

Green makes case for nuclear energy support

Patrick Moore changes his mind

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That's not to say that there aren't real problems -- as well as various myths -- associated with nuclear energy. Each deserves careful consideration:

- Nuclear energy is expensive. It is in fact one of the least expensive energy sources. In 2004, the average cost of producing nuclear energy in the United States was less than two cents per kilowatt-hour, comparable with coal and hydroelectric. Advances in technology will bring the cost down further in the future.
- Nuclear plants are not safe. Although Three Mile Island was a success story, the accident at Chernobyl, 20 years ago this month, was not. But Chernobyl was an accident waiting to happen. This early model of Soviet reactor had no containment vessel, was an inherently bad design and its operators literally blew it up. The multi-agency U.N. Chernobyl Forum reported last year that 56 deaths could be directly attributed to the accident, most of those from radiation or burns suffered while fighting the fire. Tragic as those deaths were, they pale in comparison to the more than 5,000 coal-mining deaths that occur worldwide every year. No one has died of a radiation-related accident in the history of the U.S. civilian nuclear reactor program. (And although hundreds of uranium mine workers did die from radiation exposure underground in the early years of that industry, that problem was long ago corrected.)
- Nuclear waste will be dangerous for thousands of years. Within 40 years, used fuel has less than one-thousandth of the radioactivity it had when it was removed from the reactor. And it is incorrect to call it waste, because 95 percent of the potential energy is still contained in the used fuel after the first cycle. Now that the United States has removed the ban on recycling used fuel, it will be possible to use that energy and to greatly reduce the amount of waste that needs treatment and disposal. Last month, Japan joined France, Britain and Russia in the nuclear-fuel-recycling business. The United States will not be far behind.
- Nuclear reactors are vulnerable to terrorist attack. The six-foot-thick reinforced concrete containment vessel protects the contents from the outside as well as the inside. And even if a jumbo jet did crash into a reactor and breach the containment, the reactor would not explode. There are many types of facilities that are far more vulnerable, including liquid natural gas plants, chemical plants and numerous political targets.
- Nuclear fuel can be diverted to make nuclear weapons. This is the most serious issue associated with nuclear energy and the most difficult to address, as the example of Iran shows. But just because nuclear technology can be put to evil purposes is not an argument to ban its use.

Over the past 20 years, one of the simplest tools -- the machete -- has been used to kill more than a million people in Africa, far more than were killed in the Hiroshima and

Nagasaki nuclear bombings combined. What are car bombs made of? Diesel oil, fertilizer and cars. If we banned everything that can be used to kill people, we would never have harnessed fire.

The only practical approach to the issue of nuclear weapons proliferation is to put it higher on the international agenda and to use diplomacy and, where necessary, force to prevent countries or terrorists from using nuclear materials for destructive ends. And new technologies such as the reprocessing system recently introduced in Japan (in which the plutonium is never separated from the uranium) can make it much more difficult for terrorists or rogue states to use civilian materials to manufacture weapons.

The 600-plus coal-fired plants emit nearly 2 billion tons of CO₂ annually -- the equivalent of the exhaust from about 300 million automobiles. In addition, the Clean Air Council reports that coal plants are responsible for 64 percent of sulfur dioxide emissions, 26 percent of nitrous oxides and 33 percent of mercury emissions. These pollutants are eroding the health of our environment, producing acid rain, smog, respiratory illness and mercury contamination.

Meanwhile, the 103 nuclear plants operating in the United States avoid the release of 700 million tons of CO₂ emissions annually -- the equivalent of the exhaust from more than 100 million automobiles. Imagine if the ratio of coal to nuclear were reversed so that only 20 percent of our electricity was generated from coal and 60 percent from nuclear. This would go a long way toward cleaning the air and reducing greenhouse gas emissions. **Every responsible environmentalist should support a move in that direction.**

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