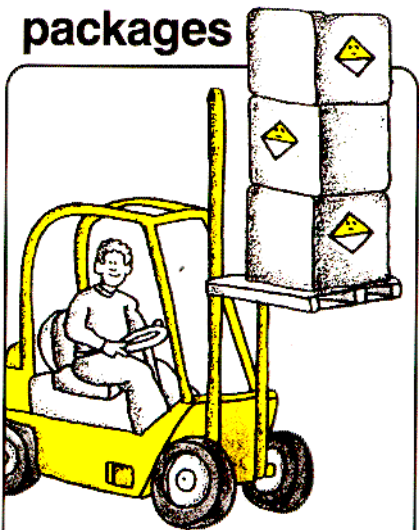


How to handle Radioactive materials packages



A guide for cargo handlers

U.S. Department of Transportation
and U.S. Nuclear Regulatory Commission

Revised April 1999

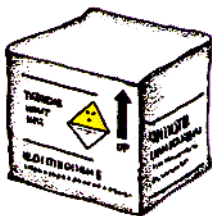
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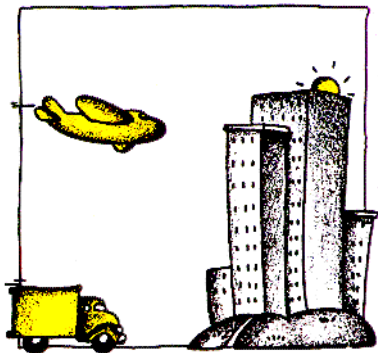
Radioactive Materials Packages



This is a package containing radioactive materials.



You can recognize these packages by their labels. An all-white label means practically no radiation, while a yellow label means some radiation outside the package. The RADIOACTIVE YELLOW-III label is for higher radiation levels than the RADIOACTIVE YELLOW-II label.



Most radioactive materials packages contain radioactive drugs that are being transported to hospitals.



The radioactive drugs are given to patients for the detection and treatment of disease. Radioactive materials are also used by industry and by research laboratories.



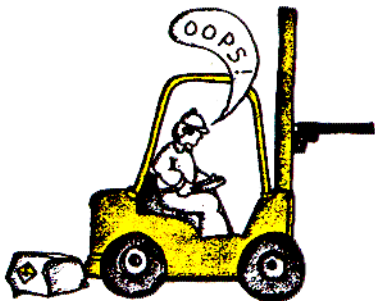
Packages of radioactive material are safe to handle under normal conditions. Studies show that cargo handlers get very little radiation exposure from handling them.



However, you should always follow good work habits that will prevent unnecessary exposure to any hazardous sources, including radiation.

The radiation dose you receive depends on how long you stay near a radioactive materials package. It also depends on how close you are to the package, because the radiation level drops off rapidly as you get farther away from the package.

Therefore, the basic rules to follow to prevent unnecessary radiation exposures are called the **TIME** and **DISTANCE** rules. They are given on the next four pages.



In case of accidents, you can receive higher exposures if you do not handle the situation properly. The steps you should follow if there is an accident are given on page 10.

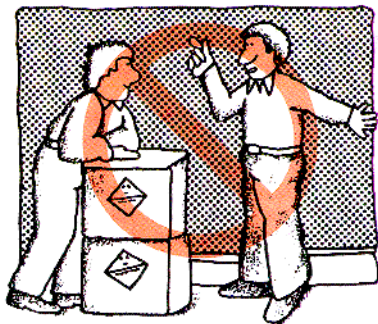
Time Rule

Keep contact time with packages short

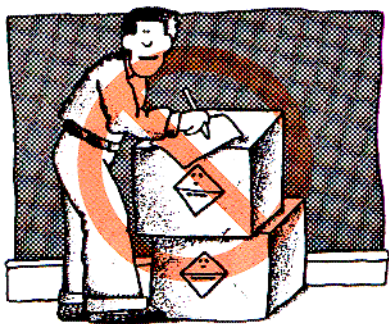
- Do not take rest periods near radioactive materials packages.
- Do not use packages as meeting places.
- Do not do time-consuming tasks, such as paperwork, near packages.
- Handle packages without delay when moving them from one place to another.



Do not hang around packages.



Do not socialize near packages.

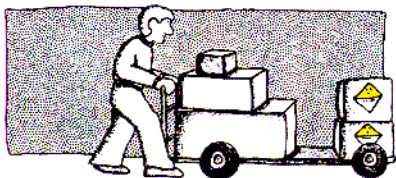


Do not use packages as a desk

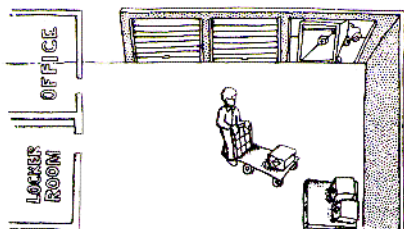
Distance Rule

Keep packages some distance away from you and other people

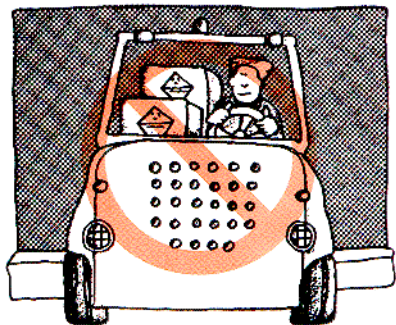
- Store packages some distance away from offices, locker rooms and usually occupied work areas.
- When moving packages a long way, use a cart or truck that will let you leave a few feet between you and the radioactive materials packages.
- Position radioactive materials packages so people don't have to stand next to them while handling other packages.
- Store packages at the farthest distance when there is a convenient choice of locations.
- Do not store packages with transport indexes (TIs) that add up to more than 50 at any one location.



Use a cart to keep packages some distance away from you when moving them a long way.



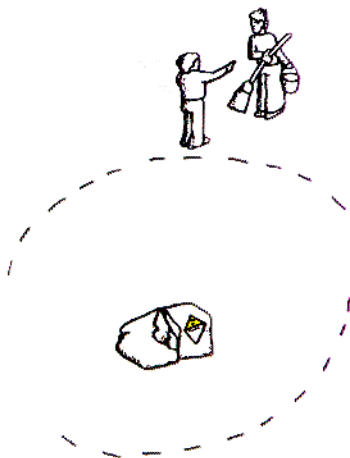
Stow packages away from areas occupied by people.



Don't place packages in the cab with the driver.

What To Do In Case of an Accident

1. Stay away from the package and do not touch it.
2. Keep other people away from the package.
3. Notify your supervisor. He or she will call for help.
4. Tell anybody who may have touched the package to go to a control point to be checked by radiation protection specialists.
5. Wash your hands thoroughly if you touched the package or objects near it.
6. Have yourself checked by a radiation protection specialist before you leave work.



Do not clean up the area where the accident occurred. This must be done under the direction of specialists.

Questions and Answers

The rest of this booklet contains answers to some common questions asked by cargo handlers. If you would like to read more detailed information about radioactive materials packages, ask your supervisor for a copy of *All About Radioactive Materials Packages – A Guide for Supervisors at Cargo Terminals*, published by the U.S. Department of Transportation and the U.S. Nuclear Regulatory Commission.

Q. Is it safe to handle packages of radioactive materials?

- A. Packages of radioactive material are safe to handle under normal conditions. The radiation exposure received from handling these packages is too low to have any noticeable effect. For example, it will not make you sterile or impotent.

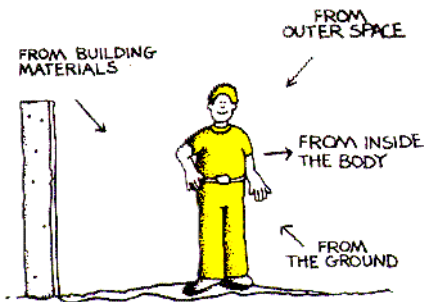
However, you should still try to avoid unnecessary radiation exposure by following the Time-Distance rules described earlier in this booklet.

In case of an accident, it may or may not be safe to handle radioactive materials packages. Be sure to stay away from a package that has been badly damaged or is leaking.

Q. Is it true that everybody is exposed to radiation?

A. Yes, everybody in the world receives a small amount of radiation exposure at all times. Radiation is given off constantly by radioactive materials all around us – in the ground, in the walls of buildings, even in our own bodies. In addition, the earth is bombarded by radiation from the sun and from outer space, known as cosmic radiation.

The additional radiation doses cargo handlers receive in a year from handling radioactive materials packages are generally less than the doses received from these natural sources.



Radiation exposure from the environment

Q. Can a person or food become radioactive from being near packages of radioactive material?

- A. You cannot become radioactive from the radiation given off from packages of radioactive material. The exposure to radiation stops when you move away from the packages.

The same thing is true for food. If lobsters are stacked next to a radioactive materials package; they will not become radioactive and it is not dangerous to eat them.

The only way you could get any radioactivity on you is if the packaging broke and the radioactive material leaked out and you touched it. If you think this may have happened, contact your supervisor. The supervisor will arrange to check you with a radiation meter and will see that any radioactive material found is cleaned up properly (usually with soap and water).

Q. How serious is leakage of radioactive liquid or powder from a package if there is an accident?

A. There is a chance that radioactive material that leaks from a broken package can be breathed in or swallowed. Even if some gets into your body, however, it is not necessarily dangerous. Remember that most of the packages shipped contain radioactive drugs that are deliberately given to patients by doctors. Some radioactive materials are more dangerous than others. However, the more dangerous radioactive materials are shipped infrequently and must be contained in especially strong packages. It is unlikely that the contents will leak out, even if the packages are dropped or damaged.