

No Longer *Business As Usual* At Duke Nuclear Power Reactors

The giant French nuclear firm Cogema and Duke Energy have formed a consortium to create and use plutonium MOX fuel in civilian atomic reactors in North and South Carolina.

If their effort is successful, plutonium would be trucked from nuclear weapons depots in the west to the Savannah River Plant on the South Carolina/Georgia border, where new plutonium processing plants would be built. This new MOX fuel would then be trucked to commercial reactors in the Southeast, in order to turn this plutonium into high-level radioactive waste. The MOX program is dangerous and unnecessary. More than 200 environmental and other organizations across the world have signed an International NIX MOX statement and have pledged to work to stop this program in the U.S. and similar programs in Russia, France and England.

What is MOX?

MOX stands for "Mixed-Oxide Fuel." It is a nuclear power reactor fuel made from plutonium mixed with uranium. The U.S. Department of Energy (DOE) wants to make experimental MOX fuel using plutonium from dismantled nuclear weapons.

There is no doubt that we must contain the plutonium from nuclear warheads. It must neither enter the environment--where it can poison drinking water and virtually everything else with which it comes into contact--nor be accessible to terrorists or others who might wish to build atomic bombs.

But using plutonium as reactor fuel accomplishes neither of those goals.

MOX fuel requires processing of plutonium before the fuel is fabricated, creating new plutonium-laced waste, added worker exposures, and releases to the environment.

Transportation of the plutonium, even when armed guards are deployed, is an open invitation to terrorists or others seeking this deadly material.

Use of MOX in nuclear reactors is not safe, and could result in serious accidents.

Use of MOX would add to our nation's immense radioactive waste burden, and would make it more difficult to find scientifically-defensible solutions to our atomic waste problems.

MOX doesn't get rid of plutonium

Inside a nuclear reactor, only some of the plutonium in MOX fuel gets "fissioned," or converted into other radioactive elements. These include such deadly elements as Strontium-90, Cesium-137, Iodine-129 and many, many more.

While some plutonium is split by fission, new plutonium is being made in the reactor. This is because every commercial nuclear reactor produces plutonium as a waste product of its operation; the average commercial reactor produces some 500 pounds of plutonium per year (it takes about 20 pounds to make a Nagasaki-size bomb).

Use of MOX fuel fails as a means of getting rid of plutonium. Instead, the plutonium just becomes part of the lethal soup of ingredients termed "high-level nuclear waste" which every reactor creates, and for which there is no means of safe long-term storage. Plutonium-239 itself is hazardous for 240,000 years.

MOX is dangerous

Use of MOX fuel attacks commercial nuclear reactors where they are the weakest. Many reactors are aging prematurely, and cracks are appearing in vital reactor components. Most atomic reactors were not originally designed to use MOX fuel and MOX makes key reactor components age even faster.

Because of its high "neutron flux" levels, the reactor pressure vessel can become embrittled and fail during accident conditions. A nuclear accident involving MOX fuel could cause a meltdown more serious than Three Mile Island or Chernobyl, because the levels of radiation inside a reactor using MOX are even higher than in a normal atomic reactor.

MOX is an economic bailout for a failed industry

There are valid alternatives to the use of MOX fuel. Thus the Department of Energy's program--and the nuclear utilities' willingness to participate in this program--makes little sense until one understands that the DOE intends to *pay* nuclear utilities tax dollars to use MOX fuel. Not only is this an unconscionable use of your money, but it creates a subsidy to allow uneconomical nuclear reactors—which would have to compete with other electricity sources under utility deregulation--to operate. Nuclear reactors that aren't economical should close, not be propped up by an unnecessary, dangerous federal program.

Alternatives to MOX

The major alternative to MOX fuel is to immobilize warhead plutonium in a form so that no one can get at it, and that is unlikely to leak into the environment. Vitrification--mixing glass and existing high-level waste--is one way to create a radiation barrier that would deter theft by making handling this material deadly. This process still involves the handling of plutonium, and would require the utmost vigilance to ensure that the lethal material does not enter the environment. But using MOX as a fuel perpetuates the myth that plutonium is a commodity. Use of MOX would set up a reprocessing infrastructure that would allow continued use of plutonium as a fuel for centuries to come. Using plutonium in commercial reactors would be the first step toward the nuclear industry's goal of recovering more plutonium from irradiated nuclear fuel by reprocessing. This option has been rejected time and again by the U.S. government as uneconomical, unsafe, and prone to nuclear weapon's proliferation concerns, and so should be rejected again. NIX MOX!

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