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The Effects of Opposing Nuclear Power

Recently it seems impossible to watch an entire news broadcast without hearing mention of the current energy crisis or global warming problem. More often than not commentators will turn to wind or solar power as the great solutions to these problems to make the United States energy independent into the future. Unfortunately, many facts about the potential of these technologies to meet the ever increasing demand for power is grossly overestimated and the issues surrounding their practical implementation are oversimplified. What could be even more unfortunate is how the facts about another power generation technology, one already producing 20% of our nation's energy, are even more commonly misrepresented to the general public. Nuclear power is the only currently feasible means of power generation with zero emissions that also has the generation capabilities to meet future demand. To fully understand what potential nuclear power holds for the future of energy and the consequences that could be associated with not implementing a plan for widespread increase in nuclear research and development it is important to first realize exactly what nuclear power is doing now, and how it came to have the negative public persona of today. More importantly, it is necessary to understand why a change needs to be made in the way the entire world treats policies on power generation or what would happen if we continue on our current path.

Energy generation is no longer a purely domestic issue within the United States, but one that is heavily influenced by both the imports and exports of countries around the globe. What has led to this change within the past decade is the unprecedented speed with which the world's two most populous nations, China and India, have been industrializing. One third of the world's population live in either China or India, and the middle classes with both countries are expanding at an explosive rate. China's economy has been expanding at a rate of ten percent every year for over a decade which has brought nearly 300 million people into the heavily energy consuming middle class, according to the New York

Times. In today's energy climate it is typical to quantify increases in energy demand by examining oil consumed, as oil makes up nearly 40% of world energy consumption.[1] In measures of actual energy demand this equates to a tripling of oil demand in China compared to two and a half decades ago. In fact, should China and India's economies improve to the point where their citizens consumed as much energy as Americans do demand for oil would increase from the current 85 million barrels a day to an unbelievable 200 million barrels a day, a level of output that is realistically unattainable given current output capabilities and thinning available supply. In addition to the problems of declining supply through resource exhaustion, problems also arise when considering where the remaining world supplies are located. A majority of the world's oil resources are located in either regions with extreme political unrest (Persian Gulf, Venezuela, Nigeria) or with other climate and weather related challenges (Gulf of Mexico, the Arctic). [2]

It becomes obvious that there is a need for a revolution in energy production around the world. What then of the touted alternative energies that are billed to provide virtually free energy? As it turns out the potential of these technologies is too often exaggerated. As of 2004, geothermal, wind, and solar power combined provide for less than one percent of the worlds energy generation. To put this into domestic perspective, if you were to link every single commercial solar panel in operation in the United States, multiply that output by ten, you would still not be able to take one coal fired power plant off the grid and meet demand (there are 600 coal fired plants in operation within the United States).[1]

How does nuclear power now fit into the potential to rise to meet the needs of the future? As mentioned earlier, nuclear currently provides about 20% of the power generated within the United States. However, it is important to realize that this output has been maintained without any new nuclear plants being built in the United States for over two decades (Not to imply these older plants are faulty by any means, in fact the oldest active reactor in the US commissioned in 1969 was just given a 20

year license extension by the US Nuclear Regulatory Commission[3]). Possibly more important than the current levels of generation is the potential for current and future expansion of nuclear power generation to be sustainable. Once again it is important to place this in some real world context. Hold out your hand and look at your pinky finger; the amount of uranium that could be contained in one third of your pinky finger is enough to create the power output in a nuclear plant equal to burning over two thousand pounds of coal in a coal fired plant. Also, the fuel (typically Uranium or Plutonium) used in nuclear reactors will be a sustainable fuel well into the future, current estimates have all ore reserves on the planet lasting up to 1500 years into the future.[4]

Finally, none of the advantages of nuclear power will mean anything if the public is not educated to the truths about the safety and viability of these plants. For instance, one of the greatest misconceptions is the fear of a cataclysmic "nuclear meltdown" at a reactor site. What most of these people do not realize is that there has never been a single death in the United States as the result of any nuclear incident or ambient radiation. The only fatal disaster at a nuclear power plant was the Chernobyl disaster in the USSR in 1986, which had a death toll of approximately 30. A disaster of this type is impossible with current day reactors in the United States. The Chernobyl disaster occurred as a result of many careless blunders and numerous design flaws. The plant was opened prior to required safety tests being carried out as the USSR mandated the plant be operational on schedule. As a result the safety test was scheduled at an inappropriate time in the reactor fuel cycle, supervised by unqualified officials, and carried out in an extremely careless manner.[5]

I sincerely hope you have found this information both illuminating and useful. These times of economic uncertainty and global energy crisis demand action at all levels of government and authorities. It is my hope that in the future nuclear power will be embraced as an effective replacement for the fossil fuels of today.

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