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# \*\*\*Topic Analysis\*\*\*

**Resolved: Countries ought to prohibit the production of nuclear power.**

**File Author: Jesse Hedin**

**Edited by: Kyle Cheesewright**

This topic asks debaters to analyze a timely question of the pertinence, potential benefits and potential dangers of nuclear power and its use across the world. This topic is especially important given the proliferation of nuclear power to countries viewed as “unstable” or “rogue” like Iran and North Korea. The fear of nuclear power has increased dramatically over the past several years due to meltdowns of different reactors like that of the Fukushima Daiichi reactor in Japan. In this context, out of the 17 reactors planned to become operational from 2007 to 2009 only 5 have become operational. Thus, the once bright future for nuclear power as an alternative to fossil fuels and their status as the safest and most powerful form of clean energy has largely come into question. The particulars in the debate over nuclearism, as well as the environmental needs that led to the necessity of clean and powerful energy can be found in the further readings section of this file.

Affirmative debaters on this topic will be able to access ground several ways. First, the dangers that have been proven to be very real by the recent reactor meltdown in Japan will be used by AFF debaters to illustrate the outdated and unsafe technology of current nuclear power plants. Second, aff debaters will be able to access links to international law and different treaties that would mandate proliferation and assistance in the development of new reactors for less developed countries, since several countries as well as the US-Russian treaties have advocated for a more accessible nuclear power which has spurred fears of rogue weaponization. Additionally, affirmative cases will be able to isolate some very real “harms” of proliferation that takes place in a world where nuclear power becomes more accessible.

Negative debaters on this topic will be able to debate from two solid areas of argumentative ground. First, the very real threat of climate change and the infeasibility of other forms of clean energy has made nuclear power a serious necessity. While these impacts may be on a longer timeframe than many others they still have a 100% probability of the end of life on earth if left unchecked. Second, if the world were to totally denuclearize, stray fissile material and safety hazards of decommissioning nuclear plants would potentially run rampant or allow for non-state actors to obtain dangerous fissile materials. Nuclear terrorism has always been a small threat after the Soviet Union decommissioned many nuclear weapons and reactors, losing track of large amounts of weapons grade materials in the process. However, in an increasingly nuclear world, the point of no return is quickly approaching, prohibition could potentially have already passed the point of feasibility.

Additionally, there is some debate to be had on both sides of this topic stemming from the specification of “nuclear power” as some reactors and weapons could potentially fall in and out of that category allowing for a variety of ways to approach the topic for both AFF and NEG.

Finally, interesting critical ground exists across this topic. Many thinkers have criticized the securitization of nuclear power and the exceptionalism of world powers in the way that they can decide what countries are “legitimate” enough to hold the awesome power of nuclear energy. Along these same lines, debaters interested in critiquing orientalism and concepts of nuclear hegemony will find ample resources criticizing the nuclear empires set up by world powers like the US, China, and Russia. Finally, the question of the degree to which nuclear technology intermingles with environmental concerns and human rights/development of countries’ ability to generate power at the heart of this topic opens up linkages to a wide variety of critical thinkers.

**\*\*\*Further Reading\*\*\***

1. **Nuclear Power Is Not the Answer** by Helen Caldicott
2. **The Pros and Cons of Nuclear Power** by Ewan McLeish
3. **Nuclear Renaissance: Technologies and Policies for the Future of Nuclear Power** by William J. Nuttall
4. **The Fundamentals of Nuclear Power Generation: Questions & Answers** by M. W. Hubbell
5. **Atomic Awakening: A New Look at the History and Future of Nuclear Power** by James A. Mahaffey
6. **Nuclear Energy: What Everyone Needs to Know** by Charles D. Ferguson
7. **Media Discourse and Public Opinion on Nuclear Power: A Constructionist Approach** William A. Gamson and Andre Modigliani American Journal of Sociology Vol. 95, No. 1 (Jul., 1989), pp. 1-37 <http://www.jstor.org/stable/2780405?seq=1#page_scan_tab_contents>
8. **Politics and Nuclear Power: Energy Policy in Western Europe** By Michael T. Hatch

# \*\*\*AFF\*\*\*

**I affirm:**

**Resolved: Countries ought to prohibit the production of nuclear power.**

**Because this resolution uses the word “ought” questions of morality within nuclear power are first and foremost, the value for this debate should be morality.**

**Zimmerman explains, the status quo nuclear policy always excludes the non-nuclear from the conversation leaving them powerless.**

**Zimmerman 95** [Andrew D., “Toward a More Democratic Ethic of Technological Governance, Science, Technology, and Human Values,” vol. 20, no. 1, Winter, pp. 86-107]

The problem of hindered or even arrested moral development is exacerbated by authoritarian institutions such as the large technological systems that dominate much of our public life and work to inhibit autonomous expression.14 As Cooper observed, "[t]he crucial feature of these institutions, as it relates to the ideal of moral autonomy, is the lack of downward accountability. Those lower in the hierarchy are to be the beneficiaries of decisions; they are not expected to partake in the decision making" (1993, 124).

**And, the standard we should use in this debate to measure morality is maximizing equality of wellbeing.**

**According to Maiese:**

**Without consideration for equality in human wellbeing, those out of power become dehumanized. Dehumanization is a prerequisite to violence – it makes conflict, human rights violations and genocide inevitable – it’s empirically proven.**

**Maiese 03** [Michelle, Graduate Student of Philosophy at the University of Colorado, Boulder; Research Staff at the Conflict Research Consortium; “Dehumanization,” http://www.beyondintractability.org/essay/dehumanization/]

While deindividuation and the formation of enemy images are very common, they form a dangerous process that becomes especially damaging when it reaches the level of dehumanization. Once certain groups are stigmatized as evil, morally inferior, and not fully human, the persecution of those groups becomes more psychologically acceptable. Restraints against aggression and violence begin to disappear. Not surprisingly, dehumanization increases the likelihood of violence and may cause a conflict to escalate out of control. Once a violence break over has occurred, it may seem even more acceptable for people to do things that they would have regarded as morally unthinkable before. Parties may come to believe that destruction of the other side is necessary, and pursue an overwhelming victory that will cause one's opponent to simply disappear. This sort of into-the-sea framing can cause lasting damage to relationships between the conflicting parties, making it more difficult to solve their underlying problems and leading to the loss of more innocent lives. Indeed, dehumanization often paves the way for human rights violations, war crimes, and genocide. For example, in WWII, the dehumanization of the Jews ultimately led to the destruction of millions of people. [9] Similar atrocities have occurred in Rwanda, Cambodia, and the former Yugoslavia.

**Contention 1: Nuclear power allows for proliferation and rogue nuclear threats**

**Proliferation is inevitable with nuclear power. This could ultimately lead to full scale nuclear conflict.**

**Digges 08** (Charles. Author at The Environmental Foundation Bellona, “Nuclear energy not an alternative for fight on Climate Change.” 10.01.2008.) <http://www.bellona.org/position\_papers/nonuke\_bellonaposition>

The nuclear relationship between Russia and Iran is a prescient example of corporate or governmental greed running roughshod over nonproliferation concerns. By building a $1 billion reactor in Iran’s port of Bushehr, Russia opened a Pandora’s Box of nuclear technology for Iran, which has developed uranium enrichment to a level that puts it, by IAEA estimates, within two to 10 years of building a nuclear weapon. For its part, France is underwriting the construction of a nuclear power plant in Libya, and actively encourages nuclear development in the Middle East. The relationship between the basic infrastructure of the fuel cycle and the eventual development of nuclear weapons technology is a well-worn path. Quite simply, any nuclear fuel cycle facility such as a uranium enrichment facility or a reprocessing facility can be used, if built in sufficient sizes, to produce nuclear weapons. Were the worldwide nuclear fuel cycle to expand to the dimensions needed to even begin cutting CO2 emissions and meet energy needs, the development of nuclear weapons – the world’s single geopolitical doomsday devices - would be possible virtually everywhere. The corporate interests of spreading nuclear technology thereby put the most feared technologies in direct proximity to many nations who have established ties to terrorist organizations. Cheap energy then becomes inestimable loss of life and reconstruction costs when viewed in light of the ever more likely possibility of a nuclear terrorist attack, or even the heightened chances of a full blown nuclear war. With the global concerns about nuclear proliferation in places such as North Korea and Iran, development of nuclear power globally is untenable given the existence of perfectly acceptable, renewable and non-weapons usable energy technologies. And while certain very specific disarmament agreements – like the Cooperative Threat Reduction act between Russia and the United States have stemmed this spiral between the two Cold War foes, larger-scale treaties, like the Nuclear Non-Proliferation Treaty (NPT) are under constant challenge. Written with the aim of pressing its nuclear-armed signatories toward disarmament, while holding its non-nuclear armed nuclear energy producing nations to the agreement not to build nuclear weapons, the Nuclear Non-Proliferation Treaty has been particularly ineffective.

**Contention 2: Nuclear Power is too much of a burden and impossible for many countries**

**Drought will prevent nuclear power from working, water resources are already too scarce to waste.**

**AP, 08.**

(“Drought Could Shut Down Nuclear Plants” MITCH WEISS, Jan 23, http://news.aol.com/story/\_a/drought-could-shut-down-nuclear-plants/20080123164209990001?ncid=NWS00010000000001)

LAKE NORMAN, N.C. (Jan. 23) - Nuclear reactors across the Southeast could be forced to throttle back or temporarily shut down later this year because drought is drying up the rivers and lakes that supply power plants with the awesome amounts of cooling water they need to operate. Utility officials say such shutdowns probably wouldn't result in blackouts. But they could lead to shockingly higher electric bills for millions of Southerners, because the region's utilities may be forced to buy expensive replacement power from other energy companies. Already, there has been one brief, drought-related shutdown, at a reactor in Alabama over the summer. "Water is the nuclear industry's Achilles' heel," said Jim Warren, executive director of N.C. Waste Awareness and Reduction Network, an environmental group critical of nuclear power. "You need a lot of water to operate nuclear plants." He added: "This is becoming a crisis." An Associated Press analysis of the nation's 104 nuclear reactors found that 24 are in areas experiencing the most severe levels of drought. All but two are built on the shores of lakes and rivers and rely on submerged intake pipes to draw **billions** of gallons of water for use in cooling and condensing steam after it has turned the plants' turbines.

**Contention 3: Nuclear power plants can’t even help the environment, in fact they harm it.**

**Nuclear power puts more CO2 intothe atmosphere than other energy sources today**

<Women’s International League of Peace and Freedom (**WILPF**), October 20**07**; WILPF is part of the international women’s peace organization established in 1915 to 'bring together women of different political beliefs and philosophies who are united in their determination to study, make known and help abolish the causes and the legitimization of war'. There are WILPF groups in 42 countries including the U.S.; http://www.wilpf.org.au/PDFs/Nuclear\_Awareness\_WILPF\_2007.pdf>

Large amounts of electricity, petrol/diesel, and water are consumed in the mining and processing of uranium to generate nuclear fuel. Essentially a nuclear reactor is a very expensive way to boil water. The actual nuclear reactor may not produce any green house gases like carbon dioxide (CO2), but there are significant amounts of CO2 produced in the mining and transport of the ore to the reactor. Large quantities of water are also consumed in mining, and in some cases these can exceed the amounts used for coal mining, e.g. Olympic Dam (Roxby Downs) using 729,000,000 liters of water a day from the Artesian Basin. This water becomes radioactive and toxic. The problem of waste disposal from mining and processing as well as from the reactor is very large and so far unsolved. After the current expansion of BHP Billiton’s Olympic Dam (Roxby Downs), it is expected that 1 tonne of radioactive tailings will be produced every second, and 10 million tonnes of tailing are produced annually. It is stored at the mine but there are no long-term treatment and management plans for how to deal with this contaminated mining waste. There are no solutions for dealing with spent fuel rods and other high-level radioactive waste generated from the nuclear cycle.

**Contention 4: Nuclear waste will irradiate and kill future generations**

**Nuclear waste sites will inevitably create health problems for future generations.**

**Brook 98** [Daniel, “Environmental Genocide: Native Americans and Toxic Waste,” *American Journal of Economics and Sociology*, Vol. 57, No. 1, Jan., pp. 105-113, http://www.jstor.org/stable/pdfplus/3487423.pdf]

Unfortunately, **it is a sad but true fact that "virtually every landfill leaks, and every incinerator emits hundreds of toxic chemicals into the air, land and water"** (Angel 1991, 3). The U.S. Environmental Protection Agency concedes that **"[e]ven if the . . . protective systems work according to plan, the landfills will eventually leak poisons into the environment"** (ibid.). Therefore, **even if these toxic waste sites are safe for the present generation**-a rather dubious proposition at best-**they will pose an increasingly greater health and safety risk for all future generations. Native people (and others) will eventually pay the costs of these toxic pollutants with their lives, "costs to which [corporate] executives are conveniently immune"** (Parker 1983, 59). In this way, **private corporations are able to externalize their costs onto the commons, thereby subsidizing their earnings at the expense of health, safety, and the environment.**

**Contention 5: All of the problems with nuclear power will only get worse, more plants are coming.**

**Although current nuclear plants are expanding to meet current needs new reactors need to be built to meet future energy needs**

**Fertel 2k4** (Marvin, Senior VP and chief Nuclear officer at Nuclear energy Institute, March 4,2004, http://www.nei.org/newsandevents/speechesandtestimony/2004/energysubcmtefertelextended)

As our country prepares for the construction of new nuclear power plants, the U.S. industry has increased the productivity and efficiency of its existing 103 plants. The industry continues to uprate capacity at U.S. plants—the U.S. Nuclear Regulatory Commission has authorized more than 2,000 megawatts (MW) of power uprates over the last three years, and another 2,000 MW are expected over the next several years. An uprate increases the output of the nuclear reactor and must be approved by the NRC to ensure that the plant can operate safely at the higher production level. Companies will invest in these power uprates as conditions in their local power markets justify.  In addition, energy companies are pursuing renewal of their operating licenses. This option allows today’s operating plants to extend their lives for 20 additional years—from 40 to 60 years. Just in the past 12 months, the NRC has approved renewed licenses for 13 reactors, bringing the total number of reactors extending their federal operating licenses to 23. An additional 33 reactors either have already filed their renewal applications, or indicated formally to NRC that they intend to do so. That represents over one-half of U.S. reactors. We expect virtually all our nuclear plants will renew their licenses—simply because it makes good economic sense to do so. With license renewal, our first plants will operate until the 2030s and our newest plants will run past 2050. As an industry, we’ve implemented systematic programs across the industry to manage the systems and components in these plants for their entire expected lifetime. And we’re making the capital investments necessary to allow 60 years of operation at sustained high levels of safety and reliability. Increasing electricity production at nuclear power plants is a key component of the president’s voluntary program to reduce the greenhouse gas intensity of the U.S. economy. In December 2002, NEI responded to President Bush’s challenge to the business community to develop voluntary initiatives that would reduce the greenhouse gas (GHG) intensity of the U.S. economy. NEI indicated that the U.S. nuclear energy industry could increase its generating capability by the equivalent of 10,000 MW. NEI’s analysis showed that this would achieve approximately 20 percent of the president’s goal. The additional 10,000 MW would come from three sources: Power Uprates—5,000 to 6,500 MW of capacity additions between 2002 and 2012. Improved Capacity Factors—the equivalent of 3,000 to 5,000 MW of additional capacity in 2002-2012. Plant Restarts—refurbishing and restarting Tennessee Valley Authority’s Browns Ferry Unit 1 would add 1,250 MW. The nuclear energy industry has recorded substantial progress toward its goal. The NRC has approved 2,198 MW of uprates in the past several years. In addition, based on information from nuclear plant operators, the NRC expects applications for an additional 1,886 MW of uprates in the 2004-2008 period. 5 In addition, the Tennessee Valley Authority (TVA) is moving forward with refurbishment of Unit 1 of the Browns Ferry nuclear power plant. The TVA Board in May 2002 approved the refurbishment and restart, a $1.8-billion project that is expected to return the reactor to commercial operation in 2007. Browns Ferry Unit 1 is not a new construction reactor, but its comprehensive refurbishment and restart, when complete, will represent a significant accomplishment for the industry. With 5,334 MW of new capacity in prospect (4,084 megawatts of uprates and 1,250 MW at Browns Ferry Unit 1), the nuclear energy industry will be approximately halfway toward meeting its goal of expanding capacity by 10,000 megawatts by 2012. This represents substantial progress—the largest progress of any single industry—toward achievement of the president’s goal to reduce the GHG intensity of the U.S. economy by 18 percent by 2012. Obviously, there are limits on how much additional electricity output can be produced at the existing 103 nuclear power plants. Meeting the nation’s growing demand for electricity—which will require as much as 400,000 MW by 2025, depending on assumptions about electricity demand growth6 —will require construction of several new nuclear power plants in the years ahead.

# \*\*\*AFF Cards\*\*\*

**Plants can’t be built fast enough to stop warming**

**Christian Science Monitor 2007** [Mark Clayton, staff, September 28, accessed 7/17/08 http://www.csmonitor.com/2007/0928/p01s05-usgn.html]

The risks might be worth the cost if nuclear power can have a substantial impact in slowing global warming. But even some industry experts doubt that's possible. To reduce carbon dioxide emissions by 1 billion tons annually, the level set by some scientists as a goal for nuclear power, the world would need to build 21 new 1,000-megawatt nuclear plants per year – about five of those annually in the US – for the next 50 years, says a Keystone Center report endorsed by the NEI. The US industry reached that level in the 1980s. But even under its most optimistic assessment, the Energy Information Administration recently projected that only about 53 nuclear power plants would be built by 2056. At that rate, this would not even replace the existing nuclear capacity expected to be retired during that time, the Keystone report said.

**Nuclear energy would not solve climate change without major consequence.**

**Greenpeace, 2008** (*End the nuclear age,* Greenpeace International, Greenpeace.org, http://www.greenpeace.org/international/campaigns/nuclear#)

We need an energy system that can fight climate change, based on renewable energy and energy efficiency. Nuclear power already delivers less energy globally than renewable energy, and the share will continue to decrease in the coming years. Despite what the nuclear industry tells us, building enough nuclear power stations to make a meaningful reduction in greenhouse gas emissions would cost trillions of dollars, create tens of thousands of tons of lethal high-level radioactive waste, contribute to further proliferation of nuclear weapons materials, and result in a Chernobyl-scale accident once every decade. Perhaps most significantly, it will  squander the resources necessary to implement meaningful climate change solutions.

**Nuclear power would be more costly and crush the economy**

**Rifkin, 2006** (Jeremy, founder and president of the Foundation of Economic Trends and the author of “*The Hydrogen Economy: The Creation of the World Wide Energy Web and the Redistribution of Power on Earth”*, “Nuclear Energy: Still a bad idea”, Los Angeles Time, September 29, http://www.commondreams.org/views06/0929-33.htm)

First, nuclear power is unaffordable. With a minimum price tag of $2 billion each, new-generation nuclear power plants are 50% more expensive than putting coal-fired power plants online, and they are far more expensive than new gas-fired power plants. The cost of doubling nuclear power's share of U.S. electricity generation — which currently produces 20% of our electricity — could exceed half a trillion dollars. In a country facing record consumer and government debt, where is the money going to come from? Consumers would pay the price in terms of higher taxes to support government subsidies and higher electricity bills. Second, 60 years into the nuclear era, our scientists still don't know how to safely transport, dispose of or store nuclear waste. Spent nuclear rods are piling up all over the world. In the United States, the federal government spent more than $8 billion and 20 years building what was supposed to be an airtight, underground burial tomb dug deep into Yucca Mountain in Nevada to hold radioactive material. The vault was designed to be leak-free for 10,000 years. Unfortunately, the Environmental Protection Agency concedes that the underground storage facility will leak. According to a study conducted by the International Atomic Energy Agency in 2001, known uranium resources could fail to meet demand, possibly as early as 2026. Of course, new deposits could be discovered, and it is possible that new technological breakthroughs could reduce uranium requirements, but that remains purely speculative.

**Nuclear power would be an easy way to spread terrorism further in the Middle East.**

**Rifkin, 2006** (Jeremy, founder and president of the Foundation of Economic Trends and the author of “*The Hydrogen Economy: The Creation of the World Wide Energy Web and the Redistribution of Power on Earth”*, “Nuclear Energy: Still a bad idea”, Los Angeles Time, September 29, http://www.commondreams.org/views06/0929-33.htm)

Fourth, building hundreds of nuclear power plants in an era of spreading Islamic terrorism seems insane. On the one hand the United States, the European Union and much of the world is frightened by the mere possibility that just one country — Iran — might use enriched uranium from its nuclear power plants for a nuclear bomb. On the other hand, many of the same governments are eager to spread nuclear power plants around the world, placing them in every nook and cranny of the planet. This means uranium and spent nuclear waste in transit everywhere and piling up in makeshift facilities, often close to heavily populated urban areas. Nuclear power plants are the ultimate soft target for terrorist attacks. On Nov. 8, 2005, the Australian government arrested 18 suspected Islamic terrorists who were allegedly plotting to blow up Australia's only nuclear power plant. The U.S. Nuclear Regulatory Commission found that more than half of the nuclear power plants in this country failed to prevent a simulated attack on their facilities. We should all be very worried.

Nuclear power isn’t a long term solution- only enough fuel for 4 years.

Caldicott, 5.

(Helen, the Australian, April 15. “Nuclear Power is the Problem, Not a Solution” <http://www.commondreams.org/views05/0415-23.htm>, founder and president of the Nuclear Policy Research Institute)

At present there are 442 nuclear reactors in operation around the world. If, as the nuclear industry suggests, nuclear power were to replace fossil fuels on a large scale, it would be necessary to build 2000 large, 1000-megawatt reactors. Considering that no new nuclear plant has been ordered in the US since 1978, this proposal is less than practical. Furthermore, even if we decided today to replace all fossil-fuel-generated electricity with nuclear power, there would only be enough economically viable uranium to fuel the reactors for three to four years.

**Waste storage nears its peak within a decade- new nuclear plants will speed the the storage process causing risk of over-filling.**

<MicroSoft News Broadcasting Company (**MSNBC**); Wed., March. 7, 20**07**; “Reid vows to block nuclear waste bill Energy Dept. warns of second nuclear waste dump if Yucca not expanded”; http://www.msnbc.msn.com/id/17498643/ >

WASHINGTON - The Energy Department unveiled legislation Tuesday to spur construction of a national nuclear waste dump in Nevada and increase its capacity. Senate Majority Leader Harry Reid, D-Nev., immediately vowed to block the bill. That could spell more problems for the troubled Yucca Mountain nuclear waste dump, already years behind schedule. The Energy Department official who heads the project warned that without new funding that's part of the bill, a 2017 goal for opening the dump 90 miles northwest of Las Vegas could not be met. "If we don't have that we are certainly not going to be able to maintain the 2017 date," said Edward F. "Ward" Sproat, director of the Energy Department's Office of Civilian Radioactive Waste Management. The bill doesn't specify how much more than 77,000 tons of nuclear waste should be allowed in Yucca Mountain, though federal environmental impact studies have estimated the dump could safely hold at least 132,000 tons. There's already more than 50,000 tons of nuclear waste piling up at nuclear power plants in 31 states with nowhere to go, something that's threatening taxpayers with mounting liability costs since the federal government was contractually obligated to begin storing nuclear utilities' waste starting in 1998. Reid's solution is to leave the nuclear waste at the sites where it already is, put it in dry cask storage units and allow the Energy Department to take ownership of it onsite to eliminate the problem of liability to utilities. He and Sen. John Ensign, R-Nev., introduced their own legislation Tuesday to make those changes. In recent years Reid has also succeeded in cutting President Bush's budget request for Yucca. The project's 2007 budget, at $405 million, is nearly $150 million less than the administration wanted, which Sproat said is forcing project managers to put various initiatives on hold, including work on a rail line to transport the waste. The Energy Department's bill would ensure that annual revenues in a special nuclear waste fund paid for by utilities would be dedicated to Yucca Mountain outside the overall federal budgeting process, so that Yucca wouldn't have to compete with other programs for funding. This would guarantee Yucca Mountain dedicated funding of at least $750 million per year.

**Poor safety standards fail to be fixed in modern reactors and often continue to leak radioactive water and more.**

**Madsen, 2008** (Wayne, *Wayne Madsen is a Washington, D.C.-based investigative journalist, author, and syndicated columnist. His articles have appeared in The Village Voice and Wired. “Wayne Madsen: Nuclear Power not eco-friendly enough to resurrect”*, McClatchy-Tribune News Service, 7-17, http://www.theolympian.com/nationworld/story/509801.html)

The poor nuclear safety record of America's nuclear power plant operators, especially during the laissez-faire regulatory holiday of the Bush administration, has not stopped GOP presumptive presidential candidate John McCain from waving the nuclear flag. In 2004, the Palo Verde nuclear plant, 50 miles west of Phoenix, saw two of three units shut down due to radiation leaks from aging equipment. The NRC saw fit to approve continued operation of the faltering plant. In addition, radioactive water was found to have leaked into ground water around Palo Verde. Similar leaks into the water supply have been discovered at the Braidwood nuclear power plant near Chicago. The Union of Concerned Scientists' call for a major investigation of such leaks was ignored.

**Nuclear Energy causes radiation health problems**

**Caldicott 2006** [Dr. Helen Caldicott, July 2006, devoted the last 35 years to an international campaign to educate the public about the medical hazards of the nuclear age Nuclear Power Is Not the Answer, http://www.helencaldicott.com/chapter3.pdf]

Few, if any, estimates of the costs of nuclear energy take into account the health costs to the human race. Even when nuclear power plants are operating normally, these costs are not insignificant. Miners, workers, and residents in the vicinity of the mining and milling functions, and workers involved in the enrichment processes necessary to create nuclear fuel are at risk for exposure to unhealthy amounts of radiation and have increased incidences of cancer and related diseases as a result. Routine and accidental radioactive releases at nuclear power plants as well as the inevitable leakage of radioactive waste will contaminate water and food chains and expose humans and animals now and for generations to come. Accidents such as Three Mile Island and Chernobyl condemn thousands if not millions to pay the cost of nuclear power with their own health. Understanding the nature of radiation is critical to understanding the health impacts of nuclear energy.

**Radiation can result in cancers and death.**

**World Nuclear Association 2002 (“Radiation and Life”,** [**http://www.world-nuclear.org/education/ral.htm**](http://www.world-nuclear.org/education/ral.htm)**)**

It has been known for many years that large doses of ionising radiation, very much larger than background levels, can cause a measurable increase in cancers and leukemias ('cancer of the blood') after some years delay. It must also be assumed, because of experiments on plants and animals, that ionising radiation can also cause genetic mutations that affect future generations, although there has been no evidence of radiation-induced mutation in humans. At very high levels, radiation can cause sickness and death within weeks of exposure - see Table. The degree of damage caused by radiation depends on many factors - dose, dose rate, type of radiation, the part of the body exposed, age and health, for example. Embryos including the human fetus are particularly sensitive to radiation damage. But what are the chances of developing cancer from low doses of radiation? The prevailing assumption is that any dose of radiation, no matter how small, involves a possibility of risk to human health.

**Nuclear Reactors unsafe-The regulators are ineffective**

**Gronlund, Lochbaum, & Lyman`7**(Lisbeth, David, Edwin, Lisbeth Gronlund is co-director and senior scientist of the UCS Global Security Program. David Lochbaum is director of the nuclear safety project in the UCS Global Security Program. Edwin Lyman is a senior staff scientist in the UCS Global Security Program. , Nuclear power in a warming world Assessing the Risks, Addressing the Challenges, Union of Concerned Scientist,  December 2007) **Safety problems remain despite a lack of serious accidents**. A serious nuclear power accident has not occurredin the United States since 1979, when the Three Mile Island reactor in Pennsylvania experienced a partial core meltdown. However, **the absence of serious accidents does not necessarily indicate that safety measures and oversight are adequate. Since 1979, there have been 35 instances in which individual reactors have shut down** to restore safety standards, **and the owner has taken a year or more to address dozens or even hundreds of equipment impairments that had accumulated over a period of years. The most recent such shutdown occurred in 2002. These year-plus closures indicate that the NRC has been doing a poor job of regulating the safety of power reactors. An effective regulator would be neither unaware nor passively tolerant of safety problems so extensive that a year or more is needed to fix them.**

**Nuclear power is inherently unsafe-The NRC’s poor regulation makes it worst for new reactors**

**Gronlund, Lochbaum, & Lyman`7**(Lisbeth, David, Edwin, Lisbeth Gronlund is co-director and senior scientist of the UCS Global Security Program. David Lochbaum is director of the nuclear safety project in the UCS Global Security Program. Edwin Lyman is a senior staff scientist in the UCS Global Security Program. , Nuclear power in a warming world Assessing the Risks, Addressing the Challenges, Union of Concerned Scientist,  December 2007)

**Nuclear power plants have experienced scores of more minor accidents and near-misses. These include an accident in Japan in December 1995, when the Monju reactor leaked** sodium coolant, **setting off a serious fire.** Sodium burns fiercely when in contact with air and reacts violently when added to water, making it difficult to control. **A recent example of a near-miss is the 2002 discovery that the Davis-Besse reactor in Ohio had a sizable hole in its head: only a thin skin of stainless steel kept radioactive materials from spreading within the plant. Continued operation** for a few more months **would have led to a Three Mile Island-style core meltdown, or worse** (see Box 1).12 In fact, **the** Nuclear Regulatory Commission **(NRC) has reported four dozen “abnormal occurrences**” to Congress **since 1986**, and notified the International Atomic Energy Agency of 18 nuclear “events” since reporting began in 1992.13 While no technology can be perfectly safe, **nuclear power is an inherently risky technology**, and minimizing its risks requires stringent safety standards and practices. **The United States has relatively strong safety standards for nuclear power.  However, serious safety problems continue to arise because the NRC does not adequately enforce those standards.** Of course, accidents are not the only measure of safety, and **the absence of accidents does not necessarily indicate that there are no safety problems. The number of U.S. reactors shut down for a year or longer to address numerous safety problems provides strong evidence of poor safety practices and inadequate NRC enforcement. A weak “safety culture” within the NRC itself prevents effective oversight. The agency also relies on flawed approaches to assessing risks and inspecting nuclear facilities, and its standards for preventing and mitigating** severe accidents are too low. **The NRC has recently taken steps to limit public participation in the reactor licensing process, even though past participation has led to improved safety**. Moreover, **rather than raising the bar for new reactor designs, the NRC is relying on existing standards, and federal limits on the liability of nuclear plant owners reduce incentives to improve the safety of future reactors. The NRC also suffers from an inadequate budget. These shortcomings indicate that the NRC needs to greatly strengthen its approach to nuclear power safety.**

# \*\*\*NEG\*\*\*

**I Negate:**

**Resolved: Countries ought to prohibit the production of nuclear power.**

**Because this resolution brings into question whether governments of countries should use nuclear power or not, the value for this debate should be governmental obligations**

**Governments’ obligations are to provide the most good to the greatest number of their citizens possible.**

**Goodin, Robert. Fellow of philosophy at Australian National University, 1990 (The Utilitarian Response)**

Whatever its shortcomings as a personal moral code, there is much to be said for utilitarianism as a ‘public philosophy’. Utilitarianism of some form or another is incumbent upon public policy-makers because of the peculiar tasks they face and because of the peculiar instruments available to them for pursuing those tasks. Given those substantially inalterable facts about the enterprise in which they are engaged, public policy-makers have little choice but to batch-process cases, acting through rules, principles, and policies, which are broadly general in form and substantially uniform in application. When looking for general, uniform public rules, principles, and policies, the premium is upon doing the right thing on average and in standard cases. In that context, utilitarianism seems to be a highly attractive proposition.

**And, the standard we should use in this debate to measure governmental obligation is maximizing equality of wellbeing.**

**According to Maiese:**

**Without consideration for equality in human wellbeing, those out of power become dehumanized. Dehumanization is a prerequisite to violence – it makes conflict, human rights violations and genocide inevitable – it’s empirically proven.**

**Maiese 03** [Michelle, Graduate Student of Philosophy at the University of Colorado, Boulder; Research Staff at the Conflict Research Consortium; “Dehumanization,” http://www.beyondintractability.org/essay/dehumanization/]

While deindividuation and the formation of enemy images are very common, they form a dangerous process that becomes especially damaging when it reaches the level of dehumanization. Once certain groups are stigmatized as evil, morally inferior, and not fully human, the persecution of those groups becomes more psychologically acceptable. Restraints against aggression and violence begin to disappear. Not surprisingly, dehumanization increases the likelihood of violence and may cause a conflict to escalate out of control. Once a violence break over has occurred, it may seem even more acceptable for people to do things that they would have regarded as morally unthinkable before. Parties may come to believe that destruction of the other side is necessary, and pursue an overwhelming victory that will cause one's opponent to simply disappear. This sort of into-the-sea framing can cause lasting damage to relationships between the conflicting parties, making it more difficult to solve their underlying problems and leading to the loss of more innocent lives. Indeed, dehumanization often paves the way for human rights violations, war crimes, and genocide. For example, in WWII, the dehumanization of the Jews ultimately led to the destruction of millions of people. [9] Similar atrocities have occurred in Rwanda, Cambodia, and the former Yugoslavia.

**Contention 1: Prohibiting nuclear power is worse for the environment**

**Nuclear energy solves proliferation and climate better than solar and wind**

**Dikshit 2008 [**Sandeep. (Hindu Front Page National Newspaper) <http://www.thehindu.com/2008/06/10/stories/2008061058260100.htm> June 10]

Prime Minister Manmohan Singh said on Monday India was left with no option but to tap all possible sources of energy, including nuclear, due to the steady increase in power consumption predicted for the coming years. While arguing for reliance on nuclear energy, Dr. Singh also called for greater controls on proliferation of nuclear energy and material. “Our energy needs will continue to rise in the foreseeable future. We do not have the luxury of limiting our options of energy sources. We therefore wish to create an international environment in which nuclear technology is used not for destructive purposes but for helping us meet our national development goals and our energy security,” he said inaugurating a conference on nuclear disarmament here. “The threat of climate change and global warming itself raises a range of security concerns, especially for us in the developing world,” the Prime Minister said without elaborating. According to a discourse on clean energy options, nuclear energy is cited as the best possible option. Energy from wind and solar means is seen as intermittent while nuclear energy copes with peak demand and can generate high volumes. Dr. Singh recalled Rajiv Gandhi’s plan for nuclear disarmament enunciated in 1988 to stress the civilian importance of nuclear energy. “Rajiv Gandhi believed that disarmament, in particular nuclear disarmament, was essential to usher in a safe and non-violent world. He had a deep insight into the nature of evolution of technology, its potential for advancing human welfare as also for unleashing destruction. In this context, he was acutely aware of the power of the atom. He wished that it should never again be used for destructive purposes.” India, Dr. Singh noted, had witnessed rapid economic growth in the last few years and would record higher growth rates in the future.

**Contention 2: Prohibition of nuclear power only allows for more proliferation – regulation is key**

**A vibrant nuclear reactor program is key to maintain consent rights over fissile material which maintain more control over international trade in nuclear supplies**

**Bengelsdorf, et al. 2007** [Harold, currently a Principal with the consulting firm of Bengelsdorf, McGoldrick, and Associates, “The U.S. Domestic Civil Nuclear Infrastructure and US Nonproliferation Policy,” May 2007, available at http://www.nuclearcompetitiveness.org/images/COUNCIL\_WHITE\_PAPER\_Final.pdf]

It is, therefore, essential that the United States have vibrant nuclear reactor, uranium enrichment, and spent fuel storage and disposal industries that can not only meet the needs of U.S. utilities but will also enable the United States to promote effective safeguards and other nonproliferation controls through close peaceful nuclear cooperation other countries. The U.S. should establish a high priority goal to rebuild an indigenous nuclear industry and support its growth in domestic and international markets. U.S. nuclear exports can be used to influence other states’ nuclear programs through the nonproliferation commitments that the U.S. requires. The U.S. has so-called consent rights over the enrichment, reprocessing and alteration in form or content of the nuclear materials that it has provided to other countries, as well as to the nuclear materials that are produced from the nuclear materials and equipment that the U.S. has supplied. The percentage of nuclear materials, including separated plutonium, that are subject to U.S. consent rights will diminish over time as new suppliers of nuclear materials and facilities take a larger share of the international nuclear market. Unless the U.S. is able to compete effectively in the international market as a supplier of nuclear fuels, equipment and technology, the quantity of the nuclear materials around the globe that the U.S. has control over will diminish significantly in the future. This may not immediately weaken the effectiveness of the nonproliferation regime since all the major suppliers have adopted the export guidelines of the Nuclear Supplier Group. However, only the U.S., Australia and Canada have consent rights over enrichment and reprocessing of the nuclear materials subject to their agreements. Consequently, if there is a major decline in the U.S. share of the international nuclear market, the U.S. may not be as effective as it has been in helping to ensure a rigorous system of export controls.

# \*\*\*Neg Cards\*\*\*

**Nuclear power is already the plan.**

**The News & Observer 2006** [Wade Rawlins, staff, January 29, “Surge in nuclear power likely,” http://www.newsobserver.com/1156/story/394089.html]

A confluence of events has spurred the renewed interest in nuclear energy. Power companies face tougher pollution limits on coal- and gas-fueled power plants, and they worry about the prospect of new limits on greenhouse gases such as carbon dioxide. Then last year, federal incentives for nuclear power made construction appear more feasible. Such attention to nuclear power comes after a quarter-century lull, the result of the 1979 accident at Three Mile Island in Pennsylvania. The accident raised public fear and distrust, and caused utilities to cancel existing orders for new reactors. Critics say fears of radiation leaks and accidents continue to be justified. In addition, the industry faces unresolved questions about the long-term disposal of the radioactive waste that nuclear power plants produce. But such concerns are dampened by growing alarm over global warming. Scientists know human activities such as burning of coal and gas are contributing to rising levels of carbon dioxide and other greenhouse gases in the atmosphere. They think the buildup of greenhouse gases, which trap heat, are contributing to global warming but are still debating how quickly temperatures will increase and how much. As Progress officials look at what kind of regulations would probably apply to a new power plant built to start running about 2015, a nuclear plant's lack of air emissions holds appeal. The company will make a final decision in about two years. "The higher the likelihood of carbon regulations, the less likely you are to build a coal plant and the more likely you are to build a nuclear plant," said Bill Johnson, president and chief operating officer of Progress Energy, which has its headquarters in Raleigh. "We are planning as if there will be a carbon-constrained future."

**Nuclear power is needed—it’s the only power that can meet emissions requirements**

Chris **Arnold**, July 7, **2007**, NPR reporter, http://www.npr.org/templates/story/story.php?storyId=11694160

The United States has 104 nuclear reactors generating electricity — the most of any country in the world — but they are aging. After an accident at Three Mile Island and the Chernobyl disaster, the country lost its stomach for nuclear power. Utilities canceled 96 new nuclear projects, and a new reactor hasn't been built in the U.S. since. Energy Secretary Samuel Bodman told the American Nuclear Society at a recent conference in Boston that the United States has reached a critical point for nuclear power. "At present, nuclear power is the only mature technology that can supply large amounts of emissions-free base load power to help us meet the expected growth in demand," Bodman said. "…We have not licensed a new nuclear power plant in this country in over 30 years. That simply must change." Tougher emissions laws also would mean more power from renewable sources: solar, wind and biomass. But experts say those can't match nuclear output. So, while it might not be what some environmentalists were hoping for while pushing for tougher global warming laws, more nuclear power plants could be on the horizon.

**Tons of countries want nuclear power as a means to combat climate change**

**Scoblic 2008** [J. Peter, executive editor of New Republic, “Nuclear Spring”, New Republic Vol. 238, Issue 7. 4/23/2008 ebscohost]

The Middle East is already intolerably hot, yet global warming seems to be on the minds of many countries in the region. Egypt, Saudi Arabia, Oman, Yemen, Syria, Libya, Jordan, and, of course, Iran are all pursuing, planning, or exploring their first nuclear power reactors. Just last week, the United Arab Emirates announced that it would go ahead with a civilian nuclear program, making it the first Gulf state to do so. Other states now considering their nuclear options range from Venezuela to Belarus to Indonesia. In justifying their programs to the world, "they've all jumped on the 'nuclear is clean and green' bandwagon," according to Sharon Squassoni of the Carnegie Endowment for International Peace. For example, Taiwan's president-elect, Ma Ying-jeou, has called for expanding the island's nuclear capacity to help combat climate change. Thailand announced last summer that it would build its first reactor and hopes to ultimately produce 25 percent of the country's electricity from nuclear power. "Without nuclear, you couldn't reduce greenhouse gases," said Energy Minister Piyasvasti Amranand. Some of this greenery seems sincere. South Africa, for example, which gave up its nuclear weapons program in the early 1990s, has strict anti-pollution regulations that have driven up the cost of coal, making its nuclear expansion sensible. Indeed, although the continent uses little energy, Africa as a whole has taken an intense interest in nuclear power because of its fear of global-warming-induced desertification.

**Backsliding on the obligation to provide nuclear power collapses the NPT**

**Butler 2008** [Declan, Before joining Nature in 1993, Declan wrote freelance, and worked for the French biotechnology magazine Biofutur. He graduated in biology from Queen's University, Belfast, and has a PhD in marine biology from the University of Leeds. He was made a Chevalier of France's National Order of Merit in 2003 for for service to science and society, January 9, Nature 451, 114-115, http://www.nature.com/news/2008/080109/full/451114a.html]

The original aim of the NPT, which came into force in 1970, was to restrict the weapons to the five countries that already openly possessed them, all of which agreed to take steps to disarm. As part of the 'grand bargain', other states agreed not to develop nuclear weapons, but were guaranteed an 'inalienable right' to use nuclear energy for peaceful purposes, dubbed atoms for peace. Over the past decade, the nuclear-weapons states' reluctance to embrace their side of the NPT bargain has stalled non-proliferation efforts and countries such as India and Pakistan have tested weapons. Huge progress was made at review conferences in 1995 and 2000, including a package deal of 13 steps to further the NPT's twin goals of non-proliferation and disarmament by the existing nuclear-weapons states, such as a commitment to a Comprehensive Nuclear-Test-Ban Treaty (CTBT) and a Fissile Material Cut-Off Treaty to outlaw the production of new weapons material. The reaction to the 11 September terrorist attacks in 2001 stopped progress, and the 2005 review conference ended with almost no agreement. “The 13 steps have been rolled back or forgotten about,” says Jean du Preez, an arms expert at the Monterey Institute of International Studies in California. Indeed, non-proliferation efforts have if anything gone backwards. The United States and China, signatories to the CTBT, have failed to ratify it, and so prevented the treaty entering into force. And the US 2002 Nuclear Posture Review, while making cuts to the country's weapons infrastructure, flew in the face of its NPT commitments by increasing the role of nuclear weapons in its security doctrine and expanding the scenarios in which they might be used to include attacks on countries with biological or chemical weapons.

**It is important that the NPT not be undermined as it protects the world from nuclear proliferation**

**Agence France-Presse 2008** (“UN chief urges more efforts to curb nuclear proliferation”, AFP, July 1st, http://afp.google.com/article/ALeqM5hr1MMk3QSwJYUNMBtsZpiFfBG-rA) UN chief

Ban Ki-moon called for stepped-up efforts toward curbing the spread of nuclear weapons as he marked the 40th anniversary of the signing of the Nuclear Non-Proliferation Treaty (NPT). Describing the UN-backed pact as the most effective multilateral instrument to limit nuclear proliferation, Ban said Tuesday in a statement: "We must reinforce and strengthen it to meet the challenges of the day." "Yet, tens of thousands of nuclear weapons remain deployed and stockpiled, and significant deeper, irreversible and verifiable cuts are needed," the UN secretary general said. "Nuclear proliferation -- whether by states or non-state actors -- threatens everyone, and therefore requires global cooperation in addressing non-compliance, in resolving concerns over nuclear programs and in ensuring the most reliable controls over nuclear materials," added Ban, who is currently on an Asian tour. In Washington, US President George W. Bush urged the international community to prevent NPT non-compliance. "NPT parties must take strong action to confront noncompliance with the treaty in order to preserve and strengthen its nonproliferation undertakings," Bush said in a statement as the world weighs potential North Korean and Iranian nuclear threats. Bush did not mention those countries by name but said "we cannot allow nations to violate their commitments and undermine the NPT's fundamental role in advancing international security." Opened for signature on July 1, 1968 and put into effect on March 5, 1970, the NPT is the most universal arms control treaty in force. Today 189 of the 192 UN member states have signed it. Its stated goal is to stop the nuclear arms race and seek nuclear disarmament. Five countries that had tested nuclear weapons before the treaty's completion -- Britain, China, France, Russia and the United States -- were recognized as nuclear-weapon states and obligated to pursue "effective measures" toward nuclear disarmament. All others were designated non-nuclear-weapon states and prohibited from acquiring nuclear arms at all. But India, Pakistan, Israel and North Korea have managed to build their own nuclear weapons outside the NPT framework. The NPT, drawn up during the Cold War era, is now in urgent need of an overhaul if it is to meet present-day challenges such as the proliferation crises in North Korea, Iran and most recently Syria, experts have said. North Korea developed a covert nuclear weapons program, which it is only now in the long and slow process of dismantling. Iran is accused of pursuing a weapons program under the guise of peaceful nuclear power and Syria has recently come under fire for allegedly building a covert nuclear facility.

**Revitalizing domestic nuclear infrastructure key to nonproliferation**

**American Nuclear Society 2001** [The American Nuclear Society, founded in 1954, is a not-for-profit scientific and educational society of over 11,000 scientists, engineers, and educators from universities, government and private laboratories, and industry, November, Nonproliferation Background for Position Statement 55, accessed 7/17/08 http://www.ans.org/pi/ps/docs/ps55-bi.pdf]

A strong domestic nuclear infrastructure will greatly enhance the continued ability of the United States to work effectively with other countries in meeting the proliferation challenges of today and tomorrow. However, the erosion that is taking place in the domestic nuclear infrastructure is seriously threatening the ability of the United States to continue to influence constructively international nuclear developments (10,11). Furthermore, the influence of the United States in institutional matters related to nonproliferation would decrease dramatically if the United States were to be perceived as disassociated from the beneficial application of nuclear technology – including the effective use of nuclear power. Conversely, a vigorous industrial, research, and educational infrastructure will position the United States to exercise effective influence and leadership in international nuclear affairs and technology.

**Generation IV reactors can be built today and solve the status quo harms of nuclear power**

**Hunt 2006** [Margaret, Editor, “Nuclear Power,” June, Advanced Materials & Processes]

**Generation IV nuclear power plants are being researched in a worldwide program** initiated by the United States in 2000. **These reactors are designed to be highly economical, and will minimize waste while providing enhanced safety. In addition, they will utilize a fuel cycle designed to prevent the proliferation of nuclear technology.** As pointed out by the FAC speakers, **some designs for Generation IV nuclear reactors could be built of materials that exist today.** However, several other Generation IV designs require the development of new ceramics and new alloys.

**One example of a Generation IV reactor that could be built today is the Sodium Fast Reactor (SFR).** According to one FAC presentation, **no major R&D obstacles block development.**

**Development of advanced reactors and technologies key to US nonproliferation efforts**

**Bengelsdorf, et al. 2007** [Harold, currently a Principal with the consulting firm of Bengelsdorf, McGoldrick, and Associates, “The U.S. Domestic Civil Nuclear Infrastructure and US Nonproliferation Policy,” May 2007, available at http://www.nuclearcompetitiveness.org/images/COUNCIL\_WHITE\_PAPER\_Final.pdf]

If the United States hopes to continue to exercise strong and specific influence internationally in nonproliferation matters in the future, it can best achieve this objective by remaining an active player in international nuclear affairs by providing advanced nuclear power systems, uranium enrichment services and nuclear fuel to other countries; and by maintaining its ability to develop and apply advanced nuclear technologies. A revival of nuclear power in the United States with new nuclear power plant orders should greatly help enhance U.S. power and influence in international nuclear affairs, but we must also seek to once again be a major supplier of nuclear power technology and equipment world-wide. Conversely, if the U.S. nuclear power program starts to diminish significantly through the retirement of old nuclear power plants without new replacements, then its voice in civil nuclear matters and nonproliferation will decline internationally, even though the U.S. may remain a superpower on the political level.

**It is fundamentally impossible to reach climate change prevention goals without nuclear energy**

**Colvin 4** (Joe, president and chief executive officer of the Nuclear Energy Institute. “Nuclear Energy: The Global Choice for the 21st Century” 2004)

Nuclear power has a relatively small environmental impact compared to other energy sources. One of the main advantages is that nuclear power plants emit no harmful gases into the atmosphere. Nuclear power plants produce electricity that otherwise would be supplied by oil-, gas- or coal-fired generating capacity, and thus avoid the emissions associated with that fossil-fueled capacity. Nuclear plants consequently have value in terms of compliance with various clean-air initiatives. In effect, emissions prevented through the use of nuclear energy are equivalent in value to those reduced as electricity is produced by other sources. Several national signatories to the United Nations Framework Convention on Climate Change have discovered the impossibility of meeting their targets without nuclear energy. Finland noted the contribution of nuclear in its decision to build a new reactor. Japan and Korea have included expansion of nuclear capacity in their plans for compliance. U.S. nuclear power plants prevented more than 750 million tons of carbon dioxide in 2003, which is equivalent to eliminating the CO2 emissions from nine out of 10 passenger cars in the United States—or about 134 million vehicles. Nuclear power plants worldwide prevented 2.57 billion tons of CO2 last year. Based on U.S. vehicle emissions data, this is equivalent to removing the CO2 emissions from 450 million passenger cars—about the same number of passenger cars on the planet. Leading U.S. scientists confirm that the expansion of nuclear energy is a critical factor in controlling the increase of greenhouse gases. A recent study by the Massachusetts Institute of Technology and Harvard University concluded that “the nuclear option should be retained, precisely because it is an important carbon-free source of power that can potentially make a significant contribution to the future electricity supply.”

**Nuclear power will solve energy crises**

**Creamer, 08**(Steve, chairman and chief executive officer of EnergySolutions Inc, Nuclear Power Will Solve Energy Crisis, June 03, 2008, http://www.tennessean.com/apps/pbcs.dll/article?AID=/20080613/OPINION01/806130395/1008)

The United States is in an energy crisis. In order to solve this crisis and achieve energy security, we must find ways to diversify our energy supply and reduce our dependence on foreign oil. Nuclear power is one of the energy sources that must be utilized, along with solar, wind, biofuels and other renewables, to achieve energy security for the United States. Nuclear energy is a clean, safe, reliable and non-carbon-emitting source of energy. It must play a growing role in meeting our energy demand. EnergySolutions' mission is to help the United States achieve energy independence, reduce carbon emissions and protect the environment. We can accomplish this by helping clean up the nuclear-waste legacy of the past and by managing current nuclear-waste issues. This will pave the way for nuclear power to play a greater role in meeting our growing energy demands.

**Without US nonproliferation leadership nuclear holocaust is assured**

**Krieger 2004** [David, Nuclear Age Peace Foundation President, “Charting a New Course for US Nuclear Policy, May 13, accessed 7/17/08 http://www.wagingpeace.org/articles/2004/05/14\_krieger\_charting-course-policy.htm]

Among the countries that currently possess nuclear weapons ( China , France , India , Israel , Pakistan , Russia , United Kingdom , United States and possibly North Korea ), the US is the most powerful, economically and militarily. If there is to be movement toward making the world safer from nuclear devastation, the US must lead the way. The US has the power to influence each of these other countries in a way that no other country or international organization could do. US leadership has the potential to bring the threat of future nuclear holocausts under control, and without this leadership the likelihood of future nuclear catastrophes seems virtually assured.

**Generation IV reactors strengthen the NPT and peaceful nuclear energy**

**P. Delaune, 2006** [The International Nuclear Nonproliferation Science and Technology Forum, Tokyo, <http://www.jaea.go.jp/04/np/documents/fr06_delaune02_E.pdf>]

France stresses the political importance of not giving any impression that the GNEP initiative could in any way deprive states parties to the NPT of any rights pursuant to the Treaty. On the contrary, this initiative should underline that it is aimed at helping countries to develop nuclear energy for peaceful purposes (as stated in article IV of the NPT).

**Advanced nuclear reactors prevent proliferation with a closed fuel cycle**

NERAC 2002 [U.S. DOE Nuclear Energy Research Advisory Committee and the Generation IV International Forum, December 2002, A Technology Roadmap for Generation IV Nuclear Energy Systems, http://gif.inel.gov/roadmap/pdfs/gen\_iv\_roadmap.pdf]

Today, most countries use the once-through fuel cycle, whereas others close the fuel cycle by recycling. Recycling (using either single or multiple passes) recovers uranium and plutonium from the spent fuel and uses it to make new fuel, thereby producing more power and reducing the need for enrichment and uranium mining. Recycling in a manner that does not produce separated plutonium can further avoid proliferation risks. However, recycling has proven to be uneconomical today, given plentiful supplies of uranium at low and stable prices. This will eventually change, and closing the fuel cycle will be favored when the cost of maintaining an open cycle exceeds that of a closed cycle. With recycling, other benefits are realized: the high-level radioactive residues occupy a much-reduced volume, can be made less toxic, and can be processed into a more suitable form for disposal. In addition, reactors can be designed to transmute troublesome long-lived heavy elements. Achieving these benefits, however, will require significant R&D on fuel cycle technology. Overall, the safety and environmental record of nuclear power is excellent. Despite this, public confidence in the safety of nuclear power needs to be increased. New systems should address this need with clear and transparent safety approaches that arise from R&D on advanced systems. Fissile materials within civilian nuclear power programs are well-safeguarded by an effective international system. Current-generation plants have robust designs and added precautions against acts of terrorism. Nevertheless, it is desirable for future nuclear fuel cycles and nuclear materials safeguards to design from the start an even higher degree of resistance to nuclear material diversion or undeclared production. Further, questions have arisen about the vulnerability of nuclear plants to terrorist attack. In response, future nuclear energy systems will provide improved physical protection against the threats of terrorism.

**Unlike oil, uranium is a stable fuel supply where fluctuations have little impact on the market price**

**World Nuclear Association 08** (“The Economics of Nuclear Power”) <http://www.world-nuclear.org/info/inf02.htm> July, 2008

Uranium has the advantage of being a highly concentrated source of energy which is easily and cheaply transportable. The quantities needed are very much less than for coal or oil. One kilogram of natural uranium will yield about 20,000 times as much energy as the same amount of coal. It is therefore intrinsically a very portable and tradable commodity. The fuel's contribution to the overall cost of the electricity produced is relatively small, so even a large fuel price escalation will have relatively little effect. For instance, typically a doubling of the uranium market price would increase the fuel cost for a light water reactor by 26% and the electricity cost about 7% (whereas doubling the gas price would typically add 70% to the price of electricity from that source).

**Nuclear energy is key to global energy**

**Colvin 4** (Joe, president and chief executive officer of the Nuclear Energy Institute. “Nuclear Energy: The Global Choice for the 21st Century” 2004)

Today’s nuclear energy industry is indeed a worldwide enterprise. Consequently, it is essential to eliminate unnecessary restrictions on free trade in fuels and equipment. For example, it is no longer necessary to levy import tariffs on reactor vessel heads or steam generators, since there are no U.S. domestic suppliers for these major components. Such tariffs serve only to increase the cost of nuclear power plant operations. The importance of nuclear energy’s contribution has garnered recognition in several current studies of the world’s energy future. Canada is studying its future energy needs at the federal and provincial level. France completed a national discussion on energy issues, and the French parliament continued to debate the country’s future energy policy during the first part of this year. The United Kingdom published an energy white paper in 2003 examining the nation’s energy future. In the United States, the Bush administration issued its national energy policy in 2001. However, Congress has not yet finalized comprehensive energy legislation that provides a road map for America’s future energy needs. In these countries, nuclear power factored explicitly in each government’s energy policy decisions. In addition to supporting the extension of its existing reactors, the French government is proceeding with the construction of a next-generation European pressurized water reactor (EPR). The U.K. government white paper backed only the continued operation of its existing reactors. In Canada, the Ontario provincial government has included tax incentives for the construction of new nuclear power plants. Many experts are convinced that nuclear energy can play an even greater role in meeting the world’s growing energy needs in years to come.

**Nuclear power is key to increase growth and decrease warming; this is the greatest threat to the planet**

Patrick **Moore** 6/7/**2008** (Cochairman of Clean and Safe Energy Coalition; http://www2.tbo.com/content/2008/jun/27/na-greenpeace-founder-goes-nuclear/)

The 2008 presidential campaign has brought to the mainstream a phrase that environmentalists have invoked for years: "green-collar jobs."The idea of industries devoted to environmental sustainability promises something for everyone - economic growth and a cleaner world. Today, Florida, along with many other states, is competing to build "green collar" industries - solar, wind, biomass, and the like. All of these industries offer something in terms of job growth and environmental responsibility. They are all an essential part of our energy mix going forward. Without exception, though, it's hard to compete with the one-two punch of nuclear energy - near-term economic growth and long-term environmental sustainability. Problem is, several decades of hazy facts about nuclear energy have made it difficult to have a frank conversation about its benefits. In the early 1970s, I was a founder of Greenpeace. Back then, like many other environmentalists, I believed that nuclear energy was synonymous with the proliferation of nuclear weapons. We were wrong; our fears were misplaced. Today, we see that the greatest threat to the earth is not the chill of nuclear winter; it's our addiction to fossil fuels and the air pollution and greenhouse gas emissions they cause. If we are to seriously attack this problem, we have to come up with innovative and reliable ways to meet our energy needs. Most solutions to our fossil fuel problem involve cutting into economic growth. But that is not a viable approach, especially with our economy already facing enormous challenges. Nuclear energy can help solve both our long-term environmental challenges as a nation and the near-term economic needs of Florida's families. If the country builds the approximately 35 new nuclear power plants currently planned or under review, we could add up to 600,000 jobs to our nation's economy, according to a report issued earlier this month by the Clean and Safe Energy Coalition. Each of the 104 reactors operating today generates an estimated $430 million a year in total economic impact for their local communities, and nearly $40 million in total labor income. Florida has seen the benefits of nuclear energy up close. Fourteen percent of the electricity that Floridians use every day comes from five nuclear reactors, which emit no controlled pollutants and employ about 3,000 workers combined. Thanks to the energy produced cleanly at those plants, Florida avoided the emission of 39,000 tons of nitrogen oxides in 2006 alone - equal to taking 2 million passenger cars off Florida highways for a full year. Yet Florida could still do better; it ranked third among states for highest carbon emissions in 2007.Now is the time to take action. It takes eight to 10 years to get new plants licensed and built. Opponents of nuclear energy know this, and play on it. But delays to nuclear plant construction represent a tax on Florida's consumers, a tax on Florida's workers, and a tax on Florida's environment. We have to start building new plants now, and we can start with the four plants being proposed in the state by Florida Power & Light and Progress Energy. We should also add capacity to Florida's existing nuclear plants, a move that could produce eight percent more electricity and avoid thousands of more tons of harmful emissions. Thirty years ago, I was convinced that the nation could live without nuclear energy. Now, the science has convinced me that the nation can't live without it. That's true because of what nuclear energy can do for our environment, and it's especially true because of what nuclear energy can do for our economy.

**New nuclear plants greatly expand the availability of clean water to the developing world**

**Colvin 4** (Joe, president and chief executive officer of the Nuclear Energy Institute. “Nuclear Energy: The Global Choice for the 21st Century” 2004)

The next generation of nuclear plants could provide other environmental benefits in addition to producing reliable electricity without emitting greenhouse gases. For example, new plants may be dedicated to hydrogen production or to the desalination of drinking water, vastly expanding the availability of clean water to the developing world.

**Advanced reactors are key to water desalination**

**International Atomic Energy Industry 02** (“Prospects for Nuclear Desalination.” IAEI October 30, 2002.) http://www.iaea.org/NewsCenter/News/2002/10-24-427595.shtml

Designers of tomorrow's nuclear power plants are more closely eyeing the developing world, by crafting reactors that can serve a dual purpose -- to produce electricity and economically turn seawater into fresh drinking water. The twin production system is known as "nuclear desalination". Economics holds the key to the future of nuclear desalination, experts say, with advanced reactor designs now promising reduced costs in turning seawater into freshwater. For developing countries facing water crises, it is a major drawing card. At an international conference on nuclear desalination, held in Morocco, 16-18 October 2002, specialists from more than 35 countries assessed global developments, including the prospects for nuclear plants. Participants heard that advanced High-Temperature Gas-Cooled Reactor designs were a competitive, safe and cleaner alternative to conventional fossil-fueled plants. As well as generating electricity, when coupled with a desalination facility the reactors could produce freshwater for about a dollar for two cubic meters.