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The State

U.S. needs to revive nuclear plant production

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Guest columnist

Is there a future for nuclear power in the United States? The question has increasing urgency. Nuclear plants in South Carolina and elsewhere in the country are setting new records for safety and performance, but the plants are getting older, demand for electricity is rising, and there hasn't been an order for a new plant since 1978. Almost all new power plants built since then have been fueled with natural gas.

Natural gas supplies are limited, however. Demand has caught up with supply even with significant increases in exploratory drilling, and the United States is now importing natural gas from Canada and other countries. Now, with the rise in natural gas prices, the cost of nuclear power has dropped to as little as two-thirds that of gas and other fuels. In fact, nuclear power is cheaper than coal. These factors make a renewal of nuclear power likely.

It is also true that the disposal of spent nuclear fuel remains a problem. However, the problem is more sociological than technological. Work is proceeding on the Yucca Mountain waste disposal site, and we can look forward to the safe storage of this material.

Unlike natural gas or coal, nuclear power doesn't emit carbon dioxide or other greenhouse gases that trap heat and warm the Earth. Nor does it produce sulfur dioxide or nitrogen oxides, which are linked to smog and acid rain, or require drilling in environmentally fragile areas.

Three years ago, the Nuclear Regulatory Commission began extending licenses for existing reactors for an additional 20 years. So far the licenses of 10 reactors, including the three-unit Oconee Nuclear Plant in South Carolina, have been renewed. Eventually all 103 U.S. power reactors will probably be relicensed. Since nuclear power is environmentally benign and also reduces the need for imported oil, that's good news.

It's especially good news in South Carolina. It's clear that the investment in nuclear power was the correct economic, environmental and energy choice for our state. With our seven operating reactors, South Carolina has ample electric capacity to lure new industry, while also protecting the environment.

Two years ago, we introduced a graduate nuclear engineering program at the University of South Carolina, the only university in the United States to have established such a program in recent years. This will help put us in the driver's seat for an expanding nuclear industry in the years ahead.

Now we are seeing the first stirring of interest in the possibility of new construction of a nuclear plant in the United States. Several utilities have announced plans to apply later this year to the commission for early site approval, so that when they decide to place an order for a new plant, the site for it will already have been established. One critical benefit of the new site approval process is that application review and approval should take about 18 to 30 months, while under old procedures, securing permits to build and operate nuclear plants could take a decade or more to accomplish.

The commission has certified three new reactor designs for construction, and, most significantly, the Senate is considering a bill supported by the administration to provide partial government funding for a new advanced nuclear reactor. The bill would fund two competing designs. One of them will be constructed. The reactor design that is selected would be capable of generating both electricity and nonpolluting hydrogen for use in fuel cells to power motor vehicles.

In this regard, President Bush's energy program, as outlined in his State of the Union address, could be a

turning point in redirecting our emphasis in energy production away from fossil fuels and toward nuclear power. But this will require an understanding -- particularly from environmentally minded people -- that we simply cannot control greenhouse-gas emissions and usher in a new hydrogen-based transportation economy without the expanded use of nuclear power. Simply put, if nuclear power were not used, about 135 million automobiles or 79 million light trucks would have to be eliminated to keep U.S. carbon emissions from increasing.

If we want to have clean and affordable electricity, the time to move ahead with construction of a new nuclear plant is now. Expanding nuclear power needs to be a high priority.

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