

# Dangers Of The Present Administration's Plutonium Fuel Cycle Policy

*This testimony was submitted June 8, to the House Subcommittee on Science and Technology hearings by Dr. Morris Levitt.*

Gentlemen:

The issue of development by this country of the nuclear fast breeder and associated nuclear fuel reprocessing technologies — the so-called Plutonium Fuel Cycle — is central to the issue of the future direction of basic scientific and industrial development of the United States, and hence the world. The long-overdue debate opened up in the pages of the May 2 *Aviation Week* magazine over the implications of basic scientific breakthroughs in Soviet controlled thermonuclear fusion research which can be directly applied among other areas to development of directed particle beam weapons must be extended to the issue of the plutonium fuel cycle, fast breeders, and reprocessing.

In both cases, the central issue is not specific military weapons development but the underlying strategic issue of the state of U.S. basic scientific and technological research and development capacity. This means R and D applied not only for defense but for basic industrial progress and development — an impulse which has been the guiding genius of this country in the world since the policies of Alexander Hamilton, Franklin and the Founding Fathers.

In this context, there are three essential points to be made regarding the current Administration's proposed policies towards the development of the fast breeder and reprocessing.

(1) There is more than persuasive evidence that *without* development on a rapid basis of the plutonium fuel cycle technologies, there will be a major world energy shortfall within the next decade of catastrophic proportions.

(2) That the global implications of the policies proposed by the current Administration would lead the U.S. to a position of fundamentally aggravated strategic disadvantage at a time when the overall military preparedness of the country has undergone a drastic decline over the past decade. This decline has as its correlate the ongoing push by various policy think-tank circles in and around the Administration to maneuver the U.S. into a suicidal war-losing confrontation on the same basis that led to the criminal and catastrophic SALT and related fiascos — in short, strategic adventurism in nuclear terms. The decline is not one of slick military gadgetry and hardware but a precipitous decline in the country's basic underlying industrial and scientific development.

(3) That for these and related reasons, no nation of the world has been sufficiently convinced of the Administration's argument to abandon its plans for development of that plutonium technology. In fact, if anything, the enunciation of the policy has forced the point that development of such energy resources is more urgent than ever.

While these are the central issues upon which competent determination of the U.S.'s future R and D policies in the area of fast breeder and related technologies must be made, it is also necessary to answer the Administration's central argument against these technologies. The Administration argues that the danger of nuclear weapons proliferation through development of the fast breeder and commercial reprocessing warrants the proposed policy. The "proliferation" argument, as posed by leading Administration policy-makers, is scientifically fraudulent, as they well know.

## *We Need Plutonium Fuel*

By all serious global estimates, even at present more conservative rates of projected growth of nuclear fission light water reactors, there exist throughout the world economically extractable uranium reserves sufficient to fuel light water reactors for at best another 20 years. Such studies are widely available and need not be repeated here. The essential point to be made is that introduction within the next 5-10 years of fast breeder and related spent fuel reprocessing technologies would essentially break that energy shortage well into the next century, by providing the essential Pu239 fuel for fast breeders as well as recyclable fissionable uranium for light water reactors. Without such prospects in sight, already prospective purchasers of light water reactors are reevaluating the feasibility of major capital investment in an energy production technology whose fuel source cannot be guaranteed.

Thus, cutting off the avenue of development of the next generation of nuclear power technology has immediate impact in slowing the development of urgently needed present light water reactor energy sources worldwide. Even without the addition of fast breeder technology, the decision to halt international development of nuclear reprocessing means a deliberate decision to scrap a much-needed 40 percent addition to the present world uranium supply. This is the equivalent of scrapping 35-45 billion barrels of oil or 10-13 billion tons of coal from the world's energy supply.

## *Strategic Part Of Integrated Development*

As the enclosed background report on the speech by a

Soviet nuclear energy official to last month's Salzburg conference of the International Atomic Energy Agency underscores, basic Soviet industrial plans to incorporate development of fast breeder plutonium fuel cycle technology as an integrated part of a long range fossil-fission energy development program. This overall approach is directly linked to the basic science and engineering technologies developed in connection with formidable Soviet controlled thermonuclear fusion breakthroughs of the type which led to the cited breakthroughs in related particle-beam development. The Soviet fast breeder program rightly sees breeder development as an essential energy technology transitional to development of commercial fusion energy and development of a fission-fusion fuel cycle.

Only with the development of breeder technologies on a wide scale will the world have the adequate energy margin to develop the fusion energy technology essential to guarantee a long range solution — via the derived high-energy plasma technologies of fusion — to the world's primary resources problem. With high-energy plasma technology, the lowest grades of ore — including basalt and granite — become economical mineral resources. In light of this, U.S. failure to pursue a full-scale forced development of fast breeder and fusion development technology ensures placing the U.S. at a strategic disadvantage internationally. The lessons of the late 1950's Sputnik breakthroughs are relevant here.

For these and related reasons, whatever merits the U.S. Administration's anti-plutonium policy may have, these have not been sufficient to persuade one of the world's nations to willingly endorse such a policy as their own. In fact, recent months of U.S. diplomatic and not-so-diplomatic arm-twisting to gain some form of backing for the Administration policy has brought the postwar system of U.S. strategic alliances to the point of breakdown. This is the case with such allies as Japan, Britain, West Germany, and Italy to name only a few.

The major conferences on nuclear development held in recent weeks have almost unanimously emphasized this point in heated opposition to the proposed U.S. policy in light of the vast world energy needs. This was the case at the April Conference on Transfer of Nuclear Technology in Persepolis, Iran where some 500 representatives from 41 nations attacked the announced U.S. policy as "counter-productive." The subsequent International Atomic Energy Agency conferences in Salzburg, Austria reemphasized this widespread opposition to the U.S. Administration policy coming from such widely respected international authorities on the issue as the head of the IAEA. The Soviet Union's response to the U.S. proposal at this meeting was to counter with a major presentation of the progress and potential benefits of their fast breeder program.

Indeed, in the weeks since the present Administration made its policy clear, planned fast breeder and reprocessing programs have been given added emphasis in Britain, West Germany, Japan, France and the Soviet Union. If latest Soviet reports are accurate, the USSR has solved quality assurance problems in the steam generator portion of its breeder program and is pursuing plans to develop the world's most vigorous breeder program. France, currently the world leader in breeder

technology, has given the go-ahead to development of their Super Phenix after more than two years successful operation of the Phenix demonstration breeder. Japanese government officials have warned that amicable U.S.-Japanese relations will be jeopardized if the U.S. government continues to withhold approval of Japanese Tokai-mura reprocessing plant and the related Japanese fast breeder program. The European Commission Energy Commission has just recommended an energy program through 1985 calling for \$160 billion for nuclear energy development.

A survey of international attitudes on the proposed Administration plutonium ban reveals that, with the exception of a handful of underfed but highly vocal "environmentalists," a disproportionate number of whom appear to be directly funded or otherwise encouraged by the Ford and Rockefeller Foundations (E.G. Natural Resources Defense Council), serious opinion regards the proposal as catastrophic to world interests.

This leaves as the central argument put forward in defense of its policy, the Administration's citing of the so-called proliferation danger. The Administration uses the argument that the plutonium from fast breeders and developed in reprocessing can be used to make bombs. On this we cite the very report which the Administration cited as basis for its announced policy, the recent Ford Foundation-Mitre Corp. report on nuclear energy. Although the summary conclusions of that report deceptively chose to ignore the fact — accurately contained within the body of the same report — it is considered impossible to make a bomb out of the plutonium obtained from a commercial reactor. This is due to the additional presence of the high content of non-fissionable isotope Pu 240 which causes either a very weak explosion or none at all to occur. The report's suggestion as to how this limitation could be overcome by a perspective bomb-maker is technically ludicrous.

The fact of the matter is that obtaining weapons grade plutonium via commercial reactors of this type is the most inconceivable method imaginable. If a nation were bent on obtaining a nuclear explosive capability, either they would purchase such capability ready-made on the world market or they would develop a special weapons grade plutonium reactor, the technology for which is widely available and has been in use since the 1950's for production of nuclear weapons. The present Secretary of Defense, who signed the Ford-Mitre report knows this full well.

The final point to be made is on the Administration's argument that substitution of a so-called thorium breeder will eliminate the dangers of the plutonium cycle. This can be answered by noting that such a change in midstream to the direction of the U.S. breeder program would delay the program by at least ten years, a devastating technological delay the world cannot afford. In the terms of a plutonium ban, such a thorium cycle could not be developed since the only economical — and the most technically feasible — way to implement the thorium fuel cycle is through its transitional integration with the plutonium fuel cycle — hence requiring the immediate development and construction of commercial plutonium fast breeder reactors including the Clinch River Breeder Reactor (CRBR) demonstration plant.