BRIEFING

How serious is North Korea's nuclear threat?

Projected North Korean nuclear capacity

North Korea is pursuing nuclear weapons along two tracks, plutonium and uranium.

The regime is widely believed to possess enough plutonium for one or two bombs, and could reprocess old fuel rods for possibly five or six more. It is not believed to have completed enrichment facilities needed for a uranium-based bomb.

As time progresses, the North is expected to have increasing capacity to produce weapons of both types. The estimated dates below presume the program restarts now and operates at maximum capacity.

Year	Material source	Weapons that can be produced	Total potential weapons
2004		1	**7-9**
2005		1	**14-16**
		6	
2006		1	**28-33**
		6	
		7-10	
2007		1	**72-90**
		6	
		7-10	
		30-40	

5-megawatt reactor
If North Korea restarted its 5-megawatt reactor in Yongbyon, it could produce about enough plutonium for one bomb a year.

Uranium-enrichment program
Recent CIA estimates suggest North Korea could complete a facility capable of enriching the nation's uranium for nuclear bombs.

50-megawatt reactor
North Korea froze construction of a 50-megawatt reactor in Yongbyon under the now-scuttled Agreed Framework. If completed, plutonium could be drawn from the plant's fuel rods.

200-megawatt reactor
Construction of a 200-megawatt reactor in Taechon, also halted in 1994, could resume.

SOURCE: The Center for Nonproliferation Studies at the Monterey Institute

ADAM WEISKIND – STAFF

Like most of life in North Korea, nuclear programs there are largely an enigma, even to the experts. But just the possibility that the regime already possesses one or two nuclear bombs has created a crisis. Officials from the US, Japan, China, Russia, and South Korea are meeting in Beijing today to try to halt Pyongyang's development of nuclear weapons. Observers are divided on whether Pyongyang is making nukes to trade for food and fuel, or, as it says, to deter the US and its allies from invading. Either way, the North's production capability could accelerate if a freeze isn't negotiated (see chart at left).

CHIEN-MIN CHUNG/AP/FILE

GOING NUCLEAR: North Korean leader Kim Jong Il

Does North Korea have the bomb now?

Perhaps. The mystery dates back to 1989, when North Korea shut down its nuclear reactor in Yongbyon for 70 days. During this time, the regime removed some of the plant's fuel rods and extracted plutonium through what's called reprocessing. Plutonium is the key element needed to make the type of bomb dropped on Nagasaki, Japan, in 1945.

The regime claimed it reprocessed rods only once for a tiny amount of plutonium. But tests by outside inspectors showed several rounds of reprocessing.

"That immediately raised suspicions," says Charles Ferguson, scientist-in-residence at the Washington office of the Monterey Institute's Center for Nonproliferation Studies. "Did they separate more than what they were saying?"

Experts can only estimate how much plutonium might have been processed in that month. The consensus among US experts and CIA officials is that it got enough plutonium for one or two bombs.

The regime expelled inspectors last December, giving it free rein to begin reprocessing the fuel rods. The North claims to be reprocessing now, but the US has not said publicly whether its surveillance confirms that. The rods could yield enough plutonium for six more bombs.

There are also doubts about whether they have the expertise to detonate a nuke, says Mr. Ferguson. Plutonium bombs require precision-timed explosives.

The current crisis erupted when Pyongyang admitted it had a separate program to develop a nuclear bomb based on uranium. This violated the 1994 Agreed Framework with the US, which was designed to freeze North Korea's program.

Can their missiles reach the United States?

Not yet. The North has deployed No Dong missiles with a range of about 1,000 kilometers, which can strike South Korea, Japan, and US forces in the region.

A 1998 missile test that sent a three-stage Taepo Dong rocket over Japan alarmed North Korea watchers. This next-generation line of rockets, still under development, could reach Alaska, Hawaii, and perhaps the US West Coast, according to a 1998 Rumsfeld Commission report. But during that one and only test launch, the third stage failed, calling into question the reliability and accuracy of the rocket.

Is North Korea selling weapons technology?

Most likely. The marked similarities between North Korea's No Dong and missiles in Iran and Pakistan have raised suspicions that Pyongyang is trading away its technology. As Pakistan already possesses nuclear weapons and Iran is believed to be developing them, extending the range of their delivery vehicles deals a blow to the cause of nonproliferation. But willingness to sell missiles does not necessarily mean willingness to spread nuclear know-how. Victor Cha of Georgetown University and David Kang of Dartmouth College argued in a recent Foreign Policy report that "a transfer of nuclear material would be a risky proposition for a regime that values survival above all else" given the US's preemptive mind-set.

Is there a preemptive strike option for the US?

Any military plan must face the reality that Seoul, home to over 10 million South Koreans, lies within range of North Korean artillery guns. For that reason, a counter-attack by the well-armed North could be devastating. Gen. Gary Luck, a former commander of US forces in Korea, estimated another Korean War would result in 1 million casualties – 52,000 of those American.

A preemptive strike might not get all of the North's nukes. The nation's nuclear program is scattered across the country (see map), and may include covert facilities in hard-to-hit caves. Success in targeting could also scatter radioactive material to neighboring populations.

If inspections resume, what form would they take?

The US wants a verifiable end to North Korea's nuclear weapons program. But Washington will probably get something short of full assurance, says Ferguson. "We can't expect that we're just going to go in there and in a matter of months check all the suspect sites," he says. Given the ability of the North to hide facilities – it's estimated there are hundreds, maybe thousands of tunnels – a spirit of cooperation, fostered over time with confidence building steps, would be necessary, he argues.

– Ben Arnoldy

North Korea's nuclear program

Over the past 30 years, North Korea has developed some self-sufficiency in its nuclear program with facilities spread across the country. The regime has uranium mines, mills to process the ore, and a fabrication plant to manufacture fuel rods for its reactors. The North can reprocess spent fuel rods from its reactors for plutonium weapons, and in the future may be able to enrich uranium for weapons.

SOURCE: The Center for Nonproliferation Studies at the Monterey Institute

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