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fact sheet

The Robust Nuclear Earth Penetrator

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The Robust Nuclear Earth Penetrator (RNEP): RNEP is a nuclear weapon that would burrow a few meters into the ground before exploding and thus generate a powerful underground shock wave. Its hypothetical targets are deeply buried command bunkers or underground storage sites containing chemical or biological agents.

The RNEP design: Weapons designers at Lawrence Livermore National Laboratory intend to use an existing high-yield nuclear warhead—the 1.2-megaton B83 nuclear bomb—in a longer, stronger and heavier bomb casing. The B83 is the largest nuclear weapon in the U.S. arsenal, and nearly 100 times more powerful than the nuclear bomb used on Hiroshima.[1]

Technical realities: According to several recent scientific studies, ***RNEP would not be effective at destroying many underground targets*,** and its use could result in the death of millions of people.[2]

- **RNEP would produce tremendous radioactive fallout:** A nuclear earth penetrator cannot penetrate deep enough to contain the nuclear fallout. Even the strongest casing will crush itself by the time it penetrates 10-30 feet into rock or concrete. For comparison, even a one-kiloton nuclear warhead (less

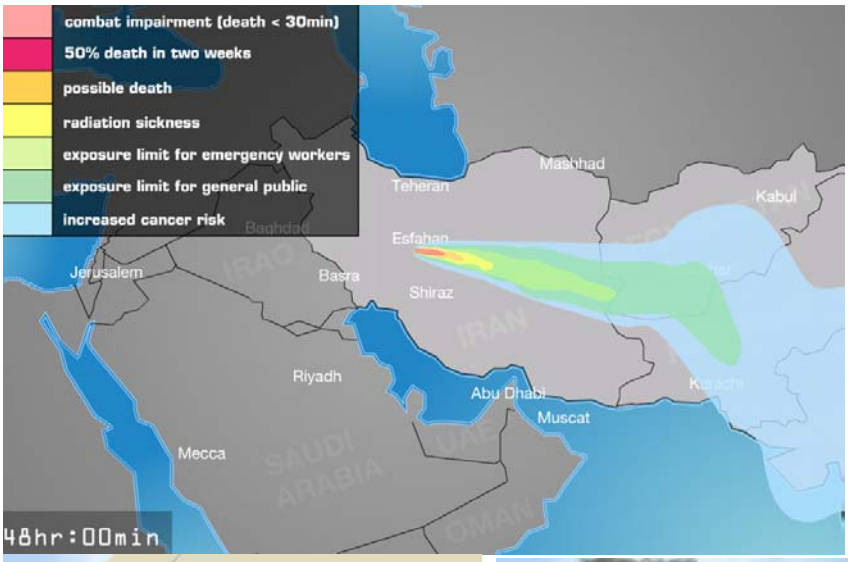

Figure 1: Fallout from the use of RNEP against the Esfahan nuclear facility in Iran would spread for thousands of miles across Afghanistan, Pakistan and India. It would kill 3 million people within 2 weeks of the explosion and expose 35 million to cancer causing radiation.

Figure 2: Only a small region around a nuclear explosion reaches temperatures high enough to sterilize chemical or biological agents. But the seismic shock or blast wave propagates much further, ejecting a large crater of dirt and debris. Agents stored within the crater volume, but outside the small sterilization zone, would be dispersed into the environment.

than 1/10th as powerful as the Hiroshima bomb) must be buried at least 200-300 feet to contain its radioactive fallout.[3] The high yield RNEP will produce tremendous fallout that will drift for more than a thousand miles downwind. As, Linton Brooks, the head of the National Nuclear Security Administration told Congress in April, "the laws of physics will [never allow a bomb to penetrate] far enough to trap all fallout. This is a nuclear weapon that is going to be hugely destructive over a large area."

- **RNEP could kill millions of people:** A simulation of RNEP used against the Esfahan nuclear facility in Iran, using the software developed for the Pentagon, showed that 3 million people would be killed by radiation within 2 weeks of the explosion, and 35 million people in Afghanistan, Pakistan and India would be exposed to increased levels of cancer-causing radiation (see Figure 1).[4]

- **RNEP would not be effective at destroying chemical or biological agents:** Unless the weapon detonates nearly in the same room with the agents, it will not destroy them. Because the United States is unlikely to know the precise location, size and geometry of underground bunkers, a nuclear attack on a storage bunker containing chemical or biological agents would more likely spread those agents into the environment, along with the radioactive fallout (See Figure 2).[5 and 6]

- **RNEP would not be effective against the deepest or widely separated bunkers.** The seismic shock produced by the RNEP could only destroy bunkers to a depth of about a thousand feet. Modern bunkers can be deeper than that, with a widely separated complex of connected rooms and tunnels.

- **There are more effective conventional alternatives to RNEP:** Current precision-guided conventional weapons can be used to cut off a bunker's communications, power, and air, effectively keeping the enemy weapons underground and unusable until U.S. forces secure them. Sealing chemical or biological agents underground is far more sensible than trying to blow them up.

The RNEP budget: RNEP is not just a feasibility study: DOE's 2005 budget included a five-year projection—totaling $484.7 million—to produce a completed warhead design and begin production engineering by 2009.[1] The FY06 budget request includes $4 million for RNEP and $4.5 million to modify the B-2 bomber to carry RNEP. Last year, David Hobson, Republican chair of the House Appropriations Energy and Water Development Subcommittee, zeroed out FY05 funding for the program, stating, "we cannot advocate for nuclear nonproliferation around the globe, while pursuing more usable nuclear weapons options here at home."

References:

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