

## Introduction to Nuclear Issues (Our only discussion of non-technical issues)

Mechanical Engineering magazine, American Society of Mechanical Engineers publication.

September 2006: Letters to the Editor begin.

January 2007: Response

**To the Editor:** The September letters section contains two items relating to nuclear power. In the first, Jessica Sarver admonishes against turning to nuclear energy as a possible solution to the energy dilemma. She tosses out phrases like "social responsibility," "technologies that promote irresponsible growth," "potentially disastrous consequences," and "surviving on renewable energy sources."

Without the necessary energy to sustain technologies and economies in a post-oil environment, we can expect a worsening of the human condition (increased hunger, exposure, disease, and poor land use). Ms. Sarver is a case of those who promote bad ideas in a good cause. Her object is to act responsibly (i.e., don't be one of those nasty planet despoilers). If we follow not just her admonition to act responsibly but also her strict formula for what constitutes responsibility, we become guilty of taking actions without considering consequences.

Three Mile Island, Chernobyl, nukes in the wrong hands, and "The China Syndrome" film generated a lot of phobia regarding nuclear that is part truth and part fiction. The result has been a U.S. frozen for a quarter-century, while the rest of the planet continues nuclear development, despite a record of safety that exceeds other large-scale technologies. Thinking we can put the lid back on Pandora's box is foolish, and we'd do better keeping up with (or ahead of) the pack. The risks from nuclear power generation can never be eliminated, but advancing safeguards and development of smaller generators have gone far in reducing them.

In the second letter, Dan Pangburn correctly identified one limitation as the restraint on recycling nuclear wastes imposed by Carter and seconded by Clinton. Nuclear has been consigned to the "limits" bin through an artificial and politicized restraint to first-pass-only utilization that wastes 99 percent of potential energy.

By defining, *a priori*, what solutions are prohibited, we condemn mankind to a future that is impoverished long before that need happen and before our creativity has a chance of finding new expression.

**BOB STAPLER, Columbia, Md.**

**To the Editor:** In the September letter, "Not Sold on Nukes," Jessica Sarver did not agree with a conclusion that we should turn to nuclear energy. She presented some important concerns and challenged us to be responsible. However, her argument against nuclear energy was – well, I didn't see any argument against nuclear energy. Without any specific physical arguments, the letter implied that opposition to nuclear energy was somehow socially noble and, I believe, it implied that nuclear energy was unnatural.

Nuclear energy is not bad, evil, or even unnatural. It is energy. Oklo in Gabon [Africa] is a natural nuclear fission reactor. It was natural nuclear energy long before any of us were socially responsible. We have a great example of a natural nuclear energy source that rises every morning in the East. Solar energy is from a nuclear source. That same nuclear source generated the stored energy in organic forms like wood, coal, oil, and biomass.

Geothermal energy is energy from the Earth's core that is heated by the decay of radioactive nuclides.

By 2010, there will be at least a half-dozen new reactors under construction in the U.S. with more to follow. The turn (or return) to nuclear has already been made. Just claiming that you do not like it will not stop it or correct any concerns. And there are some concerns that must be addressed and resolved.

All forms of energy can be dangerous. Commercial nuclear power is no exception. It has real challenges and concerns. Address those concerns.

We need an informed, logical, and scientific search for the proper energy mix. That should be the more responsible path.

**STEPHEN C. WILLARD, P.E., Decatur, Ala.**