# Round 5 vs. Whitman ST (Aff)

## 1AC

#### Same as round 4

## 2AC

### T

#### We meet: Nuclear fuel recycling is energy production.

World Nuclear Association 12 [Processing of Used Nuclear Fuel, http://www.world-nuclear.org/info/inf69.html]

Used nuclear fuel has long been reprocessed to extract fissile materials for recycling and to reduce the volume of high-level wastes. ¶ New reprocessing technologies are being developed to be deployed in conjunction with fast neutron reactors which will burn all long-lived actinides. ¶ A significant amount of plutonium recovered from used fuel is currently recycled into MOX fuel; a small amount of recovered uranium is recycled. ¶ A key, nearly unique, characteristic of nuclear energy is that used fuel may be reprocessed to recover fissile and fertile materials in order to provide fresh fuel for existing and future nuclear power plants. Several European countries, Russia and Japan have had a policy to reprocess used nuclear fuel, although government policies in many other countries have not yet addressed the various aspects of reprocessing.¶ Over the last 50 years the principal reason for reprocessing used fuel has been to recover unused uranium and plutonium in the used fuel elements and thereby close the fuel cycle, gaining some 25% more energy from the original uranium in the process and thus contributing to energy security. A secondary reason is to reduce the volume of material to be disposed of as high-level waste to about one fifth. In addition, the level of radioactivity in the waste from reprocessing is much smaller and after about 100 years falls much more rapidly than in used fuel itself.¶

#### Counter interpretation:

#### The aff has to affect both resource extraction and conversion into energy

Australian Government, Department of Climate Change and Energy Efficiency 2011 [“Energy Production and Consumption,” http://www.climatechange.gov.au/government/initiatives/national-greenhouse-energy-reporting/publications/supplementary-guidelines/energy-production-consumption.aspx]

Production of energy: in relation to a facility, means the:

1. extraction or capture of energy from natural sources for final consumption by or from the operation of the facility or for use other than in the operation of the facility
2. manufacture of energy by the conversion of energy from one form to another form for final consumption by or from the operation of the facility, or for use other than in the operation of the facility (regulation 2.23(3) NGER Regulations).

#### We meet the counter-interpretation: recycling involves both the act of reprocessing the used fuel and using it to create new nuclear energy.

#### Prefer our interp:

A. Predictability – Only our interpretation guarantees link arguments to both extraction and the burning of resources to produce energy. This is crucial link ground for pollution DAs and domestic/foreign energy tradeoff DAs.

B. Limits: Requiring the aff to both extract and convert the energy is necessary to eliminate affs that only extract, like capture carbon or methane or stockpile oil as a strategic military reserve with heg advantages. Also key to prevent affs that only burn fuels like Bataille-style affs that encourage rapid consumption or R&D affs that incentivize new ways to burn the same resources.

#### Competing interpretations are bad: Race to the bottom: they’re just trying to limit out one more case

#### Prefer reasonability: as long as we’re reasonably topical, there’s no reason to pull the trigger. Don’t vote on potential abuse.

### Warming

#### We can build them really quickly.

Blees et al 11

[Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/]

How Fast Can We Build Them?¶ During France’s nuclear building boom they built an average of six nuclear power plants per year, culminating in a situation that provides them with about 80% of their electrical needs while making electricity their fourth-largest export earner. Gross Domestic Product (GDP) can be used as a rough guide to what a given country can financially bear for such a project, keeping in mind that France proceeded without the sense of urgency that the world today should certainly be ready to muster. There are six countries with higher GDPs than France, all of whom already possess the technology to build fast reactors: USA, China, Japan, India (they’re building one now), Germany, and the United Kingdom. Add Canada and Russia (which already has a commercial fast reactor running and is planning more), then tally up the GDP of these eight countries. At the rate of 6 plants per year (~ 1GW each) at the equivalent of France’s GDP, these countries alone could afford to build about 117 power plants per year, even without any greater urgency than the French brought to bear on their road to energy independence.¶ Consider that there are about 400 nuclear power plants in the world today. At this entirely feasible rate of construction we could more than double the planet’s nuclear capacity in just four years. Remember, the French accomplished their transformation with non-modular, albeit standardized, Gen II designs. Modular construction, passive safety systems, and factory fabrication, divided among companies all over the planet, could realistically convert the planet’s electricity production to virtually all nuclear in a couple decades, with abundant surplus electricity for ancillary uses such as desalination and the production of liquid fuels such as ammonia.

### States

#### Perm do both. Solves GOP backlash because thirty republican governors would all back reprocessing.

#### Information distortion means the CP links to politics

**Kiely, ‘12** [2/17/12, Eugene Kiely, Washington assignment editor USA today, “Did Obama ‘Approve’ Bridge Work for Chinese Firms?” http://www.factcheck.org/2012/02/did-obama-approve-bridge-work-for-chinese-firms/]

Who’s to blame, if that’s the right word, if the project ends up using manufactured steel from China? The National Steel Bridge Alliance [blames](http://americanmanufacturing.org/blog/shameful-use-taxpayer-dollars-alaska) the state railroad agency. The Alliance for American Manufacturing [says](http://americanmanufacturing.org/blog/alaskan-manufacturers-outraged-potential-%E2%80%9Cmade-china%E2%80%9D-railroad-bridge) the federal Buy American laws have been “weakened with loopholes and various exemptions that make it easier for bureaucrats to purchase foreign-made goods instead of those made in American factories with American workers.” So, how did Obama get blamed for the decisions by state agencies and for state projects that, in at least one case, didn’t even use federal funds? The answer is a textbook lesson in how information gets distorted when emails go viral. We looked at the nearly 100 emails we received on this subject and found that Obama wasn’t mentioned at all in the first few emails. Typical of the emails we received shortly after the ABC News report aired was this one from Oct. 11, 2011: “I just got an email regarding Diane Sawyer on ABC TV stating that U. S. Bridges and roads are being built by Chinese firms when the jobs should have gone to Americans. Could this possible be true?” The answer: Yes, it’s true. End of story, right? Wrong. Days later, emails started to appear in our inbox that claimed ABC News reported that Chinese firm were receiving stimulus funds to build U.S. bridges — even though the broadcast news story didn’t mention stimulus funds at all. (The report did include a clip of Obama delivering a speech on the need to rebuild America’s bridges and put Americans to work, but said nothing about the president’s $830 billion stimulus bill.) Still, we received emails such as this one on Nov. 4, 2011, that included this erroneous claim language: “Stimulus money meant to create U.S. jobs went to Chinese firms. Unbelievable….” It didn’t take long for Obama to be blamed. That same day — Nov. 4, 2011 — we received an email that made this leap to Obama: “SOME CHINESE COMPANIES WHO ARE BUILDING ‘OUR’ BRIDGES. (3000 JOBS LOST TO THE CHINESE FIRM)…..AND NOW OBAMA WANTS ‘MORE STIMULUS MONEY’…..THIS IS NUTS ! ! ! If this doesn’t make you furious nothing will….” This year, Obama’s name started to surface in the subject line of such critical emails — raising the attack on the president to yet another level and perhaps ensuring the email will be even more widely circulated. Since Jan. 17, we have gotten more than a dozen emails with the subject line, “ABC News on Obama/USA Infrastructure,” often preceded with the word “SHOCKING” in all caps. The emails increasingly contain harsh language about the president. Since Jan. 11, 23 emails carried this added bit of Obama-bashing: “I pray all the unemployed see this and cast their votes accordingly in 2012!” One of those emails — a more recent one from Feb. 8 — contained this additional line: “Tell me again how Obama’s looking out for blue collar guys. He cancels pipelines, and lets Chinese contractors build our bridges…” And so it goes, on and on. All from a news report that blamed state officials — not Obama — for spending taxpayer money on Chinese firms to build U.S. bridges.

#### States CP are V/I. 1.) No comparative literature compares the action of 50 states simultaneously vs. the federal government. Kills education because it removes substantive clash about energy production. 2.) Fiat abuse – uniformity eliminates the only aff against state action, which is enforcement. Kills competitive equity.

#### CP can’t solve – federal investment is necessary to remove the perceptual ban on reprocessing.

Adams, ‘8

[Rod, “What Do You Do About the Waste? Recycle and Reuse”, Clean Technica, 5-29-2008,

<http://cleantechnica.com/2008/05/29/what-do-you-do-about-the-waste-recycle-and-reuse/>, RSR]

The US used to have a plan to recycle our fuel as well, but a great deal of marketing and pressure by people that do not like the idea of using plutonium as a source of commercial heat resulted in President Ford issuing a presidential order to temporarily halt nuclear fuel recycling in 1976. President Carter, a man who claimed to be a nuclear engineer, made that ban permanent in the hopes that forcing US companies to avoid fuel recycling would cause others to abandon the very logical idea. That effort did not work as planned, but the people who had invested large amounts of time and money into building three recycling plants in the US only to have them shut down with the stroke of a pen decided “once bitten, twice shy.” Though President Reagan removed the ban, President Clinton essentially reinstated it and no commercial company has been willing to build a facility and risk having it turn into a white elephant after an election.

#### Doesn’t solve the aff – absent the plan, companies will never believe that the federal government will allow reprocessing, so they won’t invest. That’s Selyukh 10.

#### CP can’t solve - federal preemption of the counterplan exists now

Ostrow, associate professor of law at Hofstra Law School, ’11

(Ashira Pelman Ostrow, “Process Preemption in Federal Siting Regimes, Harvard Journal of Law, July 2011, <http://www.harvardjol.com/wp-content/uploads/2011/07/Ostrow_Article.pdf>)

For national security reasons, the federal government has long asserted exclusive authority to manage high-level radioactive waste. 130 The Atomic Energy Act of 1954 131 and the Energy Reorganization Act of 1974 132 granted the Nuclear Regulatory Commission (“NRC”) exclusive regulatory authority over high-level nuclear waste facilities. 133 The statutes left no room for state participation, other than in an advisory capacity for certain transportation issues. 134 Nonetheless, by the late 1970s, the states began to actively regulate, restrict, and even ban the shipment of highly toxic nuclear waste and the establishment of radioactive waste facilities within their borders. 135 To resolve the jurisdictional conflict, Congress enacted the Nuclear Waste Policy Act of 1982 (“NWPA”). 136 The Act was intended to “establish a schedule for the siting, construction, and operation of repositories” to protect the public and the environment “from the hazards posed by high-level radioactive waste.” 137 The NWPA required the Secretary of Energy to nominate five sites for a high-level radioactive waste repository and to recommend three of them to the President for further study by January 1, 1985. 138 The Act further required the Secretary of Energy to develop guidelines by which to evaluate potential repository sites. 139

#### Conditionality is a voting issue – being able to kick positions at will destroys argumentative responsibility, skews the 2AC, the focal point of all aff offense, because we have to spend more time answering things than they do kicking them, and justifies aff conditionality to be reciprocal. Counter interpretation is dispositionality. Allows us to stick them to positions. Solves all their offense.

### Debt Ceiling

#### Warming is the only scenario for extinction --- absent multipliers, nuclear war won’t happen.

The New York End Times 6 The New York End Times is a non-partisan, non-religious, non-ideological, free news filter. We monitor world trends and events as they pertain to two vital threats - war and extinction. We use a proprietary methodology to quantify movements between the extremes of war and peace, harmony and extinction. http://newyorkendtimes.com/extinctionscale.asp

We rate Global Climate Change as a greater threat for human extinction in this century. Most scientists forecast disruptions and dislocations, if current trends persist. The extinction danger is more likely if we alter an environmental process that causes harmful effects and leads to conditions that make the planet uninhabitable to humans. Considering that there is so much that is unknown about global systems, we consider climate change to be the greatest danger to human extinction. However, there is no evidence of imminent danger. Nuclear war at some point in this century might happen. It is unlikely to cause human extinction though. While several countries have nuclear weapons, there are few with the firepower to annihilate the world. For those nations it would be suicidal to exercise that option. The pattern is that the more destructive technology a nation has, the more it tends towards rational behavior. Sophisticated precision weapons then become better tactical options. The bigger danger comes from nuclear weapons in the hands of terrorists with the help of a rogue state, such as North Korea. The size of such an explosion would not be sufficient to threaten humanity as a whole. Instead it could trigger a major war or even world war. Under this scenario human extinction would only be possible if other threats were present, such as disease and climate change. We monitor war separately. However we also need to incorporate the dangers here .

#### Debt ceiling will not pass – Obama and Republicans won’t negotiate.

Shear and Calmes, 1-2

[Michael and Jackie, NYT Reporters, “Lawmakers Gird for Next Fiscal Clash, on the Debt Ceiling”, 1-2-13,

http://www.nytimes.com/2013/01/03/us/politics/for-obama-no-clear-path-to-avoid-a-debt-ceiling-fight.html?pagewanted=all&\_r=0, RSR]

Senator Patrick J. Toomey, Republican of Pennsylvania, said flatly that his party should risk the possibility of default — including interruptions in federal benefit checks and paychecks for government workers — if it was the only way to compel the president to support deep spending cuts that will reduce the deficit. “That’s disruptive, but it’s a hell of a lot better than the path that we’re on,” Mr. Toomey said Wednesday on MSNBC. “We absolutely have to have this fight over the debt limit.” The Republican Party’s caucus in the House will discuss a debt ceiling strategy at a private retreat in Williamsburg, Va., this month, according to a top Republican aide, who said they were determined to insist again on spending cuts that equal the amount of increase in how much the country can borrow. “The speaker told the president to his face that everything you want in life comes with a price,” the aide said. “That doesn’t change here. I don’t think he has any choice.” White House officials say Mr. Obama is equally determined to avoid letting the debt ceiling become a regular Republican tool for extracting concessions on spending on programs popular with Democratic constituents. “It means that he won’t negotiate on it,” a senior administration official said Wednesday about the president’s comments. ”He’s not entertaining offers about it. We’re not having meetings about it.” The official, who asked for anonymity to discuss legislative strategy, said the debt limit “was never used as a policy leverage tool before.” “This is them paying the bills for the spending that they racked up,” the official said. “They need to do that.” Some people in both parties questioned why Mr. Obama would so emphatically vow not to negotiate over the debt limit, a promise he may ultimately be forced to break if necessary to avoid economic shock waves. “It’s bizarre,” said one veteran Democratic senator who would not be named, citing the proven willingness of Republicans to force a fiscal crisis unless the president makes a deal for additional spending cuts. Mr. Obama resolved immediately after the 2011 debt crisis, privately and publicly, that he would not be drawn again into negotiations over the borrowing limit. He has said that presidents and Congresses have a fundamental, shared responsibility to ensure that the government pays bills that it owes to its citizens and creditors.

#### Won’t pass – Democrats will not agree to spending cuts, meaning PC is not key.

Klein, Senior Editorial Writer, 1-2

[Phillip, “Phillip Klein: Past the 'cliff,' debt ceiling promises a more brutal fight”, 1-2-13, The Washington Examiner,

http://washingtonexaminer.com/past-the-cliff-debt-ceiling-promises-a-more-brutal-fight/article/2517384#.UOTzj29WyuI, RSR]

As a weary Washington assesses the "fiscal cliff" deal, a debt-ceiling showdown looms on the horizon. There are a number of reasons to believe that the standoff -- expected sometime in February or March -- will be even more difficult to resolve than the last debt-ceiling impasse in the summer of 2011. In the 2011 showdown, House Speaker John Boehner established the principle that every dollar increase in the debt limit would have to be accompanied by a dollar cut in government spending. The final deal allowed for at least $2.1 trillion in debt-limit increases offset by promised spending cuts and did not raise taxes. This time, however, it will be more difficult for Republicans to get Democrats to agree to spending cuts. In the summer of 2011, both parties were essentially placing bets on the outcome of the 2012 election. With Obama re-elected and Democrats still controlling the Senate, Democrats believe they are in a stronger position. The 2011 debt-limit deal reduced projected spending by about $917 billion. There isn't much desire among victorious Democrats to cut discretionary spending further, and there is deep resistance to cutting mandatory spending by reforming the big entitlement programs -- Medicare, Medicaid and Social Security.

**Immigration thumps.**

**Kludt 1/3**

[Tom, Writer for TalkingPointsMemo, “Report: Obama To Make Push For Immigration Reform This Month” <http://livewire.talkingpointsmemo.com/entry/report-obama-to-make-push-for-immigration-reform>]

President Barack **Obama is prepared to use his political capital to pursue immigration reform this month,** according to a report published Wednesday in the Huffington Post. The report cited an anonymous official in the Obama administration, who suggested that **the president is unlikely to be deterred by the protracted fiscal cliff debate that will be revisited in the coming months.** As such, **the administration will reportedly move quickly on both immigration reform and gun control**. The report also quoted an unnamed Senate Democratic aide, who gauged the likelihood of immigration reform to pass Congress. **Citing the fiscal cliff deal** that passed the House of Represenatives this week with a combination of Republican and Democratic votes, **the aide expressed confidence that** House Speaker John **Boehner (**R-OH) **will be able to overcome expected opposition from the conservative wing of his caucus. "He already did it with this fiscal issue, so I would not be surprised if when it came down to it he puts up a bill that he just allows to go through with a combination of Democratic and Republican votes, without worrying about a majority of the majority**," the aide said.

#### No PC loss from pushing nuclear.

Hinckley, adjunct professor of international energy policy at Georgetown University, ‘12

[Elias, partner with the law firm of Kilpatrick Townsend & Stockton,

“Hard Choices Ahead for US Energy”, <http://www.ourenergypolicy.org/wp-content/uploads/2012/03/EHinckley-policy-article.pdf>]

What remains unclear is how policymakers will react. Some amount of policymaking support has been lost, as there has been simply too much discourse devoted to the potential hazards of nuclear power. However, the downside to continuing to champion the role of nuclear energy as part of a secure US energy future appears limited at this stage. There is little nationalized resistance and, as a result, no clear political cost to support nuclear policies, and possibly the benefit of the impression of proactivity on broad energy policy initiatives, and the results may be politicians continuing to champion nuclear power with no real expectation of new facilities being developed over the near or midterm

#### Logical policymaker can do both.

#### Plan popular in Congress – popular among senators like Graham.

Ling 2009 (“Is the solution to the U.S. nuclear waste problem in France?” By KATHERINE LING, ClimateWire, http://www.nytimes.com/cwire/2009/05/18/18climatewire-is-the-solution-to-the-us-nuclear-waste-prob-12208.html?pagewanted=all Published: May 18, 2009) RCM

South Carolina Sen. Lindsey Graham (R) earlier this month said he would like to bring such an "energy park" to the Savannah River Site -- where Areva is building the MOX facility -- and plans to speak to House leadership and President Obama on the matter. Reprocessing is moving elsewhere on the congressional front, including in draft legislation from Sen. Jeff Bingaman (D-N.M.), chairman of the Senate Energy and Natural Resources Committee, that would study the feasibility of a reprocessing facility as a part of comprehensive energy legislation. Sen. Lisa Murkowski (R-Alaska), the committee's ranking member, said she will propose an alternative nuclear provision to provide cost-sharing incentives for two reprocessing facilities and other new nuclear reactor incentives.

#### Graham is a dealmaker

Politico 12 (http://www.politico.com/news/stories/1112/83458.html)

Still, there’s no mistaking the loss is anything short of a dramatic disappointment for Senate Minority Leader Mitch McConnell (R-Ky.) and Texas Sen. John Cornyn, the chairman of the National Republican Senatorial Committee who is poised to become the No. 2 Republican in the chamber.¶ After failing to return to the majority for the second straight cycle, both men will now have to navigate their own potentially tough reelection bids in 2014, as will a number of would-be GOP deal-makers, such as Lamar Alexander of Tennessee, Lindsey Graham of South Carolina and Saxby Chambliss of Georgia. The same tea party influence that has proven to be powerful in GOP primaries could haunt senators with no president in the White House strong enough to clear their respective fields. McConnell will have to balance the need for accomplishments with the desire to protect his conference from being jammed by Democrats.

#### No link – no reason Obama gets associated with the plan

#### Even massive economic decline has zero chance of war

Robert Jervis 11, Professor in the Department of Political Science and School of International and Public Affairs at Columbia University, December 2011, “Force in Our Times,” Survival, Vol. 25, No. 4, p. 403-425

Even if war is still seen as evil, the security community could be dissolved if severe conflicts of interest were to arise. Could the more peaceful world generate new interests that would bring the members of the community into sharp disputes? 45 A zero-sum sense of status would be one example, perhaps linked to a steep rise in nationalism. More likely would be a worsening of the current economic difficulties, which could itself produce greater nationalism, undermine democracy and bring back old-fashioned beggar-my-neighbor economic policies. While these dangers are real, it is hard to believe that the conflicts could be great enough to lead the members of the community to contemplate fighting each other. It is not so much that economic interdependence has proceeded to the point where it could not be reversed – states that were more internally interdependent than anything seen internationally have fought bloody civil wars. Rather it is that even if the more extreme versions of free trade and economic liberalism become discredited, it is hard to see how without building on a preexisting high level of political conflict leaders and mass opinion would come to believe that their countries could prosper by impoverishing or even attacking others. Is it possible that problems will not only become severe, but that people will entertain the thought that they have to be solved by war? While a pessimist could note that this argument does not appear as outlandish as it did before the financial crisis, an optimist could reply (correctly, in my view) that the very fact that we have seen such a sharp economic down-turn without anyone suggesting that force of arms is the solution shows that even if bad times bring about greater economic conflict, it will not make war thinkable.

### Accidents DA

#### In the short term US nuclear waste is stored on-site.

Galbraith 11 (Kate, Staff Writer, “A New Urgency to the Problem of Storing Nuclear Waste”, New York Times, 11-27-11, http://www.nytimes.com/2011/11/28/business/energy-environment/a-new-urgency-to-the-problem-of-storing-nuclear-waste.html, RSR)

Other countries are also looking at waste in new ways in the post-Fukushima world. Right now, worldwide, most spent fuel waste is stored on the site of the facility that produced it, in spent-fuel pools and, after it eventually cools, dry casks. Experts say dispersed storage is expensive and that central storage would be more secure. Few countries , apart from Sweden and Finland, have moved forward on centralized disposal sites, deep in the earth, designed to hold the waste permanently. France is evaluating a permanent disposal site for spent fuel , near the remote northeastern village of Bure.

#### Waste storage is the biggest risk of accidents.

Kinitisch 11 (Eli, Reporter at Science Magazine, “Waste Panel Expected To Back Interim Storage”, Science Magazine, Vol. 333, 7-8-11, RSR)

In any case, experts agree, some new plan for waste storage is essential. Waste currently stored in pools and casks at U.S. sites does not pose “unmanageable … safety or security risks,” says a subcommittee report. But every ton that stays at reactor sites makes those risks slightly greater. Fuel in U.S. spent fuel pools is packed four times as densely as it was 25 years ago, raising concerns about the risk of explosions or meltdown if the pools were to empty in an accident. The tsunami that devastated the Fukushima nuclear plant in Japan in March may have resulted in a loss of water in one of its ponds (Science, 1 April, p. 24). A draft commission report says the issue of the safety of keeping fuel densely packed in pools should be “reexamined,” although “it is still too early to draw deﬁ nitive conclusions” from the Fukushima accident. It calls for an expert panel at the National Academies to tackle the subject.

#### Reprocessing would remove the waste problem – the waste we currently store can be reused

Bastin 8 (Clinton, Former Chemical Engineer at the Atomic Energy Commission, 21st Century Science and Technology, “We Need to Reprocess Spent Nuclear Fuel, And Can Do It Safely, At Reasonable Cost”, 2008, [http://www.21stcenturysciencetech.com/Articles%202008/ Summer\_2008/Reprocessing.pdf](http://www.21stcenturysciencetech.com/Articles%202008/Summer_2008/Reprocessing.pdf), RSR)

The concept of used nuclear fuel as “nuclear waste” is a fiction created by the opponents of nuclear energy. Used nuclear fuel isn’t waste at all, but a renewable resource that can be reprocessed into new nuclear fuel and valuable isotopes. When we entered the nuclear age, the great promise of nuclear energy wasitsrenewability, making it an inexpensive and efficient way to produce electricity. It was assumed that the nations making use of nuclear energy would reprocess their spent fuel, completing the nuclear fuel cycle by recycling the nuclear fuel after it was burned in a reactor, to extract the 95 to 99 percent of unused uranium in it that can be turned into new fuel. This means that if the United States buries its 70,000 metric tons of spent nuclear fuel, we would be wasting 66,000 metric tons of uranium-28, which could be used to make new fuel. In addition, we would be wasting about 1,200 metric tons of fissile uranium-25 and plutonium-29, which can also be burned as fuel. Because of the high energy density in the nucleus, this relatively small amount of U.S. spent fuel (it would fit in one small house) is equivalent in energy to about 20 percent of the U.S. oil reserves. About 96 percent of the spent fuel the United States is now storing can be turned into new fuel. The 4 percent of the socalled waste that remains—2,500 metric tons—consists of highly radioactive materials, but these are also usable. There are about 80 tons each of cesium-17 and strontium-90 that could be separated out for use in medical applications, such as sterilization of medical supplies. Using isotope separation techniques, and fast-neutron bombardment for transmutation (technologies that the United States pioneered but now refuses to develop), we could separate out all sorts of isotopes, like americium, which is used in smoke detectors, or isotopes used in medical testing and treatment. Right now, the United Statesmust import 90 percent of its medical isotopes, used in 40,000 medical procedures daily. The diagram shows a closed nuclear fuel cycle. At present, the United States has no reprocessing, and stores spent fuel in pools or dry storage at nuclear plants. Existing nuclear reactors use only about 1 percent of the total energy value in uranium resources; fast reactors with fuel recycle would use essentially 100 percent, burning up all of the uranium and actinides, the long-lived fission products. In a properly managed and safeguarded system, the plutonium produced in fast reactors would remain in its spent fuel until needed for recycle.Thus, there need be no excess buildup of accessible plutonium. The plutonium could also be fabricated directly into new reactor fuel assemblies to be burned in nuclear plants.

#### A Chernobyl repeat is impossible due to better safety standards

Hiserodt, aerospace engineer, 08 (Ed, “Myths About Nuclear Energy”, [The New American](http://proquest.umi.com/pqdweb?RQT=318&pmid=51311&TS=1213577891&clientId=24726&VInst=PROD&VName=PQD&VType=PQD). April 30, Vol. 23, Iss. 9; pg. 18, 6 pgs, Proquest)

It is common to mention Chernobyl and Three Mile Island at the same time in debate over nuclear safety, but the two events are substantially different. Chernobyl was the feared "worst case scenario" envisioned by critics of nuclear energy. Whereas at Three Mile Island the nuclear chain reaction was stopped in the first 10 seconds of the event, at Chernobyl the chain reaction continued well into the accident. Although there is almost nothing flammable in a U.S. power reactor, Chernobyl's was constructed from graphite, a form of carbon that is difficult to ignite, but burns with a very hot flame once ignited. Not only that, but Chernobyl did not even have a containment structure for the reactor, unlike American plants that are built with containment buildings designed to withstand the impact of a jumbo jet. Because there was no containment vessel enclosing Chernobyl's poorly designed RBMK-type reactors, when the plant exploded, chunks of radioactive material were ejected from the annihilated plant and exposed to the environment. And yet, the aftermath of Chernobyl was not as bad as many expected it to be. § Marked 10:54 § According to the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), "The accident caused the deaths within a few days or weeks of 30 power plant employees and firemen (including 28 deaths that were due to radiation exposure)." No one wants to see loss of life, but as large industrial incidents go. this was relatively unexceptional. The 1984 gas leak at the Union Carbide plant in Bhopal, India, killed at least 3,000 people and, according to some estimates, may have caused the death of 15,000. At Chernobyl, by contrast, fears of mass casualties from the effects of radiation have not been realized. According to the UN, "There have been eleven deaths between 1987 and 1998 among confirmed acute radiation sickness survivors.... There were three cases of coronary heart disease, two cases of myelodysplastic syndrome, two cases of liver cirrhosis, and one death each of lung gangrene, lung tuberculosis and fat embolism. One patient who had been classified with Grade II acute radiation sickness died in 1998 from acute myeloid leukaemia." Though tragic, these deaths do not amount to the devastation of much of Russia and Western Europe that was predicted. Among the broader population, even under the microscope of a media that seeks out disasters, the only detectable heath effect was an increase in childhood thyroid cancer. But some have pointed out that this might be an anomaly caused by extra screening after the accident. If you screen more children every year, you will detect more cases of thyroid cancer, Chernobyl notwithstanding. It's noteworthy that Russia's childhood thyroid cancers did not go off the scale. In Finland, 2.4 percent of children had thyroid cancer - 90 times that of all persons in the Bryansk area of Russia who were less than 18 in 1986 - at the time of the accident. The most detrimental effect of Chernobyl was the forced relocation of residents. Ironically, the fallout from the accident emitted less radioactivity than the local soil.

#### Nuclear power plant explosion is impossible.

Morris, PhD in Science Education and retired Environmental Consultant, 2k

[Robert, The Environmental Case for Nuclear Power, 2000, pg 16-7]

In the 1970s, a number of anti-nuclear power organizations spread the idea that the chain reaction in a nuclear power plant might increase so rapidly that the reactor could explode, as the atomic bomb did. However, for a nuclear power reactor to undergo a nuclear explosion is, and has always been, a complete impossibility. To begin with, nuclear power reactors contain only 3 percent U235. Nuclear bombs must contain over 90 percent U235, or they don’t satisfy the first of several physical conditions which must be met before a nuclear explosion can occur. (Nor is it possible for a reactor which uses plutonium to explode as did the atomic bomb.) For those readers who might be thinking, “What about the Russian nuclear power plant at Chernobyl? Didn’t it explode?” The explosion at Chernobyl was a chemical or steam explosion, not a nuclear explosion. The fact that only two people were killed by the initial explosion is ample proof that a nuclear explosion did not occur at Chernobyl; a nuclear explosion would have killed thousands. Even at a primitive nuclear power plant like Chernobyl, a nuclear explosion is an impossibility. For the time being, suffice it to say that Chernobyl was such an unsafe design that it could never have been licensed to generate electricity in the U.S., or in any of the Western European nations. (More about Chernobyl appears in a later chapter.)

### Hafnium DA

#### No shortage of rare earth metals – other countries fill in.

McGrath, Science Writer, ‘12

[Matt, “Asian countries challenge China on rare earth minerals”, BBC News, 6-20-12,

<http://www.bbc.co.uk/news/science-environment-18508692>, RSR]

And in Vietnam there are now projects underway in several countries to improve the exploitation of rare elements that are still crucial for the manufacture of batteries, magnets, mobile phones and other devices. "There's no shortage of rare earth ore at all and there won't be for several centuries at minimum," Tim Worstall told BBC News. "There is a shortage of the processing capacity to turn those ores into the individual rare elements but that is also being addressed. Several commentators expect that in the next few years, the current shortage of the elements will become a glut. Tim Worstall says that the situation is about to change dramatically. "I can think of three specific projects that I know that are financed and in the next two to three years will supply about 40% of the world market. I think the whole question becomes irrelevant as we get more non-Chinese supplies."

#### No hafnium supply shortage – medium term projections are strong.

UK Parliament, ‘11

[“Strategic Metals Key to the UK Aerospace and Defence Industry”, 2011, RSR]

The nuclear industry dominates hafnium usage (56%)with the aerospace industry using a further 33%. With the anticipated growth in nuclear technology for power generation, there will be an increased demand for hafnium. Also, the semi-conductor industry is looking to hafnium as a (partial) substitute for silicon. This new demand, coupled to that for capacitors, will place additional pressure on supply. Given that hafnium is a minor co-product in the mineral sands industry, additional supply capacity will be slow to materialize, due to industry inertia. Using the 1:50 metric, there is no shortage of hafnium reserves into the medium term.

#### Doesn’t turn case - Hafnium not key to renaissance – other materials can be substituted in.

Vulcan, ‘11

[Tom, “Hafnium: Small Supply, Big Applications”, 3-1-11, Seeking Alpha, RSR]

That said, however, control rods in, say, pressurized water reactors are not exclusively made using hafnium. Because of both its limited availability and relatively high price, a number of other materials can be and are substituted; for example, boron or silver-indium-cadmium alloys, which usually contain 80 percent Ag, 15 percent In, and 5 percent Cd.

#### Increased rare earth metal demand is key to the Chinese economy.

China Daily, ‘12

[“Policies of China's rare earth industry”, 6-21-12,

<http://www.chinadaily.com.cn/cndy/2012-06/21/content_15515969.htm>, RSR]

The market environment is gradually improving as China is constantly expediting reform in the rare earth industry, promoting the development of a market system featuring diversified investment, independent decision-making by businesses and pricing according to supply and demand. In recent years, investment in China's rare earth industry has experienced rapid growth, the market has been constantly expanded, state-owned, privately owned and foreign-invested sectors coexist, and the value of the rare earth metal market is approaching 100 billion yuan. The market order in this sector is gradually improving, and progressive development is being made in the merger and reorganization of businesses. The old picture of a "small, scattered, and disorderly" rare earth industry has vanished. Scientific and technological level has improved further. After many years of development, China has established a relatively complete R&D system, pioneered numerous technologies of international advanced levels in rare earth mining and dressing, smelting, separating, etc., and its unique mining and dressing processes and advanced separating techniques have laid a solid foundation for efficient exploitation and utilization of rare earth resources. The rare earth new materials industry has experienced steady development, and industrialization has been achieved in using rare earths to produce permanent-magnet, luminescent, hydrogen-storage, and catalytic materials, and other new materials, providing support for the restructuring and upgrading of traditional industries, and the development of emerging industries of strategic importance. The rapid development of China's rare earth industry has not only satisfied domestic demand for economic and social development, but also made important contributions to the world's rare earth supply. For many years, China has been faithfully fulfilling its pledges upon its accession to the WTO, honoring the WTO rules, and promoting fair trade in rare earths. Currently, China supplies over 90 percent of the global market rare earth needs with 23 percent of the world's total reserves, its output of permanent-magnet, luminescent, hydrogen-storage and polishing materials, which use rare earths as raw materials, accounts for more than 70 percent of the world's total, and China-produced rare earth materials, parts and components, as well as rare earth end products, such as energy-saving lamps, special and small electric motors and NiMH batteries, satisfied the development needs of high-tech industries of other countries, especially those of the developed countries.

#### Chinese economic collapse leads to nuclear war.

Yee, Associate Professor of Government @ Hong Kong Baptist University, and Storey, Asian-Pacific Center for Security Studies, ‘2

[Herbert and Ian, China Threat: Perception, Myths, and Reality, p. 5]

The fourth factor contributing to the perception of a china threat is the fear of political and economic collapse in the PRC, resulting in territorial fragmentation, civil war and waves of refugees pouring into neighbouring countries. Naturally, any or all of these scenarios would have a profoundly negative impact on regional stability. Today the Chinese leadership faces a raft of internal problems, including the increasing political demands of its citizens, a growing population, a shortage of natural resources and a deterioration in the natural environment caused by rapid industrialisation and pollution. These problems are putting a strain on the central government’s ability to govern effectively. Political disintegration or a Chinese civil war might result in millions of Chinese refugees seeking asylum in neighbounng countries. Such an unprecedented exodus of refugees from a collapsed PRC would no doubt put a severe strain on the limited resources of China’s neighbours. A fragmented china could also result in another nightmare scenario — nuclear weapons falling into the hands of irresponsible local provincial leaders or warlords.12 From this perspective, a disintegrating China would also pose a threat to its neighbours and the world.

#### Nuclear leadership in reprocessing is key to overall technical leadership – brain drain.

Martin, Chairman of the Nuclear Energy Advisory Committee, and Ahearne, Vice-Chairman, 8 (William F. and John, Nuclear Energy: Policies and Technology for the 21st Century, Nuclear Energy Advisory Committee, November 2008, http://www.ne.doe.gov/neac/neacPDFs/NEAC\_Final\_Report\_Web%20Version.pdf, da 9-1-12)

The consequences of a weakened nuclear infrastructure in the United States include reduced domestic capability to support the role of nuclear energy as well as the related problem of the reduced ability to attract and retain the talent at all levels—from technicians to engineers to Ph.D.’s—needed to develop and sustain active U.S. participation in the domestic and global nuclear marketplace. § Marked 10:48 § In that vein, NEAC recommends that both university and industry programs in nuclear R&D be strengthened, and that laboratories and facilities in the DOE complex be modernized and made more efficient. These programs should be developed in consultation with relevant government agencies and scientists, DOE national laboratories, private industry, and the academic community. NEAC makes the following recommendations: • The DOE lead the establishment and implementation of a nuclear energy R&D roadmap, in consultation with appropriate parties. • University and industry programs in nuclear R&D be strengthened, and that laboratories and facilities in the DOE complex be modernized and made more efficient. • The DOE review existing nuclear fuel cycle research and development to assure that it is meeting U.S. needs in the nuclear fuel cycle.

## 1AR

### Case

#### Plan solves worker shortage.

Kammen, professor of nuclear engineering at Berkeley, ‘3

[Daniel, Federal News Service, Prepared Testimony before the House Committee on Science, 6/12, lexis, DH]

The federal government plays the pivotal role in the encouragement of innovation in the energy sector. Not only are federal funds critical, but as my work and that of others has demonstrated6, private funds generally follow areas of public sector support. One particularly useful metric although certainly not the only measure --. of the relationship between funding and innovation is based on patents. Total public sector funding and the number of patents - across all disciplines in the United States have both increased steadily over at least the past three decades (Figure 5). The situation depicted here, with steadily increasing trends for funding and results (measured imperfectly, but consistently, by patents) is not as rosy when energy R&D alone is considered. In that case the same close correlation exists, but the funding pattern has been one of decreasing resources (Figure 6A). Figure 6A shows energy funding levels (symbol: o) and patents held by the national laboratories (symbol: ). The situation need not be as bleak as it seems. During the 1980s a number of changes in U.S. patent law permitted the national laboratories to engage in patent partnerships with the private sector. This increased both the interest in developing patents, and increased the interest by the private sector in pursuing patents on energy technologies. The squares (l) in figure 6 show that overall patents in the energy sector derived. Figure 6B reveals that patent levels in the nuclear field have declined, but not only that, publicprivate partnerships have taken placed (shaded bars), but have not increased as dramatically as in energy field overall (Figure 6A). There are a number of issues here, so a simple comparison of nuclear R&D to that on for example, fuel cells, is not appropriate. But it is a valid to explore ways to increase both the diversity of the R&D. This is a particularly important message for **federal** policy. Novel approaches are needed to encourage new and innovative modes of research, teaching, and industrial innovation in the nuclear energy field. To spur innovation in nuclear science a concerted effort would be needed to increase the types and levels of cooperation by universities and industries in areas that depart significantly from the current 'Generation III+' and equally, away from the 'Generation IV' designs. Similar conclusions were reached by M. Granger Morgan, head of the Engineering and Public Policy Program at Carnegie Mellon University, in his evaluation of the need for innovative in the organization and sociology of the U. S. nuclear power industrys. A second important issue that this Committee might consider is the degree of **federal** support for nuclear fission relative to other nations. Funding levels in the U.S. are significantly lower than in both Japan and France. Far from recommending higher public sector funding, what is arguably a more successful strategy would be to increase the private sector support for nuclear R&D and student training fellowships. Importantly, this is precisely the sort of expanded publicprivate partnership that has been relatively successful in the energy sector generally. It is incorrect, however, to think that this is a process that can be left to the private sector. There are key issues that inhibit private sector innovation. As one example, many nuclear operating companies have large coal assets, and thus are unlikely to push overly hard, in areas that threaten another core business. This emphasis on industry resources used to support and expanded nuclear program - under careful public sector management - has been echoed by a variety of nuclear engineering faculty members: I believe that if you. were to survey nuclear engineering department heads, most would select a national policy to support new nuclear construction, over a policy to increase direct financial support to nuclear engineering departments. A firm commitment by the federal government, to create incentives sufficient to ensure the construction of a modest number of new nuclear plants, with the incentives reduced for subsequent plants, would be the best thing that could possibly be done for nuclear engineering education and revitalization of the national workforce for nuclear science and technology. - Professor Per Peterson, Chair, Department of Nuclear Engineering, University of California, Berkeley

### Accidents

#### On-site waste storage is the EASIEST target for a terrorist attack – it’s the most vulnerable.

Rogers 6 (Ken, Professor and Chair of the Political Science Department at Coastal Carolina University, “Radioactive Waste Storage/Disposal Policy: A Paradigm for Homeland Security and Energy Security”, Midsouth Political Science Review, 2006, Vol. 8, RSR)

The inability of U.S. policymakers to come to grips with the problem of what to do with the continued generation of radioactive waste has both homeland security and energy security implications. Clearly, the events of 9/11 have focused attention on the potential for a terrorist attack on nuclear facilities. While much of this concern has been directed towards an attack on the reactors themselves, the radioactive waste stored on-site – especially the waste stored outdoors above ground in dry casks – is more problematic since it is far more vulnerable to any terrorist assault. Thus, the major terrorist threat to nuclear power facilities is not to the reactors, but the radioactive waste that they generate.

### Hafnium

#### Warming is the biggest conflict multiplier – acts as a security threat that leads to extinction via resource wars.

Sawin 12 [Janet Sawin, Senior Director of the Energy and Climate Change Program at the’ WorldWatch Institute, Aug 2012, “Climate Change Poses Greater Security Threat than Terrorism]

As early as 1988, scientists cautioned that human tinkering with the Earth's climate amounted to "an unintended, uncontrolled globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war." Since then, hundreds of scientific studies have documented ever-mounting evidence that human activities are altering the climate around the world. A growing number of international leaders now warn that climate change is, in the words of U.K. Chief Scientific Advisor David King, "the most severe problem that we are facing today—more serious even than the threat of terrorism." Climate change will likely trigger severe disruptions with ever-widening consequences for local, regional, and global security. Droughts, famines, and weather-related disasters could claim thousands or even millions of lives and exacerbate existing tensions within and among nations, fomenting diplomatic and trade disputes. In the worst case, further warming will reduce the capacities of Earth's natural systems and elevate already-rising sea levels, which could threaten the very survival of low-lying island nations, destabilize the global economy and geopolitical balance, and incite violent conflict. Already, there is growing evidence that climate change is affecting the life-support systems on which humans and other species depend. And these impacts are arriving faster than many climate scientists predicted. Recent studies have revealed changes in the breeding and migratory patterns of animals worldwide, from sea turtles to polar bears. Mountain glaciers are shrinking at ever-faster rates, threatening water supplies for millions of people and plant and animal species. Average global sea level has risen 20-25 centimeters (8-10 inches) since 1901, due mainly to thermal expansion; more than 2.5 centimeters (one inch) of this rise occurred over the past decade. A recent report by the International Climate Change Taskforce, co-chaired by Republican U.S. Senator Olympia Snowe, concludes that climate change is the "single most important long term issue that the planet faces." It warns that if average global temperatures increase more than two degrees Celsius—which will likely occur in a matter of decades if we continue with business-as-usual—the world will reach the "point of no return," where societies may be unable to cope with the accelerating rates of change. Existing threats to security will be amplified as climate change has increasing impacts on regional water supplies, agricultural productivity, human and ecosystem health, infrastructure, financial flows and economies, and patterns of international migration. Specific threats to human welfare and global security include: ► Climate change will undermine efforts to mitigate world poverty, directly threatening people's homes and livelihoods through increased storms, droughts, disease, and other stressors. Not only could this impede development, it might also increase national and regional instability and intensify income disparities between rich and poor. This, in turn, could lead to military confrontations over distribution of the world's wealth, or could feed terrorism or transnational crime. ► Rising temperatures, droughts, and floods, and the increasing acidity of ocean waters, coupled with an expanding human population, could further stress an already limited global food supply, dramatically increasing food prices and potentially triggering internal unrest or the use of food as a weapon. Even the modest warming experienced to date has affected fisheries and agricultural productivity, with a 10 percent decrease in corn yields across the U.S. Midwest seen per degree of warming. ► Altered rainfall patterns could heighten tensions over the use of shared water bodies and increase the likelihood of violent conflict over water resources. It is estimated that about 1.4 billion people already live in areas that are water-stressed. Up to 5 billion people (most of the world's current population) could be living in such regions by 2025. ► Widespread impacts of climate change could lead to waves of migration, threatening international stability. One study estimates that by 2050, as many as 150 million people may have fled coastlines vulnerable to rising sea levels, storms or floods, or agricultural land too arid to cultivate. Historically, migration to urban areas has stressed limited services and infrastructure, inciting crime or insurgency movements, while migration across borders has frequently led to violent clashes over land and resources.

#### No war – China won’t risk it all and no flashpoints.

Bremmer 10 (Ian, President of the Eurasia Group, “Gathering Storm: America and China in 2020”, July/August 2010, World Affairs Journal,¶ http://www.worldaffairsjournal.org/articles/2010-JulyAugust/full-Bremmer-JA-2010.html]

In addition, Beijing has no incentive to mount a global military challenge to U.S. power. China will one day possess a much more substantial military capacity than it has today, but its economy has grown so quickly over the past two decades, and its living standards improved so dramatically, that it is difficult to imagine the kind of catastrophic, game-changing event that would push Beijing to risk it all by posing the West a large-scale military challenge. It has no incentive to allow anything less than the most serious threat to its sovereignty to trigger a military conflict that might sever its expanding network of commercial ties with countries all over the world—and with the United States, the European Union, and Japan, in particular. The more familiar flash points are especially unlikely to spark a hot war: Beijing is well aware that no U.S. government will support a Taiwanese bid for independence, and China need not invade an island that it has largely co-opted already, via an offer to much of Taiwan’s business elite of privileged access to investment opportunities on the mainland.