

# Nuclear Terrorism: Threat Briefing

## How Serious is the Threat?

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Nuclear Security Summit  
April 12-13, 2010



**HARVARD Kennedy School**

**BELFER CENTER**

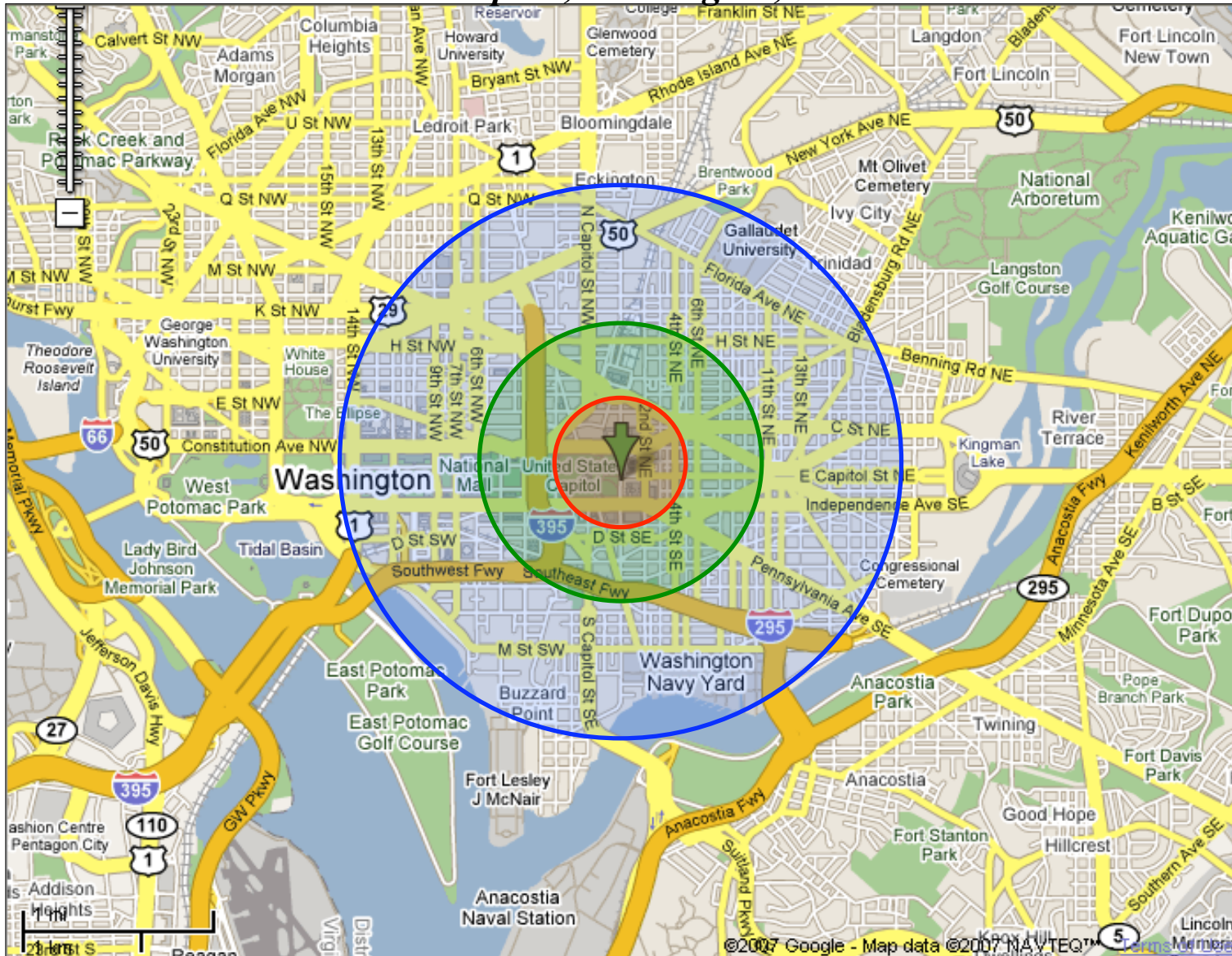
**for Science and International Affairs**

**“Nuclear terrorism is the most serious danger the world is facing.”**

— Mohamed ElBaradei, former director of the IAEA and winner of the 2005 Nobel Peace Prize

# What if?

## *U.S. Capitol, Washington, D.C.*



## **“Dragonfire” Bomb**

## Key Questions

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- Who could be planning a nuclear terrorist attack?
- What nuclear weapons could terrorists use?
- Where could terrorists acquire a nuclear bomb?
- When could terrorists launch the first nuclear attack?
- How could terrorists deliver a nuclear weapon to its target?

**“Just one nuclear weapon exploded in a city—be it New York or Moscow; Tokyo or Beijing; London or Paris—could kill hundreds of thousands of people. And it would badly destabilize our security, our economies, and our very way of life.”**

— President Barack Obama

## Who?

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*Al Qaeda, Chechnya-based separatists, Lashkar-e-Taiba, and Aum Shinrikyo have demonstrated interest in acquiring a nuclear weapon.*

• **“Acquiring these weapons for the defense of Muslims is a religious duty.”**

— Osama bin Laden (1998)

• **“We have the right to kill 4 million Americans—2 million of them children—and to exile twice as many and wound and cripple hundreds of thousands.”**

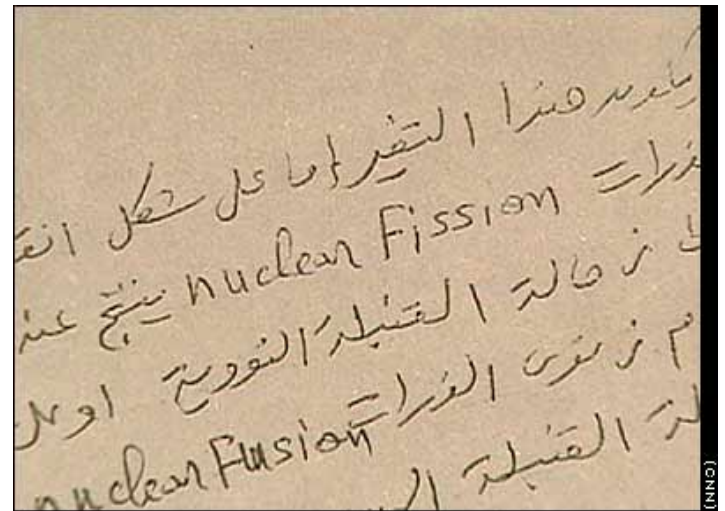
— Al Qaeda spokesman Suleiman Abu Gheith (2002)

• **There are “clear signs of terrorists trying to acquire nuclear material through criminal networks.”**

— Former IAEA Director, Mohammed ElBaradei (2006)

**“Al Qaeda has tried to acquire or make nuclear weapons for at least ten years...and continues to pursue its strategic goal of obtaining a nuclear capability.”**

— 9/11 Commission (2004)



Seized Al Qaeda blueprints for bomb, 2002

## What?

*A sophisticated terrorist group could make a crude nuclear explosive—capable of destroying the heart of a major city—if it secured enough highly enriched uranium or plutonium.*

- A ready-made weapon from the arsenal of a nuclear state
- An improvised nuclear device constructed from HEU or Pu stolen from a state stockpile
- An attack on a nuclear facility



Seized Al Qaeda blueprints for bomb, 2002

**U.S. intelligence assesses that “Al Qaeda probably had access to nuclear expertise and facilities and that there was a real possibility of the group developing a crude nuclear device...fabrication of at least a ‘crude’ nuclear device was within Al Qaeda’s capabilities, if it could obtain fissile material.”**

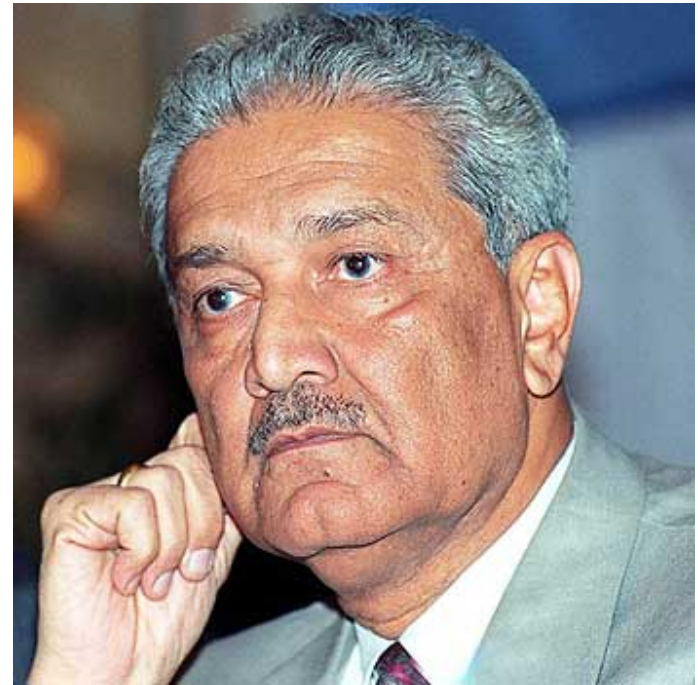
— Commission on the Intelligence Capabilities of the U.S. Regarding WMD (2005)

## Where?

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*The world's stockpiles of HEU and separated plutonium are sufficient for more than 200,000 nuclear weapons.*

- 23,360 nuclear weapons
- 1,600,000 kg HEU\*
- 500,000 kg separated Pu\*
- 1,131 nuclear facilities
- Hundreds of locations holding nuclear weapons or weapons-usable material



A.Q. Khan

**Only 25 kg of HEU or 8 kg of Pu are required for a bomb.**

**—IAEA**

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\* 1 kg = 2.2 pounds

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## When?

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*If terrorists acquire 25 kg of HEU, they could make an elementary nuclear bomb in less than 1 year.*



**“Unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere in the world by the end of 2013.”**

— Commission on the Prevention of Mass Destruction Proliferation and Terrorism (2009)

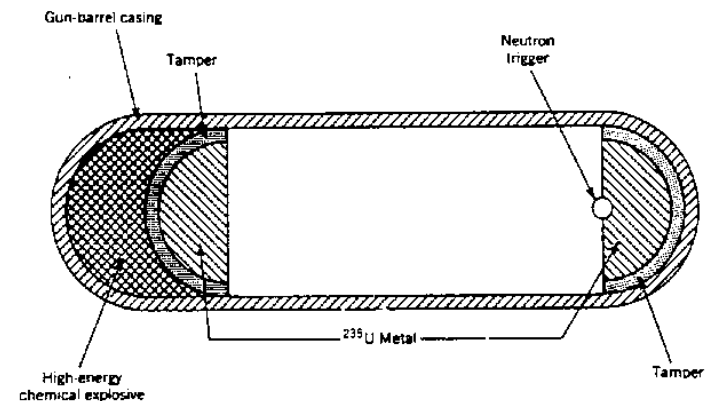
## How?

*Bringing an improvised nuclear device into a major city is as easy as drug smuggling or human trafficking.*

- Cargo ships make 9,000 port stops per week.
- There are 20-30 million unauthorized immigrants worldwide.
- The IAEA reports 1,266 incidents of illicit trafficking over the last 12 years—submitted by 99 countries—including 18 incidents involving HEU or plutonium trafficking.
- **“Experts estimate that terrorists with an amount of HEU that would fit into six one-liter\* milk cartons, need only smuggle it across borders in order to create an improvised nuclear device that could level a medium-sized city.”**  
— UN High-Level Panel on Threats, Challenges, and Change (2004)



Sphere of Pu required for a bomb



Gun-Type HEU Bomb used in Hiroshima

\* 1 liter  $\approx$  1/3 gallon



# Risk

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*Risk = Likelihood x Consequences*



Hiroshima, 1945

**“Were a nuclear terrorist attack to occur, it would cause not only widespread death and destruction, but would stagger the world economy and thrust tens of millions of people into dire poverty...[creating] a second death toll throughout the developing world.”**

— Kofi Annan, former UN secretary general (2005)

## Best Judgments

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- “Nuclear terrorism is the most serious danger the world is facing.” — Mohamed ElBaradei, former director of the IAEA and winner of the 2005 Nobel Peace Prize (2009)
- “Nuclear terrorism is the most immediate and extreme threat to global security.” —Barack Obama, U.S. president (2009)
- “One of the most dangerous threats...is that of nuclear components falling into the hands of terrorists.” —Dmitry Medvedev, Russian president (2009)
- “Nuclear terrorism is one of the most serious threats of our time.” — Ban Ki-moon, U.N. secretary general (2007)
- “Terrorists’ capacity should not be underestimated to put together and detonate a Hiroshima-sized nuclear device.” — Co-chairs of the International Commission on Nuclear Non-proliferation and Disarmament: Gareth Evans, former foreign minister of Australia, and Yoriko Kawaguchi, former foreign minister of Japan (2009)
- “Every senior leader, when you’re asked what keeps you awake at night, it’s the thought of a terrorist ending up with a weapon of mass destruction, especially nuclear.” —Robert Gates, U.S. secretary of defense (2008)