

RADIOLOGICAL DISPERSION DEVICE (RDD), AKA “DIRTY BOMB”

Adapted from: Nuclear Regulatory Commission <http://www.nrc.gov>

1. Background:

- 1.1 Principal type of “dirty bomb” combines a conventional explosive such as Dynamite/Explosives with radioactive material
- 1.2 A conventional explosive itself would have more immediate lethality than dirty bombs
- 1.3 Most probably, not enough radiation would be present in a dirty bomb to:
 - ▶ Kill people
 - ▶ Cause severe illness
- 1.4 Most radioactive material employed in hospitals is sufficiently benign
- 1.5 About 100,000 patients a day are released with this material in their bodies
- 1.6 Certain other radioactive materials could contaminate up to several city blocks
- 1.7 It could create fear and possibly panic and requiring potentially costly cleanup
- 1.8 A second type of RDD might involve a powerful radioactive source hidden in a public place
- 1.9 Hiding places may include such places as :
 - ▶ Trash receptacles
 - ▶ Latrines
 - ▶ Delivery vehicles
 - ▶ Vending machines
 - ▶ Parked vehicles
- 1.10 A dirty bomb is in no way similar to a nuclear weapon
- 1.11 The presumed purpose of its use would be as a Weapon of Mass Disruption
- 1.12 Not as a Weapon of Mass Destruction

2. Impact of a Dirty Bomb:

- 2.1 The extent of local contamination would depend on a number of factors
- 2.2 Factors includes:
 - ▶ The size of the explosive
 - ▶ The amount and type of radioactive material used
 - ▶ The weather conditions
- 2.3 Prompt detection of the kind of radioactive material employed would greatly assist local authorities
- 2.4 It would assist in advising the community on protective measures, such as:
 - ▶ Quickly leaving the immediate area or
 - ▶ Going inside until being further advised
- 2.5 Subsequent decontamination of the affected area could involve considerable:
 - ▶ Time
 - ▶ Expense

3. What Should You Do Following an Explosion

- 3.1 Move away from the immediate area--at least several blocks from the explosion
- 3.2 Head inside and establish shelter-in-place
- 3.3 This to reduce exposure to radioactive dust

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- 3.4 Turn to radio/TV channels for advisories from:
 - ▶ Emergency response
 - ▶ Health authorities
- 3.5 If facilities are available, remove clothes and place them in a sealed plastic bag
- 3.6 Save contaminated clothing to allow for testing for radiation exposure
- 3.7 Take a shower to wash off dust and dirt, or to reduce radiation exposure, if the explosive device is radioactive
- 3.8 If radiation was released, local news will advise people where to report for:
 - ▶ Radiation monitoring
 - ▶ Blood tests
 - ▶ Other tests
- 3.9 Test to determine if in fact exposed and what steps to take to protect health.

4. Risk of Cancer

- 4.1 Short time or small doses of radioactive dust does not mean a person will get cancer
- 4.2 The additional risk will likely be very small
- 4.3 Potassium Iodide (KI) will not be protective except in the unlikely event that the dirty bomb contained radioactive iodine isotopes
- 4.4 The iodine isotopes would have to be in large quantities
- 4.5 Radioactive iodine isotopes are not particularly attractive for use in an RDD
- 4.6 KI only protects the thyroid from radioactive iodine
- 4.7 KI offers no protection to other parts of the body or against other radioactive isotopes