

Tab 2 to Attachment F

Nuclear Conflict

The Hazard

Nature of the Hazard

The possibility of a nuclear conflict involving the United States is extremely remote. Our nation's relationships with the foreign governments that possess nuclear weapons remain fluid. The scope of the nuclear conflict threat can vary from a single accidental launch or detonation by terrorists to a large scale strike against the United States.

Nuclear radiation is the major effect that is unique to nuclear weapons. The other effects differ from conventional weapons only in degree. A brief description of the weapons effects that are of concern to the planner follows.

Nuclear Radiation Effects

About half of the energy produced in the detonation of a nuclear weapon results from nuclear fission, a process in which radioactive substances are produced. When detonations occur on or near the earth's surface, the debris produced by the explosion becomes radioactive. Much of this debris is carried high into the atmosphere by the rising fireball. After the debris cools, it subsequently falls back to earth in the form of particles commonly called "fallout." The radiation emitted from these particles is called gamma radiation. The health consequences of exposure to gamma radiation include:

- *Radiation sickness.* The immediate consequence of human exposure to gamma radiation is called radiation sickness. The effects may occur within hours or days following exposure. Depending on the amount and duration of exposure, health problems range from nausea, fatigue, vomiting, diarrhea, loss of hair, hemorrhages, infections, to death.
- *Somatic effects.* Radiation injuries that may occur months to years after exposure are categorized as somatic effects. They include sterility or reduced fertility, leukemia, and other forms of cancer.

Direct Weapons Effects

The energy released by a nuclear detonation alters the environment in several ways. In the immediate area of the detonation, the main effects are due to the blast wave, thermal pulse, and electromagnetic pulse.

- *Blast wave.* The force of wind caused by the blast wave destroys or damages structures and other objects. It propels and spreads the debris that is created by the explosion. Deaths and injuries result from people being thrown about or struck by the things that were turned into projectiles or missiles by the force of the wind associated with the explosion.
- *Thermal pulse (heat flash).* The thermal pulse ignites exposed combustible materials, causing many fires. People in the open may be severely burned by the heat from the detonation.
- *Electromagnetic Pulse.* When the radiation energy generated by a high altitude (60 miles and above) nuclear detonation interacts with the earth's atmosphere it produces low frequency electromagnetic waves. These waves are referred to as the EMP. When EMP interacts with the electric and electronic equipment components of radio and television systems, the resulting "energy surge" can cause severe damage. EMP is not a threat to most people. Only those who rely on an electrically driven life support system (e.g., pacemaker) are at risk.

Risk Area

The end of the cold war and collapse of the military alliance between the Soviet Union and its allies have significantly diminished the possibility of a massive coordinated attack on the United States. Control of a significant portion of the former Soviet Union's nuclear arsenal is in the hands of several independent nations. These nations now chart their own foreign policy and are not obligated to support any military action in which the new "Russia" may become involved. There are now upwards of twenty nations that may possess the capability to use nuclear weapons. However, it is unlikely that any one of them possesses or controls a large enough stockpile of weapons to carry out the kind of massive attack on the United States that was previously envisioned.

Under the current international climate, it is unlikely that an **organized** attack on the United States would occur. However, if an attack did occur, areas potentially at risk might include:

- Military installations that **directly** support our nation's nuclear retaliatory capabilities. Such installations may include intercontinental ballistic missile launch facilities, bases that house fixed wing bombers, and those that are involved in command and control of offensive nuclear weapons.

- Large, densely populated metropolitan areas that play a significant role in support of the nation's governmental or financial management activities.

Nuclear Conflict Unique Planning Considerations

This section contains a listing of the functional annexes that typically would require the preparation of a nuclear conflict hazard-specific appendix. It also identifies many of the unique planning considerations that should be examined by the planning team and addressed, as appropriate, when preparing nuclear conflict hazard-specific appendices.

Direction and Control

For this hazard it is vital for emergency response personnel to be able to detect and quantify the location and amount of gamma radiation present in the jurisdiction.

Provisions should be made, as appropriate, to address the following planning considerations in one or more appendices to a direction and control annex:

- Coordinating, when appropriate (during an international crisis, U.S. military intervention overseas, etc.) with the next level of government to obtain essential information concerning:
 - Intelligence estimate of the intent of adversary nations that possess weapons of mass destruction.
 - Appropriate increased readiness actions to take and the timing for their implementation.
- Ensuring that personnel with expertise in dealing with hazards associated with the nuclear conflict threat are assigned to work in the EOC. Typical tasks may include:
 - Advising decision makers on the scope of the radiological hazards.
 - Determining when it would be appropriate to distribute radiological instruments to emergency response organizations and mass care facility management teams.

- Disseminating essential radiological information to emergency response personnel and shelter management teams.
- Analyzing radiological information reported by emergency response teams and facility managers. Then:
 - Determine the relevant exposure data of shelter occupants and personnel performing emergency response duties and ensure that this information is tracked and recorded.
 - Implement a procedure that would limit the exposure of personnel performing emergency response duties.
 - Ensure facilities and areas that must be inhabited or used by humans are monitored and decontaminated, if appropriate.
 - Ensure facilities and areas that are unsafe for human use are identified.
 - Ensure people remain sheltered (in their mass care facility or risk area shelter) until the gamma radiation hazard has passed.
 - Determine the appropriate time to allow evacuees and the general public to leave mass care facilities

Warning

Warning of the public is a critical function related to this hazard. Lead time is necessary to make the arrangements needed to ensure the people that are located in risk areas evacuate or seek shelter. Approximately 48 or more hours may be needed to carry out the necessary actions to ensure the public is protected from this hazard. The following planning considerations should be addressed, if appropriate, in one or more appendices to a warning annex:

- Coordination with the next level of government, when appropriate, (during international crisis, U. S. military intervention overseas, etc.) to obtain information concerning the appropriate time to disseminate warning.

- Use of a jurisdiction-wide warning system to disseminate timely warning to the public and members of the emergency response organization.

**Emergency
Public
Information**

A nuclear conflict appendix to an EPI annex should address survival tips for people living in jurisdictions vulnerable to nuclear effects who choose to shelter themselves in their homes.

Evacuation

Evacuation is the primary protective action option that should be used to protect people from this hazard. The information gained from the risk assessment should be used to develop the planning instructions that will be relied upon to carry out an evacuation of those people at risk to direct weapons effects. These planning instructions detail the time-phased actions to be taken to evacuate people and relocate, if practical, essential services, special custodial facilities, and government resources from the risk area. All actions must be completed before a nuclear detonation occurs. For this reason, a nuclear conflict appendix to the evacuation annex should address the clearance times needed to conduct a safe and timely evacuation of the population at risk.

Since a jurisdiction cannot guarantee that it will receive warning in time to evacuate fully, provisions should be made for **relocation within the risk area** of the public at risk in situations where the warning comes too late to permit evacuation. The following needs should be addressed:

- *Facilities.* Provisions should be made to:
 - Identify the facilities in the risk area that:
 - Offer the best protection available.
 - Can be used to house large numbers of people.
 - Use tabs to reflect key information (protection factor, capacity, cooking, sleeping, water, medical, recreational capabilities, telephone numbers, point of contact for access, etc.) associated with each facility.
- *Special Equipment.* Provisions should be made to:

- Move radiac meters and dosimeters (that can be used to detect and measure gamma radiation) to those facilities selected for use as shelters within the risk area.
 - Ensure members of the facility management team can operate available radiological detection and decontamination equipment.
 - Ensure that mass care facility management team members are assigned to work at any shelter facility to be opened within the risk area, if their facility is not scheduled to be opened.
- *Decontamination.* Ensure members of each facility management team are familiar with procedures for decontaminating people and the shelter.

Mass Care

The following planning considerations should be addressed, if appropriate, in one or more appendices to a mass care annex:

- Ensure facilities designated for use are located outside of the area vulnerable to direct weapons effects.
- Tabs should be used to reflect key information (protection factor, capacity, cooking, sleeping, water, medical, recreational capabilities, telephone numbers, point of contact for access, etc.) associated with each facility.
- If facilities are located outside of the jurisdiction's boundaries, coordinate with the adjacent jurisdiction(s) to arrange space for evacuees.
- Identify mass care facilities suitable for housing custodial care groups.
- Ensure the facilities designated for use provide protection from gamma radiation to shelter occupants.
- Ensure provisions have been made regarding necessary special equipment:

- Move radiac meters and dosimeters (that can be used to detect and measure gamma radiation) to those mass care facilities that have been selected for opening.
 - Ensure members of the facility management team can operate available radiological detection and decontamination equipment.
- Ensure members of each mass care facility management team are familiar with procedures for decontaminating people and the facility.

Health and Medical

The following planning considerations should be addressed, if appropriate, in one or more appendices to a health and medical annex:

- Provisions for determining the levels of radiation exposure of exposed people.
- Designation of facilities that:
- Have the capability to decontaminate and medically treat people exposed to radiation.
 - Dispose of contaminated items (clothing, medical supplies, and other waste items).
- Provisions for continued medical surveillance of personnel performing essential operational tasks.

Resource Management

The following planning considerations should be addressed, if appropriate, in one or more appendices to a resource management annex:

- Provisions for purchasing, stockpiling, or otherwise obtaining essential gamma radiation detection devices for use in shelters within the risk area and in mass care facilities.
- Provisions for purchasing, stockpiling, or otherwise obtaining the essential stocks (food, water, medical, etc.) needed to support an extended stay (3-14 days) in shelters within the risk area or in mass care facilities.

BLANK PAGE