NPPP STUDY: COSTLY ARMY "MOBILE NUCLEAR REACTORS" WOULD BE VULNERABLE TO PRECISION MISSILE STRIKES, ENDANGER THOUSANDS OF U.S. TROOPS, AND BREED TERRORISM

Estimated Cost of Reactor Electricity Seen as 16 Times Higher Than Pentagon Guess; Highly Accurate Iranian Attack on U.S. Troops Last Year Spotlights Danger if Mobile Reactors Deployed as Planned

AUSTIN, TX – April 29, 2021 – As if war zones were not dangerous enough, the U.S. Army is quietly developing a plan for mobile nuclear reactors for electricity in the midst of active combat arenas. However, such a scheme might not survive enemy missile attacks that could "radioactively contaminate thousands of nearby U.S. troops" and also provide adversaries with nuclear waste for radiological attacks on American civilians, according to a new study released today by the Nuclear Proliferation Prevention Project (NPPP).

The report, *"Proposed U.S. Army Mobile Nuclear Reactors: Costs and Risks Outweigh Benefits,"* was authored by Dr. Alan J. Kuperman, coordinator of the Nuclear Proliferation Prevention Project (NPPP).

Funded by $133 million from Congress, two reactor companies, BWXT and X-Energy, are designing prototypes for an Army test in 2023.

Report author Dr. Alan J. Kuperman, a professor at the LBJ School of Public Affairs, University of Texas at Austin, said: **"This would facilitate a radioactive Pearl Harbor or 9/11 attack on U.S. troops. Afterwards the enemy could also use the radioactive waste for hundreds of 'dirty bomb' attacks on American citizens. Such enormous risks cannot be justified since we already have safer energy alternatives that are also cheaper by an order of magnitude than nuclear. The Army's mobile reactor program, which was never requested by the Pentagon but rather by nuclear industry cheerleaders in Congress, is precisely how disasters happen."**

Dr. Edwin Lyman, director, Nuclear Power Safety, Union of Concerned Scientists, is an internationally recognized expert on nuclear power safety and security, and commented: **"Professor Kuperman's important and timely report also has safety implications for civilian nuclear power. The Department of Energy and private vendors are pushing to develop and deploy small modular and micro-reactors around the United States for district heating, desalination, and electric vehicle charging stations. But even very small reactors could release dangerous amounts of radioactivity if they are damaged in an accident or sabotaged."**

Dr. Lyman is a member of the Institute of Nuclear Materials Management and has testified numerous times before Congress and the Nuclear Regulatory Commission. He also co-authored the critically acclaimed book, *Fukushima: The Story of a Nuclear Disaster* (New Press), published in February 2014.

Here are some of the issues highlighted in the study:

- ***High cost.*** The Army says mobile reactors can provide electricity less expensively than diesel generators, but its claim is based on unrealistic assumptions that a reactor would have low construction costs and then operate an average of 18 hours per day for 40 years, says the Texas study. Kuperman instead utilizes industry cost estimates and a more plausible expectation of operating half the time for 10 years, calculating that nuclear electricity would cost up to 16 times more than the Army had assumed, and seven times more than diesel-generated electricity.

- ***Vulnerability to missile attacks.*** A 2020 missile attack by Iran on American forces at Iraq's al-Asad base that resulted in traumatic brain injury for more than a hundred U.S. troops shows how a direct hit on an Army modular reactor could be catastrophic. Iran's missiles proved 10 times more accurate than the Army's logistics directorate had optimistically assumed in a 2018 report advocating the reactors. The Army's plan to protect the reactors, by burying and covering them, could backfire by impeding air cooling and thus overheating the fuel and causing a radioactive release, cautions the Texas study.

- ***Captured reactors***. Kuperman also warns that if U.S. troops abandoned a reactor under attack, the enemy would come into possession of several hundred pounds of highly radioactive waste in the form of millions of tiny fuel balls that could be dispersed in radiological terror attacks.

- ***No mission for reactors.*** The NPPP study debunks previous justifications for the mobile reactors. Congress's rationale was to reduce U.S. casualties from attacks on deliveries of diesel fuel for electricity on war bases. However, Kuperman finds that such casualties peaked at a much lower level than asserted and then dropped virtually to zero more than seven years ago due to logistics innovations. The Texas study also argues that future weapons for air defense such as high-energy lasers and electro-magnetic railguns cannot justify reactors because they would be used so infrequently that the electricity could be provided much less expensively by diesel generators coupled with batteries.

The Texas study says a mobile reactor would have the smallest economic penalty on a base with at least 5,000 personnel, but notes that due to troop withdrawals from Iraq and Afghanistan the U.S. military currently has no war bases of that size.

The Army envisions air transporting the reactors to war zones, but the NPPP study says this would complicate both U.S. and foreign regulatory approval. Domestic licensing hinges on whether American states, such as Idaho and Alaska, would allow unprecedented flights of highly radioactive spent nuclear fuel over their territory. Deployment to and from war bases could be blocked by any country along the air route that refused overflight.

The Texas study concludes that addressing all of the unresolved questions could take decades, whereas a reactor prototype could be designed and constructed in less than three years, although it would cost hundreds of millions of dollars. Accordingly, Kuperman recommends that the Biden Administration and Congress "suspend the development program until it becomes clearer in future years whether deployment of such a reactor is both feasible and desirable."

Dr. Kuperman's research focuses on nuclear nonproliferation and U.S. military intervention. His books include *Plutonium for Energy? Explaining the Global Decline of MOX* (NPPP, 2018), and *Nuclear Terrorism and Global Security: The Challenge of Phasing out Highly Enriched Uranium* (Routledge, 2013).

The Nuclear Proliferation Prevention Project (NPPP) engages in research, debate and public education to ensure that civilian applications of nuclear technology do not foster the spread of nuclear weapons to states or terrorist groups. The NPPP is based at the LBJ School of Public Affairs, University of Texas at Austin: www.NPPP.org.

MEDIA CONTACT:
Max Karlin at (703) 276-3255 or mkarlin@hastingsgroup.com.

EDITOR'S NOTE:
The report and a streaming version of the news event are available at www.NPPP.org.