

Pennsylvania Shipbuilding

Pennsylvania Shipbuilding Company • P.O. Box 498 • Chester, PA 19016 • (215) 409-2000 • TELEX: 834226

MS=16
P8

1. July 1987

U. S. Nuclear Regulatory Commission
Nuclear Materials Safety Section B
Division of Radiation Safety and Safeguards
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Attention: John E. Glenn, Ph.D., Chief

Subject: Renewal of NRC License No. 37-21067-01

References: (a) Our renewal application, dated 02-25-87
(b) Your letter, dated 06-25-87

Gentlemen,

As you have requested in your letter, reference (b), we are sending you herewith the information (the following paragraphs coincide with the paragraphs in your letter):

- Paragraph 1 - All information is given on our "Quarterly Inventory of Isotopes" - Exhibit 1.
- Paragraph 2 - Sub-paragraph "E" on page 16 of attachment 5 has been revised to comply with your requirement (copy attached).
- Paragraph 3 - When we receive a new source and transfer our depleted source into the source changer and the new source into one of our cameras, we complete a check-off list - see Exhibit 2.
- Paragraph 4 - Please note that our "Radiographer's Report" takes the place of a separate "Utilization Log". This form has been accepted by previous applications and audits. The writer believes that all required information is contained thereon. A blank copy of our "Radiographer's Report" is attached - see Exhibit 3.
- Paragraph 5 - Case histories, especially those involving the failure to use survey meters always have been included in our initial training courses as well as in the "Periodic Training". Pages 3, 33 and 64 of attachment 5 of our license have been revised to meet your requirement of Appendix A of 10 CFR Part 34.
- Paragraph 6 - Attached please find a copy of our check-off list "Survey of Radiographic Activities" for your information and files, see Exhibit 4.

"OFFICIAL RECORD COPY"

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07 JUL 1987

8801290172 870825
REQ1 LIC30
37-21067-01 PDR

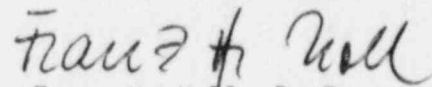
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U. S. Nuclear Regulatory Commision

We trust that the information given above will answer your questions and satisfy the NRC requirement.

Should more information be required, please direct your inquiry to the writer.

Very truly yours,



Franz H. Notl, P. E.
Radiation Safety Officer

FHN:cvl

cc: N.R.C. File

07 JUL 1987

STANDARD OPERATING PROCEDURE
FOR
PERSONNEL MONITORING

- A. Personnel performing or assisting in any radiography are wearing at all times:

- (1) Pocket Dosimeter
- (2) Current Film Badge

The pocket dosimeter and Film Badge are contained in a pouch and worn on a belt.

- B. Personnel engaged in Radiography will have in their possession at all times while on the job an operable Survey Meter that has a current Calibration Tag attached.

- C. At the start of each shift all personnel will zero their Pocket Dosimeter as follows:

- (1) Insert Dosimeter into Calibration Unit
- (2) Turn knob of calibration Unit until a zero is obtained on the dosimeter.
- (3) Dosimeters that cannot be set to zero shall be turned into the X-Ray office for disposition.

- D. Dosimeters will be checked for readings at least every hour while performing Radiography. A reading of 100 MR or higher is cause for an investigation as to the reason.

- E. If the indicator of the dosimeter of an employee performing radiography is "OFF SCALE", radiographic operation shall be stopped immediately. The Radiation Safety Officer shall be notified at once who will fully investigate the cause before radiographic operations can be restarted.

- F. Radiographers and Assistant Radiographers will log the reading of their Dosimeter on the Radiographers Report at the completion of each job.

- G. Each dosimeter shall be checked at least once every year. The dosimeter is to be placed in a known radiation field. The reading must be within plus or minus 30 percent of the calculated value.

- H. Survey Meters shall be used as outlined in Section I on "Safe Handling of Radioactive Material."

- I. Survey Meters are delicate instruments and must be handled with great care. In case of inclement weather they should be wrapped in a piece of clear plastic as that will not hinder the operation of the Unit and will keep them dry.

TRAINING FOR ASSISTANT RADIOGRAPHERS

1. Personnel hired by the Company to work in the Radiography Department will be given sixteen (16) hours of instruction and orientation as follows:

Day 1

7:00 - 10:00

Lecture on Radiation Hazards

- a. Health hazards of Radiation
- b. Responsibility to self and others
- c. Case histories of radiation accidents
- d. Radiation measuring equipment available

10:00 - 11:00

Demonstration of Equipment used.

- a. Film badge
- b. Dosimeters
- c. Survey meters

11:00 - 1:30

Pennsylvania Shipbuilding Company

Standard Operating Instructions issued and explained.

1:30 - 3:30

Federal Regulation Requirements

Day 2

7:00 - 9:00

Familiarization with operation of the permanent Radiographic facility.

9:00 - 11:30

Familiarization with other Radiographic Operations within the Ship Yard.

12:00 - 2:30

Level I Examination for Radiography

2:30 - 3:30

Assistant Radiographer's Safety Test.

-2-

Subject Outline - (cont'd)Day 3 7:00 - 8:30 - Quiz #2

8:30 - 10:30 - Measurement of Radiation

- (a) Survey Meter
- (b) Dosimeter
- (c) Film Badge
- (d) Geiger Counter

10:30 - 11:30 - Quiz #3

12:00 - 13:30 - Review

13:30 - 15:30 - Midterm Examination

Day 4 7:00 - 11:30 - Practical Demonstration in Lab.

- (a) Operating the Autom. Industr. Model 520 Projector
- (b) Expose survey meter with Tech/Ops Projector Model 773
- (c) Demonstrate back scatter using lead numbers on back side of film.
- (d) Demonstrate shielding using Tech/Ops Projector Model 773
- (e) Care and maintenance of equipment

12:00 - 14:30 - Motivation

- (a) Health Hazard of Radiation
- (b) Radiation damage to human tissue
- (c) Personnel responsibilities to self and others
- (d) Case histories of radiation accidents

14:30 - 15:30 - Quiz #4

Day 5 7:00 - 10:30 - Federal Standards of Radiation Protection

- (a) 10 CFR 20
- (b) 10 CFR 30
- (c) 10 CFR 34
- (d) 10 CFR 19

10:30 - 11:30 - Quiz #5

12:00 - 13:00 - Review

13:00 - 15:30 - Final Examination

TRAINING OF RADIOGRAPHERS WITH
PREVIOUS EXPERIENCE

Newly hired personnel will be on a thirty day probationary period regardless of past experience. This thirty day period is for the evaluation of the persons ability and qualifications as it pertains to Radiography only. During this period, they will be given an orientation of the facilities. Moreover, they will be given a 40 hour Radiation Safety Course, see pages 32 and 33 of attachment #5. Several quizzes and examination must be taken with a required minimum average score of 75%.

Prior to being assigned radiographers, newly hired personnel with previous experience in radiography will be given the Radiographic Examination, pages 21 thorough 30 of attachment #5 requiring a score of 80%. The practical examination, page 31 requires a score of 85% with the provision that questions 1 through 5 must be answered correctly.

In the event that they do not successfully pass the written and practical tests, they will be given the entire training program for Assistant Radiographers or released.

PENNSYLVANIA SHIPBUILDING COMPANY

License No. 37-21067-01

Attachment No. 5

Revision A - 07-01-87

ANNUAL TRAINING

At least eight (8) hours of classroom training will be given all radiographers and radiographer's assistant on an annual basis.

The annual training will generally consist of a review on the following topics:

- a. Atomic structure of matter.
- b. The inverse square law.
- c. Shielding.
- d. Review of Standard Operating Instructions.
- e. Calibration of Survey Meters.
- f. Subjects as designated by the Radiation Safety Officer.
- g. Case histories of radiographic accidents.

At the end of the annual periodic training course, an examination will be given, see pages 66 through 70. A passing grade of 75% is required.

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QUARTERLY INVENTORY OF RADIOISOTOPES SECOND QUARTER OF 1987

CAMERA	RADIOISOTOPE	MODEL NO.	SERIAL NO.	ACTIVITY	LOCATION	REMARKS
NO. 1	IRIDIUM 192	T/O 866	386	29.6 ci	VAULT	
NO. 2	IRIDIUM 192	T/O 866	443	87.2 ci	VAULT	
NO. 3	IRIDIUM 192	T/O 866	325	8.7 ci	VAULT	
NO. 4	COBALT 60	T/O 571	S-642	5.9 mci	VAULT	CALIBRATION SOURCE Source Rod
NO. 5	COBALT 60	T/O A-424-18	1901	14.0 ci	VAULT	
NO. 6	CESIUM 137	T/O 773	S-518	140.3 mci	VAULT	CALIBRATION SOURCE Source Rod

30. June 1987

DATE

Franz H. Noll, P.E.
 Franz H. Noll, P.E.
 Radiation Safety Officer

EXHIBIT 1

RECEIVING AND TRANSFER CHECK OFF LIST

Reference: USNRC License No. 37-21067-01 Attachment No. 4

1. Received proper Shipping Container	Model No.: S/N :	
2. Inspected Shipping Container for damage		
3. Packing Slip properly executed		
4. Max. Radiation Intensity	at Surface _____	mR/hr
	3 feet from Surface _____	mR/hr
5. Radiation Survey	Date _____	
	Time _____	
6. Location of Source Transfer		
7. Condition of Seals		
8. Storage of new Source		Camera #
9. Transfer of depleted Source properly executed	Model No.: S/N :	
10. Transfer Label of depleted Source to Shipping Container		
11. Transfer of new source to Camera properly executed	Model No.: S/N:	
12. Transfer Label of new source attached to Camera.		
13. Seal and close-up Shipping Container		
14. Monitor Radiation Intensity at 3 feet from all exterior surfaces (Transport Index).		mR/hr
15. Information for the Shipping Manifest given to Shipping Department (return of the Shipping Container with depleted Source)		

Remarks: Intensity at 3'-0" from camera # is _____ mR/hr.

Received Source Model # _____, S/N: _____

Returned Source Model # _____, S/N: _____

Date _____

Technician _____

Expiration Date

Last _____ Next _____

Description of Radiation Area

 Target

SNT - TC - 1A Level

SNT -- TC -- 1A Level_____

PENNSYLVANIA SHIPBUILDING COMPANY
CHESTER, Pennsylvania 19013

SUBJECT SURVEY OF RADIOGRAPHIC ACTIVITIES DATE
FROM Franz H. Noll
TO N.R.C. File

Radiographer :
Assistant Radiographer(s) :

Supervisor :
Radiation Safety Officer :

Date and Time of Survey :

The attending Radiation Safety Officer (Assistant) hereby testifies that the radiographic operations performed by the above named radiographer and his assistant(s) have been performed as marked on the attached checklist. At the time of the survey, neither the radiographer, his assistant(s), nor the shift supervisor had knowledge of the survey being conducted.

Supervisor

Franz H. Noll, P.E.
Radiation Safety Officer

FHN:sjs

07 JUL 1981

RADIATION SURVEY CHECKLIST

- () Are Survey Meters working and in current calibration?
S/N of Survey Meters:

- () Are the Film Badges and Dosimeters contained in the
Dosimetry Pouches and properly carried by the Radio-
grapher and Radiographer Assistant(s)?

- () Does equipment appear to be in order and operating
properly? S/N of camera:
S/N of control cable:
S/N of source tube:
S/N of collimator:

- () Is Restricted Area Perimeter roped off and posted
properly? Measurement of Radiation Intensity:

- () Is High Radiation Area Perimeter posted properly?

- () Upon completion of exposure, has camera been approached
with a survey meter?

- () Has a survey of the camera and source tube been made
properly?

- () Check readings of dosimeters:

Supervisor

Date

Franz H. Noll, P.E.
Radiation Safety Officer