

PDR



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOV 12 1979

The Honorable Don Fuqua
Chairman, Committee on Science
and Technology
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This is in response to your letter of August 3, 1979, to Chairman Hendrie requesting comments on the Congressional Research Service (CRS) report on "Alternative Breeding Cycles for Nuclear Power: An Analysis," prepared for the House Committee on Science and Technology.

Members of the NRC staff met with a CRS representative on April 11, 1979, and gave him informal comments on the report. During the meeting the staff pointed out that the report does not deal as well with the ex-reactor portion of the fuel cycle as it does with the reactor concepts. We understand that the purpose of the report is to review alternative cycles which may be capable of recovering more of the nuclear fuel's energy than does the once-through cycle but at the same time not unacceptably increasing the risk of proliferation of nuclear weapons. Since it is the separated special nuclear material that gives rise to potential proliferation concerns, it appears important to consider the whole alternative fuel cycle.

It was noted in the report that it is difficult to discern the differences between the proliferation risks of one alternative breeder concept and another, and that for all of the concepts the risks appear to be relatively low but not yet quantified or compared with other risks of public concern. NRC reviewers noted that these observations in the CRS report seem to indicate a lack of meaningful connection between nuclear power breeder reactors in general (or a particular breeder concept) and nuclear weapons proliferation. While routes to diversion of special nuclear material are mentioned, the specific creation of serious proliferation threats from such diversion have not been critically reviewed. Also, the report does not set forth criteria for determining the relative risk from various potential threat-creating scenarios involving diversion of fuel cycle material nor for comparing these risks with scenarios not involving power reactors. Further, it does not discuss how to judge whether disproportionate needs for proliferation safeguards may be required with a particular breeder alternative. We feel strongly that in order to provide for an appropriate level of Congressional and public understanding, these considerations still need to be given attention and review.

90018202


8001130 188

It has been noted that the main nonproliferation concerns most likely center on the back end of each nuclear fuel cycle system. While there are some technical developments in these areas which may provide nonproliferation improvements, recent analyses indicate that a more important role is likely to be played by a combination of improved international safeguards and institutional measures. Further, in light of recent international events, it appears important to consider the proliferation aspects of nonbreeder fuel cycles such as the application and spread of enrichment technology.

We trust these summary comments will be of use to your Committee. We would be pleased to discuss any portions of the report or the basis for our comments with members of your Committee or staff.

Sincerely,

ORIGINAL SIGNED BY R. G. SMITH

 Lee V. Gossick
Executive Director for Operations

90018203