

The New York Times

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WEDNESDAY, JANUARY 23, 2002

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Suicidal Nuclear Threat Is Seen at Weapons Plants

By MATTHEW L. WALD

WASHINGTON, Jan. 22 — Since the suicidal terrorist attacks of Sept. 11, some experts on nuclear security are increasingly concerned that intruders could break into American weapons plants, assemble a nuclear bomb from materials there and explode it on the spot.

Critics of security procedures at Energy Department weapons plants say intruders might use conventional explosives to blow up nuclear waste or uranium or plutonium, sending radioactive materials into areas nearby, or they might try to create an actual nuclear bomb.

Building a high-yield nuclear weapon requires substantial skill with metal-working and explosives, but starting a chain reaction is relatively easy. Government bomb builders have accidentally done it several times over the years. With some training, terrorists might produce a chain reaction using uranium in a way that created a substantial explosion, some experts say.

Ron Timm, a former Energy Department security official, said that in some cases assembling a bomb could be done without explosives, by bringing uranium parts together

variety of buildings, and previous security reviews have found that some of it is vulnerable to theft.

Representative Edward J. Markey, Democrat of Massachusetts and a longtime critic of the Energy Department, plans to raise the issue on Wednesday in a news conference where several current and former Energy Department workers will describe security lapses.

In a letter to the energy secretary, Spencer Abraham, which Mr. Markey said he would send on Wednesday, he argues that suicidal terrorists could try "rapidly propelling two masses of weapons-grade plutonium or uranium towards one another to create a critical mass," by using conventional explosives.

That is how the Hiroshima bomb, was detonated, experts point out.

Scientists said that a plutonium bomb could be built with a much smaller quantity of material than a uranium bomb, but that it would probably begin a chain reaction before the parts could be moved into position, resulting in a nuclear blast that would not be very powerful.

The first plutonium bombs, tested at the Trinity Site in New Mexico and then used at Nagasaki, had elaborate arrangements of explosives to squeeze the mass together and hold it there long enough for the chain reaction to become sufficiently established.

Mr. Markey's letter cites cases in which nuclear weapons laboratories and manufacturing plants have failed security drills conducted by Navy Seals and other commandos playing the part of terrorists. For example, in a drill at Los Alamos National Laboratory in 1987, the "terrorists" used a garden cart to steal enough weapons-grade uranium for numerous nuclear weapons, a report cited by Mr. Markey says.

But John A. Gordon, a retired Air Force general who is under secretary of energy for national security, expressed confidence in security.

"After Sept. 11, we've put the folks on higher alert and they're working very aggressively," he said. "I think a D.O.E. weapons site is one of the last places a terrorist would think about attacking and having hopes of success; the security basically bristles."

General Gordon said "attackers" sometimes prevailed in security drills because "sometimes we run them to failure."

"We want to find out where the system would break down, and we run stuff that is guaranteed to lose in the end," he said. "After each one of them, we strengthen security."

The Energy Department has been concerned since at least 1991 about the possibility of terrorists using its materials to build a bomb on site, but Mr. Timm and others questioned whether suicidal terrorists were a likely threat.

Lapses at security drills prompt a call for tighter controls at federal nuclear sites.

manually. "Flying a 757, or a 767, is a lot more sophisticated than what we're discussing here," he said.

Mr. Timm is a co-author of a report issued in October by the Project on Government Oversight, a watchdog group, that traces a history of security problems at the weapons plants.

The report recommends consolidating nuclear materials now held at 10 sites and putting security for the materials under the direction of an independent oversight agency instead of the Department of Energy.

A scientist not associated with the report, Frank N. von Hippel, who is a physicist and a professor of public and international affairs at Princeton, said in a telephone interview that a 100-pound mass of uranium dropped on a second 100-pound mass, from a height of about 6 feet, could produce a blast of 5 to 10 kilotons. The Hiroshima bomb, which used uranium, was 12 to 17 kilotons.

Even a blast of only one kiloton, he said, would destroy an area of about one square mile. But finding the right amounts of uranium could still be a challenge, he said.

Nuclear fuel is stored in a wide