DPRK Nuclear Capabilities

1. DPRK is producing nuclear fuel for nuclear weapons.
2. DPRK is producing advanced nuclear weapons.
3. DPRK is producing inter-continental ballistic missiles.

Rob Goldston
Producing Plutonium and Tritium Fuel for Nuclear Weapons

5 MWe reactor requires natural U. Light Water Reactor requires enriched U. Both require uranium mining & milling.

Both can be used to produce Pu and/or (for advanced weapons) tritium. *Tritium decays by 5% per year.*

DPRK claims to have use alternative fuels (Pu → U?) and “mastered” fusion.

Reactors are hard to hide.

Activity has been reduced, may be restarting? Focusing on uranium?
Producing U Fuel for Nuclear Weapons

Yongbyon
~ 80 kg HEU / year ?

Kangson Site?
~ 100 kg HEU / year ?

Likely have dozens of weapons, producing ~1/2 dozen per year?
DPRK’s Nuclear Weapons

Tritium-boosted Primary?

Somewhat physically larger than modern U.S. 2-stage weapons, but similar yield.

Two-stage Thermonuclear Weapon?
DPRK has Tested an Advanced Nuclear Explosive

~15 kt
~200 kt
Estimate of Fatalities & Injuries, NYC

NUKEMAP

1. Drag the marker to wherever you'd like to target.
   New York, NY, USA

2. Enter a yield (in kilotons): 200

   Other options: Casualty [3] Radioactive fallout

Advanced options:
4. A button to Detonate.

Detonated fatalities: 850,490
Estimated injuries: 1,736,950

The number given 24 hour period, there are approximately 8,286,287 people in the city. For more information about the model, click here.

Effects radii for 200 kiloton airburst:
- Fireball radius: 1,870 ft (0.31 mi)
- Maximum size of the fireball: relevance to lived effects depends on height of explosion. If it is above the ground, the extent of this effect is significantly increased. Minimum burn height for negligible blast is 1,200 ft.
- Radiation radius (850 m): 564 m (0.345 mi)
- A 564 m radius without medical treatment, there can be expected between 50% and 60% mortality from acute effects alone. Days to death within several hours and several weeks.
- Air blast radius (6 m): 2,566 ft (20.6 mi)
- A 6 m radius, most residential buildings collapse,juries are severe. If the blast is widespread. Often used as a standard benchmark for medium damage in cities. Optimal height of burst to maximize this effect is 1.13 mi.
DPRK Blew up Entrances to Tunnels for Testing Nuclear Weapons

Not complete, not verified, not irreversible. Is DPRK satisfied with its tests, as it states? Did it get external help with weapons design? It surely got exterior help with ICBM design.
DPRK has Missiles to Target Japan, Guam and All Continental U.S.

Hwasong-12

They have not demonstrated re-entry vehicles for ICBMs...
Hwasong 14 & 15 based on Russian RD-250 rocket engines.
How many do they have?

4500 m up
⇒ 13,000 m across
What would DPRK Denuclearization Look Like?

Sig Hecker’s list provides a comprehensive benchmark.

Current freeze-for-freeze + deterrence is a start.

Patience required. Continue gift-for-gift?

50 – 100 sites to verify?
## Possible Gifts for Gifts?

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