

# PREPTalks

New perspectives for emergency managers



## Saving Lives After a Nuclear Detonation

Brooke Buddemeier

## Agenda

Agenda
Introductions (5 minutes)
Watch the PrepTalk (25 minutes)
Discussion (25 minutes)

## Introduction



- Brooke Buddemeier is a certified health physicist in the Global Security Directorate of Lawrence Livermore National Laboratory, providing technical leadership to deliver supporting science for radiological and nuclear terrorism risk assessments and response planning
- Brooke facilitates response preparedness activities through advanced modeling and close coordination with federal, state, and local response organizations

# Watch the PrepTalk

<https://www.fema.gov/blog/preptalks-brooke-buddemeier-saving-lives-after-nuclear-detonation>

## Topics

- Understanding Nuclear Explosions
- Advance Public Education - Sheltering Saves Lives
- Post-Detonation Communications and Immediate Response

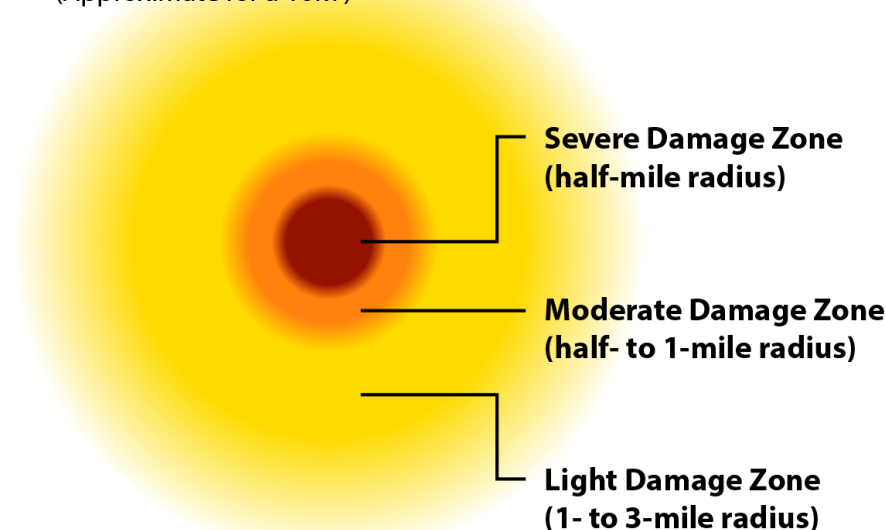
## Topic 1: Understanding Nuclear Explosions

### Components of a Nuclear Detonation

- An explosion that creates an intensely **bright flash** and causes temporary flash blindness;
- A **blast wave** that travels through the air, damaging buildings and causing injuries; and
- **Radioactive fallout**, composed of dirt and radioactive material, that rises immediately after the explosion and falls back to earth.

### Damage Zones

(Approximate for a 10kT)



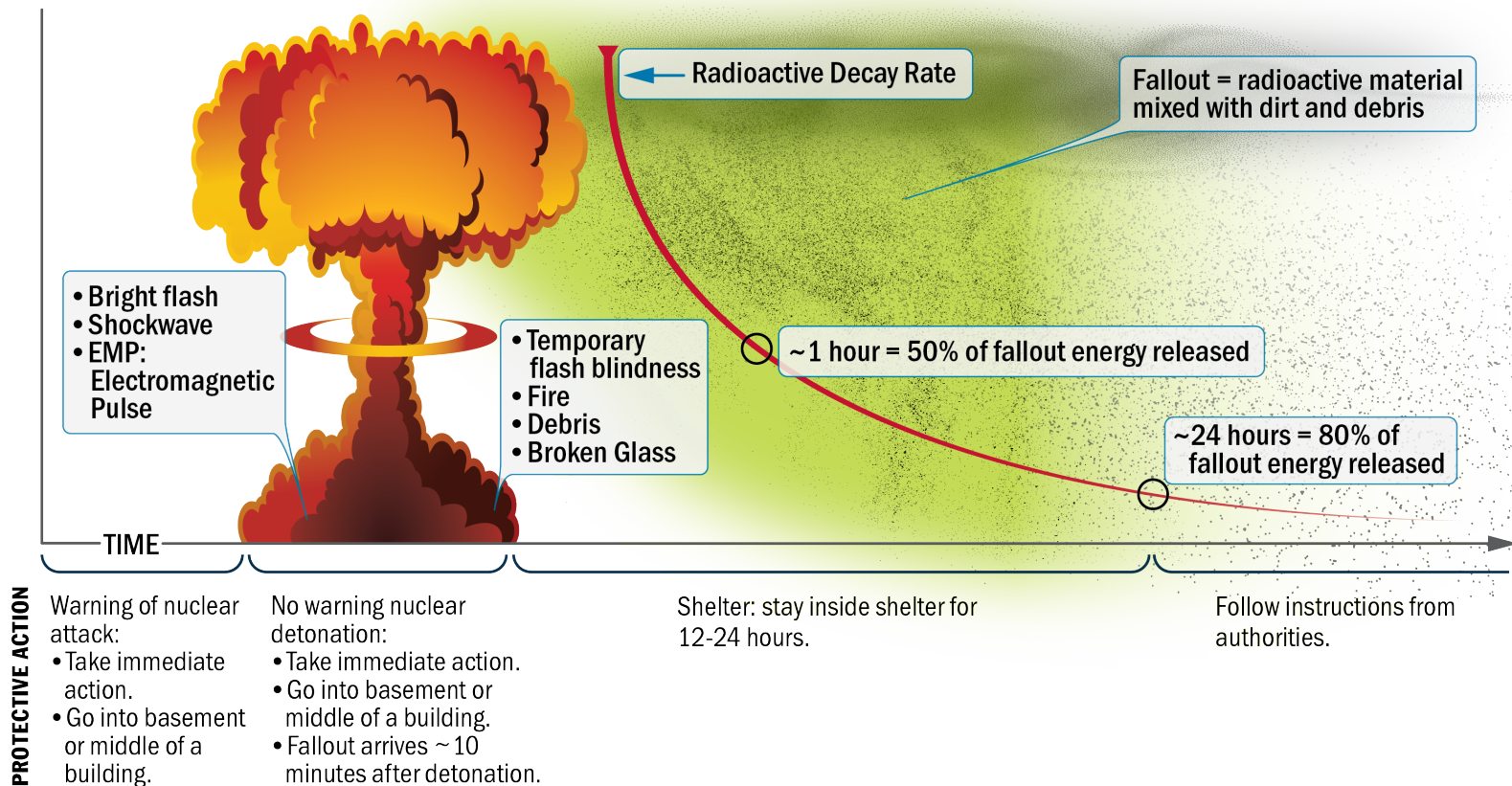
1. Does your community understand the different effects of a nuclear detonation?
2. Does your emergency response plan include a process for defining damage zones (based on limited initial incident information)?



## Topic 2: Advance Public Education - Sheltering Saves Lives

**“Casualties from fallout are almost entirely preventable.” Brooke Buddemeier**

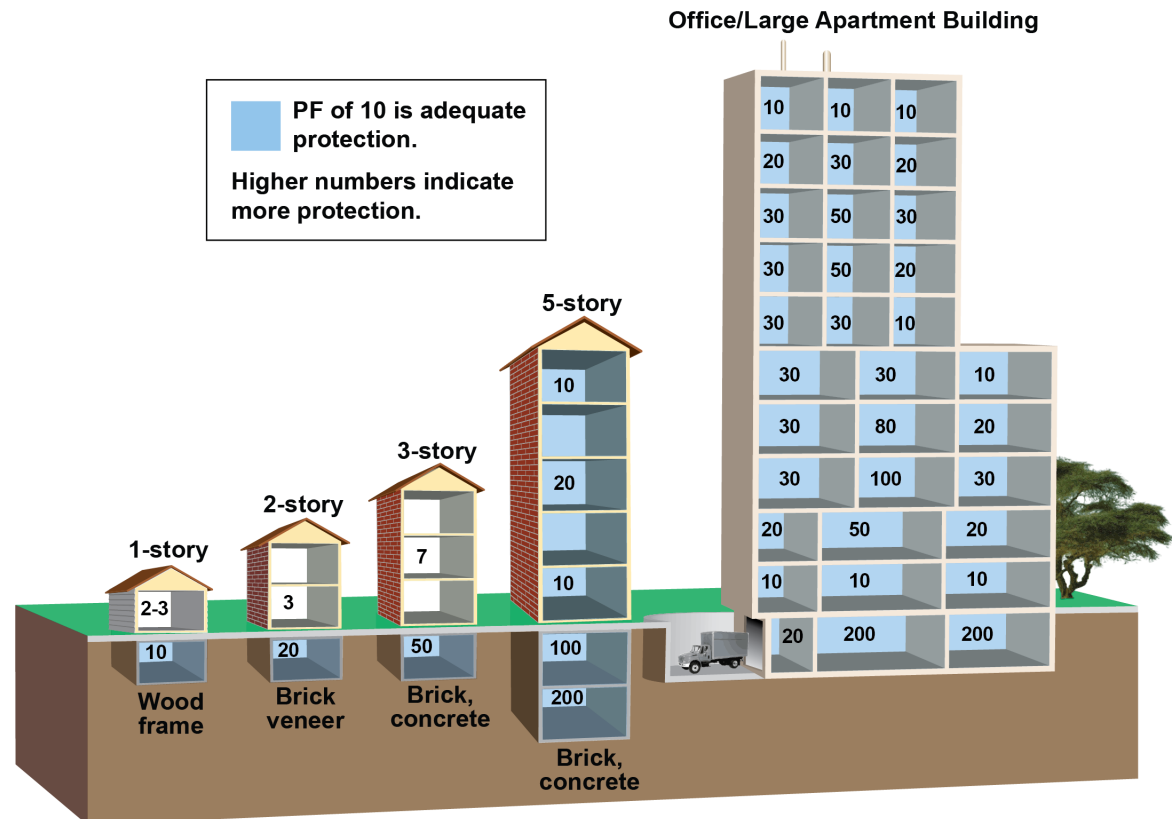
### Nuclear Detonation Protective Actions Timeline



## Topic 2: Advance Public Education - Sheltering Saves Lives

- Radioactive fallout will begin about 15 minutes after detonation. Use that time to find an adequate shelter.
- If people who were outside when the fallout began come to your shelter location, let them in!
- Decontamination is simple – remove the outer layer of clothing and brush off the dust. Get it off fast!

### Protection Factors for Nuclear Fallout Shelter Locations



## Topic 2: Advance Public Education - Sheltering Saves Lives



1. Have you included education on protective actions for nuclear detonation in your public outreach efforts?
2. Do community leaders understand that fallout casualties can be prevented and the protective actions needed to prevent them?
3. What sheltering quality do the buildings in your community provide?
4. Have you conducted training with emergency response units so they understand the need to shelter during the initial aftermath?



## Topic 3: Post-Detonation Communications and Immediate Response

- After a nuclear detonation, local decision makers, with limited information, must provide guidance to citizens.
- Focus immediate communication on:
  1. The importance of seeking adequate shelter based on the protection factors.
  2. Decontamination process.
  3. Expected sheltering duration.

### GET INSIDE. STAY INSIDE. STAY TUNED



Go to the basement or the middle of a building.



Plan on 12 – 24 hours unless provided updated guidance.



AM/FM Radio is best, Cellular and Internet if available.

1. Does your public emergency preparedness communication strategy include guidance on protective actions for a nuclear detonation?
2. What back-up communication systems may be available if primary communication equipment is damaged by the EMP?
3. Have you tested the interoperability of communication equipment with neighboring jurisdictions?



**PrepTalks. New Perspectives for Emergency Managers.**

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[www.fema.gov/preptalks](http://www.fema.gov/preptalks)