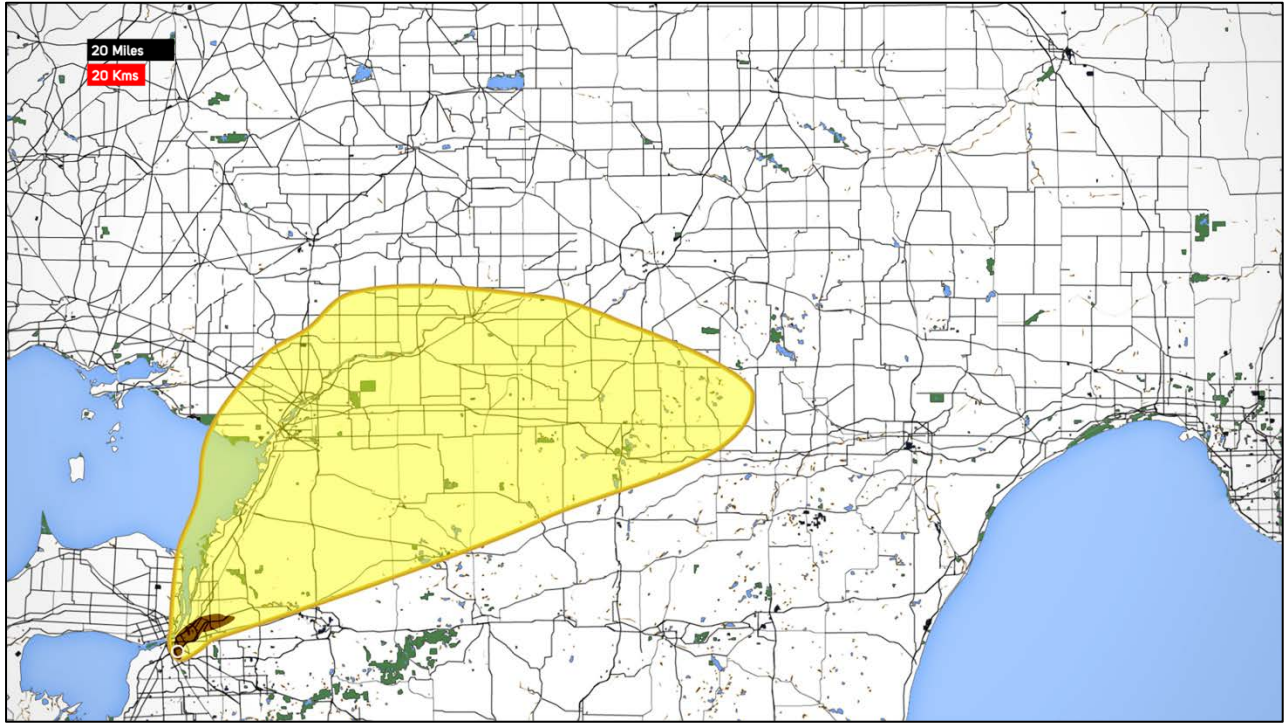


Predicted Hot Zones for Worker Protection (Presented in 6 time steps)



A **DANGEROUS FALLOUT ZONE**
 Radiation levels exceeding 10 R/h.
 Life-saving activities only. See
 Dangerous Fallout Zone map for
 details.
 Total Population: 160,000
 Area: 42.6 km² Extent: 15.3 km

B **HOT ZONE**
 Radiation levels 10 mR/h to 10 R/h.
 Death, injury or illness possible.
 Monitor worker dose carefully and limit
 worker stay times. Stage response
 assets outside of the Hot Zone.
 Total Population: 4,214,000
 Area: 12,951 km² Extent: 205 km

3 hours
 after detonation

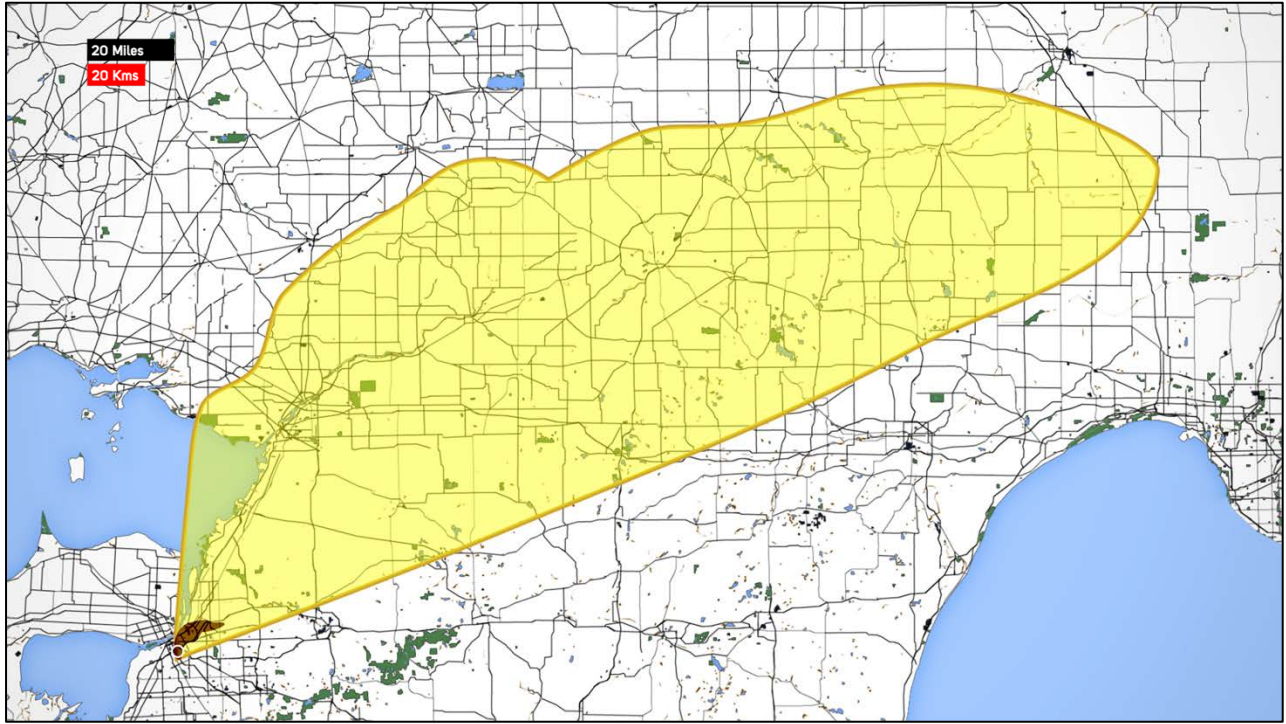
Assumptions:

- Assumes 10 kt detonation at 0 ft elevation.
- Areas shown are model predictions based on an estimated source term but no measurements.
- Radioactive cloud has passed area displayed, radiation from fallout remains a serious hazard.
- Model assumes that no shelter or other protective actions have been taken to decrease exposure.

Notes:

- Immediate shelter, possibly followed by evacuation, is strongly preferred, particularly in the first hours.
- Plan evacuation routes away from the DF/Hot Zones to minimize dose during transit. Shortest route may not guarantee minimal dose.
- Size of Hot Zone grows for 1-3 days then shrinks with time.
- Fallout and radiation extend well beyond the Hot Zone, particularly downwind, but at a reduced level of concern.
- Assure health physics professionals supervise emergency workers in the Hot Zone, workers must not exceed dose limits.

Predicted Hot Zones for Worker Protection (Presented in 6 time steps)



A **DANGEROUS FALLOUT ZONE**
 Radiation levels exceeding 10 R/h.
 Life-saving activities only. See Dangerous Fallout Zone map for details.
 Total Population: 54,800
 Area: 12.5 km² Extent: 8.4 km

B **HOT ZONE**
 Radiation levels 10 mR/h to 10 R/h.
 Death, injury or illness possible.
 Monitor worker dose carefully and limit worker stay times. Stage response assets outside of the Hot Zone.
 Total Population: 9,477,000
 Area: 28,765 km² Extent: 357 km

6 hours
 after detonation

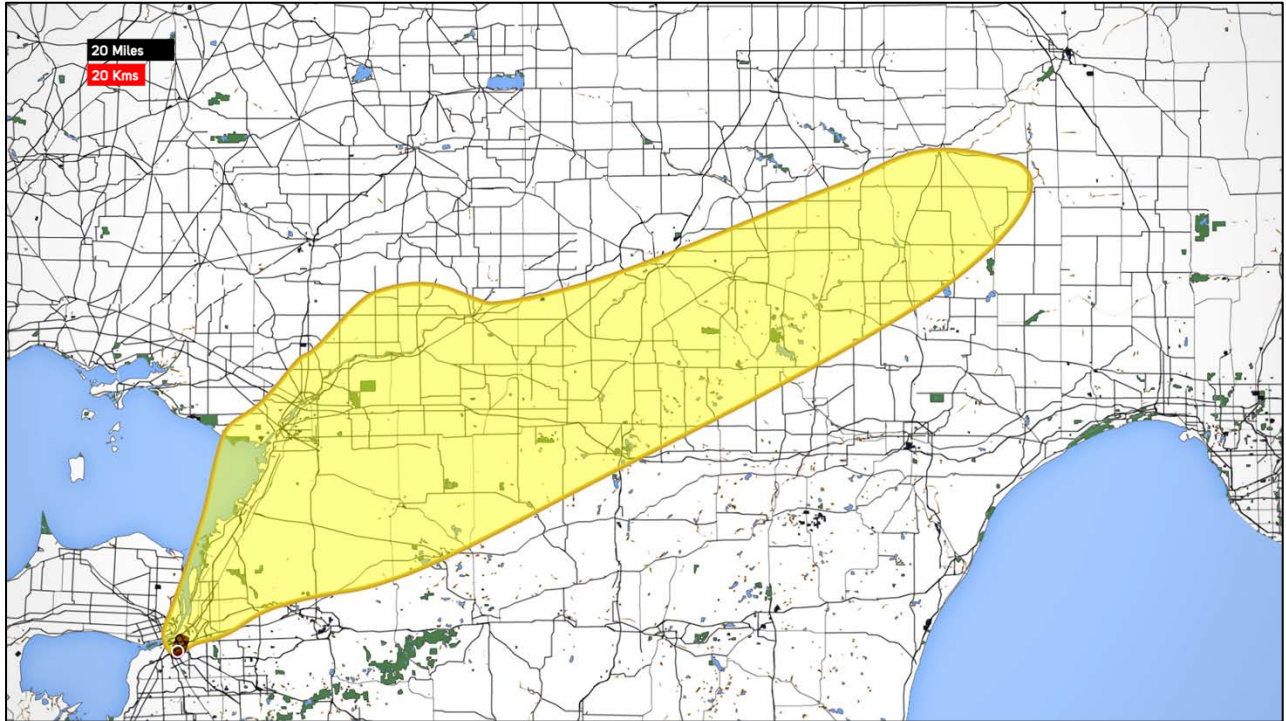
Assumptions:

- Assumes 10 kt detonation at 0 ft elevation.
- Areas shown are model predictions based on an estimated source term but no measurements.
- Radioactive cloud has passed area displayed, radiation from fallout remains a serious hazard.
- Model assumes that no shelter or other protective actions have been taken to decrease exposure.

Notes:

- Immediate shelter, possibly followed by evacuation, is strongly preferred, particularly in the first hours.
- Plan evacuation routes away from the DF/Hot Zones to minimize dose during transit. Shortest route may not guarantee minimal dose.
- Size of Hot Zone grows for 1-3 days then shrinks with time.
- Fallout and radiation extend well beyond the Hot Zone, particularly downwind, but at a reduced level of concern.
- Assure health physics professionals supervise emergency workers in the Hot Zone, workers must not exceed dose limits.

Predicted Hot Zones for Worker Protection (Presented in 6 time steps)



A **DANGEROUS FALLOUT ZONE**
 Radiation levels exceeding 10 R/h.
 Life-saving activities only. See
 Dangerous Fallout Zone map for
 details.
 Total Population: 14,600
 Area: 2.8 km² Extent: 3.4 km

B **HOT ZONE**
 Radiation levels 10 mR/h to 10 R/h.
 Death, injury or illness possible.
 Monitor worker dose carefully and limit
 worker stay times. Stage response
 assets outside of the Hot Zone.
 Total Population: 4,833,000
 Area: 17,005 km² Extent: 321 km

12 hours
 after detonation

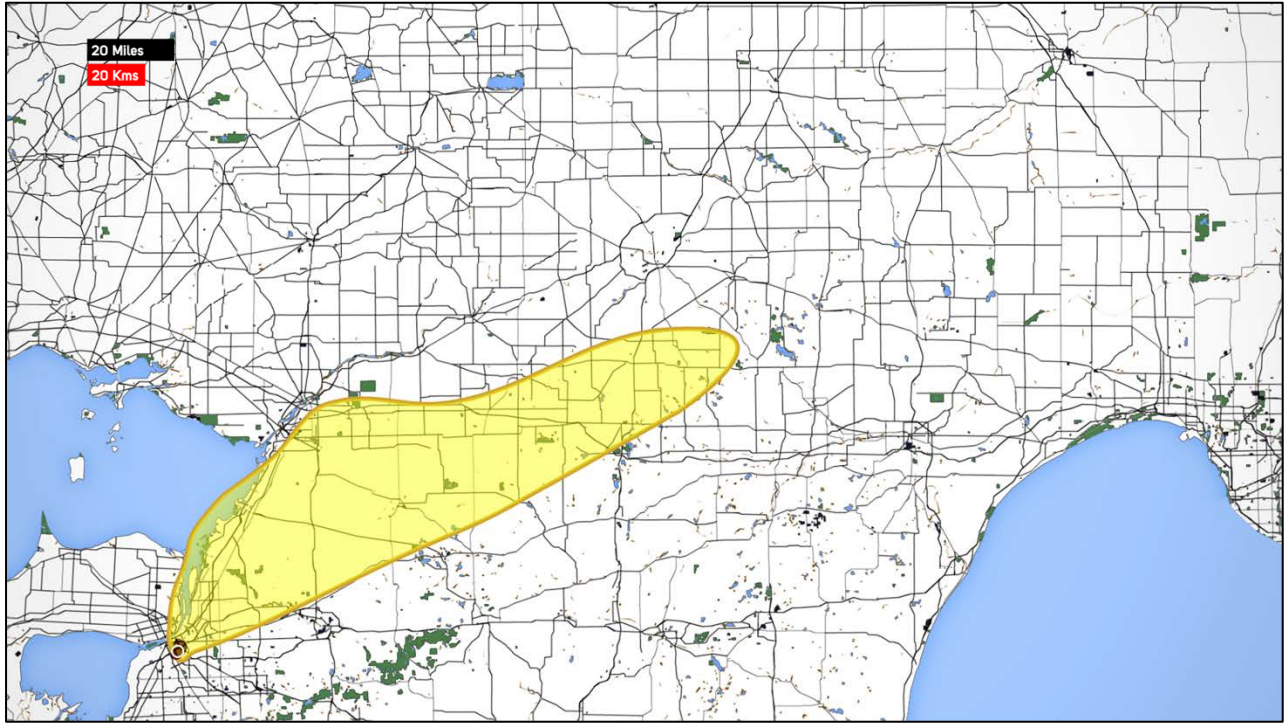
Assumptions:

- Assumes 10 kt detonation at 0 ft elevation.
- Areas shown are model predictions based on an estimated source term but no measurements.
- Radioactive cloud has passed area displayed, radiation from fallout remains a serious hazard.
- Model assumes that no shelter or other protective actions have been taken to decrease exposure.

Notes:

- Immediate shelter, possibly followed by evacuation, is strongly preferred, particularly in the first hours.
- Plan evacuation routes away from the DF/Hot Zones to minimize dose during transit. Shortest route may not guarantee minimal dose.
- Size of Hot Zone grows for 1-3 days then shrinks with time.
- Fallout and radiation extend well beyond the Hot Zone, particularly downwind, but at a reduced level of concern.
- Assure health physics professionals supervise emergency workers in the Hot Zone, workers must not exceed dose limits.

Predicted Hot Zones for Worker Protection (Presented in 6 time steps)



A **DANGEROUS FALLOUT ZONE**
 Radiation levels exceeding 10 R/h.
 Life-saving activities only. See
 Dangerous Fallout Zone map for
 details.
 Total Population: 4,210
 Area: 1.1 km² Extent: 2.5 km

B **HOT ZONE**
 Radiation levels 10 mR/h to 10 R/h.
 Death, injury or illness possible.
 Monitor worker dose carefully and limit
 worker stay times. Stage response
 assets outside of the Hot Zone.
 Total Population: 2,935,00
 Area: 7,398 km² Extent: 204 km

24 hours
 after detonation

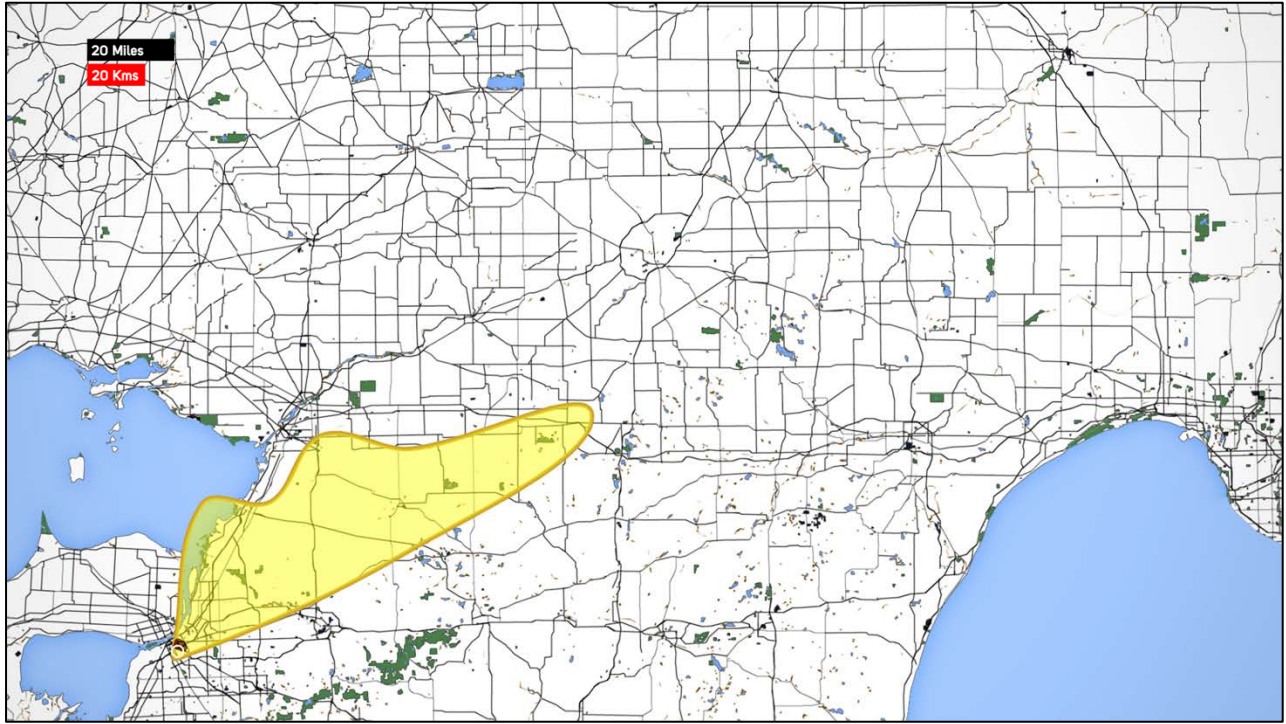
Assumptions:

- Assumes 10 kt detonation at 0 ft elevation.
- Areas shown are model predictions based on an estimated source term but no measurements.
- Radioactive cloud has passed area displayed, radiation from fallout remains a serious hazard.
- Model assumes that no shelter or other protective actions have been taken to decrease exposure.

Notes:

- Immediate shelter, possibly followed by evacuation, is strongly preferred, particularly in the first hours.
- Plan evacuation routes away from the DF/Hot Zones to minimize dose during transit. Shortest route may not guarantee minimal dose.
- Size of Hot Zone grows for 1-3 days then shrinks with time.
- Fallout and radiation extend well beyond the Hot Zone, particularly downwind, but at a reduced level of concern.
- Assure health physics professionals supervise emergency workers in the Hot Zone, workers must not exceed dose limits.

Predicted Hot Zones for Worker Protection (Presented in 6 time steps)



A **DANGEROUS FALLOUT ZONE**
 Radiation levels exceeding 10 R/h.
 Life-saving activities only. See
 Dangerous Fallout Zone map for
 details.
 Total Population: <1,000
 Area: 0.5 km² Extent: 1.3 km

B **HOT ZONE**
 Radiation levels 10 mR/h to 10 R/h.
 Death, injury or illness possible.
 Monitor worker dose carefully and limit
 worker stay times. Stage response
 assets outside of the Hot Zone.
 Total Population: 2,112,00
 Area: 4,347 km² Extent: 156 km

36 hours
 after detonation

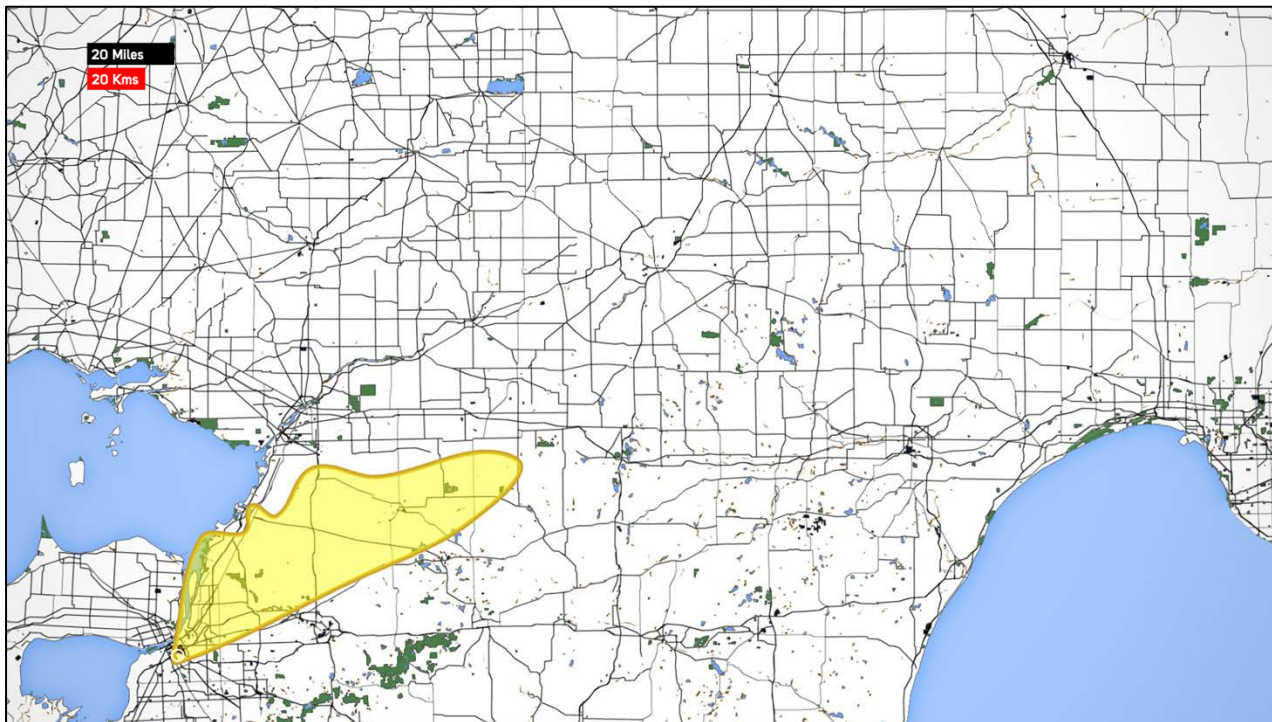
Assumptions:

- Assumes 10 kt detonation at 0 ft elevation.
- Areas shown are model predictions based on an estimated source term but no measurements.
- Radioactive cloud has passed area displayed, radiation from fallout remains a serious hazard.
- Model assumes that no shelter or other protective actions have been taken to decrease exposure.

Notes:

- Immediate shelter, possibly followed by evacuation, is strongly preferred, particularly in the first hours.
- Plan evacuation routes away from the DF/Hot Zones to minimize dose during transit. Shortest route may not guarantee minimal dose.
- Size of Hot Zone grows for 1-3 days then shrinks with time.
- Fallout and radiation extend well beyond the Hot Zone, particularly downwind, but at a reduced level of concern.
- Assure health physics professionals supervise emergency workers in the Hot Zone, workers must not exceed dose limits.

Predicted Hot Zones for Worker Protection (Presented in 6 time steps)



A **DANGEROUS FALLOUT ZONE**
 Radiation levels exceeding 10 R/h.
 Life-saving activities only. See
 Dangerous Fallout Zone map for
 details.
 Total Population: <100
 Area: 0.4 km² Extent: 1.1 km

B **HOT ZONE**
 Radiation levels 10 mR/h to 10 R/h.
 Death, injury or illness possible.
 Monitor worker dose carefully and limit
 worker stay times. Stage response
 assets outside of the Hot Zone.
 Total Population: 1,616,000
 Area: 3,189 km² Extent: 129 km

48 hours
 after detonation

Assumptions:

- Assumes 10 kt detonation at 0 ft elevation.
- Areas shown are model predictions based on an estimated source term but no measurements.
- Radioactive cloud has passed area displayed, radiation from fallout remains a serious hazard.
- Model assumes that no shelter or other protective actions have been taken to decrease exposure.

Notes:

- Immediate shelter, possibly followed by evacuation, is strongly preferred, particularly in the first hours.
- Plan evacuation routes away from the DF/Hot Zones to minimize dose during transit. Shortest route may not guarantee minimal dose.
- Size of Hot Zone grows for 1-3 days then shrinks with time.
- Fallout and radiation extend well beyond the Hot Zone, particularly downwind, but at a reduced level of concern.
- Assure health physics professionals supervise emergency workers in the Hot Zone, workers must not exceed dose limits.

Text Description for Images

Predicted Hot Zones for Worker Protection (Presented in 6 time steps)

Six maps showing Predicted Hot Zones for Worker Protection 3 hours, 6 hours, 12 hours, 24 hours, 36 hours, and 48 hours after detonation.

The maps are applicable to Improvised Nuclear Device (IND) incidents. The model is based on the assumed magnitude of the explosion and the predicted or observed meteorological conditions. It delineates two areas with elevated radiation dose rates – the Dangerous Fallout (DF) zone, where the radiation dose rate is 10 R/h (100 mSv/h) or greater, and the Hot Zone, where radiation dose rate is between 10 mR/h (0.1 mSv/h) and 10 R/h (100 mSv/h). Responders and decision-makers will use this map during the first few hours to days post-detonation to advise the affected population to shelter (within the DF zone) or evacuate (outside the DF zone, barring any impediments to evacuation). It should be noted that radiation levels from an IND will change rapidly, and the size of both zones will shrink considerably within the first 48-72 hours. Responders and decision-makers will also use this map to identify areas in which detailed mission planning would be required to due radiation levels, and to determine stay-times for emergency responders based on the nature of their mission (i.e., life-saving, protection of property, radiation monitoring, etc.)