

Nuclear Debate: Homer Simpson vs. Buckminster Fuller

By William Becker

As 2008 began, there were conflicting reports about the future of nuclear power. Some predicted that nuclear power is back again and ready to boom. Others predicted the plants are as unlikely as ever to attract investors. Some of the nation's most astute environmental leaders have decided that nuclear power is a must if we are to meet the challenge of global warming. Others don't agree.

One columnist for the Denver Post, declaring that nuclear energy is now "green", supported his case by quoting Homer Simpson, who once thanked the Lord "for nuclear power, the cleanest, safest energy source there is. Except for solar, which is just a pipe dream."

I'm a big fan of Homer and hesitate to disagree with him, but somebody needs to separate fact from fiction in the discussion about how best to reduce America's greenhouse gas emissions.

The Post went so far as to quote Dr. Patrick Moore, formerly a member of Greenpeace and now on the payroll of the nuclear industry, as saying that "building new plants to help the United States overcome its dependence on foreign oil for its energy needs is the way to go." But less than 2 percent of our electricity in the United States is generated with petroleum. Our big oil consumer is transportation. For nuclear power to make a dent in imported oil, we would need to convert our cars, trucks, trains, ships and aircraft

to electric power, or convert our transportation sector to hydrogen and use nuclear power to produce it.

If such a conversion were affordable and feasible, it could not occur in time to prevent irreversible climate change. And while an all-electric and hydrogen transportation sector would be a good thing, the energy should come from benign sources. Nuclear power doesn't yet, and may never, qualify.

The nuclear industry has not found a way to dispose of its radioactive wastes, to protect power plants from terrorist attack, or to ensure that nuclear materials do not fall into the hands of terrorists or nations that want to develop dirty bombs and nuclear weapons.

Those liabilities are well known. Others have received less attention.

Expanded use of nuclear power would increase our dependence on another imported fuel. While uranium mining is beginning to boom in Colorado and a few other states, much of the fuel we use is imported from Australia, Canada, Namibia and Kazakhstan. The federal government reportedly is clearing the way to begin importing uranium from Russia.

Like oil, uranium is a finite resource. As supplies are depleted, nations increasingly will compete for it. Worldwide, the demand for uranium already outstrips supply. The Dow Jones Commodities Service reports that total global production of uranium is about 100 million pounds a year, compared with demand of 180 million pounds. Experts say that rapidly developing nations such as China and India are trying to corner the world's uranium supplies. If our goals include homeland security and energy security, then nuclear energy is not the answer.

Nuclear power generation is vulnerable to the impacts of drought – already a concern in parts of the United States and forecast to increase with global warming. At the time of this writing (January 2008), utility officials in the Southeast were predicting that existing

nuclear reactors in that region could be forced to reduce production or temporarily shut down this year because drought has left too little water for cooling. Officials say that water shortages could lead to “shockingly high electric bills” for millions of Southerners as the region’s utilities are forced to buy expensive replacement power.

It’s not an isolated problem in a nation where the competition for water already is intensifying between states and between agriculture and urban consumers. An analysis by the Associated Press has found that 24 of the nation’s 104 nuclear reactors are located in areas experiencing high levels of drought.

Dr. Moore’s organization – the Clean and Safe Energy Coalition – promotes nuclear power as clean and safe. But nukes are neither the safest nor the cleanest of major energy technologies. That honor belongs to energy efficiency, the quickest and cheapest way to create new electric supplies while cutting costs for consumers, reducing greenhouse gas emissions and other dangerous pollutants, and minimizing strain on transmission infrastructure.

Homer Simpson is wrong, too, in writing off solar and wind power as a “pipe dream.” More than 43,000 firms are manufacturing and assembling renewable energy systems in the United States today – a trend that now is benefiting Colorado. Solar thermal technologies are outpacing all conventional energy supply technologies worldwide; wind power ranks second, delivering three times as much power as nuclear technology did at the peak of its popularity. Solar electric technology ranks third.

Last year, the American Solar Energy Society found that the renewable energy and energy efficiency industries generate about 8.5 million green collar jobs in the United States and almost \$1 trillion in revenue. As many as one in four workers could work in these fields by 2030.

Meanwhile, although it has been subsidized by American taxpayers for 60 years, nuclear power remains unable to compete in the marketplace without substantial government largesse.

Solar and wind power have other important benefits that nuclear power cannot claim. They can be deployed quickly. They can be located near the point of consumption to reduce the need for expensive distribution infrastructure. They produce no carbon or wastes as they generate power. The fuel is domestic and limitless and, best of all, free.

While the high price of solar electricity and the intermittency of sunlight and wind are drawbacks, those problems – including methods to store the power -- are much closer to being solved than the many intractable drawbacks of nuclear power.

While no new nuclear plants have been built in recent years, the technology has not been orphaned in the United States, as the industry would have us believe. Nuclear energy generation has grown 20 percent in the U.S. since 1996 and we remain the world's leading nuclear nation, producing nearly one-third of global nuclear power.

Nor does America need more nuclear plants to satisfy our future need for electricity. During 2007, at least three different studies were published that concluded America can obtain all the electric power it needs without new nuclear or coal power plants. What's required is a firm commitment and aggressive campaign to employ energy efficiency and renewable energy technologies. So far, that commitment is lagging. Federal tax credits designed to spur solar and wind development in the U.S. are due to expire at the end of this year.

If the nuclear power industry could solve all of its problems, it might be an acceptable part of America's answer to global warming. The Presidential Climate Action Plan released last December doesn't oppose nuclear power; it simply says the industries problems should be fixed before we license any new plants. But despite generations of government support, nuclear energy remains a Faustian bargain. To be sure, global

climate change is a crisis that should trump all other problems today. But there's no need to trade carbon emissions for the suite of very serious liabilities that come with nuclear power. Not if we get serious about efficiency and renewables.

I can forgive Homer Simpson. He knows that if he questioned nuclear power, Mr. Burns would fire him in a minute. Besides, Simpson spends more time sitting on a bar stool at Moe's than he does studying the issues.

But if he took a closer look, he might encounter Buckminster Fuller's answer when asked his opinion of nuclear power. The philosopher and futurist reportedly said, "Nature has decided the closest we should come to a nuclear reactor is 93 million miles."

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