

May 16, 1980

SECY-80-250

COMMISSIONER ACTION

For:

The Commissioners

From:

William J. Dircks, Acting Executive Director
for Operations

Subject:

SEMI-ANNUAL REPORT TO CONGRESS ON ALTERNATIVE REACTORS
AND FUEL CYCLES

Purpose:

To transmit NRC's second semi-annual report on the
evaluations of alternative reactors and fuel cycles
to Congress

Discussion:

Congress, in its authorizing appropriations legislation
for Fiscal Year 1979 (P.L. 95-601), directed the Commission
to "...report to the Congress semi-annually through calendar
year 1980 and annually through calendar year 1982 on the
status of domestic and international evaluations of nuclear
fuel cycle systems." Enclosure 1 is the second semi-annual
report in this series. A proposed letter of transmittal
for this report from the Chairman to the Congress is provided
as Enclosure 2.

The report covers events occurring from July 1, 1979 to
February 29, 1980. There were only a few events significant
to NRC's role and mission: (a) the draft final report of
the Non-proliferation Alternative Systems Assessment
Program (NASAP); (b) the final reports of the International
Nuclear Fuel Cycle Evaluation (INFCE); and (c) OMB's budget
cuts in advanced reactor programs.

Because alternative reactors and fuel cycles for the U.S. are
receiving very limited activity and their potential advent
is decades in the future, and because of the need to allocate
scarce NRC resources to higher priority efforts, e.g., those
associated with the TMI Action Plan, the staff has
recommended in this report that Congress relieve NRC of the
responsibility of providing further reports in this series.

Recommendation:

That the Commission approve this report and forward it to
Congress under the Chairman's signature.

Contact:

John W. Clark, MPA
492-7721

8009190787

Coordination: The Offices of NRR, NMSS, RES, and IP have reviewed this report to Congress and concur in the report and its recommendation.



William J. Dircks
Acting Executive Director for
Operations

Enclosures:
As Stated

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Tuesday, June 3, 1980.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT May 27, 1980 with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION

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NRC REPORT TO CONGRESS ON THE STATUS OF DOMESTIC
AND INTERNATIONAL EVALUATIONS OF NUCLEAR REACTOR AND FUEL
CYCLE SYSTEMS

April 1980

Enclosure 1

Semi-Annual Report to Congress on
Alternative Reactors and Fuel Cycles

Congress, in its authorizing appropriations legislation for NRC for Fiscal Year 1979 (P.L. 95-601), directed the Commission to: "...report to the Congress semi-annually through calendar year 1980 and annually through calendar year 1982 on the status of domestic and international evaluations of nuclear fuel cycle systems." NRC's first semi-annual report, covering events through June 30, 1979, was provided to Congress on December 3, 1979.

Since June 30, 1979, only a few significant events have occurred that bear on NRC's responsibilities related to alternative nuclear fuel cycle systems. These events are described below.

NASAP

During the fall of 1979, DOE published a draft final report of the Nonproliferation Alternative Systems Assessment Program (NASAP). The NASAP final report contains an Executive Summary plus nine separately bound volumes. The report covers the following subject areas: Proliferation Resistance, Resources and Fuel Cycle Facilities, Commercial Potential, Economics and Systems Analysis, Safety and Environmental Considerations for Licensing, International Perspective, Advanced Concepts, and Reactor and Fuel Cycle Descriptions.

The draft final* NASAP findings and conclusions of particular interest to NRC are:

- None of the alternative fuel cycles examined is inherently more proliferation-resistant than the once-through light water reactor (LWR) cycle.
- The fuel efficiency of LWR's can and should be improved.
- LMFBR research should be continued, but at a limited pace because breeder reactors will not be needed nor will they be commercially viable until the year 2010 or later.

These findings do not appear to justify a major NRC effort on alternative reactors and fuel cycles, nor any other activity within NRC's purview. DOE asked NRC (as well as other Government agencies, industry, and the general public) to comment on the draft final report by February 15, 1980. NRC provided comments, mainly of a technical nature, on Volumes I, II, and VI of the report. The final version of the NASAP report has not yet been published.

INFCE

The eight working group reports of the International Nuclear Fuel Cycle Evaluation (INFCE), and the summary and overview reports of the INFCE Technical Coordinating Committee, were submitted to the final INFCE Plenary Conference late in February 1980. The reports were presented to the Plenary Conference

* "Draft final" is terminology used by DOE to distinguish this report from preliminary NASAP reports.

without separate or dissenting views and, as consensus documents, were required to accommodate a wide range of assumptions and judgments from the 66 contributing countries. The Plenary Conference received the reports and submitted them to the governments of participating countries for their consideration in developing their nuclear energy policies and in future international discussions concerning nuclear energy cooperation and related controls and safeguards.

The reports consist largely of generalized findings and broadly-structured problem definition. They do not recommend one fuel cycle over another on the basis of nonproliferation superiority, although they also do not contradict the NASAP finding that no alternative fuel cycle appears more proliferation-resistant than the once-through LWR cycle. The reports do not provide NRC with data or conclusions which would guide U.S. advanced reactor licensing activity.

Budget

The first semi-annual report to Congress states that in Fiscal Year 1979, NRC was sponsoring \$14 million in fast breeder reactor safety research and \$3 million in advanced converter reactor safety research. In Fiscal Year 1980, however, the Administration asked Congress to terminate NRC's advanced converter efforts. NRC had intended to continue with all of the reactor safety research programs in 1981, but the OMB has called for their termination in the President's Fiscal Year 1981 budget. OMB has also called for the termination of DOE's advanced converter program and a massive cutback in the DOE breeder efforts.

Except for its funding for advanced reactor research, NRC has been able to provide only very limited resources for the review and evaluation of alternative fuel cycles, primarily because of higher priority requirements such as TMI related activity. This situation will continue for the foreseeable future.

Recommendation

Since NASAP and INFCE have not identified any alternative fuel cycle systems that are more proliferation resistant than the LWR, and since NRC is experiencing severe budgeting constraints with regard to advanced reactor activities, the Commission hereby recommends that Congress relieve the NRC of the (P.L. 95-601) responsibility of providing further semi-annual or annual reports in this series. If such relief were granted, however, the NRC would stand ready to promptly inform the Congress of any significant development in this area.

DRAFT LETTER OF TRANSMITTAL TO PERTINENT CONGRESSIONAL OFFICES

Dear (Senator/Congressman):

We are pleased to submit the enclosed report, "NRC Semi-Annual Report to Congress on the Status of Domestic and International Evaluations of Nuclear Fuel Cycle Systems," in accordance with Public Law 95-601. This is the second report in a series of reports mandated by Congress.

This report addresses the very few events occurring during the reporting period that bear on NRC's responsibilities related to alternative nuclear fuel cycle systems. Because alternative reactors and fuel cycles for the U.S. are receiving very little activity and their potential advent is decades in the future, and because NRC needs to allocate its scarce resources to higher priority efforts such as TMI related work, the Commission recommends that Congress relieve the NRC of its responsibility for providing further reports in this series.

We believe the enclosed report is responsive to the Public Law and hope it meets your particular needs. Please let us know if we can be of any further assistance.

Sincerely,

John F. Ahearne
Chairman

Enclosure:
NRC Semi-Annual Report to
Congress on the Status of Domestic
and International Evaluations of
Nuclear Fuel Cycle Systems