Long Nguyen
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Viability of Nuclear Energy

Changes occur constantly all over the world. Whether it's advancement in technology or all the subtle things such as a new neighbor or pet, things are constantly moving about. Those are the visible animated objects we can see, but as Al Gore mentions, things that are invisibly destroying our world, such as CO2, are "often masquerade[d] as an abstraction" (3). More and more issues of global warming that are due to the burning of fossil fuels and coals continuously appear in the news. These issues create an underlying controversy about replacing the traditional ways of forming energy with a new and greener technology. Amongst the branches of these green technologies lies an old but renewed controversy over whether we should use nuclear power as a source to produce energy throughout the world. Groups such as Greenpeace International have taken note that nuclear energy is a "dangerous diversion from the real solution" while others such as Peter Schwartz and Spencer Reise suggest that we move forward with nuclear energy to solve our "voracious energy appetite" (Greenpeace International 1; Schwartz and Reise 4). This compelling argument has produced several positions, such as cost effectiveness, global consideration, and safety issues. While these positions have intriguing claims that can inform the populace of what is going on, the question is still whether or not nuclear energy is worth the time and effort for the world to rely on.

As with most things available for our use on the planet, nuclear energy comes with a price tag, and, as Greenpeace International concludes, it isn't cheap. They note that construction costs have never been true to budget, as the reactors in the U.S. have been considerably more expensive than was planned. As a matter of fact, Greenpeace International also notes that in India the "last 10 reactors have averaged at least 300% over budget" (3–4). Due to those costs, they claim that energy investors and banks believe it is too risky to dip into their pockets for such a project, and renewable energy would be faster and cheaper to invest in (4). Although Schwartz and Reise realize that initially nuclear reactors could be expensive, they note than in the long haul nuclear power is actually far more efficient than other methods. An ideal renewable energy would be solar power, but Schwartz and Reise say that solar generating electricity is actually "four times more expensive than nuclear [energy]." Not to mention it would take a nation to build one of the largest industrial structures to have a solar plant that is useful (3). Also, according to Schwartz and Reise, nuclear energy is actually more efficient than people expect, producing more kilowatt-hours–per-cent than coal or natural gas (4). With MIT studies predicting that our energy consumption will triple over the next few decades, this would actually save loads of money (Schwartz and Reise 3).

The debate on efficiency relates to other arguments about time and usefulness. Patrice Hill introduces the idea that nuclear energy reactors can run night and day and do not rely on weather that can produce droughts (1). Schwartz and Reise agree

with this, saying that wind power is "inherently fickle, hard to capture, and widely dispersed," making mass wind power unreliable (3). Of course, Greenpeace International believes that nuclear energy is unreliable because we need alternative energy now. They inform us that construction of several fully functioning reactors could take almost a decade at best (3). If the plans stay on course, the interest rate on the construction time would already be quite high, but of course this isn't the case. Greenpeace International notes that construction times have been increasing due to "symptomatic of a range of problems," which include expense and safety issues (3). Greenpeace International points out that renewable energy is available now. One example is a wind farm that was constructed in the UK. The farm only took 8 months to build, about ten times less than constructing a nuclear energy reactor, assuming it finishes on time (3).

Now keep in mind the construction time, and couple that with the research from MIT and other studies that argue the amount of alternative energy sources we need. They concluded that we would have to construct about 1,000 reactors for it to have a decent effect on global warming (Greenpeace International 3). In theory, Greenpeace International believes that this would take too long, cost too much, and is "a wildly unrealistic scenario," considering developing countries do not even have enough resources to create reactors. So where would we put all the reactors? Stacking it in a certain area is not going to have a global effect (3–4). On the flip side, Schwartz and Reise note that wind power consumes hundreds of acres of land that could be useful for other needed resources such as food production for our ever-growing population. They go on to say that another alternative source, biomass, would need to be farmed. Farming enough cellulose would, according to Schwartz and Reise, require "an area the size of 10 Iowas" (3).

The world has been asking for a new way to produce energy while the supply of oil and coal are diminishing. Of course, the countries around the Persian Gulf would not want that to happen, as they want a large supply of income from the rising demand in foreign oil. Gore mentions that "the consequences of our ravenous consumption of oil are even larger" than we would even have guessed. We the consumers are funding the uncontrollable and unstable states that control the majority of foreign oil (1). Greenpeace International believes that this theory branches off into nuclear energy as well. A nuclear energy reactors would be able to produce simple recipes for "dirty bombs" and "provides an obvious target for terrorists" (5). Given that there are more and more countries seeking nuclear arsenals, Greenpeace International argues that going into nuclear energy will only result in a "proliferation risk" and overall a nuclear threat (5). Bernard Cohen, on the other hand, believes that this nuclear power to nuclear bomb connection is too minuscule to be much of a threat. Since most of nuclear reactors are basically electricity factories, almost all countries that have the "serious desire" to arm themselves with nuclear weapons have been unaffiliated with the plants and would mainly get their nuclear sources elsewhere (Cohen). Cohen continues his theory by arguing that nuclear energy may actually be used as an advantage to the nuclear power threat. He states that the electricity produced by the plants can eventually take the place of oil and gas for heating and the hydrogen that can be produced may one day replace fuel. This process would eventually lower our dependence on foreign oil from unstable states, thus lowering nuclear threat (Cohen).

This arrangement would also satisfy Gore, as he believes that we need to reduce our dependence on foreign oil.

Probably one of the largest and beaten-to-death concerns in the last few decades is the issue of nuclear energy safety. Greenpeace International believes creating nuclear energy power plants is a recipe for world disaster. They do not wish for another incident like Chernobyl to happen, so they want to halt the idea of nuclear energy (1). Greenpeace International notes that the effects and the "deadly plume of radioactivity" still lingers in the area and may never be removed. Radioactivity literally changed the environment around the reactor, and people that came into contact with radiation were decimated for the rest of their lives. They also mention that accidents do happen, and they can happen often, and with hundreds of reactors worldwide, the risk is too great for us to lean back on the power of nuclear energy (1-2). This argument suggests an enormous phobia of nuclear energy that some people do not agree with. Cohen states, "The public has been bombarded with fears of reactor accidents." Nuclear accident explosions are as probable as other sorts of accidents that could blow up a city. Cohen thinks that it would "require a lot of improbable circumstances combining together" for something to actually happen on a large scale. It would be like increasing the risk of smokers by adding a cigarette every decade or risking traffic accidents by increasing speed limits by one. Generally, the chances of a disaster are extremely slim (Cohen).

Even then, there are smaller issues that come with safety. Should people that don't live around the power plants be concerned? Dan Becker believes so. Nuclear energy waste is dangerous even if you live miles and miles away. According to Becker, nuclear energy waste has to be transferred from plants around the country to a designated waste spot. Since they go through many cities, leaks and accidents can happen and radioactive waste will spill. This is extremely dangerous because waste remains around for "200 thousand years" (Becker 1). Even though nuclear accidents are a more popular topic of conversation, Schwartz and Reise inform us of what has happened with other current technology. Chinese coal mines have had accidents in which thousands of people died and present-day coal plants produce massive amounts of radioactivity compared to a nuclear power plant. Schwartz and Reise believe these accidents would far outnumber the accidents associated with nuclear energy (1–2). According to Schwartz and Reise, the Chinese are actually building nuclear power plants in response to the smog that is produced from coal factories. Not only that, but the French actually already took a "decisive leap out of the hydrocarbon era" by generating over 75% of their electricity from nuclear energy (2).

So are the safety risk, concerns of global threat, and cost-effectiveness worth the time and effort to be put into nuclear energy? Or do the advantages that nuclear power gives us, along with the problems of our current technology, outweigh all those risks? Greenpeace International believes that nuclear industry gives us serious of "false promises and lies" and that we need to rely on the power of renewable energy that is available to us (1). On the other side of the coin, Schwartz and Reise believe that renewable energy resources are the ones that are giving "false promises" that are "attractive but powerless" (1). Either way, the controversy of nuclear energy may currently be at a stalemate as Gore argues that the government is having a hard time actually passing

laws for any new energy resources. The clock is ticking, and the "luxury of time" is not on our side. We should solve the problems associated with our use of fossil fuels (3). Whether nuclear energy is the solution for an alternative energy source or not, we should not put an "unacceptable burden [. . .] on all future generations" (Greenpeace International 3).

WORKS CITED

Becker, Dan. "Nuclear Power Is Expensive and Unsafe." 2001. Rpt. in *America in the Twenty-First Century.* Ed. Andrea C. Nakaya. Detroit: Greenhaven Press, 2006. *Gale Opposing Viewpoints In Context.* Web. 8 Oct. 2010.

Cohen, Bernard L. "Nuclear Power Has Many Advantages and Few Risks." *Nuclear Energy.* Ed. Debra A. Miller. Detroit: Greenhaven Press, 2010. *Gale Opposing Viewpoints In Context.* Web 8 Oct. 2010.

Gore, Al. "The Crisis Comes Ashore: Why the Oil Spill Could Change Everything." *New Republic* 10 June 2010: 10-12. Print.

Greenpeace International, "Nuclear Energy Creates Hazards and Fails to Address Climate Change." *Nuclear Energy.* Ed. Debra A. Miller. Detroit: Greenhaven Press, 2010. *Gale Opposing Viewpoints In Context.* Web. 7 Sept. 2010.

Hill, Patrice. "Nuclear Power Is the Energy of the Future." *Energy Alternatives.* Ed. Barbara Passero. Detroit: Greenhaven Press, 2006. *Gale Opposing Viewpoints In Context.* Web. 8 Oct. 2010.

Schwartz, Peter and Spencer Reise. "Nuclear Power Is the Best Way to Address Global Warming." *The Environment.* Ed. Laura K. Egendorf. San Diego: Greenhaven Press, 2009. *Gale Opposing Viewpoints In Context.* Web. 14 Sept. 2010.