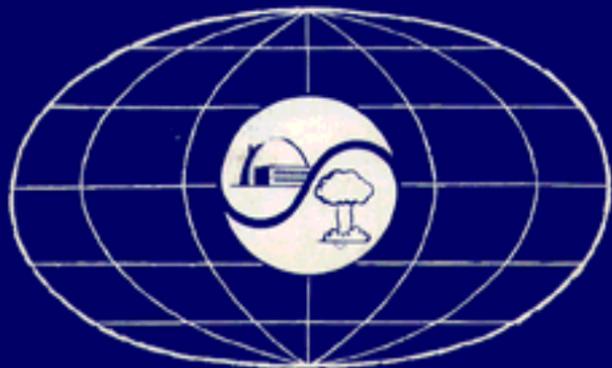


Nuclear Proliferation and Safeguards

June 1977

NTIS order #PB-275843

**Nuclear
Proliferation
and Safeguards**



CONGRESS OF
THE UNITED STATES
Office of Technology Assessment
WASHINGTON, D. C. 20510

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Honorable Abraham A. Ribicoff
Chairman, Committee on Government
Affairs
United States Senate
Washington, D. C. 20510

Dear Mr. Chairman:

On behalf of the Board of the Office of Technology Assessment,
we are pleased to forward this report Nuclear Proliferation
and Safeguards.

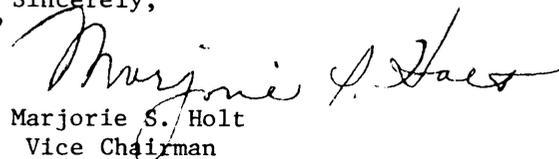
The report consists of two volumes: the first covers the
findings and analysis, the second consists of the appendices
of supporting documentation. It was prepared by the Office
of Technology Assessment in response to your Committee's
request.

In accordance with OTA policy, this report provides a balanced
and impartial analysis of the various initiatives proposed
to reduce or eliminate nuclear weapons proliferation.
The technical, institutional and political options discussed
in the report are set in the context of both alternative energy
perspectives and the various nuclear reactor fuel cycles to
which they relate. We hope that this report will be useful to
your Committee and the entire Congress in debating and resolving
the best course for the country in prevention of the spread of
nuclear weapons capabilities.

Sincerely,


Edward M. Kennedy
Chairman

Sincerely,


Marjorie S. Holt
Vice Chairman

cc : Honorable John H. Glenn
Honorable Charles H. Percy

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DANIEL V. DE SIMONE
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June 30, 1977

Honorable Edward M. Kennedy
Chairman
Technology Assessment Board
Office of Technology Assessment
United States Congress
Washington, D. C. 20510

Dear Mr. Chairman:

The enclosed report, Nuclear Proliferation and Safeguards, presents OTA's analysis of the risk of further spread of nuclear weapons, and the relation of that risk to the peaceful use of nuclear technology.

This assessment, prepared under the direction of the OTA Energy Program, was requested by Senators Abraham Ribicoff, John Glenn, and Charles Percy of the Senate Committee on Government Operations. The purpose was to provide a comprehensive analysis of technological factors and potential options to assist Congress in evaluating national and foreign policy relevant to nuclear proliferation.

In addition to extensive internal review, the report has been reviewed by the Nuclear Proliferation and Safeguards Advisory Panel, the Energy Program Advisory Committee, the Technology Assessment Advisory Council, and others. The report addresses the motivations for nations and non-state groups to obtain nuclear weapons and the routes they could follow in doing so. A balanced analysis of the policy options available for combatting the problem is presented. The options are arranged to correspond with the responses that follow from three different perceptions of the risks of proliferation relative to the need for nuclear energy: energy priority, non-proliferation priority, and shared priority.

The study concludes that the complex and difficult problem of proliferation is controllable only by hard and **controversial choices**

Honorable Edward M. Kennedy

Page Two

by many nations over which the U.S. has only limited influence. Within these limits, however, there are many options for reducing the probability of proliferation. The desirability of these options depends not only on their effectiveness and feasibility, but also on perceptions of the importance of non-proliferation relative to other national choices.

Proliferation has emerged as a major concern in both the Congress and the Executive Department. Several bills have already been introduced in Congress, and the President has elevated non-proliferation to one of his highest foreign policy objectives. The OTA report should prove useful to the Congress in its consideration of these bills.

Sincerely,

A handwritten signature in black ink, appearing to read "Emilio Q. Daddario". The signature is fluid and cursive, with a large initial "E" and "D".

EMILIO Q. DADDARIO

Director

Enclosure - 1

Acknowledgments

This report was prepared by the Office of Technology Assessment Energy Program Staff. The staff wishes to acknowledge the assistance and cooperation of the following contractors and consultants in the collection of information.

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*Also a member of the advisory panel.

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The International Atomic Energy Agency
The Nuclear Regulatory Commission

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*Resigned effective January 1, 1977

Preface

This study has been undertaken in response to a request from the Senate Committee on Government Operations (now the Committee on Governmental Affairs) to help provide Congress with the capability to “independently evaluate the policymaking activities of our Government and other nations and be prepared to take legislative actions” with regard to nuclear proliferation and safeguards.

This report has been prepared by the Energy Program of OTA with the assistance of an advisory panel of 16 members from industry, Government, and academia, who have reviewed draft material for each section of the report and have periodically met to comment on the course of the study and provide guidance to the staff. The advisory panel provided advice and critique throughout the assessment, but does not necessarily approve, disapprove, or endorse the report, for which OTA assumes full responsibility.

The Technology Assessment Board approves the release of this report, which identifies a range of viewpoints on a significant issue facing the U.S. Congress. The views expressed in this report are not necessarily those of the Board, OTA Advisory Council, or of individual members thereof.