



# Fact Sheet

United States Nuclear Regulatory Commission  
Office of Public Affairs  
Washington DC 20555  
Telephone: 301/415-8200 E-mail: opa@nrc.gov

## Dirty Bombs

### Background

In order to better inform the public on what a dirty bomb is and what terrorists might intend to try to accomplish in setting off such a weapon, the following information is provided. Given the scores of exercises—federal, state and local—being staged to assure that all emergency response organizations are properly equipped, trained and exercised to respond to terrorist chemical, biological or radiological attack, we believe members of the public, as well as news organizations, will value some concise, straightforward information.

Basically, the principal type of dirty bomb, or Radiological Dispersal Device (RDD), combines a conventional explosive, such as dynamite, with radioactive material. In most instances, the conventional explosive itself would have more immediate lethality than the radioactive material. At the levels created by most probable sources, not enough radiation would be present in a dirty bomb to kill people or cause severe illness. For example, most radioactive material employed in hospitals for diagnosis or treatment of cancer is sufficiently benign that about 100,000 patients a day are released with this material in their bodies.

However, certain other radioactive materials, dispersed in the air, could contaminate up to several city blocks, creating fear and possibly panic and requiring potentially costly cleanup. Prompt, accurate, non-emotional public information might prevent the panic sought by terrorists.

A second type of RDD might involve a powerful radioactive source hidden in a public place, such as a trash receptacle in a busy train or subway station, where people passing close to the source might get a significant dose of radiation.

A dirty bomb is in no way similar to a nuclear weapon. The presumed purpose of its use would be therefore not as a Weapon of Mass Destruction but rather as a Weapon of Mass Disruption.

### Impact of a Dirty Bomb

The extent of local contamination would depend on a number of factors, including the size of the explosive, the amount and type of radioactive material used, and weather conditions. Prompt detectability of the kind of radioactive material employed would greatly assist local authorities in advising the community on protective measures, such as quickly leaving the immediate area, or going inside until being further advised. Subsequent decontamination of the affected area could involve considerable time and expense.

## **Sources of Radioactive Material**

Radioactive materials are widely used at hospitals, research facilities, industrial and construction sites. These radioactive materials are used for such purposes as in diagnosing and treating illnesses, sterilizing equipment, and inspecting welding seams. For example, the Nuclear Regulatory Commission, together with 32 states which regulate radioactive material, have over 21,000 organizations licensed to use such materials. The vast majority of these sources are not useful for constructing an RDD.

## **Control of Radioactive Material**

NRC and state regulations require licensees to secure radioactive material from theft and unauthorized access. These measures have been stiffened since the attacks of September 11, 2001. Licensees must promptly report lost or stolen material. Local authorities make a determined effort to find and retrieve such sources. Most reports of lost or stolen material involve small or short-lived radioactive sources not useful for an RDD.

Past experience suggests there has not been a pattern of collecting such sources for the purpose of assembling a dirty bomb. Only one high-risk radioactive source has not been recovered in the last five years in the United States. However, this source (Iridium-192) would no longer be considered a high-risk source because much of the radioactivity has decayed away since it was reported stolen in 1999. In fact, the combined total of all unrecovered sources over a 5-year time span would barely reach the threshold for one high-risk radioactive source. Unfortunately, the same cannot be said world-wide. The U.S. Government is working to strengthen controls on high-risk radioactive sources both at home and abroad.

## **What People Should Do Following an Explosion**

- Move away from the immediate area--at least several blocks from the explosion--and go inside. This will reduce exposure to any radioactive airborne dust.
- Turn on local radio or TV channels for advisories from emergency response and health authorities.
- If facilities are available, remove clothes and place them in a sealed plastic bag. Saving contaminated clothing will allow testing for radiation exposure.
- Take a shower to wash off dust and dirt. This will reduce total radiation exposure, if the explosive device contained radioactive material.
- If radioactive material was released, local news broadcasts will advise people where to report for radiation monitoring and blood and other tests to determine whether they were in fact exposed and what steps to take to protect their health.

## **Risk of Cancer**

Just because a person is near a radioactive source for a short time or gets a small amount of radioactive dust on himself or herself does not mean he or she will get cancer. The additional risk will likely be very small. Doctors

will be able to assess the risks and suggest mitigating measures once the radioactive source and exposure level have been determined.

It should be noted that Potassium Iodide (KI) would not be protective except in the very unlikely event that the dirty bomb contained radioactive iodine isotopes in large quantities. Radioactive iodine isotopes are not particularly attractive for use in an RDD for a variety of technical reasons. KI only protects the thyroid from radioactive iodine, but offers no protection to other parts of the body or against other radioactive isotopes.

A number of federal agencies have responsibilities for dealing with possible detonations of dirty bombs. Reporters or other interested parties may wish to check out their websites. In addition, their offices of public affairs stand ready to promptly answer press questions on the subject or to provide access to experts in and out of government. Their websites and phone numbers follow:

Department of Energy: [www.energy.gov/](http://www.energy.gov/) ; tel 202-586-4940.

Environmental Protection Agency: [www.epa.gov](http://www.epa.gov) ; tel 202-564-9828.

Nuclear Regulatory Commission: [www.nrc.gov](http://www.nrc.gov) ; tel 301-415-8200.

Federal Emergency Management Agency: [www.fema.gov](http://www.fema.gov) ; tel 202-646-4600.

Department of Justice: [www.usdoj.gov](http://www.usdoj.gov) ; tel 202-514-2007.

Federal Bureau of Investigation: [www.fbi.gov](http://www.fbi.gov) ; tel 202-324-3691.

Department of Health and Human Services: [www.hhs.gov](http://www.hhs.gov) ; tel 202-690-6343.

Department of Homeland Security: [www.dhs.gov](http://www.dhs.gov) ; tel 202-282-8010.

Transportation Security Administration: [www.tsa.gov/public/](http://www.tsa.gov/public/) ; tel 571-227-2829.

National Nuclear Security Administration: [www.nnsa.doe.gov/](http://www.nnsa.doe.gov/) ; tel 202-586-7371.

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