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Holtec International HI-STORE Consolidated Interim Storage Facility Project

Comment On: NRC-2018-0052-0058

Holtec International HI-STORE Consolidated Interim Storage Facility Project

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Comment on FR Doc # 2018-10418

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Organization: none

Government Agency Type: State

Government Agency: none

General Comment

Please accept the attached health and safety comments and CDC infographics for Holtec SNF Storage application: DOCKET ID NRC-2018:0052

Thank you,

Teresa Seamster

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Attachments

Holtec Health Impacts_NRC letter_270718

Infographic_Contamination_versus_Exposure

Infographic_Workplace_Radiation_Incidents

May Ma
Office of Administration
Mail Stop: TWFN-7-A60M
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Via Email: holtec-cisfeis@nrc.gov

July 27, 2018

RE: Holtec SNF Storage – Eddy/Lea County Residents Public Health and Safety Considerations

Current Status of Holtec Spent Nuclear Fuel (SNF) Storage Project

Nuclear Regulatory Commission (NRC) is conducting an Environmental Review for Phase 1 licensing of an initial 500 canisters of SNF from US commercial Shutdown and Operating reactors. Holtec anticipates 20 phases for total of 10,000 canisters SNF. HOLTEC International Storage Module (HI-STORM) U-MAX system was selected for ELEA/NM - a group of 8 regional businessmen who formed a Limited Liability Corporation (LLC) to attract nuclear waste storage dollars to Eddy & Lea Counties.

Proposed Facility

A 1000-acre site has been proposed on the boundary of Eddy and Lea Counties north of NM 62 that connects the cities of Carlsbad and Hobbs. Terrain is rolling undeveloped land with nearby "playas" or ephemeral lakes that fill during wet periods. Nearest town is 35 miles, but oil wells, residential areas and ranchlands exist along NM62.

Proposed Safety Zone & Safety Assertions

Holtec's presentation slides to NM Radioactive & Hazardous Waste Materials Interim Committee, May 18, 2018:

- The property boundary is the boundary of the Emergency Planning Zone (owner controlled 1000 acres)
- "There are no radiological effects under normal or accident conditions beyond that boundary"
- Holtec "maximizes safety"
- "Minimizes dose to environment and crew"
- "Virtually immune to environmental disasters: hurricanes, floods, tornados, and earthquakes"
- "Designed to withstand crashing aircraft or on-site fire without any radiological consequences"

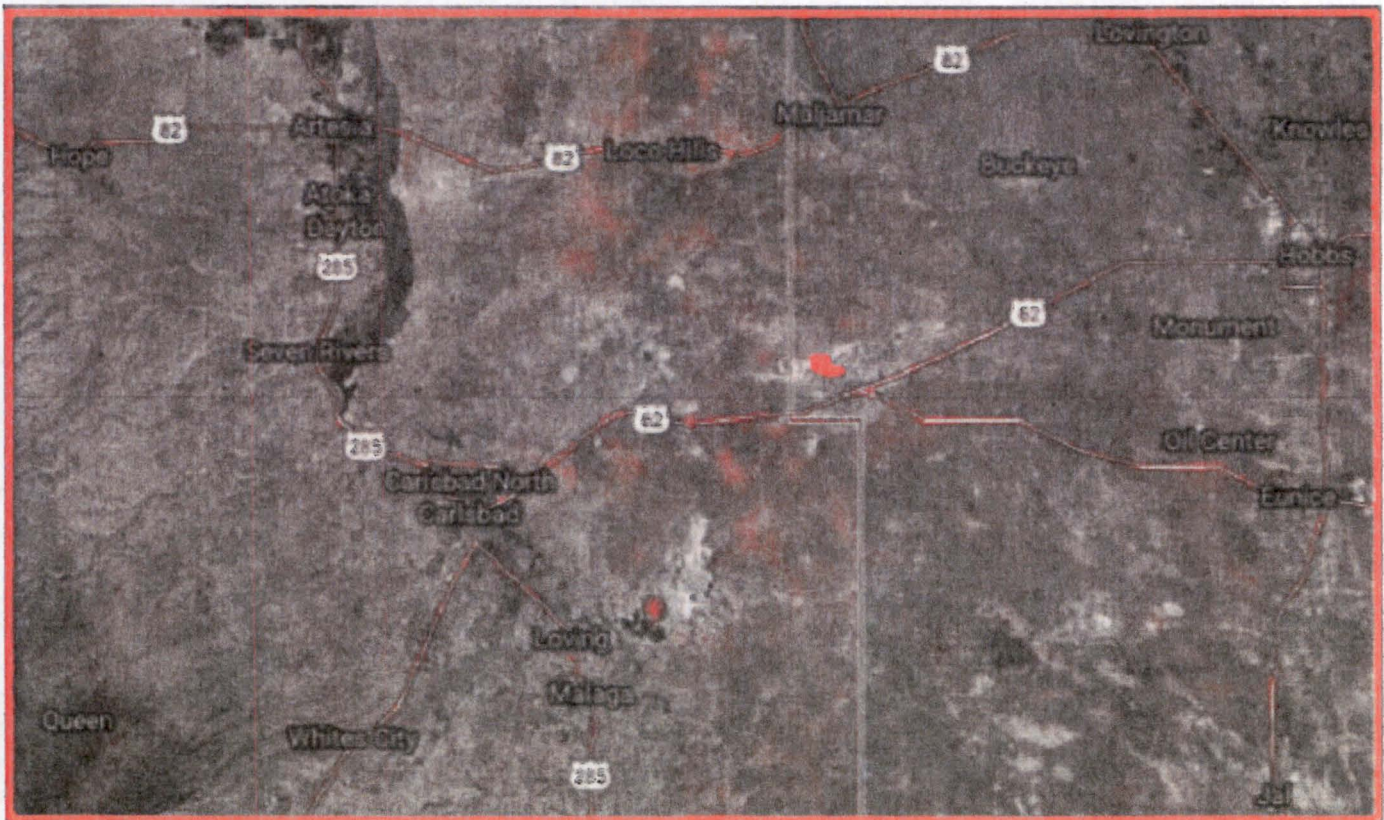
None of above claims made by Holtec or ELEA/NM was factually substantiated in the presentation.

Highest Public Health & Safety Concerns

- 1) Holtec plans a total storage build out of 10,000 canisters, each weighing 125 tons, placed in 18' tubes partially buried at ground level in an open air, unshielded facility, built on 500 developed acres surrounded by a chain link fence just off a rural NM highway. The volume and density of hazardous material being placed in storage is unprecedented on such a small site.
- 2) No police, emergency response, fire department or hospital is closer than 35 miles and no on-site emergency facility is proposed.
- 3) SNF is high-level radioactive waste that vastly exceeds the public safety hazards posed by the transport and storage of low-level Transuranic waste stored at WIPP which has far more extensive monitoring, safety and security measures than is in the Holtec proposal.
- 4) SNF canisters will be encased in cement liners that reportedly have been observed in cracked and

5) Holtec basically builds dry storage canisters and provides land to store them in. It takes no responsibility for the key risk factors associated with spent nuclear rod waste storage.

- Regulator for Casks: **Nuclear Regulatory Commission** (Certificate under 10 CFR Part 71) – NRC has not publicly supported this project and the Holtec proposal does not meet the 10CFR60 requirements for a permanent repository.
- Regulator for Transport Operation: **NM Department of Transportation** – has not publicly supported this project or indicated if private railroads and state highways are capable of taking shipments of this weight (196 Kilotons annually on rails rated for 143 Kilotons) and level of hazardous material
- Transport Operation: **“shipping company”** - no company is specified and it is unknown if any are able to assume the liability for shipments of this size, weight and level of hazardous material
- Emergency Response: **State and Local Authorities** –no emergency managers or hospitals have publicly supported this project or agreed to take responsibility for extensive HAZMAT training, additional personnel or specialized monitoring and treatment equipment



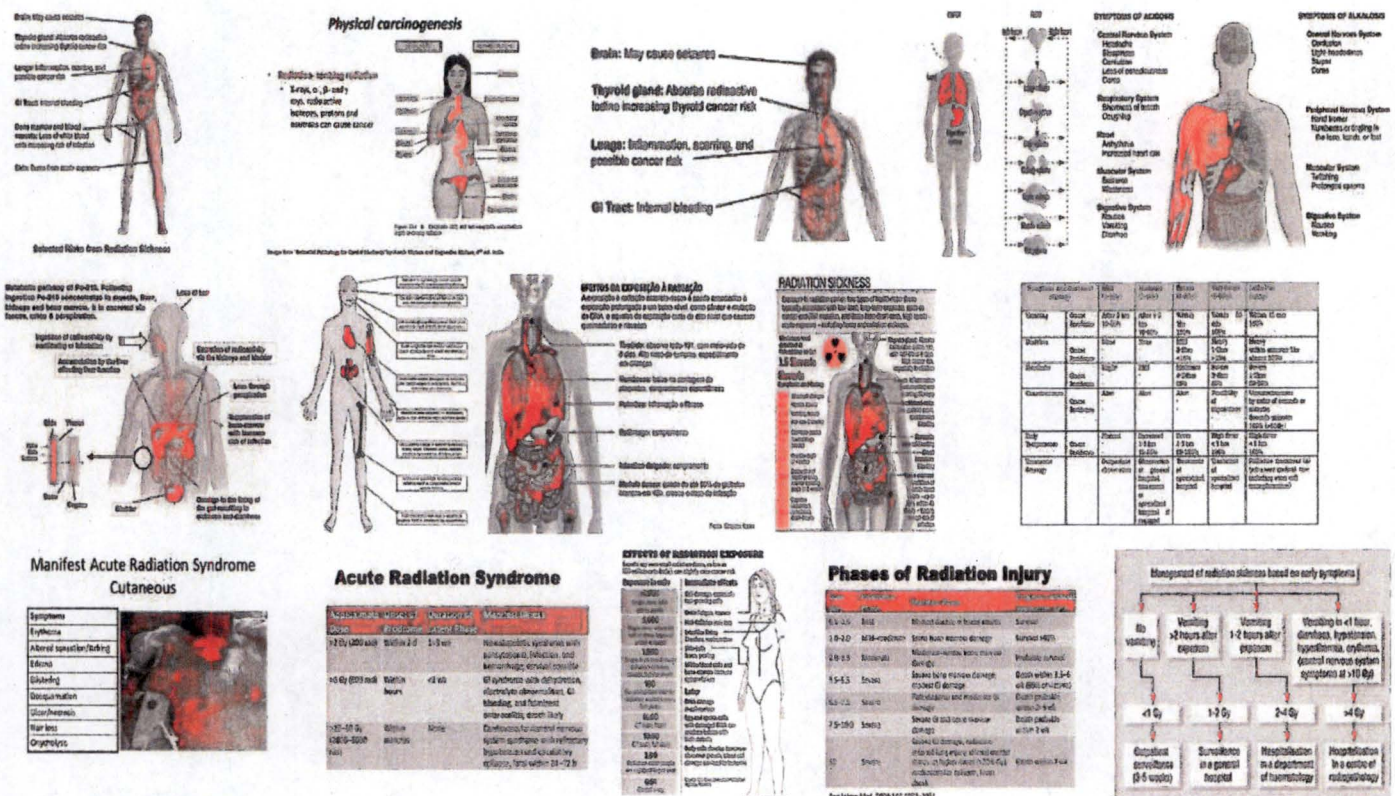
Radioactivity levels from Spent Nuclear Fuel canisters are greater than that of fresh nuclear fuel, and contain as much plutonium as the atomic bomb that destroyed the city and inhabitants of Nagasaki. Members of the public who might accidentally come within a traffic lane distance from unshielded Spent Nuclear Fuel could suffer severe health conditions. Groundwater at depths of 35-50 feet underground could be contaminated for decades. Any accidents that closely and directly exposed the public or the environment to "unshielded" SNF (such as a cracked canister on a public highway) would have potentially long-term catastrophic results. There have been no presentations of these risks by qualified medical personnel to the public.

Signs and symptoms of radiation sickness

	Mild exposure (1-2 Gy)	Moderate exposure (2-6 Gy)	Severe exposure (6-9 Gy)	Very severe exposure (10 Gy or higher)
Nausea and vomiting	Within 6 hours	Within 2 hours	Within 1 hour	Within 10 minutes
Diarrhea	--	Within 8 hours	Within 3 hours	Within 1 hour
Headache	--	Within 24 hours	Within 4 hours	Within 2 hours
Fever	--	Within 3 hours	Within 1 hour	Within 1 hour
Dizziness and disorientation	--	--	Within 1 week	Immediate
Weakness, fatigue	Within 4 weeks	Within 1-4 weeks	Within 1 week	Immediate
Hair loss, bloody vomit and stools, infections, poor wound healing, low blood pressure	--	Within 1-4 weeks	Within 1 week	Immediate

Based on Radiation exposure and contamination. Merck Manual
Professional Edition.

Radiation sickness



(Posters may be enlarged)

SNF stays radioactive for decades and plutonium remains toxic for thousands of years. Radioactive isotopes eventually decay, or disintegrate, to harmless materials. Some isotopes decay in hours or even minutes, but others decay very slowly. Strontium-90 and cesium-137 have half-lives of **about 30 years** (half the radioactivity will decay in 30 years). Plutonium-239 has a half-life of **24,000 years**.

The Centers for Disease Control's "Radiation Emergencies Public Health Roundtable: The Role of Poison Centers" (Discussion Group Summary Report, 2013) clearly emphasizes the lack of preparedness in this country in the face of a radiological exposure incident of any magnitude. It concludes that current Poison Center Hotlines would be the best delivery system for a uniform medical message to the public and to answer a patient's specific questions.

CONCLUSIONS

The nation's Poison Centers (PCs) **will** be involved during a public health radiation emergency. PCs should anticipate receiving phone calls as a consequence of such an incident, and they have many capabilities that can be of benefit during a public health response to an incident. The primary role of PCs during a response to a public health radiation emergency will be to provide accurate, uniform information to callers. However, other important roles may include using the NPDS to augment public health messaging and risk communication, assisting with caller triage and medical management, and supporting long-term follow-up activities.

Currently, PC personnel have limited knowledge and experience regarding health effects and management of contamination with radioactive material and exposure to ionizing radiation. More training on these topics would improve the preparedness level of PC personnel and enhance response readiness. In addition, improving collaboration between PCs and local, state, and federal agencies is crucial to an effective public health response to radiation emergencies.

NEXT STEPS

Improve radiation health training and education among poison center personnel.

The kinds of training desired by PC personnel should be eligible for continuing education credit for physicians, nurses, and pharmacists. It should include the following elements:

- Frequent training on basic radiation knowledge, radiation-related health effects, and radiation risk communication.
- NPDS coding of radiation-related calls, specifically for Poison Specialists. Roundtable participants indicated poor to no awareness of the new NPDS radiation codes. One way to make learning radiation coding a priority is to incorporate it into the continuing education process.
- Online training modules involving persons either contaminated with radioactive material and/or exposed to ionizing radiation, with the purpose of teaching Poison Specialists what symptoms to look for and important questions to ask.
- Disaster drills: PCs should partner with state public health departments to gain a larger role in state or federal drills. Hands-on training sessions or simulations: educational offerings should be frequent and repeated. (End)

None of these trainings, simulations, educational materials or other emergency management protocols is currently in place, and it is highly unlikely they will be established in Eddy-Lea Counties within the proposed start of operations.

The public has a right to know all the potential risks posed by the size, operations, transportation plans and site issues posed by the Holtec proposal in Lea County. A complete lack of information regarding medical and safety consequences for the residents in communities surrounding the storage facility is unacceptable. **The current proposal should be suspended by the NRC until all risks are fully addressed and all agencies assuming those risks have publicly given their approval and demonstrated their capability to successfully fulfill those responsibilities.**

The likelihood of a serious transportation accident, workplace incident, or breach of a canister over its 20-year life is high, given the number of canisters, the travel distances and the current infrastructure. The potential effects are long-term site contamination, radiation sickness and an unlivable environment. Given the lack of emergency preparedness, low security, distant medical facilities and many unknowns about ground-level storage on the site chosen for Holtec, the likelihood of serious health and safety incidents for workers and residents in Eddy-Lea counties rises to a high probability.

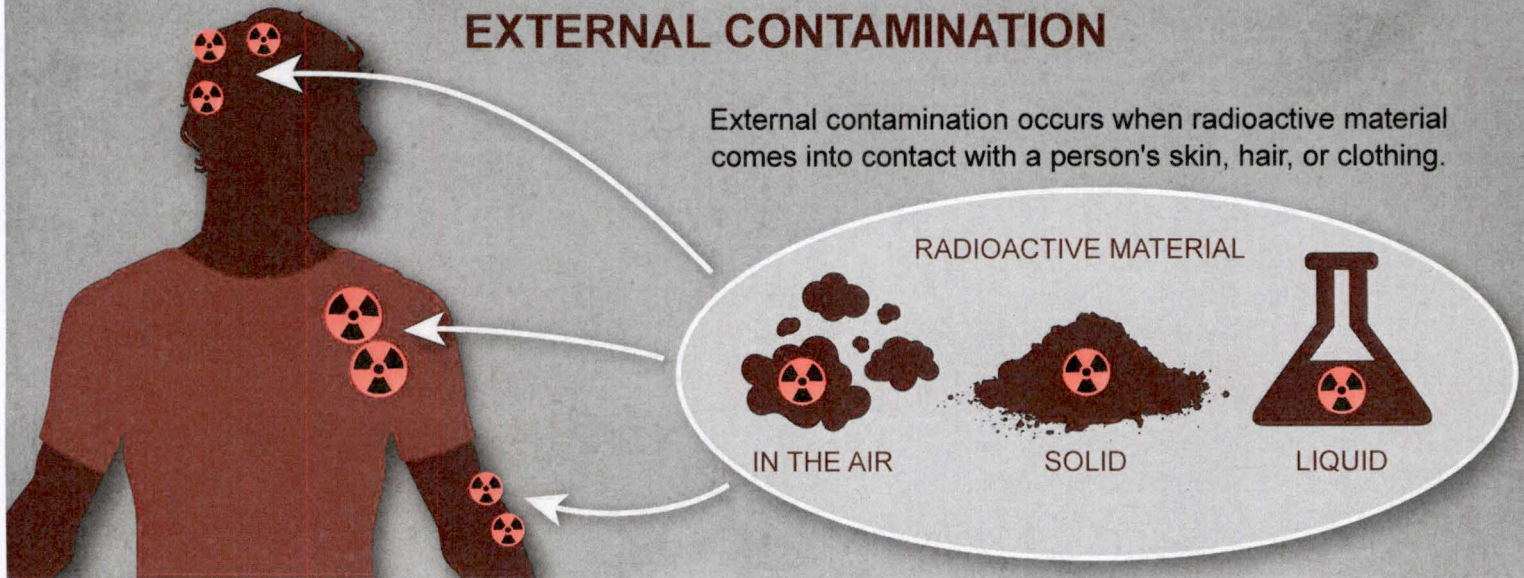
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Attachments (2): Workplace & Contamination Infographics

RADIATION CONTAMINATION VERSUS EXPOSURE

EXTERNAL CONTAMINATION

External contamination occurs when radioactive material comes into contact with a person's skin, hair, or clothing.

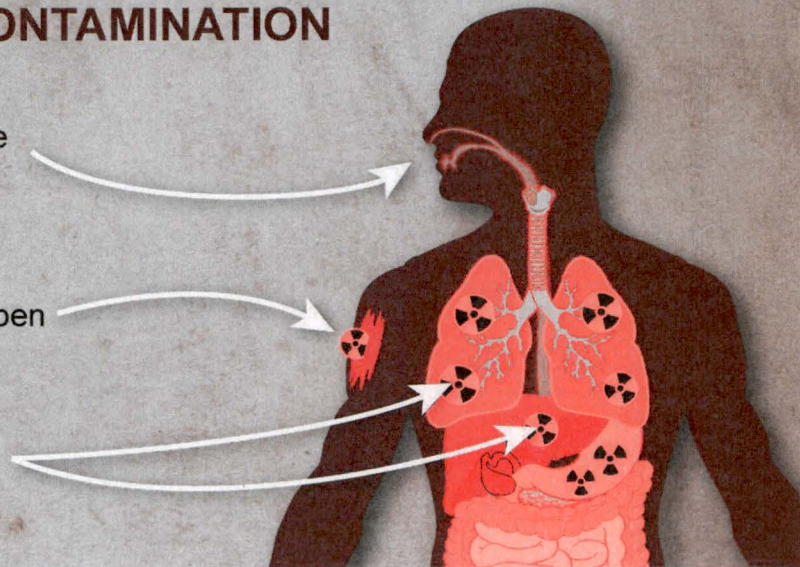


INTERNAL CONTAMINATION

Internal contamination can occur when radioactive material is swallowed or breathed in.

Internal contamination can also occur when radioactive material enters the body through an open wound.

Different radioactive materials can accumulate in different body organs.



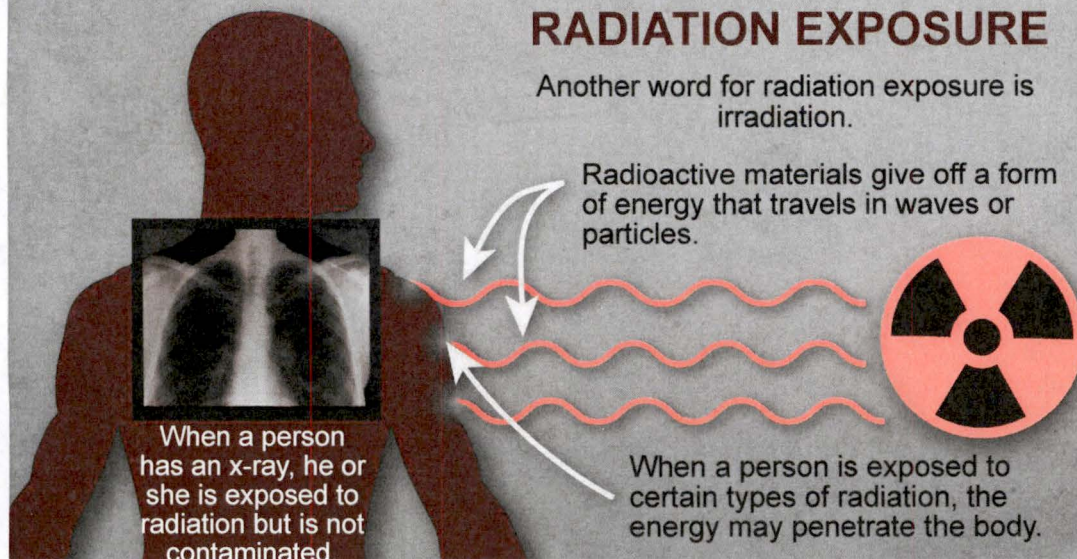
RADIATION EXPOSURE

Another word for radiation exposure is irradiation.

Radioactive materials give off a form of energy that travels in waves or particles.

A person exposed to radiation is not necessarily contaminated with radioactive material.

For a person to be contaminated, radioactive material must be on or inside of his or her body.



When a person has an x-ray, he or she is exposed to radiation but is not contaminated.

When a person is exposed to certain types of radiation, the energy may penetrate the body.



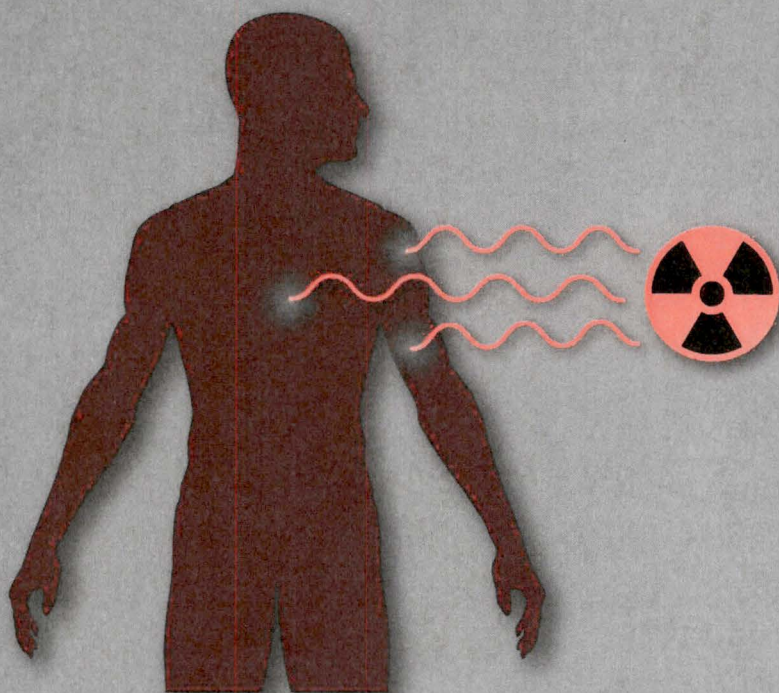
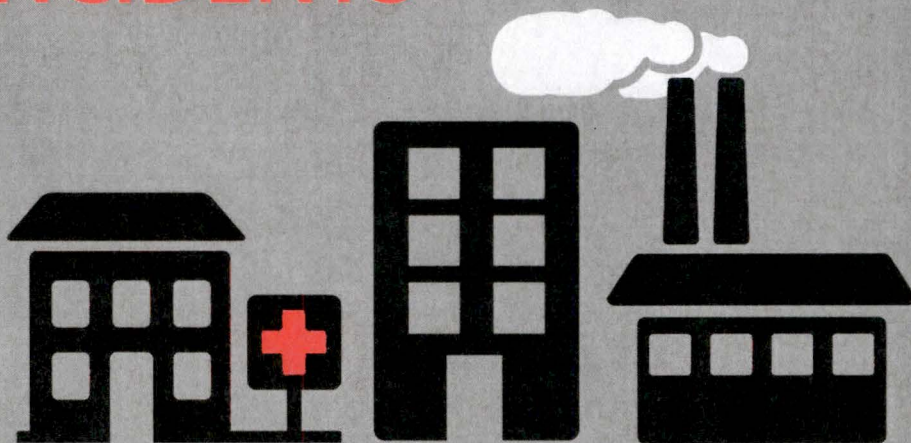
U.S. Department of
Health and Human Services
Center for Disease
Control and Prevention

<http://emergency.cdc.gov/radiation>

WORKPLACE RADIATION INCIDENTS

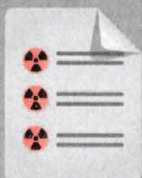
Workplaces like health care facilities, research institutions, and industrial operations may use radiation sources. An incident can happen if:

- radiation sources are stored or used incorrectly
- safety controls malfunction
- safety procedures are not followed



The health effects from a workplace incident involving radiation sources could range from no health effects to very serious health effects based on several factors:

- the type and amount of radioactive material
- how long people were near the radioactive material or how long the radioactive material was in or on the body
- how close people were to the radioactive material
- what parts of the body were exposed



What should I do to protect myself?

If your workplace uses radiation sources, use required personal protective and monitoring equipment, be familiar with safety precautions and procedures, and complete required radiation safety trainings.



Report any incidents involving radiation to safety officials immediately. Stay as far away from the site of the incident as possible.



If you are involved in a workplace radiation incident, follow instructions from safety officials and contact your doctor.



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

<http://emergency.cdc.gov/radiation>