[redacted]

73474

[redacted]TION

AEC 129/56

December 9, 1953

COPY NO. 1

DELETED VERSION ONLY

ATOMIC ENERGY COMMISSION

DRAFT FOREWORD TO THE PROGRESS REPORT
TO THE JOINT COMMITTEE, JUNE THROUGH NOVEMBER 1953

Note by the Secretary

Attached for consideration by the Commission during the week of December 7, 1953, is a draft of the Foreword by the Commission introducing the Progress Report for the period June through November 1953. It is contemplated that this foreword will be submitted to the Joint Committee in the separate document containing the Weapons Section.

ROY B. SNAPP
Secretary

[redacted]

TRANSMITTAL

When separated from enclosures handle this document as.....
[redacted] USE ONLY

DISTRIBUTION	COPY NO.
Secretary	1
Commissioners	2 - 6
General Manager	7
Deputy General Manager	8
Asst. Gen. Mgr. Adm.	9
General Counsel	10
Finance	11
Production	12
Military Application	13

[redacted] DATA

This document contains restricted data as [redacted] in the Atomic Energy Act of 1946. [redacted] permitted for the disclosure of its contents in any manner to an unauthorized person is prohibited.

[redacted]

This document consists of 6 pages

Copy No. 3 of 13 Series A

~~TOP SECRET~~
~~By authority of U. S. Atomic Energy Commission~~
~~Per [signature] Date 12/9/53~~
Document No. LXXXI-230/A

[redacted]
SE[redacted] INFORMATION

ATOMIC ENERGY COMMISSION

HIGHLIGHTS
DRAFT FOREWORD BY THE COMMISSION

1. The urgency of achieving emergency capability for delivery of thermonuclear weapons overshadows all other objectives in the Commission's current program.

2. Less urgent, but nevertheless important, is resolution of the policy issues confronting the Government in the effort to encourage wider participation by industry in the development of economic nuclear power. These two matters and other major developments warrant brief comment here.

WEAPONS

3. At Operation CASTLE at the Pacific Proving Grounds, beginning in March 1954, seven thermonuclear weapon designs will be tested.

DELETED

depending on CASTLE results. Five of the designs to be tested will contain lithium, and in four of the designs the isotopic concentration of lithium 6 will be greater than normal.

[redacted]
This document contains restricted data as def[redacted] of 1946. Its transmittal or the disclosure of its [redacted] any manner to an unauthorized [redacted] is prohibited.

GROUP 1

[redacted]

Energy yields up to eight megatons TNT equivalent are predicted. Plans for quantity production and for future development of thermonuclear weapons remain flexible, and will be determined by results of the CASTLE tests.

4.

[redacted]

The change accomplishes substantial savings.

THERMONUCLEAR AND FISSIONABLE MATERIALS

5. To meet minimum interim requirements for thermonuclear weapons, facilities completed during the summer have been placed in operation to produce lithium 6 and deuterium gas. Sufficient lithium 6 has already been produced in the new Alloy Development Plant (ADP) at Oak Ridge to satisfy the CASTLE requirement, and current output is providing amounts for limited production of weapons. A second plant (Alpha 5) is now being designed and equipped to produce larger quantities of lithium 6. At Hanford, tritium is being produced from a special reactor loading similar to that carried out three years ago. Substantially greater amounts of tritium will be produced at Savannah River, beginning in the second half of 1954. Boron 10 will be separated in a facility now under construction at the Lake Ontario Ordnance Works.

6. The addition of gaseous diffusion cascade units at Paducah has continued to push up the output of uranium 235, while increasing

[redacted]

[redacted]

power levels at Hanford have made possible new records for the formation and separation of plutonium. Initial Savannah River production has been delayed by testing operations, but plutonium formation is expected to begin there in December. Construction progress on Expansion Program facilities has been satisfactory. When all plants now under construction are in full operation, output of uranium 235 and plutonium will be at about three times the rates reached in the third quarter of 1953.

RAW MATERIALS

7. The longer term outlook for procuring uranium continues to improve. The recent decline in Belgian Congo production is small compared to the gains in output from Canada, United States, and South Africa and to the additional increases projected for these countries and Australia in the years immediately ahead.

[redacted]

In the United States and Canada, ore discoveries in both the early part of the year and in recent months have in effect created a temporary shortage of mill capacity. United States production, estimated at [redacted] of U_3O_8 in 1953, is now expected to reach [redacted] in 1956.

RESEARCH AND DEVELOPMENT

8. We have authorized construction by Westinghouse Electric Corporation of the first full-scale reactor designed for production of electric power, as well as the construction of a new type of accelerator at Brookhaven National Laboratory. Each of these

actions was taken under the specific authority provided by Congress in the 1954 Appropriation Act. The earlier Westinghouse project for development of a large ship reactor was canceled, and development of aircraft propulsion reactors has been re-oriented, in accordance with decisions of the National Security Council last spring. The first prototype submarine reactor has been undergoing extensive tests at the National Reactor Testing Station, and the two nuclear-powered submarines now under construction are scheduled to be completed in 1954 and 1955. Various other projects in reactor development and physical research have been curtailed or postponed to meet current fiscal objectives. Though characteristically unspectacular, research in biology and medicine is providing a factual basis for man's understanding of the dangers of radiation and exploitation of its benefits.

NUCLEAR POWER POLICY

9. The Commission has re-examined the policy questions implicit in the draft legislation proposed last spring to encourage wider industrial participation in the development of economic nuclear power. In this review we have considered the points of view revealed during the hearings conducted last summer by the Joint Committee, as well as problems called to our attention by other executive departments and agencies. A new draft proposal for legislation has been submitted to the President and is being studied by the Executive Branch.

10. Meanwhile, the two related studies requested by the Joint Committee are being prepared. One of these will be an unclassified report making an interim estimate of the social, political, economic, and international effects of using nuclear energy for industrial purposes. The other report will review technological accomplishments in reactor development, point out the major problems

[redacted]T

[redacted]

still to be solved in the design of power reactors, and present a recommended program covering the next three to five years.

11. We look forward with interest to a full exchange of views with the Committee during its consideration of nuclear power legislation which will be proposed to the Congress.

OTHER LEGISLATIVE PROPOSALS

12. We have recommended to the President that the Atomic Energy Act be amended to permit greater flexibility in providing materials and classified technical information to friendly nations. The Commission's need for wider discretion in this regard has been evident in past negotiations with raw materials suppliers, and would become much more acute if nuclear power legislation were enacted permitting United States industry to have broader access to reactor data.

13. The most important of various other legislative proposals relate to problems of information control. We have proposed that Commission contractors as well as Commission employees be permitted to transmit restricted data to persons cleared by the Department of Defense. We have also requested authority to remove information from the restricted data category without necessarily declassifying it and removing it from the protection of the Espionage Act.

14. A more comprehensive approach to the problem of protecting national secrets has been undertaken by the Department of Justice and the Commission. In this study, requested by the President in response to a suggestion transmitted in early July by the Chairman of the Joint Committee, representatives of the two agencies are exploring the advantages of legislation uniformly applicable to all information affecting the nation's security.

[redacted]

[redacted]

INTERNATIONAL MATTERS

15. The exchange of information and assistance with the United Kingdom and Canada under the Technical Cooperation Program is reviewed in Appendix "A". Following discussions with the Joint Committee, a new topic was recently added to this program, permitting under Area 2 (Health and Safety) the exchange of information on the effects of nuclear detonations on human beings and their environment.

16. For the fourth time the procedures established in Section 10(a)(3) were used to permit the communication of restricted data to a friendly nation. In this instance a United States manufacturer was authorized to supply equipment needed for repair of the NRX reactor at Chalk River, Canada.

17. Our report includes for the first time an account of other international matters which have required our attention during the period. These are set forth in Appendix "B", Notes on Other International Matters. Certain of this information is of less than major importance, but taken altogether it represents a segment of Commission activity which promises to become increasingly important in the years ahead.