# 1AC

## plan

#### The United States Federal Government should acquire, through Other Transactions authority, electricity from small modular reactors for its military installations in the United States.

## solvency

#### Other Transactions authority leads to effective and quick acquisition

Dix et al 3

Nancy Dix, and Fernard Lavallee, partners in the San Diego and Washington, D.C., offices of Gray Cary, and Kimberly Welch, senior associate, specialize in specialize in government contracts, government contracts litigation, and intellectual property, Fall 2003, FEAR AND LOATHING OF FEDERAL CONTRACTING: ARE COMMERCIAL COMPANIES REALLY AFRAID TO DO BUSINESS WITH THE FEDERAL GOVERNMENT? SHOULD THEY BE?, 33 Pub. Cont. L.J. 5

DARPA has taken the position that OT authority permits tremendous flexibility in the terms and conditions that can be negotiated under such agreements, and, consequently, that there are a great variety of uses for the OT instrument. For example, DARPA has pioneered the use of OTs for research and technology development projects performed as multiparty cooperative arrangements involving cost sharing and advancing dual-use technologies. While the principal purpose of these transactions frequently is like traditional federal assistance, that is, other than to acquire goods and services for the direct benefit and use of the Government, DARPA does take the view that some OTs can be used for acquisition. n62

Proponents of OTs coined the phrase "freedom of contract" to describe the flexibility offered by OTs. Other Transactions are meant to present the Government and contractor with a "blank page" from which to begin when negotiating such instruments. Generally speaking, the terms and conditions of an OT are negotiable; however, DARPA has a well-defined "opening position." DARPA's opening position usually includes, for example, restrictions on foreign access to technology and a Bayh-Dole treatment for patents, without a requirement for the flow-down of the Bayh-Dole provisions.

The "freedom of contract" aspect also acknowledges that OTs are subject to even fewer laws and regulations than Cooperative Agreements or CRADAs. In December 1996, Under Secretary of Defense Paul Kaminski published a memorandum to the secretaries of the military departments and directors of defense agencies that identifies statutes that "are not necessarily applicable to 'other transactions.'" n63

The OT provides both the Government and contractors with unparalleled opportunities to negotiate terms and conditions designed to maintain a contractor's competitive advantage in the commercial marketplace while providing the Government with timely and affordable access to cutting-edge technologies and services. n64 In many respects, the OT is the ultimate in streamlined federal acquisition, allowing the Government to "do business the way business does business." The latitude afforded to the Government by OTs enables the sovereign to attract contractors that traditionally would not, or could not, do business with the Government.

#### Incentives inevitable

Jeffrey Tomich 11-2, energy reporter for the St Louis Dispatch, “Ameren, Westinghouse still waiting for decision on nuclear grant”, <http://www.stltoday.com/business/local/ameren-westinghouse-still-waiting-for-decision-on-nuclear-grant/article_1b46d35b-eda4-5c15-9b08-b0ed80caf2bf.html>

It was six months ago that Ameren Missouri and Westinghouse officials joined Gov. Jay Nixon on the lawn of the governor’s mansion to announce plans to pursue a first-of-its-kind mini nuclear reactor that would be built next to the utility’s Callaway plant.

The effort had bipartisan political support. Other Missouri electricity suppliers were on board, as well as the state’s university system. Everything seemed in place — almost.

The whole plan hinged on getting at least a share of a $452 million federal grant to advance commercialization of next-generation nuclear technology.

Today, a month after the Department of Energy was supposed to announce who would share the federal money, Ameren and Westinghouse are still waiting. And with the presidential election just days away, heightened scrutiny of energy technology subsidies, a growing budget deficit and a potential change in administrations are looming.

An Energy Department spokeswoman said applications are still under review. She didn’t say when a decision would be made.

The companies have reason to be anxious. The government has laid out an ambitious timetable for those who share the award. The winning teams are expected to have the next-generation reactors running by 2022, leaving a decade to design, license and build a new breed of nuclear plant.

“The team is kind of counting on that (grant) right now,” Joe Zwetolitz, president of Westinghouse Americas, said Tuesday at a conference for potential suppliers at the Renaissance Grand Hotel in downtown St. Louis. “It’s really necessary to help spur development.”

President Barack Obama announced the availability of grant funding for so-called small nuclear reactors in March during a stop in Columbus, Ohio, as part of his all-of-the-above energy strategy. Two projects will share the $452 million over a five-year span.

The small-scale reactors, generally less than a third the size of today’s plants, have been touted by the nuclear industry as carbon-free sources of around-the-clock electric generation that offer safety benefits and would be easier for utilities to finance and deploy.

That’s only part of the reason the federal government is willing to throw almost half a billion dollars at developing the technology. The Obama administration also sees modular nuclear plants as another piece of an American manufacturing revival — one with potential to generate thousands of jobs building components that can be shipped overseas.

The possibility for jobs is also a big draw for Nixon and other local politicians, especially because Westinghouse has said it would build a manufacturing plant in Missouri if it wins the grant and a market for the mini reactors develops.

The Ameren-Westinghouse team is one of four that applied for the federal grant in May. Other competing ventures include established names, such as Babcock & Wilcox Co., as well as NuScale Power LLC and Holtec International Inc., both relative newcomers.

Nick Cunningham, a policy analyst for the American Security Project, a nonprofit research group, believes the upcoming election may have temporarily derailed an announcement, but he believes it will come eventually since both candidates are on record as supporting advances of nuclear power.

“I think it will move forward next year,” he said.

Westinghouse officials say they’re ready to submit design certification for the small reactor to the Nuclear Regulatory Commission next year. And while Ameren’s timing is less certain, the utility could apply for a construction and operating license as early as 2014.

## DOD

#### Adv 1 DOD

#### DoD bases are vulnerable to grid disruptions which destroys command infrastructure – only SMR’s can solve

Robitaille 12

(George, Department of Army Civilian, United States Army War College, “Small Modular Reactors: The Army’s Secure Source of Energy?” 21-03-2012, Strategy Research Project)

In recent years, the U.S Department of Defense (DoD) has identified a security issue at our installations related to the dependence on the civilian electrical grid. 1 The DoD depends on a steady source of electricity at military facilities to perform the functions that secure our nation. The flow of electricity into military facilities is controlled by a public grid system that is susceptible to being compromised because of the age of the infrastructure, damage from natural disasters and the potential for cyber attacks. Although most major functions at military installations employ diesel powered generators as temporary backup, the public grid may not be available to provide electricity when it is needed the most. The United States electrical infrastructure system is prone to failures and susceptible to terrorist attacks. 2 It is critical that the source of electricity for our installations is reliable and secure. In order to ensure that our military facilities possess a secure source of electricity, either the public system of electric generation and distribution is upgraded to increase its reliability as well as reducing its susceptibility to cyber attack or another source of electricity should be pursued. Although significant investments are being made to upgrade the electric grid, the current investment levels are not keeping up with the aging system. Small modular reactors (SMRs) are nuclear reactors that are about an order of magnitude smaller than traditional commercial reactor used in the United States. SMRs are capable of generating electricity and at the same time, they are not a significant contributor to global warming because of green house gas emissions. The DoD needs to look at small modular nuclear reactors (SMRs) to determine if they can provide a safe and secure source of electricity. Electrical Grid Susceptibility to Disruptions According to a recent report by the Defense Science Board, the DoD gets ninety nine percent of their electrical requirements from the civilian electric grid. 3 The electric grid, as it is currently configured and envisioned to operate for the foreseeable future, may not be reliable enough to ensure an uninterrupted flow of electricity for our critical military facilities given the influences of the aging infrastructure, its susceptibility to severe weather events, and the potential for cyber attacks. The DoD dependency on the grid is reflected in the $4.01 Billion spent on facilities energy in fiscal year 2010, the latest year which data was available. 4 The electricity used by military installations amounts to $3.76 billion. 5 As stated earlier, the DoD relies on the commercial grid to provide a secure source of energy to support the operations that ensure the security of our nation and it may not be available when we need it. The system could be taken down for extended periods of time by failure of aging components, acts of nature, or intentionally by cyber attacks. Aging Infrastructure. The U.S electric power grid is made up of independently owned power plants and transmission lines. The political and environmental resistance to building new electric generating power plants combined with the rise in consumption and aging infrastructure increases the potential for grid failure in the future. There are components in the U.S. electric grid that are over one hundred years old and some of the recent outages such as the 2006 New York blackout can be directly attributed to this out of date, aging infrastructure. 6 Many of the components of this system are at or exceeding their operational life and the general trend of the utility companies is to not replace power lines and other equipment until they fail. 7 The government led deregulation of the electric utility industry that started in the mid 1970s has contributed to a three decade long deterioration of the electric grid and an increased state of instability. Although significant investments are being made to upgrade the electric grid, the **many years of prior neglect will require a considerable amount of time and funding to bring the aging infrastructure up to date**. Furthermore, the current investment levels to upgrade the grid are not keeping up with the aging system. 8 In addition, upgrades to the digital infrastructure which were done to increase the systems efficiency and reliability, have actually made the system more susceptible to cyber attacks. 9 Because of the aging infrastructure and the impacts related to weather, the extent, as well as frequency of **failures is expected to increase in the future.** Adverse Weather. According to a 2008 grid reliability report by the Edison Electric Institute, sixty seven per cent of all power outages are related to weather. Specifically, lightning contributed six percent, while adverse weather provided thirty one percent and vegetation thirty percent (which was predominantly attributed to wind blowing vegetation into contact with utility lines) of the power outages. 10 In 1998 a falling tree limb damaged a transformer near the Bonneville Dam in Oregon, causing a cascade of related black-outs across eight western states. 11 In August of 2003 the lights went out in the biggest blackout in North America, plunging over fifty million people into darkness over eight states and two Canadian provinces. Most areas did not have power restored four or five days. In addition, drinking water had to be distributed by the National Guard when water pumping stations and/or purification processes failed. The estimated economic losses associated with this incident were about five billion dollars. Furthermore, this incident also affected the operations of twenty two nuclear plants in the United States and Canada. 12 In 2008, Hurricane Ike caused approximately seven and a half million customers to lose power in the United States from Texas to New York. 13 The electric grid suffered numerous power outages **every year** throughout the United States and the number of outages is expected to increase as the infrastructure ages without sufficient upgrades and weather-related impacts continue to become more frequent. Cyber Attacks. The civilian grid is made up of three unique electric networks which cover the East, West and Texas with approximately one hundred eighty seven thousand miles of power lines. There are several weaknesses in the electrical distribution infrastructure system that could compromise the flow of electricity to military facilities. The flow of energy in the network lines as well as the main distribution hubs has become totally dependent on computers and internet-based communications. Although the digital infrastructure makes the grid more efficient, it also makes it more susceptible to cyber attacks. Admiral Mr. Dennis C. Blair (ret.), the former Director of National Intelligence, testified before Congress that “the growing connectivity between information systems, the Internet, and other infrastructures creates opportunities for attackers to disrupt telecommunications, electrical power, energy pipelines, refineries, financial networks, and other critical infrastructures. 14 ” The Intelligence Community assesses that a number of nations already have the technical capability to conduct such attacks. 15 In the 2009 report, Annual Threat Assessment of the Intelligence Community for the Senate Armed Services Committee, Adm. Blair stated that “Threats to cyberspace pose one of the most serious economic and national security challenges of the 21st Century for the United States and our allies.”16 In addition, the report highlights a growing array of state and non-state actors that are targeting the U.S. critical infrastructure for the purpose of creating chaos that will subsequently produce detrimental effects on citizens, commerce, and government operations. These actors have the ability to compromise, steal, change, or completely destroy information through their detrimental activities on the internet. 17 In January 2008, US Central Intelligence Agency senior analyst Tom Donahue told a gathering of three hundred international security managers from electric, water, oil & gas, and other critical industry, that data was available from multiple regions outside the United States, which documents cyber intrusions into utilities. In at least one case (outside the U.S.), the disruption caused a power outage affecting multiple cities. Mr. Donahue did not specify who executed these attacks or why, but did state that all the intrusions were conducted via the Internet. 18 During the past twenty years, advances in computer technologies have permeated and advanced all aspects of our lives. Although the digital infrastructure is being increasingly merged with the power grid to make it more efficient and reliable, it also makes it more vulnerable to cyber attack. In October 2006, a foreign hacker invaded the Harrisburg, PA., water filtration system and planted malware. 19 In June 2008, the Hatch nuclear power plant in Georgia shut down for two days after an engineer loaded a software update for a business network that also rebooted the plant's power control system. In April 2009, The Wall Street Journal reported that cyber spies had infiltrated the U.S. electric grid and left behind software that could be used to disrupt the system. **The hackers came from China, Russia and other nations and were on a “fishing expedition” to map out the system**. 20 According to the secretary of Homeland Security, Janet Napolitano at an event on 28 October 2011, cyber–attacks have come close to compromising the country’s critical infrastructure on multiple occasions. 21 Furthermore, during FY11, the United States Computer Emergency Readiness Team took action on more than one hundred thousand incident reports by releasing more than five thousand actionable cyber security alerts and information products. 22 The interdependence of modern infrastructures and digital based systems makes any cyber attacks on the U.S. electric grid potentially significant. The December 2008 report by the Commission on Cyber Security for the forty fourth Presidency states the challenge plainly: “America’s failure to protect cyberspace is one of the most urgent national security problems facing the new administration”. 23 The susceptibility of the grid to being compromised has resulted in a significant amount of resources being allocated to ensuring the systems security. Although a substantial amount of resources are dedicated to protecting the nation’s infrastructure, it may not be enough to ensure the continuous flow of electricity to our critical military facilities. SMRs as they are currently envisioned may be able to provide a secure and independent alternative source of electricity in the event that the public grid is compromised. SMRs may also provide additional DoD benefit by supporting the recent government initiatives related to energy consumption and by circumventing the adverse ramifications associated with building coal or natural gas fired power plants on the environment.

#### Those communication breakdowns go nuclear

Andres and Breetz 11

Richard Andres, 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 Breetz, doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, Small Nuclear Reactorsfor Military Installations:Capabilities, Costs, andTechnological Implications, [www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf](http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

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. 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.

#### DoD bypasses regulatory hurdles and safety hazards

Loudermilk 11

Micah J. Loudermilk, Research Associate for the Energy & Environmental Security Policy program with the Institute for National Strategic Studies at National Defense University, 5/31/11, Small Nuclear Reactors and US Energy Security: Concepts, Capabilities, and Costs, [www.ensec.org/index.php?option=com\_content&view=article&id=314:small-nuclear-reactors-and-us-energy-security-concepts-capabilities-and-costs&catid=116:content0411&Itemid=375](http://www.ensec.org/index.php?option=com_content&view=article&id=314:small-nuclear-reactors-and-us-energy-security-concepts-capabilities-and-costs&catid=116:content0411&Itemid=375)

Path forward: Department of Defense as first-mover Problematically, despite the immense energy security benefits that would accompany the wide-scale adoption of small modular reactors in the US, with a difficult regulatory environment, anti-nuclear lobbying groups, skeptical public opinion, and of course the recent Fukushima accident, the nuclear industry faces a tough road in the battle for new reactors. While President Obama and Energy Secretary Chu have demonstrated support for nuclear advancement on the SMR front, progress will prove difficult. However, a potential route exists by which small reactors may more easily become a reality: the US military. The US Navy has successfully managed, without accident, over 500 small reactors on-board its ships and submarines throughout 50 years of nuclear operations. At the same time, serious concern exists, highlighted by the Defense Science Board Task Force in 2008, that US military bases are tied to, and almost entirely dependent upon, the fragile civilian electrical grid for 99% of its electricity consumption. To protect military bases’ power supplies and the nation’s military assets housed on these domestic installations, the Board recommended a strategy of “islanding” the energy supplies for military installations, thus ensuring their security and availability in a crisis or conflict that disrupts the nation’s grid or energy supplies. DOD has sought to achieve this through decreased energy consumption and renewable technologies placed on bases, but these endeavors will not go nearly far enough in achieving the department’s objectives. However, by placing small reactors on domestic US military bases, DOD could solve its own energy security quandary—providing assured supplies of secure and constant energy both to bases and possibly the surrounding civilian areas as well. Concerns over reactor safety and security are alleviated by the security already present on installations and the military’s long history of successfully operating nuclear reactors without incident. Unlike reactors on-board ships, small reactors housed on domestic bases would undoubtedly be subject to Nuclear Regulatory Commission (NRC) regulation and certification, however, with strong military backing, adoption of the reactors may prove significantly easier than would otherwise be possible. Additionally, as the reactors become integrated on military facilities, general fears over the use and expansion of nuclear power will ease, creating inroads for widespread adoption of the technology at the private utility level. Finally, and perhaps most importantly, action by DOD as a “first mover” on small reactor technology will preserve America’s badly struggling and nearly extinct nuclear energy industry. The US possesses a wealth of knowledge and technological expertise on SMRs and has an opportunity to take a leading role in its adoption worldwide. With the domestic nuclear industry largely dormant for three decades, the US is at risk of losing its position as the global leader in the international nuclear energy market. If the current trend continues, the US will reach a point in the future where it is forced to import nuclear technologies from other countries—a point echoed by Secretary Chu in his push for nuclear power expansion. Action by the military to install reactors on domestic bases will guarantee the short-term survival of the US nuclear industry and will work to solidify long-term support for nuclear energy. Conclusions In the end, small modular reactors present a viable path forward for both the expansion of nuclear power in the US and also for enhanced US energy security. Offering highly safe, secure, and proliferation-resistant designs, SMRs have the potential to bring carbon-free baseload distributed power across the United States. Small reactors measure up with, and even exceed, large nuclear reactors on questions of safety and possibly on the financial (cost) front as well. SMRs carry many of the benefits of both large-scale nuclear energy generation and renewable energy technologies. At the same time, they can reduce US dependence on fossil fuels for electricity production—moving the US ahead on carbon dioxide and GHG reduction goals and setting a global example. While domestic hurdles within the nuclear regulatory environment domestically have proven nearly impossible to overcome since Three Mile Island, military adoption of small reactors on its bases would provide energy security for the nation’s military forces and may create the inroads necessary to advance the technology broadly and eventually lead to their wide-scale adoption.

#### SMR’s “island” bases by providing constant reliable power

King 11

Marcus King, Ph.D., Center for Naval Analyses Project Director and Research Analyst for the Environment and Energy TeamLaVar 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

Having a reliable source of electricity is critically important for many DoD installations. Fort Meade, Maryland, which hosts the National Security Agency’s power intensive computers, is an example of where electricity is mission critical. Installations need to be more robust against interruptions caused by natural forces or intentional attack. Most installations currently rely on the commercial electricity grid and backup generators. Reliance on generators presents some limitations. A building dedicated generator only provides electricity to a specific building when there is a power outage. Typically, diesel standby generators have an availability of 85 percent when operated for more than 24 hours [38]. Most DoD installations keep less than a 5-day supply of fuel. Small nuclear power plants could contribute to electrical energy surety and survivability. Having nuclear power plants networked with the grid and other backup generating systems 5 could give DoD installations higher power availability during extended utility power outages and more days of utility-independent operation. Existing large commercial nuclear power plants have an availability of over 90 percent. When a small nuclear power plant is networked with existing backup generating systems and the grid, overall availability values could be as high as 99.6 percent [39]. Since proposed small reactors have long refueling intervals (from 4 to 30 years), if power from the commercial grid became unavailable, a small reactor could provide years of electrical power independent of the commercial grid [4]. Power assurance to DoD installations also involves three infrastructure aspects of electricity delivery: electrical power transmission, electricity distribution, and electricity control (of distribution and transmission). Electric power transmission is the bulk transfer of electrical energy from generating plants to substations located near population centers. Electricity distribution networks carry electricity from the substations to consumers. Electricity control is the management of switches and connections to control the flow of electricity through transmission and distribution networks. Typically, transmission lines transfer electricity at high voltages over long distances to minimize loss; electricity distribution systems carry medium voltages. For electrical power transmission, very little additional infrastructure is required to incorporate small nuclear power plants because they would be located on or near the DoD installation being serviced. However, redundancy in transmission lines would make the overall network more robust. 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.

#### Particularly true of Guantanamo

Steve Packard 11, member of the James Randi educational foundation – contributor to the Bad Science Blog, “20 Classic Atomic Energy Ads”, http://depletedcranium.com/20-classic-atomic-energy-ads/

I do think that these small reactors have enormous potential. They can be set up quickly and need relatively little maintenance and labor to keep running for extended periods of time. They can be prefabricated and theoretically mass produced.

There are certainly plenty of places that sorely need a reliable, relatively small, economical source of power: The Marshall Islands, Bermuda, Aruba, Barbados, Thull Air Force Base, the remote mining and oil and gas operations in Alaska and northern Canada, South Pole Station, McMurdo Base, the Canary Islands, Guantanamo Bay Naval Station, Fiji, various parts of Africa.

#### That prevents base vulnerability – Gitmo’s modeled by the whole military

Annie Snider 11, reporter for Greenwire writing in the New York Times, “Could Alternative Energy Be Gitmo's Next Legacy?”, June 13, <https://www.nytimes.com/gwire/2011/06/13/13greenwire-could-alternative-energy-be-gitmos-next-legacy-85177.html?pagewanted=all#h[EteIah,2>]

As the Pentagon looks for ways to build a military that runs on less but remains every bit as lethal, Guantanamo Bay Naval Station is gaining a reputation as an ideal test bed. It is a reputation decades in the making and spurred by necessity. Ever since 1964, when Cuban leader Fidel Castro cut off the U.S. base from the country's electric grid and water system amid sparking Cold War tensions, the naval station has had to quench its own substantial thirst for power and water. The high cost of shipping in fuel for inefficient generators that run the base's power grid and desalinization plant had the base's public works staff looking to cut consumption and bring new sources of power online long before defense chiefs were giving the topics the spotlight. Eleven years ago, for instance, staff began drawing up plans for wind turbines that now sit on the base's highest ridge. But there are as many lessons for the military in the bumps Gitmo's staff has hit in its quest for energy security as there are in its successes. When plans for those wind turbines were drawn up in 2001, the base projected that they would provide a quarter of the base's energy and provide major savings by cutting the amount of fuel being shipped in. But that was before the terrorist attacks of Sept. 11, 2001, before the U.S. undertook two wars, and before detention centers were set up on the east side of the base to house those wars' prisoners. By the time the wind farm was finished in 2005, the base was home to more than twice as many personnel and supported a whole new, energy-intensive operation. Today, four 950-kilowatt wind turbines tower over the base's Cold War-era bunkers, but they account for about 2 to 3 percent of the base's overall power generation. And although the turbines are operating as expected, the naval station is actually shipping in more fuel, not less. The story of Guantanamo Bay's wind power speaks to the particular challenges the military faces as it aims to become less reliant on fuel: Missions change quickly, and energy is rarely an important factor when deciding how to tackle them. With energy security now commanding attention at the highest levels of the defense world, the pressure is on Pentagon officials to find solutions that will work for U.S. forces. For them, Guantanamo Bay Naval Station has become a case study in the benefits -- and the challenges -- of trying to reduce energy and water use and switch to alternative sources. Cost of self-sufficiency When Castro cut off Guantanamo in 1964, the Navy spent five months importing potable water by barge while a desalination plant was built at break-neck speed. It was such an astonishing feat that Castro did not believe it could be true. He accused the United States of stealing Cuban water. To prove him wrong, the base's commanding officer, Vice Adm. John Bulkeley, invited reporters to join him at the base's northeast gate, where he cut the pipe connecting the base to the Cuban water system. He held up the pipe, and it was bone dry. Today, the 45-square-mile naval station in southeast Cuba -- the United States' oldest overseas base and the only one located in a country with which the United States has no diplomatic relations -- produces about 1 million gallons of water each day and generates enough power to meet a summertime peak demand of some 22 megawatts. In April, the Navy's top environment and energy official, Assistant Secretary of the Navy Jackalyne Pfannenstiel, visited the base to get a first-hand look at the base's unique energy strategy. "The Navy recognizes that we have a national need to wean ourselves from imported oil products," Pfannenstiel said after touring the base's utilities. "[Guantanamo] could be a model for what can be done." The energy to run Guantanamo Bay Naval Station's desalinization plant and power the military operations, including the nine prisons, comes primarily from a network of 19 diesel generators that run on fuel barged to the island. They consume between 25,000 and 30,000 gallons of fuel each day. It is an extremely expensive arrangement. DOD pays on the order of $80,000 a day for fuel and lube oil, according to Tim Wagoner, the base's resource efficiencies manager. "I used to work at Fort Campbell," Wagoner said, referring to the U.S. Army base in Kentucky. "They consume about twice as much power as we do here, but their bill is about a third of what ours is." If DOD were not footing the costs, the monthly power bill for a two-bedroom house on base would run about $550, according to Navy calculations. But the cost isn't the worst of it. The base's commanding officer said Guantanamo Bay's energy situation also makes it vulnerable to accidents or attacks. "Energy and water -- that's kind of my Achilles' heel here," said Capt. Kirk Hibbert, who took command of the naval station last September. "We certainly cannot go across town and say, 'Hey, can I borrow some of your power?'" No simple calculation The Pentagon spends about $16 billion a year on fuel, and when oil prices spike, they hit DOD's budget to the tune of $130 million a year for every $1 increase per barrel. But alternative energy projects are not always financial no brainers for DOD. While transporting energy can be extremely expensive and at times dangerous, so too can shipping the materials, equipment and people that it takes to build new renewable energy infrastructure. At Guantanamo Bay, the rule of thumb is that everything costs about one-and-a-half times what it costs in the United States since it has to be flown or shipped in to the base. That can make it tough to justify investing in something new when the old one still works. The base has a number of landmarks from its 108-year history, testifying to how slowly things change here. The base's original desalinization plant still stands, rusting but intact, because tearing it down and shipping it off base is prohibitively expensive. Poorly insulated buildings, some dating back to the 1950s or earlier, remain in use today with air conditioners whirring against the piercing tropical sun. The tug of war between long-term and short-term costs, combined with the constant need for backup options, is especially stark at the base's power plant. The base recently got two new, high-efficiency diesel generators, joining the two it had previously received as part of the same Energy Savings Performance Contract that brought the wind turbines in 2005. But when the four were off-line for maintenance on a day with temperatures of nearly 90 degrees Fahrenheit in late April, the base was running on seven 1970s-era generators that had been pulled from a salvage yard in Norfolk, Va., as well as three "old workhorses" as the staff calls them, that were built in 1957. The high-performance generators, which are about 25 percent more efficient, make economic sense, Pfannensteil said, and the base staff are hoping to get a few more. But they are not giving the old ones up yet. Other renewable energy projects have won funds by piggybacking on existing construction projects. For instance, there is a new gym in the works that will include a concentrated solar array that is expected to produce 440,000 kilowatt-hours in a year. "We've got a top-down strategy for renewables for the base with 15 sites identified for different renewable projects," Wagoner said. "At the same time, if we get a big project like our gym renovation project ... then we have the opportunity to say, 'Hey, we can add this much solar power to the building to get it closer to a net-zero building, can we move forward with that?' We've had a lot of success moving things forward that way." Meanwhile, Pentagon purse-holders are beginning to choose renewable energy investments based on more than just financial payback, with items like energy security ranking high. The military recently implemented "a new investment decision-making tool called Energy Return on investment (eROI)," Pfannenstiel said in an email. The tool considers a project's financial and nonfinancial benefits, she wrote, including "energy security capabilities, legislative mandate compliance, political/public affairs enhancements, and linkage to other long-term goals." A central DOD program also recently revised its calculations, considering the ability of a project to produce "game-changing" improvements in energy consumption, costs and security when deciding where to invest its $135 million budget. Alt-energy proving ground With a high cost of conventional fuel and a bounty of sun and wind, DOD officials say Guantanamo Bay makes an ideal laboratory for testing alternative energy and energy efficiency technologies. The base also has a unique amount of autonomy when it comes to trying something new. "The thing about Guantanamo Bay is, you don't have to go through a lot of the bureaucratic red tape -- with corps meetings, with local governments -- that folks may have to do back in the states," said Commanding Officer Hibbert. "Here, you may be able to bring things down here and test and validate here, so we can provide those results back to the states." Turning DOD's 300,000 or so buildings and 2.2 billion square feet of space into an energy test bed is an idea that has both DOD officials and energy technology businesses excited. In 2009, the Pentagon launched a $20 million pilot project and this year is looking to institutionalize it with a $30 million research and development budget. This program makes good, plain sense, the DOD official in charge of the military's bases told Congress earlier this year. "Emerging technologies offer a way to cost effectively reduce DOD's facility energy demand by a dramatic amount ... and provide distributed generation to improve energy security," said Deputy Undersecretary of Defense for Installations and Environment Dorothy Robyn in written testimony. "Absent outside validation, however, these new technologies will not be widely deployed in time for us to meet our energy requirements." Energy technology entrepreneurs like the idea because it gives them an early adopter to prove the technology. It also helps them clear the military's particular hurdles for approval and opens them up to DOD's vast market (Greenwire, March 31).

#### Gitmo’s key to Caribbean stability and counter-narcotics

Frida Berrigan 8, research associate at the World Policy Institute, specializing in arms trade, “Guantanamo: The Bigger Picture”, March 17, <http://www.fpif.org/articles/guantanamo_the_bigger_picture>

Navy Commander Jeffery D. Gordon explains that the U.S. presence at Guantanamo serves "a vital role in Caribbean regional security, protection from narco-trafficking and terrorism and safeguards against mass migration attempts in unseaworthy craft." The Navy’s Atlantic fleet is based there and the base is described as being "on the front lines of the battle for regional security."

#### That’s key to solve regional instability and nuclear smuggling

Ambassador (Ret.) Curtis A. Ward 11, Adjunct Professor in the Elliott School of International Affairs at The George Washington University, “Regional Threats: Security Capacity Imperatives in the Caribbean” ndupress, issue 58, 3d quarter 2010, http://www.ndu.edu/press/regional-threats.html

More than 6 years after this declaration, the problems of security in the Caribbean have increased considerably, and the threats have become more complex and therefore require far more superior responses. Caribbean states remain "vulnerable and susceptible" to the same risks identified at the 2004 Americas Summit in Monterrey, Mexico. They still lack "technical and financial resources," and the risks associated with the region still exist despite significant efforts by a number of Caribbean countries to improve security infrastructure and security expertise. However, with limited resources and insufficient technical and financial support from the United States and other international partners, such as Canada and the European Union, the security situation in the Caribbean should continue to be a cause of great concern to the United States in the same way it was 6 years ago in Monterrey. The expectations that followed the Monterrey pronouncement have not been met. Except for its support for drug interdiction in the Caribbean, the United States has not kept pace with the security and development imperatives of the region. During this period, there has been little U.S. assistance to prevent the trafficking in illegal arms (automatic weapons and other small arms) to the Caribbean. By failing to staunch its own flow of guns, the United States itself has not matched the level of cooperation it has demanded of Caribbean countries in dealing with illegal drug trafficking through and from the region to the United States. Furthermore, most of the security imperatives imposed on the region are direct results of bilateral pressure from the U.S. Government, including through requirements of legislation such as the Maritime Transportation Security Act to protect the homeland, the international supply chain, and particularly U.S. trade.4 Added to U.S.-imposed requirements are new security standards and best practices developed in international forums to deal with the threat of international terrorism and maritime and aviation security, often at the urging and leadership of the United States in the post-9/11 era. The Security-Development Nexus While Caribbean states remain relatively safe destinations for American visitors, there are significant security problems that threaten the future political stability and fragile economies of these states. Highlighting these problems is not intended to create any form of hysteria or to raise the threat level on Caribbean travel but to ensure that negative trends in the region are arrested before the problems become uncontrollable and irreversible. Preventative action, now rather than later, serves both the national security interests of the United States and the security and economic development interests of the region. Caribbean security problems are not insurmountable, but they are beyond the technical and financial resource capacities of Caribbean countries to fix. Without significant input from the United States and other partner countries, the problems will only get worse and will pose significant threats to the U.S. homeland and the region in the future. The countries of the English-speaking Caribbean, despite their fragile economies, begin with clear advantages over most countries in other regions and subregions, including Central and South America. The Englishspeaking Caribbean countries have strong democratic underpinnings, adhere to the rule of law, and have in place well-defined, though significantly underresourced, institutional mechanisms.5 These distinctions provide a platform for institutional and operational capacity-building and security enhancement. The security problems, while varied from country to country, have some common threads. These include substantial gaps in border management and control capacities— in particular, customs administration and control, port facilities security, and maritime border control. There is significant lack of capacity to prevent contraband from entering the international supply chain and the domestic environment. This capacity gap considerably increases the threat of weapons of mass destruction (WMD) and their precursors entering the international supply chain from or transiting marginally secured port facilities destined for the United States. The wide gaps in the capacities of the island states to patrol and secure their territorial sea and coastlines increase the likelihood of terrorists and international criminals gaining access to U.S. commercial shipping and cruise ship assets.

#### Instability causes global war

Ivelaw L. Griffith 2k, professor of political science and dean of the honors college at Florida International University, “U.S. Strategic Interests in Caribbean Security”, JFQ: Joint Force Quarterly, Autumn 2000, Issue 26

The strategic importance of the Caribbean is found in its resources, sea lanes, and security networks. The Caribbean Basin is the source of fuel and nonfuel minerals used in both the defense and civilian sectors. Of particular significance are petroleum and natural gas produced in Barbados, Colombia, Guatemala, Trinidad and Tobago, and Venezuela. Moreover, though several countries and U.S. territories in the area do not have energy resources, they offer invaluable refining and transshipment functions (Aruba, Bahamas, Curacao, Dominican Republic, Jamaica, Puerto Rico, St. Lucia, and U.S. Virgin Islands). Other mineral resources from the Caribbean include bauxite, gold, nickel, copper, cobalt, emeralds, and diamonds. The Caribbean Basin has two of the world's major choke points, the Panama Canal and the Caribbean Sea. The former links the Atlantic and Pacific Oceans and saves 8,000 miles and up to 30 days of steaming time. The canal has military and civilian value. And while it is less important to the United States than it was two decades ago, other countries remain very dependent on it, and many, like Chile, Ecuador, and Japan, are militarily or politically important to Washington. Once ships enter the Atlantic from the canal they must transit Caribbean passages en route to ports of call in the United States, Europe, and Africa. The Florida Strait, Mona Passage, Windward Passage, and Yucatan Channel are the principal lanes. The Caribbean is also our southern flank. Until a decade ago the United States maintained a considerable military presence throughout the Caribbean, mainly in Puerto Rico at the Atlantic threshold, in Panama at the southern rim, and in Cuba at Guantanamo on the northern perimeter. In 1990, for instance, there were 4,743 military and civilian personnel in Puerto Rico, 20,709 in Panama, and 3,401 in Cuba. Much has changed since 1990, requiting strategic redesign and force redeployment. Today Puerto Rico is home to fewer forces, and U.S. Southern Command (SOUTHCOM) relocated from Panama to Miami in September 1997, leaving behind only small components. Guantanamo, long considered to have little strategic value, serves essentially as a political outpost in the last remaining communist bastion in the hemisphere, with about 1,200 military and civilian personnel. During the 1980s the Soviet presence in Cuba included modern docks and repair facilities, reconnaissance aircraft, and satellite and surveillance capabilities. The 28-square mile base located at Lourdres monitored missile tests, intercepted satellite communications, and relayed microwave communications to diplomatic posts in the Western Hemisphere. The facility was reputedly the largest maintained by the Soviet Union abroad. It is still in operation, but not at Cold War levels. Yet fear of foreign encroachment persists. The United States is concerned about increasing Chinese interest and investment in Panama. Although such strategic affairs may not be crucial to Washington, they affect allies as well as regional stability and security and thus bear watching. Geoeconomics The mixture of geography, economics, and national power in the area exercises influence over trade and investment. For example, the Department of Commerce found that for the four-year period prior to 1988 a total of 646 U.S. companies invested over $1.5 billion in Caribbean Basin Initiative (CBI) beneficiary countries. Moreover, from 1986 to 1995 U.S. trade surpluses with the area grew from $297 million to $2.6 billion. In 1995 exports grew by 15 percent, to $8 billion, with the Dominican Republic and Jamaica accounting for 55 percent. That year also saw surpluses with every country except Aruba, Dominican Republic, and Trinidad and Tobago. Last year the U.S. Trade Representative told an InterAmerican Development Bank forum, "Taken as a whole, the Caribbean Basin is a larger market for our goods than ... France, Brazil, or China. Likewise, the United States is the area's natural market, taking 80 percent of its exports and providing nearly $50 billion in foreign direct investment." The United States is the largest trading partner and source of capital flows for Caribbean Community and Common Market countries. CBI nations are a principal market for U.S. exports, totaling $21.1 billion in 1998 (9.1 percent over the previous year). Exports to the Caribbean Basin accounted for 3 percent in 1998 (up 2.8 percent over the previous year). An estimated half of each dollar spent in the area is returned to the United States compared with 10 cents from Asia. Further, this trade supports some 400,000 jobs in this country and many more in the Caribbean. Moreover, the Overseas Private Investment Corporation (OPIC) reported in 2000 that from 1995 to 1999 it assisted in 38 projects in the area involving $3.2 billion in investments, which are expected to generate $1.5 billion in U.S. exports and, in turn, support 4,500 jobs in this country. Moreover, in February 1999, OPIC and Citibank established a $200 million investment facility for Central America and the Caribbean to help meet needs for medium- and long-term capital. Geonarcotics There are four dimensions in the drug phenomenon: production, consumption, trafficking, and money laundering. These activities threaten the security of states around the world. Narcotics operations and capital ventures which they spawn precipitate both conflict and cooperation among state and nonstate actors in the international system. Because of the global dispersion of drug traffic and physical, social, and political features of facilitating countries, power involves securing compliant action. In the drug world, this power is both state and nonstate in origin, and some nonstate sources exercise relatively more power than state entities. Politics revolves around resource allocation through the ability of power brokers to determine who gets what, when, where, and how. Because power in this milieu is not only state in origin, resource allocation is not exclusively a state function. Drug operations generate complex relationships. Some involve nonmilitary pressures such as political and economic sanctions by the United States against countries it considers not proactive enough in combating drug traffic. Yet the problem entails more than the movement of drugs from and through the area; it involves money laundering, organized crime, corruption, arms dealing, and matters of sovereignty. Such activities are reported in the International Narcotics Control Strategy Report issued annually by the Department of State and are reflected in the following vignettes: Operation Dinero, an international money laundering sting conducted out of tiny Anguilla from January 1992 to December 1994, led to the seizure of nine tons of cocaine and $90 million in assets, including expensive paintings, Head of a Beggar by Pablo Picasso among them. Cocaine seizures in only five nations--Bahamas, Belize, the Dominican Republic, Haiti, and Jamaica--totaled 3,300 kilos in 1993. Seizures for those same countries amounted to 6,230 kilos--almost double--during 1999. Between 1993 and 1998, over 9,000 deportees were returned to Jamaica, most for drug-related offenses in Canada, the United Kingdom, and the United States. In November 1998, American owned Cupid Foundations closed its business in Jamaica after 22 years with a loss of 550 jobs. Cupid could no longer afford the fines incurred with the seizure of its merchandise by U.S. Customs because of attempts to smuggle drugs in its clothing. Operation Conquistador, conducted March 10-26, 2000, involving the United States and 24 nations in the region, led to the issuance of 7,300 search warrants, arrest of 2,300 people, and seizure of 12,000 pounds of cocaine, 120 pounds of heroin, 150 pounds of hashish oil, 30 pounds of morphine base, 172 vehicles, 13 boats, and 83 guns. Between November 24, 1999, and June 6, 2000, 12 freighters were seized in Miami on arrival from Haiti with over 6,000 pounds of cocaine hidden in their cargo. Since mid-October 2000 Jamaica has produced a drug-related drama involving high-level police corruption, illegal wire-tapping of government officials, and the attempted assassination of the head of the National Firearms and Drug Intelligence Center. Traditional and Emerging Issues Security in the Caribbean has political, military, economic, and environmental implications and includes internal and external threats. Nonstate actors are as important as state actors. Indeed, many nonstate actors can mobilize more economic and military assets than some countries. Thus the security landscape reveals both traditional and nontraditional concerns. Territorial disputes and geopolitical posturing are core traditional issues. Belize, Colombia, Guatemala, Guyana, Suriname, and Venezuela have serious disagreements, some of which Involve multiple disputes. For example, Guyana faces claims by Venezuela for the western five-eighths of its 214,970 square kilometers of territory and by Suriname for 15,000 to the east. Drugs, political instability, migration, and the environment are major nontraditional issues. There is no uniformity in the importance ascribed to them, but a comparison of the traditional and nontraditional categories reveals a generally higher premium on nontraditional issues. Some states, such as those in the Eastern Caribbean, face no traditional security concerns or overt threats. The foremost nontraditional threat involves drugs. This multifaceted problem has increased in scope and gravity over the last decade and a half and added security effects. Crime, corruption, and arms dealing dramatically impact on national security and governance in political, military, and economic terms. They also infringe on national sovereignty. Two decades ago most Caribbean leaders were reluctant to acknowledge that their countries faced a drug threat Two decades ago most Caribbean leaders were reluctant to acknowledge that their countries faced a drug threat. But the severity of the problem grew until the danger was obvious inside and outside the area. For instance, at a meeting on criminal justice in June 2000, which was attended by officials of Europe, Canada, the Caribbean Basin, and the United States, the attorney general of Trinidad and Tobago spoke of "the direct nexus between illegal drugs and crimes of violence, sex crimes, domestic violence, maltreatment of children by parents, and other evils," and remarked that "aside from the very visible decimation of our societies caused by drug addiction and drug-related violence, there is another insidious evil: money laundering." Engagement Challenges Leaders in the Caribbean and the United States share a common assessment of the principal security concerns in the area: drugs, border disputes, poverty, corruption, natural disasters, illegal migration, insurgencies, and the environment. Consistent with this view, SOUTHCOM is focused on counterdrug operations, peacekeeping, humanitarian assistance, and disaster relief. One basic challenge in redesigning policy or strategy is determining which instruments and modalities should be changed. Except for Cuba, engagement does not warrant revamping existing practices. Some things work well and should be retained; others do not and should be modified. This discussion addresses both types. Robert Pastor, who served on the National Security Council staff during the Carter administration, noted that Caribbean nations are too small and poor to directly challenge the United States. What really moved Washington was the threat of powerful adversaries from other parts of the world forging relationships in the area that facilitated the harassment of or attack on the United States or its neighbors. "When the threat diminishes," he remarked, "so does U.S. interest. That accounts for the apparent cycle between preoccupation at moments of intense geopolitical rivalry and neglect at times of geopolitical calm." Today's relative geopolitical calm justifies the concern of scholars and statesmen about the likelihood of a new phase of benign neglect or even worse. Hence it is important to highlight the challenge of staying engaged in both symbolic and substantive terms. Some years ago, the prime minister of St. Vincent and the Grenadines declared: "We have to behave like Grenada or Fiji to get attention, and when we stop misbehaving we are left to languish in blissful obsecurity." Engagement demands flexibility and adaptability. For some missions, political expediency may require that nonmilitary personnel take the lead, or perhaps coastguardsmen as opposed to soldiers or marines. And flexibility and adaptability may be compromised by pushing the economy of force envelope too far. Also, engagement programs must not mistake silence for satisfaction. In addition, engagement requires the first team. U.S. leaders must not relegate decisionmaking to uninformed interns, junior staffers, or freshman bureaucrats. Colombia, Cuba, Haiti, and Venezuela are clearly hot spots that should be watched closely; but so must other countries. Guyana bears scrutiny because of resurgent territorial claims, the impact of that dispute on investment and development (especially because U.S. and Canadian investors are involved), the likelihood of political instability, and the influence of drug trafficking. Another concern is violent crime in Jamaica, some of which affects foreign tourists and investors. In addition, Jamaican organized crime poses transnational dangers to law enforcement and economic interests. Drug trafficking and economic deprivation could also lead to renewed political instability. The Dominican Republic faces issues of drug traffic, transnational crime, illegal migration, and political instability as that nation strives to translate rapid economic growth into less deprivation. The economy grew by 6.5 percent in 2000, 8.3 percent in 1999, and 7.3 percent in 1998, yet many Dominicans do not benefit from this wealth as some 20 percent of the country's 8.5 million people live in poverty. Puerto Rico also warrants attention. Although a domestic question for the United States, Vieques detracts from U.S. conflict resolution credibility. While Vieques is allegedly indispensable for Navy training, this issue highlights a troubling aspect of relations between the mainland and the island. Programs must operate on several tracks encompassing broad interagency activities. Multifaceted engagement is especially vital in counternarcotics efforts. Countermeasures must be multi-level--regional and international as well as national--because drug operations are transnational. Moreover, the measures must be implemented on a multiagency level to grapple with jurisdictional, legal, social, and economic issues precipitated by the drug problem. In addition to government agencies, a range of corporations, nongovernmental organizations, and international bodies such as the Organization of American States and the U.N. International Drug Control Program must play critical roles. Multilateral security measures do not preclude bilateralism. Indeed, such measures may be more politically expedient because they can be designed and executed faster. There may be budget incentives to act quickly. Moreover, in light of resource difficulties, a premium should be put on regulatory and operational aspects of interagency work to guard against turf and prestige battles. Whether it is an issue of drugs, territorial disputes, migrant flows, or the environment, engagement should be pursued on the basis of mutual interest. This is not always achievable. Sometimes even leaders of comparatively wealthy states, though partners, are unwilling to agree to collective efforts because of concern about their impact. Domestic factors such as political change and public opinion often make it difficult to honor or renew pledges. But despite such complications, leaders must not let the possibility of conflict undermine cooperation. There are high stakes for the United States in the Caribbean. The stakes are also high for the Caribbean countries. New defense and foreign policy initiatives may encourage effective engagement and investment of the resources to match the national interest in an area that represents a global crossroads and an essential element for regional stability.

#### High risk of nuclear and bioterror

Ambassador (Ret.) Curtis A. Ward 11, Adjunct Professor in the Elliott School of International Affairs at The George Washington University, “Regional Threats: Security Capacity Imperatives in the Caribbean” ndupress, issue 58, 3d quarter 2010, http://www.ndu.edu/press/regional-threats.html

As noted above, the Caribbean is astride the major shipping lanes from South America to North America and Europe. Though one of the Caribbean region's greatest assets, the region's geographic position and construct increase its vulnerability and pose even greater security challenges. Drug traffickers moving cocaine from South America—especially from Colombia, Peru, and Bolivia, the world's largest cocaine producers—have taken advantage of the ease of transit through the region and the porous, unprotected borders of the islands. Illicit arms trafficking and money laundering, which support the drug trade, have contributed significantly to increased crime and violence and raised the security risks and threat levels in a number of Caribbean societies. These and other emerging security risks have increased pressure on a global scale for each country to meet new and constantly evolving international standards of security primarily associated with combating international terrorism and transnational crime. Traditional security measures no longer suffice, and greater efforts are needed to keep pace with shifting security threats. The new security standards in particular disproportionately affect small states in which small economic returns from security investments hardly justify the large expenditures. In the everchanging global security environment, threats from increasingly sophisticated transnational organized crime and terrorism are forcing Caribbean countries to adjust their priorities. However, without the resources to do so, they fall behind constantly. The problem cannot be ignored indefinitely or until a catastrophic event either occurs in the Caribbean, or is planned and initiated in the Caribbean and carried out on U.S. territory. There are a number of likely scenarios that should raise deep concern among U.S. policymakers. These include a bomb or WMD placed on a U.S.-bound vessel in the Caribbean timed to go off or to release deadly pathogens when the vessel reaches a U.S. port. How the United States responds to Caribbean security threats and the deficiencies in current security capacities of countries in the region will determine the region's future prospects for economic growth and development, as well as ensuring democracy, good governance, and the rule of law. These are the underpinnings of stability and security in the region. It is a matter of U.S. national security to ensure and guarantee the security of its third border.

Extinction

**Ayson 10**, Robert Ayson, Professor of Strategic Studies and Director of the Centre for Strategic Studies: New Zealand at the Victoria University of Wellington, 2010 (“After a Terrorist Nuclear Attack: Envisaging Catalytic Effects,” Studies in Conflict & Terrorism, Volume 33, Issue 7, July, Available Online to Subscribing Institutions via InformaWorld)

But these two nuclear worlds—a non-state actor nuclear attack and a catastrophic interstate nuclear exchange—are not necessarily separable. It is just possible that some sort of terrorist attack, and especially an act of nuclear terrorism, could precipitate a chain of events leading to a massive exchange of nuclear weapons between two or more of the states that possess them. In this context, today’s and tomorrow’s terrorist groups might assume the place allotted during the early Cold War years to new state possessors of small nuclear arsenals who were seen as raising the risks of a catalytic nuclear war between the superpowers started by third parties. These risks were considered in the late 1950s and early 1960s as concerns grew about nuclear proliferation, the so-called n+1 problem. It may require a considerable amount of imagination to depict an especially plausible situation where an act of nuclear terrorism could lead to such a massive inter-state nuclear war. For example, in the event of a terrorist nuclear attack on the United States, it might well be wondered just how Russia and/or China could plausibly be brought into the picture, not least because they seem unlikely to be fingered as the most obvious state sponsors or encouragers of terrorist groups. They would seem far too responsible to be involved in supporting that sort of terrorist behavior that could just as easily threaten them as well. Some possibilities, however remote, do suggest themselves. For example, how might the United States react if it was thought or discovered that the fissile material used in the act of nuclear terrorism had come from Russian stocks,40 and if for some reason Moscow denied any responsibility for nuclear laxity? The correct attribution of that nuclear material to a particular country might not be a case of science fiction given the observation by Michael May et al. that while the debris resulting from a nuclear explosion would be “spread over a wide area in tiny fragments, its radioactivity makes it detectable, identifiable and collectable, and a wealth of information can be obtained from its analysis: the efficiency of the explosion, the materials used and, most important … some indication of where the nuclear material came from.”41 Alternatively, if the act of nuclear terrorism came as a complete surprise, and American officials refused to believe that a terrorist group was fully responsible (or responsible at all) suspicion would shift immediately to state possessors. Ruling out Western ally countries like the United Kingdom and France, and probably Israel and India as well, authorities in Washington would be left with a very short list consisting of North Korea, perhaps Iran if its program continues, and possibly Pakistan. But at what stage would Russia and China be definitely ruled out in this high stakes game of nuclear Cluedo? In particular, if the act of nuclear terrorism occurred against a backdrop of existing tension in Washington’s relations with Russia and/or China, and at a time when threats had already been traded between these major powers, would officials and political leaders not be tempted to assume the worst? Of course, the chances of this occurring would only seem to increase if the United States was already involved in some sort of limited armed conflict with Russia and/or China, or if they were confronting each other from a distance in a proxy war, as unlikely as these developments may seem at the present time. The reverse might well apply too: should a nuclear terrorist attack occur in Russia or China during a period of heightened tension or even limited conflict with the United States, could Moscow and Beijing resist the pressures that might rise domestically to consider the United States as a possible perpetrator or encourager of the attack? Washington’s early response to a terrorist nuclear attack on its own soil might also raise the possibility of an unwanted (and nuclear aided) confrontation with Russia and/or China. For example, in the noise and confusion during the immediate aftermath of the terrorist nuclear attack, the U.S. president might be expected to place the country’s armed forces, including its nuclear arsenal, on a higher stage of alert. In such a tense environment, when careful planning runs up against the friction of reality, it is just possible that Moscow and/or China might mistakenly read this as a sign of U.S. intentions to use force (and possibly nuclear force) against them. In that situation, the temptations to preempt such actions might grow, although it must be admitted that any preemption would probably still meet with a devastating response.

#### Bioterror causes extinction

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**Of current extinction risks, the most severe may be bioterrorism. The knowledge needed to engineer a virus is modest compared to that needed to build a nuclear weapon; the necessary equipment and materials are increasingly accessible and because biological agents are self-replicating, a weapon can have an exponential effect on a population** (Warrick, 2006; Williams, 2006). 5 **Current U.S. biodefense efforts are funded at $5 billion per year** to develop and stockpile new drugs and vaccines, monitor biological agents and emerging diseases, and strengthen the capacities of local health systems to respond to pandemics (Lam, Franco, & Shuler, 2006). **There is currently no independent body assessing the risks of high-energy physics experiments. Posner** (2004) **has recommended withdrawing federal support for such experiments because the beneﬁts do not seem to be worth the risks**.

## hydrogen

#### Adv 2 hydrogen

#### SMR development allows hydrogen fuel cell transition—spills over to military transportation

Alt Energy Today, 10/25

(“Alternative Energy The Ways that the Military is Using,” http://www.alternative-energy-today.com/the-ways-that-the-military-is-using-alternative-energy/)

One thing that the military leaders stress is the desire for the forces deployed in the theater to be able to be more alternative energy-independent. Currently the US military has policies and procedures in place to interact with allies or sympathetic local populaces to help its forces in the field get their needed energy and clean water when engaged in a foreign military campaign. However, this is not wholly reliable, as the US might well find itself facing unilateral military activities, or have itself in a situation where its allies cannot help it with the resources it needs to conduct its military actions successfully. The US military is very interested in certain alternative energy that, with the right research and development technologically, can make it energy independent, or at least a great deal more so, on the battlefield. One of the things that greatly interests the military along these lines is **the development of small nuclear reactors,** which could be portable, for producing theater-local electricity. The military is impressed with how clean-burning nuclear reactors are and how energy efficient they are. Making them portable for the typical warfare of today’s highly mobile, small-scaled military operations is something they are researching. The most prominent thing that the US military thinks these small nuclear reactors **would be useful for** involves **the removal of hydrogen (for fuel cell) from seawater.** It also thinks that converting seawater to hydrogen fuel in this way would have less negative impact on the environment than its current practices of remaining supplied out in the field. **Seawater is, in fact, the military’s highest interest when it comes to the matter of alternative energy supply. Seawater can be endlessly “mined” for hydrogen, which in turn powers advanced fuel cells.** Using OTEC, seawater can also be endlessly converted into desalinated, potable water. Potable water and hydrogen for power are two of the things that a near-future deployed military force will need most of all. In the cores of nuclear reactors—which as stated above are devices highly interesting, in portable form, to the US military—we encounter temperatures greater than 1000 degrees Celsius. When this level of temperature is mixed with a thermo-chemical water-splitting procedure, we have on our hands the most efficient means of breaking down water into its component parts, which are molecular hydrogen and oxygen. The minerals and salts that are contained in seawater would have to be extracted via a desalination process in order to make the way clear for the water-splitting process. These could then be utilized, such as in vitamins or in salt shakers, or simply sent back to the ocean (recycling). **Using the power of nuclear reactors to extract this hydrogen from the sea, in order to then input that into fuel cells to power advanced airplanes, tanks, ground vehicles**, and the like, is clearly high on the R & D priority list of the military.

#### Tech is viable—just need hydrogen fuel

Chuck Squatriglia, Wired, 4/22/11, Discovery Could Make Fuel Cells Much Cheaper, www.wired.com/autopia/2011/04/discovery-makes-fuel-cells-orders-of-magnitude-cheaper/

One of the biggest issues with hydrogen fuel cells, aside from the lack of fueling infrastructure, is the high cost of the technology. Fuel cells use a lot of platinum, which is frightfully expensive and one reason we’ll pay $50,000 or so for the hydrogen cars automakers say we’ll see in 2015. That might soon change. Researchers at Los Alamos National Laboratory have developed a platinum-free catalyst in the cathode of a hydrogen fuel cell that uses carbon, iron and cobalt. That could make the catalysts “two to three orders of magnitude cheaper,” the lab says, thereby significantly reducing the cost of fuel cells. Although the discovery means we could see hydrogen fuel cells in a wide variety of applications, it could have the biggest implications for automobiles. Despite the auto industry’s focus on hybrids, plug-in hybrids and battery-electric vehicles — driven in part by the Obama administration’s love of cars with cords — several automakers remain convinced hydrogen fuel cells are the best alternative to internal combustion. Hydrogen offers the benefits of battery-electric vehicles — namely zero tailpipe emissions — without the drawbacks of short range and long recharge times. Hydrogen fuel cell vehicles are electric vehicles; they use a fuel cell instead of a battery to provide juice. You can fill a car with hydrogen in minutes, it’ll go about 250 miles or so and the technology is easily adapted to everything from forklifts to automobiles to buses. Toyota, Mercedes-Benz and Honda are among the automakers promising to deliver hydrogen fuel cell vehicles in 2015. Toyota has said it has cut the cost of fuel cell vehicles more than 90 percent by using less platinum — which currently goes for around $1,800 an ounce — and other expensive materials. It plans to sell its first hydrogen vehicle for around $50,000, a figure Daimler has cited as a viable price for the Mercedes-Benz F-Cell (pictured above in Australia). Fifty grand is a lot of money, especially something like the F-Cell — which is based on the B-Class compact — or the Honda FCX Clarity. Zelenay and Wu in the lab. In a paper published Friday in Science, Los Alamos researchers Gang Wu, Christina Johnston and Piotr Zelenay, joined by Karren More of Oak Ridge National Laboratory, outline their platinum-free cathode catalyst. The catalysts use carbon, iron and cobalt. The researchers say the fuel cell provided high power with reasonable efficiency and promising durability. It provided currents comparable to conventional fuel cells, and showed favorable durability when cycled on and off — a condition that quickly damages inferior catalysts. The researchers say the carbon-iron-cobalt catalyst completed the conversion of hydrogen and oxygen into water, rather than producing large amounts of hydrogen peroxide. They claim the catalyst created minimal amounts of hydrogen peroxide — a substance that cuts power output and can damage the fuel cell — even when compared to the best platinum-based fuel cells. In fact, the fuel cell works so well the researchers have filed a patent for it. The researchers did not directly quantify the cost savings their cathode catalyst offers, which would be difficult because platinum surely would become more expensive if fuel cells became more prevalent. But the lab notes that iron and cobalt are cheap and abundant, and so the cost of fuel cell catalysts is “definitely two to three orders of magnitude cheaper.” “The encouraging point is that we have found a catalyst with a good durability and life cycle relative to platinum-based catalysts,” Zelenay said in a statement. “For all intents and purposes, this is a zero-cost catalyst in comparison to platinum, so it directly addresses one of the main barriers to hydrogen fuel cells.”

#### Navy developing new underwater capabilities now

Paul Szoldra, Business Insider, 1/17/13, The Pentagon Wants To Scatter Weapons Under The World's Oceans To Activate On Demand, www.businessinsider.com/navy-darpa-develop-underwater-weapon-upward-falling-payloads-ufp-2013-1

The U.S. Navy is attempting to develop a stealth underwater system capable of providing worldwide "operational support and situational awareness," according to a Jan. 11 release from the Defense Advanced Research Projects Agency (DARPA).

The announcement, called "Falling Up", cites cost and complexity that limits the Navy from operating over vast areas.

That makes a lot of sense, considering the cost of ships, which are expensive and limited in scope -keep going up.

And as the technology of unmanned systems has been realized in Iraq & Afghanistan with the use of drones, the Navy wants to get in on the action.

The concept of DARPA's Upward Falling Payloads (UFP) would be "deployable, unmanned, distributed systems that lie on the deep-ocean floor in special containers for years at a time." They can then be woken up remotely and recalled to the surface to send back data.

#### Hydrogen fuel cell critical to effectiveness

Cai et al 7

Cai, Browning, Brett, Brandona, Department of Earth Science and Engineering, Imperial College London, 2007, Hybrid Fuel Cell / Battery Power Systems for Underwater Vehicles, http://www.seasdtc.com/events/2008\_conference/downloads/pdf/propulsion\_power\_generation\_and\_energy\_management/PPEM003\_paper.pdf

A system-level design and analysis of the power system for a lightweight unmanned underwater vehicle (UUV) is presented with recommendations of viable technologies that can meet the UUV mission requirements. A hybrid fuel cell / battery system is designed to power the UUV as it has advantages over a pure fuel cell or battery system. The power system is designed to use a lithium-ion battery hybridised with a polymer electrolyte fuel cell. The analysis is focused on the mass, size, and the energy balance of the system components. It is shown that hydrogen and oxygen storage systems dominate the mass and volume of the energy system compared to the fuel cell and battery. Liquid oxygen is recommended for oxidant storage based on the mission length requirement.

Unmanned underwater vehicles (UUVs) are ideally suited to provide surveillance, remote sensing and communication relay capabilities for both military and civilian applications. Practical examples include oceanographic data gathering, environmental monitoring, mine detecting and coastal defence. The power system of a UUV has long been a major consideration in designing and manufacturing these vehicles for particular missions. This is because the power system usually determines the ultimate performance (e.g. **endurance, cruising speed and distance**) of a UUV. The work reported here aims to investigate viable power system architectures that meet the requirement of UUVs.

Stealth is the highest design priority of a UUV as it enables the UUV to operate anywhere, at any time, without being detected. Besides helping to avoid detection, stealth enhances a submarine’s ability (by eliminating / reducing selfnoise) to detect targets. To meet the stealth requirement, an air independent power (AIP) system is beneficial to UUVs. The ideal AIP source for a submarine will be quiet, have a low thermal signature, will not need to discharge anything from the submarine system, and will of course be capable of operating without atmospheric air. In its simplest form, the AIP power source is a battery. However, batteries alone encounter technology difficulties for use as the power source of UUVs, as current battery technologies cannot provide sufficient endurance to allow for large area coverage and short turnaround time between missions. Hybrid fuel cell / battery systems have a number of advantages over either stand-alone fuel cells or batteries. For example, the battery would enable instant cold-start operation whilst the fuel cell was initiating. The battery, as the dynamic energy storage device, would supply peak and pulse power and power for start-up of the hybrid system. The fuel cell, as the device that converts the energy from the fuel, supplies base-load power and recharges the battery. A hybrid system would allow both components to be of smaller dimensions and operate with higher efficiency, since neither would have to provide the full load power.

#### UUVs are critical to maintaining naval power—ISR and communications key to unlock all other capabilities

Troy Vandenberg, Naval Postgraduate School, 2010, Manning and maintainability of a submarine Unmanned Undersea Vehicle (UUV) program a systems engineering case study, https://calhoun.nps.edu/public/bitstream/handle/10945/5226/10Sep\_Vandenberg.pdf?sequence=1

Future naval battles will rely heavily on advantages gained through the combination of strategies, tactics, procedures, and technologies called network-centric warfare and implemented through the strategy of ForceNet. These ideas rely heavily on Joint Force assets working together with common communication nodes. Large-scale undersea networks, like those adhering to ForceNet, will be used heavily in the future of USW, with UUVs acting as crucial communication nodes to and from submarine and surface assets. The following subsections will outline three different submarine missions and the future involvement UUVs will have with those missions. Each of the three missions (ISR, Communications, and ASW) can be evaluated as part of the overall ForceNet image.

Many missions may require the submarine to have the ability to launch and recover a UUV, but this is not a necessary factor in analyzing the possible mission sets. Currently, launch and recovery efforts have been possible via torpedo tubes and vertical launch tubes, but none of the missions discussed in this thesis require this to happen. Moving forward in the militarization of UUVs, it is important to remove the “platformcentric” thinking of programs and analyze how systems can interact with other systems.

1. Intelligence, Surveillance, and Reconnaissance

One of the many examples of applying ForceNet to ISR for the submarine force is through a program titled Persistent Littoral Undersea Surveillance Network (PLUSNet), a multi-institution effort combining key government assets via ONR and Space and Naval Warfare Systems Command (SPAWAR). PLUSNet is an unmanned systems approach to undersea surveillance that involves the use of mature technologies. The system involved an autonomously processed cable-free nested communication network with fixed and mobile sensor nodes (Martin, 2005).

In any ISR example, including PLUSNet, there are four fundamental tasks necessary to complete the mission: collect, communicate, process, and act. These tasks are performed in various different ways by a number of unique systems (both manned and unmanned). In the case of UUVs, however, one vessel has the ability—given the appropriate payloads—to perform all four tasks on board. One UUV can include sensors that collect the data, a platform that communicates and processes the data, and an implementer on board that takes action via movement, external communication, or weapon deployment (Fletcher, 2001). This concept is currently the main focus of UUV platform development for the Navy, namely a single, multi-payload UUV that can handle long (greater than 30 days) ISR missions.

Figure 10. Operational concept of PLUSNet (From: Martin, 2005)

However, one UUV does not have to have all three systems (sensor, platform, and implementer) on board to perform the tasks, as is the case of collaboratively networked UUV groups. Instead of having one large scale UUV with multiple payloads performing multiple missions, the groups of small UUVs would include single payloads performing individual missions. These UUVs would then communicate data amongst themselves and/or a larger node (either a separate UUV or manned vessel) to gain a common operational picture of the battlespace. Currently, DARPA has given some funding to develop grouped UUV programs, but this is not the main focus of the submarine force.

In both cases, unmanned systems add a strategic advantage to the war-fighter and will allow friendly forces to gather ISR information from locations otherwise currently inaccessible or of high risk to manned systems. Possible ISR missions using these strategies include (Department of the Navy, 2004):

Deployment of leave-behind surveillance sensors or sensor arrays Specialized mapping and object detection and localization could deploy one or more UUVs a safe distance from the shoreline and sit out of harm’s way while they patrol harbors, collecting ISR data and eventually returning to the host platform to refuel, upload data, and receive necessary operator level maintenance. This mission will free up valuable time for the submarine and the Special Operating Forces (SOF) on board to perform other valuable missions. Ultimately, due to the simplistic nature and emerging technologies, the submarine ISR mission-set will see the first full scale use of UUVs.

2. Communications

Communication is an important aspect for all military operations. UGVs and UAVs have distinct advantages of being able to easily communicate large amounts of data over long distances in air. Underwater communications, however, are not quite as simple and pose many problems in the area of USW. One solution to the problem of undersea communication is a concept called “Seaweb.” Seaweb uses battery-limited sensor technology to set up a wide-area network with expendable network nodes. In an article entitled “Enabling Undersea ForceNET with Seaweb Acoustic Networks” in the Biennial Review 2003, author Joseph Rice of SPAWAR San Diego concluded that:

Undersea, off-board, autonomous systems will enhance the war-fighting effectiveness of submarines, maritime patrol aircraft, amphibious forces, battle groups, and space satellites. Wide-area sensor grids, leave behind multi-static sonar sources, mine-hunting robots, and AUVs are just a few of the battery-powered, deployable devices that will augment space and naval platforms. (Rice, 2003)

#### Naval power key to prevent a laundry list of wars

Eaglen 11, research fellow for national security – Heritage, and McGrath, former naval officer and director – Delex Consulting, Studies and Analysis, 5/16/’11

(Mackenzie and Bryan, “Thinking About a Day Without Sea Power: Implications for U.S. Defense Policy,” Heritage Foundation)

Global Implications. Under a scenario of dramatically reduced naval power, **the** **U**nited **S**tates **would cease to be active in any international alliances.** While it is reasonable to assume that land and air forces would be similarly reduced in this scenario, the lack of credible maritime capability to move their bulk and establish forward bases would render these forces irrelevant, even if the Army and Air Force were retained at today’s levels. In Iraq and Afghanistan today, 90 percent of material arrives by sea, although material bound for Afghanistan must then make a laborious journey by land into theater.

China’s claims on the South China Sea, previously disputed by virtually all nations in the region and routinely contested by U.S. and partner naval forces, are accepted as a fait accompli, effectively **turning the region into a “Chinese lake.”** China establishes expansive oil and gas exploration with new deepwater drilling technology and secures its local sea lanes from intervention. Korea, unified in 2017 after the implosion of the North, signs a mutual defense treaty with China and solidifies their relationship.

Japan is increasingly isolated and in 2020–2025 executes long-rumored plans to create an indigenous nuclear weapons capability.[11] By 2025, Japan has 25 mobile nuclear-armed missiles ostensibly targeting China, toward which Japan’s historical animus remains strong.

China’s entente with Russia leaves the Eurasian landmass dominated by Russia looking west and China looking east and south. Each cedes a sphere of dominance to the other and remains largely unconcerned with the events in the other’s sphere.

Worldwide, trade in foodstuffs collapses. Expanding populations in the Middle East increase pressure on their governments, which are already stressed as the breakdown in world trade disproportionately affects food importers. Piracy increases worldwide, driving food transportation costs even higher.

In the Arctic, Russia aggressively asserts its dominance and effectively shoulders out other nations with legitimate claims to seabed resources. No naval power exists to counter Russia’s claims.

India, recognizing that its previous role as a balancer to China has lost relevance with the retrenchment of the Americans, agrees to supplement Chinese naval power in the Indian Ocean and Persian Gulf to protect the flow of oil to Southeast Asia. In exchange, China agrees to exercise increased influence on its client state Pakistan.

The great typhoon of 2023 strikes Bangladesh, killing 23,000 people initially, and 200,000 more die in the subsequent weeks and months as the international community provides little humanitarian relief. Cholera and malaria are epidemic.

Iran dominates the Persian Gulf and is a nuclear power. Its navy aggressively patrols the Gulf while the Revolutionary Guard Navy harasses shipping and oil infrastructure to force Gulf Cooperation Council (GCC) countries into Tehran’s orbit. Russia supplies Iran with a steady flow of military technology and nuclear industry expertise. Lacking a regional threat, the Iranians happily control the flow of oil from the Gulf and benefit economically from the “protection” provided to other GCC nations.

In Egypt, the decade-long experiment in participatory democracy ends with the ascendance of the Muslim Brotherhood in a violent seizure of power. The United States is identified closely with the previous coalition government, and riots break out at the U.S. embassy. Americans in Egypt are left to their own devices because the U.S. has no forces in the Mediterranean capable of performing a noncombatant evacuation when the government closes major airports.

Led by Iran, a coalition of Egypt, Syria, Jordan, and Iraq attacks Israel. Over 300,000 die in six months of fighting that includes a limited nuclear exchange between Iran and Israel. Israel is defeated, and the State of Palestine is declared in its place. Massive “refugee” camps are created to house the internally displaced Israelis, but a humanitarian nightmare ensues from the inability of conquering forces to support them.

The NATO alliance is shattered. The security of European nations depends increasingly on the lack of external threats and the nuclear capability of France, Britain, and Germany, which overcame its reticence to military capability in light of America’s retrenchment. Europe depends for its energy security on Russia and Iran, which control the main supply lines and sources of oil and gas to Europe. Major European nations stand down their militaries and instead make limited contributions to a new EU military constabulary force. No European nation maintains the ability to conduct significant out-of-area operations, and Europe as a whole maintains little airlift capacity.

Implications for America’s Economy. If the United States slashed its Navy and ended its mission as a guarantor of the free flow of transoceanic goods and trade, globalized world trade would decrease substantially. As early as 1890, noted U.S. naval officer and historian Alfred Thayer Mahan described the world’s oceans as a “great highway…a wide common,” underscoring the long-running importance of the seas to trade.[12]

#### Effective UUVs necessary to deter Chinese submarine movement—otherwise, they’ll patrol off the US coast causing crisis situations

Michael Robinson, Defense and Technology Specialist, 1/14/13, moneymorning.com/2013/01/14/this-profit-play-builds-hunter-drones-to-counter-the-chinese-sub-threat/

That's why I was glad to learn recently that SAIC is taking a leadership role in a major defense trend unmanned vehicles, usually referred to as drones. SAIC is helping the Pentagon pioneer underwater drones that can detect a new generation of ultra-quiet diesel-electric submarines that threaten U.S. security. In a moment I will share those details with you. But first, I want to make sure you know why I spend time talking to senior leaders like Beyster. See, these guys are not only big thinkers driving the Era of Radical Change, but many of them are also profit machines. They often define U.S. entrepreneurship the unique quality that makes America the perennial leader in global high tech ... and in the creation of wealth for its free-market investors. An entrepreneur himself, Beyster is known for taking two bold management steps. First, he laid the groundwork for employee ownership of a publicly traded firm. That may sound like an inherent contradiction. But not the way Beyster did it. At the time I talked with him, only the employees could own stock in SAIC. Beyster stands out today as a leader in pushing the concept of employee-owned firms. After he retired as CEO, the company launched an IPO, and its shares are publicly traded still. (In fact, to better focus on a changing market, SAIC later this year plans to split into two publicly traded firms.) Second, Beyster became the ultimate change agent. He created an atmosphere that catered to entrepreneurs which turned SAIC into an incubator for innovation. Indeed, many of Beyster's "employees" went off to start their own firms. Between 1975 and 2003 the 18-year stretch for which Beyster kept records roughly four dozen alumni started new companies. No doubt, most never became household names. You likely never heard of Michael A. Chipman. Fact is, he created a little software package called TurboTax. Shortly after going public in 1993, Intuit Inc. (NasdaqGS: INTU) acquired that firm and has gone on to return roughly 2,600% to investors. In 2004, Beyster retired from the company he'd founded back in 1969, at the height of the Vietnam War. But his focus on making sure that SAIC would remain a technical leader lives on today. That's clear from the recent news that the mid-cap firm just got a key "drone" contract with DARPA, the Pentagon's research unit. These days, most drones are airborne, and are known as "unmanned aerial vehicles," or UAVs. They represent a major trend toward pilotless military planes. But under a contract worth at least $58 million, SAIC will build and test an unmanned underwater vehicle (UUV) with a very special purpose. Simply put, DARPA wants a robotic anti-submarine vehicle a "sub-hunter" drone that can operate for extended periods, and cover thousands of miles of ocean as it does so. You see, China, North Korea and Iran between them now have 73 diesel-electric "boats," as they're known in military parlance. About half are the new, super-quiet subs. And more are on the way. In an era in which ultra-modern nuclear subs get all the headlines, here's a stunner: Diesel-electric technology which dates back to the late 1920s is one of the biggest sources of worry in the Pentagon's shadowy corridors. And for good reason. The propulsion systems of these boats are nearly silent. Diesel-electrics run on big diesel motors when running on the surface, but switch to batteries when submerged. That power system is nearly silent, making it the perfect design for the shallow waters just off our coastlines. These submarines also possess the "passive" sonar systems that make it possible for these submarines to sit and listen, submerged and quiet, just off our shores. It's a nasty package, and one that can't be ignored: We don't want the silent subs of our enemies to be able to launch a first strike on the U.S. from as little as a mile away. I believe this technology is vital, and the sooner we field these drones, known as ACTUVs, the better. It will give us an edge over China we'll be able to find their quiet subs long before they can find ours, shifting the balance of power back to the United States.

#### Limiting Chinese sub proximity key—allowing close patrols cause hair trigger alert and use-it-or-lose-it situations—causes nuclear escalation

Michael Glosny, Harvard John M. Olin Institute for Strategic Studies Fellow, 1/9/2008, Federal News Service, CHINA'S BOOMERS: IMPLICATIONS IF CHINA'S DETERRENT GOES TO SEA, Lexis

The first thing I want to say is there's a lot we just don't know about the boomer force. But there are a few things we do know or know with a reasonable amount of certainty, and I want to talk about how two specific factors -missile range and geographic situation -are going to impact the way the PLA would put out a boomer force if it decides to put out a boomer force. The first thing to say is the 094 clearly a vast improvement on the Xia class, on their former SSBN, that either never went out or went out in one deterrent patrol. And the JL-2 which is the missile that will eventually go on the 094 is about probably a four-fold increase in range over the current missile. But what does that mean in practice? When a lot of people talk about what the 094 with the JL-2 means for U.S. security, there are a lot of people that talk about the Chinese in their own territory, in their own territorial waters in the Bohai Gulf or in the Yellow Sea, being able to attack the continental United States. This is in lots of newspaper articles and lots of places it shouldn't be. For instance, it's all the time it appears in Jane's which should know better. But there's a '99 piece in Jane's Missiles and Rockets that I'll pull out. It says, quote, "JL-2 has a maximum range of 8,000 kilometers. When deployed, it will allow Chinese SSBNs to target portions of the U.S. for the first time from operating areas located near the Chinese coast." I'm sure if you've read anything on 094, you've probably read that before. In order for that statement to be true, based on what we know about the range, you need to stretch one of those two key concepts. You either need to stretch what counts as waters near the Chinese coasts, or you need to stretch what means portions of the United States. After the very next sentence in this article is the SSBN, quote, "would only have to patrol just to the northeast of the Kurile Islands to put approximately 75 percent of the United States at risk." Now, that's a big difference between sitting in Chinese territorial waters and holding Washington at risk or having to go a very, very long way. We didn't bring a map, but if you look at a map, it's a very, very long way to go from Chindao out into the deep north Pacific. MR. LEWIS: Mike, if I could just interrupt you. If you picked up a copy of one of my blog posts I printed out, it actually does have a said map. MR. GLOSNY: Great. You do the self-promotion, too, I see. (Laughs.) So that is a very big difference, and I'll talk a little bit about what some of the implications of the range of the missile is. But if you leave this room knowing nothing else, know that the 094 with the JL-2 in Chinese territorial waters cannot hit the continental United States. There is a follow-on missile which is going to be the sea-based version of the DF-31A which has a much longer range which could do so. And later in the Q&A or in the discussion, we can talk about what the implications for that are either for stability or for the U.S. Navy. The second factor that we're even more sure of, right, the missile range that's based on DOD estimates of what the DF-31's range is, and it's been roundabout 8,000 kilometers. On the DF-31, it's been reduced to 7,250. But we're roughly sure that it's somewhere in that range. It would be very surprising if it came in at 10,000 kilometers or something like that. So we're pretty sure of that. One thing we're really sure of is what the geographic situation is that China faces. If you look at where China is likely to be operating these submarines from, which is near Chindao, and then you look at what these patrol areas are that I'm talking about, which are very far east, very far east of the Kurile Islands, one thing you look at when you look at a map is there are very few ways for the Chinese to get there. There are essentially two major ways to get there. One would be going up north between Japan and South Korea through the Sea of Japan and then out. The other way would be to go south of Japan, sort of through Okinawa. And what does this mean for ASW concerns? Well, it narrows the areas that these submarines could possibly be. So this serves as something of a queuing in terms of where we would be looking for these submarines. The other thing that Jeff points out in the piece that you have is it draws the comparison between that and what in the Cold War was called the Greenland-Iceland-U.K. gap, right. When the Soviet Union had to get their submarines out into the Atlantic, we set up a gap of passive sonars, of P-3s dropping sonobuoys of attack submarines, and the Soviet submarines had to get through this in order to get to the promised land on the other side. Essentially, this is what this geography presents as a possibility, that in order for the Chinese SSBN to get out into that part of the world to launch, it would need to go through a similar type of gap. And although there's been a lot of discussion about how U.S. ASW has atrophied, much of this is focused on the idea of a small, diesel electric submarine operating in the coral shallow waters. What the geography means here, what the geography and the range of the missile mean is where the SSBN would need to go is not only through these gaps, that at least in the Cold War we were very good at setting up ASW bastions, but then would need to patrol in very deep water. And for those -not to get too technical -but for those that know a little bit about Cold War anti-submarine warfare, in deep water, sound propagates a lot longer, and it's a lot easier to make detections. So the missile range and the geography together essentially put the Chinese in a situation where they are far more constrained in how they would actually put this Boomer at sea if it wanted to, right. It limits how -it sets a constraint on how quiet the submarine needs to be in terms of being survivable. If the submarine only needs to be in its own waters to launch, it doesn't need to be anywhere near as quiet as it does if it needs to go through a very long patrol through fairly good ASW barriers. And this issue also impacts lots of other things like how many submarines they would need to have in order to be able to put submarines out in that deployed area. This is what, sort of, Air Force people call "the base loss factor," right -the further you need to go, the more, overall, you need to have to get one out there at that point in time. This is also probably going to impact readiness rates and maintenance requirements. If a submarine only has to sit off its own waters, that mission is not as demanding as it is if you're having to transit as -transit that far, so there's certainly a greater chance of breakdowns happening more often. Furthermore, there's this loss of home field advantage that we hear about in terms of diesel submarines acting in the littorals and thinking of Chinese submarines acting around Taiwan. The Chinese submarines know the water around Taiwan very, very well -they know where temperature changes happen; they know where salinity changes happen; they know how to hide, and where not to go. They are far, far, far less familiar with these waters out in the North Pacific. And this means that it's far more likely that they will run into places where they'll make a lot more noise. It's also likely -or not likely, but possible if you remember what the U.S.S. San Francisco did a couple of years ago, running into underground mountains that you didn't know were there because you're not familiar with the waters. Another thing that this geography and missile range together, put a constraint on the way communications work. Communications are much easier with a submarine if it's right off your own waters. When it's further away, it's far more difficult. And then, lastly, it's going to be much more difficult to keep allies -U.S. allies out of cooperating in this ASW fight than it would be if they were patrolling off their own waters. If you look at, sort of, the two ways you get out to the North Pacific, you're pretty much going around Japan. So while it might be unlikely to think that Japan is going to fly P-3s off the Chinese coast -and drop sono buoys off the Chinese coast and cooperate in ASW there, it's far more likely that they would cooperate in ASW as it's essentially coming through its own territory. I'll just say one more quick thing and then I'll shut up. I'm equally very worried about crisis stability. The Navy's response to the SSBN seems to be, okay, there's this threat, what do we need to have to neutralize it, deal with it, or be able to keep these Boomers, if they go out, at risk? Some of these escalation concerns are similar to what debates that happened in the 1980s maritime strategy, right, in terms of escalation and whether or not both tracking, trailing and then prosecuting Soviet SSBNs would put the -would provoke a situation where the crisis got out of control. I would say those issues are here, but in spades, right. What we would essentially be doing is putting the Chinese in a use-it-or-loseit situation, right. If you think of -whatever your estimates are of the readiness rates, and how many they build, and how many they get out, we're not talking about a lot of submarines. So it's very likely that even just trailing them, and having a fire-control solution on them, would put them in a situation where they feel like they need to launch, or they lose the capability to launch. And there are very good reasons, in terms of defensive national security, that would lead us to trail them all the time and know where they are. What I want to suggest is before asking that question, what force structure do we need to trail them, we also need to ask the other question of, what are the costs and risks that we're running by trailing them? I would suggest that, for a country whose command-and-control and communications are not that well-developed -and I'm sure we'll get into that; for a country whose understanding of escalation -and what counts as escalation, and what counts as provocation we really don't fully understand, it seems like it might not be the best of idea to put their survivable nuclear weapons in a situation where they're using it or losing it. And I'll just stop.

#### Extinction

Wittner 11

(Lawrence S. Wittner, Emeritus Professor of History at the State University of New York/Albany, Wittner is the author of eight books, the editor or co-editor of another four, and the author of over 250 published articles and book reviews. From 1984 to 1987, he edited Peace & Change, a journal of peace research., 11/28/2011, "Is a Nuclear War With China Possible?", www.huntingtonnews.net/14446)

While nuclear weapons exist, there remains a danger that they will be used. After all, for centuries national conflicts have led to wars, with nations employing their deadliest weapons. The current deterioration of U.S. relations with China might end up providing us with yet another example of this phenomenon. The gathering tension between the United States and China is clear enough. Disturbed by China’s growing economic and military strength, the U.S. government recently challenged China’s claims in the South China Sea, increased the U.S. military presence in Australia, and deepened U.S. military ties with other nations in the Pacific region. According to Secretary of State Hillary Clinton, the United States was “asserting our own position as a Pacific power.” But need this lead to nuclear war? Not necessarily. And yet, there are signs that it could. After all, both the United States and China possess large numbers of nuclear weapons. The U.S. government threatened to attack China with nuclear weapons during the Korean War and, later, during the conflict over the future of China’s offshore islands, Quemoy and Matsu. In the midst of the latter confrontation, President Dwight Eisenhower declared publicly, and chillingly, that U.S. nuclear weapons would “be used just exactly as you would use a bullet or anything else.” Of course, China didn’t have nuclear weapons then. Now that it does, perhaps the behavior of national leaders will be more temperate. But the loose nuclear threats of U.S. and Soviet government officials during the Cold War, when both nations had vast nuclear arsenals, should convince us that, even as the military ante is raised, nuclear saber-rattling persists. Some pundits argue that nuclear weapons prevent wars between nuclear-armed nations; and, admittedly, there haven’t been very many—at least not yet. But the Kargil War of 1999, between nuclear-armed India and nuclear-armed Pakistan, should convince us that such wars can occur. Indeed, in that case, the conflict almost slipped into a nuclear war. Pakistan’s foreign secretary threatened that, if the war escalated, his country felt free to use “any weapon” in its arsenal. During the conflict, Pakistan did move nuclear weapons toward its border, while India, it is claimed, readied its own nuclear missiles for an attack on Pakistan. At the least, though, don’t nuclear weapons deter a nuclear attack? Do they? Obviously, NATO leaders didn’t feel deterred, for, throughout the Cold War, NATO’s strategy was to respond to a Soviet conventional military attack on Western Europe by launching a Western nuclear attack on the nuclear-armed Soviet Union. Furthermore, if U.S. government officials really believed that nuclear deterrence worked, they would not have resorted to championing “Star Wars” and its modern variant, national missile defense. Why are these vastly expensive—and probably unworkable—military defense systems needed if other nuclear powers are deterred from attacking by U.S. nuclear might? Of course, the bottom line for those Americans convinced that nuclear weapons safeguard them from a Chinese nuclear attack might be that the U.S. nuclear arsenal is far greater than its Chinese counterpart. Today, it is estimated that the U.S. government possesses over five thousand nuclear warheads, while the Chinese government has a total inventory of roughly three hundred. Moreover, only about forty of these Chinese nuclear weapons can reach the United States. Surely the United States would “win” any nuclear war with China. But what would that “victory” entail? A nuclear attack by China would immediately slaughter at least 10 million Americans in a great storm of blast and fire, while leaving many more dying horribly of sickness and radiation poisoning. The Chinese death toll in a nuclear war would be far higher. Both nations would be reduced to smoldering, radioactive wastelands. Also, radioactive debris sent aloft by the nuclear explosions would blot out the sun and bring on a “nuclear winter” around the globe—destroying agriculture, creating worldwide famine, and generating chaos and destruction.

#### Reactors make hydrogen feasible and economical

Science, 2.0, quoting Dr. Ibrahim Khamis of the International Atomic Energy Agency (IAEA), 3/26/12, One Day, You May Thank Nuclear Power For The Hydrogen Economy, www.science20.com/news\_articles/one\_day\_you\_may\_thank\_nuclear\_power\_hydrogen\_economy-88334

The hydrogen economy has been ready to start for decades and could begin commercial production of hydrogen in this decade but, says Dr. Ibrahim Khamis of the International Atomic Energy Agency (IAEA) in Vienna, Austria, it will take heat from existing nuclear plants to make hydrogen economical.

Khamis said scientists and economists at IAEA and elsewhere are working intensively to determine how current nuclear power reactors — 435 are operational worldwide — and future nuclear power reactors could be enlisted in hydrogen production.

Most hydrogen production at present comes from natural gas or coal and results in releases of the greenhouse gas carbon dioxide. On a much smaller scale, some production comes from a cleaner process called electrolysis, in which an electric current flowing through water splits the H2O molecules into hydrogen and oxygen. This process, termed electrolysis, is more efficient and less expensive if water is first heated to form steam, with the electric current passed through the steam.

"There is rapidly growing interest around the world in hydrogen production using nuclear power plants as heat sources," Khamis said. "Hydrogen production using nuclear energy could reduce dependence on oil for fueling motor vehicles and the use of coal for generating electricity. In doing so, hydrogen could have a beneficial impact on global warming, since burning hydrogen releases only water vapor and no carbon dioxide, the main greenhouse gas. There is a dramatic reduction in pollution."

Khamis said that nuclear power plants are ideal for hydrogen production because they already produce the heat for changing water into steam and the electricity for breaking the steam down into hydrogen and oxygen. Experts envision the current generation of nuclear power plants using a low-temperature electrolysis which can take advantage of low electricity prices during the plant's off-peak hours to produce hydrogen. Future plants, designed specifically for hydrogen production, would use a more efficient high-temperature electrolysis process or be coupled to thermochemical processes, which are currently under research and development.

"Nuclear hydrogen from electrolysis of water or steam is a reality now, yet the economics need to be improved," said Khamis. He noted that some countries are considering construction of new nuclear plants coupled with high-temperature steam electrolysis (HTSE) stations that would allow them to generate hydrogen gas on a large scale in anticipation of growing economic opportunities.

#### New fuel cell tech makes it affordable—old evidence irrelevant

Commodity Online, 2011, US researchers claim breakthrough in Hydrogen Fuel Cell tech , www.commodityonline.com/news/us-researchers-claim-breakthrough-in-hydrogen-fuel-cell-tech-37501-3-37502.html

U.S. researchers say they've made a breakthrough in the development of low-cost hydrogen fuel cells that one day could power electric cars.

Researchers at Case Western Reserve University in Cleveland say catalysts made of carbon nanotubes dipped in a polymer solution can outperform traditional platinum catalysts in fuel cells at a fraction of the cost.

The scientists say the new technology can remove one of the biggest roadblocks to widespread cell use: the cost of the catalysts.

Platinum, which represents at least a quarter of the cost of fuel cells, currently sells for about $30,000 per pound, while the activated carbon nanotubes cost about $45 per pound, a Case release said Tuesday.

"This is a breakthrough," Liming Dai, a professor of chemical engineering and the research team leader, said.

#### Chinese subs enable effective A2/AD strategies—destroys US Asia strategy—UUV anti-sub capabilities crucial

Eleni Elkmektsioglou, Handa Fellow at Pacific Forum CSIS, Masters from King’s College London War Studies Department, and Matthew Hallex, GW Masters, Scitor Strategic Analyst, 8/27/11, Chinese submarines and US anti-submarine warfare capabilities, www.e-ir.info/2011/08/27/the-undersea-balance-in-the-western-pacific-chinese-submarines-and-u-s-anti-submarine-warfare-capabilities/

China’s military modernization has been a source of great concern for the United States and its allies in the Asia-Pacific region. American anxiety has been fueled by double digit defense budget increases over the last decade along with the veil of mystery that covers Chinese defense spending. Much of these funds have been devoted to the acquisition of platforms and weapons that will allow China to implement Anti-Access/Area Denial strategies (A2/AD.)[1] Despite the growth of Chinese economic and military power, it is in no position to challenge the United States and in particular the U.S. Navy on equal footing.

Sea control in the face of U.S. maritime power is still beyond the People’s Liberation Army Navy (PLAN) but sea denial is an achievable goal.[2] Sea denial aims not to eliminate U.S. naval forces but drawing on the same toolkit as insurgents, aims to inflict unacceptable costs on enemy forces and erode their political will to continue fighting.[3] Such a strategy relies upon an asymmetric approach – confronting U.S. surface forces with PLAN surface forces would serve to play to the strengths of the United States. Rather, the PLAN aims to inflict unacceptable costs by focusing on the weaknesses of the United States. Multi-layered Chinese systems, threatening U.S. forces from the land, the surface, the air, and under the waves could threaten to deny access to key strategic areas to the United States.

Submarines, unsurprisingly, can be expected to play a significant role in Chinese asymmetric A2/AD strategies.[4] The inherent stealth of submarines makes anti-submarine warfare (ASW) one of the most difficult tasks facing a modern navy. This challenge is complicated further by Chinese acquisition of new nuclear (SSNs) and advanced conventional submarines § Marked 09:10 § (SSKs.) When armed with advanced torpedoes, sea mines, and anti-ship missiles, even relatively unsophisticated submarines can pose a significant threat to U.S. surface forces, including the aircraft carriers that are the heart of the U.S. ability to project power into the Western Pacific region.

This paper will address the role submarines are likely to play in Chinese maritime strategy. It will review the structure of the Chinese submarine force and procurement trends that are shaping its future structure. China has identified a growing gap in U.S. military capabilities since the end of the Cold War and this paper will identify some of the operational uses and missions of submarine the PLAN will likely use to exploit it. The paper will also review current weaknesses in U.S. ASW capabilities, efforts currently underway to address them, and conclude with suggestions of further steps that should be taken to improve the ability of the U.S. to properly exploit the undersea domain. Chinese Submarine Forces Modernization and expansion of the submarine fleet has been a high priority for the People’s Liberation Army Navy. Acquisitions from abroad as well as a number of indigenous development programs have added advanced conventional and nuclear submarines to China’s fleet. In addition to bolstering the number of vessels deployed by China, the acquisition of new weapons systems have made Chinese forces a more potent threat to U.S. and allied forces in the region. Force Size While China has maintained a number of obsolete vessels in service, procurement in recent years has been focused on replacing outmoded vessels and increasing the size of the force. According to the Congressional Research Service, the PLAN’s annual commissioning rate of 2.6 submarines of all types will eventually result in an undersea force of 53-79 submarines.[5] The final size of the submarine force will depend upon China’s choice of deploying large numbers of less costly diesel-electric submarines or acquiring a smaller force of nuclear submarines. Platforms Beginning in the 1990s, China undertook an extensive modernization of its submarine force. Initially, the PLAN focused on acquiring advanced submarines from abroad and purchased 12 Kilo class submarines from Russia in 2002. In addition to foreign acquisitions, China has indigenously developed four classes of submarines including a nuclear ballistic missile submarine (Type 094/Jin-class), a nuclear attack submarine (Type 093/Shang-class) and two classes of conventional diesel electric submarines the Song and Yuan classes.[6] The Yuan class is believed by many analysts to be equipped with an Air Independent Propulsion (AIP) system which would significantly improve its stealth capabilities.[7] In addition to the new submarines that have been fielded, China is developing two additional submarine classes that represent steps towards a sophisticated submarine force. China seems determined to develop an improved version of its indigenously produced Shang class nuclear attack submarine. According to the U.S. Office of Naval Intelligence report, this improved attack submarine is expected to enter service in 2015.[8] An improved variant of the Yuan class is also under production. This variant is reported to be notably different from its predecessors and incorporates a number of features from the Kilo class submarines acquired from Russia.[9] Weapons Systems Procurement of advanced weapons systems is key to making China’s newly acquired submarines an effective fighting force, in addition to boosting the combat capabilities of China’s current forces. Chinese submarines are equipped with wake-homing-torpedoes which can threaten U.S. surface forces. Kilo-class submarines are equipped with the SS-N-27 Sizzler anti-ship missile. The Sizzler is a supersonic sea skimming missile designed to defeat the Aegis missile defense system deployed by the U.S. Navy.[10] The Yuan and Song class submarines are expected to be equipped with the new CH-SS-NX-13 anti-ship missile when it completes development and testing. As well as being able to threaten U.S. surface vessels, Shang class submarines are capable of firing land attack cruise missiles that would allow it to threaten bases in the region and other infrastructure that support U.S. power projection in the Western Pacific. The Chinese Submarine Force in the Context of a Sea Denial Strategy Chinese procurement trends suggest a preference for smaller and stealthier submarines rather than long-range endurance platforms. While China is moving towards a blue water navy, it is capitalizing on advantages conventional submarines present to green water navies. Conventional submarines, particularly those equipped with AIP systems, can operate with a greater degree of stealth and freedom in the waters near China than larger U.S. nuclear submarines. Advanced weapons systems deployed on submarines along with land based missile and air forces would serve to deny the waters near the Chinese coast to U.S. and other combat forces. While U.S. submarines play an important role in ASW activities, Chinese operational planners seem to focus more on the development of anti-surface warfare (ASuW) doctrine enabled by stealthy conventional submarines. Through the purchase and indigenous production of quiet diesel-electric boats, China intents to create a ‘ghost’ submarine force that would move silently along the Chinese coast looking for possible surface targets while avoiding encounters with the enemy’s submarine force. The difficult underwater geography of the littoral region as well as the noise from coastal shipping, fishing, and other economic activities make it an ideal operating environment for China’s submarines. Chinese investments in hydrographic studies enhance its knowledge of the underwater topography, thermoclines, and other elements of the coastal area and would allow the PLAN to take full advantage of the opportunities offered by the Chinese coastal operation theater. [11] While Chinese operational plans and possible missions for their submarine force remains opaque to outside analysts, the limitations of their current systems suggest that submarine forces are unlikely to operate independently. Rather, as Admiral McVadon suggests in the Naval War College Review, Chinese submarine forces would work in coordination with shore based missile systems.[12] Given that older Chinese submarines would encounter difficulty attempting to penetrate U.S. ASW defenses to conduct anti-surface strikes under normal conditions, the PLAN would be more likely to wait until missile strikes launched from the mainland had degraded U.S. missile defenses before launching anti-ship missile and torpedo attacks. The supersonic Sizzler ASCM fired by Kilo class submarines could threaten U.S. surface forces if launched in sufficiently numbers, or if a Kilo managed to surprise its target.[13] The subsonic missiles and torpedoes carried by the rest of the Chinese submarine fleet would be easier for U.S. forces to defeat but they could still pose a significant threat to U.S. surface vessels after U.S. defenses were degraded by other attacks. Older submarines including the Ming, Romeo, and Han class vessels based on obsolete Soviet designs, can also pose a threat. Such submarines could act as mine layers or as bait, bringing in U.S. submarines and ASW forces into the range of missiles carried by more advanced Chinese submarines.

The technological developments undertaken by the Chinese submarine force have had an impact on the PLAN’s assessment of their own capabilities and roles. The Kitty Hawk incident, in which a Chinese submarine surfaced in the midst of a U.S. carrier battle group, suggests that Chinese submariners are confident in their ability to avoid detection by U.S. ASW escorts.[14] Such incidents as well as an increasing number of submarine patrols suggest that China aims at operating its forces further afield in the region and sending the message across that China is a non- negligible maritime power in the Asia Pacific.[15]

The United States and the Chinese Undersea Challenge

While the submarine forces of the PLAN have expanded and improved their technological capabilities, the ASW capabilities of the United States have eroded. Throughout the Cold War the United States faced a persistent threat from Soviet submarines and ASW was to be a primary mission of the U.S. Navy during a conflict as it attempted to eliminate Soviet sea based nuclear forces and ensure that sea lanes to NATO allies in Europe remained open. The fall of the Soviet Union eliminated the undersea peer threat to the United States and ASW has not been a major component of U.S. naval operations in recent conflicts. The U.S. has retained qualitative and technical superiority in the undersea domain but ASW capabilities have suffered in recent decades.

Much of the difficulty faced by U.S. ASW forces stems from the technical challenge posed by the stealth of advanced conventional submarines. Conventional submarines operating on battery power have a smaller passive sonar signature than nuclear submarines which must keep their reactor machinery operating. AIP systems serve to extend the period in which SSKs can operate quietly making them more capable and more difficult to detect. In addition to the technical challenge posed by modern conventional submarines forces, the balance of undersea forces in the Pacific is shifting. While the PLAN expands its submarine forces, U.S. naval forces are drawing down. The current shipbuilding plan of the U.S. Navy envisions a reduction in submarine forces to a fleet of only 39 nuclear attack submarines in 2030, significantly less than the 48 that the Navy projected as necessary to fulfill future missions.[16] While U.S. submarines are unmatched technologically, their low numbers will be a significant shortcoming due to the heavy demands that would likely be placed on them to perform both strike and ASW missions during a potential conflict between the U.S. and China. Other shortfalls in U.S. ASW capabilities can also be expected. Anti-submarine warfare is a planned mission for the Littoral Combat Ship (LCS), a program which has proven to be deeply troubled. Currently deployed LCSs have developed significant problems with structural damage due to corrosion. The LCS also lacks organic ASW capabilities and is not equipped with the towed sonar array found on previous dedicated ASW combatants. Rather, the LCS can be equipped with an ASW mission module when necessary that is projected to include unmanned undersea vehicles (UUVs) and unmanned aerial vehicles (UAVs) that can carry out ASW missions. The LCS mission modules are facing a number of development hurdles and are significantly behind schedule.[17] U.S. aerial ASW capabilities have similarly eroded. The U.S. retired the S-3 Viking leaving U.S. carriers without a fixed wing ASW capable aircraft. While the U.S. is replacing its P-3 Orion maritime surveillance and ASW aircraft with the advanced P-8, such aircraft must operate from land bases. While the P-8 will likely be a highly capable ASW combatant, the bases it operates from would be highly vulnerable to the types of missile and air attacks that would be integral to a Chinese A2/AD strategy. While the U.S. Navy faces significant challenges in the ASW arena, it has taken a number of steps to cope with the increased threat posed by Chinese and other submarines. U.S. naval forces in the Pacific have placed a renewed emphasis on ASW training. As part of an effort to build greater familiarity with conventional submarines equipped with AIP systems the U.S. conducted two years of training with the Gotland, an advanced Swedish diesel submarine.[18] Such training continues as part of the Diesel Electric Submarine Initiative which involves regular training exercises involving U.S. ASW forces and the conventional submarines of allies.[19] While this training is a step in the right direction, exercises have demonstrated that advanced diesel submarines are highly capable threats that can threaten major U.S. surface combatants. Shipbuilding shortfalls are unlikely to be improved due to expected future cuts in the U.S. defense budget and the significant problems that plague current U.S. navy procurement efforts. The U.S. has coped, in part, by shifting its current forces to better face the threat posed by expanding Chinese capabilities. The U.S has permanently home ported four Los Angeles class submarines and a tender in Guam and shifted other submarines to bases in Hawaii and California.[20] The U.S. is also planning to base future LCSs in forward bases in Singapore.[21]While forward deployment does risk putting the infrastructure supporting U.S. ASW forces within range of Chinese missile systems, it would also reduce the transit time for U.S. forces, allowing them to deploy more quickly and remain in theater longer during a conflict. The shortcomings in China’s own ASW capabilities would allow U.S. submarine forces to disrupt Chinese attempts to project power in the region and threaten PLAN surface forces. Cruise missile armed U.S. submarines would also play an important role in strikes against targets within China. During Desert Storm just 10% of missile strikes came from subs, while one third of such strikes were launched from submarines during the conflicts in Afghanistan and Iraq.[22] The conversion of Ohio class ballistic missile submarines to guided missile submarines (SSGNs) has expanded this capability further. U.S. submarines represent a power projection force that is relatively immune to Chinese A2/AD capabilities as they can’t be threatened by air and missile forces and China currently lacks ASW forces to credibly threaten them. While the striking abilities of U.S. undersea forces will be diminished by the retirement of Ohio class SSGNs, they represent a threat that the PLAN lacks the ability to credibly respond to. Recommendations for the United States

Shifting submarines forces to the Pacific and increasing ASW training is an important first step in responding to the challenge posed by China’s expanding and improving submarine forces. However, it is insufficient. There are a number of steps the United States could take to improve the undersea balance of power in the Asia Pacific region. Submarines are a vital asset which can serve as the primary ASW tool for U.S. naval forces, and which can carry out strike missions without interference from Chinese A2/AD systems. Addressing the shrinking size of the U.S. fleet is vital. The U.S. Navy should continue its efforts to improve the cost effectiveness of its current procurement programs and consider shifting a larger portion of the shipbuilding budget to submarine acquisition. In particular, the U.S. should procure additional guided missile submarines to replace retiring Ohio class SSGNs and to expand the ability of the U.S. to strike targets despite China’s deployment of A2/AD systems.

The United States should also invest in new technical solutions that could bolster American ASW capabilities. Unmanned surface and underwater vehicles are increasingly capable and further development in this area would provide alternatives to expensive and vulnerable manned assets. Ships deploying a number of unmanned sensors from a standoff distance would be better able to detect stealthy submarines while being less vulnerable to Chinese missile attacks. Deploying fixed sensors in strategic points in the waters near China would also improve the ability of the U.S. to detect PLAN submarines. During the Cold War fixed acoustic sensors deployed between Greenland, Iceland, and the United Kingdom allowed U.S. forces to detect Soviet submarines as they entered the North Atlantic. Similar systems could serve as tripwires for the entrances to the Western Pacific from the South China Sea. The cooperation of Vietnam and the Philippines would be required for the deployment of the shore based support infrastructure, but as Chinese naval deployments grow more threatening, the support of these states is more likely to be forthcoming.[23]

#### Causes fast widespread Asia prolif

Friedberg, 2009

Aaron Friedberg, Professor of Politics and International Affairs, Woodrow Wilson School, Princeton University, Sep-Oct 2009, “Menace,” The National Interest, http://nationalinterest.org/greatdebate/dragons/menace-3818

FAST-FORWARD to the present. America's ability to project power into the western Pacific, once unchallenged, is now threatened by the maturation of what Pentagon planners refer to as China's "anti-access/area-denial" strategy. The goal here is not to match the Americans ship-for-ship and plane-for-plane but rather to develop certain specialized capabilities designed to make it difficult, if not impossible, for U.S. forces to operate freely anywhere close to China's coasts. In the past decade, Beijing has made considerable progress toward achieving this goal. Every one of the relative handful of bases on which the United States relies to sustain its presence in East Asia will soon be within range of bombardment by repeated salvos of precisely targeted Chinese conventional ballistic and cruise missiles. At the same time, the PLA is in the process of knitting together a network of satellites, onshore radars and other sensors that will permit it to locate and track an enemy's surface ships hundreds of miles off its coasts and then use a combination of torpedoes, high-speed cruise missiles and land-based ballistic missiles to sink or disable them. America's huge and costly aircraft carriers are the key to its global power-projection capabilities. In a future crisis, Washington might have little choice but to pull them far back § Marked 09:10 § from China's coasts, well beyond the effective range of their aircraft. This would dramatically reduce their ability to provide air defense for U.S. friends or to conduct strikes against Chinese forces on land or at sea. In addition to these more direct modes of attack, the PLA is experimenting with antisatellite weapons and techniques for taking down an enemy's computer networks, thereby rendering him deaf and blind during the critical opening phases of a war. On the defensive side of the equation, the PLA Navy (PLAN) is turning out attack submarines at a record pace and developing sophisticated undersea mines; it is in the process of completing a massive new submarine base adjacent to the South China Sea, and has reportedly begun to deploy an undersea detection system that would aid it in engaging U.S. submarines operating off its shores. Finally, China is investing heavily in "passive defenses" (hiding or hardening critical facilities) and in advanced radars and surface-to-air missiles, including some that may be effective against "stealthy" Western aircraft and cruise missiles. THIS COMBINATION of rapidly advancing offensive and defensive capabilities is beginning to raise doubts in the region about America's ability to defend its allies and project its power. What is worse, over the next several years there will be an increasing danger that, in an extreme crisis, China's leaders might believe that they have a chance of starting a war by effectively knocking the United States out of the western Pacific and blunting its initial, retaliatory response, all without striking the American homeland and without the need to fire a single nuclear weapon. If it were successful, such an attack would leave a president with some agonizing choices. Much as during the cold war, if faced with the possibility of a quick conventional defeat in Western Europe, American decision makers would have to contemplate the use of nuclear weapons. But, as was true then, the plausibility of escalatory threats will diminish as the probability of retaliation rises. Beijing is fast approaching the point where it will have a secure second-strike force capable of dealing a devastating blow no matter how hard the United States might try to prevent it. As risky as an American attack on Chinese nuclear forces, ports, airfields and communications centers would be today, it will be considerably more so a few years from now. Beijing is in the process of deploying intercontinental-range ballistic missiles (ICBMs) that will be far less vulnerable than their predecessors. In addition to its small force of fixed, single-warhead ICBMs, over the next few years China will place in service several dozen hard-to-locate road-mobile and submarine-launched missiles, each capable of striking the United States with multiple warheads. OF COURSE, there are alternatives to the nightmare of nuclear war. If Washington chose not to use nuclear weapons, it might respond to a Chinese attack by engaging in "horizontal escalation," hitting back at another location where the opponent is vulnerable and U.S. forces still enjoy an overwhelming advantage. The most obvious way to do this, though perhaps not the only one, would be to use America's global naval strength and airpower to cut China off from the sea. This is an arena of military competition in which the United States maintains overwhelming superiority. While the PLAN may be able to contest control of its immediate coastal waters, its capabilities fall off rapidly with distance. If the United States wanted tomorrow to constrict China's maritime access to oil, minerals and markets, there would be very little Beijing could do in direct response. Chinese strategists are acutely aware of this potential vulnerability and they are hard at work on a variety of projects which, taken together, may help to mitigate the danger. Included among these are: a strategic petroleum reserve; transcontinental pipelines to Russia and Central Asia; the pursuit of undersea resources close to China's coasts; new transportation routes through Southeast Asia that would permit oil and gas from the Middle East to bypass the narrow straits off Indonesia; the construction of ports and airfields in Myanmar and Pakistan that could be used in an emergency by a future Chinese air and naval "rapid-deployment force"; a deepening strategic relationship with Iran that could provide a bridgehead to the Persian Gulf; and the development of aircraft carriers and long-range nuclear-powered attack submarines, and the construction of large numbers of diesel subs, which will give the PLAN some capacity to defend China's sea-lanes and perhaps to attack the shipping of its rivals. If produced in sufficient numbers, the same antiship ballistic missiles (ASBM) that will soon threaten American aircraft carriers could also be used against commercial vessels. Using a combination of missiles and submarines, Beijing might be able to impose a blockade of its own on key American allies like Japan, perhaps weakening its will to stay in the fight or, better yet, dissuading it from ever joining with the United States in the first place. AMERICA'S INFLUENCE in and access to Asia will be drastically reduced, with harmful long-term consequences for its security, prosperity and ability to promote the spread of liberal democracy, if it is seen to be in long-term decline relative to China or, even worse, if it appears irresolute, incompetent, unwilling or simply unable to fulfill its commitments. Other governments will then have no choice but to reconsider their national strategies either by developing their own nuclear capabilities or-worse-by bandwagoning with Beijing.

Nuclear war

Van Jackson, Exec. Ed. Of Asia Chronicle, 5-8-2009, “Can U.S. Nuclear Plan Prevent Asian Arms Race?” YPFP, http://www.ypfp.org/content/can-us-nuclear-plan-prevent-asian-arms-race

One of the myriad fears associated with North Korea’s possession of nuclear weapons is the potential for it to spark a nuclear arms race in Asia. The doomsday scenario plays out rather intuitively: 1) North Korea confirms unequivocally that it will be keeping its existing nuclear weapons or possibly adding to its stockpile; 2) Japan, which has repeatedly mentioned its belief that a nuclear North Korea is a threat to Japanese security, dramatically builds up its defensive and offensive military capability, possibly developing its own nuclear program while it pushes for greater involvement in transnational security issues such as terrorism; 3) China, continuing to see Japan as the only near-peer realistically capable of challenging its regional leadership, is threatened by Japan’s remilitarization and responds by increasing its own military spending; 4) Partly in response to China’s increased military expenditures and partly in response to nagging historically based concerns over Japan’s remilitarization, both South Korea and Taiwan build up their own conventional armaments, potentially engaging in secret nuclear programs as well. Under such circumstances, political risk indicators would shoot through the roof and foreign direct investment inflows of capital would quickly dry up as multinational corporations seek a safer, more stable region in which to do business. The region’s resulting economic contraction would place increasing pressure on national governments to pander to xenophobic and nationalistic sentiments, as has been done many times before, thus stoking the fire of conflict. § Marked 09:09 § The region, in sum, would become a powder keg. This is not overly pessimistic hyperbole but a realistic scenario according to the classic literature on security dilemmas.[1] Just imagine a world where the most powerful countries in Asia all either possess nuclear weapons or are engaged in covert programs to develop a nuclear weapons capability, each in the name of its own security. Such a dreadful possibility is exactly what the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was designed to prevent.

# 2AC

## feasibility

#### 5 years

Freed 10

Josh Freed, Director of the Third Way Clean Energy Program, Elizabeth Horwitz, Policy Advisor at Third Way’s Clean Energy Program, Jeremy Ershow, Third Way Clean Energy Program, Sept 2010, Thinking Small On Nuclear Power, http://content.thirdway.org/publications/340/Third\_Way\_Idea\_Brief\_-\_Thinking\_Small\_On\_Nuclear\_Power.pdf

Several U.S. companies are in the advanced stages of developing small reactors that adapt existing technology to produce smaller amounts of baseload electricity.15 These technologies are nearly ready for deployment. Final decisions about design, siting, and regulatory approval could be made within the next five years.16 The federal government can take several steps to help make this possible. First, economic barriers to entry must be lowered. For first movers, costs of licensing, design and regulatory approval will be comparable to those of the larger reactors because existing regulations have not yet been tailored to suit new designs. As the Nuclear Regulatory Commission (NRC) gains expertise in evaluating SMRs, and as economies of scale develop, these costs will decrease. Until this happens, the Department of Energy’s new cost-sharing program for near-term licensing and deployment of light water SMRs will help reduce some of the financial impact.17[i] The NRC also needs to continue its commitment to allocate sufficient resources and build the expertise necessary to evaluate and license SMRs in a timely fashion. The Department of Energy (DOE) and Department of Defense (DOD) can also prime the market pump by serving as a buyer of first-of-a-kind technologies. This could include deploying SMRs on DOE-owned sites, many of which are already zoned to support nuclear power plants,18 and appropriate DOD facilities in the United States. DOD, the largest single energy consumer in the U.S., comprises 78% of federal energy use, and is the most significant energy consumer in several metropolitan areas.19 DOE should also work closely with the private sector to develop standardized designs, with the goal of achieving demonstration and licensing within a decade.20 The potential market for SMRs is global. As we note in “Getting Our Share of Clean Energy Trade,” whichever country emerges as the market leader could dominate a good part of the $6 trillion global energy market.21 The U.S. could seize that mantle and all the jobs and exports that come with it. American reactors could be deployed within a decade domestically22 and go global soon after.

## fast v slow da

#### Fast development’s good – it means the DoD bypasses the NRC

EnergyWashington Week 10

(“DOD STRESSING NEED FOR NRC COLLABORATION ON 'MINI' REACTOR BUILD OUT” July 5, 2010, Vol. 7 No. 27)

The U.S. Army is rejecting arguments by some industry and government officials who say military bases could proceed to build small modular reactors (SMRs) on military bases without Nuclear Regulatory Commission (NRC) certification and license approvals. Instead, the Department of Defense (DOD) believes it must work closely with NRC and that legislation will likely be needed to clearly define the various agency roles before the novel nuclear energy systems are constructed, according to DOD and industry sources. A senior DOD source also says that a collaborative arrangement between DOE, DOD, and NRC will be needed to begin constructing reactors that currently have not been licensed by the NRC -- including all prominent SMR models being examined by the three agencies for potential licensing and deployment. Small reactor industry and government proponents have been struggling to find ways to accelerate the development of small reactors, including through the use of military bases as a test bed for building and demonstrating the reactors ahead of NRC certification of SMR designs, according to industry sources, who note that NRC approval is required before a utility can apply for a license to build a small reactor. One senior industry consultant says **the NRC does not have authority over military bases and therefore a non-certified reactor could be built there without the technology being vetted by NRC.** While industry proponents want NRC certification, they see it as slow because of a lack of resources to review the new reactors and certify the designs, says the industry consultant. **Building the reactors on military bases would help demonstrate SMR functionality** that would eventually help accelerate commercial licensing, says the source.

#### That’s key – need to lead from the front

Glen Butler, Lt. Col., 2011, 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

## blue ribbon cp

#### Solvency’s empirically denied – the Blue Ribbon Commission happened after their ev was written and its recommendations weren’t adopted

Jack **Spencer and** Cornelius **Milmoe 12**, Jack is a Research Fellow in Nuclear Energy at Heritage, Cornelius is a lawyer and nuclear energy expert who owns Milmoe Consulting Services LLC, “Obama Administration: No Confidence in Nuclear Energy”, March 5, <http://www.heritage.org/research/reports/2012/03/obama-administration-no-confidence-in-nuclear-energy>

\* Abandon the obsolete waste confidence rule. The rule is an artifact, no longer needed or useful. The Blue Ribbon Commission on America’s Nuclear Future, and others, have criticized the NWPA’s approach to nuclear-waste management.[22] Nonetheless, until needed reforms are implemented, the NWPA is the law of the land and creates a legally binding obligation on the U.S. government to collect and dispose of nuclear waste. Congress should affirm the NWPA by barring consideration of the waste confidence issue in any administrative or judicial proceeding except as provided by the NWPA.[23] It is not the place of the Energy Department, the NRC, or the courts to act on their doubts about the social or political acceptability of the NWPA, or on their confidence about the will of Congress, in adjudicatory proceedings on reactor licenses. Abandoning the waste confidence rule and simply recognizing that the federal government is responsible for waste management under current law would be a better approach. How the government meets that requirement, as long as it is done within established safety guidelines, should be irrelevant to the NRC. The United States has struggled for decades to implement a predictable and rational nuclear waste management policy. The difficulties are the result of poor policy choices, not of technological or economic obstacles. This government-created problem has led to unnecessary impediments to the expansion of clean and safe nuclear energy. Fixing this problem should begin with Congress simply demanding that America’s government bodies follow the law.

#### 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 TeamLaVar 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 TeamLaVar 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.

#### Current acquisitions favor old tech – the plan’s signal is key

CNA 10, non-profit research organization that operates the Center for Naval Analyses and the Institute for Public Research, “Powering America’s Economy: Energy Innovation at the Crossroads of National Security Challenges”, July, <http://www.cna.org/sites/default/files/research/WEB%2007%2027%2010%20MAB%20Powering%20America%27s%20Economy.pdf>

In our final discussion, we consider the end of the innovation pipeline—deployment—and we look at how fine-tuning the incentives might help pull more innovative, new energy technologies through the pipeline. Energy use at installations is governed under a stricter rubric than operational energy: a variety of regulatory and legislative mandates have steered DOD toward lowering energy consumption, increasing use of renewables, and promoting conservation and energy efficiency. However, the adoption of new clean energy technologies is still hampered in key installation acquisition programs. To help achieve its energy goals, DOD often employs two mechanisms: the Energy Conservation Investment Program (ECIP) and Energy Savings Performance Contracts (ESPCs). The ECIP program is backed by Congressional appropriations (through military construction funding), and it is designed to allow installations to purchase technologies that save money through conserving energy [55]. The program is viewed widely as being successful, cited as saving more than two dollars for each dollar invested. ESPCs are contracting vehicles that allow DOD to invest in energy-related improvements without expending funds appropriated by Congress. Through ESPCs, DOD partners with private firms that make the energy improvements; in return, the firms’ investments are paid back through the energy savings. While these programs have improved installation energy use, as they are currently structured, they favor older technologies that are well-established on the commercial market. This is especially the case for ESPCs, which are inherently risk averse. The private sector firms that enter into these contracts only do so if they are guaranteed to make a profit; as such, the energy improvements are done so with tried-and-tested technologies whose payback schedules and energy savings are well-defined. Many of these investments are also made with small profit margins. As such, companies are not willing to take risks on these contracts by using new and perhaps unproven technologies. Altering these programs to reduce the advantages provided to already commercialized products will encourage the acquisition of more innovative technologies on installations. One change could include a guaranteed return on investment (similar to that given on older technologies) for those developers proposing cutting-edge technologies. Another change could include giving first preference to innovations that come from public/private partnerships (incubators, energy hubs, etc.). Given DOD’s size and the fact that installations mirror U.S. infrastructure, the use of innovative technologies on its installations provides a clear demand signal to the developer.

#### All defense funds are going to designated, pre-existing programs—DoD ignoring new programs

Harrison 11

Todd Harrison, Center for Strategic and Budgetary Analysis, 2011, [www.csbaonline.org/wp-content/uploads/2011/07/2011.07.16-FY-2012-Defense-Budget.pdf](http://www.csbaonline.org/wp-content/uploads/2011/07/2011.07.16-FY-2012-Defense-Budget.pdf)

On January 6, 2011, prior to the official release of the FY 2012 budget request, Secretary of Defense Robert Gates announced the results of his efficiency initiative. The initiative, begun nearly a year ago, identified a total of $178 billion in potential savings over five years (FY 2012 to FY 2016), or six percent of the planned funding over that time period. Some $100 billion of the savings came from the Services and the remainder from defense-wide agencies, a government-wide pay freeze that applies to DoD civilians, and revised economic assumptions.3 Several high-profile weapon systems were affected by the announcement, including the Expeditionary Fighting Vehicle (EFV), the Joint Strike Fighter (JSF), and the Surface-Launched Advanced Medium-Range AirtoAir Missile (SLAMRAAM), which are discussed in more detail in Chapter IV of this report. Of the $178 billion in potential savings identified, $78 billion is being used to reduce total defense spending from FY 2012 to FY 2016 compared to what was projected in the FY 2011 FYDP. For example, the effect on the FY 2012 budget is a reduction of $13 billion from the $566 billion in base discretionary budget authority that was previously planned for FY 2012. The remaining $100 billion in potential savings is being reinvested within the defense budget in high-priority programs and activities, such as a new long-range bomber, next-generation jammer, and carrier-based unmanned strike and surveillance aircraft. The **funding for** these **new programs**, however, **could be at risk** in future years if the potential savings identified through the efficiency initiative do not materialize as projected. Previous attempts at achieving similar efficiencies have fallen short of their intended goal. For example, former Secretary of Defense Donald Rumsfeld suggested that DoD could save some $15 billion annually from efficiencies when he took office, roughly 5 percent of the annual budget at the time. But instead of declining, DoD’s peacetime operating costs grew substantially over the years that followed. Current DoD Comptroller Bob Hale wrote in a 2002 report, “After adjusting for changes in force size and inflation, day-to-day operating costs have consistently and persistently increased for decades.” Hale went on to conclude, “These barriers suggest that DoD should be realistic in assessing the prospects for future efficiency savings. The idea that multiple tens of billions of dollars a year can be saved through efficiencies over the next few years—and used to pay for new programs—is almost certainly unrealistic.”4 Unfunded Priori ties Each year, the Services rank and prioritize items for inclusion in the budget request. Unfunded priorities are those items not included in the budget request because they are a lower priority and do not fit within the funding ceiling set for the Department. The Services’ lists of unfunded priorities, sometimes referred to as “wish lists,” are routinely requested by Congress for consideration during their markup of the budget. The total amount of unfunded priorities grew dramatically over the past decade, rising from $9.5 billion in FY 2001 to a peak of $38 billion in FY 2008 (both figures in FY 2012 dollars). In the FY 2010 budget process, Secretary Gates required the Services to present their unfunded priorities to him for review before submitting them to Congress. Unfunded priorities for that year fell by an order of magnitude to just $3.5 billion. In FY 2011 unfunded priorities fell to $1.8 billion, and in FY 2012 they total only $1.2 billion. Nearly all of the unfunded priorities submitted to Congress are in procurement and O&M. This indicates that if the Services had additional funding available they would prioritize the maintenance of existing equipment and would procure additional equipment or spares to augment their inventory.

## demo

#### Perm do both—solves the fast v slow da

L. Elaine Halchin, Congressional Research Service Specialist in American National Government, 7/15/2011, Other Transaction (OT) Authority, http://www.fas.org/sgp/crs/misc/RL34760.pdf

An other transaction (OT) is a special type of vehicle or instrument used by federal agencies for research and development purposes, and only those agencies that have statutory authority to engage in OTs may do so. There is no statutory or regulatory definition of “other transaction,” though, in practice, it is defined in the negative: an OT is not a contract, grant, or cooperative agreement. While the government may benefit from the work carried out pursuant to an other transaction, an OT does not necessarily involve the purchase of goods or services.1 Using an OT, the government may gain access to research or technology developed by, or in concert with, one or more non-governmental entities, such as commercial firms.2 Depending on the language of a particular statute, an agency may use OTs for basic, applied, or advanced research projects; prototypes; or some other purpose.3 Alternatively, an agency also may use a contract for research and development (R&D), which is covered by Part 35 of the Federal Acquisition Regulation (FAR), but OTs provide certain advantages over contracts.4 Generally, the advantages derive from the fact that OTs are not subject to the FAR and certain procurement statutes.5 Companies (and other entities) unwilling or unable to comply with government procurement regulations and statutes might be less likely to engage in a contract than an OT. By using an OT instead of a contract, an agency and its partners are able to develop a flexible arrangement tailored to the project and the needs of the participants: “Other Transactions are meant to present the Government and contractor with a ‘blank page’ from which to begin when negotiating such instruments.”6 Additionally, OTs promote “a more collaborative working relationship,” which can be more conducive to R&D than the type of relationship established by a contract.7

#### OTs include effective private R&D before DOD adoption—zero link to their procurement first bad offense

Bloch and McEwen 2

David Bloch, Gray Cary Ware & Freidenrich LLP, , The George Washington University School of Medicine and Health Sciences; J.D. with honors, The George Washington University National Law Center; Fellow in International Trade Law, University Institute of European Studies, formerly a research assistant at the Government Contracts Program, and James McEwen, Staas & Halsey LLP, Washington, D.C.; B.S.A.S.E., The University of Texas at Austin; J.D. with honors, The George Washington University National Law Center. Mr. McEwen was formerly an intellectual property attorney with the Naval Surface Warfare Center, Carderock Division, and the Naval Air Systems Command, specializing in the procurement and management of intellectual property, Winter 2002, ARTICLE: "Other Transactions" with Uncle Sam: A Solution to the High-Tech Government Contracting Crisis, 10 Tex. Intell. Prop. L.J. 195

By the 1990s, events forced the Department of Defense to change its views on intellectual property yet again. The system discussed above was adopted over decades and jointly molded by a defense community that no longer exists. At the same time, the need for new weapons systems has increased: a modern generation of enemies (like Al Qaeda) requires different military responses and the speed of technological innovation has meant that legacy systems become obsolete at an increasingly rapid pace. In addition, the Department of Defense in recent years has suffered from a declining budget, and thus has financial incentives to outsource as much work as possible. n80 This means that there are more outside contractors [\*209] performing functions once performed by the government. Thus, while the defense community is growing smaller, the Department of Defense has become increasingly reliant on contractors, and the commercial sector in general, to fulfill its needs. Within the world of defense research and development, these same forces are at work. The need for new weapons systems has required more government-sponsored research and development. At the same time, as the number of government laboratories is reduced, there are fewer and fewer internal sources to which the Department of Defense can turn for advanced weapons systems. It is for this reason that the Department of Defense is increasingly interested in attracting new commercial partners, and has recognized that its past practices with regard to intellectual property may not be appropriate for the current paradigm. n81 Simply put, the federal government can no longer rely on traditional government contractors to perform all of the functions that it requires. In order to cope with this new scenario, the Department of Defense has actively recruited new contractors to produce its weapons systems to fill the void left by the vanishing traditional contractors. These new contractors have historically worked in the commercial sector, rather than with the Department of Defense; they are reliant on non-government (and often foreign) sources to help build their technology; and venture capital has become their method of choice for launching new technologies. These new contractors have often refused to deal with the Department of Defense due, in part, to the misperception that the government is intractable in matters of intellectual property. n82 In order to address these concerns, the Department of Defense has begun making itself commercial-contractor-friendly, and the new contracting environment is slowly working to attract a new breed of commercial contractor. This new environment is embodied chiefly in the Government's "Other Transactions" authority. Created as part of the Federal Acquisition Streamlining Act of 1994, n83 "Other Transactions" allow Department of Defense agencies (but not other Government buyers) to "enter into transactions (other than contracts, cooperative agreements, and grants) ... to carry out basic, applied, and advanced research projects. The authority under this subsection is in addition to the authority ... to use contracts, cooperative agreements, and grants in carrying out such projects." n84 They are "extremely flexible instruments used by the Department of Defense ... to foster [\*210] dual-use technology, establish industrial capabilities, and strengthen the nation's technological capabilities to advance the national defense system." n85 Other Transactions are not subject to the Federal Acquisition Regulation, the DFARS, or other procurement statutes. n86 Under the "Other Transactions" clause, the Government is allowed to participate in a battle of the forms, and is therefore able to draft any intellectual property clause it finds necessary to fulfill a need. To emphasize this point, the Department of Defense has not generated a model Other Transaction Agreement, but instead relies upon its Other Transactions Guide for Prototype Projects (January 2001) n87 to provide sufficient guidance to obtain the appropriate level of rights. The Other Transaction authority is patterned after NASA's Space Act authority. n88 Under the Space Act, NASA was allowed to enter into "Other Transactions," so called because they were neither contracts, grants, nor cooperative agreements. In 1989, Congress extended a similar authority to the Defense Advanced Research Projects Agency. n89 When this prototyping authority proved popular, Congress extended it to all Department of Defense agencies as part of the Federal Acquisition Streamlining Act of 1994. n90 Other Transactions authority was created to further three specific Department of Defense missions: (1) enhancing American military technological superiority, (2) streamlining the acquisition process, and (3) integrating civilian and military technology industries. n91 As Kuyath explains, "Other transactions" have the potential for being of tremendous benefit to both the Government and to industry. Because an "other transaction" is not a procurement contract, cooperative agreement, or grant, it is not subject to the laws, regulations, and other requirements governing such traditional contracting mechanisms. This enormous flexibility allows [the Department of Defense] to issue "other transactions" that permit commercial companies to use their commercial practices almost entirely in the performance of DoD-funded research and development ... . The authority enables DoD to enter into R&D agreements with commercial companies that refuse or are unable to enter into traditional government [\*211] cost-reimbursement contracts, grants, or cooperative agreements. "Other transactions" offer tremendous potential for reducing DoD's R&D costs and for allowing leading-edge, high-technology companies to participate in DoD-funded R&D programs in situations where they otherwise would not do so. n92 Others are equally enthusiastic: "DoD's implementation of its OT authority will determine its success ... . If DoD's OT authority is implemented properly and used appropriately, it could prove to be one of DoD's biggest successes for the warfighter." n93 An expanded reading of these "Other Transactions" may hold the key to more efficient Government contracting in the intellectual property sector. Other Transactions allow the Department of Defense "to leverage both private sector technology and financial investment and to reduce barriers between defense and civilian industrial bases, furthering DoD's objectives for civil/military integration... . Flexible intellectual property and financial management provisions of research OTs have attracted firms that have not traditionally done business with DoD." n94 In essence, Other Transactions allows the Government, and more specifically the Department of Defense, to adopt commercial practices that would otherwise not have been easily permitted under traditional contracting rules. Nevertheless, ""Other Transactions' remains a largely untapped resource." n95 Expanded use of Other Transactions would theoretically attract qualified high-technology contractors to the government contracting market a result that would benefit both the government and the contractors. n96 However, it appears that the new procurement device has mainly attracted traditional government contractors rather than the intended commercial sector businesses. As noted in testimony before the General Accounting Office, Other Transaction agreements are still mainly used by traditional defense contractors. n97 Specifically, of 97 agreements reviewed, 84 had [\*212] been awarded to traditional defense contractors. n98 This resulted despite the flexibility afforded with regard to intellectual property under the Other Transaction authority. n99 Thus, it appears that the main beneficiaries of the government's new policy remain the traditional defense firms. This is not set in stone, however, and given the present commercial environment Other Transactions are a more attractive option for companies seeking new sources of support for technology research.

#### Perm do CP—it’s a topical way to implement the plan

EIA 1 – US Energy Information Administration (Renewable Energy 2000: Issues and Trends, Report prepared by the US Energy Information Administration, "Incentives, Mandates, and Government Programs for Promoting Renewable Energy", <http://tonto.eia.doe.gov/ftproot/renewables/06282000.pdf>)

Over the years, incentives and mandates for renewable energy have been used to advance different energy policies, such as ensuring energy security or promoting environmentally benign energy sources. Renewable energy has beneficial attributes, such as low emissions and replenishable energy supply, that are not fully reflected in the market price. Accordingly, governments have used a variety of programs to promote renewable energy resources, technologies, and renewable-based transportation fuels. (1) This paper discusses: (1) financial incentives and regulatory mandates used by Federal and State governments and Federal research and development (R&D), (2), (3) and (2) their effectiveness in promoting renewables.

A financial incentive is defined in this report as providing one or more of the following benefits:

A transfer of economic resources by the Government to the buyer or seller of a good or service that has the effect of reducing the price paid, or, increasing the price received, respectively;

Reducing the cost of production of the good or service; or,

Creating or expanding a market for producers.

The intended effect of a financial incentive is to increase the production or consumption of the good or service over what it otherwise would have been without the incentive. Examples of financial incentives are: tax credits, production payments, trust funds, and low-cost loans. Research and development is included as a support program because its effect is to decrease cost, thus enhancing the commercial viability of the good(s) provided. (4)

#### Only the CP links to NNSA

McCormick, 12

(“Interview with Colin McCormick,” This interview was conducted with Dr. Colin McCormick, (Senior Advisor for R&D in the Office of the Under Secretary at the Department of Energy. He previously served as the Team Lead for Emerging Technologies in the Building Technologies Program of the Office of Energy Efficiency and Renewable Energy (EERE). Prior to joining the Department of Energy he was an energy and security analyst at the Federation of American Scientists, a staff member with the House Science and Technology Committee, and an AAAS Congressional Fellow on the staff of Rep. Ed Markey of Massachusetts. Dr. McCormick received his PhD in atomic and optical physics from the University of California, Berkeley, and did post-doctoral work in quantum optics at the National Institute of Standards and Technology (NIST) in the group of 1997 Physics Nobel Laureate William Phillips. Dr. McCormick reviewed, revised and approved the below text for publication. Specifically, this interview began as discussions that took place on October 17, 2012 and October 22, 2012, with questions being asked by members of GWDebate (Francisco Bencosme, Kevin Bertram, Lauren Cashmore, Paul Hayes, Joseph Nelson and Kyla Sommers). 10/17, http://debateandtherealworld.com/article.php?id=3)

D+TRW: What is your view on the suggestion that the DOD should pursue its own SMR or nuclear project apart from the DOE? McCormick: The DOD could build their own lab to research nuclear power, but that would be very inefficient and duplicative. It would also hire people away from DOE labs that are working on important projects. The DOD would have to build equipment, test chambers, radiation shields, etc. All of that already exists and is used at the DOE labs. It would seem very wasteful to try to pursue that. It would also delay efforts, for several years easily. The DOD does have laboratory infrastructure, but if you wanted to actually build nuclear test infrastructure, you would have to find a site not near population centers, would then have to have the site inspected by the NRC. And that's true even when it's the military. That would be a very long start up time. Not to mention extremely costly.

#### And would fail

Martinez 7

Coleen K. Martinez, Director of Medical Systems for the U.S. Army Medical Research and Materiel Command with duty at the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology in the Pentagon, Strategic Studies Institute, March 2007, " BIODEFENSE RESEARCH SUPPORTING THE DoD: A NEW STRATEGIC VISION", http://www.strategicstudiesinstitute.army.mil/pdffiles/pub767.pdf

As a result of the 2004 reorganization, management of the DoD medical biodefense program became split among four primary organizations. The Army laboratories (primarily the U.S. Army Medical Research Institute of Infectious Diseases for biodefense products) were still the primary executors of the program, but were divested of any programmatic decision authority. The management of the technical base and advanced development research was now divided between the Defense Threat Reduction Agency (subordinate to the Under Secretary of Defense for Acquisition, Technology, and Logistics) and the Joint Program Office (subordinate to the Army Acquisition Executive). The Joint Requirements Office (under the Chairman, Joint Chiefs of Staff, Force Structure, Resources, and Assessment Directorate) was now responsible for program requirements and planning, programming, budget, and execution (PPBE) activities. Coordination of product development across the divide between these organizations does not appear to exist in any measurable degree, and there is little to no corporate agreement on product planning, or even product requirements (to be addressed in more detail under the Requirements section). The Joint Requirements Office, Defense Threat Reduction Agency, and Joint Program Office representatives initiated triad meetings with an objective of attempting to coordinate the program. However, at least from the perspective of the executing laboratories, there has been little to no improvement and no tangible and clear guidance birthed from these periodic meetings. The result of this leadership and management void is inefficient use of the DoD’s biodefense resources, including infrastructure and personnel. In the absence of a coordinated effort directed from a corporate level (which appeared to be the intent of the reorganization), the laboratory researchers are most apt to follow their own interests, and an extremely competitive, rather than cooperative, research environment divides rather than unites the efforts. Furthermore, the current structure and absence of any coherent and coordinated corporate development plan creates an environment that allows, or even encourages, political influence and decisions based on issues other than customer requirements, science, program plans, and risk analysis. Individuals without requisite knowledge or experience in pharmaceutical product development are placed in high-level, decisionmaking positions. When approached to consider special funding set-asides, such individuals’ inability to review critically and discuss the scientific data, coupled with a lack of a prospectively-defined decisionmaking process, leaves them vulnerable to being influenced by whoever can tell them a convincing story. By occupying high level positions, they gain the authority to unilaterally decide to direct millions of dollars to fund specific efforts. The programmatic impact of such political influence is to dilute program resources of funding and personnel that could or should be devoted to higher priority efforts and also to set the conditions for unnecessary duplication of approaches and poorly coordinated efforts. Even if a new project has the potential to be a valuable addition to the overall program, the effort should not be considered in a vacuum, but rather be integrated fully into an overarching plan and assigned to the most qualified (rather than the most politically connected) individual(s). Finally, a noteworthy problem with the current the DoD biodefense program management, and in stark contrast to the industry model, is that there is no “bottom line” about which one needs to worry. There is no necessity to define or meet any developmental milestones. Program funding continues year after year, regardless of program productivity in fielding useable countermeasures for the warfighter. Although the 2004 DoD biodefense reorganization was intended to improve coordination and oversight, the lack of qualifications and experience at the reviewer level allowed programs that should have been terminated to persist instead, based simply on promises of future performance, rather than scientific data and risk analysis. In spite of all of the DoD-mandated program reviews and oversight, there is a dearth of those participating in the reviews who have the experience and knowledge to critically assess the presentation, data, conclusions, or recommendations. There is, therefore, a façade of accountability, but in fact there is no accountability required, unlike industry with the need to justify expenditures and investments with the shareholders. The diffuse program structure, lack of coherent and focused plans, and absence of qualified program managers described above caused a lack of urgency in tracking programs through to fruition, that is, availability of licensed products. This inevitably left the DoD unprepared when faced with crises of heightened biological warfare or terrorist threats, such as may be present in military conflict and/or war. Historically, such times of national crisis stimulate sudden interest in pushing all available technologies out to the deployed soldier, and there is a predictable call to assess all medical products still in the developmental pathway, to determine if any exist that might be able to undergo rapid fielding. While this approach is effective with regard to weapons systems, vehicles, and body armor, for example, 25 it is not a preferred solution for medical products. Attempting to field unlicensed medical products for the purpose of force protection has been fraught with difficulty and controversy. 26 Although the actual safety risk to service members receiving such an unlicensed product would likely be low (because such products generally would have an established safety profile, with only unproven efficacy), there is a more significant risk that recipients of such products would falsely perceive that they have protection that may not exist. The greatest risk, however, is the DoD’s credibility and reputation with the FDA and the public. It is demonstrated repeatedly that when the DoD attempts to administer unlicensed products in a deployed environment, it is unable to meet the stringent recordkeeping and protocol requirements of the FDA. Protocol violations then become the subject of Government Accounting Office investigations, negative publicity, and public suspicion, all of which unnecessarily blemish a well-intended program. Rather than exerting pressure to get new medical solutions in the field at the time of national crisis, the DoD program leaders would be better off to demand, from their research laboratories, a persistent urgency to field products and a focused management of the research effort to meet this end. Considering the long timelines associated with product development and licensure, even in the best and most efficient programs, biodefense research cannot afford the luxury of months, years, or decades of unfocused and poorly managed programs.

#### No SMR adoption (absent fiat)—even if DOD leadership wants to

Gross et al 11

Thomas Gross, Albert Poche, Kevin Ennis, DOD Defense Logistics Agency Research & Development, 10/19/2011, Beyond Demonstration: The Role of Fuel Cells in DoD's Energy Strategy, http://www.chfcc.org/publications/reports/dod-fuel-cell\_10-19-11\_dlafuelcells.pdf

Among DoD’s agency-level organizations and the military services, many people have responsibilities for or influence decisions affecting energy. These include decisions relating to distributed power generation, acquisition of backup power systems, the purchase of material handling equipment, and power for unmanned vehicles. DoD personnel are committed to the department’s mission and compliance with directives, including those related to energy. Some have helped make DoD a leader in achieving energy efficiency and alternative fuel use targets. However, they are handicapped by several factors that can militate against procurement of newer, more environmentally benign technologies. These include:

the federal budget process, which emphasizes minimizing upfront capital costs and downplays later savings;

energy prices, which do not fully reflect goals such as energy security, GHG reduction, and reduced vulnerability to electric grid disruptions; and

a culture that highly values tried-and-true technologies, sometimes at the expense of potentially superior but somewhat risky alternatives.

These factors need not prevent DoD decision makers from choosing to pursue fuel cell systems, but they render such a decision more difficult than it otherwise would be. Recently the Secretary of the Army established the Energy Initiative Office, which is charged with building both technical and business case metrics for investments to achieve military installation energy goals and objectives.

DoD leadership recognizes the institutional challenges. For example, in 2009 Secretary Gates stated during congressional testimony that “entrenched attitudes throughout the government are particularly pronounced in the area of acquisition: a risk-averse culture, a litigious process, parochial interests, excessive and changing requirements, budget churn and instability, and sometimes adversarial relationships within the Department of Defense and between Defense and other parts of the government.”[16]

## nnsa workforce

#### No extinction

Malcolm **Gladwell**, writer for The New Yorker and best-selling author The New Republic, July 17 and 24, 19**95**, excerpted in Epidemics: Opposing Viewpoints, 1999, p. 31-32

Every infectious agent that has ever plagued humanity has had to adapt a specific strategy but every strategy carries a corresponding cost and this makes human counterattack possible. Malaria is vicious and deadly but it relies on mosquitoes to spread from one human to the next, which means that draining swamps and putting up mosquito netting can all hut halt endemic malaria. Smallpox is extraordinarily durable remaining infectious in the environment for years, but its very durability its essential rigidity is what makes it one of the easiest microbes to create a vaccine against. AIDS is almost invariably lethal because it attacks the body at its point of great vulnerability, that is, the immune system, but the fact that it targets blood cells is what makes it so relatively uninfectious. Viruses are not superhuman. I could go on, but the point is obvious. Any microbe capable of wiping us all out would have to be everything at once: as contagious as flue, as durable as the cold, as lethal as Ebola, as stealthy as HIV and so doggedly resistant to mutation that it would stay deadly over the course of a long epidemic. But viruses are not, well, superhuman. They cannot do everything at once. It is one of the ironies of the analysis of alarmists such as Preston that they are all too willing to point out the limitations of human beings, but they neglect to point out the limitations of microscopic life forms.

#### No tradeoffs—different talent pool, new nuclear demand solves

APS 8

APS (American Physical Society), Report from the APS Panel on Public Affairs Committee on Energy and Environment, June 2008, Readiness of the U.S. Nuclear Workforce for 21st Century Challenges, http://www.aps.org/policy/reports/popa-reports/upload/Nuclear-Readiness-Report-FINAL-2.pdf

Workforce shortages in the arena of commercial nuclear power, and the problem of maintaining modernized training facilities, mainly stem from the 30-year stasis in U.S. demand for new civilian nuclear power plants1. The number of operating civilian nuclear reactors in the U.S. has remained at about 100 during this time. Thus, U.S. vendors have been forced to look abroad for sales. Some have either ceased construction of new reactors entirely or else significantly scaled back business in this area. Their continuing, largely static, nuclear engineering workforce needs have been met through a combination of hiring those trained in university nuclear engineering programs and retraining others whose original expertise was in some other field (usually mechanical engineering). Retirees from the nuclear Navy also have played an important role.

A natural result of this stasis was for many years a greatly reduced interest among undergraduates in nuclear science and engineering programs2. In turn, this put great pressure on U.S. universities to scale back in these areas. Recently, however, the Federal government, through the Department of Energy (DOE), dramatically increased funding for these educational efforts. This played a major role in increasing undergraduate student enrollments in nuclear engineering from a low point of 480 in 1999 to 1,933 in 2007. Declaring the problem to be solved, DOE called for the termination of its university nuclear science and engineering programs for FY 2007. Congress in turn provided reduced funding for FY 2007 and transferred all the programs except reactor fuel services to the Nuclear Regulatory Commission (NRC) for FY 2008. These “feast or famine” gyrations have led to significant instabilities: the number of university nuclear engineering departments has decreased from 66 in the early 1980s to 30 today, and the number of university reactors has dwindled from 63 to 25 during essentially the same period.

#### Plan signal solves workforce shortage

Unistar, 10

(January, This UniStar Issue Brief is a publication of UniStar Nuclear Energy, a joint venture of Constellation Energy and EDF Group, “Rebuilding the Nuclear Energy Workforce,” http://www.unistarnuclear.com/IB/workforce.pdf)

The decades-long hiatus in construction of new nuclear energy facilities has contributed to this workforce decline, of course. As the marketplace became less interested in nuclear energy, fewer students entered the discipline, reducing enrollment and forcing the closure of university and skills-based programs. **Reversing this trend will require building confidence among individuals in the target demographic that the nuclear renaissance is real and long term.** Washington Must take a stand The nuclear energy industry can only go so far in making critical workforce investments **without a clear signal from the Federal government**. Spurred by both industry and political considerations, President Obama and Secretary of Energy Steven Chu have begun the task of promoting green and high-tech jobs in the U.S. In August 2008, while still the director of the Lawrence Berkeley National Laboratory, Dr. Chu and other National Laboratory Directors signed a statement calling for a federal commitment. “For example, the government should establish and fund a nuclear energy workforce development program at universities and colleges to meet the expected [workforce] need.” 11 As the American Nuclear Society stated, “America’s university-based [nuclear science and engineering] programs cannot continue to be leaders in the field without an active [NRC] university program.” Both the total number of nuclear engineering programs and the enrollment in those programs has fallen precipitously since the 1980s. 12 the tiMe is noW Increasing the use of nuclear energy—building new facilities and expanding or relicensing existing ones—will maintain or create tens of thousands of high-paying jobs for American workers. But two key ingredients for a true nuclear energy renaissance are missing. First, the federal government **must demonstrate a long term commitment to a resurgent nuclear energy industry. This means** expanding the NRC university program, funding and issuing loan guarantees, and other **concrete actions.** If we want people to stake their education and career choices on nuclear expansion, **they deserve a clear signal that the government supports the industry** with more than just words. Second, companies must commit to a continued investment in their own workforces, through research to understand the laborsupply environment, through training, and through partnerships with organized labor. Ultimately, the government and industry must act together to both provide career opportunities and also ensure that a trained workforce will be available to fill the demand.

#### Not zero-sum—training and surplus of candidates disprove the link

Stoneturn Consultants, A White Paper Prepared for the Blue Ribbon Commission on America's Nuclear Future, 3/14/11, From Three Mile Island to the Future Improving Worker Safety and Health In the U.S. Nuclear Power Industry, http://cybercemetery.unt.edu/archive/brc/20120621004952/http://brc.gov/sites/default/files/documents/stoneturn\_brc\_osh\_report\_revision\_1.pdf

There are also several reasons why this may not be as great a problem as it appears, and the majority of the individuals we spoke to favor this reasoning:

• If nuclear power plants end up not being built, then developing a large specialized workforce does not make sense. There has to be long-term sustainable employment for the workforce.

• The industry, contractors and unions have established many efforts to fill the gap that could result from baby-boomer attrition.

• Many nuclear power plant operators say they track their workforce beginning at age 55 in anticipation of an average retirement age of 60, to make sure they replace every skill that the person who retires well in advance of the actual retirement.

• Several also expressed the view that "if you build them they will come." Construction of a nuclear power plants offers several years of good jobs with good pay, and many workers will relocate for that opportunity. Another way of expressing this is that if the labor market conditions are favorable then recruitment takes care of itself. In regional markets with high pay, there is an abundance of applicants for slots at all levels expertise. It regional markets with low pay, it is much harder to find qualified people.

• There is no shortage of available training system capacity, which can be mobilized to fill the need for large numbers of crafts workers.

#### Other industries trigger (or disprove) the link

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

Further complicating NNSA’s recruiting efforts is the demand for qualified candidates in the private sector as well, and private sector jobs may offer a work environment that many candidates may find more desirable. The same pool of candidates who can excel in engineering, modeling, and simulation tasks is also attractive to high technology firms. For example, according to M&O contractor officials at Lawrence Livermore National Laboratory, a web-based provider of DVD rentals and streaming media uses computational scientists to predict consumers’ preferences for films, which is the same skill set the weapons laboratories would use for modeling and simulation. However, this company does not have the constraints that a federal contractor has with compensation limits and a restrictive work environment.

## immigration – high skilled

#### Visa’s not key to reverse brain drain

Wadhwa 9

Vivek Wadhwa, executive in residence/adjunct professor at the Pratt School of Engineering at Duke University and a senior research associate with the Labor and Worklife Program at Harvard Law School, Spring 2009, “A Reverse Brain Drain,” Issues in Science and Technology, <http://www.issues.org/25.3/wadhwa.html>

To our surprise, visa status was not the most important factor determining their decision to return home. Three of four indicated that considerations regarding their visa or residency permit status did not contribute to their decision to return to their home country. In fact, 27% of Indian respondents and 34% of Chinese held permanent resident status or were U.S. citizens. For this highly select group of returnees, career opportunities and quality-of-life concerns were the main reasons for returning home. Family considerations are also strong magnets pulling immigrants back to their home countries. The ability to better care for aging parents and the desire to be closer to friends and family were strong incentives for returning home. Indians in particular perceived the social situation in their home country to be significantly superior. The move home also appeared to be something of a career catalyst. Respondents reported that they have moved up the organization chart by returning home. Only 10% of the Indian returnees held senior management positions in the United States, but 44% found jobs at this level in India. Chinese returnees went from 9% in senior management in the United States to 36% in China. Opportunities for professional advancement were considered to be better at home than in the United States for 61% of Indians and 70% of Chinese. These groups also felt that opportunities to launch their own business were significantly better in their home countries.

#### Obama losing immigration still results in high-skill reform

Matthew Yglesias, Slate, 1/15/13, 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.

## immigration

#### Passage inevitable—Obama’s irrelevant

Michael Hirsh, National Journal, 2/7/13, There’s No Such Thing as Political Capital, 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. The point is not that “political capital” is a meaningless term. Often it is a synonym for “mandate” or “momentum” in the aftermath of a decisive election—and just about every politician ever elected has tried to claim more of a mandate than he actually has. Certainly, Obama can say that because he was elected and Romney wasn’t, he has a better claim on the country’s mood and direction. Many pundits still defend political capital as a useful metaphor at least. “It’s an unquantifiable but meaningful concept,” says Norman Ornstein of the American Enterprise Institute. “You can’t really look at a president and say he’s got 37 ounces of political capital. But the fact is, it’s a concept that matters, if you have popularity and some momentum on your side.” The real problem is that the idea of political capital—or mandates, or momentum—is so poorly defined that presidents and pundits often get it wrong. “Presidents usually over-estimate it,” says George Edwards, a presidential scholar at Texas A&M University. “The best kind of political capital—some sense of an electoral mandate to do something—is very rare. It almost never happens. In 1964, maybe. And to some degree in 1980.” For that reason, **political capital is a concept that misleads far more than it enlightens**. It is distortionary. It conveys the idea that we know more than we really do about the ever-elusive concept of political power, and it discounts the way unforeseen events can suddenly change everything. Instead, it suggests, erroneously, that a political figure has a concrete amount of political capital to invest, just as someone might have real investment capital—that a particular leader can bank his gains, and the size of his account determines what he can do at any given moment in history. Naturally, any president has practical and electoral limits. Does he have a majority in both chambers of Congress and a cohesive coalition behind him? Obama has neither at present. And unless a surge in the economy—at the moment, still stuck—or some other great victory gives him more momentum, it is inevitable that the closer Obama gets to the 2014 election, the less he will be able to get done. Going into the midterms, Republicans will increasingly avoid any concessions that make him (and the Democrats) stronger. 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.

#### Obama pushing poisons the well

Ezra Klein 1/28/13, Two numbers show why Republicans support immigration reform, [www.washingtonpost.com/blogs/wonkblog/wp/2013/01/28/two-numbers-show-why-republicans-support-immigration-reform/](http://www.washingtonpost.com/blogs/wonkblog/wp/2013/01/28/two-numbers-show-why-republicans-support-immigration-reform/)

So on this issue, Republicans have both strategic and substantive reasons for making a deal. The question for the Obama administration is how to keep them from developing reasons for opposing whatever particular deal the Obama administration proposes. And **the answer, in a way, is** obvious: The **Obama** administration shouldn’t **propose a deal**. In fact, **it should stay out of the dealmaking as much as possible.** The immigration-reform effort is being spearheaded by a bipartisan group of senators that includes Chuck Schumer (D-N.Y.), John McCain (R-Ariz.), Dick Durbin (D-Ill.), Marco Rubio (R-Fla.), Bob Menendez (D-N.J.), Lindsey Graham (R-S.C.), Michael Bennet (D-Colo.) and Jeff Flake (R-Ariz.). You can read their plan here. That’s no accident. Durbin, Schumer and Menendez are close allies of the White House. The fact that they moved first isn’t a quirk of scheduling. It’s an effort to keep the fever down. Republicans will fight most anything Obama proposes. This is, again, not because they’re sick, but because they run in primaries and represent districts and states where their constituents want them to fight anything overly associated with the Obama administration. This is a frustrating fact of life for the Obama administration — and perhaps even a sick commentary on how our political system works — but it is, nevertheless, a fact: Their involvement polarizes issues. And it’s not unique to them: Presidential involvement in general polarizes issues**. By staying out,** at least for now, the **Obama** administration **is making it easier for Republicans to stay in.** At some point, the Obama administration’s involvement will become necessary. Certainly, the administration will have to take a position on whatever is being worked on in the Senate. But they’re wise to hang back for as long as they can, routing their preferences through the Democrats on the Senate working group. Republicans have all the reason in the world to support immigration reform. The last thing the Obama administration wants to do is give them a reason to oppose it. The fever is low now, but that doesn’t mean it can’t spike.

#### Gay rights provisions trigger the link

Erin Kelly, USA Today, 2/8/13, Gay rights becoming controversy in immigration reform, www.usatoday.com/story/news/politics/2013/02/08/gay-rights-immigration-reform/1903119/

Gay rights has emerged as an unexpected point of controversy in the congressional debate over immigration reform, prompting key Republicans to warn that it could derail efforts to reach a bipartisan compromise. President Obama and some congressional Democrats are pushing for any immigration reform plan to include a provision to allow gay Americans to sponsor their immigrant partners for legal residency in the United States. That is a right currently enjoyed only by married heterosexual couples. But Republican leaders on immigration reform say it's already going to be an uphill battle to convince their GOP colleagues to support a pathway to citizenship for the 11 million illegal immigrants living in the United States. **Including a provision for gay partners will make reform legislation** an even tougher sell, key senators said. "I'm telling you now, if you load this (immigration reform legislation) up with social issues and things that are controversial, it will endanger the issue," Sen. John McCain, R-Ariz., said at a forum this week sponsored by Politico. Sen. Marco Rubio, R-Fla., expressed similar concerns during an interview with the BuzzFeed online news site this week. "I think if that issue (gay rights) becomes a central issue in the debate it's going to become harder to get it done because there will be strong feelings on both sides," Rubio said. McCain and Rubio are part of a group of eight senators -- four Republicans and four Democrats -- who recently unveiled a bipartisan blueprint for comprehensive immigration reform. Their efforts have sparked optimism among immigration rights' advocates that legislation might finally be passed to deal with the divisive issue. The senators' bipartisan blueprint does not include any provision for gay citizens to sponsor their immigrant partners for legal status. However, a plan announced by Obama late last month does include the language, which supporters estimate would affect 30,000 to 40,000 gay Americans and their partners. This week, a group of 16 House members -- 14 Democrats and two moderate Republicans from the Northeast -- introduced the "Uniting American Families Act" to allow gay Americans to sponsor their "permanent partners" to become legal U.S. residents -- and eventually citizens. "Permanent partners" are described as two adults who intend to make a lifelong commitment to one another. "Today, thousands of committed same-sex couples are needlessly suffering because of unequal treatment under our immigration laws, and this is an outrage," said Jerrold Nadler, D-N.Y., who led the effort to introduce the same-sex partners' bill in the House. "Any serious legislative proposal for comprehensive immigration reform absolutely must include gay and lesbian couples and their families." Sen. Patrick Leahy, D-Vt., the chairman of the Senate Judiciary Committee, said he intends to introduce identical legislation in that chamber soon with more than 25 Democratic co-sponsors and the support of Republican Sen. Susan Collins of Maine. "More than two dozen countries recognize same-sex couples for immigration purposes," Collins said. "This important civil rights legislation would help prevent committed, loving families from being forced to choose between leaving their family or leaving their country." But some of the religious **groups that strongly support immigration reform say they will oppose the inclusion of the same-sex provision in any comprehensive bill**. U.S. Catholic bishops, with the support of evangelicals, have written a letter to Obama urging him to remove the provision from his immigration reform plan. "Injecting a contentious social issue into the immigration debate calls into question the commitment to actually achieving immigration reform," said Galen Carey, vice president of the National Association of Evangelicals. "Too many politicians in both parties are using the immigration issue to score political points. We need a laser focus on building bipartisan consensus on fixing our broken immigration system. The future for millions of immigrant families hangs in the balance."

#### Overloading Congress causes agenda success—focusing his capital kills it

Chuck Todd, NBC, 2/5/13, First Thoughts: Flooding the zone, firstread.nbcnews.com/\_news/2013/02/05/16852487-first-thoughts-flooding-the-zone?lite

Flooding the zone: Exactly one week away from President Obama’s State of the Union address, the White House has spent the early days of the second term flooding the zone with its legislative agenda. Last week, the president delivered his big immigration speech in Las Vegas. Yesterday, he spoke about gun violence in Minnesota. Today, he’s meeting at the White House with progressive, labor, and business leaders to discuss immigration reform and the budget situation. What’s going on here: The Obama White House wants to overload Washington’s political circuits in an effort to see what it can get through Congress -- without letting Congress define what issues get addressed. After all, Republicans want to solely talk about the budget before the March budget showdown (see yesterday’s multiple coordinated responses by House Republicans on the White House’s announcement it would be late with its budget). Yet by flooding the zone, Team Obama -- with the bully pulpit and the State of the Union at its disposal -- wants to widen the political dialogue beyond that one issue. This “flooding the zone” concept is how the Obama White House operated in the first six months of the first term, and it’s where he got most of his legislative achievements. When the White House got bogged down on ONE issue (health care, debt ceiling, etc), officials determined they lost some of their political capital.

#### 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>, AM

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.

# 1AR

## A2 accidents

#### No impact

Rod **Adams 12**, Former submarine Engineer Officer, Founder, Adams Atomic Engines, Inc., “Has Apocalyptic Portrayal of Climate Change Risk Backfired?”, May 2, <http://atomicinsights.com/2012/05/has-apocalyptic-portrayal-of-climate-change-risk-backfired.html?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+AtomicInsights+%28Atomic+Insights%29>

Not only was the discussion enlightening about the reasons why different people end up with different opinions about climate change responses when presented with essentially the same body of information, but it also got me thinking about a possible way to fight back against the Gundersens, Caldicotts, Riccios, Grossmans and Wassermans of the world. That group of five tend to use apocalyptic rhetoric to describe what will happen to the world if we do not immediately start turning our collective backs on all of the benefits that abundant atomic energy can provide. They spin tall tales of deformed children, massive numbers of cancers as a result of minor radioactive material releases, swaths of land made “uninhabitable” for thousands of years, countries “cut in half”, and clouds of “hot particles” raining death and destruction ten thousand miles from the release point. Every one of those clowns have been repeating similar stories for at least two solid decades, and continue to repeat their stories even after supposedly catastrophic failures at Fukushima have not resulted in a single radiation related injury or death. According to eminent scientists – like Dr. Robert Gale – Fukushima is unlikely to EVER result in any measurable increase in radiation related illness. One important element that we have to consider to assess cancer risks associated with an accident like Fukushima is our baseline risk for developing cancer. All of us, unfortunately, have a substantial risk of developing cancer in our lifetime. For example, a 50-year-old male has a 42% risk of developing cancer during his remaining life; it’s almost the same for a 10-year-old. This risk only decreases when we get much older and only because we are dying of other causes. It’s true that excess radiation exposure can increase our cancer risk above baseline levels; it’s clear from studies of the survivors of the 1945 atomic bombings of Hiroshima and Nagasaki, of people exposed to radiation in medical and occupational settings, and of people exposed to radon decay products in mines and home basements. When it comes to exposures like that of Fukushima, the question is: What is the relative magnitude of the increased risk from Fukushima compared to our baseline cancer risk? Despite our fears, it is quite small. § Marked 10:27 § If the nuclear industry – as small and unfocused as it is – really wanted to take action to isolate the apocalyptic antinuclear activists, it could take a page from the effective campaign of the fossil fuel lobby. It could start an integrated campaign to help the rest of us to remember that, despite the dire predictions, the sky never fell, the predicted unnatural deaths never occurred, the deformations were figments of imagination, and the land is not really irreversibly uninhabitable for generations. The industry would effectively share the story of Ukraine’s recent decision to begin repopulating the vast majority of the “dead zone” that was forcibly evacuated after the Chernobyl accident. It would put some context into the discussion about radiation health effects; even if leaders shy away from directly challenging the Linear No Threshold (LNT) dose assumption, they can still show that even that pessimistic model says that a tiny dose leads to a tiny risk. Aside: My personal opinion is that the LNT is scientifically unsupportable and should be replaced with a much better model. We deserve far less onerous regulations; there is evidence that existing regulations actually cause harm. I hear a rumor that there is a group of mostly retired, but solidly credentialed professionals who are organizing a special session at the annual ANS meeting to talk about effective ways to influence policy changes. End Aside. Most of us recognize that there is no such thing as a zero risk; repeated assertions of “there is no safe level” should be addressed by accepting “close enough” to zero so that even the most fearful person can stop worrying. The sky has not fallen, even though we have experienced complete core meltdowns and secondary explosions that did some visible damage. Nuclear plants are not perfect, there will be accidents and there will be radioactive material releases. History is telling me that the risks are acceptable, especially in the context of the real world where there is always some potential for harm. The benefits of accepting a little nuclear risk are immense and must not be marginalized by the people who market fear and trembling.

#### Passive shutdown means no impact

Ioannis N. Kessides and Vladimir Kuznetsov 12, Ioannis is a researcher for the Development Research Group at the World Bank, Vladimir is a consultant for the World Bank, “Small Modular Reactors for Enhancing Energy Security in Developing Countries”, August 14, Sustainability 2012, 4(8), 1806-1832

Compared to large conventional reactors, SMRs are better able to “respond” to lessons of the 9/11 and Fukushima disasters. They can do so by moving the nuclear islands underground and/or surrounding the reactor vessels or small containments with water, as well as by exploiting their relatively higher potential for passive decay heat removal—they can achieve grace periods of 72 hours and well beyond and eliminate the need for continuous emergency electrical supply on the site. One of the key concerns regarding nuclear deployment in developing countries is that those countries generally have a less mature regulatory regime in place compared to the advanced industrial countries. These considerations place very stringent requirements on power station reliability and safety performance. The need for enhanced levels of safety can be more easily met by SMRs with design options that maximize the use of inherent and passive safety features and incorporate additional layers of “defense in depth” [13]. These safety features can be more easily and effectively implemented in SMRs because of these reactors’ larger surface-to-volume ratio, § Marked 10:27 § reduced core power density, lower source term, and less frequent (multi-year) refueling. For example, large surface-to-volume ratios facilitate the passive (with no external source of electrical power or stored energy) removal of decay heat.

#### Large reactors are much worse

Kessides 12

(Ioannis, Lead Economist, Development Research Group, The World Bank. The findings, interpretations, and conclusions are the author's own and should not be attributed to the World Bank, its Executive Board of Directors, or any of its member states, “The future of the nuclear industry reconsidered: Risks, uncertainties, and continued promise” 13 June 2012., Energy Policy Volume 48, September 2012, Pages 185–208)

The design, construction, and operational challenges of nuclear plants became more severe as the reactors have increased in size and complexity. One particularly challenging aspect of design is anticipating potential failure modes within a single nuclear plant component and guarding against the potential interaction among different components—i.e., ensuring that the operation of safety systems is not impaired by failures in unrelated and less critical areas. The risks of such adverse interactions, and hence the design and construction challenges, increased considerably as nuclear plants have become larger because of the concomitant increase in the number and complexity of plant components. The operation of plants also has become more difficult. Many of the control functions required to operate the reactor, or to shut it down during an accident, are handled automatically. During an accident, however, a combination of unanticipated events can interfere with the proper functioning of these automatic safety systems. § Marked 10:27 § Nuclear reactor operators are therefore trained to respond to such low probability but potentially very damaging events. Such human interventions are not too problematic in the case of very simple, small reactors which can be designed with a great deal of inherent safety and operated with less sophisticated control systems. Large nuclear reactors, on the other hand, contain many complex systems that have the potential to interact in unpredictable ways thus making it extremely difficult for operators to respond correctly.

## A2 turns the case

#### Not true - empirics

Fuhrmann 11

(Matthew, Stanton Nuclear fellow at CFR, “Nuclear Inertia,” <http://www.slate.com/articles/health_and_science/green_room/2011/04/nuclear_inertia.single.html>, AM)

For the past two years, I've been building a data set that can help answer this question. It contains the location and date of every nuclear power plant constructed in every country in the world between 1965 and 2000—based on records maintained by the International Atomic Energy Agency—and every significant nuclear accident during that time. I also collected country-level statistics on other factors that are thought to influence nuclear-power development: economic welfare, energy security, and energy production capacity, for example.

The nearly 75 nuclear accidents in the database include widely remembered disasters, such as Three Mile Island (TMI) in 1979 and Chernobyl in 1986, but also less-known incidents, such as the reactor meltdown in Buenos Aires, Argentina, in 1983 and an uncontrolled nuclear chain reaction in Tokaimura, Japan, in 1999 that killed two people.

Japanese authorities recently rated Fukushima at the highest possible severity level (Level 7), a designation shared only by Chernobyl. (TMI was classified as Level 5.) Given that the last accident of this magnitude crippled the nuclear industry, it may be tempting to conclude that the crisis in Japan will substantially curtail global nuclear power development. According to my database, however, it seems this judgment may be premature.

Nuclear-reactor construction is dominated by inertia. Harvesting nuclear energy is incredibly expensive at first, but much cheaper once the infrastructure is in place. Nevertheless, countries with a lot of money invested in nuclear energy have been surprisingly reluctant to give it up—even after major nuclear accidents. States that were not heavily invested, however, have often been quick to cancel their nuclear plans after accidents in other countries.

My analyses confirmed the conventional wisdom that TMI and Chernobyl stymied the global nuclear industry. A simple comparison between construction rates in the pre- and post-Chernobyl eras indicates that states were about 75 percent less likely to build reactors following the Soviet accident.

But Chernobyl and TMI aside, nuclear accidents generally have not deterred countries from building additional plants—even when the accidents happen within their borders. India, for example, began construction on four new reactors following the release of helium and heavy water at the Rajasthan Atomic Power Station in February 1995. \*

Countries with nuclear power plants under construction prior to Three Mile Island continued to build reactors at a slower, though still steady pace—at least one new plant per country every seven years, on average, over the next two decades. In these countries—a group that includes Czechoslovakia, France, Pakistan, and South Korea—the accidents at Chernobyl and TMI raised concerns about the safety of nuclear power plants, but these fears were rarely sufficient to derail entrenched national interests.

#### Fukushima proves

Lovering et al 9/7/12

Jessica Lovering, Ted Nordhaus, and Michael Shellenberger are policy analyst, chairman, and president of the Breakthrough Institute, a public policy think tank and research organization, “Out of the Nuclear Closet,” <http://www.foreignpolicy.com/articles/2012/09/07/out_of_the_nuclear_closet?page=0,0>, AM

Not long after a tsunami washed over Japan's Fukushima nuclear power plants in March 2011, causing a partial meltdown, it appeared to many that humankind's half-century experiment with nuclear power might be in permanent jeopardy. Although nuclear energy provides 15 percent of the world's electricity, all without spewing greenhouse gas emissions, many countries seemed ready to forgo nuclear for deadlier but less viscerally frightening power sources. And sadly, while U.S. political leaders, including those at the just-concluded Democratic National Convention, are quick to trumpet their embrace of natural-gas drilling, the word "nuclear" is scarcely ever mentioned. A year and half after the accident, it's clear that the political fallout from Fukushima has been less than many anticipated. Despite the predictable denunciations from anti-nuclear campaigners and high-profile shifts away from nuclear both in Germany-- which is now planning to phaseout nuclear power entirely by 2022 -- and Japan -- where the government is seriously considering making the country's post-Fukushima shutdown permanent -- the nuclear landscape today looks much as it did before the accident. In places where rapidly growing energy demand has outstripped the availability of domestic fossil fuel reserves, nuclear remains the only reliable alternative to generate sufficient electrical power. China and India are proceeding apace with plans to expand their nuclear generation capacity dramatically. South Korea recently announced plans to increase significantly the percentage of electricity it gets from nuclear energy.

## no adopt

#### R&D won’t be robust or prototype SMRs unless tied to procurement

Matt Stepp et al. 11, specialist in clean energy innovation at the Information Technology and Innovation Foundation, formerly Fellow at the Breakthrough Institute, et al, May 2011, “Ten Principles for Creating a New U.S. Clean Energy Policy,” http://www.itif.org/files/2011-guiding-principles.pdf

R&D is fundamentally the most important part of an effective clean energy innovation policy. But by itself it is not enough. Spurring clean energy innovation means supporting innovation from the back-end (basic science and R&D) through the front-end (testing, demonstration, deployment, and commercialization). Clean energy policy should support a robust innovation system from beginning to end, ensuring that all stages of technology development are optimally sustained.¶ Clean energy innovation includes bridging technologies across the “valleys of death.” The first valley of death – the phase in development between R&D and prototyping the first generation of a technology – is crucially important because it takes the innovation out of the lab and proves its commercial viability. But building the first prototype of a radically new solar installation or demonstrating a new small modular nuclear reactor is capital intensive and risky. Because of this, the private sector has historically provided little support for this stage of development and would rather wait until new technologies yield a higher rate of return. So the federal government has played a significant role in developing many of the last century’s breakthrough technologies through demonstration and test-bed projects. Past breakthrough technologies like the Internet, nuclear power plants, and jet engines were initially built and tested at federal labs and through private sector collaborations with the military. Currently, the United States is just beginning to implement strategies for bridging technologies from the lab to demonstration, such as through the agreement between ARPA-E and the Department of Defense to test advanced energy technologies suitable for the militaries needs. But these policies are not permanent, as they are enforced at the agency level without a national strategy or Congressional mandate.¶ The second valley of death is the phase in development between tech demonstration and commercialization. 12 Clean energy must compete in an entrenched energy sector filled with significant institutional, political, and regulatory barriers to deployment. But it’s expensive to produce the first generation of technology after development and demonstration, making it a risky and potentially costly business decision for utilities and consumers. Clean energy may need up-front financing to build the first generation of new clean energy technologies and to hurdle barriers to deployment. Without it, the high cost of up-front investment is a significant deterrent for utilities to choose brand new advanced solar, wind, or small modular reactors (SMRs) over well established coal or natural gas plants. New clean energy is stuck in what Coalition for Green Capital’s Ken Berlin calls, “the chick and egg problem.” 13 Breakthrough clean energy needs first-generation investment after demonstration and testing in order to evolve into lower cost, better understood secondand third-generation tech. But utilities and consumers will only invest in breakthrough tech with greater cost and market certainty. The federal government can and should play a role in supporting this transition or what leading clean energy policy expert Bill Bonvillian calls “beefing up the back end of clean energy.” 14 This is different than simply subsidizing deployment of existing mature clean energy technologies with little hope for dramatic price reductions of next generation innovations.

## 1ar – uq outweighs

#### Both sides have no choice

Allan Wernick, attorney and director of the City University of New York’s Citizenship Now!, 1/25/13, A look at where key Congressional players stand on immigration indicates reform could come soon, http://www.nydailynews.com/new-york/citizenship-now/immigration-chances-good-sweeping-immigration-reform-article-1.1245988

As expected, President Obama confirmed his support for immigration reform in his inaugural address. It was one of the few specific issues mentioned by the President in setting the program for his coming four years in office. In the last few weeks, some pundits have argued that the debate over debt and budget issues or gun control will sidetrack the President from his commitment to immigrants. That analysis ignores the expectations of Latino voters and their allies. Obama and both parties have no choice but to make immigration reform a priority in the coming year. The doubters are wrong. I am more optimistic than ever that we will see reform this year. To understand why, lets take a look at what some key players on the immigration reform debate have been saying and doing this year: l Charles Schumer — New York Democrat Chuck Schumer will pay a key role in shaping the debate. That’s good news for immigrant rights’ advocates. As chair of the Senate Subcommittee on Immigration, Border Security and Citizenship, Sen. Schumer is responsible for leading any reform bill through the Senate. Particularly experienced in dealing with immigration legislation, many credit then-Congressman Schumer with the deal-making that led to passage of the last legalization legislation, the Immigration Reform and Control Act of 1986. More than 3 million undocumented immigrants were legalized under that act. Schumer is already on the move, organizing his colleagues for the fight to come. l Marco Rubio — Florida Sen. Marco Rubio’s call last spring for a Dream Act for undocumented youth was an historic turning point in the immigration reform debate. A rising Conservative Republican star, Rubio’s proposal forced Obama’s hand. The President’s decision to grant Deferred Action for Childhood Arrivals helped him consolidate the Latino vote, a key factor in his victory. Recently, Rubio's position on legalization has moved from supporting just legal status to agreeing that legalization must include a path to citizenship for undocumented immigrants. Though many others in the Republican party have yet to adopt the “path to citizenship” position, it will hard for Republican leaders to buck one of their few Latino leaders. Rubio is a key player in the Republicans’ plan to reach out to Latinos. As a possible 2016 Presidential candidate, Rubio can’t afford to anger Latinos. l Luis Gutierrez — Chicago Congressman Luis Gutierrez is the Democratic Party’s conscience on immigration issues. Gutierrez is a tenacious advocate for immigrants’ rights. Though not a member of the party’s leadership, his impact on the debate will be greater than might be expected from his position alone. He has a long history of advocating for immigrants’ rights and he stood up to the Obama administration’s early resistance to the DACA program. Of Puerto Rican ancestry, Gutierrez recognized early in his career the importance of reaching out to his Mexican constituents. To help lead the immigration reform debate in the House of Representatives, Gutierrez is giving up his senior position on the prestigious House Financial Services Committee to join the Subcommittee on Immigration Policy and Enforcement. House Democratic leaders will look to Gutierrez to speak for immigrants about which compromises are acceptable to Latinos and which are not. He has closer ties to the immigrants’ rights movement than any other federal elected official. l Paul Ryan — Former Vice Presidential candidate Paul Ryan has no intention of letting Marco Rubio steal the show on immigration reform. A contender with Rubio for a possible 2016 run for the White House, Ryan reportedly reached out to House colleague Gutierrez regarding possible Tea Party support for a generous immigration bill. § Marked 10:27 § Ryan and any other Republicans seeking a national leadership role must be sensitive to the growing Latino vote. Unlike many of his Republican colleagues, Ryan is not a reformed immigrant-basher, reversing his position only after Romney and his defeat in November. Compared to other Republicans, he has been relatively immigrant-friendly much of his career. l John Boehner and Harry Reid — Boehner, as Speaker of the House, and Reid, as Senate Majority Leader, together need to make the system work for immigration reform to become law. Within days of President Obama’s reelection, Republican Boehner made clear his intention to seek common ground with Obama on the issue. As a leading Republican, Boehner knows that his party’s future is bleak if it maintains a restrictionist stance. Reid, as his party's Senate leader, will do what it takes to get Obama and Schumer’s program through the Senate. Reid must also keep his own constituents in mind. In his home state of Nevada, Latinos made up 18% of voters in 2012, up from 15% in 2008, a number that will surely grow going forward. Immigration reform will happen this year. Count on it.

#### Fights can’t stop passage

Ezra Klein, 1/28/13, Two numbers show why Republicans support immigration reform, www.washingtonpost.com/blogs/wonkblog/wp/2013/01/28/two-numbers-show-why-republicans-support-immigration-reform/

By and large, Washington isn’t gripped by fever. It’s gripped by actual disagreements and mismatched incentives. Republicans really do disagree with Obama on taxes. And most Republican senators and representatives really do come from increasingly conservative districts that didn’t vote for Obama. When you stack substantive disagreement atop a strategic incentive to disagree, you get Washington in 2012. But — and this is key — Republicans weren’t behaving irrationally. They were behaving rationally. And that’s exactly why they might cut a deal on immigration even as they fight Obama on taxes. Two numbers explain why a rational Republican Party needs to do something dramatic on immigration: 27 percent and 2 percent. Twenty-seven percent is the percentage of the Latino vote Mitt Romney received in 2012, according to the exit polls. Two percent is the projected increase in the non-white electorate come 2016. So Republicans are losing badly among Hispanic voters and Hispanic voters are becoming an increasingly important part of the electorate. Those numbers supply the raw political case for acting on immigration. But the other side is the substantive case: A lot of elected Republicans simply want to do something on immigration. This isn’t like taxes, where most every elected Republican has signed a pledge swearing to fight any and all tax increases. The last major effort at immigration reform came in 2007, under President George W. Bush. The key Republican legislator on that bill was Sen. John McCain (Ariz.), who would go on to be the GOP’s presidential nominee in 2008. Support for comprehensive immigration reform is by no means unanimous within the Republican Party. Bush’s immigration reforms, for instance, fell before a conservative backlash. But some of the key conservatives behind that backlash have since changed their minds. Sean Hannity, for instance, now says: We’ve got to get rid of the immigration issue altogether. It’s simple, to me, to fix it. I think you control the border first. You create a pathway for those people that are here. You don’t say, ‘You’ve got to go home.’ And that is a position that I’ve evolved on. Because, you know what, it’s got to be resolved. The majority of people here, if some people have criminal records you can send them home, but if people are here, law-abiding, participating for years, their kids are born here, you know, it’s first secure the border, pathway to citizenship, done, whatever little penalties you want to put in there, if you want, but then it’s done.

## at: high skilled

#### If Obama’s immigration strategy collapses, still bipart support for separate high-skill reform

Lauren Hepler, 1/25/13, Senate readies immigration reform bill aimed at high-skill workers, www.bizjournals.com/sanjose/news/2013/01/25/senate-readies-immigration-reform-bill.html?page=all

A bipartisan group of senators is preparing to introduce a bill aimed exclusively at increasing the number of employer-sponsored H-1B visas available for foreign-born workers with specialized skills in fields like engineering and computer programming.

The move directly contradicts President Obama's vow to pursue "comprehensive immigration reform" for illegal immigrants, guest workers and highly skilled tech workers in one fell swoop,

Washington newspaper The Hill obtained a copy of a measure, which would raise the annual cap from 65,000 workers to 115,000, with the possibility of raising the number of H-1B visas to 300,000, should the higher cap be hit early in the year.

Similar legislation aimed at high-tech workers was proposed in the last Congress, including the STEM Jobs Act, the IDEA Act and the Startup Visa Act, all of which died before coming to a final vote.

The Hill report does not address whether the legislation would impact startup founders, who often have difficulty obtaining visas because of outdated criteria that favor more established companies.

Despite lobbying by tech giants like Facebook, Microsoft and Intel on the issue for high skill workers, President Obama has maintained a focus on immigration reform that also addresses low-wage workers and illegal immigrants, complicating the prospects of reform for highly skilled workers.

The Business Journal took an in-depth look last week at the ways the current immigration system often fails specialized tech talent, from the difficulties of obtaining visas to launching startups under outdated laws - costing the U.S. economy untold potential jobs and tax revenue.

Silicon Valley Leadership CEO Carl Guardino told me in an interview earlier this month that high-skill immigration reform is being held "hostage" in Washington to get through more controversial reforms for other groups of immigrants.

## 1ar – myth

#### Proves internal link is wrong:

#### The internal link is smoke and mirrors

Michael Hirsh, National Journal, 2/7/13, There’s No Such Thing as Political Capital, www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207

Weighing the imponderables of momentum, the often-mystical calculations about when the historic moment is ripe for an issue, will never be a science. It is mainly intuition, and its best practitioners have a long history in American politics. This is a tale told well in Steven Spielberg’s hit movie Lincoln. Daniel Day-Lewis’s Abraham Lincoln attempts a lot of behind-the-scenes vote-buying to win passage of the 13th Amendment, banning slavery, along with eloquent attempts to move people’s hearts and minds. He appears to be using the political capital of his reelection and the turning of the tide in the Civil War. But it’s clear that a surge of conscience, a sense of the changing times, has as much to do with the final vote as all the backroom horse-trading. “The reason I think **the idea of political capital is kind of distorting is that it implies you have chits you can give out to people. It really oversimplifies why you elect politicians**, or why they can do what Lincoln did,” says Tommy Bruce, a former political consultant in Washington.

## 1ar – winners

#### Capital isn’t capped which means there’s only a risk of the link turn

Michael Hirsh, National Journal, 2/7/13, There’s No Such Thing as Political Capital, www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207

In terms of Obama’s second-term agenda, what all these shifting tides of momentum and political calculation mean is this: Anything goes. Obama has no more elections to win, and he needs to worry only about the support he will have in the House and Senate after 2014. But if he picks issues that the country’s mood will support—such as, perhaps, immigration reform and gun control—there is no reason to think he can’t win far more victories than any of the careful calculators of political capital now believe is possible, including battles over tax reform and deficit reduction. Amid today’s atmosphere of Republican self-doubt, a new, more mature Obama seems to be emerging, one who has his agenda clearly in mind and will ride the mood of the country more adroitly. **If he can get some early wins**—as he already has, apparently, on the fiscal cliff and the upper-income tax increase—**that will create momentum, and one win may well lead to others. “Winning wins.”**

#### Obama can muscle anything

John Dickerson, Slate, 1/18/13, Go for the Throat!, www.slate.com/articles/news\_and\_politics/politics/2013/01/barack\_obama\_s\_second\_inaugural\_address\_the\_president\_should\_declare\_war.single.html

On Monday, President Obama will preside over the grand reopening of his administration. It would be altogether fitting if he stepped to the microphone, looked down the mall, and let out a sigh: so many people expecting so much from a government that appears capable of so little. A second inaugural suggests new beginnings, but this one is being bookended by dead-end debates. Gridlock over the fiscal cliff preceded it and gridlock over the debt limit, sequester, and budget will follow. After the election, the same people are in power in all the branches of government and they don't get along. There's no indication that the president's clashes with House Republicans will end soon. Inaugural speeches are supposed to be huge and stirring. Presidents haul our heroes onstage, from George Washington to Martin Luther King Jr. George W. Bush brought the Liberty Bell. They use history to make greatness and achievements seem like something you can just take down from the shelf. Americans are not stuck in the rut of the day. But this might be too much for Obama’s second inaugural address: After the last four years, how do you call the nation and its elected representatives to common action while standing on the steps of a building where collective action goes to die? That bipartisan bag of tricks has been tried and it didn’t work. People don’t believe it. Congress' approval rating is 14 percent, the lowest in history. In a December Gallup poll, 77 percent of those asked said the way Washington works is doing “serious harm” to the country. The challenge for President Obama’s speech is the challenge of his second term: how to be great when the environment stinks. Enhancing the president’s legacy requires something more than simply the clever application of predictable stratagems. Washington’s partisan rancor, the size of the problems facing government, and the limited amount of time before Obama is a lame duck all point to a single conclusion: The president who came into office speaking in lofty terms about bipartisanship and cooperation can only cement his legacy if he destroys the GOP. If he wants to transform American politics, he must go for the throat. President Obama could, of course, resign himself to tending to the achievements of his first term. He'd make sure health care reform is implemented, nurse the economy back to health, and put the military on a new footing after two wars. But he's more ambitious than that. He ran for president as a one-term senator with no executive experience. In his first term, he pushed for the biggest overhaul of health care possible because, as he told his aides, he wanted to make history. He may already have made it. There's no question that he is already a president of consequence. But there's no sign he's content to ride out the second half of the game in the Barcalounger. He is approaching gun control, climate change, and immigration with wide and excited eyes. He's not going for caretaker. How should the president proceed then, if he wants to be bold? The Barack Obama of the first administration might have approached the task by finding some Republicans to deal with and then start agreeing to some of their demands in hope that he would win some of their votes. It's the traditional approach. Perhaps he could add a good deal more schmoozing with lawmakers, too. That's the old way. He has abandoned that. He doesn't think it will work and he doesn't have the time. As Obama explained in his last press conference, he thinks the Republicans are dead set on opposing him. They cannot be unchained by schmoozing. Even if Obama were wrong about Republican intransigence, other constraints will limit the chance for cooperation. Republican lawmakers worried about primary challenges in 2014 are not going to be willing partners. He probably has at most 18 months before people start dropping the lame-duck label in close proximity to his name. Obama’s only remaining option is to pulverize. Whether he succeeds in passing legislation or not, given his ambitions, his goal should be to delegitimize his opponents. Through a series of clarifying fights over controversial issues, he can force Republicans to either side with their coalition's most extreme elements or cause a rift in the party that will leave it, at least temporarily, in disarray.