

RADIOLOGICAL HAZARDS ASSOCIATED WITH A LARGE-SCALERELEASE OF NUCLEAR ENERGY

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The radiological hazards associated with a large-scale release of nuclear energy may be roughly divided into three stages: first, those that are present at or shortly after the time of detonation from the release of penetrating ionizing radiation; second, the external body exposure to large amounts of gamma radiation given off by the fission products which may have contaminated the area immediately around the area of the detonation and downwind; and third, the long term insidious hazard produced by the inhalation and ingestion and possible storage of long life fission materials within the body itself. The long term hazard arises from continuous contact with areas which have been extensively contaminated as a result of the detonation. The discussion will deal with the physical problem of monitoring. Lantern slides and movies will be shown of the physical damage at Hiroshima and Nagasaki to illustrate the chaotic conditions possible in a contaminated area and some of the details of the hazards confronting those working on the target ships at Bikini will be used to illustrate the problems of dealing with the hazards immediately after the explosion. There will be a brief description of possibilities of downwind contamination with the portals of entry to the body through food, water supply and dust with a brief discussion of the probabilities of damage and treatment in case of injury.

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