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IN RESPONSE

A pox on MOX

By Paul L. Leventhal

SENATOR DOMENICI IS CONFUSED. That is perhaps the kindest explanation of his current lapse into nuclear evangelism. He equates anti-plutonium with anti-nuclear and concludes that America's energy salvation can be attained only through a rebirth of nuclear energy built upon a new acceptance of the virtues of plutonium.

How sad. I remember Pete Domenici as a thoughtful member of the Senate's Class of '72, not at all inclined to throw in with fire-breathing nuclear apologists of the day such as Cong. Chet Holifield and Sen. John Pastore, who struck fear in the hearts of anyone challenging the Joint Committee on Atomic Energy's perfect wisdom and monopolistic hold on all things nuclear.

Now, a quarter-century later, flush with the trappings of seniority and of powerful committee and subcommittee chairmanships, Senator Domenici is coming to resemble the men who did so much to bring down the once-grand Joint Committee and to bring about the sorry state that the once-proud nuclear industry finds itself in today.

First and foremost, he argues, we must recognize as "wrong" the premise underpinning present nuclear policy,

namely President Carter's end to "U.S. efforts to reprocess spent nuclear fuel and develop mixed-oxide fuel (MOX) on the grounds that the plutonium could be diverted and eventually transformed into bombs."

He insists that other countries have not followed the U.S. example, and he cites France, Great Britain, Japan, and Russia as countries that have continued to develop their MOX programs.

But Domenici is wrong on both the history and the facts. It was a fellow Republican, President Gerald Ford, not Carter, a Democrat, who originated U.S. anti-plutonium policy. The Ford policy of 1976, warning that plutonium is "the root of the problem" and calling on nations for cooperation "to turn aside from pursuing nuclear capabilities which are of doubtful economical value and have ominous implications for nuclear proliferation and

instability in the world," remains the single best pronouncement on the folly of making commercial fuel from nuclear bomb material.

Carter's failing was that he could not win over the U.S. nuclear bureaucracy and industry to carry out the policy that Ford began. He looked to a brain trust from Harvard University to do the heavy lifting, just as President Clinton turned to Harvard, which came up with a MOX path to nuclear disarmament and an alternative to nonproliferation—"counterproliferation" (managing rather than preventing proliferation). Domenici, too, chose Harvard as the platform to launch his pro-plutonium campaign, exhorting the assembled academics "to develop a proposal that brings the economics of the MOX fuel cycle together with the need to dispose of weapons-grade plutonium."

Domenici, chairman of the Senate Budget Committee and of the key Energy Appropriations Subcommittee, needs to take a harder look at plutonium economics. Mixed oxide fuel is at least four to eight times more expensive than low-enriched uranium fuel, which is why a top American utility executive recently confided to me—after cautioning that if I quoted him by name he'd deny it—that I did the nuclear power industry a "great favor" by killing off the domestic plutonium in-

There is no MOX success story— anywhere.

dustrial. (It was actually Ronald Reagan who performed this *coup de grâce* on economic grounds.)

MOST NATIONS HAVE WISELY STEERED clear of plutonium. As for the Europeans and Japanese cited by Domenici, only France can be said to have a commercial MOX program of its own, and one that is being mightily resisted by the French national utility because of higher costs and operational asym-

metries relative to low-enriched uranium fuel.

The British have no MOX program of their own because all but one of their reactors are ill-suited for MOX fuel, which explains why they have a 50-ton stockpile of unusable civilian plutonium and why they run their reprocessing and MOX plants primarily as yen and euro earners. The Japanese have yet to burn their first commercial MOX core; they have a scandal-ridden plutonium industry that is denounced regularly by the prime minister himself; and they have no sound explanation as to why they don't deal with their energy insecurity simply by stockpiling uranium at a savings of at least 40 percent relative to the cost of their plutonium program.

The Russians are a special case. In fact, they have no MOX program, despite their professed worship of plutonium, and they estimate \$45 billion as the life-cycle cost of running warhead-plutonium MOX fuel through their light-water reactors. (All but \$3 billion of that cost will be paid by Russian ratepayers, they insist—but when was the last time Russians paid their electricity bills?)

Presumably, the United States will be called upon to foot the bill because while European and Japanese MOX interests are rooting Russia on, their hands remain in their pockets.

Before Domenici presides over throwing good money into Russia's MOX black hole, and before opening the United States nuclear fuel market to desperate British and French MOX fabricators, he ought to do his homework.

He should learn how much cheaper, faster, safer, and more secure is the alternative route of direct disposal of plutonium through vitrification. He should steer clear of the snake-oil salesmen at Los Alamos who lard his speeches with pitches for MOX, accelerator-based transmutation of waste, and the health benefits of low-level radiation. Instead, he should talk to safeguards experts at the same laboratory.

They could explain to him that measurement inaccuracies of plutonium processing are so large that a quarter ton a year of the stuff could be missing

from a commercial reprocessing plant, and dozens of kilograms annually from a MOX plant, before an alarm could be sounded with confidence.

THE SENATOR NOW SEEMS QUITE WILLING to trade plutonium for greenhouse gases in a nuclear solution to global warming. But Princeton University scientists have calculated that replacing just one-fourth of global fossil-fuel use would require a ten-fold increase in nuclear capacity (to 3,000 large reactors) and would place about 5,000,000 kilograms of separated plutonium into global commerce per year. That's

equivalent to at least 700,000 nuclear bombs.

Pete Domenici should ponder hard before being identified with this scenario. Both his place in history and the survival of civilization are at stake. ■

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