Reagan Changes Course on Nonproliferation

U.S. decision to offer new terms to allies for reprocessing, open discussion of export of nuclear technology incites critics

President Reagan has approved a significant revision of U.S. nuclear nonproliferation policy through a broadening of the terms under which U.S. allies may reprocess nuclear fuel supplied by the United States.

The action has drawn the fire of critics who fear that it will encourage the international spread of nuclear weapons by making plutonium more accessible. Reprocessing of spent nuclear fuel yields unused uranium, fission products, and plutonium. And plutonium can be fashioned into nuclear weapons.

Another source of the critics' concern is the apparent shift in policy by the Administration to a willingness to discuss the export by the allies of sensitive nuclear technology—notably uranium enrichment and reprocessing facilities. Such a shift would open the way for U.S. nuclear industry to compete in the international market for this technology. Such exports have heretofore been strongly opposed as a matter of policy by the United States.

Details of the new policy are not available because the Administration has chosen to classify the policy paper laying out the U.S. position on grounds that it forms the basis for negotiation with other nations. Congressional critics have also objected to the decision to classify. The issue of the export of sensitive technology was not explored at closed briefings in the House and Senate, but Administration officials acknowledged to the press that discussion of exports is contemplated.

The President's decision on reprocessing was foreshadowed in a general statement on nonproliferation policy issued by the Administration last July, however (*Science*, 31 July 1981, p. 522). In that statement Reagan said, "The Administration will not inhibit or set back civil reprocessing and breeder reactor development abroad in nations with advanced nuclear programs where it does not constitute a proliferation risk."

Administration officials say that the action amounts to a presidential directive to open negotiations with U.S. allies—specifically the nations belonging to EURATOM, the European regional atomic energy organization, and Japan—on new arrangements for their reprocessing of U.S.-supplied nuclear fuel.

In the past, the United States has insisted on case-by-case approval before nuclear fuel of American origin could be shipped and reprocessed. The U.S. requirement of piecemeal approval has long been a sore point in Europe and Japan.

The aim now is to work out terms under which a country's program for reprocessing could be granted blanket approval. Administration officials emphasize that U.S. approval will be contingent on the user country's adoption of reliable nonproliferation safeguards on reprocessing operations and the resulting nuclear materials. These safeguards would be those administered by the International Atomic Energy Agency in Vienna.

Observers say that the United States will seek the sort of agreement on "programmatic" approval already obtained by Australia and Canada, which supply uranium for nuclear power use to the allies.

The Reagan initiative fits the rationale for nonproliferation policy embraced by the Administration in the statement of last July. In a key passage, Reagan said, "We must establish this nation as a predictable and reliable partner for peaceful nuclear cooperation under adequate safeguards. This is essential to our nonproliferation goals. If we are not such a partner, other countries will tend to go their own ways and our influence will diminish."

The new tack on reprocessing marks a sharp departure from Carter Administration nonproliferation policies that were aimed specifically at discouraging development of a plutonium economy. To set an example through domestic policy the Carter Administration sought to defer development of the breeder reactor, which both uses and produces plutonium, and ordered that reprocessing facilities at Barnwell, South Carolina, not be put into operation. Internationally, the Administration tied exports of enriched uranium fuel to tight safeguards and used such exports and diplomatic leverage to deter the export by other suppliers of sensitive nuclear technology.

From the start, the Reagan Administration has argued that a policy of "technical denial," as State Department Under Secretary for Management Richard T. Kennedy has called it, is ineffective. In a speech in March, Kennedy, the Administration's top hand in formulating nonproliferation policy, said, "We must turn away from the 'unilateral' approach, therefore, which characterized our recent dealings with our nuclear partners and emphasize instead a cooperative approach—an approach in which we work together to reach agreement as to how our nuclear relations will be conducted. Continuation of 'unilateralism' certainly would not help to achieve our nonproliferation goals."

Underlying the Administration position is a view that the EURATOM nations and Japan are committed to the same nonproliferation objectives as the United States and that cooperation offers a surer way to achieve those goals than coercion. The Administration also argues that the Carter Administration erred in applying essentially the same standards to nations that have reliable nonproliferation credentials and those that do not.

The President's endorsement of the new policy came while he was at the recent economic summit meeting at Versailles when he signed off on a review of U.S. policy on international plutonium use which was undertaken last year. Although details of the policy initiative are classified, reaction in Washington was sharp.

Representative of the responses from legislators who have opposed any relaxation of controls on plutonium was the comment of Senate Minority Whip Alan Cranston (D–Calif.) that "it seems clear that the President has given the green light to the plutonium economy—international trade in bomb-grade plutonium from nuclear reactors.

"This, tragically, will accelerate the global spread of nuclear bomb-making capability."

The Administration decision to classify the policy paper attracted criticism. Representative Jonathan B. Bingham (D–N.Y.) a vocal opponent of Administration attitudes on plutonium, declined

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to attend a closed briefing offered by the Administration on 10 June. Bingham said he was unwilling to agree not to discuss information acquired at the briefing on a topic he thought should be open to public debate.

Earlier, Bingham questioned the legality of abandonment of the case-by-case approval of reprocessing. In a statement he said, "If the policy violates the dictates of the NNPA [Nuclear Non-Proliferation Act], as it could, I am personally committed to devoting my full efforts to see that it is not implemented."

Other critics are voicing concern about the Administration's expressed willingness to discuss with the allies their export of sensitive technology and their possible use of the so-called "thermal recycle," in which plutonium from reprocessing operations is mixed in fuel for fission reactors. There is skepticism that the Administration can extract satisfactory guarantees for safeguards under the new policy.

As for the prospect of a direct collision between the Administration and its congressional critics on these issues, the advent of a statement on domestic policy on plutonium, which Administration sources indicate will soon be completed, could precipitate such a clash.

—JOHN WALSH

Survival of the Fittest in the Falklands

Charles Darwin made myriad observations on the political and biological struggle for existence during a visit to the desolate isles

"We arrived here . . . [and] found to our great surprise the English flag hoisted. I suppose the occupation of this place has only just been noticed in the English papers: but we hear all the southern part of America is in a ferment about it. By the aweful language of Buenos Ayres, one would suppose this great Republic meant to declare war against England!"

So wrote Charles Darwin in 1833, with a note of condescension that Margaret Thatcher might envy. The 24-year-old naturalist, aboard the H.M.S. *Beagle*, was at the start of a 5-year voyage of discovery that proved pivotal in the formation of his evolutionary theory. Darwin in the Falklands made observations of fauna, flora, and geology that later showed up in his mature theorizing, including the 1859 opus *On the Origin of Species*. He also witnessed the struggle for supremacy in the world of human affairs.

The Argentines some years earlier had seized the Falklands from Britain, which asserted sovereignty over the isles in the wake of claims made in 1690 by an Englishman. In January of 1833, less than 2 months before Darwin arrived, Royal Marines from the H.M.S. *Clio* expelled the Argentine governor and planted the Union Jack. "A Buenos Ayrean man of war was here at the time with some fresh colonists," wrote Darwin in his diary. But the British show of force paid off, and not a shot was fired.

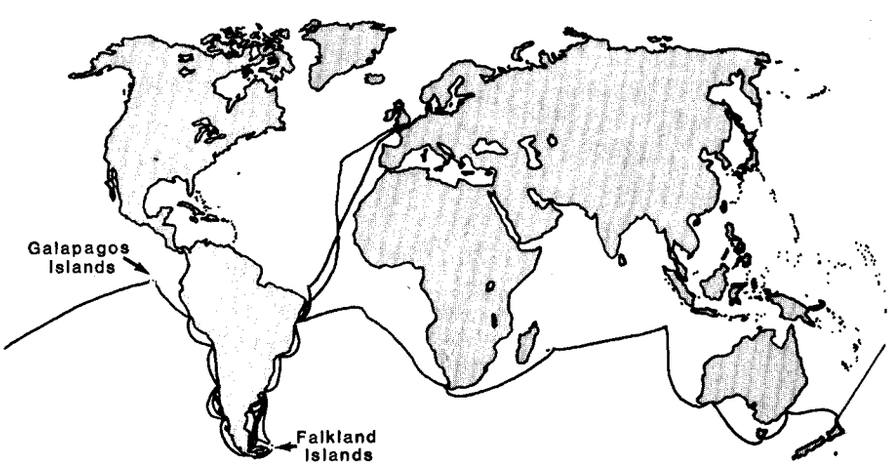
Aside from political intrigue, Darwin found the islands a bleak place. "The land is low & undulating with stony peaks & bare ridges; it is universally covered by a brown wiry grass," he noted in his diary. "Very few plants are found, & excepting snipes & rabbits, scarcely any animals. The whole landscape from the uniformity of the brown color has an air of extreme desolation."

According to Robert G. Frank, Jr., a historian of science at the University of California at Los Angeles who has studied Darwin's stay in the Falklands, the islands prompted doubts about the stability of species and prepared Darwin for the important observations he would make at another archipelago, the Galápagos. Further, says Frank, "Darwin later went back to observations made on the Falklands and found evidence in support of evolution."

Darwin toured the Falklands by horseback, accompanied by two friendly gauchos and a seemingly endless torrent of rain and hailstones. He was struck by the violence of the landscape, the lack of trees, and such geological oddities as "streams of stones" where lava flows had broken up in large chunks. Fossils, including "an obscure impression of the lobes of a trilobite," he found in abundance. Similar to ones in England, the fossils, he reasoned, might indicate a tropical climate at one point covered the entire earth.

Natural wonders were matched by ones of human origin, such as how the gauchos in a cold and driving rain immediately made a fire with nothing more than a tinderbox and piece of rag. "They seek beneath the bushes for some dry twigs or grass & this they rub into fibres & then (somewhat like a bird's nest) surround it with coarser twigs; they put the rag with its spark of fire in the centre & then covering it up with the fibrous matter, hold it up to the wind, when by degrees it smokes more & more & at last bursts out into flames. I am sure no other method would have any chance of succeeding with such damp materials."

According to Frank, the Falklands trained Darwin's eye. Having already visited the east coast of South America, Darwin now examined the productions of the archipelago. Did not the close connection of insects and plants point to some closer connection than migration?



The voyage of the H.M.S. Beagle*: 1831 to 1836*

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