# 1AC

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### 1AC – Plan

#### The Executive branch of the United States should acquire electricity from small modular nuclear reactors for military installations in the United States.

### 1AC Grid Advantage

#### CONTENTION 1: GRID

**Cyber-attack is coming ---actors are probing grid weaknesses**

**Reed 12** John, Reports on the frontiers of cyber war and the latest in military technology for Killer Apps at Foreign Policy, "U.S. energy companies victims of potentially destructive cyber intrusions", 10/11, killerapps.foreignpolicy.com/posts/2012/10/11/us\_energy\_companies\_victims\_of\_potentially\_destructive\_cyber\_attacks

Foreign actors are probing the networks of key American companies in an attempt to gain control of industrial facilities and transportation systems, Defense Secretary Leon Panetta revealed tonight.¶ "We know that foreign **cyber actors are probing America's critical infrastructure networks**," said Panetta, disclosing previously classified information during a speech in New York laying out the Pentagon's role in protecting the U.S. from cyber attacks. "They are targeting the computer control systems that operate chemical, **electricity** and water plants, and those that guide transportation thorough the country."¶ He went on to say that the U.S. government knows of "specific instances where intruders have gained access" to these systems -- frequently known as Supervisory Control and Data Acquisition (or SCADA) systems -- and that "they are seeking to create advanced tools to attack these systems and cause panic, destruction and even the loss of life," according to an advance copy of his prepared remarks.¶ The secretary said that **a coordinated attack on enough critical infrastructure could be a "cyber Pearl Harbor" that would "cause physical destruction and loss of life, paralyze and shock the nation, and create a profound new sense of vulnerability.**"¶ While there have been reports of criminals using 'spear phishing' email attacks aimed at stealing information about American utilties, Panetta's remarks seemed to suggest more sophisticated, nation-state backed attempts to actually gain control of and damage power-generating equipment. ¶ Panetta's comments regarding the penetration of American utilities echo those of a private sector cyber security expert Killer Apps spoke with last week **who said that the networks of American electric companies were penetrated, perhaps in preparation for a Stuxnet-style attack**.¶ Stuxnet is the famous cyber weapon that infected Iran's uranium-enrichment centrifuges in 2009 and 2010. Stuxnet is believed to have caused some of the machines to spin erratically, thereby destroying them.¶ "**There is hard evidence** that there has been penetration of our power companies, and given Stuxnet, that is a staging step before destruction" of electricity-generating equipment, the expert told Killer Apps. Because uranium centrifuges and power turbines are both spinning machines, "**the attack is identical -- the one to take out the centrifuges and the one to take out our power systems is the same attack**."¶ "If a centrifuge running at the wrong speed can blow apart" so can a power generator, said the expert. "If you do, in fact, spin them at the wrong speeds, you can blow up any rotating device."¶ Cyber security expert Eugene Kaspersky said two weeks ago that one of his greatest fears is someone reverse-engineering a sophisticated cyber weapon like Stuxnet **-- a relatively easy task** -- and he noted that Stuxnet itself passed through power plants on its way to Iran. "Stuxnet infected thousands of computer systems all around the globe, I know there were power plants infected by Stuxnet very far away from Iran," Kaspersky said.

**Grid attacks take out C and C---causes retaliation and nuclear war**

**Tilford 12** Robert, Graduate US Army Airborne School, Ft. Benning, Georgia, “Cyber attackers could shut down the electric grid for the entire east coast” 2012, <http://www.examiner.com/article/cyber-attackers-could-easily-shut-down-the-electric-grid-for-the-entire-east-coa>

To make matters worse a cyber attack that can take out a civilian power grid, for example could also cripple the U.S. military.¶ The senator notes that is that the same power grids that supply cities and towns, stores and gas stations, cell towers and heart monitors also power “every military base in our country.”¶ “Although bases would be prepared to weather a short power outage with backup diesel generators, within hours, not days, fuel supplies would run out”, he said.¶ Which means military **command and control centers could go dark**.¶ Radar systems that detect air threats to our country **would shut Down completely**.¶ “Communication between commanders and their troops would also go silent. And many weapons systems would be left without either fuel or electric power”, said Senator Grassley.¶ “So in a few short hours or days, the mightiest military in the world would be left scrambling to maintain base functions”, he said.¶ We contacted the Pentagon and officials confirmed the threat of a cyber attack is something very real.¶ Top national security officials—including the Chairman of the Joint Chiefs, the Director of the National Security Agency, the Secretary of Defense, and the CIA Director— have said, “preventing a cyber attack and improving the nation’s electric grids is among the most urgent priorities of our country” (source: Congressional Record).¶ So how serious is the Pentagon taking all this?¶ Enough to start, or end a war over it, for sure (see video: Pentagon declares war on cyber attacks http://www.youtube.com/watch?v=\_kVQrp\_D0kY&feature=relmfu ).¶ A cyber attack today against the US could very well be seen as an “Act of War” and could be met with a “full scale” US military response.¶ That could include the use **of “nuclear weapons**”, if authorized by the President.

**Plan solves grid collapse---SMRs make bases resilient --- prevents lashout**

**Andres and Breetz 11** Richard B, Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University and Hanna L, doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, February, "Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications", www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf

Small Reactors and Energy Security¶ The DOD interest in small reactors derives largely from problems with base and logistics vulnerability. Over the last few years, the Services have begun to reexamine virtually every aspect of how they generate and use energy with an eye toward cutting costs, decreasing carbon emissions, and reducing energy-related vulnerabilities. These actions have resulted in programs that have significantly reduced DOD energy consumption and greenhouse gas emissions at domestic bases. Despite strong efforts, however, two critical security issues have thus far **proven resistant to existing solutions**: bases’ vulnerability to civilian power outages, and the need to transport large quantities of fuel via convoys through hostile territory to forward locations. Each of these is explored below.¶ Grid Vulnerability. DOD is unable to provide its bases with electricity when the civilian electrical grid is offline for an extended period of time. **Currently, domestic military installations receive 99 percent of their electricity from the civilian power grid.** As explained in a recent study from the Defense Science Board:¶ DOD’s key problem with electricity is that critical missions, such as national strategic awareness and national command authorities, are almost entirely dependent on the national transmission grid . . . [**which] is fragile, vulnerable, near its capacity limit, and outside of DOD control**. In most cases, neither the grid nor on-base backup power provides sufficient reliability to ensure continuity of critical national priority functions and oversight of strategic missions in the face of a long term (several months) outage.7¶ The grid’s fragility was demonstrated during the 2003 Northeast blackout in which 50 million people in the United States and Canada lost power, some for up to a week, when one Ohio utility failed to properly trim trees. The blackout created cascading disruptions in sewage systems, gas station pumping, cellular communications, border check systems, and so forth, and demonstrated the interdependence of modern infrastructural systems.8¶ More recently, awareness has been growing that the grid is also vulnerable to purposive attacks. A report sponsored by the Department of Homeland Security suggests that a coordinated cyberattack on the grid could result in a third of the country losing power for a period of weeks or months.9 Cyberattacks on critical infrastructure are not well understood. It is not clear, for instance, whether existing terrorist groups might be able to develop the capability to conduct this type of attack. It is likely, however, that some nation-states either have or are working on developing the ability to take down the U.S. grid. In the event of a war with one of these states, it is possible, if not likely, that parts of the civilian grid would cease to function, taking with them military bases located in affected regions.¶ **Government and private organizations are currently working to secure the grid against attacks; however, it is not clear that they will be successful**. Most military bases currently have backup power that allows them to function for a period of hours or, at most, a few days on their own. **If power were not restored after this amount of time, the results could be disastrous**. First, military assets taken offline by the crisis would not be available to help with disaster relief. Second, during an extended blackout, **global military operations could be seriously compromised**; this disruption would be particularly serious if the blackout was induced during major combat operations. During the Cold War, this type of event was far less likely because the United States and Soviet Union shared the common understanding that blinding an opponent with **a grid blackout could escalate to nuclear war**. America’s current opponents, however, may not share this fear or be deterred by this possibility.¶ In 2008, the Defense Science Board stressed that DOD should mitigate the electrical grid’s vulnerabilities by turning military installations into “islands” of energy self-sufficiency.10 The department has made efforts to do so by promoting efficiency programs that lower power consumption on bases and by constructing renewable power generation facilities on selected bases. Unfortunately, these programs will not come close to reaching the goal of islanding the vast majority of bases. **Even with massive investment in efficiency and renewables, most bases would not be able to function for more than a few days after the civilian grid went offline**.¶ **Unlike other alternative sources of energy, small reactors have the potential to solve DOD’s vulnerability to grid outages**. Most bases have relatively light power demands when compared to civilian towns or cities. Small reactors could easily support bases’ power demands separate from the civilian grid during crises. In some cases, the reactors could be designed to produce enough power not only to supply the base, but also to provide critical services in surrounding towns during long-term outages.¶ Strategically, islanding bases with small reactors has another benefit. One of the main reasons an enemy might be willing to risk reprisals by taking down the U.S. grid during a period of military hostilities would be to affect ongoing military operations. Without the lifeline of intelligence, communication, and logistics provided by U.S. domestic bases, American military operations would be compromised in almost any conceivable contingency**. Making bases more resilient to civilian power outages would reduce the incentive for an opponent to attack the grid**. An opponent might still attempt to take down the grid for the sake of disrupting civilian systems, but the powerful incentive to do so in order to win an ongoing battle or war would be greatly reduced.

### 1AC Radar Advantage

#### CONTENTION 2: RADAR

#### Space radar is infeasible due to power limitations --- nuclear’s key

McCall 6 Chair, USAF Scientific Advisory Board, “Spacecraft Bus Technoligies,” http://www.au.af.mil/au/awc/awcgate/vistas/stechch3.pdf

All current spacecraft are either power limited or restricted in some measure by inadequate electrical power. Power limitations impose restrictions on the communications and propulsion subsystems and currently make large space-based radars and space-based weapons **relatively** unfeasible. A revolutionary change in capabilities will result from power technologies capable of providing large amounts of power onboard satellites. Large amounts of power will be enabling on spacecraft in the same sense that large amounts of random access memory have been enabling in personal computers. If power is not an issue, then previously hard applications become easy and new applications become possible. Evolutionary development of solar-array-based power technologies will see improvements to tens of kilowatts on satellites over the next decades. However, all solar collection systems in Earth orbit are limited by the solar constant of 1.4 kiloWatts per square meter. Large powers from solar collectors require large collection areas. For substantially larger powers (> 100 kW), several different types of technologies will have to be explored. Powers of this level will make large space-based radars, space-based directed energy weapons, and the use of high-performance electrically driven maneuvering technologies possible. **A natural technology to enable high power is nuclear power in space**; however, this technology has to date been considered unacceptable due to political and environmental limitations. Thus it is desirable to develop other technologies that may provide large power levels in space. In addition to continued development of safe **nuclear** systems, two other sources of continuous power in space that should be explored are the concepts of electrodynamic power-generating tethers and power beaming from one location to another (e.g., from space to space). The development of these and other technologies for high continuous power **will have a revolutionary effect** and the Air Force should invest in these areas as well as continuing to invest in solar collection technologies. Over the years, there have been several programs in nuclear powered spacecraft. NASA has been using Radioisotope Thermoelectric Generators (RTGs) for the interplanetary missions that generate a few tens of watts of power. Russia has flown nuclear reactors in space and BMDO has a joint program with the Russians (TOPAZ), under which the Defense department bought three of the reactors to do laboratory experiments. DoE had a program (SP 100) to use nuclear power in space and the Air Force had a nuclear propulsion program; these programs have been canceled. Nuclear power, however, remains one of the attractive alternatives in generating large amounts of power in space. To build a reactor for space applications has many challenging technical aspects including development of high-temperature lightweight materials, active cooling technologies, extremely radiation-hard and high-temperature electronics, and fail-safe system architectures. Setting the emotional issues of nuclear power aside, this technology offers a viable alternative for large amount of power in space. The Air Force should continue efforts towards making a safe nuclear reactor in space a viable option. Existing joint programs with Russia offer a low cost alternative and should be pursued. To build a reactor for space applications has many challenging technical aspects including development of high-temperature lightweight materials, active cooling technologies, extremely radiation-hard and high-temperature electronics, and fail-safe system architectures. Setting the emotional issues of nuclear power aside, this technology offers a viable alternative for large amount of power in space. The Air Force should continue efforts towards making a safe nuclear reactor in space a viable option. Existing joint programs with Russia offer a low cost alternative and should be pursued.

#### SMR development solves---allows the Air Force to deploy space radar

Maybury 12 Dr. Mark T, Chief Scientist, United States Air Force, 1/31/12, “Energy Horizons: United States Air Force Energy S&T Vision 2011-2026,” <http://www.fas.org/irp/doddir/usaf/energy.pdf>

There are other breakthrough space energy generation component technologies with the potential of achieving up to 70% efficiency. Examples include quantum dots and dilute nitrides in solar cells. But there are also entirely new technologies such as tethers to attempt to harvest energy from the geomagnetic field, and energy harvesting from system heat waste. These ideas, as well as new developments in nuclear energy, including small modular reactors, can potentially fuel local facilities. ¶ Recently, there has been progress in developing large systems for energy generation, including very large deployable panels as developed by the Air Force Research Lab (AFRL), DARPA, and industry. For example, we are currently limited to 27 kW arrays for satellite power, whereas more power is required for some future space missions by the AF, National Security Space (NSS), and NASA. Employing larger and more efficient arrays will enable missions that require very high power, such as space-based radar or space-based laser missions. An example of a system that is almost ready for a flight demonstration is the AFRL-Boeing 30 kW Integrated Blanket Interconnect System (IBIS). Figure 3.2 shows the technology and implementation concept for such a High Power Solar Array (HPSA). In the long term, increased solar cell efficiencies and revolutionary materials foreshadow the potential of 500 kW on-orbit power generation technologies, which would be transformational for performing missions from spacebased systems. ¶ In addition to improving photovoltaic efficiencies, other potential energy production is possible in the mid- to far-term. In addition to modern designs for autosafing, small modular nuclear reactors for ground operations energy, nuclear energy has been demonstrated on several satellite systems (e.g., Radioisotope Thermoelectric Generators (RTG)). This source provides consistent power regardless of harvestable resources (i.e. solar) at a much higher energy and power density than current technologies. While the implementation of such a technology should be weighed heavily against potential catastrophic outcomes, many investments into small modular reactors can be leveraged for space based systems. As these nuclear power plants decrease in size, their utility on board space based assets increases.

#### It will be deployed---Air Force wants to, they just need the tech

Puiu 12 Tibi Puiu – Studies Mechanical Engineering, Feb 23, 2012 “Air Force plans buildings a solar power station in space and nuclear-powered spacecraft”

http://billionyearplan.blogspot.com/2012/08/air-force-plans-buildings-solar-power.html

Last week, the U.S. Air Force released a report in which it outlines its technological and energy plans for the forthcoming 15 years. Among others, the Air Force means to deploy a space-based solar power station, which would serve energy wirelessly to both Earth and space satellites, as well as a new generation of spacecraft powered by small nuclear reactors.¶ This solar power satellite design features sets of lightweight, inflatable fresnel reflectors to focus the Sun's energy on small arrays of high-efficiency photovoltaic cells. (c) NASA¶ The 72-page long report, titled “Energy Horizons: United States Air Force Energy S&T Vision 2011-2026″, can be read in its entirety for thus curious enough here. It discusses measures the institution plans to meet in order to reach its energy goals, reduce demand and change military culture in sight of rapidly developing missions.¶ “Energy is a center of gravity in war and an assured energy advantage can enable victory,” said Mark Maybury, chief scientist for the United States Air Force. He spearheaded the report.¶ “While energy is already an essential enabler,” Maybury said. “Global competition, environmental objectives and economic imperatives will only increase its importance.”¶ Of great interest, is a solar-based power station, which would harness solar energy and then beam it to Earth using lasers. The technology necessary to effectively transfer energy between space and Earth isn’t available at the moment, however, so my guess is the Air Force has in mind distributing it towards satellites, whether they belong to the Air Force, NASA or other national security agencies. Air Force is currently limited to 27 kilowatt (kW) arrays for satellite power. In the future, it intends to massively increase its space energy array, which would also allow them to build smaller spacecraft, as they wouldn’t need to generate power for themselves. Also, sensors, communications equipment and on-board processing devices generally require a lot of energy, and if you want to have a very powerful satellite, destined for space-based radar or space-based laser missions, you need to provide it somehow. It would all be wireless transmitted from the neighboring space power station.¶ Nuclear-powered spacecraft¶ When nuclear energy is concerned, there are already some satellites powered by Radioisotope Thermoelectric Generators (RTG), which provide steady and reliable power, at a much greater output than other technologies currently in place. However, the Air Force wants to take it up a notch and employ satellites powered by small nuclear reactors. We’ve discussed about nuclear fission power plants, small enough to fit in a briefcase, in one of our past posts – I’m guessing the Air Force is going for something similar. Of course, safety is a major concern, as outlined in the report.

#### Space radar is the key internal link to maintaining nuclear primacy

Li & Nie 9 – Li Bin, director of Arms Control Program at the Institute of International Studies, Tsinghua University; and Nie Hongyi, officer in the People’s Liberation Army with an MA from China’s National Defense University and a Ph.D. in International Studies from Tsinghua University, 5/22/9, “An Investigation of China – U.S. Strategic Stability,” <http://www.ucsusa.org/assets/documents/nwgs/Li-and-Nie-translation-final-5-22-09.pdf>

The mobility of China’s nuclear weapons raises the survivability of Chinese nuclear weapons and thereby sustains China-U.S. strategic stability. If the United States cannot accept a condition of strategic stability between China and the United States, then a simple increase in the number of nuclear weapons targeting China (for example, moving nuclear subs) cannot achieve that objective, but requires an increase in the ability to sense, discriminate and track mobile targets. The visible light and the infrared sensors on U.S. satellites can partially serve this objective. But in clouds and rain the light seen by infrared and visible light sensors have no way to penetrate the cloud layer to see targets on the ground. For this reason the United States hopes to develop an all-weather capability to observe the ground. The specified plan is to develop a satellite-based radar system utilizing the Doppler reflection to follow moving targets on the ground. According to this plan the United States will begin to deploy a space-based radar network in 2008. If the U.S. space-based radar can effectively realize the functions of this idea then they will be able to detect, recognize and track the large body of Chinese strategic mobile missiles. This will greatly discount the effort of China to mobilize its strategic weapons, and a new strategic imbalance will appear between China and the United States. Analysis makes it clear that if China selects an appropriate countermeasure to space-based radar it would be difficult to track Chinese mobile missiles in all weather, making it unable to realistically lower China’s nuclear retaliatory capability. The problem is that the ability of space-based radar to track mobile objects on the ground is a product of adjustments in the movement that are sensitive to the environment (such as terrain), the path followed by mobile objects on the ground and other factors. Consequently, once the United States deploys a space-based radar system, it will not be easy for China to know if its mobile missiles are being tracked; it will also not be easy for the United States to know if the Chinese mobile missiles they’re tracking already escaped tracking. This increases difficulties for decision-makers on both sides.

#### It enables effective reconnaissance to ensure primacy over mobile targets

Li 7 Bin, director of Arms Control Program at the Institute of International Studies, Tsinghua University, “Tracking Chinese Strategic Mobile Missiles,” Science and Global Security, Vol. 15, p. 1-30

Long-range weapons can be divided into two categories: nuclear and nonnuclear. ICBMs and SLBMs are two main long-range nuclear weapons. The United States has deployed ICBMs and SLBMs for several decades and these weapons, in principle, are able to attack mobile targets if the targets are located, although the costs may be high. The question is whether or not conventional weapons are able to attack mobile targets from long distances. As conventional weapons have a much smaller lethal radius, they must be very precise to hit the target.¶ To attack mobile or re-locatable targets, real-time intelligence systems are also required as an adjunct to weapons in order to locate and track mobile targets.¶ For many years, the United States has employed satellite-based optical and infrared sensors that observe ground targets with a resolution of sub-meters. The optical and infrared observation capabilities from space have been applied in recent warfare and proved to be strategically important. However, the detection of optical and infrared signals is not always possible. Darkness precludes the use of optical signals and heavy clouds can shield both optical and infrared signals. To ensure persistent monitoring all-weather systems are needed. One idea is to detect the targets on the ground by satellite based radar. Radar can penetrate clouds and rain, and space radar is an ideal alternative. The main question is whether space radar can provide persistent tracking. This study uses the DF-31 as the example and assumes that it can move on standard roads at 20 km/h (5.6 m/s), the limit set by the Chinese government for transportation vehicles on level IV roads in uneven areas. 36 In the ﬁrst mobility mode analyzed in the previous section, the survivability of DF-31 increases when its speed increases. In that analysis the author examined the DF-31 TELs at speeds of 20 km/h and higher to see if a higher speed helps China saturate a U.S. preemptive strike. In the mode analyzed next, higher speeds of DF-31 TELs make them more visible to space radar when the radar monitors moving ground targets. Therefore the author examines a case in which the DF-31 TELs are at low speed (20 km/h). ¶ Research in the United States has explored the roles of using space radar to track Chinese mobile missiles. 37 Space radar detects targets on the ground or in the air by sending radar waves to targets and picking up reﬂected signals. To reach the same level of resolution, the size of the radar antenna needs to be much larger than the size of the telescope that picks up infrared and optical signals as the radar wavelength (e.g., several centimeters for X-band) is much larger than optical and infrared signals (10−4 to 10−5 centimeters). Satellites in space cannot carry large radar antenna to achieve such a high resolution. An alternative is to pick up a reﬂected radar wave at different positions when the satellite is traveling and piece the picture together from coherent signals. Radar working in this mode is called a Synthetic Aperture Radar (SAR). Spacebased SAR is good for taking pictures of nearly stationary targets, for example, mapping the terrain. To highlight moving targets, the Doppler effects of radar waves are utilized. If a beam of a radar wave is projected to a moving target with radial speed (speed in the direction of the radar beam), the frequency of the radar wave reﬂected from the moving target changes slightly. A larger radial speed creates larger frequency shift. Space radar can pick up only the signals from moving targets whose frequency is slightly different from that from stationary targets. This mode of detection is called Ground Moving Target Indicator (GMTI) or Surface Moving Target Indicator (SMTI). When space radar is operated in SMTI mode, all stationary objects in the ﬁeld become dark and only moving targets with appropriate radial speed are bright. Space radar in SMTI mode is the primary available tool to monitor mobile targets and therefore is the main candidate for tracking Chinese strategic mobile missiles. This analysis will focus mainly on space radar in SMTI mode.

#### Nuke primacy prevents nuclear war over Taiwan

Lieber and Press 7 - Keir A. Lieber, Assistant Professor of Political Science at the University of Notre Dame, and Daryl G. Press, Associate Professor of Political Science at the University of Pennsylvania, Winter 2007, “U.S. Nuclear Primacy and the Future of the Chinese Deterrent,” China Security, Issue No. 5, online: http://www.wsichina.org/cs5\_5.pdf

Ironically, one of the clearest explanations for how the United States may use nuclear primacy in a crisis or war with China appears in an earlier article by Blair. His recent article with Chen labels our suggestion that the United States might use nuclear threats “the zenith of provocation” and “unthinkable.”23 However, in the autumn 2005 issue of China Security, Blair describes exactly the crisis dynamics we envision leading to U.S. nuclear threats and perhaps even a preemptive nuclear attack. He notes that if China were to alert its strategic nuclear forces during a war with the United States over Taiwan, “the United States would likely act to beat China to the punch.” He continues, “Given constant U.S. surveillance of Chinese nuclear launch sites, any major Chinese preparations to fire peremptorily would be detected and countered by a rapid U.S. preemptive strike against the sites by U.S. conventional or nuclear forces… The United States could easily detect and react inside of the lengthy launch cycle time of Chinese forces.”24¶ Blair’s words mirror our argument and suggest the two ways that nuclear primacy may benefit the United States. First, if the Chinese were to threaten nuclear escalation in the context of a Taiwan war, the U.S. could strike first and likely destroy the Chinese force on the ground – “beat China to the punch,” as Blair puts it. Second, China’s knowledge of its vulnerability to nuclear preemption might prevent China from alerting its nuclear force – or even attacking Taiwan – in the first place.

War over Taiwan is inevitable---U.S. conventional superiority ensures China will escalate

Zhang 8 - Baohui Zhang, Associate Professor of Political Science, Lingnan University, Hong Kong, March 2008, “The Taiwan Strait and the Future of China's No-First-Use Nuclear Policy,” Comparative Strategy, Vol. 27, No. 2, p. 164-182

For the above reasons the no-first-use principle remained unchallenged until the 1990s, when a series of new issues began to force some in China to rethink its nuclear principles. These include the ascendance of the Taiwan issue as the central security challenge for China (and, as a result, the increased likelihood of American military intervention in the Taiwan Strait), and the revolution in military affairs (RMA) that has given the United States vast conventional advantage over China. ¶ According to John Wilson Lewis and Xue Litai, during the 1990s Taiwan's tendency to move toward de jure independence led to an increasingly pessimistic view inside China that the Taiwan issue could not be peacefully resolved. More and more Chinese analysts believed that, due to the internal political dynamics of a democratic Taiwan and the rise of Taiwanese identity among its people, peaceful reunification between Taiwan and the mainland has become increasingly hopeless.13 In fact, Jiang Zemin made the famous remark that “a war across the Taiwan Strait is unavoidable.”14 As a result, Taiwan has become the number-one security issue for China, and preparing for a war to prevent Taiwan's independence has become an obsession of the Chinese leadership and military.¶ The problem for China is that it also increasingly believes that American military intervention can be expected in the event of war in the Taiwan Strait. Inside the Chinese military, due to “America's proclaimed geostrategic interests and recent military actions the prevailing opinion was that U.S. forces would undoubtedly intervene.”15 This scenario presents an extremely daunting challenge: how to defeat the world's most powerful military. This task is particularly daunting since the Chinese military recognizes that the revolution in military affairs has given the United States vast advantages over China. According to military observers, the 1991 Gulf War and the 1999 NATO war against Serbia demonstrated the revolutionary change in warfare through the use of precision-guided weapons linked to information technologies in areas such as intelligence, command and control, and weapon guidance. The Chinese military was keenly aware of the new trend and organized systematic studies of how the American military conducted its operations in this new kind of war.16¶ In fact, the Chinese military was awed by the American dominance in conventional warfare. As observed by General Wang Baocun, a prominent strategist at the PLA Academy of Military Sciences, the U.S. revolution in military affairs has resulted in a new kind of gap with other countries. Previously, the gap was merely generational. This time, there is a “time gap” in that the U.S. military and others are fighting as if they were from different historical periods. According to Wang, “The time gap in military technologies allows the superior side to possess an absolute advantage while leaving the other side in a position of absolute disadvantage. … The time gap makes it impossible for developing countries to overcome their military disadvantage in confrontations with the United States.” Wang thus reaches a gloomy conclusion: “The military time gap results in serious threats to the national and military security of developing countries. In fact, they are almost in a defenseless situation.”17¶ Major General Xu Hezhen, who is the Commandant of PLA Army Command Academy in Shijiazhuang, suggests that the RMA allows the U.S. to conduct “no-contact combat” against other militaries through beyond visual range sensor technologies and precision-strike weapons. This revolution in combat “creates a battlefield situation where 'I can see you and hit you but you can't see me and hit back. The situation leaves the weaker side in a position of perpetual disadvantage until it loses the will of resistance.”18¶ The RMA thus presents a serious problem for China's military planners: how to defeat a technologically far superior enemy such as the United States. In fact, China is no longer confident it can defeat such an enemy due to the vast gap with the United States in conventional military technologies. As Lewis and Xue observe, “As senior PLA planners dissected the American strategy from the Gulf War of 1991 to the lightening war against Iraq in 2003, it was to become painfully evident that no war with the United States could be won or even brought to a reasonable draw.”19¶ This bleak assessment by Chinese officers of the U.S. conventional dominance in the Taiwan Strait is echoed by American analysis. In a research project for the U.S. Department of Defense, the Rand Corporation analyzed how China may choose to conduct a war against the American military. According to Rand, in the coming decades the U.S. will possess “even greater military advantages over Chinese forces than it currently enjoys.”20 Therefore, if the China intends to fight the U.S. through conventional military modernization, “this option, taken alone, potentially condemns the PLA to evolving relative obsolescence.”21¶ How to prevent a disastrous defeat in the Taiwan Strait led some in China to question the separation of conventional and nuclear doctrines in Chinese military thinking. While the no-first-use policy can prevent a nuclear attack against China, it cannot deter a large-scale conventional war by a technologically superior enemy. Some believe that the policy can no longer protect China's core national interests, such as preventing de jure independence of Taiwan. According to Alastair Iain Johnston, who was the first Western analyst to notice this trend in the 1990s, some Chinese strategists began to argue that China should develop a nuclear doctrine “suitable for economically and technologically weak states.”22

#### Nuclear war

Glaser 11 Professor of Political Science and International Affairs – George Washington University, “Will China’s Rise Lead to War?” *Foreign Affairs* Vol. 9 Iss. 2, March/April

THE PROSPECTS for avoiding intense military competition and war may be good, but growth in China's power may nevertheless require some changes in U.S. foreign policy that Washington will find disagreeable--particularly regarding Taiwan. Although it lost control of Taiwan during the Chinese Civil War more than six decades ago, China still considers Taiwan to be part of its homeland, and unification remains a key political goal for Beijing. China has made clear that it will use force if Taiwan declares independence, and much of China's conventional military buildup has been dedicated to increasing its ability to coerce Taiwan and reducing the United States' ability to intervene. Because China places such high value on Taiwan and because the United States and China--whatever they might formally agree to--have such different attitudes regarding the legitimacy of the status quo, the issue poses special dangers and challenges for the U.S.-Chinese relationship, placing it in a different category than Japan or South Korea. A crisis over Taiwan could fairly easily escalate to nuclear war, because each step along the way might well seem rational to the actors involved. Current U.S. policy is designed to reduce the probability that Taiwan will declare independence and to make clear that the United States will not come to Taiwan's aid if it does. Nevertheless, the United States would find itself under pressure to protect Taiwan against any sort of attack, no matter how it originated. Given the different interests and perceptions of the various parties and the limited control Washington has over Taipei's behavior, a crisis could unfold in which the United States found itself following events rather than leading them. Such dangers have been around for decades, but ongoing improvements in China's military capabilities may make Beijing more willing to escalate a Taiwan crisis. In addition to its improved conventional capabilities, China is modernizing its nuclear forces to increase their ability to survive and retaliate following a large-scale U.S. attack. Standard deterrence theory holds that Washington's current ability to destroy most or all of China's nuclear force enhances its bargaining position. China's nuclear modernization might remove that check on Chinese action, leading Beijing to behave more boldly in future crises than it has in past ones. A U.S. attempt to preserve its ability to defend Taiwan, meanwhile, could fuel a conventional and nuclear arms race. Enhancements to U.S. offensive targeting capabilities and strategic ballistic missile defenses might be interpreted by China as a signal of malign U.S. motives, leading to further Chinese military efforts and a general poisoning of U.S.-Chinese relations.

#### Space radar solves Pakistan loose nukes, Mediterranean oil safety and bioterror

Sersun 3 Douglas K, Major of USAF, Air Command and Staff College, "Eyes of the Nation: Does the United States Need Space Radar?", April, dtlweb.au.af.mil///exlibris/dtl/d3\_1/apache\_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS8zNzMzMA==.pdf

Space Radar is specifically designed to operate within a complementary system-of systems (SoS) architecture to address these requirements, wisely benefiting from investment in existing ISR platforms. This horizontal integration is one of the great legacies of the former Undersecretary of the Air Force (USECAF), Mr. Peter B. Teets, who drove the National Security Space community to embrace the concept. Because of the inherent day/night, all-weather, global persistence of Space Radar, Mr. Teets notes that we could use Space Radar “as a tripwire between…Iran and Iraq, or Pakistan and Afghanistan, so that anything that moves across those borders would set off alarms.” 3 With this information, we could then cue more locally persistent and responsive assets to go in for a closer look, dramatically increasing the efficiency of the entire network of sensors, and thus, denying the enemy sanctuary. ¶ U.S. forces require this timely flow of actionable intelligence to maintain full spectrum domain awareness whether engaged against hard target sets, conducting battle damage assessment, monitoring sea commerce routes, or augmenting disaster relief operations. Space Radar is the only sensor that can provide it globally, non-provocatively, in all-weather, day or night. Fully deployed, a Space Radar constellation will allow U.S. forces and coalition/allied partners to understand enemy actions and harness decision superiority to defeat him. ¶ Finally, Space Radar will enable many of the QDR’s transformation goals. We need to think well beyond OEF and OIF, continuing progress to deal with asymmetric, non-traditional threats, from non-state actors, with non-western cultural values, and potential access to WMD. This includes operational integration in interagency scenarios supporting the State Department, the Department of Commerce and justice/law enforcement. Space Radar can be harnessed to monitor nuclear storage facilities and the connecting transportation routes in Pakistan, to keep an eye on the oil infrastructure in the Mediterranean region, or to watch developments in the evolving Iranian nuclear stalemate. Space Radar can play a key role in homeland security matters such as monitoring a metropolitan containment area following an outbreak from a biological weapon during a bad weather period or for catastrophe planning in the event of another huge hurricane and the resultant evacuation. Space Radar is poised to deliver in scenarios well beyond those that resonate with French Maginot Line thinking prior to WWII.

#### Pakistan loose nukes cause global nuclear conflict

Pitt 9 William, a New York Times and internationally bestselling author of two books: "War on Iraq: What Team Bush Doesn't Want You to Know" and "The Greatest Sedition Is Silence”, 5/8/09, “Unstable Pakistan Threatens the World,” http://www.arabamericannews.com/news/index.php?mod=article&cat=commentary&article=2183

But a suicide bomber in Pakistan rammed a car packed with explosives into a jeep filled with troops today, killing five and wounding as many as 21, including several children who were waiting for a ride to school. Residents of the region where the attack took place are fleeing in terror as gunfire rings out around them, and government forces have been unable to quell the violence. Two regional government officials were beheaded by militants in retaliation for the killing of other militants by government forces. As familiar as this sounds, it did not take place where we have come to expect such terrible events. This, unfortunately, is a whole new ballgame. It is part of another conflict that is brewing, one which puts what is happening in Iraq and Afghanistan in deep shade, and which represents a grave and growing threat to us all. Pakistan is now trembling on the edge of violent chaos, and is doing so with nuclear weapons in its hip pocket, right in the middle of one of the most dangerous neighborhoods in the world.The situation in brief: Pakistan for years has been a nation in turmoil, run by a shaky government supported by a corrupted system, dominated by a blatantly criminal security service, and threatened by a large fundamentalist Islamic population with deep ties to the Taliban in Afghanistan. All this is piled atop an ongoing standoff with neighboring India that has been the center of political gravity in the region for more than half a century. The fact that Pakistan, and India, and Russia, and China all possess nuclear weapons and share the same space means any ongoing or escalating violence over there has the real potential to crack open the very gates of Hell itself. Recently, the Taliban made a military push into the northwest Pakistani region around the Swat Valley. According to a recent Reuters report: The (Pakistani) army deployed troops in Swat in October 2007 and used artillery and gunship helicopters to reassert control. But insecurity mounted after a civilian government came to power last year and tried to reach a negotiated settlement. A peace accord fell apart in May 2008. After that, hundreds — including soldiers, militants and civilians — died in battles. Militants unleashed a reign of terror, killing and beheading politicians, singers, soldiers and opponents. They banned female education and destroyed nearly 200 girls' schools. About 1,200 people were killed since late 2007 and 250,000 to 500,000 fled, leaving the militants in virtual control. Pakistan offered on February 16 to introduce Islamic law in the Swat valley and neighboring areas in a bid to take the steam out of the insurgency. The militants announced an indefinite cease-fire after the army said it was halting operations in the region. President Asif Ali Zardari signed a regulation imposing sharia in the area last month. But the Taliban refused to give up their guns and pushed into Buner and another district adjacent to Swat, intent on spreading their rule. The United States, already embroiled in a war against Taliban forces in Afghanistan, must now face the possibility that Pakistan could collapse under the mounting threat of Taliban forces there. Military and diplomatic advisers to President Obama, uncertain how best to proceed, now face one of the great nightmare scenarios of our time. "Recent militant gains in Pakistan," reported The New York Times on Monday, "have so alarmed the White House that the national security adviser, Gen. James L. Jones, described the situation as 'one of the very most serious problems we face.'" "Security was deteriorating rapidly," reported The Washington Post on Monday, "particularly in the mountains along the Afghan border that harbor al-Qaeda and the Taliban, intelligence chiefs reported, and there were signs that those groups were working with indigenous extremists in Pakistan's populous Punjabi heartland. The Pakistani government was mired in political bickering. The army, still fixated on its historical adversary India, remained ill-equipped and unwilling to throw its full weight into the counterinsurgency fight. But despite the threat the intelligence conveyed, Obama has only limited options for dealing with it. Anti-American feeling in Pakistan is high, and a U.S. combat presence is prohibited. The United States is fighting Pakistan-based extremists by proxy, through an army over which it has little control, in alliance with a government in which it has little confidence." It is believed Pakistan is currently in possession of between 60 and 100 nuclear weapons. Because Pakistan's stability is threatened by the wide swath of its population that shares ethnic, cultural and religious connections to the fundamentalist Islamic populace of Afghanistan, fears over what could happen to those nuclear weapons if the Pakistani government collapses are very real. "As the insurgency of the Taliban and Al Qaeda spreads in Pakistan," reported the Times last week, "senior American officials say they are increasingly concerned about new vulnerabilities for Pakistan's nuclear arsenal, including the potential for militants to snatch a weapon in transport or to insert sympathizers into laboratories or fuel-production facilities. In public, the administration has only hinted at those concerns, repeating the formulation that the Bush administration used: that it has faith in the Pakistani Army. But that cooperation, according to officials who would not speak for attribution because of the sensitivity surrounding the exchanges between Washington and Islamabad, has been sharply limited when the subject has turned to the vulnerabilities in the Pakistani nuclear infrastructure." "The prospect of turmoil in Pakistan sends shivers up the spinesof those U.S. officials charged with keeping tabs on foreign nuclear weapons," reported Time Magazine last month. "Pakistan is thought to possess about 100 — the U.S. isn't sure of the total, and may not know where all of them are. Still, if Pakistan collapses, the U.S. military is primed to enter the country and secure as many of those weapons as it can, according to U.S. officials. Pakistani officials insist their personnel safeguards are stringent, but a sleeper cell could cause big trouble, U.S. officials say." In other words, a shaky Pakistan spells trouble for everyone, especially if America loses the footrace to secure those weapons in the event of the worst-case scenario. If Pakistani militants ever succeed in toppling the government, several very dangerous events could happen at once. Nuclear-armed India could be galvanized into military action of some kind, as could nuclear-armed China or nuclear-armed Russia. If the Pakistani government does fall, and all those Pakistani nukes are not immediately accounted for and secured, the specter (or reality) of loose nukes falling into the hands of terrorist organizations could place the entire world on a collision course with unimaginable disaster. We have all been paying a great deal of attention to Iraq and Afghanistan, and rightly so. The developing situation in Pakistan, however, needs to be placed immediately on the front burner. The Obama administration appears to be gravely serious about addressing the situation. So should we all.

#### Bioterror causes extinction

Ochs 2 Richard, Past president of the Aberdeen Proving Ground Superfund Citizens Coalition, Member of the Depleted Uranium Task force of the Military Toxics Project, and M of the Chemical Weapons Working Group, June 9, 2002, “Biological Weapons Must Be Abolished Immediately,” <http://www.freefromterror.net/other_articles/abolish.html>

Of all the weapons of mass destruction, the genetically engineered biological weapons, many without a known cure or vaccine, are an extreme danger to the continued survival of life on earth. Any perceived military value or deterrence pales in comparison to the great risk these weapons pose just sitting in vials in laboratories. While a “nuclear winter,” resulting from a massive exchange of nuclear weapons, could also kill off most of life on earth and severely compromise the health of future generations, they are easier to control. Biological weapons, on the other hand, can get out of control very easily, as the recent anthrax attacks has demonstrated. There is no way to guarantee the security of these doomsday weapons because very tiny amounts can be stolen or accidentally released and then grow or be grown to horrendous proportions. The Black Death of the Middle Ages would be small in comparison to the potential damage bioweapons could cause. Abolition of chemical weapons is less of a priority because, while they can also kill millions of people outright, their persistence in the environment would be less than nuclear or biological agents or more localized. Hence, chemical weapons would have a lesser effect on future generations of innocent people and the natural environment. Like the Holocaust, once a localized chemical extermination is over, it is over. With nuclear and biological weapons, the killing will probably never end. Radioactive elements last tens of thousands of years and will keep causing cancers virtually forever. Potentially worse than that, bio-engineered agents by the hundreds with no known cure could wreck even greater calamity on the human race than could persistent radiation. AIDS and ebola viruses are just a small example of recently emerging plagues with no known cure or vaccine. Can we imagine hundreds of such plagues? HUMAN EXTINCTION IS NOW POSSIBLE. Ironically, the Bush administration has just changed the U.S. nuclear doctrine to allow nuclear retaliation against threats upon allies by conventional weapons. The past doctrine allowed such use only as a last resort when our nation’s survival was at stake. Will the new policy also allow easier use of US bioweapons? How slippery is this slope?

#### [ ] Independently, radar solves debris

Marques 5 Marta Marti-Marques, Technical University of Valencia, Spain, "SPACE-BASED RADAR SYSTEM FOR GEOSTATIONARY DEBRIS DETECTION AND TRACKING AT MEO", 2005, www.iafastro.net/iac/archive/browse/IAC-05/B6/1/1965/

Since the first known satellite fragmentation occurred just four years after Sputnik 1 was successfully put into orbit around our planet, it is believed that a total of 173 satellites have broken up, making the scientific community aware of the potential risks that space debris poses. In order to decrease the threat of operational spacecraft colliding with non-functional objects and to assess current and future population of space debris, cost-effective measurement techniques and devices capable of supplying us with the data required to conduct collision avoidance manoeuvres should be developed.¶ Our research aims to design a space-based detection and tracking radar system, which would provide much more accurate measurements of debris size and orbital parameters from densely populated GEO (Geostationary Earth Orbit). The orbiting device should be placed at MEO (Medium Earth Orbit), so that it allows full tracking of the geostationary arc in order to search GEO for non-functional spacecraft as well as for debris fragments and thereby update the current database of catalogued on-orbit debris population.¶ The detection and tracking radar system operating at Ka-band would supply us with valuable information for the characterisation of the near-Earth debris environment and the validation of space debris models. A directive large antenna would be required to generate short wavelengths and achieve high frequencies, as well as to provide a narrow beamwidth (high gain) capable of searching for non-operational spacecraft and debris clouds. Recent advances on microstrip patch antennas nevertheless prove that the building of such high performance radar would be cost-effective using planar technology.¶ Debris data would be collected by means of an electronically steerable phased array antenna, which could have its beam electronically steered in angle by changing the phase of the current at each radiating element, so that the region of constructive interference could be swept from side to side and look for targets. Despite the fact that attenuation of electromagnetic signals when propagating through the atmosphere or in adverse weather conditions can seriously degrade radar performance at high microwave frequencies, our in situ radar system does not have to face this challenge as it is a space-based device. Now then, on-board signal and data processing should be conducted before transmission by radio link to an Earth-based receiving station.¶ As it is not technically feasible to provide accurate enough ground-based measurements of targets located 36,000 km above the Earth surface, a MEO space-based radar would be the perfect solution due to the potential decrease of the distance between the observer and the object. The database built up from ground-based optical and radar facilities by means of traditional measurement techniques would be definitely improved if we update it with the accurate data our space-based radar will acquire. Functional spacecraft could use this database for advance warning of collisions with debris in order to manoeuvre out of the collision path.¶ In the final analysis, we believe that the proposed orbiting radar system would make a significant contribution to achieve a better understanding of the threats posed by the debris environment so that its impact on future space missions is minimised. For this reason, international cooperation is needed to evolve both technically and economically feasible alternatives to debris threats so that future space activities develop in a debris-free orbital environment. In this paper our space-based radar system will be described in detail and its operating parameters will be calculated to prove the feasibility of this new proposal and demonstrate its effectiveness in preserving the orbital environment for future generations.

#### [ ] Debris will knock out satellites and cause extinction

Dunstan 9 – James, JD, Space and Technology Lawyer – Garvey Schubert Barer, and Berin Szoka, Senior Feelow – Progress and Freedom Foundation, Director – Space Frontier Foundation, and Member of the Commerical Space Transportation Advisory Committee – Federal Aviation Administration, “Beware Of Space Junk: Global Warming Isn’t the Only Major Environmental Problem”, http://techliberation.com/2009/1t2/18/beware-of-space-junk-global-warming-isnt-the-only-major-environmental-problem/

As world leaders meet in Copenhagen to consider drastic carbon emission restrictions that could require large-scale de-industrialization, experts gathered last week just outside Washington, D.C. to discuss another environmental problem: Space junk.[1] Unlike with climate change, there’s no difference of scientific opinion about this problem—orbital debris counts increased 13% in 2009 alone, with the catalog of tracked objects swelling to 20,000, and estimates of over 300,000 objects in total; most too small to see and all racing around the Earth at over 17,500 miles per hour. Those are speeding bullets, some the size of school buses, and all capable of knocking out a satellite or manned vehicle. At stake are much more than the $200 billion a year satellite and launch industries and jobs that depend on them. Satellites connect the remotest locations in the world; guide us down unfamiliar roads; allow Internet users to view their homes from space; discourage war by making it impossible to hide armies on another country’s borders; are utterly indispensable to American troops in the field; and play a critical role in monitoring climate change and other environmental problems. Orbital debris could block all these benefits for centuries, and prevent us from developing clean energy sources like space solar power satellites, exploring our Solar System and some day making humanity a multi-planetary civilization capable of surviving true climatic catastrophes. The engineering wizards who have fueled the Information Revolution through the use of satellites as communications and information-gathering tools also overlooked the pollution they were causing. They operated under the “Big Sky” theory: Space is so vast, you don’t have to worry about cleaning up after yourself. They were wrong. Just last February, two satellites collided for the first time, creating over 1,500 new pieces of junk. Many experts believe we are nearing the “tipping point” where these collisions will cascade, making many orbits unusable. But the problem can be solved. Thus far, governments have simply tried to mandate “mitigation” of debris-creation. But just as some warn about “runaway warming,” we know that mitigation alone will not solve the debris problem. The answer lies in “remediation”: removing just five large objects per year could prevent a chain reaction. If governments attempt to clean up this mess themselves, the cost could run into the trillions—rivaling even some proposed climate change solutions.

### 1AC Water Diplomacy Advantage

#### CONTENTION 3: WATER DIPLOMACY

#### Military SMRs key to water diplomacy---allows mobile desalination

Pfeffer 1 Physical Scientist at Army Nuclear and Chemical Agency, MS in Physics at Johns Hopkins, “Nuclear Power: An option for the Army’s Future,” http://www.almc.army.mil/alog/issues/SepOct01/MS684.htm

The idea of using nuclear power to produce synthetic fuels, originally proposed in 1963, remains feasible today and is gaining significant attention because of recent advances in fuel cell technology, hydrogen liquefaction, and storage. At the same time, nuclear power has become a significant part of the energy supply in more than 20 countries—providing energy security, reducing air pollution, and cutting greenhouse gas emissions. The performance of the world's nuclear power plants has improved steadily and is at an all-time high. Assuming that nuclear power experiences further technological development and increased public acceptance as a safe and efficient energy source, its use will continue to grow. Nuclear power possibly could provide district heating, industrial process heating, desalination of seawater, and marine transportation. Demand for cost-effective chemical fuels such as hydrogen and methanol is expected to grow rapidly. Fuel cell technology, which produces electricity from low-temperature oxidation of hydrogen and yields water as a byproduct, is receiving increasing attention. Cheap and abundant hydrogen eventually will replace carbon-based fuels in the transportation sector and eliminate oil's grip on our society. But hydrogen must be produced, since terrestrial supplies are extremely limited. Using nuclear power to produce hydrogen offers the potential for a limitless chemical fuel supply with near-zero greenhouse gas emissions. As the commercial transportation sector increasingly moves toward hydrogen fuel cells and other advanced engine concepts to replace the gasoline internal combustion engine, DOD eventually will adopt this technology for its tactical vehicles. The demand for desalination of seawater also is likely to grow as inadequate freshwater supplies become an urgent global concern. Potable water in the 21st century will be what oil was in the 20th century—a limited natural resource subject to intense international competition. In many areas of the world, rain is not always dependable and ground water supplies are limited, exhausted, or contaminated. Such areas are likely to experience conflict among water-needy peoples, possibly prompting the deployment of U.S. ground forces for humanitarian relief, peacekeeping, or armed intervention. **A mobile desalination plant using waste heat from a nuclear reactor could help prevent conflicts** or provide emergency supplies of freshwater to indigenous populations, and to U.S. deployed forces if necessary. Promising Technology for Tomorrow Compact reactor concepts based on high-temperature, gas-cooled reactors are attracting attention worldwide and could someday fulfill the role once envisioned for the energy depot. One proposed design is the pebble bed modular reactor (PBMR) being developed by Eskom in South Africa. Westinghouse, BNFL Instruments Ltd., and Exelon Corporation currently are supporting this project to develop commercial applications. A similar design is the remote site-modular helium reactor (RS-MHR) being developed by General Atomics. If proven feasible, this technology could be used to replace retiring power plants, expand the Navy's nuclear fleet, and provide mobile electric power for military or disaster relief operations. Ideally, modular nuclear power plants could be operated by a small staff of technicians and monitored by a central home office through a satellite uplink. The technology of both the PBMR and the RS-MHR features small, modular, helium-cooled reactors powered by ceramic-coated fuel particles that are inherently safe and cannot melt under any scenario. This results in simpler plant design and lower capital costs than existing light water reactors. The PBMR, coupled with a direct-cycle gas turbine generator, would have a thermal efficiency of about 42 to 45 percent and would produce about 110 megawatts of electricity (MWe). The smaller RS-MHR would produce about 10 to 25 MWe, which is sufficient for powering remote communities and military bases. Multiple modules can be installed on existing sites and refueling can be performed on line, since the fuel pebbles recycle through the reactor continuously until they are expended. Both designs also feature coolant exit temperatures high enough to support the thermochemical water-splitting cycles needed to produce hydrogen. For military applications, RS-MHR equipment could be transported inland by truck or railroad, or single modules could be built on barges and deployed as needed to coastal regions. The Army's nuclear reactor on the barge Sturgis, which provided electric power to the Panama Canal from 1968 to 1976, demonstrated the feasibility of this concept. In fact, the military previously used several power barges (oil-fired, 30-MWe power plants) during World War II and in Korea and Okinawa as emergency sources of electric power. Research teams around the world also are examining other reactor concepts based on liquid-metal-cooled reactor systems with conventional sodium or lead-alloy coolants and advanced water-cooled systems. The Department of Energy (DOE) is supporting research and development of innovative concepts that are based on ultra-long-life reactors with cartridge cores. These reactors would not require refueling, and they could be deployed in the field, removed at the end of their service life, and replaced by a new system. The proposed international reactor innovative and secure (IRIS) design, funded by DOE's Nuclear Energy Research Initiative, would have a straight burn core lasting 8 years and may be available by 2010. Based on increasing costs of fossil fuels, a growing consensus that greenhouse gas emissions must be reduced, and a growing demand for energy, there is little doubt that we will continue to see significant advances in nuclear energy research and development. Nuclear power is expected to grow in the 21st century, with potential benefits applicable to the military. Small, modular nuclear power reactors in mobile or portable configurations, coupled with hydrogen production and desalination systems, could be used to produce fuel and portable water for combat forces deployed in remote areas and reduce our logistics requirements. Assuming the inevitability of hydrogen fuel replacing fossil fuels, a clearly defined objective that was missing in 1966 now exists. The partnership between DOD and the former AEC to develop Army nuclear reactors contributed to the technology of both military and small commercial power plants. This historical relationship should be renewed based on recent technological advances and projected logistics requirements. DOD logistics planners should reconsider military applications of nuclear power and support ongoing DOE research and development initiatives to develop advanced reactors such as RS-MHR, IRIS, and others. For the Army to fight and win on tomorrow's distant battlefields, nuclear power will have to play a significant role.

#### Plan’s demonstration domestically spills over

Galloway 10 Brigadier General Gerald E, Former Dean of the Academic Board, US Military Academy and Dean of the Faculty and Academic Programs, Industrial College of the Armed Forces, "On the Need for Creative Energy Solutions", Summer, www.cna.org/sites/default/files/research/WEB%2007%2027%2010%20MAB%20Powering%20America%27s%20Economy.pdf

Based on the progress made in technology, and on the findings of a study he chaired for the National Academies, General Galloway believes it may be time for the Army to revisit the initiative and consider paradigm shifting technologies like small, modular nuclear reactors. “In 1999, our report on logistics for the future Army recommended looking once again into small nuclear plants. It found that now there are additional benefits, like producing hydrogen for fuel cells. Today, small nuclear reactors are being marketed in the U.S. It’s probably time to think more about this,” General Galloway says. “No one’s envisioned bringing them out in combat zones, but they could provide energy in theater at large staging areas.”¶ General Galloway sees a special role for DOD in demonstrating these reactors in the United States. “The challenge at many military facilities is that they’re tied to the grid. We’ve seen the grid go down. At the same time, energy demands are rising. Putting a small reactor on a military installation not only provides a reliable and sustainable power source and a test bed to define its long term utility, but also places the plant in a secure location. Within the United States, it’s hard to find a more physically secure place than a military installation,” says General Galloway. “If the tests go well on bases in the United States, these small reactors could be used to support overseas military operations or disaster recovery activities.”

#### Water assistance vital to effective public diplomacy

Seib 10 Philip, Professor of journalism and public diplomacy and director of the Center on Public Diplomacy-USC, Considering Water Diplomacy, 6/29, http://www.huffingtonpost.com/philip-seib/considering-water-diploma\_b\_629487.html

The vitality and seriousness with which the institute addresses such issues is a reminder that water-related assistance is an underused tool of public diplomacy. Rather than an "advertising" approach to public diplomacy ("We are wonderful! Love us!"), water diplomacy answers a crucial question often asked by recipients of public diplomacy efforts but just as often ignored by public diplomacy planners: "What can you do for us?" Throughout the world, few things are more precious than a safe and abundant water supply. A country that can help another nation improve the availability and quality of water is likely to win friends, regardless of how the respective governments get along. Water diplomacy is an excellent tool for the United States to use in improving relations with Syria, which is enduring a prolonged drought, and other countries where the public has been indifferent or even hostile toward American interests, but would welcome water-related assistance. Public diplomacy does not need to be a unilateral enterprise. Engaging in water diplomacy offers the United States an opportunity to develop international partnerships for creating and delivering public diplomacy programs. A U.S.-Singapore joint venture in this field would enhance both countries' credentials as leaders in improving lives throughout the world, and for the United States it would be an improvement on the go-it-alone approach that characterizes much of its foreign policy. Private sector participation by foundations and corporations should be another facet of such partnerships, and could include funding for research into ways to combat water-borne diseases. Developing the concept of water diplomacy requires an essential, but often neglected, element of public diplomacy: imagination. Too much public diplomacy today has become a process of simply going through the motions in overblown public relations campaigns that misjudge the needs and underestimate the sophistication of global publics. Actually improving people's lives is given short shrift, and as a result public diplomacy fails to reach its potential as a means of advancing national interests.

#### Public diplomacy key to AFRICOM effectiveness

Seib 9 Philip, Professor of Public Diplomacy & International Relations-USC, America’s New Approach to Africa: AFRICOM and Public Diplomacy, http://uscpublicdiplomacy.org/CPD\_Perspectives.pdf

Regardless of what reasons are proffered for AFRICOM’s importance, public diplomacy is often cited as an essential element of the command’s work. Ryan Henry, principal deputy undersecretary of defense for policy, has stated that “AFRICOM, at its core, is about public diplomacy, which is critical to its mission and how we as a nation compete not only in Africa but in the wider marketplace of ideas concerning governance and security facing key regions, critical indigenous peoples, and global stakeholders throughout the world today. Whether you want to call it ‘soft power’ or ‘smart power,’ or even just ‘the right power,’ the bottom line is we have created, for a variety of reasons, a national security structure that today is currently out of balance and is biased toward the military toolset.” He added: “AFRICOM is a risk-laden experiment on the part of government and the Department of Defense specifically on how to more holistically engage the continent of Africa, a specific region of emerging interest. And public diplomacy is a fundamental element of its success. We cannot continue to pursue 21**st** century missions in an information digital network age with bureaucratic constructs and thinking laid out as part of the Industrial Age in the aftermath of World War II.” Despite efforts by Gates and his deputies to assuage concerns about further militarization of U.S. foreign policy, such worries cast a shadow on AFRICOM’s prospects. As the Barack Obama administration begins, the Pentagon’s role in public diplomacy is still being defined. So too is the American view of Africa and Africa’s perception of America.

#### ( ) AFRICOM key to disease prevention

Martin 9 MD & US Naval Officer, 1/9, “Africa Command Health Symposium: Health as a Bridge to Peace and Stability” http://intlhealth.fhpr.osd.mil/Libraries/IHDocuments/AfricaCommandHealthSymposiumProceedings.sflb.ashx

The newly established United States Africa Command (AFRICOM) intends to incorporate health as a bridge towards security. AFRICOM was declared a fully unified command on October 1, 2008. It was designed to be a “different kind of command” focusing on war prevention rather than war-fighting (AFRICOM, 2008a). Over half the personnel who will ultimately be assigned to AFRICOM will be civilians, including representatives from nonmilitary U.S. government agencies. Africa Command’s mission is to work in concert with other U.S. government agencies and international partners. It will conduct sustained security engagement through military-to-military programs to promote a stable and secure African environment in support of U.S. foreign policy (AFRICOM, 2008b). The intention of this new command is to increase security on the African continent through an integrated and coordinated approach. There is a reflexive relationship between public health, civil security, and economics. Improvements in one of these areas generally help the status of the others. The medical and health issues representative to Africa Command is the Command Surgeon, who has many mission objectives. His goal is to enhance coordination and create more sustainable medical programs through military-to-military engagement efforts. There are many potential positive benefits for civilian public health infrastructure and capacity building that may ensue from these engagements. To help facilitate these objectives, the U.S. Assistant Secretary of Defense for Health Affairs sponsored the Africa Command Health Symposium convened at the National Academy of Sciences from January 8-9, 2009. The goals of the Africa Command Health Symposium were to: 1) Introduce the U.S. Africa Command Surgeon; 2) Explore the successful public-private partnership model in Africa; 3) Explore the potential role of health research in developing host nation capabilities; and 4) Develop a communication and coordination mechanism to share best practices among service providers regarding health care capabilities and programs. The intent of the conference was to bring together senior government and non-government agency leaders and allow them the opportunity share successful development models with Africa Command. The aim is to build stronger and more effective partnerships for current and future joint development projects in Africa. These goals were accomplished by bringing together experts from academia, U.S. Government, private sector, and the African Union to address challenges across the healthcare spectrum. Public Health and Military Significance Health as a Bridge for Peace was formally accepted by the 51st World Health Assembly in May 1998. It has been defined as the integration of peace-building concerns, concepts, principles, strategies and practices into health relief and health sector development (WHO, 2009). Deficiencies in transnational governance may create a global public health crisis. Health is no longer just a humanitarian issue, but rather a major economic and security issue (Kickbusch, 2002). In 2005 a Department of Defense directive defined “stability operations” as a “core U.S. military mission” with a “priority comparable to combat operations.” This required the DoD to expand from its traditional war-fighting mission to one that includes preventing or mitigating collapse of failing nations (DoD, 2005; Reaves, Schor, & Burkle, 2008). With globalization, every communicable disease is now potentially only an airplane trip away from any of us. It is imperative that surveillance programs be as robust as possible. Collaboration between U.S. Africa Command and local African military forces provides an opportunity both to expand U.S. knowledge of emerging diseases and improve the local African health systems. Military-to-military and military-to-civilian partnerships support ministers of health in obtaining laboratory, epidemiological, and logistical resources (Chretien et al., 2007). Direct health-related strategic threats to the United States include infectious diseases such as pandemic influenza. However, chronic diseases, maternal and child mortality, sanitation, malnutrition, and access to basic health care also affect U.S. national interests due to their impacts on key countries’ economies, governments, and militaries (NIC, 2008)

#### [ ] Vital to containment

Geller 9 MD & Lt. Colonel-US Army, 1/9, “Africa Command Health Symposium: Health as a Bridge to Peace and Stability” http://intlhealth.fhpr.osd.mil/Libraries/IHDocuments/AfricaCommandHealthSymposiumProceedings.sflb.ashx

The Africa Command Surgeon’s priorities include developing a DoD medical strategy for the continent, regional situational awareness and developing medical common operating picture, CJTF-HOA integration of medical MAPE’s-2009, component medical integration-RMTR, developing partnerships into effective programs, and developing measures of effectiveness that are outcomes driven. We need to show measurable outcomes like the 40% weight gain in herds vaccinated by JTF-HOA compared to herds that were not vaccinated. Other key medical measures of effectiveness include Partner Nation (PN) militaries having medical capabilities to support all necessary force health protection issues, deployable medical capabilities to support PKOs and regional security organizations, medical capabilities to assist with HN and regional disaster response efforts, comprehensive HIV education/testing/treatment programs, and effective AI/PI (EID) contingency plans in place. How is Africa Command going to accomplish Theater Strategic Objective 3: The American population is protected from deadly contagions emanating from Africa? It will measure percentage of military trained in Force Health Protection measures, percentage of military medically-ready for deployment as defined by African Union, verify incidence rate of HIV/AIDS in military continues to decline, and verify State’s military has a specified epidemic response mission. Subjective indicators include: military has developed and routinely-exercised epidemic response plans which are assessed to be effective to contain the spread of pandemic influenza and other high-risk contagions, military has medical/veterinary surveillance and reporting capability sufficient to identify pandemic influenza (PI) or other high-risk contagions, military has access to an accredited diagnostic reference laboratory, military has adequate medical logistical capability for epidemic response to pandemic influenza or other high-risk contagions, and no increase in regional instability due to emerging disease threat.

#### [ ] New pandemics likely in Africa

Boyer 11 9/24, Reporter for EMax Health, http://www.emaxhealth.com/8782/us-not-well-prepared-flu-pandemic-man-infects-pigs-h1n1-swine-flu

UCLA Scientists studying the H1N1 swine flu virus have discovered the first evidence of animal infection between man and pigs in Central Africa and believe that such transmission can lead to a new pandemic of the H1N1 swine flu. The H1N1 swine flu virus is a genetic hybrid of DNA from bird, swine and the human influenza viruses. According to the Centers for Disease Control (CDC) the swine flu virus is responsible for a pandemic in 2009 which infected an estimated 60 million people resulting in 270,000 hospitalizations and 12,500 deaths. In a recent study published in the scientific journal Veterinary Microbiology, scientists from UCLA traveled to Cameroon to determine whether the H1N1 virus was present in African livestock. The researchers collected nasal swabs and blood samples from randomly selected domestic pigs in outlying villages and farms. What they found were two cases of active H1N1 virus infection from the nasal samples. The blood samples, however, showed that 28% of the pigs tested positive for past infection of the virus, and of that 28% almost all demonstrated that their infection was due to the H1N1 influenza virus isolated from humans during the 2009 pandemic. Although theH1N1 virus has been detected in livestock in other countries, this was the first evidence of it in Africa and showing that contamination was from man to pig. According to a press release from the University of California the authors of the paper were surprised by the results. "I was amazed that virtually every pig in this village was exposed," said Thomas B. Smith, director of UCLA's Center for Tropical Research and the senior author of the research. "Africa is ground zero for a new pandemic. Many people are in poor health there, and disease can spread very rapidly without authorities knowing about it." "The pigs were running wild in that area," said lead author Kevin Njabo, a researcher in UCLA's department of ecology and evolutionary biology and associate director of the Center for Tropical Research. "I was shocked when we found out it was H1N1. Any virus in any part of the world can reach another continent within days by air travel. We need to understand where viruses originate and how they spread, so we can destroy a deadly virus before it spreads. We have to be prepared for a pandemic, but so many countries are not well-prepared - not even the United States." According to Njabo, the importance of their findings is that it shows how that farming practices can lead to a viral outbreak. "The pigs got H1N1 from humans," Njabo said. "The fact that pigs in Africa are infected with the H1N1 flu virus illustrates the remarkable interconnectedness of the modern world with respect to diseases. The H1N1 virus that we found in livestock in Cameroon is virtually identical to a virus found in people in San Diego just a year earlier, providing an astonishing example of how quickly the flu can spread all over the globe.” The authors of the paper have also collected hundreds of sample from chickens, ducks and wild birds for additional studies to determine the interaction of viruses and infections between humans and both wild and domestic animals. "The world is a global village; no area is truly isolated," said Njabo, who was born and raised in Cameroon. "There are so many unknowns about the transmission rates of viruses between humans and wild animals. We have to expand screening."

#### ( ) Extinction---their impact D doesn’t apply

Quammen 12 David, award-winning science writer, long-time columnist for Outside magazine for fifteen years, with work in National Geographic, Harper's, Rolling Stone, the New York Times Book Review and other periodicals, 9/29, “Could the next big animal-to-human disease wipe us out?,” The Guardian, pg. 29, Lexis

Infectious disease is all around us. It's one of the basic processes that ecologists study, along with predation and competition. Predators are big beasts that eat their prey from outside. Pathogens (disease-causing agents, such as viruses) are small beasts that eat their prey from within. Although infectious disease can seem grisly and dreadful, under ordinary conditions, it's every bit as natural as what lions do to wildebeests and zebras. But conditions aren't always ordinary. Just as predators have their accustomed prey, so do pathogens. And just as a lion might occasionally depart from its normal behaviour - to kill a cow instead of a wildebeest, or a human instead of a zebra - so a pathogen can shift to a new target. Aberrations occur. When a pathogen leaps from an animal into a person, and succeeds in establishing itself as an infectious presence, sometimes causing illness or death, the result is a zoonosis. It's a mildly technical term, zoonosis, unfamiliar to most people, but it helps clarify the biological complexities behind the ominous headlines about swine flu, bird flu, Sars, emerging diseases in general, and the threat of a global pandemic. It's a word of the future, destined for heavy use in the 21st century. Ebola and Marburg are zoonoses. So is bubonic plague. So was the so-called Spanish influenza of 1918-1919, which had its source in a wild aquatic bird and emerged to kill as many as 50 million people. All of the human influenzas are zoonoses. As are monkeypox, bovine tuberculosis, Lyme disease, West Nile fever, rabies and a strange new affliction called Nipah encephalitis, which has killed pigs and pig farmers in Malaysia. Each of these zoonoses reflects the action of a pathogen that can "spillover", crossing into people from other animals. Aids is a disease of zoonotic origin caused by a virus that, having reached humans through a few accidental events in western and central Africa, now passes human-to-human. This form of interspecies leap is not rare; about 60% of all human infectious diseases currently known either cross routinely or have recently crossed between other animals and us. Some of those - notably rabies - are familiar, widespread and still horrendously lethal, killing humans by the thousands despite centuries of efforts at coping with their effects. Others are new and inexplicably sporadic, claiming a few victims or a few hundred, and then disappearing for years. Zoonotic pathogens can hide. The least conspicuous strategy is to lurk within what's called a reservoir host: a living organism that carries the pathogen while suffering little or no illness. When a disease seems to disappear between outbreaks, it's often still lingering nearby, within some reservoir host. A rodent? A bird? A butterfly? A bat? To reside undetected is probably easiest wherever biological diversity is high and the ecosystem is relatively undisturbed. The converse is also true: ecological disturbance causes diseases to emerge. Shake a tree and things fall out. Michelle Barnes is an energetic, late 40s-ish woman, an avid rock climber and cyclist. Her auburn hair, she told me cheerily, came from a bottle. It approximates the original colour, but the original is gone. In 2008, her hair started falling out; the rest went grey "pretty much overnight". This was among the lesser effects of a mystery illness that had nearly killed her during January that year, just after she'd returned from Uganda. Her story paralleled the one Jaap Taal had told me about Astrid, with several key differences - the main one being that Michelle Barnes was still alive. Michelle and her husband, Rick Taylor, had wanted to see mountain gorillas, too. Their guide had taken them through Maramagambo Forest and into Python Cave. They, too, had to clamber across those slippery boulders. As a rock climber, Barnes said, she tends to be very conscious of where she places her hands. No, she didn't touch any guano. No, she was not bumped by a bat. By late afternoon they were back, watching the sunset. It was Christmas evening 2007. They arrived home on New Year's Day. On 4 January, Barnes woke up feeling as if someone had driven a needle into her skull. She was achy all over, feverish. "And then, as the day went on, I started developing a rash across my stomach." The rash spread. "Over the next 48 hours, I just went down really fast." By the time Barnes turned up at a hospital in suburban Denver, she was dehydrated; her white blood count was imperceptible; her kidneys and liver had begun shutting down. An infectious disease specialist, Dr Norman K Fujita, arranged for her to be tested for a range of infections that might be contracted in Africa. All came back negative, including the test for Marburg. Gradually her body regained strength and her organs began to recover. After 12 days, she left hospital, still weak and anaemic, still undiagnosed. In March she saw Fujita on a follow-up visit and he had her serum tested again for Marburg. Again, negative. Three more months passed, and Barnes, now grey-haired, lacking her old energy, suffering abdominal pain, unable to focus, got an email from a journalist she and Taylor had met on the Uganda trip, who had just seen a news article. In the Netherlands, a woman had died of Marburg after a Ugandan holiday during which she had visited a cave full of bats. Barnes spent the next 24 hours Googling every article on the case she could find. Early the following Monday morning, she was back at Dr Fujita's door. He agreed to test her a third time for Marburg. This time a lab technician crosschecked the third sample, and then the first sample. The new results went to Fujita, who called Barnes: "You're now an honorary infectious disease doctor. You've self-diagnosed, and the Marburg test came back positive." The Marburg virus had reappeared in Uganda in 2007. It was a small outbreak, affecting four miners, one of whom died, working at a site called Kitaka Cave. But Joosten's death, and Barnes's diagnosis, implied a change in the potential scope of the situation. That local Ugandans were dying of Marburg was a severe concern - sufficient to bring a response team of scientists in haste. But if tourists, too, were involved, tripping in and out of some python-infested Marburg repository, unprotected, and then boarding their return flights to other continents, the place was not just a peril for Ugandan miners and their families. It was also an international threat. The first team of scientists had collected about 800 bats from Kitaka Cave for dissecting and sampling, and marked and released more than 1,000, using beaded collars coded with a number. That team, including scientist Brian Amman, had found live Marburg virus in five bats. Entering Python Cave after Joosten's death, another team of scientists, again including Amman, came across one of the beaded collars they had placed on captured bats three months earlier and 30 miles away. "It confirmed my suspicions that these bats are moving," Amman said - and moving not only through the forest but from one roosting site to another. Travel of individual bats between far-flung roosts implied circumstances whereby Marburg virus might ultimately be transmitted all across Africa, from one bat encampment to another. It voided the comforting assumption that this virus is strictly localised. And it highlighted the complementary question: why don't outbreaks of Marburg virus disease happen more often? Marburg is only one instance to which that question applies. Why not more Ebola? Why not more Sars? In the case of Sars, the scenario could have been very much worse. Apart from the 2003 outbreak and the aftershock cases in early 2004, it hasn't recurred. . . so far. Eight thousand cases are relatively few for such an explosive infection; 774 people died, not 7 million. Several factors contributed to limiting the scope and impact of the outbreak, of which humanity's good luck was only one. Another was the speed and excellence of the laboratory diagnostics - finding the virus and identifying it. Still another was the brisk efficiency with which cases were isolated, contacts were traced and quarantine measures were instituted, first in southern China, then in Hong Kong, Singapore, Hanoi and Toronto. If the virus had arrived in a different sort of big city - more loosely governed, full of poor people, lacking first-rate medical institutions - it might have burned through a much larger segment of humanity. One further factor, possibly the most crucial, was inherent in the way Sars affects the human body: symptoms tend to appear in a person before, rather than after, that person becomes highly infectious. That allowed many Sars cases to be recognised, hospitalised and placed in isolation before they hit their peak of infectivity. With influenza and many other diseases, the order is reversed. That probably helped account for the scale of worldwide misery and death during the 1918-1919 influenza. And that infamous global pandemic occurred in the era before globalisation. Everything nowadays moves around the planet faster, including viruses. When the Next Big One comes, it will likely conform to the same perverse pattern as the 1918 influenza: high infectivity preceding notable symptoms. That will help it move through cities and airports like an angel of death. The Next Big One is a subject that disease scientists around the world often address. The most recent big one is Aids, of which the eventual total bigness cannot even be predicted - about 30 million deaths, 34 million living people infected, and with no end in sight. Fortunately, not every virus goes airborne from one host to another. If HIV-1 could, you and I might already be dead. If the rabies virus could, it would be the most horrific pathogen on the planet. The influenzas are well adapted for airborne transmission, which is why a new strain can circle the world within days. The Sars virus travels this route, too, or anyway by the respiratory droplets of sneezes and coughs - hanging in the air of a hotel corridor, moving through the cabin of an aeroplane - and that capacity, combined with its case fatality rate of almost 10%, is what made it so scary in 2003 to the people who understood it best. Human-to-human transmission is the crux. That capacity is what separates a bizarre, awful, localised, intermittent and mysterious disease (such as Ebola) from a global pandemic. Have you noticed the persistent, low-level buzz about avian influenza, the strain known as H5N1, among disease experts over the past 15 years? That's because avian flu worries them deeply, though it hasn't caused many human fatalities. Swine flu comes and goes periodically in the human population (as it came and went during 2009), sometimes causing a bad pandemic and sometimes (as in 2009) not so bad as expected; but avian flu resides in a different category of menacing possibility. It worries the flu scientists because they know that H5N1 influenza is extremely virulent in people, with a high lethality. As yet, there have been a relatively low number of cases, and it is poorly transmissible, so far, from human to human. It'll kill you if you catch it, very likely, but you're unlikely to catch it except by butchering an infected chicken. But if H5N1 mutates or reassembles itself in just the right way, if it adapts for human-to-human transmission, it could become the biggest and fastest killer disease since 1918. It got to Egypt in 2006 and has been especially problematic for that country. As of August 2011, there were 151 confirmed cases, of which 52 were fatal. That represents more than a quarter of all the world's known human cases of bird flu since H5N1 emerged in 1997. But here's a critical fact: those unfortunate Egyptian patients all seem to have acquired the virus directly from birds. This indicates that the virus hasn't yet found an efficient way to pass from one person to another. Two aspects of the situation are dangerous, according to biologist Robert Webster. The first is that Egypt, given its recent political upheavals, may be unable to staunch an outbreak of transmissible avian flu, if one occurs. His second concern is shared by influenza researchers and public health officials around the globe: with all that mutating, with all that contact between people and their infected birds, the virus could hit upon a genetic configuration making it highly transmissible among people. "As long as H5N1 is out there in the world," Webster told me, "there is the possibility of disaster. . . There is the theoretical possibility that it can acquire the ability to transmit human-to-human." He paused. "And then God help us." We're unique in the history of mammals. No other primate has ever weighed upon the planet to anything like the degree we do. In ecological terms, we are almost paradoxical: large-bodied and long-lived but grotesquely abundant. We are an outbreak. And here's the thing about outbreaks: they **end**. In some cases they end after many years, in others they end rather soon. In some cases they end gradually, in others they end with a crash. In certain cases, they end and recur and end again. Populations of tent caterpillars, for example, seem to rise steeply and fall sharply on a cycle of anywhere from five to 11 years. The crash endings are dramatic, and for a long while they seemed mysterious. What could account for such sudden and recurrent collapses? One possible factor is infectious disease, and viruses in particular.

#### The US is perceived as losing the battle for influence in Africa---AFRICOM legitimacy key to reverse Chinese influence

Eric Murray 11, Prof. of Physics @ Georgia Tech, US Attempts at Countering Chinese Influence in Africa, 10 October,

<http://www.currentanalyst.com/index.php/external-actors/164-us-attempts-at-countering-chinese-influence-in-africa>

There are different ways of looking at the decline of US power in the world, prominent among which is the rising influence of China in Africa. And the US can do very little about it. True, the Chinese are building their Navy, a historic precursor to expanded ambitions and global conflict. But the US can check that by continuing to build its military well ahead of Beijing. However, it can’t do the same, or it is unable to arrest the growing influence of China in Africa. These days it’s impossible to think about America and its future role in the world without also thinking about China’s growing influence, if not domination, in Africa.. The United States can become the leading player in a pluralistic international system rather than a “hyperpower” or hegemon, whose persuasiveness extends only as far as its military reach? Nobody denies that the United States is uniquely equipped to wreak physical destruction anywhere it wants. However, in economic terms and soft power particularly in Africa, the US is clearly on the defensive. According to US officials “China has become a very aggressive and pernicious economic competitor with no morals” in Africa. This may be true, but the real question is how does the US fare any better and how is it responding to the so-called China threat? Unable to take the lead it is forced to countering Chinese influence in the continent. And yet it doesn’t have a coherent strategy, rather what we see is a disparate but quickly assembled set of measures. These include the following:¶ The operationalization of the New US Africa Command/AFRICOM/, to which the Peoples Daily of China referred to as ‘unpleasant and arrogant’. Displacing China from oil rich regions such as Sudan, Libya through war and Angola, Tunisia, Egypt, Nigeria and Algeria through diplomacy could be part of the plan. Another consideration is the war on terror, which also helps to control oceans and main ports around the continent. As one US official puts it” we need a sea-denial capability of our own that comes with US Navy Seal control.” And this is on the top of the existing military bases around the world. America currently maintains more than seven hundred bases on foreign soil, including in Europe, Asia, Africa and the Middle East. Another side of the strategy is political and propaganda warfare. And Western narrative characterizes China as a new imperialist power in Africa. Not just the content but even the tone of this characterization can resemble the emanations from China hawks in the United States. This doesn’t preclude a counter offensive strategy on the Chinese economic model and its relevance to Africa. A good example being the Article of the US drafted African Consensus Resolution adopted on April 27, 2011 by the NGO Forum in Banjul, the Gambia. The resolution underscores Africa have largely ignored traditional knowledge in favor of imported economic models (such as the Chinese model), which are often unconnected to realities on the African continent. ¶ By actively lobbying in favor of the so-called African Consensus/AC/, US authorities are working hard to deprive Chinese companies in Africa of their main competitive advantage- low cost of manufacturing. The modalities of the AC include reinforcing by law high technological standards for economic projects of foreign companies in Africa. Besides, African states will be obliged to use ‘clean technology’ which can be provided mainly by the USA and other leading Western countries. Experts agree that the African Consensus is being developed as an alternative to the so-called Beijing Consensus, which was meant to unite Africa with China economically and politically in exchange of investments and other financial help. The US is planning to take further steps to create new instruments and institutions in a bid to strengthen the African Consensus as a major mechanism to check the growing economic influence of China in Africa. As a reviewing authority Washington is prepared to establish a new NGO- the Institute of African Consensus. The would-be institute will be granted full right to appeal directly to African governments, leading world powers and international organisations, including courts and core international NGOs on issues related to the economic dimensions of the AC.It could serve as a policy outfit and advocacy tool for anti-Chinese and pro-Western interests in Africa.¶ As recently as June 2011,the US Secretary of State Hillary Clinton, during a press conference in Lusaka, said that China is guilty of carrying out “new colonialism” in Africa, adding that she didn’t think China was a role model for governance. Fair enough. The other component of the strategy directly flows from this assertion i.e. supporting democracy and popular uprisings that could eventually weaken and displace Beijing’s foothold in the continent as it is seen in North Africa. Compounding this is US aggressive diplomacy aimed at several African countries. The US refocuses its efforts on developing African partnerships in order to further establish itself as a valued international partner different from China. To this effect the US focuses on two groups of countries in the continent. The first group is oil rich African countries such as Nigeria, Libya, Angola and Algeria, all member states of OPEC, the cartel of oil producing countries, whose joint actions in setting production quotas have a profound effect on the price of oil. The second is on politically high impact African countries such as South Africa, Kenya, Ethiopia and Nigeria. Nonetheless, US strategy doesn’t exclude working together with Beijing. That is what the US-China-Africa Trilateral Dialogue was meant to achieve. Until the U.S. gets to accept China as legitimate competitor and partner relations between the two will remain fundamentally insecure.¶ Apart from countering Chinese influence in Africa using a set of measures described above, Washington seeks to have an interface with Beijing on issues that matter to Africa. The US seeks common ground with Beijing on some porgrammes considered to be beneficial to Africa, including humanitarian aid, malaria and HIV/AIDS initiatives, and peacekeeping operations. This is not only for humanitarian reasons but also to further encourage what the US refers to as responsible international behavior. Positively influencing the behavior of Beijing will form one component of the strategy of containment. Clearly, Africa has emerged as the major battle ground for the US and China. However the battle ground is largely characterized by the deployment and effective use of “soft power”. Nobody thinks the US has an effective strategy of countering China. America’s ability to construct social, economic, or political institutions in Africa that could serve as a brick wall against newly emerging economic powers is remotely as impressive. As they say, this is the problem of “soft power”.

#### African influence enhances Chinese diplomatic leverage at the UN

Christopher Alessi 12, Associate Staff Writer for the Council on Foreign Relations and Stephanie Hanson, “Expanding China-Africa Oil Ties”, CFR, 2-8, http://www.cfr.org/china/expanding-china-africa-oil-ties/p9557

Since former Chinese president Jiang Zemin inaugurated China's reengagement with Africa in 1996, the Chinese have tried to maintain a policy of "noninterference" in the domestic affairs of African countries, explains Donald L. Sparks in an April 2011 paper for the Journal of African Studies and Development.¶ In an August 2011 paper in the African Journal of Political Science and International Relations, Fanie Herman and Tsai Ming-Yen compare China's foreign policy in Africa to that of the United States. "The U.S. focuses on humanitarianism, good governance, and democratization of petroleum-producing states in their oil diplomacy approach," they write. On the other hand, they argue, "China, the world's fastest growing economy, views SSA [sub-Saharan Africa] as a welcome offloading ground for its products in exchange for oil. An **economic approach** focusing on enlarging its commercial interests is the driving factor for China's engagement with petroleum producing states."¶ Moreover, argues Richard Dowden in his 2009 book Africa: Altered States, Ordinary Miracles, the policy of noninterference has freed up China to sell weapons **to rogue states** like Sudan and Zimbabwe. "When the Sudanese government forcibly removed thousands of people from their land at Merowe so that the Chinese could build a dam on the Nile in exchange for oil concessions," Dowden writes, "Beijing said it was none of its business."¶ China's policy of noninterference has been most controversial--and challenged--in its policy toward Sudan. In 2007, China altered its policy of blocking UN Security Council resolutions that authorized peacekeeping troops for the contested Sudanese region of Darfur, and subsequently placed modest pressure on Khartoum to allow a deployment of UN forces.¶ China's policy of noninterference in Sudan was further complicated when South Sudan seceded from Sudan (NYT) in July 2011. Prior to South Sudan's independence, China had supported--mainly through the selling of arms--the Khartoum government's efforts to crush a longtime rebel uprising in the south. However, with most of the area's oil located in what is now South Sudan, China has had to recalibrate its policy toward the southern Sudanese rebels. It has since become the main negotiator in an oil dispute between the two Sudans. However, China's new diplomatic role--and traditional alliance with Khartoum--was challenged in January 2012 when rebels loyal to South Sudan kidnapped twenty-nine Chinese workers (WSJ) in the state of South Kordofan in Sudan.¶ Assessing the Benefits of Sino-African Ties¶ Chinese investment in Africa has helped spur consistently high economic growth. The International Monetary Fund's October 2011 Regional Economic Outlook for Sub-Saharan Africa (PDF) estimates growth of 5.3 percent and 5.8 percent for 2011 and 2012, respectively.¶ Some analysts say China's efforts in Africa--from building infrastructure to forgiving billions in debt to providing medical support--are for building goodwill for later investment opportunities or stockpiling international support for contentious political issues. Dowden writes in his book, "China is **playing a long game for oil and other raw materials in Africa** and securing allies who will vote for it in the United Nations." Meanwhile, St. Andrews' Taylor says, "The fundamental problem facing Africa is governance--it doesn't matter how many roads or ports."

#### Increased Chinese influence will derail climate negotiations --- pressures developing states

Fiona Harvey 12, environment correspondent, Guardian, “Republican presidential win would lose US ground to China – UN climate chief”, 3-9, http://www.guardian.co.uk/environment/2012/mar/09/republican-climate-change-us-president-china?newsfeed=true

Figueres faces a difficult year, as at last year's UN climate conference in Durban, countries pledged to produce a new draft treaty on climate change by 2015, to come into force by 2020. But in order to do so, governments must agree to substantially reduce emissions from 2020, and the gulfs between countries loom large.¶ This week, China submitted its draft proposals to the UN, which indicated that **developed, not developing, countries** **should carry the burden of cutting emissions.** That was regarded by some developed countries as a backward step.¶ There are also **doubts among some prominent players** as to whether the process agreed in Durban can succeed. But Figueres insisted that **the process was "on track",** with a meeting scheduled for May at which countries would agree a "workplan" and timetable for the rest of the negotiations. She said countries were **already meeting in many informal groups** that would push the negotiations forward.

#### Kills any possibility of a legally binding climate treaty post-Durban

Reuters 12, “Citizens not pushing hard for climate deal - UN chief”, 3-10, http://in.reuters.com/article/2012/03/09/un-climate-idINDEE8280F620120309

Countries had to submit proposals by February 28 on ways of raising the level of mitigation targetted under the so-called Durban Platform, although most submissions were late.¶ India, China and some other countries maintained the idea of "common but differentiated responsibilities", which puts most of the onus on developed countries **to cut emissions** as they were historically more responsible for global warming.¶ The United States in particular is against this principle as it does not want heavily emitting developing countries to **exempt themselves from legally binding mitigation measures.¶** "That concept is very central to the convention. I don't think the convention will ever really progress without that principle but it is very clear the moment has come to really understand that principle in the context which we committed," said Figueres.¶ "The commitment countries made to themselves is to make an agreement by 2015 to go into effect by 2020 - with the participation of all and applicable to all - not an agreement to be reached by 2020."

#### Now’s key --- the Durban Platform provides a new opportunity to solve global climate change

Robert N. Stavins 12 is the Albert Pratt Professor of Business and Government, Director of the Harvard Environmental Economics Program, and Chairman of the Environment and Natural Resources Faculty Group, “The Platform Opens a Window: An Unambiguous Consequence of the Durban Climate Talks”, 1-1, http://www.robertstavinsblog.org/2012/01/01/the-platform-opens-a-window-an-unambiguous-consequence-of-the-durban-climate-talks/

Finally, We Arrive in Durban (2011)¶ The third of the three outcomes of the December 2011 talks in Durban, South Africa, which I mentioned at the beginning of this essay – the Durban Platform for Enhanced Action – completely eliminates the Annex I/non-Annex I (or industrialized/developing country) distinction. In the Durban Platform, the delegates reached a non-binding agreement to reach an agreement by 2015 that will bring all countries under the same legal regime by 2020. That’s a strange and confusing sentence, but it’s what happened, and it’s potentially important.¶ Rather than adopting the Annex I/non-Annex I (or industrialized/developing country) distinction, the Durban Platform focuses instead on the (admittedly non-binding) pledge to create a system of greenhouse gas reductions including all Parties (that is, all key countries) by 2015 that will come into force (after ratification) by 2020. Nowhere in the text of the decision will one find phrases such as “Annex I,” “common but differentiated responsibilities,” “distributional equity,” “historical responsibility,” all of which had long since become code words for targets for the richest countries and blank checks for all others.¶ A Dramatic Departure¶ Thus, **in a dramatic departure** from some seventeen years of U.N. hosted international negotiations on climate change, the 17th Conference of the Parties in Durban turned away from the Annex I/non-Annex I distinction, which had been the centerpiece of international climate policy and negotiations since it was adopted at the 1st Conference of the Parties in Berlin in 1995.¶ Because of this, the international law scholar, Daniel Bodansky, has labeled “the Durban Platform a **complete departure from the Berlin Mandate**.” Likewise, Indian professor of international law, Lavanya Rajamani says that Durban delivered a “new process and with it, a **clean slate on differentiation.”** And Elliot Diringer of the Center for Climate and Energy Solutions, finds the overall Durban deal to be “delicately poised between two eras – the fading age of Kyoto, and a new phase … with developed and developing countries presumably on a **more equal footing.”** ¶ This is of vast potential importance, but – of course – only “potential” importance, because just as it was the Kyoto Protocol’s numerical targets and timetables that fulfilled the Berlin Mandate’s promise, it remains for the delegates to the UNFCCC to meet this Durban mandate with a new post-Kyoto agreement by 2015 (to come into force by 2020). Only time will tell whether the Durban Platform delivers on its promise, or turns out to be another “Bali Roadmap,” leading nowhere.¶ So, with such uncertainty, what’s the “unambiguous consequence” of Durban that I refer to in the title of this essay?¶ An Unambiguous Outcome: The Platform Opens a Window¶ The Durban Platform – by replacing the Berlin Mandate – has opened an important window. It is this. The national delegations from around the world now have a challenging task before them: to identify a new international climate policy architecture that is consistent with the process, pathway, and principles laid out in the Durban Platform, namely to find a way to include all key countries (such as the 20 largest national and regional economies that together account for upwards of 80% of global carbon dioxide emissions) in a structure that **brings about meaningful emissions reductions** on an appropriate timetable at acceptable cost. ¶ Having broken the old mold, **a new one must be forged.** There is a mandate for change. Governments around the world now need **fresh, outside-of-the-box ideas** from the best thinkers, and they need those ideas over the next few years. This is a time for new proposals for future international climate policy architecture, not for incremental adjustments to the old pathway. I trust that this call will be heard by a diverse set of universities, think tanks, and – for that matter – advocacy and interest groups around the world. With 48 research initiatives in Australia, China, Europe, India, Japan, and the United States, the Harvard Project on Climate Agreements is prepared to contribute to this effort. Please stay tuned.

#### Solves runaway warming --- Chinese support is key

Helle Jeppesen 11, MSN, “Breakthrough in Durban: Pragmatism over perfection”, December, http://arabia.msn.com/technology/news/dw/2011/december/11171643/breakthrough-durban-pragmatism-over-perfection.aspx

Following extended talks, which stretched into the early hours of Sunday, delegates representing the 194 countries participating in the UN climate talks in Durban, finally reached agreement.¶ It took an extra two nights of negotiations but UN climate chief Christiana Figueres finally announced that ministers had reached a last-minute agreement on a new text known as the **Durban platform for enhanced action.**¶ It's unclear if being at the negotiation table 30 hours after the climate talks officially closed is what finally forced the exhausted delegates to agree. Perhaps they were moved by an impassioned speech from South African Foreign Minister Maite Nkoana-Mashabane, who chaired the talks.¶ She made an urgent last-minute appeal on Saturday night, calling for delegates to seek unity.¶ "Let us agree to accept the Durban outcome package. I feel the four pieces of the package before us .... represent a comprehensive, balanced and credible set of outcomes for this conference," she said.¶ "I think we all realize (the results) are not perfect, but we should not let the perfect become the enemy of the good and the possible."¶ Kyoto rescued¶ The Durban platform opens the doors to new global climate politics, which aim to cut carbon emissions, in order to keep global temperatures at two degrees Celsius. Limiting climate change to a rise of two degrees is viewed as crucial to avoid dangerous tipping points that would lead to runaway warming. At present, climate models predict a rise of about four degrees.¶ The Durban agreement sets out a roadmap towards a successor to the Kyoto Protocol that will force all participating countries, including emerging economies and developing nations, to reduce their emissions output. The first commitment period of Kyoto ends in one year. The Durban platform calls for an extension until either 2017 or 2020, but the exact date will be set next year.¶ Equal footing¶ The Durban Platform does away with the differentiation between developed and developing countries. India strongly opposed this move, arguing that it should not be held to the same standard as industrialized nations.¶ Kyoto was initially drafted to reduce emissions in the industrial world. At that time, India wasn't forced to participate as it was not yet considered a major industrial nation. Indian negotiators refused to agree to new climate regulations, fearing this could limit their ability to expand their economy.¶ But the breakthrough came with a change of phrasing. "Legal outcome" in an earlier draft of the Durban platform was changed to "an agreed outcome with legal force under the convention applicable to all parties." That won the consent of both Chinese and Indian delegates, bringing both nations into the fold.¶ The new agreement isn't exactly flawless. Even UN climate chief Christiana Figueres acknowledged the final wording on the legal form of a future deal is ambiguous. But observers say the talks bring the world a step closer to an agreement on how to deal with climate change.¶ New alliances¶ In an unprecedented new alliance with the poorest developing nations as well as small islands states, the EU was able to push through many of its demands at the talks in Durban. The bloc insisted that a timeline for a new agreement be laid out, despite reluctance on the part of India, China and the US.¶ For days on end, the delegates squabbled and bargained, seeking common ground.¶ Martin Kaiser is a climate expert from the action group Greenpeace. In an interview with Deutsche Welle, he acknowledged that the Durban platform has its shortcomings. But he sees it as a huge accomplishment that the talks have brought major emitters like India, China, Brazil and South Africa into a roadmap which will secure an overarching global deal. But he warned that failure to engage the US on binding targets was the "sword of Democles."¶ Many of the pressing questions about the nature of a new global climate deal have been referred to working groups. They will be tasked with finding a way to get the world's top emitters on board. But for now, delegates are celebrating the success of bringing the US and China into the fold for the first time. China, the US and India - which rank as the world's three largest emitters of greenhouse gases - were not covered by Kyoto. But they have pledged to join the new pact, which would take effect in 2020.¶ Oxfam climate expert Jan Kowalzig said this victory comes at a price. "For China, the price is that the form of the future deal has been left open. For the US and for China, there was also a price to pay. We are leaving Durban without an agreement that allows us to pursue ambitious measures for protecting the global climate."

#### Warming is real, anthropogenic and causes extinction

Flournoy 12 -- Citing Feng Hsu, PhD NASA Scientist @ the Goddard Space Flight Center. Don Flournoy is a PhD and MA from the University of Texas, Former Dean of the University College @ Ohio University, Former Associate Dean @ State University of New York and Case Institute of Technology, Project Manager for University/Industry Experiments for the NASA ACTS Satellite, Currently Professor of Telecommunications @ Scripps College of Communications @ Ohio University (Don, "Solar Power Satellites," January, Springer Briefs in Space Development, Book, p. 10-11)

In the Online Journal of Space Communication , Dr. Feng Hsu, a  NASA scientist at Goddard Space Flight Center, a research center in the forefront of science of space and Earth, writes, “The evidence of global warming is alarming,” noting the potential for a catastrophic planetary climate change is real and troubling (Hsu 2010 ) . Hsu and his NASA colleagues were engaged in monitoring and analyzing climate changes on a global scale, through which they received first-hand scientific information and data relating to global warming issues, including the dynamics of polar ice cap melting. After discussing this research with colleagues who were world experts on the subject, he wrote: I now have no doubt global temperatures are rising, and that global warming is a serious problem confronting all of humanity. No matter whether these trends are due to human interference or to the cosmic cycling of our solar system, there are two basic facts that are crystal clear: (a) there is overwhelming scientific evidence showing positive correlations between the level of CO2 concentrations in Earth’s atmosphere with respect to the historical fluctuations of global temperature changes; and (b) the overwhelming majority of the world’s scientific community is in agreement about the risks of a potential catastrophic global climate change. That is, if we humans continue to ignore this problem and do nothing, if we continue dumping huge quantities of greenhouse gases into Earth’s biosphere, humanity will be at dire risk (Hsu 2010 ) . As a technology risk assessment expert, Hsu says he can show with some confidence that the planet will face more risk doing nothing to curb its fossil-based energy addictions than it will in making a fundamental shift in its energy supply. “This,” he writes, “is because the risks of a catastrophic anthropogenic climate change can be potentially the extinction of human species, a risk that is simply too high for us to take any chances” (Hsu 2010 ) .

### 1AC – Solvency

#### CONTENTION 4: SOLVENCY

#### Plan’s solves SMRs in the military -- doesn’t pick winners

Andres and Breetz 11 Richard B, Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University and Hanna L, doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, February, "Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications", www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf

DOD as First Mover¶ Thus far, this paper has reviewed two of DOD’s most pressing energy vulnerabilities—grid insecurity and fuel convoys—and explored how they could be addressed by small reactors. We acknowledge that there are many uncertainties and risks associated with these reactors. On the other hand, failing to pursue these technologies raises its own set of risks for DOD, which we review in this section: first, small reactors may fail to be commercialized in the United States; second, the designs that get locked in by the private market may not be optimal for DOD’s needs; and third, expertise on small reactors may become concentrated in foreign countries. By taking an early “first mover” role in the small reactor market, DOD could mitigate these risks and secure the long-term availability and appropriateness of these technologies for U.S. military applications.¶ The “Valley of Death.” Given the promise that small reactors hold for military installations and mobility, DOD has a compelling interest in ensuring that they make the leap from paper to production. However, if DOD does not provide an initial demonstration and market, there is a chance that the U.S. small reactor industry may never get off the ground. The leap from the laboratory to the marketplace is so difficult to bridge that it is widely referred to as the “Valley of Death.” Many promising technologies are never commercialized due to a variety of market failures— including technical and financial uncertainties, information asymmetries, capital market imperfections, transaction costs, and environmental and security externalities— that impede financing and early adoption and can lock innovative technologies out of the marketplace. 28 In such cases, the Government can help a worthy technology to bridge the Valley of Death by accepting the first mover costs and demonstrating the technology’s scientific and economic viability.29¶ Historically, nuclear power has been “the most clear-cut example . . . of an important general-purpose technology that in the absence of military and defense related procurement would not have been developed at all.”30 Government involvement is likely to be crucial for innovative, next-generation nuclear technology as well. Despite the widespread revival of interest in nuclear energy, Daniel Ingersoll has argued that radically innovative designs face an uphill battle, as “the high capital cost of nuclear plants and the painful lessons learned during the first nuclear era have created a prevailing fear of first-of-a-kind designs.”31 In addition, Massachusetts Institute of Technology reports on the Future of Nuclear Power called for the Government to provide modest “first mover” assistance to the private sector due to several barriers that have hindered the nuclear renaissance, such as securing high up-front costs of site-banking, gaining NRC certification for new technologies, and demonstrating technical viability.32¶ It is possible, of course, that small reactors will achieve commercialization without DOD assistance. As discussed above, they have garnered increasing attention in the energy community. Several analysts have even argued that small reactors could play a key role in the second nuclear era, given that they may be the only reactors within the means of many U.S. utilities and developing countries.33 However, given the tremendous regulatory hurdles and technical and financial uncertainties, it appears far from certain that the U.S. small reactor industry will take off. If DOD wants to ensure that small reactors are available in the future, then it should pursue a leadership role now.¶ Technological Lock-in. A second risk is that if small reactors do reach the market without DOD assistance, the designs that succeed may not be optimal for DOD’s applications. Due to a variety of positive feedback and increasing returns to adoption (including demonstration effects, technological interdependence, network and learning effects, and economies of scale), the designs that are initially developed can become “locked in.”34 Competing designs—even if they are superior in some respects or better for certain market segments— can face barriers to entry that lock them out of the market. If DOD wants to ensure that its preferred designs are not locked out, then it should take a first mover role on small reactors**.**¶ It is far too early to gauge whether the private market and DOD have aligned interests in reactor designs. On one hand, Matthew Bunn and Martin Malin argue that what the world needs is cheaper, safer, more secure, and more proliferation-resistant nuclear reactors; presumably, many of the same broad qualities would be favored by DOD.35 There are many varied market niches that could be filled by small reactors, because there are many different applications and settings in which they can be used, and it is quite possible that some of those niches will be compatible with DOD’s interests.36¶ On the other hand, DOD may have specific needs (transportability, for instance) that would not be a high priority for any other market segment. Moreover, while DOD has unique technical and organizational capabilities that could enable it to pursue more radically innovative reactor lines, DOE has indicated that it will focus its initial small reactor deployment efforts on LWR designs.37¶ If DOD wants to ensure that its preferred reactors are developed and available in the future, it should take a leadership role now. Taking a first mover role does not necessarily mean that DOD would be “picking a winner” among small reactors, as the market will probably pursue multiple types of small reactors. Nevertheless, DOD leadership would likely have a profound effect on the industry’s timeline and trajectory.

#### Military is best at advancing SMRs

Cohen 12 Armond, Executive Director for the Clean Air Task Force, "DoD: A Model for Energy Innovation?", May 21, energy.nationaljournal.com/2012/05/powering-our-military-whats-th.php

Unlike most other agencies, including the Energy Department, the Pentagon is the ultimate customer for the new technology it helps create, spending some $200 billion each year on R&D and procurement. The implications of DoD’s role as customer have not been widely appreciated, as:¶ · DoD, uniquely in government, supports multi-year, billion-dollar “end to end” innovation efforts that produce technology that is continuously tested, deployed and refined on bases and in the field, providing real world feedback that leads to increases in performance and reductions in cost. By contrast, most of the federal government’s civilian energy innovation efforts involve research loosely connected at best with the few commercialization efforts that it supports.¶ · DoD and its contractors know how to bring together multiple innovations to achieve system-level advances leading to big performance gains (examples range from nuclear submarines to unmanned aircraft to large-scale information systems). This systems approach is precisely what is needed to advance clean energy technologies.¶ · Relatively stable, multi-year funding allows the Pentagon to pursue “long cycle” innovation that is necessary for large, capital- intensive technologies and supports a highly capable contractor base that can respond to changing national security demands.¶ · The Pentagon’s scope and budget has allowed it to experiment with new and creative innovation tools such as the well-known Defense Advanced Projects Research Agency, which has produced extraordinary technological breakthroughs; and the Environmental Security Technology Certification Program, which develops and demonstrates cost-effective improvements in environmental and energy technologies for military installations and equipment.¶ · Because of DoD’s size and demands for performance and reliability, it is unique among government and private sector organizations as a demonstration test-bed. Smart-grid technologies and advanced energy management systems for buildings are already poised to benefit from this aspect of the Pentagon’s innovation system.¶ · DoD has collaborated effectively with other federal agencies, including the Department of Energy and its predecessors (for example, to advance nuclear energy technologies). Continuing competition and cooperation between DoD and DOE will spur energy innovation. DoD’s innovation capabilities can enhance U.S. national security, improve U.S. international competitiveness, and spur global energy restructuring and greenhouse gas emissions reductions.¶ At the same time, while providing enormous opportunities to develop and test energy efficiency technologies and small scale distributed energy appropriate to forward bases, the Pentagon is unlikely to become an all-purpose hub for advancing all categories of clean-energy technologies, because its energy innovation activities will be sustainable only where they can support the nation’s defense capabilities.¶ Therefore, many other large-scale technologies that are of great importance to improving the environment, such as carbon-free central station generation or zero carbon transportation, may not as easily fit with DoD’s mission. Possible exceptions might include small modular nuclear reactors that can be used for producing independent, non-grid power at military bases, or, conceivably, zero-carbon liquid fuels other than anything resembling current generation biofuels.¶ In any case, the challenge for military-led energy innovation is to further define and delineate avenues for improved clean-energy performance that are linked to the national strategic mission. History shows that when such linkages are strong, DoD’s innovation capabilities are second to none.

#### SMRs solve nuclear downsides

Ringle 10 John, Professor Emeritus of Nuclear Engineering at Oregon State University, "Reintroduction of reactors in US a major win", November 13, 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 cost $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.

#### DOE funding SMRs now---more to come

Holly 12/6 Derrill, ECT Staff Writer, "DOE Advances Small Nuclear Reactors", 2012, [www.ect.coop/power-supply/power-plants/doe-funds-small-nuclear-reactors-project/50667](http://www.ect.coop/power-supply/power-plants/doe-funds-small-nuclear-reactors-project/50667)

The Department of Energy has agreed to help fund a small modular nuclear reactor design backed by a consortium that includes several generation and transmission electric cooperatives.¶ After reviewing several proposals, DOE selected a project led by Bechtel Corp., Babcock & Wilcox and the Tennessee Valley Authority. The mPower Consortium was formed in in 2010 to support the Generation mPower small modular nuclear reactor design. The consortium includes investor-owned FirstEnergy, TVA, and 13 G&Ts.¶ The lead companies have proposed deployment of up to five 180 megawatt Babcock & Wilcox mPower reactors at TVA’s abandoned Clinch River Breeder Reactor site in Oak Ridge, Tenn.¶ “DOE will match future engineering and design development, design certification and licensing activities up to a cap of $452 million,” said Sandra Byrd, vice president of member and public relations for Little Rock-based Arkansas Electric Cooperative Corp. “Although the mPower design is already far along, it still requires more testing and the design certification documents have to be developed and submitted to the Nuclear Regulatory Commission for approval.”¶ Plans call for the consortium to submit documentation to NRC by December 2013. An early site permit and a construction and operating license application will also be developed for submission over the next year.¶ “This will be the first time that a small nuclear design has been submitted to NRC for review and approval,” said Byrd, adding that commercial operation could begin between 2020 and 2022. Successful deployment of the technology is expected to lead to development of nuclear power plants roughly one-third the size of existing facilities, and DOE plans to issue additional funding opportunities.¶ “More is obviously better. Different designs may lend themselves to different utility operating situations,” said Byrd. Co-ops supported proposals from three of the four companies that sought consideration under the initial DOE cost-sharing grant.¶ Arkansas Electric Cooperative Corp. is among mPower Consortium backers also supporting the NexStart SMR Alliance led by Westinghouse and investor-owned Ameren Missouri. Springfield, Mo.-based Associated Electric Cooperative is also supporting the group.

# 2AC

## Radar

### AT: Radar Bad – Primacy (Li)

#### The U.S. would never over-estimate primacy enough to cause us to first-strike---their author

Zhang 8 - Baohui Zhang, Associate Professor of Political Science, Lingnan University, Hong Kong, March 2008, “The Taiwan Strait and the Future of China's No-First-Use Nuclear Policy,” Comparative Strategy, Vol. 27, No. 2, p. 164-182

China's emerging nuclear capabilities offer a tempting option for the Chinese military. China may believe that the threat of first use of nuclear weapons could generate a powerful deterrence effect, since the United States does not have the same credibility in fighting a nuclear war for the sake of Taiwan. This is due to the perceived vast asymmetry of interests between China and the U.S. in the Taiwan issue. This point is also emphasized by American analysts. As a recent Rand study suggests, “Beijing would have much more at stake than Washington in the event of a showdown over the status of Taiwan.” Although Taiwan's security is an important U.S. concern, “For Beijing, however, Taiwan ranks as the most important security issue. … In a conflict over Taiwan, Beijing calculates that China's vital national interests, and perhaps, even regime survival, would be on the line.”55 Indeed, as mentioned at the beginning of the article, at the 2007 APEC summit meeting President Hu Jintao declared in the most explicit terms that the Taiwan issue “concerns core of the core Chinese national interests.” This statement, at an occasion where President George Bush was present, was clearly intended to convey to the United States the vital stake that China attaches to Taiwan.¶ This vast asymmetry of interests between China and the United States in the Taiwan issue would give the former a clear advantage in the so-called “balance of resolve.” According to Robert Jervis, for nuclear deterrence the balance of resolve, meaning whichever side has greater credibility in carrying out its nuclear threats in a given context, is far more important than the balance of force. The much greater stake by China in the Taiwan issue will give it significant perceived resolve in using nuclear weapons to prevent a conventional defeat by the United States and its allies.56¶ Thus, although the United States will continue to enjoy an overwhelming nuclear advantage over China, it is, as noted deterrence expert Richard Ned Lebow argues, “unusable superiority.”57 As he quotes from McGeorge Bundy's observation on U.S. decision making during the Cuban missile crisis, “if even one Soviet weapons landed on an American target, we would all be losers.”58 This view was echoed by Robert McNamara. He recalled that during the crisis the U.S. Central Intelligence Agency estimated that the Soviet Union might be able to retaliate with only thirty warheads against the United States. “Does anyone believe that a president or a secretary of defense would be willing to permit thirty warheads to fall on the United States? No way!”59¶ Indeed, the forthcoming expansion of the China's strategic nuclear forces will allow it to retaliate with at least the same number of warheads after an American preemptive strike. It would be almost impossible to imagine that a president of the United States, for the sake of defending Taiwan, is willing to see this happen. In fact, even during the Cold War, when the United States supposedly had genuine strategic interests in defending Europe against threats from the Soviet Union, Britain and France could not put their trust in American extended nuclear deterrence. Indeed, they had very reasonable doubts about U.S. willingness to sacrifice New York City for the sake of London or Paris. Thus, both countries were determined to develop their independent nuclear deterrence.

### AT: Space Radar Bad – Causes Bad Impacts

#### Nuclear primacy doesn’t cause crisis instability

Long 8 – Austin Long, Assistant Professor of International and Public Affairs at Columbia University, 2008, “Deterrence: From Cold War to Long War,” online: http://www.rand.org/pubs/monographs/2008/RAND\_MG636.pdf

Lieber and Press found this U.S. nuclear primacy troubling, as it may mean that Russia and China will take risks that may make accidental war more likely. It may also mean that the United States will be more likely to run risks in confrontations with these states, secure in the knowledge that it once again possesses nearly splendid counterforce. The interaction of these dynamics may make crises extraordinarily dangerous in the future, possibly leading to a nuclear war that neither side truly intends (Lieber and Press, 2006a, pp. 31–33).¶ While Lieber and Press’s worries cannot be dismissed out of hand, they appear to be overstated. The United States, even when resting extended deterrence almost entirely on nuclear weapons, was always extremely circumspect about even obliquely threatening their use; this was no less the case during the 1950s when it still retained a nearmonopoly on long-range nuclear weapons.6 In addition, at present and for the near term, U.S. conventional capabilities greatly reduce the need to rely on nuclear weapons for extended deterrence relative to the 1950s. Further, Russia and China do not appear panicked by the current state of affairs. China has never sought to build an incredibly robust deterrent; U.S. forces have always had a counterforce capability against Chinese forces.7 While there are signs that China’s force modernization may make this force less vulnerable, there has never been any sign of Chinese desperation about U.S. counterforce. Russia, while slowly modernizing its forces, also appears to be relatively unconcerned.¶ This relative lack of concern by both of these near-peer competitors is understandable, as they have not sought to extend deterrence to others in the same way that the United States has. Russian and Chinese nuclear forces exist almost exclusively to provide basic deterrence, which is inherently credible in intent. Given this highly credible intent to “trade Moscow or Beijing for Washington,” even a relatively small capability is very effective. What U.S. president would undertake an operation with even a 5 percent chance of resulting in the destruction of one or two major U.S. cities in any but the direst circumstances? A similar rationale underpinned the French and British nuclear-force structure in the Cold War; the survival of even a handful of nuclear weapons would give even the most hardened Soviet pause in launching a first strike. Here, the fear aspect of deterrence is clearly critical; even small uncertainties about relative gains from a first strike can deter in all but the bleakest scenarios involving highly credible threats (see Kahn, 1961, pp. 126–144; Jervis, 1984, p. 175, n. 47; and Kahneman and Tversky, 1979).¶ At the same time, neither Russia nor China has an incentive to launch first in most circumstances. The submarine portion of the U.S. deterrent alone is enough to inflict a devastating countervalue attack on either country even if its first strike succeeded in totally destroying both land-based legs of the nuclear triad. Given that neither Russia nor China is likely to be able to disarm a large portion of the land components of the triad in the foreseeable future, both have that much less incentive to fire first. Only in circumstances in which crises escalated to the point at which China or Russia felt that its basic deterrence was being undermined would this seem likely. This argues for limits on certain military options in crisis or confrontation, examples of which will be given in the scenario in the next section.

#### No crisis instability or miscalc

Bolkcom et al 6 – Christopher Bolkcom, Foreign Affairs, Defense, and Trade Division of the Congressional Research Service, et al., August 11, 2006, “U.S. Conventional Forces and Nuclear Deterrence: A China Case Study,” online: http://www.au.af.mil/au/awc/awcgate/crs/rl33607.pdf

Once a conflict begins, participants can feel pressure to act quickly, to control events and to manage the crisis in a way that meets its interests. This, in turn, can make the crisis escalate quickly and unpredictably. For example, if its command and control systems were protected from attack and offered redundant capabilities, and its forces were not vulnerable to an early strike by the adversary, then a nation could delay its response, await further information, and possibly seek alternate means to resolve the conflict.¶ On the other hand, if a country’s command and control infrastructure and its key forces were vulnerable to attack early in a conflict, then it might feel compelled to act quickly, using those forces before it lost them to attack, and before it had complete information about the intent and capabilities of its adversary in pursuing the conflict. Preferably, the capabilities or posture of a nation’s conventional and nuclear forces would not inherently add to this instability.¶ Specific U.S. crisis stability objectives in these scenarios may include fielding forces that 1) are not vulnerable, and do not make Chinese forces vulnerable to “use it or lose it” pressures, and 2) do not appear to be either vulnerable to or capable of political or military decapitation.¶ Both the United States and China have currently deployed their long-range nuclear forces in ways that would not leave them vulnerable to a first strike, and therefore, appear unlikely to undermine stability in a crisis. Chinese forces lack the accuracy to attack U.S. land-based forces and cannot effectively track and engage U.S. submarines that carry ballistic missiles (called SSBNs). Chinese long-range missiles are deployed in deeply buried silos, protected by rough terrain and mountains, or deployed on mobile launchers. Therefore, neither the United States nor China would experience pressure to use these weapons before losing them. Early warning and command and control systems, could, however, still be vulnerable to disruption on both sides. Therefore, efforts to disrupt these assets, or other factors, such as a desire to achieve tactical surprise, could stimulate prompt or accelerated responses as soon as a crisis unfolds.

### AT: Mutual Miscalc

#### Accepting nuclear vulnerability with China accelerates their attempts to exploit it---causes a fast ramp-up of asymmetric capabilities and war---turns every neg arg

Pfaltzgraff 9 – Robert L. Pfaltzgraff, Jr., Shelby Cullom Davis Professor of International Security Studies at Tufts University, April 7, 2009, “China–U.S. Strategic Stability,” online: http://www.carnegieendowment.org/files/2009npc\_prepared\_pfaltzgraff.pdf

This, then, leads me to the conclusion that to the extent that the United States perpetuates its vulnerabilities, it provides an open invitation to Chinese efforts to exploit such vulnerabilities. Let me be more specific. There is considerable discussion to the effect that the United States should maintain or develop with China a strategic relationship based on mutual vulnerability and that increased emphasis, notably, on missile defense on our part will lead China to increase its own programs to order to counter such U.S. systems. Aside from the shaky empirical basis for such an assertion, the Chinese emphasis on exploiting U.S. vulnerabilities argues logically for efforts on our part to cut off such U.S. vulnerabilities wherever possible in the forces that will shape the China-U.S. strategic relationship in the years ahead. In fact, I could even argue that the conscious perpetuation of U.S. vulnerability in the mistaken belief that the result will be strategic stability makes no sense. It may even encourage China to attempt to exploit U.S. vulnerability at a time of crisis and lead to undesired escalation based on miscalculation.

## T

### 2AC T – Financial Incentive

#### We meet – plan is a financial incentive – acquiring is T

US Code 3 Legal Information Institute, “41 USC § 131 – Acquisition”, November 24, <http://www.law.cornell.edu/uscode/text/41/131?quicktabs_8=1#quicktabs-8>

In division B, the term “acquisition”—¶ (1) means the process of acquiring, with appropriated amounts, by contract for purchase or lease, property or services (including construction) that support the missions and goals of an executive agency, from the point at which the requirements of the executive agency are established in consultation with the chief acquisition officer of the executive agency; and¶ (2) includes—¶ (A) the process of acquiring property or services that are already in existence, or that must be created, developed, demonstrated, and evaluated;¶ (B) the description of requirements to satisfy agency needs;¶ (C) solicitation and selection of sources;¶ (D) award of contracts;¶ (E) contract performance;¶ (F) contract financing;¶ (G) management and measurement of contract performance through final delivery and payment; and¶ (H) technical and management functions directly related to the process of fulfilling agency requirements by contract.

#### C/I – Financial incentives induce behaviors---that includes plan

Webb 93 – lecturer in the Faculty of Law at the University of Ottawa (Kernaghan, “Thumbs, Fingers, and Pushing on String: Legal Accountability in the Use of Federal Financial Incentives”, 31 Alta. L. Rev. 501 (1993) Hein Online)

In this paper, "financial incentives" are taken to mean disbursements 18 of public funds or contingent commitments to individuals and organizations, intended to encourage, support or induce certain behaviours in accordance with express public policy objectives. They take the form of grants, contributions, repayable contributions, loans, loan guarantees and insurance, subsidies, procurement contracts and tax expenditures.19 Needless to say, the ability of government to achieve desired behaviour may vary with the type of incentive in use: up-front disbursements of funds (such as with contributions and procurement contracts) may put government in a better position to dictate the terms upon which assistance is provided than contingent disbursements such as loan guarantees and insurance. In some cases, the incentive aspects of the funding come from the conditions attached to use of the monies.20 In others, the mere existence of a program providing financial assistance for a particular activity (eg. low interest loans for a nuclear power plant, or a pulp mill) may be taken as government approval of that activity, and in that sense, an incentive to encourage that type of activity has been created.21 Given the wide variety of incentive types, it will not be possible in a paper of this length to provide anything more than a cursory discussion of some of the main incentives used.22 And, needless to say, the comments made herein concerning accountability apply to differing degrees depending upon the type of incentive under consideration.¶ By limiting the definition of financial incentives to initiatives where *public funds are either disbursed or contingently committed*, a large number of regulatory programs with incentive *effects* which exist, but in which no money is forthcoming,23 are excluded from direct examination in this paper. Such programs might be referred to as *indirect* incentives. Through elimination of indirect incentives from the scope of discussion, thedefinition of the incentive instrument becomes both more manageable and more particular. Nevertheless, it is possible that much of the approach taken here may be usefully applied to these types of indirect incentives as well.24 Also excluded from discussion here are social assistance programs such as welfare and *ad hoc* industry bailout initiatives because such programs are not designed primarily to *encourage* behaviours in furtherance of specific public policy objectives. In effect, these programs are assistance, but they are not incentives.

#### Precision---our definition’s from the DoE

Waxman 98 **–** Solicitor General of the US (Seth, Brief for the United States in Opposition for the US Supreme Court case HARBERT/LUMMUS AGRIFUELS PROJECTS, ET AL., PETITIONERS v. UNITED STATES OF AMERICA, http://www.justice.gov/osg/briefs/1998/0responses/98-0697.resp.opp.pdf)

2 On November 15, 1986, Keefe was delegated “the authority, with respect to actions valued at $50 million or less, to approve, execute, enter into, modify, administer, closeout, terminate and take any other necessary and appropriate action (collectively, ‘Actions’) with respect to Financial Incentive awards.” Pet. App. 68, 111-112. Citing DOE Order No. 5700.5 (Jan. 12, 1981), the delegation defines “Financial Incentives” as the authorized financial incentive programs of DOE, “including direct loans, loan guarantees, purchase agreements, price supports, guaranteed market agreements and any others which may evolve.” The delegation proceeds to state, “[h]owever, a separate prior written approval of any such action must be given by or concurred in by Keefe to accompany the action.” The delegation also states that its exercise “shall be governed by the rules and regulations of [DOE] and policies and procedures prescribed by the Secretary or his delegate(s).” Pet. App. 111-113.

## CP

### 2AC States CP

#### DoD already established its recommendations for SMR adoption

King 11 Marcus King, Ph.D., Center for Naval Analyses Project Director and Research Analyst for the Environment and Energy Team LaVar Huntzinger, Thoi Nguyen, March 2011, Feasibility of Nuclear Power on U.S. Military Installations, www.cna.org/sites/default/files/research/Nuclear Power on Military Installations D0023932 A5.pdf

Recognizing nuclear power as a potential benefit to Department of Defense (DoD) facilities, Congress directed the DoD, in section 2845 of the National Defense Authorization Act (NDAA) of 2010, to “conduct a study to assess the feasibility of developing nuclear power plants on military installations” [12]. Specifically, the study is to consider the following topics:¶ • Options for construction and operation¶ • Cost estimates and the potential for life-cycle cost savings¶ • Potential energy security advantages¶ • Additional infrastructure costs¶ • Effect on the quality of life of military personnel¶ • Regulatory, state, and local concerns¶ • Effect on operations on military installations¶ • Potential environmental liabilities¶ • Factors that may impact safe colocation of nuclear power plants on military installations¶ • Other factors that bear on the feasibility of developing nuclear power plants on military installations.¶ To meet this requirement, the office of the Deputy Under Secretary of Defense for Installations and Environment, DUSD(I&E), asked CNA to conduct this feasibility study. The CNA effort was directed by a steering group consisting of representatives from DUSD (I&E), each of the military departments, DOE, NRC, and DOE Labs. This report documents our analysis and findings.

#### And it recommended against being an early adopter—proves the CP can’t establish a bureaucratic consensus for the plan

King 11 Marcus King, Ph.D., Center for Naval Analyses Project Director and Research Analyst for the Environment and Energy Team LaVar Huntzinger, Thoi Nguyen, March 2011, Feasibility of Nuclear Power on U.S.Military Installations, www.cna.org/sites/default/files/research/Nuclear Power on Military Installations D0023932 A5.pdf

The most significant risk for SMR power plants is associated with being an early adoptor of new technology. From a DoD perspective, economic feasibility depends on negotiating arrangements for the project that ensure DoD is not responsible for FOAK expenses. Having contractor owners and operators would reduce operating risks associated with being an early adoptor. If partners can’t be found who are willing to bear the FOAK and early adoptor risks then DoD should not undertake such a project. The recent MOU between DOE and DoD identifies a framework for cooperation and partnership for sharing risks associated with this type of project.

#### Military bypasses and solves licensing lag

CSPO 10, Consortium for Science, Policy and Outcomes at ASU, “four policy principles for energy innovation & climate change: a synthesis”, June, <http://www.catf.us/resources/publications/files/Synthesis.pdf>

Government purchase of new technologies is a powerful way to accelerate innovation through increased demand (Principle 3a). We explore how this principle can be applied by considering how the DoD could purchase new nuclear reactor designs to meet electric power needs for DoD bases and operations. Small modular nuclear power reactors (SMRs), which generate less than 300 MW of power (as compared to more typical reactors built in the 1000 MW range) are often listed as a potentially transformative energy technology. While typical traditional large-scale nuclear power plants can cost five to eight billion dollars, smaller nuclear reactors could be developed at smaller scale, thus not presenting a “bet the company” financial risk. SMRs could potentially be mass manufactured as standardized modules and then delivered to sites, which could significantly reduce costs per unit of installed capacity as compared to today’s large scale conventional reactor designs. It is likely that some advanced reactors designs – including molten salt reactors and reactors utilizing thorium fuels – could be developed as SMRs. Each of these designs offers some combination of inherently safe operation, very little nuclear proliferation risk, relatively small nuclear waste management needs, very abundant domestic fuel resources, and high power densities – all of which are desirable attributes for significant expansion of nuclear energy. Currently, several corporations have been developing small nuclear reactors. Table 2 lists several of these companies and their reactor power capacities, as well as an indication of the other types of reactor innovations that are being incorporated into the designs. Some of these technologies depend on the well-established light water reactor, while others use higher energy neutrons, coolants capable of higher temperature operation, and other innovative approaches. Some of these companies, such as NuScale, intend to be able to connect as many as 24 different nuclear modules together to form one larger nuclear power plant. In addition to the different power ranges described in Table 2, these reactors vary greatly in size, some being only 3 to 6 feet on each side, while the NuScale reactor is 60 feet long and 14 feet in diameter. Further, many of these reactors produce significant amounts of high-temperature heat, which can be harnessed for process heating, gas turbine generators, and other operations. One major obstacle is to rapid commercialization and development are prolonged multi-year licensing times with the Nuclear Regulatory Commission. Currently, the NRC will not consider a reactor for licensing unless there is a power utility already prepared to purchase the device. Recent Senate legislation introduced by Senator Jeff Bingaman (D-NM) has pushed for DOE support in bringing down reactor costs and in helping to license and certify two reactor designs with the NRC. Some additional opportunities to facilitate the NRC licensing process for innovative small modular reactors would be to fund NRC to conduct participatory research to get ahead of potential license applications (this might require ~$100million/year) and potentially revise the current requirement that licensing fees cover nearly all NRC licensing review costs. One option for accelerating SMR development and commercialization, would be for DOD to establish SMR procurement specifications (to include cost) and agree to purchase a sufficient amount of SMR’s to underwrite private sector SMR development. Of note here may be that DARPA recently (3/30/10) issued a “Request for Information (RFI) on Deployable Reactor Technologies for Generating Power and Logistic Fuels”2 that specifies may features that would be highly desirable in an advanced commercial SMR. While other specifications including coproduction of mobility fuel are different than those of a commercial SMR power reactor, it is likely that a core reactor design meeting the DARPA inquiry specifications would be adaptable to commercial applications. While nuclear reactors purchased and used by DOD are potentially exempt from many NRC licensing requirements3, any reactor design resulting from a DOD procurement contract would need to proceed through NRC licensing before it could be commercially offered. Successful use of procured SMR’s for DOD purposes could provide the knowledge and operational experience needed to aid NRC licensing and it might be possible for the SMR contractor to begin licensing at some point in the SMR development process4. Potential purchase of small modular nuclear reactors would be a powerful but proven way in which government procurement of new energy technologies could encourage innovation. Public procurement of other renewable energy technologies could be similarly important.

#### New spending wrecks the California economy

Krol 12 Robert, Professor of economics at California State University Northridge and author of a forthcoming Cato Journal paper on state budget institutions, 2012, “California Needs a Spending Limit”, http://www.cato.org/publications/commentary/california-needs-spending-limit

California's budget is once again in the red. The governor signed a balanced budget in August of last year, but before the ink was dry, a slowing economy, the real estate bust and a spate of unplanned spending resulted in a significant budget crunch. The Legislative Analyst's Office now projects a deficit of about $10 billion over the next 18 months, and Gov. Schwarzenegger says the shortfall may be as high as $14 billion. To be sure, the slowing economy has reduced revenues, but excessive spending remains the root cause ofCalifornia's persistent financial troubles. The governor plans to declare a "fiscal emergency," requiring legislators in Sacramento to correct the deficit. The resulting legislation will likely include spending cuts, fee increases and borrowing. Details aside, Schwarzenegger must insist that any legislation contain an enforceable framework to help prevent future fiscal crises and allow for a voter referendum on a constitutional spending limit. The time is right**.** California's taxes are already high, so the solution is to control spending with a constitutional constraint limiting expenditure growth to inflation plus population growth. Schwarzenegger proposed a spending limit in 2005, but it was poorly designed, and voters had little incentive to support it. Now, the fiscal crunch is much worse. A new proposal should require legislators to get voter approval for any expenditures above the limit, and include a component allowing taxpayers to decide for themselves whether they want higher spending or a tax refund. Such a law would lessen the severity of budget shortfalls in economic downturns. Recent experience provides an example of how this would work. The state's revenues began to rise in the 2004-05 fiscal year. Since that time, pegging spending increases to inflation and population growth would have allowed spending to grow by 15 percent. Instead, expenditures increased by more than twice that much. If spending growth had been limited to 15 percent since 2004-05, we'd be facing a $7 billion surplus rather than a $2 billion deficit for the current fiscal year. Thirty states already have some form of a tax or government spending limit. Most of the limits link the growth of state expenditures to growth in personal income. California overwhelmingly passed a population growth plus inflation spending constraint in 1979, but it was amended by voters in 1990 to limit expenditure growth to increases in population plus growth in personal income. This more generous limit has never effectively constrained state spending. Linking spending growth to increases in population plus inflation is a more effective way to establish fiscal discipline in Sacramento. We know from other states that tax and spending limits can constrain the expansion of government. Research shows that the most effective limits are constitutional, written by voters and limit increases in spending rather than revenues. As an added bonus, financial markets reward states with expenditure limits by demanding lower interest rates on state borrowing. This offers significant savings over time. During economic booms, if revenues increase more than inflation plus population growth, the surplus should be refunded to taxpayers or used to shore up California's rainy-day fund. If state leaders wanted to spend some of the additional revenues, they should put their proposals up for a vote. California has little choice but to get its spending under control. Higher taxes are not an economically viable option. The Tax Foundation in Washington, D.C., ranks California 46th in its 2007 State Business Climate Rankings. Our neighboring states – Arizona, Nevada and Oregon – rank considerably better. Despite healthy revenue growth over the last few years, the California budget has been mismanaged. Schwarzenegger has been unable to make good on his pledge to reform Sacramento and get state lawmakers off of what he called "autopilot" spending. In the 2003 recall election, he ran as a budget reformer, promising he would "tear up the credit cards" and rein in runaway spending. He has failed to live up to his promises. A spending limit would give California some much-needed budget stability, and allow the governor to salvage his legacy. With a new fiscal mess brewing, it's time for him to try again.

#### California is key to the US economy

Williams 9 Juliet, writer for the Huffington Post, June 29, 2009, “California's Ailing Economy Could Prolong US Recession”, http://www.huffingtonpost.com/2009/06/29/californias-ailing-econom\_n\_222616.html

SACRAMENTO, Calif. — California faces a $24 billion budget shortfall, an eye-popping amount that dwarfs many states' entire annual spending plans. Beyond California's borders, why should anyone care that the home of Google and the Walt Disney Co. might stop paying its bills this week? Virtually all states are suffering in the recession, some worse than California. But none has the economic horsepower of the world's eighth-largest economy, home to one in eight Americans. California accounts for 12 percent of the nation's gross domestic product and the largest share of retail sales of any state. It also sends far more in tax revenue to the federal government than it receives giving a dollar for every 80 cents it gets back which means Californians are keeping social programs afloat across the country. While the deficit only affects the state, California's deepening economic malaise could make it harder for the entire nation's economy to recover. When the state stumbles, its sheer size 38.3 million people creates fallout for businesses from Texas to Michigan. "California is the key catalyst for U.S. retail sales, and if California falls further you will see the U.S. economy suffer significantly," said retail consultant Burt P. Flickinger, managing director of Strategic Resource Group. He warned of more bankruptcies of national retail chains and brand suppliers. Even if California lawmakers solve the deficit quickly, there will likely be more government furloughs and layoffs and tens of billions of dollars in spending cuts. That will ripple through the state economy, sowing fear of even more job losses.

## DA

### 2AC Immigration DA

#### **Won’t pass---both parties have incentives to prevent a deal**

Koons 2-1 – Andy Koons, writer for the Daily Iowan, February 1st, 2013, "Koons: Immigration reform not done" [www.dailyiowan.com/2013/02/01/Opinions/31576.html](http://www.dailyiowan.com/2013/02/01/Opinions/31576.html)

Immigration reform is not a done deal, though it should be. America’s immigration system has been a travesty for decades. Despite being a nation of immigrants, needing workers to fill unpopular jobs and needing to remain competitive in a global economy in which education and knowledge are paramount, we haven’t found it in ourselves to move to a more fair pro-economic growth immigration system.¶ Why has it been so difficult? **Powerful forces stand against fixing immigration. Democrats benefit from Latinos refusing to vote for anti-reform Republicans, businesses appreciate low cost under-the-table labor and the conservative base treasures American citizenship and is loath to give it to what they consider “lawbreakers.”**¶ I am concerned that current reform efforts will not be successful because those forces are still present. Reform is being considered now because of a single change in dynamics. National Republican leaders are stinging from Obama’s substantial re-election victory and know that they have a diminishing chance of winning future national elections unless the growing Latino vote is put in play.¶ The Latino vote will never be attainable by the right as long as national Republican nominees are pressured to position themselves against immigration reform. Is that realization by Republican leaders enough to pass reform? The conservative base is very skeptical about reform proposals — will they include enough border protection, be too lenient on undocumented immigrants, contain left-leaning provisions such as allowing foreign same-sex couples a pathway to citizenship — and don’t want to hand Obama another historic win.¶ And make no mistake: Obama will be given credit if immigration reform passes. A big win this early in his second term will strengthen the wind already at his back from his election. Obamacare passed after almost two years of work and sucked the president dry of electoral goodwill. If Republicans don’t use immigration to sap Obama’s political capital, Obama will have enough remaining momentum to take on climate change before the midterms.¶ Don’t discount the intelligence of Republican strategists either — they know that there is a real possibility that the Latino vote may never join the Republican big tent even after reforming immigration. That vote may be religious, generally, but they are also composed of a great deal of low-income workers who may feel more at home with Democrats and be against changing safety-net policies.¶ Republican **House members come from solidly conservative districts in which the only** re-election threats are challenges by people more extreme than themselves**.** Will those members risk their seats **to give party leaders a chance to win the presidency in four years? House Speaker John Boehner hasn’t had much luck leading his members so far.**¶ If we could stop politicking for a moment and let the right thing happen, immigration reform would pass — but **politics never ends**. The best that can be hoped is that the political balance has shifted enough after Obama’s re-election that Republican leaders feel vulnerable without reform and that Republican House members are receptive. I’m afraid that may be asking a lot.

#### Obama’s strategy is to make sure immigration doesn’t pass

Munro 12-31 – Neil Munro, reporter for the Daily Caller, December 31st, 2012, "Obama promises new immigration plan but keeps endgame close to his vest" dailycaller.com/2012/12/31/obama-promises-new-immigration-plan-but-keeps-endgame-close-to-his-vest/?print=1

President Barack Obama promised Dec. 30 to introduce an immigration bill during 2013, but activists on all sides of the debate are trying to understand his strategy.¶ **He may be gunning for a victory in the mid-term elections by introducing** a bill so radical that it will **spark an emotional controversy from whites**, which would then **spur many angry Latino**s to vote Democratic in the 2014 midterm elections, said Robert de Posada, former head of a GOP-affiliated group, The Latino Coalition.¶ **“The word that I’ve heard from many, is [that** he will] submit a very, very liberal plan that most Republicans will not support, that most southern and moderate Democrats will not support**,”** he said.¶ When the bill fails**, “they can announce once again that they tried [and that Latinos] need to rally in the next election**,” said Posada, who helped President George W. Bush win 40 percent of the Latino vote in 2004, during the housing boom.

#### **Gun control and debt sap PC**

Cillizza 2-6 Chris, writer for the Washington Post, 2013, "President Obama is enjoying a second political honeymoon. But how long will it last?" [www.washingtonpost.com/blogs/the-fix/wp/2013/02/06/president-obama-is-enjoying-a-second-political-honeymoon-but-how-long-will-it-last/](http://www.washingtonpost.com/blogs/the-fix/wp/2013/02/06/president-obama-is-enjoying-a-second-political-honeymoon-but-how-long-will-it-last/)

Regardless of the reason, it’s clear that Obama has a limited time — six months perhaps? — to take legislative advantage of his second political honeymoon.¶ He seems committed to taking on three separate and distinct fights during that time: 1) gun control 2) immigration reform 3) debt and spending. **Each of those legislative scraps will shorten his honeymoon as he** expends political capital to try to get what he wants out of a Congress — particularly in the House — that seems likely to be resistant.¶ And, it’s possible — given the glacially slow pace at which Congress works and the aforementioned partisanship that seems to seize any and every issue — that Obama’s honeymoon will fade well before he gets all three of those priorities accomplished.¶ A look back at **the trend line on his job approval in his first term is telling in that regard**.¶ 2013-02-06 Obama honeymoon 1Even though Obama started off considerably higher in his first term than he began his second term, by August 2009 he had dropped to 54 percent approval in WaPo-ABC polling — thanks to the bailout of the American auto industry, the fight over the economic stimulus package and the earlier positioning over his health-care bill.¶ Considering that Obama is — at best — in the mid-50s in terms of job approval at the moment and the fact that the past showdowns on fiscal issues have revealed the massively different approaches advocated by the two parties, it’s not at all far fetched to assume that taking on just one of those fights might be enough to end **the president’s second term honeymoon.**

#### **Nominations**

Thurlow 2-5 – Tom Thurlow, writer for Red State, February 5th, 2013, "Obama’s Political Capital" www.redstate.com/tfthurlow/2013/02/05/obamas-political-capital/

President Obama blows through his own political capital just as fast as he blows through America’s financial capital. Neither case of over-spending is sustainable, and we will just have to wait to see which spending spree is forced to end first.¶ But this further confirms my suspicion that President Obama’s brains are the most over-rated to occupy the Oval Office in generations. Take **his recent** nominations, which are a mess.¶ Last week’s Senate **hearings on Senator Hagel’s** confirmation as defense secretary were a disaster. Senator McCain pressed Senator Hagel to confirm or deny Hagel’s earlier statement that the Surge in Iraq was “the greatest foreign policy blunder since the Vietnam War.” Senator Ted Cruz pointed out that Senator Hegal, during an interview with the Al Jazeera English network in 2009 had agreed with a questioner who said that the United States appeared and acted like the world’s bully. As Paul Mirengoff at the Powerline Blog wrote, “if he were a Broadway play, Hagel would close after one performance.”¶ There were also a number of past anti-Semitic, or at least anti-Israel statements about which Senator Hagel was questioned. About the only thing about the hearing that was reassuring to those who take national defense seriously was that Hagel bumbled so much he sounded like he may have dementia. Let’s face it, a demented defense secretary may not be as bad as an anti-American defense secretary who is purposefully soft on defense and unconcerned about looming problems with Iran’s nuclear program.¶ Senator Lindsey Graham has threatened a hold on the Hagel nomination, and he should. Not only is a defense secretary an important policy position, but as has been pointed out by Republican critics that in any given foreign crisis, the defense secretary will be one of the few advisors in the room, advising the president.¶ Next up: **a nomination battle for a Treasury secretary nominee, Jacob Lew**, who has never worked in a bank except as an attorney for Citibank, and has held many different government jobs, most recently President Obama’s chief of staff. Definitely a financial industry lightweight. Lew has also been accused of misleading the public on deficits. About the only thing that stands out about Jacob Lew as Treasury secretary is the fact that his signature — which will appear on all of our currency – looks like a bunch of circles. Oddly enough, it doesn’t appear as if Lew has had any medical training.¶ After that, brace yourself for President Obama’s **nominee for director of the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), Todd Jones**. Jones is the current acting director of ATF and has been criticized by a local Democratic FBI office director as being politically well-connected but incompetent and soft on gun and violent crime prosecutions.¶ Past presidents have had difficult times in their second terms, but the difficulty is usually with big proposals. President George W. Bush unsuccessfully tried to pass privatization of Social Security and immigration reform in his second term. President Reagan spent his second term solidifying his victory in the Cold War and simplified the tax code, lowering the top marginal tax rate to 28%. Meanwhile, President Obama is trying to get Charles Hagel approved as defense secretary, Jacob Lew at Treasury secretary, and Todd Jones as ATF director, not grand plans by any means.¶ President Obama may get these nominees approved by a majority of senators. But the question is: why is he fighting these particular battles? He could have easily found better qualified nominees for these positions and fought bigger battles on some substantive legislative proposals. Why spend what remaining political capital he has on these problematic appointments? I have a theory, and here goes.

#### Agency action doesn’t trade off with immigration, and pounds the disad

Amy Harder 2-6, Energy and Environment Correspondent, National Journal, 2/6/13, “In Washington, Energy and Climate Issues Get Shoved in the Closet,” http://www.nationaljournal.com/columns/power-play/in-washington-energy-and-climate-issues-get-shoved-in-the-closet-20130206

While Obama maneuvers for a big legislative win on immigration, he’s moving on a parallel track toward another win on climate change through Environmental Protection Agency rules controlling greenhouse-gas emissions, which don’t require congressional approval. Fresh off a strong reelection victory, Obama has more freedom to move unilaterally with EPA.¶ “He doesn't have to expend political capital or ask Democrats to extend their necks on this issue,” said Kevin Book, an energy analyst at the Washington-based consulting firm ClearView Energy Partners. “He already won. He can control the issue and move as fast or slow as he wants.”¶ The EPA action will only further polarize efforts, such as those by Murkowski on the Senate Energy panel, to move through Congress smaller bits of energy and environmental policy.

#### Nukes cuts

R. Jeffrey Smith 2-8, News Observer, “Obama administration embraces major new cut in nuclear weapons”, http://www.newsobserver.com/2013/02/08/2661969/obama-administration-embraces.html

WASHINGTON — Senior Obama administration officials have agreed that the number of nuclear warheads the U.S. military deploys could be cut by at least a third without harming national security, according to those involved in the deliberations.¶ Such a reduction would open the door to billions of dollars in military savings, which might ease the federal budget deficit. It also would improve prospects for a new arms deal with Russia before President Barack Obama leaves office, those involved said, but it’s likely to draw fire from conservatives, if previous debate on the issue is any guide.¶ The results of the internal review haven’t been announced, but they’re reflected in a proposed classified directive prepared for Obama’s signature that details how U.S. nuclear weapons should be targeted against potential foes, according to four people with direct knowledge of the document’s content. The sources, who spoke only on the condition of anonymity because they weren’t authorized to talk to a reporter about the review, described the president as fully on board, but said he hasn’t signed the document.¶ The document directs the first detailed Pentagon revisions in U.S. targeting since 2009, when the military’s nuclear war planners last took account for the substantial shrinkage – roughly by half from 2000 to 2008 – in the number of nuclear weapons in the American arsenal. It makes clear that an even smaller nuclear force can still meet all defense requirements.¶ The officials said Obama’s advisers had reached their consensus position last year, after a review that included the State Department, the Defense Department, the National Security Council, the intelligence community, the U.S. Strategic Command, the Joint Chiefs of Staff and the office of Vice President Joe Biden.¶ Participants said the results weren’t disclosed at the time, partly because of concerns that any resulting controversy might affect Obama’s re-election hopes. Some Republican lawmakers have said they oppose cutting the arsenal out of concern that it might diminish America’s standing in the world.¶ Under the new policy, the U.S. would target fewer, but more important, military or political sites in Russia, China and several other countries.¶ Obama first adopted a policy to reduce the role of nuclear weapons in 2010, explaining in a Defense Department report that they’re “poorly suited to address the challenges posed by suicidal terrorists and unfriendly regimes seeking nuclear weapons.”¶ Much of the policy has yet to be implemented, but with the election behind him and a new national security team selected, Obama finally is prepared to send this new guidance to the Joint Chiefs of Staff and to open a new dialogue with Russia about corresponding reductions in deployed weapons, according to two senior U.S. officials involved in the deliberations.¶ One of the officials said the review’s conclusions very likely would become public in coming weeks, possibly during the president’s State of the Union address Tuesday night or in a speech this spring dedicated to the subject.¶ While the draft directive opens the door to scrapping a substantial portion of the U.S. arsenal, it doesn’t order those reductions immediately or suggest that they be undertaken unilaterally, the officials said. Instead, the administration hopes to negotiate an addendum to the 2010 New START treaty with Russia in the form of a legally binding agreement or an informal understanding. Officials said the latter path might be chosen if gaining the assent of two-thirds of the Senate to a treaty weren’t possible.¶ Preliminary discussions about such an addendum occurred Feb. 2 in Munich between Vice President Biden and Russian Foreign Minister Sergey Lavrov. Additional talks are expected later this month, when acting Undersecretary of State Rose Gottemoeller and White House national security adviser Thomas Donilon visit Moscow.¶ National Security Council spokesman Tommy Vietor declined to comment Wednesday on the draft directive.¶ The New START treaty limits each side to deploying no more than 1,550 strategic nuclear weapons by 2018, but it uses a counting rule that pretends strategic bombers carry only a single warhead each, instead of up to 20. The actual arsenals after the treaty takes effect are likely to be closer to 1,900, a number that Obama’s advisers now think is too high.¶ New START also imposes no limits on nuclear weapons in each country that are held in storage or are considered of “tactical” or short-range use, a number that independent experts estimate as roughly 2,700 in the United States and 2,680 in Russia. Under the new deal envisioned by the administration, Russia and the United States would agree not only to cut deployed warhead levels below 1,550 – to between 1,000 and 1,100 – but also, for the first time, to begin limiting the number of tactical weapons as well.¶ Several officials said that as a result, the total number of U.S. nuclear warheads could shrink to fewer than 3,500 and perhaps as low as 2,500, or a bit more than half the present arsenal, without harming security or requiring a major reconfiguration of missiles or bombers.

#### HARP

The Street 2-8, “Obama Makes Renewed Push for Lower Rates on Refinancing”, http://www.thestreet.com/story/11836863/1/obama-makes-renewed-push-for-lower-rates-on-refinancing.html

The Obama administration is exploring plans to allow more borrowers to refinance at lower [rates](http://www.thestreet.com/story/11836863/1/obama-makes-renewed-push-for-lower-rates-on-refinancing.html). Any measure would face stiff opposition in Congress.¶ Senators Bob Menendez (D, N.J.) and Barbara Boxer (D, Calif.) reintroduced legislation Thursday aimed at removing barriers that prevent borrowers with government-backed loans from getting the lowest possible interest rates.¶ The Responsible Homeowners Act of 2013 would improve upon the government's current Home Affordable Refinance Program (HARP) by eliminating appraisal costs, reducing upfront fees on refinances, ensuring consistent standards for all lenders and providing equal access to refinancing options to all borrowers, the senators said.¶ The legislation was introduced last year but failed to win Congressional approval.¶ "We need to bring much-needed relief now to hard-working, responsible homeowners who are struggling to keep up with their high interest-rate loans -- including thousands in New Jersey whom I have heard from," Menendez said in a release. "We need to do this before interest rates go up again. It's time that Congress finally put families first and give homeowners who have played by the rules a fair chance to refinance at today's low rates."¶ The administration's current HARP program allows borrowers with loans backed by Fannie Mae and Freddie Mac to refinance at lower rates even if they owe more than what their mortgages are worth, so long as they are current on their payments.¶ The program, which was expanded in October 2011, has helped 1.8 million borrowers and boosted the refinancing [business](http://www.thestreet.com/story/11836863/1/obama-makes-renewed-push-for-lower-rates-on-refinancing.html) for banks including Wells Fargo ([WFC\_](http://www.thestreet.com/quote/WFC.html)), JPMorgan Chase([JPM\_](http://www.thestreet.com/quote/JPM.html)) and U.S. Bancorp ([USB\_](http://www.thestreet.com/quote/USB.html)).¶ But borrowers have still not fully benefited from rock-bottom interest rates because the program currently is structured in a way that limits competition among lenders.¶ Under HARP, a bank that wants to compete with the current lender for business has to go through tougher underwriting criteria and faces greater risk that Fannie Mae or Freddie Mac would force them to repurchase loans should the borrower default.¶ As a result, the borrower finds he can often get his loan refinanced only with his current lender and is not able to shop around for a better [rate](http://www.thestreet.com/story/11836863/1/obama-makes-renewed-push-for-lower-rates-on-refinancing.html). That allows lenders to charge higher rates.¶ The senators cited a recent study by Amherst Securities Group that found HARP borrowers are paying more than half a percentage point more than borrowers with other types of loans.¶ The new bill directs the housing-finance agencies to require the same underwriting standards for new servicers as they do for existing ones, leveling the playing field.¶ HARP also makes distinctions between borrowers with more [equity](http://www.thestreet.com/story/11836863/2/obama-makes-renewed-push-for-lower-rates-on-refinancing.html) in their homes and those who are underwater. GSE borrowers who have more than 20% equity in their homes are not eligible for HARP refinancing. The bill seeks to ensure that all GSE borrowers, regardless of the equity in their homes, have the same access to low-cost refinancing options.¶ The GSEs also lowered upfront refinance fees for those with less than 20% equity in their homes. That creates an "economically indefensible situation in which borrowers with significant equity in their homes could face steeper costs in refinancing than borrowers with no equity whatsoever. So borrowers who pose less risk to the GSEs are in fact paying a higher risk premium," the senators said. The bill will prohibit GSEs from charging upfront fees for loans they have already guaranteed.¶ The bill will also eliminate appraisal costs and waive employment and income verification requirements to further ease the process.¶ It also intends to expand HARP, which expires at the end of 2013, by another year.¶ The senators said the bill has broad support, including that of the Mortgage Bankers Association.¶ It remains to be seen, however, if the bill will win Congressional approval this time.¶ According to KBW analyst Brian Gardner, the chances of the bill passing in the Republican-controlled House are "quite low."¶ Gardner says the improvements in the housing market "reduces political pressure on Congress to act."¶ Next week, President Obama is expected to renew his push for a broader refinancing program in his State of the Union address.¶ Last year, Obama proposed allowing [borrowers with private mortgages who were underwater but current on their payments to refinance](http://www.thestreet.com/story/11395043/1/obama-offers-mortgage-rescue-for-responsible-borrowers.html) at lower rates through the FHA.¶ But the plan never saw the light of day, with Republicans strongly opposed to the idea of [funding](http://www.thestreet.com/story/11836863/2/obama-makes-renewed-push-for-lower-rates-on-refinancing.html)the program through a "bank tax."¶ Now with the [FHA in deep financial trouble](http://www.thestreet.com/story/11829785/1/mortgage-insurer-is-one-recession-away-from-bailout-critic-says.html), analysts believe the chances of winning approval is even slimmer.¶ The Wall Street Journal recently [reported](http://online.wsj.com/article/SB10001424127887323291704578199832047537030.html) that the Treasury might push a plan to allow Fannie Mae and Freddie Mac to purchase loans from private investors who face an imminent risk of default and allow them to refinance. The agencies would be allowed to charge a higher rate to compensate for the risk of the loan, but some fear that it would increase the risks to taxpayers.

#### Executive military action shields

Davenport 12 Coral, energy and environment correspondent for National Journal, Prior to joining National Journal in 2010, Davenport covered energy and environment for Politico, and before that, for Congressional Quarterly. In 2010, she was a fellow with the Metcalf Institute for Marine and Environmental Reporting. From 2001 to 2004, Davenport worked in Athens, Greece, as a correspondent for numerous publications, including the Christian Science Monitor and USA Today, covering politics, economics, international relations and terrorism in southeastern Europe. She also covered the 2004 Olympic Games in Athens, and was a contributing writer to the Fodor’s, Time Out, Eyewitness and Funseekers’ guidebook series. Davenport started her journalism career at the Daily Hampshire Gazette in Northampton, Massachusetts, after graduating from Smith College with a degree in English literature. National Journal, 2/10, White House Budget to Expand Clean-Energy Programs Through Pentagon, ProQuest

The White House believes it has figured out how to get more money for clean-energy programs touted by President Obama without having it become political roadkill in the wake of the Solyndra controversy: **Put it in the Pentagon**. While details are thin on the ground, lawmakers who work on both energy- and defense-spending policy believe the fiscal 2013 budget request to be delivered to Congress on Monday probably won't include big increases for wind and solar power through the Energy Department, a major target for Republicans since solar-panel maker Solyndra defaulted last year on a $535 million loan guarantee. But they do expect to see increases in spending on alternative energy in the Defense Department, such as programs to replace traditional jet fuel with biofuels, supply troops on the front lines with solar-powered electronic equipment, build hybrid-engine tanks and aircraft carriers, and increase renewable-energy use on military bases. While Republicans will instantly shoot down requests for fresh spending on Energy Department programs that could be likened to the one that funded Solyndra, many support alternative-energy programs for the military. "I do expect to see the spending," said Rep. Jack Kingston, R-Ga., a member of the House Defense Appropriations Subcommittee, when asked about increased investment in alternative-energy programs at the Pentagon. "I think in the past three to five years this has been going on, but that it has grown as a culture and a practice - and it's a good thing." "If Israel attacks Iran, and we have to go to war - and the Straits of Hormuz are closed for a week or a month and the price of fuel is going to be high," Kingston said, "the question is, in the military, what do you replace it with? It's not something you just do for the ozone. It's strategic." Sen. Lindsey Graham, R-S.C., who sits on both the Senate Armed Services Committee and the Defense Appropriations Subcommittee, said, "I don't see what they're doing in DOD as being Solyndra." "We're not talking about putting $500 million into a goofy idea," Graham told National Journal . "We're talking about taking applications of technologies that work and expanding them. I wouldn't be for DOD having a bunch of money to play around with renewable technologies that have no hope. But from what I understand, there are renewables out there that already work." A senior House Democrat noted that this wouldn't be the first time that the **Pentagon has been utilized to advance policies that wouldn't otherwise be supported**. "They did it in the '90s with medical research," said Rep. Henry Waxman, D-Calif., ranking member of the House Energy and Commerce Committee. In 1993, when funding was frozen for breast-cancer research programs in the National Institutes of Health, Congress boosted the Pentagon's budget for breast-cancer research - to more than double that of the health agency's funding in that area. **Politically, the strategy makes sense**. Republicans are ready to fire at the first sign of any pet Obama program, and renewable programs at the Energy Department are an exceptionally ripe target. That's because of Solyndra, but also because, in the last two years, the Energy Department received a massive $40 billion infusion in funding for clean-energy programs from the stimulus law, a signature Obama policy. When that money runs out this year, a request for more on top of it would be met with flat-out derision from most congressional Republicans. Increasing renewable-energy initiatives at the Pentagon can also help Obama advance his broader, national goals for transitioning the U.S. economy from fossil fuels to alternative sources. As the largest industrial consumer of energy in the world, the U.S. military can have a significant impact on energy markets - if it demands significant amounts of energy from alternative sources, it could help scale up production and ramp down prices for clean energy on the commercial market. Obama acknowledged those impacts in a speech last month at the Buckley Air Force Base in Colorado. "The Navy is going to purchase enough clean-energy capacity to power a quarter of a million homes a year. And it won't cost taxpayers a dime," Obama said. "What does it mean? It means that the world's largest consumer of energy - the Department of Defense - is making one of the largest commitments to clean energy in history," the president added. "That will grow this market, it will strengthen our energy security." Experts also hope that Pentagon engagement in clean-energy technology could help yield breakthroughs with commercial applications. Kingston acknowledged that the upfront costs for alternative fuels are higher than for conventional oil and gasoline. For example, the Air Force has pursued contracts to purchase biofuels made from algae and camelina, a grass-like plant, but those fuels can cost up to $150 a barrel, compared to oil, which is lately going for around $100 a barrel. Fuel-efficient hybrid tanks can cost $1 million more than conventional tanks - although in the long run they can help lessen the military's oil dependence, Kingston said Republicans recognize that the up-front cost can yield a payoff later. "It wouldn't be dead on arrival. But we'd need to see a two- to three-year payoff on the investment," Kingston said. Military officials - particularly Navy Secretary Ray Mabus, who has made alternative energy a cornerstone of his tenure - have been telling Congress for years that the military's dependence on fossil fuels puts the troops - and the nation's security - at risk. Mabus has focused on meeting an ambitious mandate from a 2007 law to supply 25 percent of the military's electricity from renewable power sources by 2025. (Obama has tried and failed to pass a similar national mandate.) Last June, the DOD rolled out its first department-wide energy policy to coalesce alternative and energy-efficient initiatives across the military services. In January, the department announced that a study of military installations in the western United States found four California desert bases suitable to produce enough solar energy - 7,000 megawatts - to match seven nuclear power plants. And so far, those **moves have met with approval from congressional Republicans**. Even so, any request for new Pentagon spending will be met with greater scrutiny this year. The Pentagon's budget is already under a microscope, due to $500 billion in automatic cuts to defense spending slated to take effect in 2013. But even with those challenges, clean-energy spending probably won't stand out as much in the military budget as it would in the Energy Department budget. Despite its name, the Energy Department has traditionally had little to do with energy policy - its chief portfolio is maintaining the nation's nuclear weapons arsenal. Without the stimulus money, last year only $1.9 billion of Energy's $32 billion budget went to clean-energy programs. A spending increase of just $1 billion would make a big difference in the agency's bottom line. But it would probably be easier to tuck another $1 billion or $2 billion on clean-energy spending into the Pentagon's $518 billion budget. Last year, the Pentagon spent about $1 billion on renewable energy and energy-efficiency programs across its departments.

#### SMRs are popular

Nelson and Northey 12 Gabriel and Northey, energy and environment reports for Greenwire, “DOE funding for small reactors languishes as parties clash on debt,” <http://www.eenews.net/public/Greenwire/2012/09/24/3>

It's not just wind and solar projects that are waiting for federal help as Congress duels over the importance of putting taxpayer dollars on the line for cutting-edge energy projects. Some of the nation's largest nuclear power companies are anxious to hear whether they will get a share of a $452 million pot from the Department of Energy for a new breed of reactors that the industry has labeled as a way to lessen the safety risks and construction costs of new nuclear power plants. The grant program for these "small modular reactors," which was announced in January, would mark the official start of a major U.S. foray into the technology even as rising construction costs -- especially when compared to natural-gas-burning plants -- cause many power companies to shy away from nuclear plants. DOE received four bids before the May 21 deadline from veteran reactor designers Westinghouse Electric Co. and Babcock & Wilcox Co., as well as relative newcomers Holtec International Inc. and NuScale Power LLC. Now the summer has ended with no announcement from DOE, even though the agency said it would name the winners two months ago. As the self-imposed deadline passed, companies started hearing murmurs that a decision could come in September, or perhaps at the end of the year. To observers within the industry, it seems that election-year calculations may have sidelined the contest. "The rumors are a'flying," said Paul Genoa, director of policy development at the Nuclear Energy Institute, in an interview last week. "All we can imagine is that this is now caught up in politics, and the campaign has to decide whether these things are good for them to announce, and how." Small modular reactors do not seem to be lacking in political support. The nuclear lobby has historically courted both Democrats and Republicans and still sees itself as being in a strong position with key appropriators on both sides of the aisle. Likewise, top energy officials in the Obama administration have hailed the promise of the new reactors, and they haven't shown any signs of a change of heart. DOE spokeswoman Jen Stutsman said last week that the department is still reviewing applications, but she did not say when a decision will be made.

#### PC’s not key to immigration

Hirsh 2/7 Michael, chief correspondent for National Journal, previously served as the senior editor and national economics correspondent for Newsweek, has appeared many times as a commentator on Fox News, CNN, MSNBC, and National Public Radio, has written for the Associated Press, The New York Times, The Washington Post, Foreign Affairs, Harper’s, and Washington Monthly, and authored two books, "There's No Such Thing as Political Capital", 2013, [www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207](http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)

Meanwhile, the Republican members of the Senate’s so-called Gang of Eight are pushing hard for a new spirit of compromise on immigration reform, a sharp change after an election year in which the GOP standard-bearer declared he would make life so miserable for the 11 million illegal immigrants in the U.S. that they would “self-deport.” But this turnaround has very little to do with Obama’s personal influence—his political mandate, as it were. It has almost entirely to do with just two numbers: 71 and 27. That’s 71 percent for Obama, 27 percent for Mitt Romney, the breakdown of the Hispanic vote in the 2012 presidential election. Obama drove home his advantage by giving a speech on immigration reform on Jan. 29 at a Hispanic-dominated high school in Nevada, a swing state he won by a surprising 8 percentage points in November. But the movement on immigration has mainly come out of the Republican Party’s recent introspection, and the realization by its more thoughtful members, such as Sen. Marco Rubio of Florida and Gov. Bobby Jindal of Louisiana, that without such a shift the party may be facing demographic death in a country where the 2010 census showed, for the first time, that white births have fallen into the minority. It’s got nothing to do with Obama’s political capital or, indeed, Obama at all.

#### Rubio loves nuclear power

Luimbe 12 November 20, "Rubio wants more nuclear energy, doesn't believe in radiocarbon dating", www.luimbe.com/blog/2012/11/20/rubio-wants-more-nuclear-energy-doesnt-believe-in-radio-carbon-dating/

Rubio on nuclear energy:¶ I support a comprehensive energy plan that encourages nuclear energy, exploration in the Arctic National Wildlife Refuge and environmentally safe leasing of oil and natural gas fields in the outer continental shelf and on federally owned lands with oil shale in the West. As senator, I will stand for policies that make us more energy efficient, less reliant on foreign sources of oil, create jobs and ease the burden on family budgets.¶ source: Marco Rubio on Energy & Oil.

#### Rubio’s key to immigration

Drucker and Trygstad 1/30 David M and Kyle, "Rubio Must Sell Immigration Changes to GOP, Grass Roots", 2013, www.rollcall.com/news/rubio\_must\_sell\_immigration\_changes\_to\_gop\_grass\_roots-222044-1.html?pos=hftxt

The fate of an immigration overhaul rests almost exclusively with Sen. Marco Rubio, the Florida Republican whose star power with conservatives is crucial to moving a bill through Congress.¶ President Barack Obama retains veto power, and Democrats hold the Senate floor. But no comprehensive immigration changes are likely to pass Congress without the healthy support of House Republicans. And Florida’s junior senator, perhaps more than any other Republican serving in Washington today, has the political credibility and communication skills to sell such complicated, sensitive legislation to skeptical conservative members, grass-roots voters and influential media commentators.¶ Rubio’s position is all the more unique because congressional Democrats and Obama need him, too, and appear to realize his importance to the legislative endgame.¶ Republicans warn that Obama and congressional Democrats could sink Washington’s immigration policy rewrite by attaching controversial social provisions or watering down the border enforcement and security measures included in the bipartisan Senate framework that Rubio helped negotiate. The Florida lawmaker has said he’ll pull his support from any bill if that occurs, and Republicans say comprehensive policy changes will fail to garner meaningful GOP support without Rubio’s backing.¶ “If Rubio signals any mistrust or misgivings, the whole thing collapses,” GOP pollster Brock McCleary said.

#### Winner’s win

Hirsh 2/7 Michael, chief correspondent for National Journal; citing Ornstein, a political scientist and scholar at the American Enterprise Institute and Bensel, gov’t prof at Cornell, "There's No Such Thing as Political Capital", 2013, [www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207](http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)

But the abrupt emergence of the immigration and gun-control issues illustrates how suddenly shifts in mood can occur and how political interests can align in new ways just as suddenly. Indeed, the pseudo-concept of political capital masks a larger truth about Washington that is kindergarten simple: You just don’t know what you can do until you try. Or as Ornstein himself once wrote years ago, “Winning wins.” In theory, and in practice, depending on Obama’s handling of any particular issue, even in a polarized time, he could still deliver on a lot of his second-term goals, depending on his skill and the breaks. Unforeseen catalysts can appear, like Newtown. Epiphanies can dawn, such as when many Republican Party leaders suddenly woke up in panic to the huge disparity in the Hispanic vote.¶ Some political scientists who study the elusive calculus of how to pass legislation and run successful presidencies say that political capital is, at best, an empty concept, and that almost nothing in the academic literature successfully quantifies or even defines it. “It can refer to a very abstract thing, like a president’s popularity, but there’s no mechanism there. That makes it kind of useless,” says Richard Bensel, a government professor at Cornell University. Even Ornstein concedes that the calculus is far more complex than the term suggests. Winning on one issue often changes the calculation for the next issue; there is never any known amount of capital. “The idea here is, if an issue comes up where the conventional wisdom is that president is not going to get what he wants, and he gets it, then each time that happens, it changes the calculus of the other actors” Ornstein says. “If they think he’s going to win, they may change positions to get on the winning side. It’s a bandwagon effect.”

#### Comprehensive reform fails – if it passes it has too many compromises that prevent solvency

Morrison 12 – Bruce Morrison, a former U.S. Representative from Connecticut, was the chairman of the House immigration subcommittee and the author of the Immigration Act of 1990. December 9th, 2012, "One Bill of Compromises Isn’t the Answer” www.nytimes.com/roomfordebate/2012/12/09/understanding-immigration-reform/one-immigration-bill-of-compromises-isnt-the-answer

To many, “comprehensive immigration reform” means “fix it and forget it.” But doing it all in one bill reprises what got us in the current mess in the first place. After major reform bills in 1986 and 1990, the failing employment verification scheme and the clogged green card process were allowed to go unattended. The “enforcement only” 1996 law only froze the mess in place.¶ Save the 'punishment' for those that do not comply with a system that works, not those ensnared in the current system that does not.¶ **A huge compromise of all competing immigration fixes larded into one bill will involve compromises that do not serve the nation’s interests.** Instead we need to assemble the votes to do the two things that must be done — a broad earned legalization program for the 11 million now illegally resident in the country in conjunction with the assurance that this problem will not happen again. That assurance will come from a universal, electronic, identity-authenticating screening of all workers to ensure that they are authorized to work in the U.S.¶ Because almost all who make unauthorized entries and overstays do so to seek and accept employment, no other tool will get the result we need to make legalization politically and philosophically justified — that we have fixed the source of the problem. And this also means using the employment relationship to roll-in legalization while rolling out universal verification.¶ The key point is that prevention of illegal presence is the goal. Save the “punishment” for those that do not comply with a system that works, not those ensnared in the current system that does not.¶ Our legal immigration system needs lots of fixing, like the increase of STEM green cards passed by the House last week and much more. But these fixes, including all future flows beyond the current one million annual immigrants and the millions who will be legalized, will get much easier to negotiate when the legalization-prevention barrier is removed.

#### XO solves

Nakamura 1-6 – David Nakamura and Tara Bahrampour, January 6th, 2013 "Obama using authority for immigrant issues," Washington Post, [www.journalgazette.net/article/20130106/NEWS03/301069950/1066/NEWS03](http://www.journalgazette.net/article/20130106/NEWS03/301069950/1066/NEWS03)

WASHINGTON - The Obama administration’s decision this week to ease visa requirements for hundreds of thousands of illegal immigrants represents its latest move to reshape immigration through executive action, even as the White House gears up for an uncertain political fight over a far-more-sweeping legislative package in the months ahead.¶ Immigration advocates on Thursday hailed a rule change at the Department of Homeland Security that would make it easier for many undocumented immigrants to stay in the United States as they seek permanent residency, saying it will improve the lives of relatives who could have been separated for years without the changes.¶ For President Obama – who has called the inability to achieve comprehensive immigration reform among the biggest regrets of his first term – the new policy is among a series of steps his administration has taken over the past year aimed in part at easing the pace of deportations, which have surged during his tenure. The steps also came amid a presidential campaign that included sharp disagreements over immigration policy and strong support among Latinos and Asians for Obama.¶ The centerpiece was Obama’s decision, announced last June, to stop deporting people who were brought to the country as children and have gone on to be productive and otherwise law-abiding residents.¶ “He is checking off every administrative box he can of what he can do with executive authority that comports with his overall view of immigration policy,” said Angela Kelley, an analyst at the Center for American Progress, a liberal think tank allied with the White House.¶ The latest policy change is focused on illegal immigrants who have a spouse, parent or child with U.S. citizenship. Currently, in order to become legal they must leave the United States and apply for a waiver forgiving their unlawful presence in the country. Only then can they apply for an immigrant visa. And if they don’t get a waiver, they are barred from returning to the United States for up to 10 years, depending on the case.¶ The specter of being barred deterred many from applying. But under the rule change finalized Wednesday, those who qualify will be able to apply for waivers from within the United States starting March 4. Applicants must return to their native country for a brief period for the consular immigrant visa process.¶ The new rule greatly reduces the risk inherent in applying for a waiver, as people whose applications are rejected would still be in the United States when they heard the news. Even for those whose applications are approved, the new rule will allow them to spend much less time outside the United States, as they will travel abroad with waivers in hand.

#### Loss of PC still results in high-skill reform

Yglesias 1/15 Matthew, Slate, 2013, How the GOP Can Roll Obama on Immigration, www.slate.com/blogs/moneybox/2013/01/15/immigration\_reform\_will\_obama\_get\_rolled.html

Of the major policy issues under discussion in Washington, "immigration reform" stands out for having unusually undefined content. For the major immigration-advocacy groups, the goal is clear, a comprehensive bill that includes a path to citizenship for the overwhelming majority of unauthorized migrants already living in the United States. But many other aspects of immigration law are in the mix as part of a proposed deal, and it seems to me that there's a fair chance that a nimble Republican Party could essentially roll the Democratic coalition and pass an "immigration reform" bill that doesn't offer the path Latino advocacy groups are looking for.¶ Elise Foley has the key line from her briefing on the administration's thinking about immigration, namely that a piecemeal approach "could result in passage of the less politically complicated pieces, such as an enforcement mechanism and high-skilled worker visas, while leaving out more contentious items such as a pathway to citizenship for undocumented immigrants."¶ And indeed it could. But how can they stop it? The last House GOP effort to split the high-tech visas question from the path to citizenship question was an absurd partisan ploy. If Republicans want to get serious about it they should be able to make it work. The centerpiece would be something on increased immigration of skilled workers. That's something the tech industry wants very much, it's a great idea on the merits, and few influential people have any real beef with it. High tech visas will easily generate revenue to pay for some stepped-up enforcement. Then instead of adding on a poison pill so Democrats will block the bill, you need to add a sweetener. Not the broad path to citizenship, but something small like the DREAM Act. Now you've got a package that falls massively short of what Latino groups are looking for, but that I think Democrats will have a hard time actually blocking. After all, why would they block it? It packages three things—more skilled immigration, more enforcement, and help for DREAMers—they say they want. Blocking it because it doesn't also do the broad amnesty that liberals want and conservatives hate would require the kind of fanaticism that is the exact opposite of Obama's approach to politics.

### AT: Economy Impact

#### No economic internal

Hill et al. 10 – Laura E. Hill is a research fellow at the Public Policy Institute of California. She has been a research associate at The SPHERE Institute and a National Institute of Aging postdoctoral fellow. She holds a Ph.D. in demography from the University of California, Berkeley AND\*\*\* Magnus Lofstrom is a research fellow at the Public Policy Institute of California. He also holds appointments as a research fellow at the Institute for the Study of Labor (IZA) at the University of Bonn and as a research associate at the Center for Comparative Immigration Studies at the University of California, San Diego. He has also served as a researcher and has taught at IZA and at the University of California, Irvine. He received his Ph.D. in economics from the University of California, San Diego. AND\*\*\* Joseph M. Hayes is a research associate at the Public Policy Institute of California, where he studies migration and population change throughout the state. He has studied migration in the Central Valley, the families of newly arrived immigrants to California, and the state’s prison population. He holds an M.S. in agricultural economics from the University of Wisconsin, Madison. 2010, “Immigrant Legalization Assessing the Labor Market Effects,” Public Policy Institute of California, [www.ppic.org/content/pubs/report/R\_410LHR.pdf#ppic](http://www.ppic.org/content/pubs/report/R_410LHR.pdf#ppic)

Legalization of the estimated 12 million unauthorized immigrants residing in the United States would lead to both **economic benefits and costs for the nation.** **Some arguments for comprehensive immigration reform suggest that legalizing immigrants will help end the current recession.** This seems unlikely. Our research suggests that earlier findings from the IRCA era may overstate anticipated earnings from a new reform, at least in the short run. ¶ We do expect occupational mobility to improve for formerly unauthorized immigrants with higher skill levels. When compared to the continuously legal, their occupational earnings growth was about 9 to 10 percent. These higher-skill unauthorized immigrants are more likely to be overstayers than crossers, but unauthorized immigrants with college degrees are found in both groups. **Lower-skill unauthorized immigrants are not likely to experience strong occupational mobility as a result of a legalization program** (although their occupational earnings grow over time in the United States). It will be important that any new legislation give legalized immigrants incentives to improve their skills, especially in English. ¶ The majority of studies investigating the effect of legalizing immigrants on natives’ earnings suggest that the effects are slightly negative for workers with low skill levels. Since we find no improvements in occupational mobility or wages for the lowest skill levels in the short run, we do not expect that legalizing immigrants would place any increased pressure on the wages of low-skill natives or low-skill legal immigrants. Tax revenues may increase, although **many unauthorized immigrants already file federal and state tax returns and pay sales and payroll taxes.** We found that about 90 percent of unauthorized immigrants filed federal tax returns in the year before gaining LPR status. We expect that increases in **tax revenues** resulting from increased earnings among the formerly unauthorized would be modest.

#### SMR expansion solves growth

MSCR 11 US Department of Commerce International Trade Administration Manufacturing and Services Competitiveness Report, February 2011, “The Commercial Outlook for U.S. Small Modular Nuclear Reactors”, http://trade.gov/mas/ian/build/groups/public/@tg\_ian/@nuclear/documents/webcontent/tg\_ian\_003185.pdf

A primary advantage of SMRs is in their production. Their small size means that they do not need the ultra-heavy forged components that currently can be made only by Japan Steel Works and Doosan Heavy Industries in South Korea.7 In most of the current U.S. SMR designs, the reactor pressure vessels and other large forgings could be supplied by **domestic vendors**, which would create U.S. jobs and potential exports of SMR components to international customers. In addition, most SMR designs allow for factory manufacturing, which could potentially provide opportunities for cost savings, for increased quality, and for more efficient production. Those attributes mean that **SMRs could be a** significant source of economic growth **in the United States.**

# 1AR

### AT: Fast Bad

#### Fast deployment key

Butler 11 Glen, Lt. Col, Not Green Enough, [www.mca-marines.org/gazette/not-green-enough](http://www.mca-marines.org/gazette/not-green-enough)

SMRs have relatively low plant cost, can replace aging fossil plants, and do not emit greenhouse gasses. Some are as small as a “hot tub” and can be stored underground, dramatically increasing safety and security from terrorist threats.25 Encouragingly, in fiscal year 2010 (FY10) the DoE allocated $0 to the U.S. SMR Program; in FY11, they’ve requested $38.9 million. This funding is to support two main activities—public/private partnerships to advance SMR designs and research and development and demonstrations. According to the DoE’s website, one of the planned program accomplishments for FY11 is to “collaborate with the Department of Defense (DoD) . . . to assess the feasibility of SMR designs for energy resources at DoD installations.”26 The Marine Corps should vigorously seek the opportunity to be a DoD entity providing one platform for this feasibility assessment.27¶ Fourth, SMR technology offers the Marine Corps another unique means to lead from the front—not just of the other Services but also of the Nation, and even the world.28 This potential Pete Ellis moment should be seized. There are simple steps we could take, and others stand ready to lead if we are not.30 But the temptation to “wait and see” and “let the others do it; then we’ll adopt it” mentality is not always best. Energy security demands boldness, not timidity.¶ To be fair, nuclear technology comes with challenges, of course, and with questions that have been kicked around for decades. An April 1990 Popular Science article asked, “Next Generation Nuclear Reactors—Dare we build them?” and included some of the same verbiage heard in similar discussions today.31 Compliance with National Environment Policy Act requirements necessitates lengthy and detailed preaction analyses, critical community support must be earned, and disposal challenges remain. Still, none of these hurdles are insurmountable.¶ Yet despite the advances in safety, security, and efficiency in recent years, nuclear in the energy equation remains the new “n-word” for most military circles. And despite the fact that the FY10 National Defense Authorization Act called on the DoD to “conduct a study [of] the feasibility of nuclear plants on military installations,” the Office of the Secretary of Defense has yet to fund the study.¶ Fifth, the cumbersome, bureaucratic certification process of the Nuclear Regulatory Commission (NRC), often enough to scare away potential entrepreneurs and investors, is not necessarily a roadblock to success. The NRC is “responsible for licensing and regulating the operation of commercial nuclear power plants in the United States.” Military installations offer unique platforms that could likely bypass an extended certification process. With established expertise and a long safety record in nuclear reactor certification, operations, training, and maintenance, the Naval Nuclear Propulsion Program comprises the civilian and military personnel who:¶ . . . design, build, operate, maintain, and manage the nuclear-powered ships and the many facilities that support the U.S. nuclear-powered naval fleet.”34¶ Bypassing the NRC and initiating SMR experimentation under ADM Hyman Rickover’s legacy umbrella of naval reactors could shorten the process to a reasonable level for Marine and naval installations.35

### AT: Military Bad for Safety

#### Risks exist but benefits outweigh---Navy proves success

Andres and Breetz 11 Richard B, Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University and Hanna L, doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, February, "Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications", www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf

Despite these potential events, a cost-benefit analysis should shape any decisions regarding the use of small reactors domestically or at forward locations. The real risks of deploying this technology should be put in perspective. The Navy has deployed more than 500 nuclear reactors since 1948 and never experienced a reactor accident. Further, in the current global context, every year the United States allows to go by without deploying small reactors represents a strategic gamble: domestic bases risk losing power should a competent opponent attack the U.S. domestic electric grid, while forward operating bases endanger American convoy support personnel who must deliver fuel.

### AT: Public Support

#### DoD programs now resolve backlash

M2 Presswire 12, “'Pockets of excellence' across Army, but work still needs to be done on health of force,” 7/30/12, lexis

Additionally, Ferriter said, about two-thirds of military families live in the local communities off base. The Army is working to make stronger connections with those communities, with community groups, and with sports teams, for instance, to ensure that military families stay engaged. ¶ Finally, Ferriter said, the Army is working, from headquarters-level in Washington, to further efforts that help keep military spouses employed when they move from state to state as part of the transition process. Continuity, Ferriter said, is critical. To that end, the Army has worked to develop a program where credentials that military spouses might need to do their jobs can be transferred from state to another during a transition. About 23 states now participate, he said. ¶ The Army is also making a similar effort that will allow the children of military families to transfer school credits from one school to another. ¶ "What we offer is a full layer cake of opportunity to create stability and certainty during this time of a lot of movement," Ferriter said. ¶ COMMANDERS ARE ENGAGED¶ Following the visit around the force, at installations chosen both for their size and their diversity, Austin said he came away with one clear picture of the Army's health. ¶ "The overriding piece of feedback is that commanders are engaged and are very concerned about taking care of their troops and are very focused on building a better force," Austin said.

#### Islanding provides benefits for communities

King et al 11 Marcus, Associate Director of Research, Associate Research Professor of International Affairs, Elliot School of International Affairs, The George Washington University, et al., March 2011, “Feasibility of Nuclear Power on U.S. Military Installations,” http://www.cna.org/sites/default/files/research/Nuclear%20Power%20on%20Military%20Installations%20D0023932%20A5.pdf

Electricity control capabilities, such as self-healing 6 and optimization of assets to increase operational efficiency, could improve overall power availability; however, they are not necessary for the integration of small nuclear power plants. Key components for improving electricity control include advanced electricity meters and electricity meter data management. These tools are needed in order to establish islanding, a condition in which a portion of the utility system, which contains both load and generation, is isolated from the remainder of the utility system and continues to operate. Since the power generation capacities of small nuclear power plants are larger than required for most DoD bases, islanding could extend to adjacent communities if sufficient technical upgrades were performed to systems outside of the installation. This contributes to DoD missions because civilians and service members working on the installation often live with their families in adjacent communities. The power would ensure that critical services such as emergency response, waste water treatment, and hospitals could be maintained.

### AT: Accidents Impact

#### SMRs are safe---passive mechanisms, less radiation, underground and prolif-resistant

Cunningham 12 Nick, Policy Analyst for Energy and Climate at the American Security Project, "Small Modular Reactors: A Possible Path Forward for Nuclear Power", October, americansecurityproject.org/ASP%20Reports/Ref%200087%20-%20Small%20Modular%20Reactors.pdf

Reduced Safety and Weapons Proliferation Concerns¶ SMRs can offer improved safety and security over conventional large reactors because of specific design features inherent to small reactors. First, one danger from nuclear power plants is the radiation from the reactor core. SMRs offer a reduction in danger from radiation because a smaller reactor core produces less radiation. 13¶ Second, due to their small size, SMRs are better able to incorporate passive safety features – those that do not require human or electronic actions to function properly. 14 These include cooling systems that use gravity instead of relying on access to power, natural convection systems, and passive heat removal. 15 For example, in the event something goes wrong, Westinghouse’s SMR is designed to keep the reactor cool for several days without the need for operators or power. 16 While the latest reactor designs are incorporating passive safety features, including for large reactors, passive safety features are inherently easier with small designs due to a smaller reactor core. ¶ Third, SMRs can benefit from a simplification of design, using less components, resulting in a more compact reactor. 17 SMR designs can eliminate the need for coolant pipes, which are considered the most significant safety challenge during the development of nuclear power plants. 18 An integral design, in which the primary reactor core, the steam generator, and the pressurizer are incorporated into a single common pressure vessel, is only possible in a small design. 19 In comparison, large reactors have components outside the containment vessel, increasing the chance of an accident. ¶ Fourth, unlike large reactors, SMRs can be installed underground, reducing the vulnerability to a terrorist attack or natural disaster. 20 A design from Gen4, a nuclear reactor vendor, seals off the reactor underground. This allows for it to never be opened once it is installed, enhancing proliferation resistance. 21 It would also operate for 10 years before refueling would be needed, compared to conventional large reactors that require refueling every 18-24 months. 22

### AT: Tradeoff DA

#### No training or readiness tradeoff due to nuclear

King et al 11 Marcus, Associate Director of Research, Associate Research Professor of International Affairs, Elliot School of International Affairs, The George Washington University, et al., March 2011, “Feasibility of Nuclear Power on U.S. Military Installations,” http://www.cna.org/sites/default/files/research/Nuclear%20Power%20on%20Military%20Installations%20D0023932%20A5.pdf

It should be noted that 1963 legislation granted Southern California Edison Corporation an easement of 90 acres from the Camp Pendleton Marine Corps Base to construct the San Onofre Nuclear Generating Station. Our discussions have indicated that the two facilities have co-existed without significant impact on training and readiness.

### AT: Cost Overruns

#### SMRs solve cost concerns---super cheap, no cost overruns, easier financing, immediate revenue and standardized quality construction

Cunningham 12 Nick, Policy Analyst for Energy and Climate at the American Security Project, "Small Modular Reactors: A Possible Path Forward for Nuclear Power", October, americansecurityproject.org/ASP%20Reports/Ref%200087%20-%20Small%20Modular%20Reactors.pdf

Lower Upfront Costs¶ The greatest challenge facing the nuclear power industry is the upfront costs of new reactors. Although large reactors should be able to take advantage of economies of scale, there are economic advantages to small designs. Large reactors require substantial upfront investment, with long permitting and construction times before a return on investment can be realized. ¶ These upfront costs make investing in a large nuclear power plant highly risky, even if the final cost per kilowatt-hour is profitable. A large nuclear power plant can cost between $6 and $9 billion, often exceeding the financing capabilities of most financial institutions, utilities, or even small countries. 23¶ Conversely, small modular reactors at commercial scale could produce a 100 MW plant for $250 million. 24 Due to lower upfront costs and shorter lead times, SMRs would present lower financial risks, allowing for significantly lower costs of financing. The shorter lead times for SMRs allow for more certainty for investors, and the ability to change with market conditions. 25¶ The smaller project size of each additional reactor also reduces the risks of cost-overruns. 26 This translates not only to lower absolute costs, but also lower upfront capital costs, making it easier for projects to attract financing, at better rates.27¶ Shorter construction times also provide a quicker revenue stream. SMRs can be built in roughly one-half to one-third of the time required for conventional plants. 28¶ Even comparing multiple small reactors to the equivalent installed capacity of one large reactor, SMRs allow incremental capacity to come online while the large reactor is still under construction. SMRs create revenue generation immediately after each small unit is completed, and the owner can retire debt before the next increment is constructed. 29 Similarly, the SMR units can be under parallel construction (multiple reactors under construction simultaneously), allowing the full SMR project to be completed before the large nuclear reactor, a significant cost advantage for SMRs over large reactors. 30¶ Another major drawback for conventional large reactors is the lack of standardization. This leads to long, expensive, and uncertain time periods for licensing and siting. SMRs can overcome this hurdle with standardized designs, standardized components, and enhanced safety from reduced reactor size, all of which are not easy to accomplish with large reactors. 31¶ Small Modular Reactors, as their name suggests, can be “modularized”. SMRs can be constructed in factories and actually shipped to site. Factory construction allows for greater quality control, predictability and scheduling. In contrast, large reactors are designed and built uniquely for each project, which can lead to delays and inflated costs. 32

### AT: Meltdowns/Accidents

#### No impact to accidents or meltdowns

Drum 11 Kevin, political blogger for Mother Jones, "Nukes and the Free Market", March 14, www.motherjones.com/kevin-drum/2011/03/nukes-and-free-market

We’re currently told that the death toll in Japan will be at least 10,000 people of whom approximately zero seem to have perished in nuclear accidents. What happens when a tsunami hits an offshore drilling platform or a natural gas pipeline? What happens to a coal mine in an earthquake? How much environmental damage is playing out in Japan right now because of gasoline from cars pushed around? The main lesson is “try not to put critical infrastructure near a fault line” but Japan is an earthquakey country, so what are they really supposed to do about this?¶ This is a good point: energy sources of all kind cause problems. Sometimes the problems create screaming headlines (nuke meltdowns, offshore oil explosions, mining disasters) and sometimes they don't (increased particulate pollution, global warming, devastation of salmon runs). But the dangers are there for virtually every type of energy production.¶ Still, it's worth pointing out that the problem with nuclear power isn't so much its immediate capacity to kill people. As Matt points out, no one has died in Japan from the partial meltdowns at its damaged nuclear plants, and it's unlikely anyone ever will. The control rods are in place, and even in the worst case the containment vessels will almost certainly restrict the worst damage.

### AT: Naval Power

#### Our fleet can take anyone’s—no challengers

Work 12 Robert O, United States Under Secretary of the Navy and VP of Strategic Studies @ Center for Strategic and Budgetary Assessments, "The Coming Naval Century," May, Proceedings Magazine - Vol. 138/5/1311, US Naval Institute, www.usni.org/magazines/proceedings/2012-05/coming-naval-century

For those in the military concerned about the impact of such cuts, I would simply say four things:¶ • Any grand strategy starts with an assumption that all resources are scarce, requiring a balancing of commitments and resources. As political commentator Walter Lippmann wrote: “The nation must maintain its objectives and its power in equilibrium, its purposes within its means, and its means equal to its purposes.”¶ • The upcoming defense drawdown will be less severe than past post–World War II drawdowns. Accommodating cuts will be hard, but manageable.¶ • At the end of the drawdown, the United States will still have the best and most capable armed forces in the world. The President well appreciates the importance of a world-class military. “The United States remains the only nation able to project and sustain large-scale military operations over extended distances,” he said. “We maintain superior capabilities to deter and defeat adaptive enemies and to ensure the credibility of security partnerships that are fundamental to regional and global security. In this way our military continues to underpin our national security and global leadership, and when we use it appropriately, our security and leadership is reinforced.”¶ • Most important, as the nation prioritizes what is most essential and brings into better balance its commitments and its elements of national power, we will see the beginning of a Naval Century—**a new golden age of American sea power**.¶ The Navy Is More Than Ships¶ Those who judge U.S. naval power solely by the number of vessels in the Navy’s battle force are not seeing the bigger picture. Our battle force is just one component—albeit an essential one—of a powerful National Fleet that includes the broad range of capabilities, capacities, and enablers resident in the Navy, Marine Corps, and Coast Guard. It encompasses our special-mission, prepositioning, and surge-sealift fleets; the ready reserve force; naval aviation, including the maritime-patrol and reconnaissance force; Navy and Marine special operations and cyber forces; and the U.S. Merchant Marine. Moreover, it is crewed and operated by the finest sailors, Marines, Coast Guardsmen, civilian mariners, and government civilians in our history, and supported by a talented and innovative national industrial base.¶ If this were not enough, the heart of the National Fleet is a Navy–Marine Corps team that is transforming itself from an organization focused on platforms to a total-force battle network that interconnects sensors, manned and unmanned platforms with modular payloads, combat systems, and network-enabled weapons, as well as tech-savvy, combat-tested people into a cohesive fighting force. This Fleet and its network would make short work of any past U.S. Fleet—and of any potential contemporary naval adversary.

### AT: Lyman

#### Reject lyman – UCS bad

Hoffman 10 Doug L, The Resilient Earth, "MIT Report Disputes Uranium Shortage Fallacy", October 22, www.theresilientearth.com/?q=content/mit-report-disputes-uranium-shortage-fallacy

All the alarmist talk from the likes of the Union of Concerned Scientists and the National Resources Defense Council is just that—emotion based alarmist propaganda. MIT says there is plenty of uranium, even without developing thorium. As a bonus, recycling fuel greatly reduces the nuclear waste storage problem. China's accelerated nuclear building program shows that cutting through government red-tape and eliminating superfluous law suits dramatically reduces construction costs as well. With biofuels proving to be a bust, clean coal a scam, geothermal coming up dry and people having second thoughts about wind power, now is the time for nuclear energy.

### AT: Workforce

#### No workforce shortage

ITA 11 International Trade Administration, “The Commercial Outlook for U.S. Small Modular Nuclear Reactors” Manufacturing and Services Competitiveness Report, February, US Department of Commerce

A serious obstacle to the resurgence of traditional nuclear power in the United States is the eroded domestic manufacturing capacity for the major nuclear components. A robust program of building SMRs, however, could make use of existing domestic capacity that is already capable of completely constructing most proposed SMR designs. **SMRs would not require the ultra-heavy forgings that currently can only be made overseas.** U.S. suppliers say that firms could retool using existing capabilities and resources and could source most of the components of SMRs here in the United States. This ability could mean tremendous new commercial opportunities for U.S. firms and workers.¶ A substantial SMR deployment program in the United States could result in the creation of many new jobs in manufacturing, engineering, transportation, construction (for site preparation and installation) and craft labor, professional services, and ongoing plant operations. As SMR manufacturers prove their designs in the domestic market, **they will likely consider export opportunities**. The modular nature of SMRs and their relative portability means that locating export-oriented SMR manufacturing and assembly could make sense for U.S. companies, as opposed to the localiza-tion that is typically necessary for building larger reactors.

### AT: Litigation/Liability DA

#### DOD’s immune to citizen environmental suits --- exemptions + circumvention

Scott M. Palatucci 4, Attorney Specializing in Construction Litigation, Former Law Clerk to The Honorable Joseph F. Scancarella, Presiding Judge, Superior Court of New Jersey, THE EFFECTIVENESS OF CITIZEN SUITS IN PREVENTING THE ENVIRONMENT FROM BECOMING A CASUALTY OF WAR, 2004, 10 Widener L. Rev. 585, lexis

Citizen suit provisions are designed to hold the federal government accountable for the violation of an environmental law in the same way they would hold public or private entities liable for the same infraction. As such, the provisions provide for an express waiver of the federal government's sovereign [\*588] immunity from prosecution for a violation of the respective environmental law. n17 In virtually every environmental statute, however, Congress has inserted a subsequent provision expressly authorizing "the President to exempt an activity from compliance, if to do so is in the 'paramount interest' of the United States." n18 This exemption, although rarely invoked, gives the military a viable way to circumvent citizen suits, since it can be argued that most of its activities are performed "in the paramount interest of the United States." n19¶ The exemption aside, the military is otherwise slowly becoming more and more immune to "citizen suits."

Recently, in a fifty-seven-to-one vote, Congress passed the Bob Stump Defense Authorization Act for the Fiscal Year 2003 (BSDAA). n20 In this Act, the military received exemptions from pertinent parts of the Endangered Species Act and the Migratory Bird Treaty Act. n21 These exemptions represent an enormous win for the military, and have effectively served to nullify several court rulings that previously enjoined harmful military operations. n22¶ The exemptions contained in the BSDAA have the Department of Defense (DOD) excited with the **new found freedom** they provide. n23 In fact, it can be said that these exemptions have encouraged the DOD to continue to seek [\*589] blanket exemptions from many other environmental laws. n24 The DOD justifies these exemptions by stating:¶ The ability of the Department of Defense to fulfill its primary mission to safeguard national security has been dramatically challenged - and in some instances diminished - due to its obligations to satisfy several important federal environmental laws. [For example, t]he land, waters and space in which the Department can train its solders, sailors, airmen, and Marines have been restricted or lost due to the presence of endangered species, complaints about noise, urban encroachment and so forth. n25¶ **Holding the military accountable for environmental damage** by way of the citizen suit may soon be an impossible feat given the legislature's propensity to grant the military blanket exemptions from environmental laws. In fact, according to the House Armed Services Committee, the only reason that the military did not receive additional exemptions to other environmental laws in the BSDAA was because the DOD and the military did not give legislators enough time to consider their requests. n26