

Worthington

DRESSER

WORTHINGTON PUMP DIVISION, DRESSER INDUSTRIES, INC.
401 WORTHINGTON AVENUE • HARRISON, NJ 07029 • 201/484-1234

MS-16
P-7

May 20, 1987

US Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Nuclear Materials Safety Section B
Division of Radiation Safety and Safe Guards

Reference: Renewal of NRC License Application
Dresser/Worthington License # 29-02210-02
NRC Mail Control No. 106484

Enclosure: Revisions (2) of Each

Attention: Mr. Thomas K. Thompson

Dear Sir:

Reference your telcon of May 14, 1987 the additional comments and/or corrections of our application for our NRC license renewal are submitted for your review and approval.

1. Additional cell dimensions and survey source strength, included on Supplement pages drawing #3.
2. Reworded sample questions and answers, reference to Dresser/Worthington Operation and Emergency Procedure and Use of Equipment. Question Numbers 8, 12, 15, 16, 25, 22A and 22B incorporated into 22.

The above corrections and revisions have been written, reviewed and implemented into our written procedures. I feel that all comments per our phone conversation have been met.

Truly yours,

E. L. Molyneux

E. L. Molyneux Q.A. Supervisor

8801220504 870722
REG1 LIC30 PDR
29-02210-02

RECEIVED-REGION 1
1987 MAY 22 PM 2:16

106484

"OFFICIAL RECORD COPY"

ML10

22 MAY 1987

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The following safety precautions are used in the permanent cell at the radiographers station. The safety control panel monitors (19) locations throughout the area, including the roof locations.

Safety equipment used are warning lights, audio horns and fences; if any unauthorized person attempts to gain access on the roof while a radiographic exposure is on, a control warning light on the panel board by the radiographer will indicate where, and an audio horn will be sounded.

Survey results included on Drawing #3 are in the least conservative condition. Radiation readings A" thru "G" were taken, using the open tube and no additional external shielding.

Drawings #1, 2 and 3 indicate an escape ladder on the south side of the Co 60 permanent cell.

Access to this ladder is controlled by a dead man bar across the bottom of the ladder. If bar is moved by an unauthorized person while a radiographic exposure is being made, a warning light and an audio alarm will be sounded. The warning light and location will show at the radiographers operating station.

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ADDITIONAL DIMENSIONS-REFERENCED TO THE PERMANENT CELL

- 18'9" Floor to top of cell
- 36' Floor to outside secured roof
- 10' Height of full wall thickness from floor
- 42" Wall thickness of permanent cell
- 24" Upper wall thickness section of permanent cell
- 14" Thickness of ceiling of permanent cell

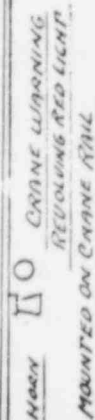
Thickness of cell walls and roof distances are stated on Dresser/Worthington Drawings #1 and #3, originally dated 11-25-74, redrawn on 11/86

NOTE: Cobalt 60 source strength at time radiation survey was taken - 220 Curies (Uncollimated)

SUPPLEMENT WITH DRAWING #3

EXTERNAL RADIATION LEVELS

TOOL GRINDING
SHOP



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TRAINING PROGRAM

- 7.0 How often are the outside walls and doors of the exposure room and roof surveyed?

Expected Answer

- (a) daily (c) monthly
(b) weekly (d) quarterly

- 8.0 After a radiographer or radiographers assistant make a set-up in cell, what are the safety checks before leaving cell?

Expected Answer

- (a) Check that the guide tube has no sharp kinks to eliminate a possible source hang up.
(b) Check that all personnel are out of cell before closing entrance door.

- 9.0 What radioactive level constitutes a "High Radiation Area"?

Expected Answer

Where major portion of the body could receive in any one hour, in excess of 100MR.

10. What is a "dose"?

Expected Answer

The quantity of radiation absorbed per unit of mass by the body of any portion of the body.

11. Where are the Co-60 Isotope, 10 curie Co-60 Isotope and IR-192, 100 curies stored?

Expected Answer

In permanent exposure room.

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TRAINING PROGRAM

12. When does a radiographer or radiographers assistant check the leakage of of the radioactive isotopes (Cobalt 60 and Iridium 192)
- (a) daily - AM Utilization Log per 10CFR 27
 - (b) daily - PM Utilization Log per 10CFR 27
 - (c) after each exposure to insure return of source to projector.

13. How often are pocket dosimeters charged?

Expected Answer

- (a) daily
- (b) before the start of each shift.

14. Where are dosimeters stored?

Expected Answer

In a cool dry place absent from any radiation.

15. Why are operating and emergency procedures stored at entrance door to cell?

Expected Answer

To insure fast action in case of any emergency.

16. If a customer or co-worker not in the "NDT Industry" must come into exposure room, what steps must be taken?

Expected Answer

- (a) Personnel must be properly monitored.
- (b) Personnel must be accompanied by a monitored radiographer or radiographers assistant, or R.S.O.

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TRAINING PROGRAM

22. What radiation warning signs are located at (a) entrance door, (b) exterior walls, (c) interior walls, (d) exposure devices?

Expected Answer

- (a) Entrance door - Caution - High Radiation Area
- (b) Exterior walls - Caution - Radiation Area
- (c) Interior walls - Caution - High Radiation Area
- (d) Exposure devices- Caution - Radioactive Material

23. While exposure is on (source out) do you check interlock system?

Expected Answer

Yes, daily

24. Are all radioactive sources operated with mechanical crank used by Dresser/Worthington?

Expected Answer

No, the Tech/Ops 520 Projector is operated with an electric drive which retracts automatically upon completion of the exposure. This drive also has a mechanical crank to be used in case of an electric failure or some other malfunction of the automatic control.

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TRAINING PROGRAM

25. Why does the NRC require written records to be maintained by companies utilizing radioactive isotopes, such as Cobalt 60 and Iridium 192?

Expected Answer

- (a) Primary purpose is safety.
- (b) To follow regulations written and updated by the NRC.
- (c) To maintain accurate records
- (d) To follow approved written procedures.

26. Can the 200 Curie Source in the Tech/Ops 520 Projector be put into the Iridium Tech/Ops 660 Projector?

Expected Answer

- () Yes
- (X) No

27. Why are calibrated survey meters required?

Expected Answer

- (a) Personal safety
- (b) Conduct surveys, checking for possible radiation
- (c) Required to be used by our procedures.
- (d) NRC rule.

CONVERSATION RECORD

TIME

1030

DATE

5/14/87

TYPE

☐ VISIT

☐ CONFERENCE

☒ TELEPHONE

☐ INCOMING

☒ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

E. L. Molyneux

ORGANIZATION (Office, dept., bureau, etc.)

Dresser Ind. Inc. 201
030-05273

TELEPHONE NO.

484-1234

SUBJECT

See attached sheet ~~discuss~~

ROUTING

NAME/SYMBOL

INT

SUMMARY

Discussed questions attached with Mr. Molyneux
Mr. Molyneux will correct and provide
the requested info in a letter.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

Thomas K. Thompson

DATE

5/14/87

ACTION TAKEN

"OFFICIAL RECORD COPY"

ML10

SIGNATURE

TITLE

DATE

50271-101

U.S. G.P.O. 1983-381-526/8346

CONVERSATION RECORD

OPTIONAL FORM 10-1 (12-76)
DEPARTMENT OF DEFENSE

Dresser

- 1) You have not provided specifications for your most ~~test~~ conservative conditions in your permanent cell evaluation. You indicate readings are open tube. We assume you must be referring to uncollimated. What source strength of Co-60 was used for this survey? What is your cell roof wall thickness and construction?

~~Test quarters (?)~~

220 Ci

14" concrete on top cell
N 14' roof another 35'

- 2) Some of your additional questions for radiographer assistant exams are unclear or confusing.

a) Question 8 answer should be that last check prior to leaving exposure room should be a check for personnel who may have entered room or ~~above~~ roof above cell.

b) Question 12 is misleading ~~because~~ because leakage detectable ~~by~~ by daily survey meter checks would have to be so excessive that such a leak is unlikely. Wipe tests are normally performed every 6 months. Perhaps guide tabs could be checked for gross contamination if separated from camera and taken to a low background radiation area.

c) Question 15, ~~an~~ answer is ~~obvious~~ obvious

d) Question 16 is not a ^{complete} question.

e) Question 22A answer is obvious

f) Question 22B is not a complete question

g) Question 25 looks like an obvious True/False question only.

Please correct those questions and submit the corrections.

OVERSIZE DOCUMENT PAGE PULLED

SEE APERTURE CARDS

NUMBER OF OVERSIZE PAGES FILMED ON APERTURE CARDS

2

**APERTURE CARD/HARD COPY AVAILABLE FROM RECORD SERVICES BRANCH, TIDC
FTS 492-8989**

ANTICIPATED RADIATION LEVEL

LOCATION NUMBER	RADIATION MIC. PER HR.	RE MARKS
(A) EAST WALL	.5	OPEN TUBE
(B) NORTH WALL	.0	OPEN TUBE
(C) WEST WALL	.5	OPEN TUBE
(D) SOUTH WALL	.4	OPEN TUBE
(E) ENTRANCE DOOR	.8	OPEN TUBE
(F) BUILDING ROOF	200 TO 225	OPEN TUBE CONTROLLED AREA
(G) BUILDING ROOF	55	OPEN TUBE CONTROLLED AREA

TECH CRANING

SHOP

NO CRANE WARNING
RE JOLTS AND LIGHT
MOUNTED ON CRANE RAIL

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EXTERNAL RADIATION LEVELS

