# Natural Resources Defense Council, Inc.

1725 I STREET, N.W.
SUITE 600
WASHINGTON, D.C. 20006
202 223-8210

*New York Office*
122 EAST 42ND STREET
NEW YORK, N.Y. 10017
212 949-0049

*Western Office*
25 KEARNY STREET
SAN FRANCISCO, CALIF. 94108
415 421-6561


Testimony of

Thomas B. Cochran

on

U.S. Post-INFCE Nuclear Nonproliferation Policy

before the

Subcommittee on Energy Research and Production
of the
Committee on Science and Technology
U.S. House of Representatives

June 4, 1980

My name is Thomas B. Cochran. I am a Senior Staff Scientist with the Washington, D.C., office of the Natural Resources Defense Council, on whose behalf I am appearing today. I have a Ph.D. in Physics from Vanderbilt University. I was a member of DOE's Ad Hoc INFCE/NASAP Study Group* chaired by Professor Henry Rowen of Stanford University. I am very pleased to have the opportunity to appear before this Committee and present our views with respect to the future direction of U.S. nuclear nonproliferation policy now that the INFCE process has been concluded.

Let me begin by reminding the Committee that both Presidents Ford and Carter have agreed that in developing U.S. policy "nonproliferation objectives must take precedence over economic and energy benefits . . . ." In his nuclear policy statement of October 28, 1976, President Ford Stated:

> I have concluded that the reprocessing and recycling of plutonium should not proceed unless there is sound reason to conclude that the world community can effectively overcome the associated risks of proliferation . . . I have decided that the United States should no longer regard reprocessing of used nuclear fuel to produce plutonium as a necessary and inevitable step in the nuclear fuel cycle, and that we should pursue reprocessing and recycling in the future only if they are found to be consistent with our international objectives.

President Carter, on April 7, 1977, when the INFCE process was proposed, stated:

---

*/ International Nuclear Fuel Cycle Evaluation/Nonproliferation Alternative Systems Assessment Program

> The U.S. is deeply concerned about the consequences for all nations of a further spread of nuclear weapons or explosive capacilities. We believe that these risks would be vastly increased by the further spread of sensitive technologies which entail direct access to plutonium, highly enriched uranium and other weapons usable material.

As recent events in Pakistan, Iraq, India, and South Africa have demonstrated, this is an equal if not greater concern today.

We must not lose sight of this primary objective: curtailing the spread of sensitive technologies and weapons usable material. Stated in different terms, a primary objective of U.S. nonproliferation policy must be to assure timely warning of a diversion of peaceful nuclear materials and technology to the manufacture of atomic weapons. Timely warning is essential to the viability of any international safeguards regime and, under the Nuclear Nonproliferation Act of 1978, must be given "foremost consideration."

Many nuclear industry spokesmen and some Members of Congress would have us set aside our concerns and this objective, and reopen the GESMO*process with the hope of making plutonium recycle in thermal reactors a legitimate commercial enterprise.

Others, primarily some Administration officials, are willing to compromise this objective -- curtailing the spread of sensitive technology -- for the sake of "easing tensions

---

*/ Generic Environmental Statement on the Use of Mixed Oxide Fuel in Light Water Reactors.

with our allies," or "removing diplomatic irritants." This backpedalling has already begun with the Administration's announcement of willingness to continue to supply nuclear fuel to India, a country that has exploded an atomic bomb, refuses to sign the NPT or accept international inspection of all its "civilian" fuel facilities, and refuses to rule out further "peaceful" nuclear explosions.

Clearly, "easing tensions" is not an end in itself; it is another way of saying that a policy based on consensus is generally to be preferred over a policy based on leverage. While we agree in principle, we disagree with those who use the principle to justify backpedalling.

Both those who wish to reopen the GESMO process and those who say that we must "ease tensions" argue that the U.S. took its best shot in INFCE and lost in its effort to delay the commercial development of the breeder; that the Europeans and the Japanese are going ahead; and that U.S. policy must be revised to accommodate this reality.

This argument is flawed in every respect. In fact:

(a) INFCE was highly politicized. Many of the INFCE findings, particularly those related to nuclear growth projection, uranium supplies, and the potential of breeders (i.e., rate of commercial introduction, breeding ratio, economics, etc.) are ridiculous on their face. Interdevelopment, Inc., of Arlington, a U.S. industrial consulting firm, for example, projects 480 Gw of installed nuclear capacity

in the non-Communist world in the year 2000, which is barely over one-half of the INFCE low-case estimate of 850 Gw (Nucleonics Week, May 22, 1980, p. 1).

(b) The U.S. did not take its best shot. The U.S. representative on INFCE's Breeder Working Group was the director of the U.S. breeder effort, an unabashed enthusiast for this technology. The U.S. failed to maintain adequate political control over representatives of this and some other key working groups. With no one minding the store, it is hard to take seriously the INFCE results in this area.

(c) The European and Japanese breeder efforts are on the verge of collapse. The entire FRG nuclear program, like the U.S. program, is at a standstill. The Kalkar reactor squeaked by the Bundestag by a slim margin. The German Government is keeping an "open mind" on the breeder and would gladly give it up altogether in exchange for moving ahead with LWRs. Despite the rhetoric of the Thatcher Government, the U.K. cannot justify launching a PWR program, much less breeders. The U.K. has something like a 40% excess reserve margin and is facing no growth in electrical demand. The Japanese just slipped their breeder program ten years or longer, due to "long range R&D delays and mounting costs." The French now have a "commercial" breeder than cost 2.4 times the cost of a PWR -- another Concorde. Dissent within the French Government over the rate of expansion of the French breeder program is beginning to have its effect.

(d) Not only are nuclear growth projections down worldwide, but also uranium reserves are expanding and uranium prices have been falling in real terms for the past two years. On the world market, there is excess capacity; it's a buyer's market; and the uranium industry is in the midst of a depression.

Thus, we see that the foreign breeder programs are in the same state that plutonium recycle was in in the U.S. in 1976. While there is no shortage of rhetoric, the reality is that the plutonium industry is collapsing. The INFCE findings reflect the breeder boosterism, and the back-pedallers within the Administration are responding to their rhetoric. They should be responding instead to the realities and the very real prolifreation threat. With regard to the latter, the only nuclear programs that are expanding beyond expectations are the nuclear weapons programs in the Middle East and East Asia -- Pakistan and Iraq.

The reality of the collapse of the plutonium industry inevitably must be considered by policymakers in Europe and Japan, nor can it be easily dismissed as they continue to reassess their own breeder commitments. The U.S. should not soften its resolve at the very time that events are shifting in our favor. If we do, we will lock ourselves into a policy that legitimizes commercial or R&D use of weapons usable materials.

One nonproliferation alternative that has been proposed as a means of limiting the spread of sensitive technology and the flow of weapons usable material is to draw the line between high technology countries with large electric grids and large nuclear programs on the one hand and developing countries on the other for purposes of limiting breeder development. This would allow our non-nuclear weapons state allies -- Japan and the Federal Republic of Germany -- to continue unencumbered with their own breeder programs while enabling the U.S. and its industrial allies to constrain breeder development in other non-nuclear weapons countries. Aside from the fact that this would be a blatantly discriminatory policy, we do not believe a workable distinction can be made. If Japan meets the test, then so does Korea; if Korea, then Brazil; and so on. Furthermore, it pretends that smaller countries have no legitimate business in developing an industry solely for the export market.

The choice before us is not between "leverage" and "consensus;" rather, it is between sticking to our principles and abandoning them. At the time the April 1977 policy was formulated, the Administration concluded correctly that the most immediate threat was represented by reprocessing and plutonium recycle in thermal reactors. The breeder was limited primarily to a few countries with good nonproliferation credentials. Because of the breeder's "energy independence" appeal (actually a false hope) and its nature as a long-term

R&D program, the Administration concluded that it would be much more difficult to convince countries with breeder programs to give up this technology. Thus, in developing its nonproliferation strategy, the Administration attempted to draw a distinction between "commercial" plutonium recycle in thermal reactors and "commercial" breeders on the one hand, and breeder R&D on the other -- the objective being to defer commercial use of plutonium but permit breeder R&D to continue. Some people apparently have forgotten that this was a "tactical" distinction, and that in reality the breeder fuel cycle, even as an R&D program, is actually less proliferation-resistant than plutonium recycle in thermal reactors (cf. the NASAP results).

The Administration's nonproliferation policy has met with considerable success in deflecting the rush to recycle plutonium in thermal reactors, its first goal. A large measure of this success was due to the realization worldwide that plutonium recycle was uneconomic and not necessary for waste management. The response of the advocates of reprocessing has been simply to shift their rationale, arguing that reprocessing was now needed for the breeder, not for thermal recycle. It is now becoming clear worldwide that the breeder is facing the same fate.

We are now faced with a struggle that is half over. Having won the first half, we are amazed at how quickly some in the Administration are willing to throw in the towel. We can win the remaining battle by continuing to hold the line,

by employing the tactics we used with respect to plutonium recycle. Thus, in shaping our post-INFCE nonproliferation policy, we should not compromise away our gains. We should not abandon the concept of timely warning. We should not make significant concessions, and should close major loopholes. Our objective should be to make it harder to reprocess, harder to expand breeder technology, not easier.

It follows that one goal should be to persuade our allies to defer or abandon the expansion of La Hague and the construction of the Thorp facility at Windscale and the new commercial reprocessing plant in Japan. These new starts are not needed to insure fuel for the currently committed breeder demonstration projects in Japan and FRG during the next 10-15 years at least.

While we should oppose new breeder starts, this is not an immediate problem. With regard to retransfers and exports for breeder R&D, we should require a demonstration that the timely warning criterion is met, or that: (a) the program is directed toward achieving that goal in the future; (b) no shipments are made in advance of actual need; and (c) the most proliferation-resistant technology and approaches are utilized.

With regard to requests for retransfers of spent fuel (MB-10s), we should continue to require for contracts that post-date April 7, 1977, a clear showing of need: that is, either a lack of spent fuel storage sapce or a showing that the plutonium is needed for currently committed breeder

demonstration facilities. We should insure that plutonium cannot otherwise be obtained from existing stocks and insist that reprocessing does not take place far in advance of the need for plutonium.

With regard to pre-existing contracts, we do not recommend changing the existing policy except to set out the criteria for subsequent transfers of the plutonium at the time of the initial transfer. We should not approve an contracts for reprocessing in new or expanded reprocessing plants unless and until it is clear that existing capacity no longer matches projected breeder R&D demands.

We should not approve of reprocessing or retransfers for the commercial use of plutonium -- e.g., plutonium recycle in thermal reactors, or "commercial" breedres. If the French find this policy an irritant, so be it.

Regarding the international plutonium storage regime (IPS), we do not believe such a regime can be constructed in a way that meets the timely warning criteria under rules agreeable to the Europeans and the Japanese. As in the INFCE process, the rules would reflect the lowest common denominator and we would end up with something much weaker than we could achieve through bilaterial agreements. IPS would legitimize large stocks and flows of plutonium, contrary to the Administration's desire to limit these, and it would result in strong pressure to recycle plutonium in thermal reactors once the stocks become available.

As for long-term fuel supply contracts, we see little purpose served by giving away future leverage unless we receive new and very important concessions in return. After Tarapur, we are surprised anyone would seriously suggest this simply as a method of promoting cooperation.

We hope these views are useful to the Committee in its struggles with this very difficult issue.