

# North Korea's nuclear EMP threat

North Korea's recent nuclear weapons test is fuelling concerns over a potential high-altitude electromagnetic pulse (EMP) attack which could cripple power supplies and electronic systems across a wide area

## HOW EMP ATTACK WORKS

### 1 Nuclear warhead

Explodes above Earth's atmosphere, releasing burst of gamma rays – very high energy electromagnetic radiation

### 2 Upper atmosphere

Wave of radiation collides with oxygen and nitrogen atoms at altitude of between 20-40km, stripping away electrons

Gamma ray

Atom

**3 EMP:** Electrons interact with Earth's magnetic field, creating brief but intense burst of downward-moving radiation

Pulse does not directly kill or injure humans but produces energy surge that can overload and wreck unprotected electrical systems

ESTIMATED  
AREA AFFECTED\*

Height of explosion

500km

200km

50km

U.S.

Ejected electron

CANADA

Washington DC

Radius of affected area

2,400km

1,600km

800km

MEXICO

\*Explosion over U.S. Midwest