

Scientists Advocate Nuclear Power To Conserve Energy Drain

Energy — the unseen power that provides everything from food and shelter to the luxuries of mechanized living — may pose a major ecological problem for man. Modern industry, transportation, and agriculture are almost totally dependent on the stored solar energy found in fossil fuels. But coal, petroleum and natural gas will soon be in short supply.

These are some of the conclusions developed by two Ohio scientists, Dr. Warren L. Roller, professor of agricultural engineering at the Ohio Agricultural Research and Development Center, Wooster, and Dr. Walter Carey, director of the Nuclear Reactor Laboratory at Ohio State University.

"We are the stewards of these energy capital assets," Roller said. "Yet we continue to withdraw from our account as if there were no tomorrow . . . living off resources that belong to future generations."

He said that three-fourths of the fossil fuel energy consumed by transportation goes down the energy drain. Efficiency of fossil fuels to generate electricity is poor.

We must develop the full potential of nuclear power, said Dr. Carey. When uranium is split in the fission reaction, energy in the form of heat is liberated — three million times more energy than in an equivalent weight of coal.

But radiation dangers and thermal pollution have created controversy. "We have lost sight of a basic principle about nuclear power," Carey submits.

"The nuclear reactor was never meant to be the ultimate answer to our energy needs. It was originally conceived as a temporary source of power that would extend our limited resources until we learned to directly harness the sun's energy."

The scientist said that technology is now available to minimize or eliminate the impact of nuclear plants on the environment.

What do the scientists predict as tomorrow's energy source? The sun, says Carey. Solar cells have already been developed to capture the sun's rays, but as yet there is no practical way to store solar energy.

The researcher described one suggested plan which may become part of the new solar technology.

Huge plates of solar cells would orbit in continual sunlight high

above the earth. Solar energy would be captured, converted into microwaves, and beamed—even through cloud cover—to receivers on the ground or floating in the sea. The microwaves would then be converted into various forms.

"The idea isn't nearly as far fetched as it might sound," Carey said. In fact, scientists in the space program have already taken the first step toward such advanced technology.

Carey and Roller pointed out that we must correct the misuse of our limited stored energy reserves. Increasing our energy use efficiency may involve some sweeping change in outlook, and even in eating habits, they said.

Protein, as well as energy, is essential in our food supply. Forests and other dense vegetative crops are most efficient at capturing solar radiation and turning it into organic material.

Yeasts and certain other lower life forms are much more efficient at converting this organic material to protein than are some of our domestic animals. This means, Roller said, we may be forced to substitute these more efficient processes for our present feed grain to meat pathways.

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