## Weap DA

#### No, really, there isn’t a link

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(John C. Ringle of Corvallis is professor emeritus of nuclear engineering at Oregon State University, “Reintroduction of reactors in US a major win” November 13, 2010, http://robertmayer.wordpress.com/2010/11/21/reintroduction-of-reactors-in-us-a-major-win/)

Small nuclear reactors will probably be the mechanism that ushers in nuclear power’s renaissance in the U.S. Nuclear plants currently supply about 20 percent of the nation’s electricity and more than 70 percent of our carbon-free energy. But large nuclear plants c ost $8 billion to $10 billion and utilities are having second thoughts about how to finance these plants. A small modular reactor (SMR) has several advantages over the conventional 1,000-megawatt plant: 1. It ranges in size from 25 to 140 megawatts, hence only costs about a tenth as much as a large plant. 2. It uses a cookie-cutter standardized design to reduce construction costs and can be built in a factory and shipped to the site by truck, railroad or barge. 3. The major parts can be built in U.S. factories, unlike some parts for the larger reactors that must be fabricated overseas. 4. Because of the factory-line production, the SMR could be built in three years with one-third of the workforce of a large plant. 5. More than one SMR could be clustered together to form a larger power plant complex. This provides versatility in operation, particularly in connection with large wind farms. With the variability of wind, one or more SMRs could be run or shut down to provide a constant base load supply of electricity. 6. A cluster of SMRs should be very reliable. One unit could be taken out of service for maintenance or repair without affecting the operation of the other units. And since they are all of a common design, replacement parts could satisfy all units. France has already proved the reliability of standardized plants. At least half a dozen companies are developing SMRs, including NuScale in Oregon. NuScale is American-owned and its 45-megawatt design has some unique features. It is inherently safe. It could be located partially or totally below ground, and with its natural convection cooling system, it does not rely on an elaborate system of pumps and valves to provide safety. There is no scenario in which a loss-of-coolant accident could occur. Tests conducted on a one-third model of the NuScale reactor at Oregon State University have confirmed the effectiveness of this cooling system. Small reactors haven’t been built for commercial use since the very early days of nuclear power development, when the very first power reactors were of this size. For more than 50 years, however, small reactors have been built and operated successfully and safely by the Navy in submarines and aircraft carriers. The Nuclear Regulatory Commission anticipates getting applications from two to three companies within the next two years for approval of SMR designs. Energy Secretary

#### Your burden

**Lambakis, 2001,** Steven, Hoover Institution, Stanford University. “Space Weapons: Refuting the Critics,” <http://www.hoover.org/publications/policy-review/article/6612>, KHaze

In other words, it is not at all self-evident that a sudden loss of a communications satellite, for example, would precipitate a wider-scale war or make warfare termination impossible. In the context of U.S.-Russian relations, communications systems to command authorities and forces are redundant. Urgent communications may be routed through land lines or the airwaves. Other means are also available to perform special reconnaissance missions for monitoring a crisis or compliance with an armistice. While improvements are needed, our ability to know what transpires in space is growing — so we are not always in the dark. The burden is on the critics, therefore, to present convincing analogical evidence to support the notion that, in wartime or peacetime, attempts by the United States to control space or exploit orbits for defensive or offensive purposes would increase significantly the chances for crisis instability or nuclear war. In Washington and other capitals, the historical pattern is to use every available means to clarify perceptions and to consider decisions that might lead to war or escalation with care, not dispatch.

**Space weapons aren’t destabilizing**

**Lambakis, 2001,** Steven, Hoover Institution, Stanford University. “Space Weapons: Refuting the Critics,” <http://www.hoover.org/publications/policy-review/article/6612>, KHaze

When we look at what incites war, history instructs us that what matter most are the character and motivation of the states involved, along with the general balance of power (i.e., are we in the world of 1914, 1945, or 2001?). Fluctuations in national arsenals, be they based on earth or in space, do not determine, but rather more accurately are a reflection of, the course of politics among nations. In other words, it matters not so much that there are nuclear weapons, but rather whether Saddam Hussein or Tony Blair controls them and in what security context. The same may be said for space weapons. The sway of major powers historically has regulated world stability. It follows that influential countries that support the rule of law and the right of all states to use orbits for nonaggressive purposes would help ensure stability in the age of satellites. The world is not more stable, in other words, if countries like the United States, a standard-bearer for such ideas, "do nothing." Washington’s deterrence and engagement strategies would assume new dimensions with the added influence of space weapons, the presence of which could help bolster peacemaking diplomacy and prevent aggression on earth or in space. Insofar as we have no experience in space warfare, no cases exist to justify what is in essence a theoretically derived conclusion — that space combat must be destabilizing. We do know, however, that the causes of war are rarely so uncomplicated. Small events, by themselves, seldom ever explain large-scale events. When ardent Israeli nationalist Ariel Sharon visited this past fall the holy site around the Al Aksa Mosque at Jerusalem’s Temple Mount, his arrival fired up a series of riots among impassioned Palestinians and so widened the scale of violence that it kicked up the embers of regional war yet again. Yet the visit itself would have been inconsequential were it not for the inveterate hostility underlying Israeli-Palestinian relations. Likewise, World War I may have symbolically begun with the assassination of Archduke Ferdinand in Sarajevo. Yet a serious student of history would note that the alliances, the national goals and military plans, and the political, diplomatic, and military decisions of the major European powers during the preceding years and months were the true causes of the erosion in global strategic stability. By extension, if decisions to go to war are set on a hair-trigger, the reasons for the precarious circumstances extend far beyond whether a communications or imaging platform is destroyed in space rather than on earth.