

The Dow Chemical Company

7/16/63

Revised 10/63

Normal Radiography Procedure w Co<sup>60</sup>

1. Examine the job and the job site to make measurement and determine how the exposure will be made.
2. Check the area, hazards and personnel involved.
3. Calculate the desired exposure; radioactive source to be used, time, film and distance.
4. Radiographers secure film badges and check dosimeters to read them and check for proper level of charge. (Not greater than 100 on the 200 mr scale.) Place the radioactive materials sign on the back of the truck.
5. Unlock materials and equipment and load into the portable X-ray truck at 615 Building. Unchain the source but padlock it for transport.
6. Place the truck as convenient to work site as possible.
7. Alert supervision and personnel in the area.
8. Place the film in position on the object to be radiographed.
9. Set up the handling rod in place and make a "dry run" to check for freedom of movement and possible difficulties.
10. Turn on and check the zero point of the survey meter.
11. Rope off the area involved to a distance of 76 feet for the large source, 12 feet for the small source. This includes

stairways, floors overhead and below. Place radiation area signs on the rope so that they are clearly visible.

12. Read dosimeters.
13. Unlock the storage container for the source, open the lid, and thread the 8 feet handling rod onto the source, avoiding direct personal exposure as much as possible. Maximum time and shortest distance in this operation would be 15 seconds and three feet approximately.
14. Place the source and handling rod in position.
15. Check roped off area using the survey meter to allow no exposure at this distance of more than 2 mr/hr radiation level.
16. Check dosimeter again for personal exposure.
17. Monitor the radiation area at all times.
18. At the end of exposure, return the source to the container. Unthread the handling rod. Close and lock the container. Check with the survey meter to verify that the source is in place.
19. Film, rope, signs and equipment are returned to the truck.
20. Notify supervision and personnel in the area that the job has been completed.
21. Develop the film.
22. Return the source and equipment to the storage area at 615 Building. Radioactive materials sign on back of the truck is removed.

23. Chain and lock the source container in place, then check it with the survey meter.
24. The date, dosage, place, "large" or "small" source, and job involved is logged in the log book, and initialed by the senior radiographer.

#### Alternate Procedures

In case of a large amount of use of the source on a job, a proper storage area may be established near to the job location. A temporary storage site should be selected in an isolated, low fire-hazard area where the source container can be chained to something solid to prevent its removal. A radiation survey of the site should be made and signs placed at or beyond the 2 mr/hr isodose line. One of the persons on the Emergency Call List should be advised by telephone each time the source is stored away from 615 Building.

Normal Work Procedures to be followed are as described on the cobalt radiography job Key Point Card. The key point card lists the necessary equipment to consider for the job.

Emergency Procedures must be followed in all instances of (1) loss of source, (2) rupture of source, or (3) overexposure (dosimeter discharge). In these emergencies call: L. G. Silverstein ME 6-2377

H. R. Hoyle ME 6-2377

J. E. Peterson ME 6-2377

Emergency Procedures for Handling Cobalt-60 Radiographic Sources

By: W. R. Schick

Approved By: R. F. Woollard

Date: 6-12-63

Revised 10/63 - L. G. Silverstein

To: Radiographers

Scope: Emergency includes:

1. Loss of source
2. Rupture of source
3. Overexposure (dosimeter discharge)
4. Plant emergency

Remarks:

In these emergencies call:

Business  
Phone

Home  
Phone

Larry G. Silverstein

ME 6-2377

or H. R. Hoyle

ME 6-2377

or J. E. Peterson

ME 6-2377

1. If the source is lost - locate the general area with the meter and keep people away.
2. If rupture of the source is suspected, rope off any area that may be contaminated and keep people away.
3. If overexposure to radiographers or others is suspected, or the dosimeter is discharged while using a source, the exposed person and the senior radiographer should report to Dow Medical Department.
4. If there is a plant emergency involving the area in which you are working, secure the source in its storage container if at all possible, and get it out of the area.

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