the results of the test analyzed by the applicant. A description of the specimen, test procedure, including test points, and results of examination shall be documented and filed in the applicant's NDE qualification file.

8.0 EXAMINATION QUESTIONS - LEVEL I AND II

8.1 Level I and II - The written examination shall include the following minimum number of questions:

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

METHOD	GENERAL LEVEL		SPECIFIC LEVEL	
	I	II	I	II
RT	40	40	20	20
MT	30	30	20	15
UT	40	40	20	20
PT	30	30	20	15

8.2 Practical proficiency shall be demonstrated in performing the applicable NDE examinations and limited evaluations of results obtained on one or more samples approved by the Level III. At least 10 different check points requiring understanding of test variables and Panhandle N.D.T. procedure requirements will be included.

9.0 GRADING

9.1 The percentile weight factor will be applied to percentage grades of the various examinations. The percentile weights assigned are identified below for the various examinations. The total of the percentile weights shall be equal to 1.0.

	Level I	Level II
General	0.3	0.4
Specific	0.3	0.3
Practical	0.4	0.3

The composite grade (G_C) will be determined as follows:

$$G_C = (G_g \times W_g) + (G_s \times W_x) + (G_p \times W_p)$$

G_g = actual grade on General examination

W_g = percentile weight on General examination

G_s = actual grade on Specific examination

W_s = percentile weight on Specific examination

G_p = actual grade on Practical demonstration

W_p = percentile weight on Practical demonstration

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PERSONNEL CERTIFICATION

9.2 RESULTS - Examinations administered for NDE Level I & II qualifications require a composite grade of 80% or greater; in addition, each grade for the General, Specific and Practical, shall be 70% or greater. Test objects shall be used in the practical examination and at least 90% of the known indications should be found.

10.0 RE-EXAMINATION

10.1 Applicants failing the required grade shall wait at least 30 days and will receive additional training in the areas of failure.

11.0 CERTIFICATION

11.1 Applicants as Level I & II examiners may be certified by the responsible Level III examiner after satisfactory completion of the qualification test and physical examination requirements in accordance with this practice. The record of certification shall be documented on an NDE Examiner Certification Record and shall include:

Name of Certified Individual
Level of Certification and Test Method
Statement Indicating Satisfactory Completion of Training in Accordance with this NDE Personnel Certification Practice
Results of the Physical Examination
Composite Grade(s) if Examinations were administered
Date of Certification and/or Re-certification
Signature of Certifying Level III

11.2 Orvil Couch of Panhandle N.D.T. will maintain the following records in the examiner's file:

Copies of Current Examinations and Grades for all previous examinations and descriptions of practical test objects.

PANHANDLE N D T AND INSPECTION

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PERSONNEL CERTIFICATION

12.0 CERTIFICATI[illegible] L III

12.1 It is P[illegible]andle N.D.T. practice to not normally require that applicants for Level III examiners be administered General, Specific, and Practical Examinations. Panhandle N.D.T. waives these examinations and may certify an individual as a Level III examiner based on demonstrated ability, achievement, experience and education as identified in this practice. Documented evidence supporting this certification may be in letter form and shall be certified by the Engineering Vice President.

13.0 RECERTIFICATION LEVEL I, II AND III

13.1 Level I, II, and III NDE examiners shall be recertified at least once every three years in accordance with the following:

13.2 Evidence of continuing satisfactory performance

OR

13.3 Re-examination of continuing satisfactory performance

OR

13.4 Re-examination in accordance with this practice.

13.5 The Level III examiner may require that NDE methods for a six-month continuous period, their certification shall be voided and require recertification in accordance with this NDE Personnel Certification Practice.

14.0 TERMINATION OF SERVICE

14.1 All NDE certifications shall be terminated when an NDE examiner leaves Panhandle N.D.T. employment.

PANHANDLE N D T AND INSPECTION

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PERSONNEL CERTIFICATION

15.0 RECERTIFICATION - CONDITIONAL

15.1 If Panhandle N.D.T. employs a previously certified, by another employer to SNT-TC-1A (1988) NDE examiner, the Level III examiner shall review the records and at his discretion, the examiner may be recertified provided the following conditions are met:

15.2 Proof of prior certification is available.

15.3 The examiner was working in the capacity to which he had been certified within six months of his termination.

15.4 The examiner is being recertified within six months of his termination.

16.0 SUBCONTRACTING

16.1 It shall be at the option of Panhandle N.D.T. to engage the services of an outside agency to provide NDE Level III services. Any such agency shall meet at least the minimum requirements of the NDE Personnel Certification Practice. Panhandle N.D.T. shall retain the responsibility for certification.

16.2 It shall be the option of Panhandle N.D.T. to engage an outside agency to provide qualification services for NDE personnel. When this option is applied, the company will audit the agency to show the training, Personnel Certification Practice.

17.0 PERSONNEL RE-EXAMINATION

17.1 The employer shall in his written practice establish rules covering the duration of interrupted services which will require re-examination and re-certification. With 6 months interrupted service at maximum, NDE personnel may be re-examined any time at the discretion of the employer and have their certification extended or revoked.

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-1

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

PERSONNEL RECORDS CHECK LIST

As Per Recommended Practice No. SNT-TC-1A, December 1988 Edition

NAME: _____

ITEM NO.	DESCRIPTION OF RECORDS	INCLUDED IN THESE RECORDS YES	NO
1.	Level of Certification & Test Method	_____	_____
2.	Education and Experience	_____	_____
3.	Statement of Training in Accordance with NTSI Written Procedures	_____	_____
4.	Current Annual Eye Examination	_____	_____
5.	Copies of Current Examinations:		
	General Examination.	_____	_____
	Specific Examination	_____	_____
	Practical Examination	_____	_____
6.	90% of the Pre-known Defects Found by Technician on Practical Examination	_____	_____
7.	Description of Practical Test Objects	_____	_____
8.	Percentile Weights Assigned to Each Exam	_____	_____
9.	Composite Grade Meets Minimum Requirements . . .	_____	_____
10.	Date of Certification Shown on Records	_____	_____
11.	Date for Recertification	_____	_____
12.	Employment Date and Assignment Date to NDT . . .	_____	_____
13.	Signature of Certifying Individual & His Level of Certification	_____	_____

ITEMS CHECKED "NO" GIVE REASON & DATES THESE WILL BE CLEARED:

Item #	Reason	Date to be cleared

The above items on this check list have been inspected and found to be in accordance with requirements of SNT-TC-1A, '88 edition by the undersigned: _____

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-2

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

LEVEL OF CERTIFICATION AND TEST METHOD

THIS CERTIFIES THAT _____

Has successfully completed the *REQUIRED TRAINING, EXPERIENCE* set forth in Panhandle N.D.T. & Inspection inc. written procedures in accordances with the recommended practices of SNT-TC-1A (1988).

_____ IN _____
(LEVEL) (TEST METHOD)

In Witness Thereof. Our Signatures

_____ _____
APPLICANT AUTHORIZED EXAMINER

EXAMINATION	TOTAL POINTS	% WT	SCORE
GENERAL			
SPECIFIC			
PRACTICAL			
		COMPOSITE GRADE	

GIVEN UNDER MY HAND THIS

MONTH _____ DAY _____ YEAR _____

BY _____

TITLE _____

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-3

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

EDUCATION AND EXPERIENCE

RESUME

NAME: _____ DATE: _____

PANHANDLE N D T AND INSPECTION

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-4

PANHANDLE N D T AND INSPECTION

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

NDE EXAMINER CERTIFICATION RECORD

		RADIOGRAPHY		
		I	II	III
PRIOR CERTIFICATION				
STATEMENT OF SATISFACTORY COMPLETION OF TRAINING				
DATE OF CERTIFICATION				
EXAM COPIES	GENERAL / DATE			
	SPECIFIC / DATE			
	PRACTICAL / DATE			
EXAM SCORES	GENERAL / % wts.			
	SPECIFIC / % wts.			
	PRACTICAL / % wts.			
	COMPOSITE			
CERTIFIED BY / LEVEL				
EYE EXAMINATION				
RECERTIFICATION (REQUIRED ON)	RADIOGRAPHY			
	ULTRASONICS			
	MAGNETIC PARTICLE			
	LIQUID PENETRANT			

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-5

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P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

NDE EXAMINER CERTIFICATION RECORD

		MAGNETIC PARTICLE		
		I	II	III
PRIOR CERTIFICATION				
STATEMENT OF SATISFACTORY COMPLETION OF TRAINING				
DATE OF CERTIFICATION				
EXAM COPIES	GENERAL / DATE			
	SPECIFIC / DATE			
	PRACTICAL / DATE			
EXAM SCORES	GENERAL / % wts.			
	SPECIFIC / % wts.			
	PRACTICAL / % wts.			
	COMPOSITE			
CERTIFIED BY / LEVEL				
EYE EXAMINATION				
RECERTIFICATION (REQUIRED ON)	RADIOGRAPHY			
	ULTRASONICS			
	MAGNETIC PARTICLE			
	LIQUID PENETRANT			

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-6

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

NDE EXAMINER CERTIFICATION RECORD

		ULTRASONICS		
		I	II	III
PRIOR CERTIFICATION				
STATEMENT OF SATISFACTORY COMPLETION OF TRAINING				
DATE OF CERTIFICATION				
EXAM COPIES	GENERAL / DATE			
	SPECIFIC / DATE			
	PRACTICAL / DATE			
EXAM SCORES	GENERAL / % wts.			
	SPECIFIC / % wts.			
	PRACTICAL / % wts.			
	COMPOSITE			
CERTIFIED BY / LEVEL				
EYE EXAMINATION				
RECERTIFICATION (REQUIRED ON)	RADIOGRAPHY			
	ULTRASONICS			
	MAGNETIC PARTICLE			
	LIQUID PENETRANT			

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-7

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

NDE EXAMINER CERTIFICATION RECORD

		LIQUID PENETRANT		
		I	II	III
PRIOR CERTIFICATION				
STATEMENT OF SATISFACTORY COMPLETION OF TRAINING				
DATE OF CERTIFICATION				
EXAM COPIES	GENERAL / DATE			
	SPECIFIC / DATE			
	PRACTICAL / DATE			
EXAM SCORES	GENERAL / % wts.			
	SPECIFIC / % wts.			
	PRACTICAL / % wts.			
	COMPOSITE			
CERTIFIED BY / LEVEL				

EYE EXAMINATION				
RECERTIFICATION (REQUIRED ON)	RADIOGRAPHY			
	ULTRASONICS			
	MAGNETIC PARTICLE			
	LIQUID PENETRANT			

PANHANDLE NDT AND INSPECTION

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NORMAN KENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-8

PANHANDLE NDT AND INSPECTION

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

LEVEL II -RT-
VISION TEST

EMPLOYEE _____ AGE _____

ADDRESS _____
STREET CITY STATE ZIP

DISTANT VISION:

UNCORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

CORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

NEAR VISION:

UNCORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

CORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

COLOR VISION:
(REQUIRED)

RESULTS _____

_____

REMARKS: _____

_____

APPLICANT HAS SUCCESSFULLY PASSED EXAMINATION FOR:

JAEGER '2' OR EQUIVALENT — YES _____ NO _____
DISTANT VISION — YES _____ NO _____
NEAR VISION — YES _____ NO _____
COLOR VISION — YES _____ NO _____

EXAMINER: _____ DATE: _____

SIGNATURE OF VISION TEST APPLICANT

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-9

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

LEVEL III -RT-
VISION TEST

EMPLOYEE _____ AGE _____

ADDRESS _____
STREET CITY STATE ZIP

DISTANT VISION:

UNCORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

CORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

NEAR VISION:

UNCORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

CORRECTED
RIGHT EYE _____/_____
LEFT EYE _____/_____

COLOR VISION: (REQUIRED)
RESULTS _____

REMARKS: _____

APPLICANT HAS SUCCESSFULLY PASSED EXAMINATION FOR:

JAEGER '2' OR EQUIVALENT	YES _____	NO _____
DISTANT VISION	YES _____	NO _____
NEAR VISION	YES _____	NO _____
COLOR VISION	YES _____	NO _____

EXAMINER: _____ DATE: _____

SIGNATURE OF VISION TEST APPLICANT _____

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

FORM NDE-10

1203 INDUSTRIAL BLVD.
P. O. BOX 1474
BORGER, TEXAS 79007
806-273-2733

RECERTIFICATION OF N.D.T. PERSONNEL

DATE _____

TO _____

SUBJECT: RECERTIFICATION OF NDT PERSONNEL

BY COPY OF THIS LETTER, YOU ARE HEREBY ADVISED OF YOUR RECERTIFICATION AS A *LEVEL* _____ IN _____ AS ALLOWED BY Panhandle N.D.T. & Inspection, Inc. WRITTEN PROCEDURES AND IN ACCORDANCE WITH SNT-TC-1A, Dec. 1988 EDITION, PARAGRAPH 9.7.1, SUB. PARAGRAPH (e).

RECERTIFICATION IS REQUIRED AT LEAST ONCE EVERY THREE YEARS OF SERVICE AT Panhandle N.D.T. & Inspection, Inc. BY CONTINUED JOB PERFORMANCE IN A SATISFACTORY MANNER OR BY RE-EXAMINATION.

IN ADDITION, NDT PERSONNEL MAY BE RE-EXAMINED ANYTIME AT THE DISCRETION OF Panhandle N.D.T. & Inspection, Inc. MANAGEMENT AND HAVE THEIR CERTIFICATION EITHER EXTENDED OR REVOKED.

VERY TRULY YOURS,

Panhandle N.D.T. & Inspection, Inc.

_____

_____

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING

Recommended Practice No. SNT-TC-1A • December 1988 Edition

FOREWORD

The recommended practice contained herein establishes the general framework for a qualification and certification progam. In addition, the document provides recommended educational, experience, and training requirements for the different test methods. Supplementary documents include question and answer lists which may be used in composing examinations for nondestructive testing personnel.

Inquiries related to this recommended practice should be directed to the Chairman of the Personnel Qualification Division, at the following address:

The American Society for Nondestructive Testing
4153 Arlingate Plaza, Caller #28518
Columbus, Ohio 43228-0518

CONTENTS

PANHANDLE N D T AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

RECOMMENDED PRACTICE NO. SNT-TC-1A

PERSONNEL QUALIFICATION AND CERTIFICATION IN NONDESTRUCTIVE TESTING

1. SCOPE

1.1 It is recognized that the effectiveness of nondestructive testing (NDT) applications depends upon the capabilities of the persons who are responsible for, and perform, nondestructive testing. This Recommended Practice has been prepared to establish guidelines for the qualification and certification of nondestructive testing personnel whose specific jobs require appropriate knowledge of the technical principles underlying the nondestructive tests they perform, witness, monitor, or evaluate.

1.2 This document provides guidelines for the establishment of a qualification and certification program.

1.3 These guidelines have been developed by the American Society for Nondestructive Testing to aid employers in recognizing the essential factors to be considered in qualifying employees engaged in any of the test methods listed in Par. 3.

1.4 It is recognized that these guidelines may not be appropriate for certain employers' circumstances and/or applications. In developing a written practice as required in Par. 3, the employer shall review the detailed recommendations presented herein, and shall modify them as necessary to meet particular needs.

2. DEFINITIONS

2.1 Terms included in this document are defined as follows:

(1) Qualification — Demonstrated skill, training, knowledge and experience required for personnel to properly perform the duties of a specific job.

(2) Certification — Written testimony of qualification.

(3) Certifying Agency — The employer of the personnel being certified.

(4) Recommended Practice — A set of guidelines to assist the employer in developing uniform procedures for the qualification and certification of nondestructive testing personnel to satisfy the employer's specific requirements.

(5) Employer — The corporate, private, or public entity which employs personnel for wages, salary, fees, or other considerations.

(6) Training — The program developed to impart the knowledge and skills necessary for qualification.

3. NONDESTRUCTIVE TEST METHODS

3.1 Qualification and certification of nondestructive testing personnel in accordance with this Recommended Practice is applicable to each of the following methods:

(1)	Radiographic Testing	(RT)
(2)	Magnetic Particle Testing	(MT)
(3)	Ultrasonic Testing	(UT)
(4)	Liquid Penetrant Testing	(PT)
(5)	Eddy Current Testing	(ET)
(6)	Neutron Radiographic Testing	(NRT)
(7)	Leak Testing	(LT)
(8)	Acoustic Emission	(AE)

4. LEVELS OF QUALIFICATION

4.1 There are three basic levels of qualification. These levels may be further subdivided by the employer for specific situations where additional levels of skills and responsibilities are deemed necessary.

4.2 While in the process of being qualified and certified to NDT Level I, an individual should be considered a Trainee. A Trainee should work with a certified individual and shall not independently conduct any tests, interpret or evaluate the results of a test, or report test results.

December 1988 Edition

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PERSONNEL CERTIFICATION

4.3 The three basic levels of qualification are as follows:

(1) NDT LEVEL I — An NDT Level I individual should be qualified to properly perform specific calibrations, specific tests, and specific evaluations for acceptance or rejection determinations according to written instructions and to record results. The NDT Level I shall receive the necessary instruction or supervision from a certified NDT Level II or III individual.

(2) NDT LEVEL II — An NDT Level II individual should be qualified to set up and calibrate equipment and to interpret and evaluate results with respect to applicable codes, standards, and specifications. The NDT Level II should be thoroughly familiar with the scope and limitations of the methods for which the individual is qualified and should exercise assigned responsibility for on-the-job training and guidance of trainees and NDT Level I personnel. The NDT Level II should be able to prepare written instructions, and to organize and report the results of nondestructive tests.

(3) NDT LEVEL III — An NDT Level III individual should be capable of establishing techniques and procedures; interpreting codes, standards, specifications, and procedures; and designating the particular test methods, techniques, and procedures to be used. The NDT Level III should be responsible for the NDT operations for which qualified and to which assigned, and should be capable of interpreting and evaluating results in terms of existing codes, standards, and specifications. The NDT Level III should have sufficient practical background in applicable materials, fabrication, and product technology to establish techniques and to assist in establishing acceptance criteria where none are otherwise available. The NDT Level III should have general familiarity with other appropriate NDT methods, and should be qualified to train and examine NDT Level I and Level II personnel for certification.

5. WRITTEN PRACTICE

5.1 The employer shall establish a written practice for the control and administration of NDT personnel training, examination, and certification.

5.2 The employer's written practice shall describe the responsibility of each level of certification for determining the acceptability of materials or components in accordance with the applicable codes, standards, specifications, and procedures.

6. EDUCATION, TRAINING, AND EXPERIENCE REQUIREMENTS FOR INITIAL QUALIFICATION

6.1 Personnel considered for certification in nondestructive testing shall have sufficient education, training, and experience to ensure understanding of the principles and procedures of those areas of testing in which they are being considered for certification.

6.2 Documented training and/or experience gained in positions and activities equivalent to those of Levels I, II, and/or III prior to establishment of the employer's written practice may be considered in satisfying the criteria of Par. 6.3.

6.3 To be considered for certification, a candidate should satisfy one of the following criteria for the applicable NDT level:

6.3.1 NDT Levels I and II

Table 6.3.1 lists the recommended training and experience factors to be considered by the employer in establishing written practices for initial qualification of Level I and Level II individuals.

6.3.2 NDT Level III

(1) Have graduated from a minimum four-year college or university curriculum with a degree in engineering or science plus one years experience in nondestructive testing in an assignment comparable to that of an NDT Level II in the applicable test method(s),

or:

(2) Have completed with passing grades at least two years of engineering or science study at a university, college, or technical school plus two years experience in assignments at least comparable to that of NDT Level II in the applicable test method(s),

or:

(3) Have four years experience in an assignment at least comparable to that of an NDT Level II in the applicable testing method(s).

When the individual is qualified by examination, the above requirements may be partially replaced by experience as a certified NDT Level II, or in assignments at least comparable to NDT Level II, in other methods listed in Par. 3 of this Recommended Practice as defined in the employer's written practice.

7. TRAINING PROGRAMS

7.1 Personnel being considered for certification should complete sufficient organized training to become thoroughly familiar with the principles and practices of the specified test method related to the level of certification desired and applicable to the practices to be used and the products to be tested.

7.2 The training program should include sufficient examinations to assure that the necessary information has been comprehended.

7.2.1 Recommended training course outlines for Levels I and II personnel and recommended references which may be used as technical source material are appended as follows:

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

Test Method	Training Guide Table Number	Reference Table Number
Radiographic Testing	I-A	II-A
Magnetic Particle Testing	I-B	II-B
Ultrasonic Testing	I-C	II-C
Liquid Penetrant Testing	I-D	II-D
Eddy Current Testing	I-E	II-E
Neutron Radiographic Testing	I-F	II-F
Leak Testing	I-G	II-G
Acoustic Emission	(In course of preparation)	

8. EXAMINATIONS

8.1 An NDT Level III individual or his designated representative should administer and grade examinations. The examinations to verify physical and technical qualifications should consist of the following:

8.1.1 Physical

(1) The examination should assure natural or corrected near-distance acuity in at least one eye such that the applicant is capable of reading a minimum of Jaeger Number 2 or equivalent type and size letters at a distance of not less than 12 inches (30.5 cm) on a standard Jaeger test chart. The ability to perceive an Ortho-Rater minimum of 8 or similar test pattern is also acceptable.

(2) The examination should demonstrate the capability of distinguishing and differentiating contrast between colors used in the method.

(3) The examination should demonstrate additional physical capabilities as required by the employer.

(4) The examination should be administered on an annual basis.

(5) Examination results are to be kept on file for the period of certification (see Par. 9.7).

8.1.2 General (Written) (For NDT Levels I and II)

(1) The general examinations should be addressed to the basic principles of the applicable method.

(2) In preparing the examination, the employer should select or devise appropriate questions covering the applicable method to the degree required by the employer's written practice.

(3) The questions and answers provided in the applicable separate Question Booklets (See 8.2) are suggested as guidelines for the development of the general examination.

8.1.3 Specific (Written) (For NDT Levels I and II)

(1) The specific examination should address the equipment, operating procedures, and test techniques that the applicant may encounter during specific assignments to the degree required by the employer's written practice.

(2) The specific examination should also cover the specifications or codes and acceptance criteria used by the employer in his nondestructive testing procedures.

8.1.4 Practical (for NDT Level I and II)

(1) The candidate should demonstrate familiarity with and the ability to operate the necessary test equipment, record, and analyze the resultant information to the degree required.

(2) At least one selected specimen should be tested and the results of the test analyzed by the candidate.

(3) The description of the specimen, the test procedure, including check points, and the results of the examination should be documented.

8.1.5 NDT Level III examinations should be in accordance with Par. 8.3.3.

8.2 Suggested examination questions and answers for use in compiling appropriate general examinations are presented in the separate Question Booklets which can be obtained from ASNT Headquarters. The following is a list of the booklets.

Test Method	Question Booklets
Radiographic Testing	A
Magnetic Particle Testing	B
Ultrasonic Testing	C
Liquid Penetrant Testing	D
Eddy Current Testing	E
Neutron Radiographic Testing	F
Leak Testing	G
Acoustic Emission	(In course of preparation)

8.3 The following paragraphs describe the recommended examinations for each NDT level for the various nondestructive testing methods. The written examinations should be administered without access to reference material (closed book) except that necessary data, such as graphs, tables, specifications, procedures, and codes, may be provided. All questions used for Level I and Level II examinations shall be approved by the responsible Level III.

8.3.1 NDT Level I

(1) General Examination — The recommended minimum number of Level I questions which should be given are:

Test Method	Number of Questions
Radiographic Testing	40
Magnetic Particle Testing	30
Ultrasonic Testing	40
Liquid Penetrant Testing	30
Eddy Current Testing	30
Neutron Radiographic Testing	40
Leak Testing	20
Acoustic Emission	40

(2) Specific Examination — The recommended minimum number of questions which should be given are:

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PERSONNEL CERTIFICATION

Test Method	Number of Questions
Radiographic Testing	20
Magnetic Particle Testing	20
Ultrasonic Testing	20
Liquid Penetrant Testing	20
Eddy Current Testing	15
Neutron Radiographic Testing	15
Leak Testing	
1. Bubble Test	15
2. Absolute Pressure Leak Test (Pressure Change)	15
3. Halogen Diode Leak Test	15
4. Mass Spectrometer Leak Test	20
Acoustic Emission	20

(3) Practical Examination — Proficiency shall be demonstrated in performing the applicable nondestructive tests on one or more samples approved by the NDT Level III. At least ten different checkpoints requiring an understanding of test variables and the employer's procedural requirements shall be included in this practical examination.

8.3.3 NDT Level II

(1) General Examination — The recommended minimum number of Level II questions to be given are:

Test Method	Number of Questions
Radiographic Testing	40
Magnetic Particle Testing	30
Ultrasonic Testing	40
Liquid Penetrant Testing	30
Eddy Current Testing	30
Neutron Radiographic Testing	40
Leak Testing	20
Acoustic Emission	40

(2) Specific Examination — The recommended minimum number of questions to be given are:

Test Method	Number of Questions
Radiographic Testing	20
Magnetic Particle Testing	15
Ultrasonic Testing	20
Liquid Penetrant Testing	15
Eddy Current Testing	15
Neutron Radiographic Testing	15
Leak Testing	
1. Bubble Test	15
2. Absolute Pressure Leak Test (Pressure Change)	15
3. Halogen Diode Leak Test	15
4. Mass Spectrometer Leak Test	40
Acoustic Emission	20

(3) Practical Examination — Proficiency should be demonstrated in selecting and performing the applicable nondestructive tests and interpreting and evaluating the results on one or more samples approved by the NDT Level III. At least ten different checkpoints requiring an understanding of test variables and the employer's procedural requirements should be included in this practical examination.

8.3.3 NDT Level III

(1) Basic Examination (Required only once when more than one method of examination is taken).

(a) Twenty (20) questions relating to understanding the SNT-TC-1A document.

(b) Fifteen (15) questions relative to applicable materials, fabrication, and product technology.

(c) Fifteen (15) questions which are selected from or are similar to published Level II questions for other appropriate NDT methods.

(2) Method Examination (for each method).

(a) Thirty (30) questions relating to fundamentals and principles, which are selected from or are similar to published ASNT Level III questions for each method, and

(b) Fifteen (15) questions relating to application and establishment of techniques and procedures which are selected from or are similar to the published ASNT Level III questions for each method, and

(c) Twenty (20) questions relating to capability for interpreting codes, standards, and specifications relating to the method.

(3) Specific Examination (for each method).

(a) Twenty (20) questions relating to specifications, equipment, techniques, and procedures applicable to the employer's product(s) and methods employed, and to the administration of the employer's written practice.

8.3.4 On the basis of demonstrated ability, achievement, experience, and education, as defined in Par. 4.3.(3) and 6.3, the employer may waive examination for the Level III individual. Written certification should be provided, and evidence supporting the certification should be held on file and be made available when verification is required.

8.4 Grading

8.4.1 An NDT Level III shall be responsible for the administration and grading of examinations for NDT Level I & II personnel. The administration and grading of examinations may be delegated to a designated representative of the NDT Level III and so recorded. The employer shall be responsible for administration and grading of examinations for Level III personnel. The actual administration and grading of Level III examinations may be performed by a designated representative of the employer.

8.4.2 A composite grade based upon the general, specific, and practical or upon the basic, method, and specific

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

examinations should be developed by the employer. The composite grade may be a simple average of the examinations or may be developed by applying a weighting factor to each examination. The method of arriving at the composite grade prescribed in the employer's written practice should not be changed indiscriminately to fit the capabilities of the candidate.

8.4.3 When weighting factors are used, the total of the weighting factors shall equal 1.0. The weighting factors should be within the following ranges:

(1) NDT Level I Weighting Factors

(a) General — 0.2 to 0.6
(b) Specific — 0.2 to 0.5
(c) Practical — 0.3 to 0.7

(2) NDT Level II Weighting Factors

(a) General — 0.3 to 0.7
(b) Specific — 0.2 to 0.6
(c) Practical — 0.2 to 0.5

(3) NDT Level III Weighting Factors

(a) Basic — 0.2 to 0.5
(b) Method — 0.3 to 0.6
(c) Specific — 0.2 to 0.4

(4) The composite grade (Gc) is determined as follows:

Levels I & II: $Gc = (Gg \times Wg) + (Gs \times Ws) + (Gp \times Wp)$

Level III: $Gc = (Gb \times Wb) + (Gm \times Wm) + (Gs \times Ws)$

Where Gc = Composite grade
Gg = Actual grade from general examination in percent
Wg = Weighting factors of general examination
Gs = Actual grade from specific examination in percent
Ws = Weighting factor of specific examination
Gp = Actual grade from practical examination in percent
Wp = Weighting factor of practical examination
Gb = Actual grade from basic examination in percent
Wb = Weighting factor of basic examination
Gm = Actual grade from method examination in percent
Wm = Weighting factor of method examination

8.4.4 When an examination is administered for qualification, a composite passing grade of 80% or greater is recommended. In addition, each passing grade for the general, specific, and practical or the basic, method, and specific examination is recommended to be 70% or greater. Test objects should be used in the practical examination when appropriate.

8.4.5 When examination is administered and graded for the employer by an outside agency, and the outside agency issues grades of Pass or Fail only, on a certified report, then the employer may accept the Pass grade as 80% for that particular examination.

8.5 Re-examination

(1) Those failing to attain the required grades must wait at least 30 days or show evidence of having received suitable additional training as determined by the employer before re-examination.

9. CERTIFICATION

9.1 Certification of all levels of NDT personnel is the responsibility of the employer.

9.2 The employer shall establish written practices covering all phases of certification including training as specified in Par. 5.

9.3 Certification of NDT personnel shall be based on demonstration of satisfactory qualification as determined by procedures outlined in Par. 6, 7, and 8 as modified by the employer's written practices.

9.4 At the option of the employer, an outside agency may be engaged to provide NDT Level III services. In such instances, the responsibility of certification must be retained by the employer.

9.5 The employer who purchases outside services is responsible for assuring that training and examination services are in accordance with the employer's written practice.

9.6 Personnel certifications and copies of the employer's written practices shall be maintained on file by the employer.

9.6.1 The qualification records of the certified individuals shall be maintained by the employer and should include the following:

(1) Name of certified individual.
(2) Level of certification and test method.
(3) Educational background and experience of certified individuals.
(4) Statement indicating satisfactory completion of training in accordance with the employer's written procedure.
(5) Results of the physical examination prescribed in Par. 8.1.1.
(6) Current examination copy(s) or evidence of successful completion of the examinations.
(7) Other suitable evidence of satisfactory qualifications when such qualifications are used in lieu of examinations.
(8) Composite grade(s) or suitable evidence of grades.

PANHANDLE NDT AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

TABLE 6.3.1
RECOMMENDED INITIAL TRAINING AND EXPERIENCE LEVELS

TRAINING (HOURS)

Examination Method	RT		MT		UT		PT		ET		NRT		AE		LT							
Level	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I				II			
Technique															BT	PCMT	HDLT	MSLT	BT	PCMT	HDLT	MSLT
Completion with a passing grade of at least 2 years of engineering or science study in a university, college, or technical school	12	40	8	4	24	40	4	4	8	8	12	40	40	30	2	16	8	28	2	12	6	16
High school graduation or equivalent	20	40	12	8	40	40	4	8	12	8	20	40	60	60	2	24	12	40	4	16	8	24
Grammar school graduation, or demonstration proficiency, or additional training	80	80	24	16	40	80	12	16	40	24	80	80	80	80	2	60	24	60	4	80	20	80
	WORK TIME EXPERIENCE (MONTHS)																					
All educational levels as listed above	3	9	1	3	3	9	1	2	1	9	6	24	6	18	*	1½	1½	4	½	4	4	6

BT = Bubble Test
PCMT = Pressure Change/Measurement Test
HDLT = Halogen Diode Leak Test
MSLT = Mass Spectrometer Leak Test
* = 2 Hours

NOTES:

(1) For Level II certification, the experience should consist of time at Level I or equivalent. If a person is being qualified directly to Level II with no time at Level I, the required experience should consist of the sum of the times required for Level I and Level II and the required training should consist of the sum of the hours required for Level I and Level II.

(2) Initial experience may be gained simultaneously in two or more methods if:

(a) The candidate spends a minimum of 25% of his work time on each method for which certification is sought, and

(b) The remainder of his work time claimed as experience is spent in NDT-related activities as defined in the employer's written practice.

(3) Training should be outlined in the employer's written practice.

December 1988 Edition

PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

PERSONNEL CERTIFICATION

(9) Dates of certification and/or recertification and the dates of assignment to NDT.

(10) Signature of employer's designated representative.

9.7 Recertification

9.7.1 All levels of NDT personnel should be recertified at least once every three years in accordance with one of the following criteria:

(1) Evidence of continuing satisfactory performance.

(2) Re-examination in those portions of the examinations in Par. 8.3 deemed necessary by the employer's NDT Level III.

9.7.2 NDT personnel may be re-examined any time at the discretion of the employer and have their certifications extended or revoked.

9.7.3 The employer's written practice should include rules covering the duration of interrupted service which will require re-examination and recertification.

10. TERMINATION

10.1 The employer's certification shall be deemed revoked when employment is terminated.

10.2 A Level I, Level II, or Level III whose certification has been terminated may be recertified to his former NDT level by a new employer based on examination as described in Par. 8 provided all of the following conditions are met to the new employer's satisfaction:

(1) The employee has proof of prior certification.

(2) The employee was working in the capacity to which he certified within six months of termination.

(3) The employee is being recertified within six months of his termination.

PANHANDLE NDT AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

July 29, 1987

Item #10

APR 3 1990

Mr. John T. Bass
Chief Industrial Radiography Program
Division of Licensing, Registration, and Standards
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756-3189

RE: License No. LO2627

Dear Mr. Bass;

In regards to your letter of July 20, 1987, we are sending you the following information for your evaluation and consideration of our in-house training program..

1. Description of subjects studied and time allotted to each subject:

A. Radioactivity and the harmful effects of radiation. - We will teach what radioactivity is, the biological effects of radiation dose, the basic building blocks of atoms, and discuss case histories of radiography accidents. Time allotted: 4 hours.

B. Inverse Square Law, Time, Distance, and Shielding. - We will teach the Inverse Square Law formulas, and the procedures for controlling radiation dose (time, distance, shielding). Time allotted: 8 hours.

C. Measuring of Radiation / Survey Meters and Pocket Dosimeters. We will demonstrate how to read and check the survey meter to make sure it is working properly and has been calibrated as required; we will demonstrate how to read the dosimeter and how to zero the dosimeter using a dosimeter charger. Time allotted: 8 hours.

D. Rules and Regulations. - We will explain the Texas Regulations, NRC Regulations, and what Reciprocity means. Time allotted: 6 hours.

E. Following Operating and Emergency Procedures. - We will explain why we have Operating and Emergency Procedures and how important it is for Trainers and Trainees to follow them. Time allotted: 6 hours.

PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

Item #10

F. Radiography Cameras and Leak Test. - We will show pictures of different cameras and explain the working parts, etc; we will also show slides on how a source is changed out, we will demonstrate how to do a source lock-out survey, and we will demonstrate how to do a leak test and explain how often it should be done: Time allotted: 8 hours.

2. Description of demonstrations and equipment used:

We will use a RG13-20V Camera (with dummy source) to demonstrate how to hook-up crank cable to source, how to check source tube for damage before using camera, and show proper technique for putting collimator on source tube.

We will use a Victoreen 2000A Dosimeter Charger to demonstrate how to zero dosimeter.

We will show the TLD Film Badge and explain the precautions used to protect the badge form being damaged.

We will use a Ludlum Model 5 Survey Meter to demonstrate how to survey radiation area and to make sure source is in shielded position.

3. Training resources:

A. Texas Regulations for Control of Radiation (T.D.H.).

B. Working Safely In Gamma Radiography (N.R.C.).

C. Radiographer's Study Guide (Radiation Consultants).

D. Company Film Badge Reports.

4. Sketch of classroom area: See attachment.

5. Minimum number of students we will train at one time: one.

6. Resumes of instructors: See attachments.

7. Prerequisite for classroom participation: Must be 18 years old and have a high school education.

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Item #10

8. Test questions and answers: See attachments.

We appreciate your consideration of our in-house training program and if further information is needed, please let us know.

Sincerely,

Orvil Couch
President and R.S.O.
Panhandle N.D.T. & Inspection, Inc.

Attachments

PANHANDLE N D T AND INSPECTION

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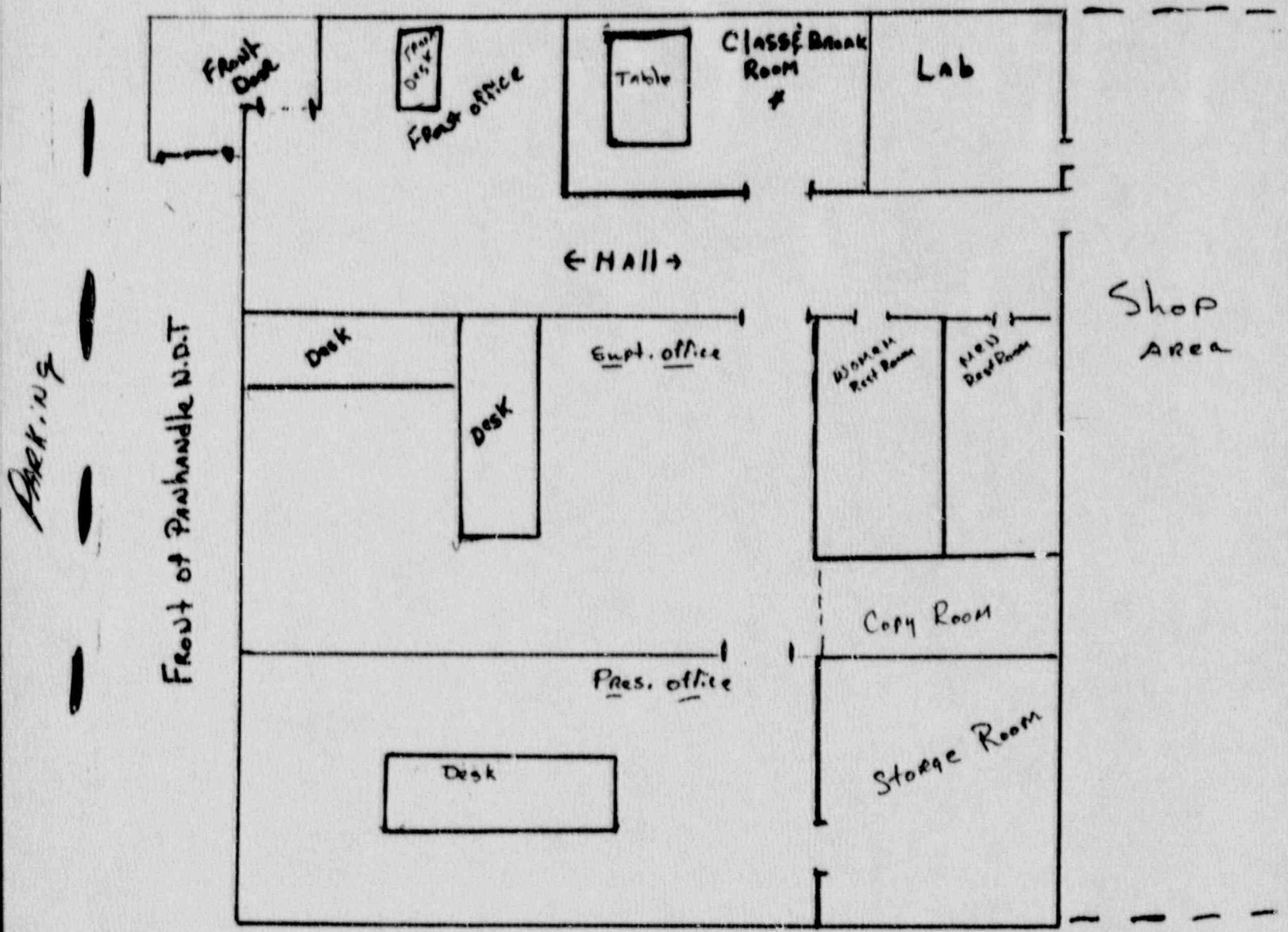
NORMAN RENEAU, Field Superintendent

Item #10

Sketch of Class Room



PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

Item #10.3

Internal Audit As Required In 31.30 (a)
NRC Par. 34.11 (d) of 10CFR - Part 34

1. Follows all emergency procedures correctly. _____

1. Checks equipment before using. _____

2. Ropes off area correctly. _____

3. Sets dosimeter before shift. _____

4. Keeps good visual surveillance of area. _____

5. Does quarterly inspection as required. _____

6. Uses colliator as required. _____

7. Signs out on utilization log as required. _____

8. Fills out area survey as required. _____

9. Has properly calabrated and operable survey meter. _____

Audit performed by Norman Reneau, Field Superintendent.

Employee's Name _____

462999

DIO ACTIVE MATERIAL

PANHANDLE N.D.T.

DATE

Item #10.3

AME OF USER	SOURCE OUT		LOCATION	SOURCE IN		Sorce Activity	Source Nc
	DATE	TIME		DATE	TIME		

PANHANDLE NDT

RADIATION REPORT

WARNING – INTENTIONAL FAILURE TO RECORD INFORMATION ACCURATELY ON THIS FORM CAN RESULT IN A FINE AND/OR DISCIPLINARY ACTION.

DATE _____ CITY _____ STATE _____

PROJECT _____ CUSTOMER _____

SOURCE OF RADIATION
IR-192 ☐
S/N _____

TRANSPORT INDEX
CONTENTS _____
CURIES _____

ACTIVITY OF SOURCE _____ CURIE
SURVEY INSTRUMENT MODEL NO. _____

EXPOSURE DEVICE MODEL NO. _____ CAMERA NO. _____ S/N _____ VOID DATE _____

RADIOGRAPHIC EQUIPMENT INSPECTED IN ACCORDANCE WITH NDT O AND E PROCEDURE DAILY CHECK LIST.

INSPECTION COMPLETED BY _____

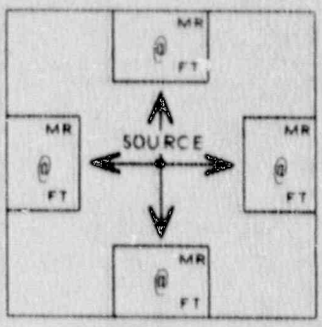
RECORD OF PHYSICAL SURVEY MADE TO DETERMINE SOURCE IS IN SHIELDED POSITION PRIOR TO SECURING EXPOSURE DEVICE.

IR-192 _____ MR/HR @ 3" FROM SURFACE

TOTAL EXPOSURE TIME FOR THIS DAY _____ HRS. _____ MINS.

PERSONNEL INFORMED _____

RESULT OF PHYSICAL SURVEY



BARRICADE EQUIPMENT

☐ SIGNS ☐ ROPE
☐ CONSTANT SURVEILLANCE
☐ _____

RADIOGRAPHER _____ RADIOGRAPHER'S ASSISTANT _____

SERIAL NO. OF DOSIMETER _____ AND _____

TOTAL MR RECORDED START _____ FINISH _____ MR AND START _____ FINISH _____ MR

FILM BADGE AND SERIAL NO. _____ AND _____

REMARKS: _____

SURVEY OF TRANSPORTING VEHICLE

MR/HR @ DRIVER _____ MR/HR @ OUTSIDE SURFACE _____ MR/HR @ 1 FT. FROM SURFACE _____

WHITE – RADIATION SAFETY OFFICE YELLOW – FIELD COPY PINK – DIVISION OFFICE

PANHANDLE NDT

RADIATION REPORT

WARNING – INTENTIONAL FAILURE TO RECORD INFORMATION ACCURATELY ON THIS FORM CAN RESULT IN A FINE AND/OR DISCIPLINARY ACTION.

DATE _____ CITY _____ STATE _____

PROJECT _____ CUSTOMER _____

SOURCE OF RADIATION
IR-192 ☐
S/N _____

TRANSPORT INDEX
CONTENTS _____
CURIES _____

ACTIVITY OF SOURCE _____ CURIE

SURVEY INSTRUMENT MODEL NO. _____

EXPOSURE DEV. NO. _____ CAMERA NO. _____ S/N _____ VOID DATE _____

RADIOGRAPHIC EQUIPMENT INSPECTED IN ACCORDANCE WITH NDT O AND E PROCEDURE DAILY CHECK LIST.

INSPECTION COMPLETED BY _____

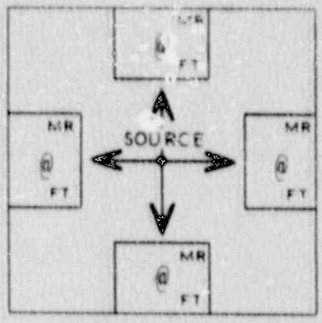
RECORD OF PHYSICAL SURVEY MADE TO DETERMINE SOURCE IS IN SHIELDED POSITION PRIOR TO SECURING EXPOSURE DEVICE.

IR-192 _____ MR/HR @ 6" FROM SURFACE

TOTAL EXPOSURE TIME FOR THIS DAY _____ HRS. _____ MINS.

PERSONNEL INFORMED _____

RESULT OF PHYSICAL SURVEY



BARRICADE EQUIPMENT

☐ SIGNS ☐ ROPE

☐ CONSTANT SURVEILLANCE

☐ _____

_____

RADIOGRAPHER _____ RADIOGRAPHER'S ASSISTANT _____

SERIAL NO. OF DOSIMETER _____ AND _____

TOTAL MR RECORDED START _____ FINISH _____ MR AND START _____ FINISH _____ MR

FILM BADGE AND SERIAL NO. _____ AND _____

REMARKS: _____

SURVEY OF TRANSPORTING VEHICLE

MR/HR @ DRIVER _____ MR/HR @ OUTSIDE SURFACE _____ MR/HR @ 1 FT. FROM SURFACE _____

WHITE – RADIATION SAFETY OFFICE YELLOW – FIELD COPY PINK – DIVISION OFFICE

PANHANDLE NDT

RADIATION REPORT

WARNING – INTENTIONAL FAILURE TO RECORD INFORMATION ACCURATELY ON THIS FORM CAN RESULT IN A FINE AND/OR DISCIPLINARY ACTION.

DATE _____ CITY _____ STATE _____

PROJECT _____ CUSTOMER _____

SOURCE OF RADIATION
IR-192 ☐
S/N _____

TRANSPORT INDEX
CONTENTS _____
CURIES _____

ACTIVITY OF SOURCE _____ CURIE

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EXPOSURE DEVICE MODEL NO. _____ CAMERA NO _____ S/N _____ VOID DATE _____

RADIOGRAPHIC EQUIPMENT INSPECTED IN ACCORDANCE WITH NDT O AND E PROCEDURE DAILY CHECK LIST.

INSPECTION COMPLETED BY _____

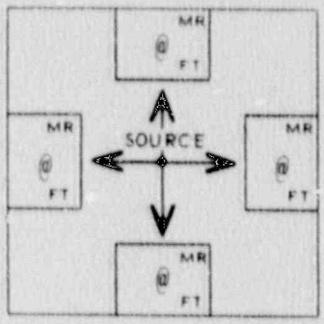
RECORD OF PHYSICAL SURVEY MADE TO DETERMINE SOURCE IS IN SHIELDED POSITION PRIOR TO SECURING EXPOSURE DEVICE.

IR-192 _____ MR/HR @ 6" FROM SURFACE

TOTAL EXPOSURE TIME FOR THIS DAY _____ HRS. _____ MINS.

PERSONNEL INFORMED _____

RESULT OF PHYSICAL SURVEY



BARRICADE EQUIPMENT

☐ SIGNS ☐ ROPE
☐ CONSTANT SURVEILLANCE
☐ _____
_____

RADIOGRAPHER _____ RADIOGRAPHER'S ASSISTANT _____

SERIAL NO. OF DOSIMETER _____ AND _____

TOTAL MR RECORDED START _____ FINISH _____ MR AND START _____ FINISH _____ MR

FILM BADGE AND SERIAL NO. _____ AND _____

REMARKS: _____

SURVEY OF TRANSPORTING VEHICLE

MR/HR @ DRIVER _____ MR/HR @ OUTSIDE SURFACE _____ MR/HR @ 1 FT. FROM SURFACE _____

WHITE — RADIATION SAFETY OFFICE YELLOW — FIELD COPY PINK — DIVISION OFFICE

PANHANDLE N D T AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

Item #10.4

OPERATING AND EMERGENCY PROCEDURES

1.0 No personnel employed by this company for the purpose of working in restricted radiation areas, shall be permitted to handle by-product material or other radiation producing material or equipment in such a manner as to expose themselves or others to radiation in excess of the following limits:

2.0 Exposure of Individuals to Radiation in Restricted Areas:

REMS PER CALENDAR QUARTER

2.1 Whole body: head and trunk; active blood forming organs; lens of the eyes; or gonads 1.25

2.2 Hands and forearms; feet and ankles 18.75

2.3 Skin of whole body 7.50

3.0 Employees working in restricted areas may be permitted to receive doses to the whole greater than that permitted above, provided:

3.1 During any calendar quarter the dose to the whole body from radioactive material and other sources of radiation in this company's possession shall not exceed 3 rems; and

3.2 The dose to the whole body, when added to the accumulated occupational dose to the whole body shall not exceed 5 (N-18) rems where "N" equals the individual's age in years at his last birthday.

3.3 The individual has on file with this company a complete resume of his accumulated occupational dose to the whole body and all the other information required on TRCR Form 21-2.

4.0 All personnel employed by this company for the purpose of working in restricted radiation areas shall file with this company a complete resume of their previous occupational radiation exposure as required by State Regulations.

PANHANDLE NDT AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

OPERATING AND EMERGENCY PROCEDURES

Item #10.4

5.0 Individuals under 18 years of age shall not be allowed in restricted areas.

6.0 EXPOSURE OF INDIVIDUALS IN UNRESTRICTED AREAS:
Employees shall not be allowed to use by-product material or other radiation producing material or equipment in such a manner as to create in any unrestricted area:

6.1 Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of 2 millirems in any one hour, or

6.2 Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of 100 millirems in any seven consecutive days.

7.0 All personnel who are employed by this company as qualified radiographers shall serve at least one week as assistants, to become familiar with this company's equipment and procedures.

8.0 All radiographers and assistants shall satisfactorily complete the following:

a. radiation training course for radiographers

b. examination for radiographic personnel

9.0 Orvil Couch shall provide the above instruction and is responsible for the radiation protection program.

PANHANDLE NDT AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

MANAGEMENT RECORDS

This Covers

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10.4.4
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10.4.13
10.5
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(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

MANAGEMENT RECORDS

1.0 MANAGEMENT RECORDS DOCUMENTATION

1.1 This quarterly inventory report will be made by Orvil Couch and kept on file at Panhandle N.D.T. and Inspection, Inc., Borger, Texas.

1.2 The utilization log will be filled out daily by the radiographer in charge of the exposure device. A daily lot of each exposure device will be made out by Orvil Couch at Panhandle N.D.T.. Borger, Texas.

1.3 Daily dosimeter readings will be filled out daily by each individual. Reports will be turned in weekly and kept on file at Panhandle N.D.T., Borger, Texas. Yearly summary reports will be made by Orvil Couch, on each individual, and kept on file at Panhandle N.D.T.

1.4 Survey reports will be made daily on each job by the radiographer in charge of the exposure device. Reports on each survey will be kept on file at Panhandle N.D.T.

1.5 Leak test records will be filled out by Orvil Couch on each source. They will be kept on file at Panhandle N.D.T.

1.6 Calibration reports will be made by Orvil Couch and records kept on file at Panhandle N.D.T.

1.7 Quarterly inspection reports will filled out by a qualified radiographer and records kept on file at Panhandle N.D.T., Borger, Texas. This inspection will be done under the supervision of Orvil Couch, Radiation Safety Officer.

1.8 All training records and reports will be filled out and approved by Orvil Couch, Radiation Safety Officer. Records will be kept on file at Panhandle N.D.T.

1.9 Source records will be filled out and approved by Orvil Couch, Radiation Safety Officer. Records will be kept on file at Panhandle N.D.T. and Inspection, Inc., Borger, Texas.

PANHANDLE NDT AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79008-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

2.0 MANAGEMENT RECORDS

2.1 Quarterly inventory
2.2 Utilization log
2.3 Exposure record
2.4 Survey record
2.5 Leak test
2.6 Instrument calibration record
2.7 Quarterly equipment inspection and maintenance report
2.8 Training records
2.9 Source record (folder to be kept on each source).
Folder includes:
2.9.1 Source papers
2.9.2 Receipt of delivery
2.9.3 Model and serial number of storage device
2.9.4 Leak test reports
2.9.5 Inspection reports
2.9.6 Receipt of transfer and disposal record

PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

MANAGEMENT RECORDS

Item #10.4.4

3.0 EQUIPMENT INSPECTION AND MAINTENANCE PROCEDURES INSPECTION OF RADIOGRAPHIC EXPOSURE DEVICES & STORAGE CONTAINERS

NOTICE

The following will be inspected at the beginning of each work day.

3.1 RADIOGRAPHIC EXPOSURE UNIT

- 3.1.1 Abnormal surface radiation levels anywhere on camera
- 3.1.2 Condition of safety plugs
- 3.1.3 Proper operation of locking mechanism
- 3.1.4 Condition of pigtail connector
- 3.1.5 Alignment of "S" tube with exit prot
- 3.1.6 Condition of carrying device (straps, handle, etc.)
- 3.1.7 Proper labeling

3.2 SOURCE TUBE

- 3.2.1 Rust, dirt, or sludge buildup inside the source tube
- 3.2.2 Condition of source tube connector
- 3.2.3 Condition of source stop
- 3.2.4 Kinks or damage that could prevent proper operation

3.3 CONTROL CABLES AND DRIVE MECHANISM

- 3.3.1 Proper drive mechanism with this camera, if appropriate
- 3.3.2 Changes in general operating characteristics
- 3.3.3 Condition of connector on drive cable
- 3.3.4 Drive cable flexibility, wear, and rust
- 3.3.5 Excessive wear or damage to crank assembly parts
- 3.3.6 Damage to drive cable conduit that could prevent the cable from moving freely
- 3.3.7 Connection of the control cable connector with the pigtail connector for proper mating
- 3.3.8 Proper operation of source position indicator if applicable

PANHANDLE N D T AND INSPECTION

(ABE) ORVIL COUCH, Owner • P. O. Box 1474 • Borger, TX 79 \8-1474 • 806-273-2733

NORMAN RENEAU, Field Superintendent

MANAGEMENT RECORDS

Item #10.4.4

3.4 A QUARTERLY INSPECTION REPORT MUST BE MADE ON THE ABOVE.

3.4.1 Report any defect in equipment at any time to the office so repairs can be made at once or the equipment can be sent to an authorized agent.

3.4.2 The quarterly inspection report will be made out by the radiographer in charge of the exposure device and equipment. All questions on the report must be filled out.

3.4.3 Any equipment not being used at the time of the quarterly inspection will be inspected by Orvil Couch, R.S.O. A report will be filled out and all reports will be on file at Panhandle N.D.T., Borger, Texas.

PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

MANAGEMENT RECORDS

4.0 POSTING AND LABELING

4.1 Each vehicle of transport containing by-product material shall be posted with placards bearing the work "RADIOACTIVE" in black letters on yellow background four (4) inches high, in 5/8 inch stroke. These placards will be posted on front, rear and both sides. When vehicle is not carrying radioactive aterial, these placards will be covered.

4.2 Each vehicle to be used for radiography shall be equipped with sufficient signs bearing the prescribed radiation caution symbol and the words "CAUTION. HIGH RADIATION AREA."

4.3 Each radiographic exposure device and source container shall possess a label bearing the prescribed radiation symbol and the words "CAUTION. RADIOACTIVE MATERIAL."

PANHANDLE NDT AND INSPECTION

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NORMAN RENEAU, Field Superintendent

MANAGEMENT RECORDS

Item #10.4.3

5.0 AREA CONTROL AND POSTING RADIOGRAPHIC SITES

5.1 Objects to be radiographed shall be placed in an area as remote as possible whenever practicable.

5.2 Radiation survey instruments shall be used after each exposure to assure the source had been returned to a safe position.

5.3 Radiation survey levels in unrestricted areas shall be controlled so that an individual, if continuously present, could not receive more than 2 MR in any one hour or 100 MR in any seven consecutive days. Signs, ropes or barricades displaying the prescribed radiation symbol and bearing the words "CAUTION. RADIATION AREA" shall be posted in sufficient number, to warn personnel that radiation levels exist in excess of the above limits. A minimum of 4 signs for each job.

5.4 Signs displaying the prescribed radiation caution symbol and the words "CAUTION. HIGH RADIATION AREA" shall be posted in the same manner where radiation levels exist which could expose a major portion of the body to a dose in excess of 100 MR in any one hour. A minimum of 4 signs for each job.

5.5 Personal surveillance will be continuous during radiographic procedure.

5.6 Should an individual enter the 2 MR area, he will be immediately asked to leave the area. Should he not leave, the source will be returned to the camera immediately, locked and surveyed. No further exposures shall be made until the area is clear of all unauthorized personnel.

5.7 The 2 MR area will be established by trial run. During the dry run, the radiographer will establish the 2 MR area with a survey meter and post warning signs around the perimeter. On exposures where the source is on the outside of the object, a collimator will be used to minimize the radiation and reduce the size of the 2 MR area. Time permitting, the radiographer will resurvey the perimeter but due to exposures that only last seconds, this is not always possible.

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Item #10.4.13

6.0 SOURCE REPLACEMENT

6.1 With the approval of the State, source replacement for depleted sources will be as follows:

6.1.1 Replacement will be made using an NEEI Model RC-6C source changer.

6.1.2 The replacement source will be the same model as the one removed, and NEEI Model RG-13.

6.1.3 Instructions furnished with the source changer will be followed explicitly.

6.1.4 Safety precautions general to radiation source handling and particular to source replacement will be in force.

6.1.5 Depleted sources will be shipped to the manufacturer or an approved agency for disposal, and a record of this disposal will be kept for inspection. An approved carrier will be used for shipment.

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Item #10.4.5

MANAGEMENT RECORDS

7.0 PERSONNEL MONITORING EQUIPMENT

7.1 DOSIMETERS

7.1.1 Each radiographer and assistant shall at all times during radiographic operations wear a pocket dosimeter capable of measuring doses from zero to at least 200 MR. Dosimeters will be zeroed each day they are used by radiographer. Dosimeters will be zeroed immediately after posting the daily dosimeter reading. This report shall be signed and turned in to the office each week. At the end of each week each radiographer and assistant will post his previous week's dosimeter record on his individual cumulative dose form. Weekly cumulative dose records will be transferred to this company's quarterly record form. This form shall be kept current quarterly.

7.1.2 Should any dosimeter become completely discharged (off scale) in any one day, the film badge shall be returned to the office for immediate evaluation and a new one issued. Radiographer will not return to work until results on film badge have been obtained and cleared.

7.2 FILM BADGE

7.2.1 Each radiographer and assistant shall wear a film badge during all radiographic operations. This badge shall be replaced monthly. Film will be evaluated by an approved service company. As monthly film badge reports are received from the film badge supplier, they will be reviewed by the Radiation Safety Officer and then placed in a file that is available to the radiographers. Any excessive exposures indicated on the film badge report will be called to the attention of the radiographer concerned and the cause of the over-exposure will be discussed and an attempt will be made to prevent recurrence of over-exposure.

7.2.2 The film badge supplier will be instructed to notify this company by telephone of any excessive film badge readings. In turn this company will notify Texas State Department of Health, Division of Occupational Health & Radiation Control, Austin, Texas. Film badge reports will be compared with individual dosimeter records. A variation of over 20% will be investigated.

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Item #10.4.6

8.0 SOURCE STORAGE AND TRANSPORTATION PROCEDURE

8.1 All radiographic exposure devices and source containers, containing by-product material, shall be stored in the source storage box, when returned to the shop and not in use. This box shall be locked at all times and only authorized personnel will be admitted.

8.2 In the field, when mobile dark rooms are being used, radiographic exposure device and source containers shall be locked and stored in the dark rooms and the dark rooms locked as well.

8.3 Due to out-of-town jobs that require overnight stays and late hour jobs that make it impossible to return source to the shop storage area during normal office hours, Panhandle N.D.T. and Inspection, Inc. requests permission to store sources overnight in mobile units. Mobile units are equipped with state approved US 6717B containers. Mobile units are marked as required by the State of Texas and Department of Transportation.

8.4 PROCEDURE FOR OVERNIGHT SOURCE STORAGE IN MOBILE UNITS:

8.4.1 Replace plug and end cap on source container and survey container.

8.4.2 Place source container into lead-lined storage box and secure lock.

8.4.3 Secure lock on mobile unit and survey dark room.

8.4.4 All surveys will read less than 1 MR at exterior of unit on all sides.

8.4.5 Re-survey and check to see that source container is still secure the following morning.

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9.0 RADIATION SURVEYS AND EXPOSURE PROCEDURE

9.1 RADIOGRAPHIC TECHNIQUE

9.1.1 Clear area of all unauthorized personnel.

9.1.2 Place projector on ground or other suitable object and adjust until in a safe and secure position.

9.1.3 Attach control cable and flexible tube or projector.

9.1.4 Position head of flexible tube to desired exposure position and secure it in place.

9.1.5 Establish 2 MR area and display radiation warning signs.

9.1.6 Unlock projector with key and retreat to extreme end of control cable and crank source into position for exposure.

9.1.7 Radiographer shall retreat to a location beyond the radiation caution signs while keeping the exposure under constant surveillance.

9.1.8 After exposure, crank source back to its storage position.

9.1.9 Survey projector with meter to assure source is in a safe position, and lock projector.

SOURCE SHALL ALWAYS BE IN VAULT WHEN NOT IN USE

9.2 A physical survey shall be made to determine that each sealed source is in its shielded position prior to securing the radiographic exposure device. This shall be done at the completion of each job. After each job the final survey shall be recorded in the source log of the truck being used. In addition, an area survey report must be filled out and filed with paper work.

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MANAGEMENT RECORDS

Item #10.5

10.0 LEAK TEST PROCEDURES

10.1 Leak test will be made by individual using NEEI, Model LTK-1 Leak Test Service Kit and then returned to Gulf Nuclear, Inc.

10.2 Leak test will be made every 6 months and reports kept on file at Panhandle N.D.T. and Inspection, Inc.

10.3 Instructions are included in each kit and will be as follows:

Model LTK-1 Contents
One (1) packet of powder
Two (2) cotton swabs in separate plastic packets marked A and B.

10.4 INSTRUCTIONS:

10.4.1 Dissolve the detergent in the packet in a small amount of water.

10.4.2 Remove the swab from the plastic container on the left marked A and dip it into the water solution and proceed to wipe the source container at the exit fitting of the source container. Replace the swab in the plastic container from which it was removed.

10.4.3 Remove the dry swab from the plastic container marked B and repeat the wipe process. DO NOT DIP THIS SWAB IN THE DETERGENT. Replace this swab in the plastic container from which it was removed in the kit.

10.5 CAUTION:

10.5.1 The swabs must be replaced in the plastic containers from which they are removed.

10.5.2 The requested information on the kit cover must be filled out as follows: Company Name _____; Location _____; Date _____; Isotope _____; Quantity _____; Serial Number _____.

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11.0 INSTRUMENT CALIBRATION PROCEDURES

11.1 Survey meters will be sent of Gulf Nuclear, Inc. of Webster, Texas for calibration every 90 days or sooner.

11.2 Film badges will be sent in every month to R. S. Landauer,Jr. & Co. (Tech/Ops, Inc.), Glenwood Science Park, Glenwood, Illinois.

11.3 Dosimeter readings will be made daily and recorded. Dosimeters will be calibrated daily.

11.4 Records of these calibrations and readings will be kept on file at Panhandle N.D.T. and Inspection, Inc., Borger, Texas.

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EMERGENCY PROCEDURES

Item #10.4.7

EMERGENCY PROCEDURES

1.0 In the event of a road accident, check camera to make sure it is secured and intact. If source is lost, locate it with survey meter and follow these instructions:

1.1 Clear personnel out of area.

1.2 Post area at 2 MR/HR zone with radiation warning sign.

1.3 Notify office and/or Orvil Couch.

1.4 Upon the arrival of an authorized representative of Panhandle N.D.T., follow his instructions.

1.5 If you are physically unable to perform the above instructions, advise or have someone notify the civil authorities of the situation.

2.0 In the event of an accident or malfunction of the storage castle, employ the following emergency procedures:

2.1 With a survey meter determine the approximate location of the radioactive source.

2.2 Clear personnel out of area and post radiation warning sign at the 2 MR/HR level.

2.3 Maintain constant surveillance of radiation area and have someone notify Panhandle N.D.T. of Borger, Texas, Orvil Couch.

2.4 If emergency exists in an industrial plant or on a building project, have someone notify the Plant or Project Safety Officers or Superintendents.

2.5 Upon arrival of Radiation Safety Officer, follow his instructions.

2.6 If you are physically unable to perform the above instructions, have someone advise the civil authorities of the situation and instruct them to notify the Texas State Dept. of Health, Radiation Division.

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